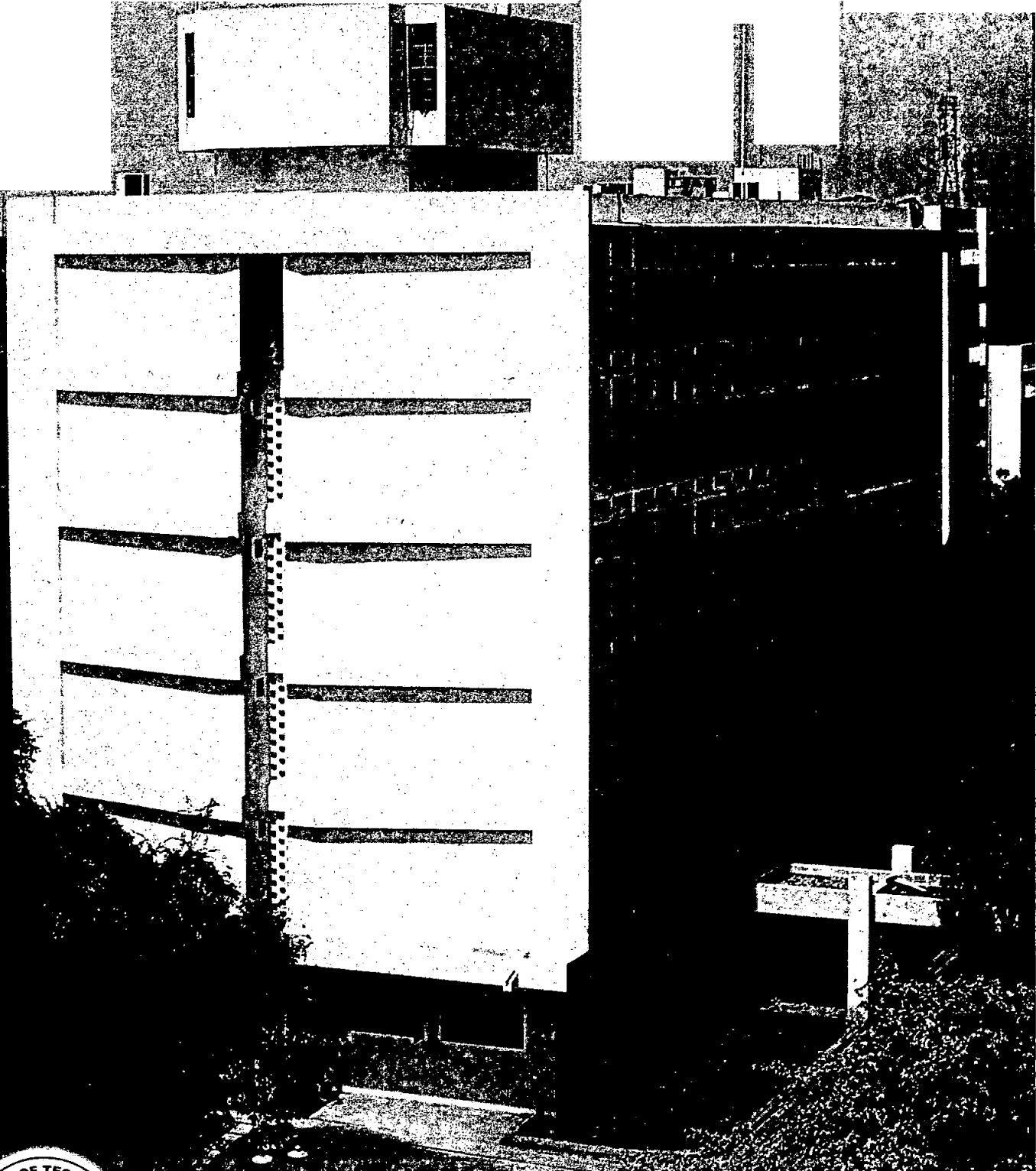


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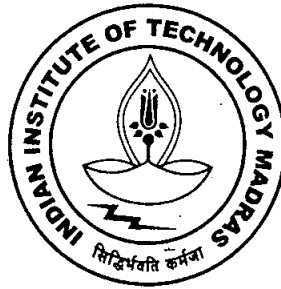
2004-2005



INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI-600 036

FORTY SIXTH
ANNUAL REPORT

2004 - 2005



INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI - 600 036

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1. DIRECTOR'S REPORT

1.1 Introduction:

The Indian Institute of Technology Madras (IITM), was established in 1959 by the Government of India, as an Institute of national importance. Its primary objective was to promote higher technical education, research and consultancy. The activities of the Institute in various fields of Science and Technology are now being carried out by 15 Departments and 5 Research Centres. The Institute Campus covers an area of 256 hectares of forest land and houses a community of about 11000 people.



The Institute offers several course-based undergraduate (UG) and post-graduate (PG) programmes as well as research-based post-graduate and doctoral programmes. It has, over the years, responded to environmental changes and user needs by redesigning curricula, offering new UG and PG programmes and specially designed user-oriented (UoP) M.Tech. and continuing education programmes. IITM also offers part-time PG programmes that enable working professionals to acquire higher degrees. Our Preparatory Course Programme for Weaker Section Students offers intensive coaching to eligible candidates to prepare them for entry into IITM on successful completion of this one-year Programme. 40 (23 SC & 17 ST) candidates have been admitted to this Course in 2004.

The Institute also undertakes a large number of research and consultancy projects sponsored by a wide spectrum of funding agencies, including Government and Industry. IITM has active linkages with leading academic and research organizations in India, Australia, Germany, Japan, Malaysia, Singapore, UK and USA. This brief Report provides a summary of our activities, achievements and accomplishments in the different spheres of our activity during the year 2004-05.

1.2 The Forty-First Convocation:

The 41st Convocation was held on 30th July 2004. A total of 1082 degrees were awarded: 72 Ph.D., 90 M.S., 375 M.Tech., 39 M.B.A., 85 M.Sc., 85 Dual Degree and 336 B.Tech. These degrees cover a wide range of disciplines and specializations offered by the ten Engineering departments, three Science departments, the department of Management Studies and the department of Humanities and Social Sciences. Among the Graduands are: 21 QIP candidates (teachers from other colleges), 65 sponsored candidates and 57 UOP candidates, 111 ladies, comprising 18 Ph.D., 6 M.S., 30 M.Tech., 27 M.Sc., 3 MBA, 6 Dual Degree and 21 B.Tech. Students.

1.3 Course-Based Programmes:

IITM offers UG & Dual Degree programmes in Aerospace, Chemical, Civil, Computer Science, Electrical, Mechanical, Metallurgical & Materials and Ocean Engineering Departments; PG programmes in Applied Mechanics, Mathematics, Physics, Chemistry and Humanities & Social Sciences Department and User Oriented programmes are offered in Biotechnology, Civil, Computer Science, Electrical, Mechanical & Ocean Engineering departments.

Keeping in view that the role of designers in engineering industry is very important for its growth, a new dual degree program, with a B.Tech. in Engineering Design and a M.Tech. in Automobile engineering, has been started in IIT Madras. The Indian auto industry has promised full cooperation for making this program a success. It is a unique blend of engineering and aesthetics in design, with a liberal spread of practical laboratory classes. The students need to spend six months in the industry as a part of the curriculum. The following new facilities are being created for this programme: A graphic art studio, a virtual reality lab, a product design lab, ergonomics lab, mechatronics lab, vehicle dynamics lab, a new IC engine lab and Controls lab are being set up. The total cost is about Rs. 15 crores and a new building of about 60,000 sq.ft will also be constructed. It is expected that these facilities will be of use to other engineering departments as well.

1.4 Academic Research:

IIT Madras continues to be very active in research and during the year under review, 72 Ph.D theses and 90 Master's theses have been completed. Our faculty and research scholars have published 589 research papers in refereed International (450) and National (139) Journals and have presented 881 research papers in International (543) and National (338) Conferences. At the risk of over simplification I will attempt to give a flavour of the results obtained.

Ph.D Work

Aerospace Engineering:

Prabhu Ramachandran, Ramakrishna & Rajan have established that it is possible to perform high resolution simulation, using the Lagrangian, grid-free, Random Vortex method.

Applied Mechanics:

Jacob Thomas, Patil & Radhakrishnan obtained foot pressure images of diabetic subjects from Pedopower-graph and analysed them for planter ulcers. They used a 3D FE model to analyse varying foot sole properties for stresses and their effect on causing ulcers and designed a therapeutic footwear which has been clinically tested.

Sathiyarayan, Sivakumar & Lakshmana Rao characterized the nonlinear nature of the electromechanical response of PVDF material.

Satya Devi, Sivakumar & Bhattacharya have gained insight into the importance of instability strain in the very low cycle fatigue behavior of some metallic specimens through experiments and proposed a simple life prediction methodology.

Biotechnology:

Baskar & Anju Chadha developed an efficient biocatalytic method to synthesise alpha-hydroxy esters on a variety of substrates in the lab scale.

Santosh Kumar Padhi & Anju Chadha developed whole cell mediated deracemisation of beta hydroxy esters resulting in high optical purity product esters and elucidated the mechanism of deracemisation.

Akila & Chandra achieved low temperature biogas generation nearing 75% of mesophilic by using an adapted methanogenic consortia and isolated novel cold-adapted Clostridia and Methanogens which secrete cold tolerant xylanases and hydrolases of industrial interest.

Vijayalakshmi & Chandra demonstrated lipid accumulation and lipase activity prior to riboflavin production for the first time in *Eremothecium ashbyii* and genetic transcriptional regulation of riboflavin biosynthesis in *Ashbya gossypii*.

Chemical Engineering:

Arvind Kumar Sharma, Chidambaram & Krishnaiah carried out experimental investigation on batch adsorption, fluidized bed hydrodynamics and fluidized bed adsorption for removal of dyes from waste water using activated carbon.

Maharudrayya Swamy, Sreenivas Jayanti & Abhijit Deshpande have developed design correlations to calculate pressure drop and flow distribution in different flow configurations used in PEM fuel cells and a comprehensive water balance model to predict the onset of flooding/dehydration.

Chemistry:

Sudhakar & Sundararajan synthesized a new series of homogeneous catalysts in monomeric and tetrameric forms for ethylene polymerisation studies.

Satya Kishore & Varadaraju reported the synthesis and electrochemical studies on oxides and phosphides expected to be useful as electrode materials for rechargeable Li batteries.

Lakshminarasimhan & Varadaraju reported the study of Eu luminescence as a structural probe and for generation of white light for solid state lighting applications.

Shanmugam & Varadarajan synthesized organic-inorganic nanocomposites consisting of Keggin polyoxometalate films and showed that they exhibit photochromic and electrochromic behaviour. Several patents have been filed as part of this work. Antimicrobial activity of Ag and Au embedded composite film against E-coli BL 21 was also investigated.

Jothiramalingam & Varadarajan developed eco-friendly catalytic materials such as cerium incorporated manganese oxide OMS-2 for the catalytic wet oxidation of toxic phenolic compounds into non-hazardous chemical species like carbon dioxide and water.

Prabhakaran & Subramanian have developed ion-selective, sensitive, rapid and robust grafted polymers for the recovery of toxic and valuable metal ions from natural water samples and a new rapid and selective, diamide-modified reversed phase HPLC method for the separation and determination of uranium, thorium and lanthanides.

Prabhakara Rao & Vidyasagar have synthesized new metal organophosphonates at relatively low temperatures by hydrothermal and evaporation techniques. Some of these compounds are microporous, solid Brønsted acids and undergo topotactic intercalation reactions with ammonia and primary amines.

Civil Engineering:

Ayothiraman & Boominathan carried out extensive experimental and numerical investigations on the lateral dynamic / seismic behaviour of piles embedded in clays and determined the depth of maximum dynamic bending moment.

Computer Science & Engineering:

Suryakanth Gangashetty, Yegnanarayana & Chandrasekhar developed a system for recognition of CV units in speech using support vector machines incorporating neural network models to compress feature vectors and detect voice onset points in continuous speech.

Palanivel & Yegnanarayana presented new methods for face tracking, facial feature extraction, visual speech feature extraction and face recognition using neural network models, for developing an online person authentication system.

Electrical Engineering:

Priya & Sridharan presented the first hardware-directed solutions and FPGA realizations for complete and reduced visibility graphs. They also presented hardware solutions for finding the point to point shortest path in a planar environment amidst polygonal obstacles using these visibility graphs.

Chitra Babu & Janakiram proposed a new programming language called DyaNaCola that provides constructs for expressing changing object behaviours in a program at run-time.

Klutto Milleth, Devendra Jalihal & Giridhar proposed two schemes for partial feedback based wireless communications applicable to base-stations employing multiple transmit antennas, one based on a single bit feedback and the other on a novel phase feedback technique.

Rangaraj, Devendra Jalihal & K. Giridhar exploited the available delay diversity in multipath fading channels to analytically evaluate the extent of decorrelation this would yield on the measurements, even when the spatial antenna elements are fully correlated and designed a space-frequency linear dispersive coding scheme to yield enhanced error rate performance.

Management Studies:

Preeti & Thenmozhi showed that selected manufacturing companies in India raise finance through non-traditional debt instruments when profitability is low, thereby signalling prosperity of growth, confirming the information asymmetry and trade-off theories and the pecking order hypotheses.

Sudhir Ryan Daniel & Rajendran developed genetic algorithms and simulated-annealing algorithms to determine order-up-to levels in a serial supply chain with the objective of minimizing the sum of inventory carrying costs and shortage (or lost-sales) costs.

Mathematics:

Shine Lal & Thamban Nair investigated new mollifier-type methods for obtaining stable approximate solutions for ill-posed problems in a general operator theoretic setting.

Shalu & Choudum studied several super classes of perfect graphs that have their origin in the works of C. E. Shannon and C. Berge on communication channels.

Anilkumar & Satyajit Roy investigated in detail self-similar, semi-similar and non-similar solutions of unsteady mixed convection flows over a rotating sphere, a rotating cone and a moving slender cylinder, respectively.

Vasundhra & Ponnusamy studied the geometric properties of certain families of analytic functions using certain integral transformations and obtained improved polynomial series expansions for Gaussian and confluent hypergeometric functions.

Mechanical Engineering:

Muthukumar, Maiya & Srinivasa Murthy studied the performance of metal hydride based hydrogen compressor and storage devices taking into account the heat and mass transfer characteristics of the hydriding reactor.

Senthil Kumar & Venkatarathnam developed a highly efficient low cost single stage cryogenic mixed refrigerant cycle Joule Thomson refrigerator.

Somashekar Hiremath, Singaperumal & Krishnakumar developed a methodology to study the dynamics of the fluid structure interaction of a jet pipe electro hydraulic servo valve with built-in mechanical feedback using Finite Element method. An experimental setup was also designed to determine the characteristics of some of the critical components

Deivanathan & Vijayaraghavan studied the thermal aspects of grinding especially the significance of peak temperature and rate of heating on burn as well as the material dependant responses and established length of contact and metal removal rate as critical parameters in the control of burn.

Shajan Kuriakose & Shunmugam determined optimal conditions for achieving good surface finish and machining speed in wire-cut electro discharge machining of an aerospace material Ti6Al4V.

Mohan & Shunmugam investigated methods to simulate machining of single- and double- enveloping worm and worm gears, and the CAD application of such simulations and showed that the machined geometry can be compared with design geometry and necessary corrections can be carried out to improve geometrical accuracy.

Wilson Samuel Jesudasan, Arunn Narasimhan & Venkateshan determined experimentally the effect of the inflow velocity profile on the porous media parameters such as the permeability and the form coefficient and deduced the importance of "wall channeling" effect in the pressure drop and heat transfer characteristics of rod bundles.

Krishnan, Balaji & Venkateshan measured the temperature distribution along the walls in vertical parallel plate channels, determined the convective and radiative heat transfer rates and showed that radiation heat transfer could reduce the maximum temperature by as much as 40%.

Premachandran, Balaji & Venkateshan developed a 2D code to numerical study multi-mode heat transfer in vertical channels with straight / converging / diverging walls as well as horizontal flow in a channel with discrete protruding heat sources and correlated the results using "asymptotic CFD" analysis.

Rajesh & Ramesh Babu investigated the effectiveness of high velocity water jets for peening of aluminium alloys by analyzing the magnitude of stresses induced on the surface with X-ray diffraction technique and proposed a new approach using liquid impact theory and Reichardt's theory to predict the residual stresses induced on the surface treated with water jets.

Ajmal Deen Ali, Koshy Varghese & Ramesh Babu developed problem specific genetic algorithms for automated collision free path planning of two manipulators, each with 4 degrees of freedom i.e. 2 x 4 cooperative manipulators.

Metallurgical Engineering:

Kamath & Prasanna Kumar developed a new algorithm for inverse heat conduction and applied it to define space and time varying heat extraction rates from a solidifying casting.

Suresh Babu, Pratap Haridoss & Vijayan synthesized and characterized CdS and PbS semiconductor quantum dots in a variety of matrices.

Palaniappa & Seshadri carried out electroless synthesis and surface property evaluation of Ni-W-P and Ni-W-B ternary alloy deposits, demonstrating their superior hardness and wear behaviour compared to their binary counterparts.

Balla Vamsi Krishna, Venugopal & Prasada Rao have successfully produced transition and bimetallic joints of dissimilar sintered powder metallurgical preforms - steel to copper and steel to aluminium - by the

cold extrusion technique as energy effective and environmentally friendly replacements for fully dense joints.

Koteswara Rao, Kamaraj & Prasada Rao showed that the addition of scandium increases the joint strength of components made of Al-6%Cu significantly and that pulsed-current mode of gas tungsten arc welding increases not only strength but also ductility over the continuous current mode.

Srinivasa Rao & Prasada Rao found that the corrosion resistance of aluminum alloys is relatively better in natural aged condition than in the artificially aged condition and developed a method to remove copper-rich precipitates from the surface of aluminum alloys to improve their corrosion resistance. The corrosion resistance of fusion zone and partially melted zone of aluminum alloy welds was improved by pulsed current gas tungsten arc welding method.

Janakiram & Prasada Rao applied electron beam and laser beam welding processes to improve mechanical properties of the weld fusion zone in superalloy Inconel 718 and showed that pulsed arc mode of gas tungsten welding results in superior mechanical properties than continuous current.

Ramanaiah, Guha & Prasada Rao showed that application of grain refiners especially scandium not only improves the mechanical properties of fusion zone but also arrests cracking in partially melted zone in aluminum-magnesium-silicon alloys.

Ocean Engineering:

Muthukkumaran, Sundaravadivelu & Gandhi carried out experimental, field and numerical studies on piles in sloping ground and described the effect of lateral soil movement due to surcharge load and dredging on the behaviour of the pile.

Vijayalakshmi, Sundaravadivelu & Murali developed formulae for prediction of forces and water elevation for a perforated circular caisson encircling a vertical cylinder based on the experimental and numerical studies and recommended a porosity in the range of 10-15% for the perforated cylinder.

Pavan Kumar & Ganesh Babu developed composites using a mixture of glass, polymer and steel fibres of excellent quality in terms of the strength and durability and impact and fracture characteristics.

Darga Kumar, Narasimha Rao & Sundar analysed the safe limits of cyclic load levels in terms of lateral deflections and earth pressures for seawalls constructed using caissons to prevent coastal zones from erosion and other effects of waves and currents.

Physics:

Ramesh Chandra Mallik & Damodar Das carried out the thermo-electric characterisation of thin films of the binary semiconducting alloy system of Bi-Sb in the composition range 4 to 20 atomic percentage of Sb to highlight the effect of point defect clusters in decreasing the thermoelectric energy conversion efficiency of these materials.

Anantha & Hariharan synthesized and characterized a variety of Na⁺ ion conducting NaNO₃ based composite, polymeric and glassy solid electrolytes for potential application in solid state ionic devices.

Mani & Ramaprabhu carried out studies on the fundamental aspects of hydrogen absorption in AB₂ and AB₅ systems and on design and development of hydrogen storage devices.

Shaijumon & Ramaprabhu synthesised large quantities of high quality multiwalled nanotubes using metal hydrides as catalysts and developed CNT based PEM fuel cell and supercapacitor.

Lakshmi, Prasada Rao & Sunil Kumar developed a lattice gas model to investigate the existence of simple scaling in phase separating isotropic and anisotropic fluid mixtures and used a Monte Carlo algorithm to show that closed fluid membranes (Vesicles) subjected to active fission and fusion exhibit convoluted steady state shapes.

Ranjith, Balakrishnan & Sunil Kumar developed an accurate and fast method to compute the probability distribution of end to end vectors of a heterogeneous semiflexible polymer and used it to model the experimentally obtained cyclization data of short DNA filaments and to study the dynamics of single semiflexible polymers under the action of external forces.

Radha Ramani Vedantam, Murthy & Subramanian determined dielectric properties of certain lead based complex niobate perovskite oxides in single step, two step and three step methods to avoid formation of secondary phases and characterized them by structural dielectric and Raman studies.

M.S. Work:

Aerospace Engineering:

Ramana Kumar & Subramanian established the overall deformed shapes of plates by applying energy conservation based digital Intensity Integration Technique to reflected light from uni-directional optically divisioned finite strips of plate surfaces.

Karthikeyan & Velmurugan carried out the characterisation of polyester/clay and Polyester/glass fiber/clay (hybrid) composites and showed that the presence of clay improved all the mechanical, damping and thermal properties.

Jithesh Gopal, Ramakrishna & Rajan used data collapse in surrogate modelling of complex engineering problems and for pattern recognition in engineering data base.

Applied Mechanics:

Dhananjaya & Palaninathan presented a finite element method for hyperthermal heating and a boundary movement scheme for surface recession of carbon/ carbon composites used in nose tips and leading edges of re-entry space and hypersonic vehicles.

Gangadharan & Sivakumar have developed a combined r-h adaptive strategy in the form of relocation of nodes leading to a reduction in the errors in a finite element analysis.

Chemical Engineering:

Sudarkodi & Kannan characterized the sonochemical reactor performance through rigorous non-linear bubble dynamics modeling of the cavitation field.

Snehalatha Cheethirala & Panda studied a biodegradable and biocompatible polymer produced under statistically optimized conditions from alcaligenes and developed a novel purification strategy.

Gokul, Pushpavanam & Abhijit Deshpande carried out modeling and experimental characterization studies of the velocity field due to bubble plumes.

Civil Engineering:

Ramana Chandaka & Boominathan experimentally investigated the seismic behaviour of pile walls in sandy soil layer using sophisticated laminar shake table test setup. It was found that the rigid pile walls reduce liquefaction induced lateral spreading of soil by about 40 - 50 %.

Sudhir & Boominathan carried out shake table studies to determine the effectiveness of cement column treatment in improving liquefaction resistance of loose saturated sand and found that even 1% cement content can drastically reduce the pore water pressure build up and settlement of the loose sandy ground during earthquakes.

Venkata Reddy Gali, Mohan & Boominathan developed fuzzy-neural network models based on cyclic stress and Arias Intensity approaches for the evaluation of liquefaction hazard during earthquake.

Sangeeta Kumari & Mohan developed four models to estimate recharge in an unconfined aquifer system taking into account the different soil parameters, rainfall, land use and infiltration rate. The models could estimate the recharge with a maximum error of 10% when tested in a watershed of Cuddalore basin in Tamilnadu.

Magesh & Mohan studied the effect of temperature on BOD decay rate and its implications on waste load allocation in rivers and developed a new model to predict measured water quality data in a river system.

Shanmugam & Mohan found that a two stage CSTR with hydrolyser and mechanizer performs better than the single stage system for anaerobic bioprocesses to treat the sago and tannery effluents mainly because the acidified pH maintained through phase separation eliminates $\text{NH}_3\text{-N}$ formation.

Vijayalakshmi Rayapati & Gandhi evaluated the smear zone created around a vertical drain by laboratory experiments and produced charts to consider the effect of smear zone in design.

Magesh Nagarajan & Krishnaswamy developed a new theoretical model to predict satisfactorily the bearing capacity of circular footings on reinforced soil beds with anchors.

Computer Science & Engineering:

Guruprasad & Yegnanarayana have explored new features based on difference cepstral coefficients using pitch synchronous analysis of speech to enable speaker verification.

Devu Srikrishna Satish & Chandra Shekar have constructed hidden Markov models in the feature space of Mercer kernels for classification of varying length patterns of similar classes.

Srivathsan & Janakiram have proposed concurrency control algorithms for transaction processing in web based enterprise applications using a novel data centric approach to achieve steady performance from the web server in the presence of bursty traffic.

Muthukumar & Janakiram have developed a scalable generational garbage collector for Java programming language running on multiprocessor systems with extremely low pause times compared to the state of the art algorithms.

Rajesh & Janakiram have made attempts to provide mechanisms for re-factoring low quality object oriented programs into high quality pattern based object oriented programs using Declarative Meta programming techniques.

Vaka Jayaprakash & Kamala Krithivasan have studied the computational capacity of a variant of P systems (which is the model of membrane computing), viz, "Tissue P systems" under rewriting and leftmost rewriting.

Kiran Kumar Penta, Sreenivasa Kumar & Deepak Khemani looked at the problem of monitoring physical devices by constructing a case base from streaming operational data.

Prasanna, Sreenivasa Kumar & Deepak Khemani addressed the problem of maintaining a continuously growing case base by removing cases that are too similar to other cases using a genetic algorithm approach.

Shyam Sundar Yadav & Deepak Khemani looked at knowledge acquisition from a relatively sparse data set using an ensemble of classifiers as an oracle to label an augmented data set, before inducing a single accurate, robust and comprehensible classifier.

Senthil, Sreenivasa Kumar & Deepak Khemani looked at the problem of adapting temporal plans with durative actions in an environment where the conditions may change during execution.

Electrical Engineering:

Prasad Reddy & Swarup have developed a generalized pattern-recognition-based neural network approach in terms of generator and contingency ranking for steady state, dynamic and transient security assessment of power systems.

Srinivasa Rao & Rajagopalan have proposed a fusion framework that statistically combines information acquired from different facial features for achieving good recognition accuracy.

Anmol Sharma & Shanthi Pavan have designed an integrated circuit that generates two DC supplies using only one external inductor incorporating a novel current-mode control algorithm implemented completely in the digital domain.

Marathe Vaibhav Gajanan & Nandita Das Gupta studied the effect of selective anodization on the characteristics of MOS capacitors and developed a model based on pinhole-filling concept to successfully explain the improvement in the characteristics of the devices after anodization.

Manjula, Bhat & Enakshi Bhattacharya fabricated piezoresistive pressure sensors to enable temperature independent operation and proposed a new model for polysilicon resistivity and optimized the doping of polysilicon to get zero temperature coefficient.

Radhakrishnan, Aravind & Harishankar Ramachandran designed and developed a cost-effective fibre-access network for dense urban neighbourhoods with moderate bandwidth requirements.

Management Studies:

Nagendra Kumar & Srinivasan have carried out simulation studies on dispatching rules and performance measures in semiconductor wafer manufacturing and developed a method of classifying workstations using a clustering algorithm.

Padma, Ganesh & Rajendran investigated the effects of implementation of the ISO 9001, ISO 14000 and the CMM quality systems on organizational performance with special reference to the Indian manufacturing and software industries as well as the relationships between firm-attributes and critical factors of the quality systems and organizational performance.

Mechanical Engineering:

Rathore & Srinivasa Murthy studied the freezing of high viscosity foods like jams and jellies in cans and found that convection in the mushy region plays an important role in deciding the freezing rate and hence the quality of the product.

Ravindranatha Reddy & Venkatarathnam studied two different mixed refrigerant processes that can be used in a single stage cryogenic refrigerator and built a phase separator cycle prototype

Rajendra Prasad, Maiya & Srinivasa Murthy studied metal hydride based heat operated water pumps for both high headlow discharge and low headhigh discharge applications.

Vamsi Krishna, Singaperumal & Narayanasamy developed a Micro Electro Discharge machine comprising a smart actuator as tool feed mechanism and a PET based pulse generating circuit and used it to study the influence of process parameters on the process responses in copper and steel specimens, micro structuring of silicon wafers and the formation of Nano particles of more or less uniform size in graphite.

Praveen Kumar & Raju Sethuram, developed a novel methodology to solve small strain elasto-plastic problems based on pseudo elastic analysis using higher order finite elements and illustrated its effectiveness with reference to various hardening engineering materials.

Suresh Kumar & Ganesan investigated both non-reacting and reacting flow conditions in a three-dimensional model of an afterburner using CFD to help the Gas Turbine Research Establishment, Bangalore to optimize their design of afterburners.

Ravuthu Satyamu, Shet & Sundararajan carried out both experimental and theoretical studies on air-staged combustion with LPG as fuel in a co-swirl burner and analysed numerically the effect of combustion staging on NO_x emissions under varied operating parameters. Near-burner temperature field data were used to validate FLUENT, the commercial code used in the present work.

Harish Dixit & Babu have predicted *ab initio* the mean velocity profile in a turbulent boundary layer using lattice Boltzmann calculation without any turbulence model.

Ramakrishna Raju & Chandramouli have developed a binary indexing technique based on component mode synthesis to reduce the computational burden in periodic structures connected to nonperiodic end structures.

Phani Kiran, Chandramouli & Narayanan identified the statistical energy parameters for welded and riveted joints used in isogrid and stiffened panels in space structures and developed improved techniques for accurate estimation of the SEA parameters.

Krishna Prasad Mandava & Krishnan Balasubramaniam, working jointly with Prof. Wiggerhauser of BAM, Berlin, Germany demonstrated an advanced DSP method for improving the imaging of internal defects in concrete

Padma Kumar & Krishnan Balasubramaniam developed a new method for the measurement of elastic constants of anisotropic thin plates.

Nelanti Krishna & Venkateshan carried out numerical studies on phase change problems melting and solidification when the properties of the phase change medium vary significantly with respect to temperature, and highlighted the effect of natural convection on melting times.

Vijaya Bhaskar, Koshy Varghese & Ramesh Babu addressed the issues related to trajectory planning of 2 x 4 cooperative manipulators with algebraic, trigonometric and B-spline techniques, demonstrated the effectiveness of higher order trigonometric splines through several case studies implemented in a virtual work cell developed in IDEAS, and analysed the dynamics of robots in cooperative manipulation of a long object using the ADAMS software.

Senthilkumar & Ganesan analysed the dynamics of conical shells, convergent, divergent nozzles with steady flow.

Ashok Kumar Reddy, Siva Prasad & Shunmugam obtained spur gear profiles by geometric modeling with analytical relations or computer based approach. An Artificial Neural Network, based on back propagation algorithm has been used to train the network to predict the fillet stresses for a given gear tooth geometry to save computational time.

Metallurgical Engineering:

Sriraman, Seshadri & Ganesh Sundara Raman synthesized by electrodeposition and characterized nanocrystalline Ni-W and Ni-Fe-W alloys.

Suresh Kumar, Seshadri & Pratap Haridoss synthesized and characterized Ni-Pd catalysts for use in Direct Methanol Fuel Cells (DMFC) taking advantage of the surface segregation observed in this alloy system.

Pani Kishore & Prasanna Kumar incorporated mathematical models of shrinkage porosity of aluminum alloy castings into FLUENT to derive virtual radiographs of the castings.

Padmavathi & Prasada Rao found that laser surface modification of magnesium alloy AZ91C improves both corrosion and wear and that non-chromate conversion coatings were as efficient as chromate conversion coatings in improving corrosion resistance.

Kamsala Devi & Prasada Rao showed that the mechanical properties of Al-6%Cu alloy welds are improved by compressive deformation and by addition of scandium at room temperature.

Ocean Engineering:

Arunakumari & Rajagopalan studied the effect of soil-structure interaction on the reliability of offshore jackets.

Manorama & Rajagopalan generated optimal designs for target reliability of large diameter stiffened cylindrical submarine hulls.

Venkata Prasad, Sundar & Sundaravadivelu studied the effects of frequency ratio, wave steepness and relative water depth on the ringing response of vertical cylinder for both regular and random waves and proposed predictive formulae for second and third order forces based on the FNV model.

Naga Sreenivas, Ganesh Babu & Narasimha Rao studied the influence of aggregate on the performance of high strength concrete and developed charts to bring out the pile capacities at various concrete grades.

Anuradha & Narasimha Rao showed that the caissons foundation can be conveniently adopted for mooring dolphins in harbours and proposed methods to estimate the lateral capacities and deflections.

Ravi Challa, Idichandy & Vendhan studied the dynamics of a Space Recovery Module (SRM) during water impact by performing experiments using a 1/6th Froude-Scale model and comparing them with numerical results obtained using an advanced state of the art explicit dynamic finite element code, LSDYNA3D.

Inter Disciplinary Research Groups:

Several interdisciplinary groups were formed in order to synergise the expertise of the faculty in different departments. The groups were formed on the basis of overlapping research interests. A brief description of their research goals and their progress till date are given below.

Biotechnology:

The group has 3 projects: (a) A mathematical model has been developed for cellular stress response during the dual-stress conditions of temperature shift and recombinant protein over-expression. Key components of the stress response like transcription factors, chaperones and proteases and their function

under stressful conditions have been characterized experimentally. Comparison of the cellular stress response has been carried out for cytoplasmic and periplasmic expression of recombinant streptokinase in *Escherichia coli*. (b) GJ adaptation is found to significantly increase the range of synchronization of autorhythmic cells with different intrinsic frequencies implying that it is probably anti-arrhythmic. It was also shown that the well-known pattern of GJ conductance dependence on junctional voltage is consistent with the proposed adaptation mechanism, adaptive GJs give robustness to cardiac activation dynamics and prolonged external stimulation leads to a persistent change in virtual "ECG". (c) Mimosine was found to promote growth of the seedlings of *Vigna radiata* at exposure levels of 0.1-0.2 mM. Remarkable increase was noticed in mitochondrial and soluble SOD levels with concomitant enhancement in catalase, peroxidase and ascorbate peroxidase levels. Evidence for mitigation of lipid peroxidation by mimosine was provided by the results.

Chemical Physics and Molecular Biology:

The primary research concern is the structure and activity of atoms, molecules, surfaces and solids, as well as bio-molecular systems such as enzymes. A *Time-Correlated Single Photon Counting (TCSPC)* system has been set up around existing equipment with appropriate modular additions, resulting in an order of magnitude enhanced time resolution (now 300 ps) and 0.5 μ **spatial resolution for the associated confocal microscopy capability. Excited state energy transfer studies are being undertaken; studies of liposomic drug delivery systems and of cavity quantum electrodynamics are planned.**

Communication Technologies:

The group has set up an Indic Computing Laboratory. Keyboard, speech and handwriting interfaces to the computer (for Indian languages) have been developed. Currently the system supports Tamil. A "sound proof" room for recording voice(s) has also been built. A second area of research is dense wavelength division multiplexed systems, components and networks.

Complex Systems:

With several biological and personal-care applications in mind, rheology, structure and flow behaviour of micellar systems are being investigated. Specific systems include ionic as well as non-ionic surfactants and macromolecules.

Development Studies:

Five research projects are being carried out covering a vast range of development issues, such as the impact of Pesticides on Human Health, Ethics and Technology Policy, Media and Environmental Awareness, Gender and Entrepreneurial Development, Cost, Quality and Performance of Technical Education.

Energy:

The Energy group is working on two specific topics of renewable energy technologies: (a) New solid state hydrogen storage materials such as intermetallics, borates, alanates and carbon nanotubes have been synthesized and tested successfully. Heat and mass transfer optimized design of large capacity hydrogen storage reactors have been carried out. A variety of automotive IC engines have been run on hydrogen on the test bed. (b) "Thermo-Photovoltaics" are being studied for simultaneous production of electric power and heat. Air heating and water heating collectors integrated with transparent PV panels have been tested successfully.

Environmental Technology:

Three important issues concerning the environment are being addressed: Municipal Solid Waste Management, Traffic Control Strategies for mitigation of Environmental Pollution and Localized Waste Water Treatment System Development. In the areas of solid waste management, mini-laboratory scale incineration plant is being developed with effective gas clean-up. In the area of road traffic, control strategies to reduce both air and noise pollution have been proposed. It is also proposed to develop an economical and environmental friendly waste water treatment and reuse technology for schools and small scale laboratories.

Infrastructure Systems:

The Urban Infrastructure Systems group concentrates on the use of Information and Communication Technology (ICT) for improving effectiveness in the delivery of infrastructure systems, specifically in the areas of traffic systems, water & gas distribution networks, and power systems.

Instrumentation and Control:

With core competence in Control Guidance & Robotics, Process Dynamics & Control, Acoustic, Noise & Vehicle Control, Smart Structures & Micro-Robots, Control of Mechatronic Systems, the research focus is in the areas of Application Intelligent Instrumentation and Control for Process and Productivity Improvement.

Materials Group:

There are six research projects in progress: (a) Nanostructured carbon films and carbon based p-n junctions have been obtained using PLD technique (b) Methodologies for recycling PCB are under development. Mechanical and chemical methods to separate metallic and non metallic constituents have been developed. (c) Ni-Pd catalyst has been synthesized using electrodeposition technique and has been characterized for use in DMFC. (d) A novel processing route to produce boron carbide by carbo-thermic reduction of boron oxide and carbon has been developed. (e) Multi walled, Single walled and alloy encapsulated Multi walled carbon nanotubes have been synthesised by catalyst chemical vapour deposition technique using metal hydrides as catalysts. These CNTs are being used as catalyst support for Proton Exchange Membrane Fuel Cells. (f) Novel alloy hydrides thin films have been used to develop hydrogen sensors.

Micro Electro Mechanical Systems:

There are five research projects: (a) A Silicon based Micropump suitable for drug delivery and drug dosage control has been designed for electrostatic operation with voltages below 10Volts. (b) A PDMS (poly dimethyl siloxane) based chip has been fabricated and successfully demonstrated the separation of a 5 µg sample mixture of DNA fragments by electrophoresis. The microchannel dimensions can be easily reduced and the same resolution of separation can be obtained by loading nano-gram levels of DNA. (c) A potentiometric biosensor based on porous silicon for triglycerides and urea, capable of measurements down to 500 micro molar, has been developed for the first time. (d) Extensive design and simulation has been carried out using both analytical models and Intellisuite software and a MEMS shunt capacitive switch, having very low actuation voltage, low insertion loss, and high isolation has been designed. (e) Simple cantilever beam MEMS test structures with polycrystalline silicon have been fabricated and tested for estimating the Young's modulus of the material.

Measurements, Testing and Diagnostics:

This group has 5 projects: (1) measurement of (a) unburned fuel concentration in the combustion zone using the planar laser-induced fluorescence (PLIF) technique and (b) 3-components of velocity in a plane in a flow field using stereoscopic particle image velocimetry (stereo-PIV). (2) microscopic and macroscopic imaging of the internal structure of materials using microwaves (3) developing measurement techniques using transient heat "waves" to see inside engineering materials and structures and measure the quantitative state such as presence of cracks, voids, corrosion, hydride attack (4) perform quantitative gait to objectively document walking ability as well as identify the underlying causes for walking abnormalities in patients with cerebral palsy, stroke, head injury and other neuromuscular problems. (5) Femto-second laser based measurement of chemical and physical phenomena.

Methodologies:

Among the main areas of current study are the application of Finite Point Set method to understand wave interactions with porous media and the application of graph theoretic techniques to understand the molecular structure and stability of fullerenes.

Quality Assured Design & Manufacturing:

This project aims at damage tolerant design and materials, macro-and micro-mechanical machining, and modeling and system simulation to assure quality in design and manufacturing.

1.5 Academic Distinctions Secured by our Faculty Members and Students:

Several academic distinctions - Honours and awards, Fellowships of Professional societies, Memberships on Editorial Boards of Journals, Books and Monographs, Patents - have been bestowed on our faculty, staff and students in recognition of their academic achievements during the current year. Some of these are listed below:

Awards :

Dr. E. G. Tulapurkara Aerospace Engg.	Excellence in Aerospace Education by the Aeronautical Society of India
Dr. T. Pradeep Chemistry	CRSI Bronze Medal for contributions in Chemistry
Dr. K. P. Sudheer Civil Engg.	INAE Young Engineer Award 2004 by the INAE
Dr. Ashok Jhunjhunwala Electrical Engg.	27 th IETE Ram Lal Washwa Gold Medal Award by the Institution of Electronics & Telecommunication Engineers UGC Hari Om Ashram Trust Award by UGC Skoch Summit Challengers 2005 Award by Business India
Dr. K. N. Bhat Electrical Engg.	Rashtriya Gaurav Award by India International Friendship Society
Dr. V. Ganesan Mechanical Engg.	State Level Periyar Award for the best Engineering College Teacher in Tamil Nadu and Pondicherry by the Indian Society for Technical Education, Tamil Nadu and Pondicherry Section Khosla National Award by IIT Roorkee
Dr. K. Gopinath Mechanical Engg.	Alumni Excellence Award by NIIT Surathkal
Dr. B. S. Murthy Metallurgical & Materials Engg.	National Metallurgist of the Year Award by the Indian Institute of Metals
Dr. V. Sundar Ocean Engg.	Rashtra Prathibha Puraskar Award by the Integrated Council for Socio-Economic Progress
Dr. M. S. Ramachandra Rao Physics	Certificate in recognition of Excellent Achievements in Science Education Outreach by the UMD-NSF Materials Research Science and Engineering Centre (MRSEC), University of Maryland
Dr. Harish Chandra Librarian	Best Technology Librarian 2004 by The Delhi State Booksellers' and Publishers' Association

Fellowships:

Dr. A. K. Mishra Chemistry	Fellow, National Academy of Science
Dr. S. Srinivasa Murthy Mechanical Engg.	Fellow, American Society for Mechanical Engineers
Dr. C. Balaji Mechanical Engg. Dr. Shamit Bakshi Mechanical Engg.	Humboldt Fellow

Membership of the Editorial Boards:

Dr. Mukesh Doble Biotechnology	Member, Editorial Board, Journal of Chemical Engineering, USA
Dr. G. Sundararajan Chemistry	Editor Regional, Molecules, Switzerland
Dr. B. Viswanathan Chemistry	Member, Editorial Board, Eurasian Chemo-Technological Journal, Kazakhstan
Dr. P. R. Parthasarathy Mathematics	Advisory Editor, Journal of Statistics and Management Systems, India
Dr. S. H. Kulkarni Mathematics	Guest Editor, Journal of Analysis, Vol.12, India

Dr. V. Vetrivel Mathematics	Member, Editorial Board, Journal of Functional Analysis and Approximation Theory, _____
Dr. R. Krishna Kumar Mechanical Engineering	Editorial Board, International Journal of Mechanics of Advanced Materials and Structures, USA
Dr. Sarit Kumar Das Mechanical Engg.	Member, Editorial Board, International Journal of Heat Transfer Engineering, USA
Dr. T. Sundararajan Mechanical Engg.	Associate Editor, Computers, Materials and Continua, USA
Dr. Harish Chandra Librarian	Member, Editorial board, International Journal of New Review of Information Networking, USA
Dr. S. Narasimha Rao Ocean Engg.	Member, Editorial Board of the Geotechnical Testing Journal, USA
Dr. S. Srinivasa Murthy Mechanical Engg.	Member, Editorial Board, Journal of Energy, Heat and Mass Transfer, India Member, Editorial Board, International Journal of Low Carbon Technologies, India Associate Regional Editor, International Journal of Applied Thermal Energy, UK Member, Editorial Board, Innovative Refrigeration and Airconditioning, India
Dr. V. Ganesan Mechanical Engg.	Member, Indian Journal of Engg. and Materials Science
Dr. C. Sujatha Mechanical Engg.	Member, Indian Journal of Transport Management Member, Advances in Vibration Engineering, India
Dr. T. S. Sampath Kumar Metallurgical Engg.	Associate Editor, Trends in Biomaterials and Artificial Organs, India
Dr. V. Sundar Ocean Engg.	Member, Indian Journal of Marine Sciences

Books:

Dr. S. Radhakrishnan Dr. Megha Singh	Advances in Medical Diagnostic Techniques and Procedures, Anamaya
Dr. Mukesh Doble	Biotransformation and Bioprocesses, Marcell Dekker
Dr. M. Chidambaram	Basics of Data Acquisition and Control in Handbook of Networking, Springer Verlag
Dr. B. Viswanathan	Practical Physical Chemistry, VIVA Books
Dr. John B. Lourdasamy	Science & National Consciousness in Bengal 1870-1930, Orient Longman
Dr. S. C. Chaudhary	Better Spoken English, Vikas English for Engineering Students Vol.I, Vikas
Dr. S. P. Venkatesan	A First Course in Heat Transfer, M/s. ANE Books
Dr. S. K. Das	Process Heat Transfer, Narosa

Best Paper / Thesis / Design Awards:

M. Akhila Maheswari Ch. Siva Kesava Raju Chemistry	Best Paper of International Standards Award at the National Symposium on Nuclear and Radiochemistry (NUCAR-2005)
E. Rajasekar Dr. A. Ramachandraiah Civil Engg.	One of the Best Papers at the National Symposium of Acoustics

K. Srividya Civil Engineering	ISTE National Award for the Best M.Tech. Thesis in Civil Engineering for the year 2004 by ISTE
Dr. S. R. Gandhi Civil Engineering	IGS - Smt. Indra Joshi Biennial Prize for the Best Paper published in National / International Conferences 2004 by IGS
B. S. Manoj Computer Science & Engg.	IBM outstanding Ph.D. Research Award by IBM
S. Jayashree B. S. Manoj Dr. C. Siva Ram Murthy Computer Science & Engg.	Best Paper Award in Systems at the 11 th International Conference on High Performance Computing (The Award carries a citation and a cash prize of Rs.25,000)
A. Pavan Kumar Dr. V. Kamakoti Dr. Sukhendu Das Computer Science & Engg.	First Prize at the SOPC World Design Contest 2004
Vinod Pathangay Dr. Sukhendu Das Computer Science and Engg.	Best Paper at the National Conference on Image Processing
G. V. Subramanyam Dr. P. Sreenivasa Kumar Computer Science & Engg.	Best Student Paper Award at the 11 th International Conference on Management of Data
Shri Roy Paily Palathinkal Electrical Engg.	IBM outstanding Ph.D. Research Award by IBM
Dr. Debashis Acharya Humanities & Social Sciences	Best Paper Award at the International seminar on Globalisation and Competitiveness
Mr. Aavek Majumdar Humanities & Social Sciences	Best Paper Award in Retail Management at the International Conference on Services Management
S. Radha Dr. Thenmozhi Management Studies	Best Paper Award at the National Conference in Business Research
K. Ganesh Dr. T. T. Narendran Management Studies T. Godwin Ram Gopalan Dr. T. T. Narendran Management Studies V. Nagendra Kumar Dr. G. Srinivasan Management Studies	Best Paper Awards at the VIII Annual International Conference of the Society of Operations Management
Dr. R. Madhumathi Management Studies	Dhainik Bhaskar Best Applied Research paper Award at the International Conference on Banking and Insurance
Dr. V. Ganesan Sunil V Unaune Mechanical Engineering	N. K. Iyengar Memorial Prize for best paper published by the Institution of Engineers
Dr. G. Venkatarathnam Mechanical Engg.	Best Technical Paper at the 27 th National Symposium on Industrial Gases
Dr. V. Ganesan M. Sivakumar Mechanical Engg. Dr. V. Balasubramanian, UCAL Systems	SVRCET Surat Prize for Best Paper at the 31 st National Conference on Fluid Mechanics and Fluid Power
M. Sireesha Dr. Shaju Albert Dr. S. Sundaresan Metallurgical & Materials Engg.	KCP Award for Best Paper on Welded Fabrication at the International Welding Conference
Dr. B. S. Murthy Metallurgical & Materials Engg.	Binani Gold Medal Award for best paper published in the Transactions of the Indian Institute of Metals in the year 2003-04

A. N. Suryanarayana Prasad Ocean Engineering	The K. Suryanarayanan Rau Memorial Senior Student Award for Research and Development in Smart Technology – 2004 by the Indian Society for Advancement of Materials and Process Engineering (ISAMPE)
Dr. V. Sundar Ocean Engg.	Maritime Award for research paper by the Union Minister for Shipping, Road Transport and Highways

Patents Filed:

Dr. K. M. Patil Applied Mechanics	A novel diabetic footwear for prevention of foot sole ulcers (filed by M/s.Sundaram Medical Foundation) Portable Pedopowergraph
Dr. Anju Chadha Biotechnology	A process for the Monoacylation of Polyols with Alkyl & Aryl B-Keto Esters
Dr. T. Pradeep Chemistry	Polyurethane Foam Coated with Silver Nanoparticles Flow Induced Potential in Nanoparticles Assemblies Solution Phase Room Temperature Synthesis of C60 promoted by nanoparticles
Dr. B. Viswanathan Chemistry	An Improved Process for the preparation of polylactic acid (filed by Malladi Drugs and Pharmaceuticals Ltd.)
Dr. G. Venkataratnam Mechanical Engg.	A Refrigerant composition for a single stage refrigerant system- (containing Inobutne) A Refrigerant composition for a single stage refrigerant system (containing Propane)
Dr. Krishnan Balasubramaniam Mechanical Engg.	Method of Automated detection and removal of hard contaminants in soft materials such as cotton
Dr. T. S. Sampath Kumar Metallurgical & Materials Engg.	A Novel Method for Processing Boron Carbide Powders
Dr. S. K. Seshadri Metallurgical & Materials Engg.	A Process for the preparation of Wear & Corrosion resistant coatings for electrodes deposition on metal substrates
Dr. Prem B. Bisht Physics	A new technique for dye concentration sensing by microspheres

1.6 Industrial Consultancy and Sponsored Research:

Industrial consultancy not only provides technological solutions towards industrial development, but also brings a sense of relevance to the teaching-learning processes. Sponsored research is an important part of IITM's activities. Since 1973, we have maintained a steady and sustained growth in our interaction with industry and other agencies, both in terms of the number and value of sponsored research and consultancy projects. The number of active sponsored projects during the year is 79 for a total value of Rs.352 millions including 8 international projects for a value of Rs.89 millions and 26 large projects of value exceeding Rs.2 millions each; the number of faculty members involved in these projects as Principal Investigators and Co-principal Investigators is 94.

The number of active consultancy projects during the year is 452, for a total value of Rs.84 million including 53 Research Based Industrial Consultancy projects for Rs.42 million. The number of faculty members involved in these consultancy projects is 117 while 9 have been retained as consultants in various industries at a cost of Rs.1.38 million. The ISRO-IITM Space Technology Cell renewed 8 projects and sanctioned 13 new projects during this year. Under the IGCAR-IITM Cell, 2 new projects have been initiated. Periodic monitoring and review of these projects are the major responsibilities of these Cells.

The Industrial Associateship Scheme has now 231 members facilitating continuous interaction with industry. The Centre for IC & SR organized 7 Technology Appreciation Programmes for the benefit of these Industrial Associates during the current year. We have signed 23 Memoranda of Understanding during the year under review with industries such as JK Tyres, Eureka Forbes Limited, Texas Instruments (India) Private Ltd., Satyam Computer Services Limited and Lakshmi Ring Travellers Limited.

The establishment of a technology R&D park has made further progress with the allocation of land to the extent of 6.5 acres by the Government of Tamil Nadu to IIT Madras. This land is adjacent to Tidal Park

across the road from IIT. The plan is to set up a 100,000 sq. ft. facility, which will rent out space to industries that have R&D collaborative projects with IIT and incubate companies initiated by the faculty and students of IIT Madras. It is hoped that this park will increase the meaningful interactions between IIT Madras and the industry and contribute significantly to increase in the competitiveness of the Indian industry.

The Centre for IC & SR publishes Quarterly Reports of the activities of the Institute in an attractive format under the banner of *IIT Madras News*, in addition to the release of regular Newsletters. A CD has been prepared highlighting the several facilities and activities of the Institute.

1.7 Continuing Education:

The Centre for Continuing Education (CCE) has been very active in promoting activities for the benefit of working professionals in industries and faculty members of other technical institutions. During the year, our faculty members organized several courses/training programmes: 10 under the Quality Improvement Programme, 52 under Continuing Education and 2 under ISTE. The CCE generated a revenue of Rs. 74.35 lakhs during the year:

The Centre encourages other activities such as preparation of computer aided instructional packages and production of technical video programmes. During the year under review, a major thrust has been given to development of web based course materials. A Web Studio has started functioning mainly to web-enable many courses. Under the Book Writing Scheme, 3 proposals have been received. Five books have been published.

The Educational Technology Cell's studio equipment has been upgraded from Analog to Digital, serving the needs of many research projects and multimedia CD ROM projects. Conversion of the available material in tape format to CD ROM format is in progress. About 600 hours of video material is being disseminated to various colleges and R & D establishments at a subsidised rate. This year's activities also include: 172 Semester programmes, 125 laboratory shoots, 1250 hours non-linear editing and 90 hours LCD projections.

1.8 Our Contributions to the National S&T Educational System:

IIT-Madras plays a lead role in providing guidance and assistance to the other Engineering Institutions in the country. We have been implementing the Quality Improvement Programme (QIP), which provides opportunities for teachers of engineering colleges to upgrade their qualifications towards Ph.D. and M.S.. Under the QIP, 394 faculty from other institutions have obtained their Ph.D. degrees and 472 faculty from other institutions have obtained their M.Tech. degrees since its inception. Currently we have a total of 144 QIP Scholars (77 Ph.D. 67 M.Tech. which includes 4 women in Ph.D. and 20 women in M.Tech) in the Institute.

The All India Council for Technical Education, including the National Board of Accreditation, has been utilizing the expertise of our faculty members in several of their Committees and activities. Many of our faculty members are also on the Governing Councils of several S & T institutions in the country. CCE assists AICTE in the selection process of candidates for the Early Faculty Induction Programme scheme and in 2004, 165 candidates have been selected under this scheme.

The National Programme on Technology Enhanced Learning (NPTEL) project involving all the IITs and IIMs co-ordinated by IITM has been funded by MHRD. A Virtual Centre for TEL has been established through an MoU involving IITs, IIMs in India and CMU in the US. NPTEL partners in India will jointly put 300 courses on the Web within the next year. These courses will be made available by June 2006 at highly subsidized rates to all engineering and management institutions in India, thus enhancing the reach and quality of technical education in the country.

IIT-Madras has been playing a lead role in the design of activities towards IIT-NIT Networking. The activities proposed include joint projects, faculty and student exchange, and joint activities such as workshops, seminars, etc. The Summer Fellowship Scheme, which was initiated a few years ago, provides opportunities for summer training to top-ranking engineering and science students all over the country; 73 students participated in the programme this year.

1.9 International Collaboration:

IITM has been interacting with several International Organizations for collaborative research, exchange of faculty and students, etc. During the year, we have signed MoUs with the following 10 international universities: University of Maryland System and the John Hopkins University, University of Waterloo, Concordia University, University of North Carolina, University of Nebraska-Lincoln, Indo-Swiss Academic Alliance, University of Vienna, Technical University of Hamburg, Hyogo University, New Mexico Tech.

With these, the total number of MoUs signed by IIT-Madras with international universities amounts to 65. We have also signed 6 MoUs with International Companies and Research Laboratories for collaborative R & D.

During the summer, a number of faculty members from the Institute visited universities and research laboratories abroad for collaborative research, participation in conferences, visiting assignments, lectures, consultancy, etc.

1.10 International Student Exchange Programmes:

Over the past few years, the Institute has created several opportunities for International Student Exchange. One of the major initiatives in this regard is the Indo-German Agreement between the seven IITs and seven Technical Universities in Germany. Under this Programme, we have deputed 14 M. Tech. students and 3 M. S. scholars to undertake their project / thesis work in these German Universities last year. We have also received a few Ph.D. and Dipl.-Ing. scholars from Germany to undertake their projects in our research laboratories. Under the MoU with EPFL, 15 students from EPFL did their course work in IIT-Madras for two to four months. 5 Ethiopian students joined the M. Tech. programme in this Institute in August 2004.

1.11 Career Development and Welfare Schemes for the Employees:

HR training has been planned and implemented for providing opportunities to our technical and administrative staff to update and upgrade their knowledge and skills, in order to enable them to perform their work more effectively. Under this scheme, 26 training programmes (166 programme-days) covering 259 staff / faculty members were conducted during the year. Special Programmes were conducted on Interpersonal Effectiveness, Communication Skills, Computer Skills, Teamwork etc.

1.12 Our Quality Initiatives:

We are setting up Visiting Committees for the various Departments of our Institute, on the lines of the best practices obtaining at leading institutions world-wide. The Visiting Committee for Aerospace Engineering completed their visit and has provided us valuable inputs this year.

IIT-Madras has been awarded ISO-9000 certification for academic and support processes since 1999 and for administrative support processes since 2001. The administrative support processes have been recertified in April 2005 while recertification for the academic support processes is due in September 2005. In addition to the ISO 9001:2000 certification, the Central Electronics Centre has also received the NABL Accreditation for its Testing and Calibration Laboratories.

1.13 Infrastructure Development:

Significant additions have been made to the logical infrastructure in the Campus. The IBM main frame has been upgraded to P690 series, with 64 CPU, 128 GB RAM and 4 Terabytes of disk space. Two Sunfire Enterprise Servers with 64 CPU 128 GB RAM and 4 Terabytes of disk space in each have been acquired for e-learning and digital library management for the country. Two SGI 350 Altix series high end computing servers each with 16 itanium processors, 32 GB RAM and 2 Terabytes of disk space for computation and graphics capability. The entire hostel area has been networked connecting all the hostel rooms to the rest of the Campus and the rest of the world. Each student's room is equipped with direct access to Campus-wide computer facilities, Internet and a telephone with Direct Inward Dialing (DID) facility. Each hostel common room has been equipped to cater to the computing needs of those who cannot afford computers in their respective rooms.

A 100 seater Digital Knowledge Centre (DKC) based on Thin Client Technology has been established in the Central Library to enable students to access e-journals. A state-of-the-art Data Centre facility has been established. It is populated with 30 Intel Xeon CPUs in dual/quad formation with 1:2 GigaByte memory and 6 Terabytes of storage. A Record Room has been created which houses all the physical records of the Institute for periods ranging from 5 to 10 years depending on the administrative requirements. Meanwhile digitisation process to capture the last 50 years of IIT Madras in electronic form is at the final stage of completion. The concept of the work flow has been adopted for launching Institute wide administrative applications. A sample for the Stores and Purchase Section has been created. The Institute Wide ICE Information System based on IITM portal will enable on-line access to the Data base cutting across the entire Institute.

A Smart Card which is capable of carrying information in itself and enabling access to various facilities has been finalized and is being issued shortly to faculty, staff and students. These cards will regulate access to

Library, the swimming pool and will soon enable the students to access messing facilities and the computer facilities across the Campus.

The Class Room Complex consisting of 3 halls of 194 student-seating capacity and 10 halls of 105 seating capacity has been acoustically treated, electronically enabled, and internet connected. Further, the three large halls are video-integrated that means a lecture being delivered live can be seen in the other two large halls in "video-live" mode. 45 class rooms of the Institute have been modernised with LCD projectors and computer systems with all necessary softwares. Network connection has also been given in the class rooms. The ambience of the class rooms have also been improved considerably.

Several major works have been completed : networking of residential zone; deepening of approach canals of the lake for rainwater harvesting; construction of 3rd floor in Jamuna and Godavari Hostels; improvement of student rooms at Brahmaputra, Narmada, Alakananda, Tapti and Saraswathi hostel, construction of quarters for married research scholars; renovation of swimming pool; a new ward complex in the hospital with 12 single rooms; modifications to house a physiotherapy unit and a pharmacy.

Three additional floors have been made operational in the Central Library with the back volumes, reference collections, students discussion hall, Media resource center and a separate place for reports, collections on IPR. In addition to this, Central Library has also implemented VTLS Virtual International Library Management Software with Digital Library Interface with iPortal facilities for searching for books. Large numbers of e-Journals have been subscribed to and can be accessed on the campus network by the faculty, students and staff.

The following major constructions will be completed by December 2006 : new boys hostel G+6 floors (4 blocks); Mega Dining facility II and Bio-Technology building; addition of a floor and major modification of the old library building to house the department of Management Studies; crèche; addition of 11 suites to the Main Guest House.

1.14 Student Co-Curricular and Extra-Curricular Activities:

The academic year 2004-05 has been remarkable as far as the co-curricular and extra-curricular activities of our students are concerned. Eminent personalities from all walks of life addressed our students in the Extra Mural Lecture series and these after dinner lectures and the lively discussions that follow are becoming very popular among students.

The annual technical festival SHAASTRA held during October 5th to 9th 2004 attracted student's participation from all over the country. The Quality Management system in place for the conduct of Shaastra has been awarded ISO 9001 making it perhaps the first student festival in the world to get the certification. The Industrial Design Problem contest and the Robotics contest, introduced this year were hits. Popular lectures, video conferences, workshop and a number of formal and informal events make Shaastra one of the major technical festivals of the country.

SAARANG held during January 21st to 26th January 2005 attracted thousands of students from the length and breadth of the country. This year all professional shows had record crowds. Being sensitive to the Tsunami victims, IIT Madras contributed a sum of 5 lakhs towards the TN Chief Minister's Tsunami Relief Fund out of the Saarang budget.

Participation of our students in various Inter university technical and cultural festival has been on the increase and every team left their mark wherever participated. The 2nd TCS-IIT Madras Open Quiz 2005 was organized this year on 12th March which attracted teams from all over the country. There were about 100 college teams, 35 school teams from various city schools and about 75 teams of experienced veteran quizzers. In the 40th Inter IIT Sports Meet held during December 2004 at IIT Madras, both the Men's and Women's General Championship were won by our students team and Mr. Raghuv eer was adjudged the Best Athlete. All our sports facilities were given face-lift and many outdoor courts flood-lit. Swimming pool has been renovated. Because of the improvements in all sports facilities participation by students has improved considerably compared to previous years.

Since last year IIT Madras has started a series of lectures by eminent people under the title 'Perspectives in Science & Technology'. Eminent persons in different fields are invited to spend a few days on the campus giving technical as well as general talks as well as holding discussions with faculty and students of IIT Madras. So far, we have had two visitors Prof. V. S. Ramachandran, Director, Center for Brain and Cognition and Professor of Neurosciences and Psychology, University of California, San Diego and Prof. Hartmut Michel, Max Planck Institute of Biophysics, Frankfurt, Germany. We expect to have Prof. Jagdish N. Bhagwati, Columbia University, New York next year.

1.15 Socially Relevant Activities:

IIT Madras initiated activities for transfer of technologies, which are of immediate relevance to the society. For this purpose, the following three projects have been taken up.

Socially Relevant Projects is an initiative of IIT Madras. Under this initiative, a metal-free, non-toxic organic polymer based phosphate-binding agent was developed at the Department of Chemistry, IIT Madras and the technical know-how was transferred to a pharma company. This product (FOSEAL) will soon be available to renal patients in India at an affordable cost. Other projects are under progress.

IITM has launched two projects with the participation of the entire campus community with the Ladies Club taking the responsibility for their implementation. The Zero Waste Zone (OWZone) project has employed three self-help groups to collect the solid waste on campus on a daily basis and segregate it into organic and non-organic parts. The organic part is returned to the forest areas as manure while the non-organic part is further segregated into various disposable forms of solid waste. The latter is sold every month and the proceeds are distributed as incentive to the self-help groups themselves. The Atma Charity Wing (ACW) conducts a ticketed charity show every year in September in order to raise funds in support of charitable organizations in the vicinity of Chennai. This annual fund-raiser receives voluntary support from faculty, staff, students and alumni.

IIT Madras as a partner in the Rural Technology Action Group, initiated by the Principal Scientific Advisor to the Prime Minister, has identified a few projects for improvement in product quality such as Natural Drugs, Coir Spinning Mills, Solar Powered LED based Lamps, Ankle Support for artificial foot. It is also in the process of identifying technologies for Drinking water supply through water harvesting of surface waters, waste water treatment, energy requirement, technologies for poverty alleviation, sanitation complexes and data bases.

Recognition and Mentoring Programme by Lemelson Foundation (USA) is a novel programme to encourage innovators to come up with inventions to aid rural development has been jointly set up by IIT Madras and Rural Innovations Network, with the funding from M/s. The Lemelson Foundation Recognition and Mentoring Programme (L-RAMP). L-RAMP will provide with technical and financial support to innovators with ideas, which will be commercially viable and cater to the market needs. L-RAMP's network would also promote innovations across the country. IITM has already identified 10 viable innovative products.

1.16 Alumni Matters:

Our Institute has so far awarded a little over than 27,000 degrees, ranging from Ph.D. to B.Tech. The education and training our alumni have received at the Institute have enabled them to launch themselves into professionally satisfying and successful careers. They have distinguished themselves professionally, and many of them occupy top positions in the Industry, Government and the Academe. Since 1997, we have been honouring selected alumni for their accomplishments through the Distinguished Alumnus Awards. The Awardees for this year are:

1. Dr. Thomas Thindat
Distinguished Scientist
Oakridge National Laboratory & University of Tennessee
2. Dr. Ashok Khanna
CMD, Controls and Switchgear Group, New Delhi
3. Dr. Mari G Subramanyam
Professor, Stern School of Business, New York
4. Dr. B Santhanam
CEO, Saint Gobain India, Chennai
5. Dr. B N Suresh
Director, VSSC, Trivandrum
6. Dr. B R Pai
Director, NAL, Bangalore

The Office of Alumni Affairs coordinates the interaction between the Institute and the Alumni. In addition to the parent Alumni Association on Campus, we have several Chapters within the country and abroad. The 1980 batch will celebrate its Silver Reunion this year.

The alumni of all IITs have come together to form the PAN IIT organization. During the year, PAN IIT Conference was organized at New Delhi in December 2004. There were about 2000 participants at each of the conferences.

A major fund raising drive called the IIT Madras Growth Fund under the Chairmanship of Mr. S. Gopalakrishnan, COO of Infosys was launched during the year. The funds raised will be utilized towards upgrading research and infrastructure in the campus.

1.17 Acknowledgments:

For all the achievements and accomplishments enumerated in this report, several people and agencies are responsible - our faculty, students and staff; agencies and industries sponsoring R&D and consultancy projects; professionals from other organizations who have assisted our Institute in several of our endeavours; and our alumni. The Institute is grateful to the Ministry of Human Resource Development, Government of India, for its continued and sustained support. I also wish to thank Dr. K. Kasturirangan, our Chairman for his valuable guidance and encouragement. We look forward to reaching new heights of achievement in all our endeavours with the able guidance of our Board of Governors.

2. ADMINISTRATION

2.1 General

Indian Institute of Technology, Madras is an autonomous statutory organisation functioning within the "Institutes of Technologies Act, 1961, "as amended by "The Institute of Technology (Amendment Act, 1963)". The seven Institutes of Technology (others being at Mumbai, Kanpur, Kharagpur, Delhi, Guwahati and Roorkee) are administrated centrally by the Councils of IITs; an apex body established by the Government of India to co-ordinate the activities of these Institutes. The Minister for Human Resource Development, of the Government of India is the Chairperson of the Council. Each Institute of Technology has a Board of Governors responsible for the overall administration and control.

The Senate decides the academic policies of the Institute. It approves and controls curricula, courses, examinations and declaration of results. It appoints various committees to look into specific academic matters arising from time to time. The teaching, training and research activities of various departments at the Institute are constantly under review to improve both facilities and standards. The Director of the Institute is the Chairman of the Senate. Members of the Senate are listed in the Appendix. The Finance Committee gives financial advice to the Institute. The Buildings and Works Committee advises the Institute on matters relating to buildings and works activities.

In addition, the Board of Academic Research, Board of Academic Courses, Board of Students and Board of Industrial Consultancy and Sponsored Research are constituted by the Senate to help in the efficient administration of academic and research activities of the Institute.

The compositions of the above Committees and Boards together with a list of other officers are also given in the Appendix.

2.2 Staff Position:

As on 31.03.2005, 348 Faculty, 21 Scientific and Design Staff, 66 group A officers, 265 Technical Staff and 546 Administrative Staff were in position totaling 1246. During the period under report 85 faculty / staff members comprising 5 Professors, 5 Associate Professors, 23 Assistant Professors and 52 other staff were appointed. 38 staff members comprising 16 Faculty members, 5 Officers and 17 Staff retired from their services. 2 faculty members took voluntary retirement. 5 Staff members expired. 20 faculty members and 6 staff members were on long leave. The details of all the above are given below:

2.2.1 Faculty / Staff appointed from 01.04.2004 to 31.03.2005:

List of Faculty Members who have joined during the period from April 2004 to March 2005

S.No.	Name	Designation	Dept.	Date of Joining
1.	Doble Mukesh	Associate Professor	Biotechnology	15.04.2004
2.	B.S.Murty	Professor	Metallurgy	11.05.2004
3.	G.K.Suraish Kumar	Professor	Biotechnology	14.05.2004
4.	A. Veeraraghavan	Professor	Civil	18.05.2004
5.	Uma Kant Dash	Asst. Prof (on contract)	Humanities	20.05.2004
6.	K. Srinivasan	Asst. Professor	Mechanical	24.05.2004
7.	Gharpure Santosh Janardhan	Asst. Professor	Chemistry	27.05.2004
8.	B.Nageswara Rao	Asst. Prof. (on contract)	Civil	31.05.2004 (regularised w.e.f. 05.01.2005)
9.	Sangamitra Bhattacharya	Asst. Prof (on contract)	Management Studies	01.06.2004 (regularised w.e.f. 06.01.2005)
10.	S.Bharadwaj	Asst. Professor	Humanities	04.06.2004
11.	T. Andrew Edwin Raj	Asst. Professor	Electrical	10.06.2004
12.	S. Raghunathan	Professor (on contract)	Mgt. Studies	11.06.2004
13.	Rama Shankar Verma	Assoc. Professor	Biotechnology	11.06.2004
14.	J. Murali Krishnan	Asst. Prof. (on contract)	Civil	14.06.2004 (regularised w.e.f. 05.01.2005)
15.	N. Manoj	Asst. Prof.	Biotechnology	01.07.2004
16.	V.Subramanya Sarma	Asst. Professor	Metallurgy	01.07.2004

17.	Dhiman Chatterjee	Asst. Prof	Mechanical	27.08.2004
18.	Indrapal Singh Aidhen	Associate Prof.	Chemistry	09.08.2004
19.	V. Raghu Prakash	Associate Prof.(on contract)	Mech. Engg.	18.08.2004
20.	Surajit Bhattacharjya	Asst. Prof. (on contract)	Biotech	04.10.2004
21.	G. Sekar	Asst. Prof	Chemistry	15.12.2004
22.	M.S. Ramachandra Rao	Assoc. Prof.	Chemistry	20.12.2004
23.	Ravindra Gettu	Professor	Civil	31.12.2004
24.	S.N. Murthy Haradanahalli	Asst. Prof.	Aerospace Engg	03.01.2005
25.	N.S. Narayanaswamy	Asst. Prof.	Computer Sc.	06.01.2005 (regularised)
26.	Shamit Bakshi	Asst. Professor	Mech. Engg.	27.01.2005
27.	Shanti Bhattacharya	Asst. Professor (on contract)	Electrical Engg.	04.02.2005
28.	K.V. Nagendra Gopal	Asst. Professor	Aerospace Engg.	10.02.2005
29.	Gandham Phanikumar	Asst. Professor	Metallurgy	24.02.2005
30.	G.L. Samuel	Asst. Professor	Mechanical Engg.	01.03.2005
31.	Krishnendu Sinha	Asst. Professor	Aerospace Engg.	01.03.2005
32.	Yugal Khajuria	Asst. Professor (on contract)	Physics	28.03.2005
33.	Debashis Chakraborty	Asst. Professor	Chemistry	30.03.2005

List of Staff Members who have joined during the period from April 2004 to March 2005

S.No.	Name	Designation	Dept.	Date of Joining
1.	Ms. R. Nishandhani	Nurse(on contract)	Hospital	23.04.2004
2.	Ms. G. Indumathi	Helper Nursing (on contract)	Hospital	23.04.2004
3.	Ms. A. Devipadmavathi	Nurse (on contract)	Hospital	26.04.2004
4.	Ms. M. Ananthi	Helper Nursing (on contract)	Hospital	26.04.2004
5.	Ms. N. Buela Arputhamary	Helper Nursing (on contract)	Hospital	26.04.2004
6.	Ms. J. Thenmozhi	Nurse (on contract)	Hospital	28.04.2004
7.	Ms. P. Anuradha	Helper Nursing (on contract)	Hospital	28.04.2004
8.	Ms. M. Uma Priya	Helper Nursing (on contract)	Hospital	29.04.2004
9.	Ms. Ajitha Rajan	Nurse (on contract)	Hospital	30.04.2004
10.	Shri P. Balasubramanian	X-ray Technician (on contract)	Hospital	05.05.2004
11.	Ms. K. Porselvi	Nurse (on contract)	Hospital	11.05.2004
12.	Ms. D. Lakshmi	Apprentice(Helper Nursing)	Hospital	14.05.2004
13.	Dr. K. Malathi	Consultant Radiologist (Part-time)	Hospital	01.06.2004
14.	Ms. L. Amutha	Nurse (on contract)	Hospital	14.06.2004
15.	Dr. S.K. Rajavalli	Consultant Dentist (Part-time)	Hospital	23.06.2004
16.	Ms.P. Alaguthayee	Helper Nursing (on contract)	Hospital	23.06.2004
17.	Shri S. Sambasivam	Asst. Registrar	Finance & Accts.	01.07.2004
18.	Smt. S. Aruna	Asst. Audit Officer (on deputation)	Stores & Purchase	01.07.2004
19.	Shri P. Ravi	Asst. Audit Officer (on deputation)	Internal Audit	01.07.2004
20.	Shri R. Jaganathan	Asst. Audit Officer (on deputation)	Administration	01.07.2004

S.No.	Name	Designation	Dept.	Date of Joining
21.	Shri A. Sridhar	Senior Auditor (on deputation)	Finance & Accts.	01.07.2004
22.	Dr.N. Porchelvi	JMO(on contract)	Hospital	08.07.2004
23.	Dr. R. Santhosh	JMO(on contract)	Hospital	14.07.2004
24.	Shri S. Sivanandam	Section Officer (on deputation)	Internal Audit	02.08.2004
25.	Dr. E.S. Krishna Moorthy	Consultant Neurologist (Part-time)	Hospital	18.08.2004
26.	Dr. D. Vindhya	JMO(on contract)	Hospital	20.08.2004 (since resigned)
27.	Ms. A. Chella Priya	LDC	Finance & Accts.	15.10.2004
28.	Mr. C. Rajendran	LDC	Stores & Purchase	15.10.2004
29.	Mr. G. Manickam	LDC	CCW Office	15.10.2004
30.	Ms. V. Saradambal	LDC	Computer Sc.	18.10.2004
31.	Shri N. Muruganandam	LDC	Central Library	18.10.2004
32.	Shri N. Govindaraj	LDC	COMPTEC	18.10.2004
33.	Shri P. Rajendran	LDC	Chem. Engg.	18.10.2004
34.	Shri P. Govindaraju	LDC	Transport Cell	18.10.2004
35.	Shri T. Subramani	LDC	Civil Engg.	18.10.2004
36.	Shri A.G. Elumalai	LDC	Academic	18.10.2004
37.	Shri M. Saravanan	LDC	Mechanical Engg.	18.10.2004
38.	Shri R. Mariyon Bernot	Catering Helper(on contract)	TGH	26.10.2004
39.	Shri D. Muthurajan	Mechanic	CWS	02.11.2004
40.	Shri A. Kirubainathan	Mechanic	CEC	02.11.2004
41.	Shri P. Saranath	Mechanic	Electrical Engg.	02.11.2004
42.	Shri R. Sivakumar	Mechanic	Physics	02.11.2004
43.	Shri N. Giri	Mechanic	Mechanical Engg.	02.11.2004
44.	Shri K. Mathaiyan	Mechanic	Engg. Unit	02.11.2004
45.	Shri M. Sivakumar	Mechanic	Engg. Unit	03.11.2004
46.	Shri V. Selvaraj	Mechanic	Engg. Unit	03.11.2004
47.	Shri H. Udayakumar	Mechanic	Applied Mechanics	03.11.2004
48.	Shri A. Thayalan	Mechanic	Aerospace Engg.	03.11.2004
49.	Shri P. Jayaprakash	Catering Helper(on contract)	TGH	03.11.2004
50.	Shri K. Uthayakumar	Mechanic	CWS	05.11.2004
51.	Shri M. Jeevanantham	Mechanic	Aerospace Engg.	17.11.2004
52.	Shri D. Maheswaran	Catering Helper (on contract)	TGH	22.11.2004

2.2.2 Faculty / Staff retired from 01.04.2004 to 31.03.2005

S.No.	Name	Designation	Department	Date of Retirement
1	Krishnamurthy, R.	Professor	Mech. Engg.	30.04.2004
2	Durgaprasada Rao .M	Assist. Prof.	Hum. & Sco. Sci.	31.05.2004
3	Elisabeth Nainan Kurian (w)	Assoc. Prof.	Hum. & Sco. Sci.	31.05.2004
4	Megha Singh	Professor	Appl. Mech.	31.05.2004
5	Ramjee, V.	Professor	Appl. Mech.	31.05.2004
6	Ambalavanan R.	Professor	Civil Engg.	31.05.2004

7	Parvathy Natarajan	Sr. Helper	Hospital	31.05.2004
8	Swamy, P.N.	Sr. Prof. Asst. (SG)	Library	31.05.2004
9	Sadhasivam, A.	Supervisor (SG)	App. Mech.	31.05.2004
10	Sugavanam S	Asst. Repr.	Stores & Pur.	30.06.2004
11	Subramaniam V.	Daftry GR. I (SG)	Admn,II	30.06.2004
12	Kathavarayan, S.	Jr. Mechanic	C.W.S.	30.06.2004
13	Madurai C.	Sr. Helper	C.W.S.	30.06.2004
14	Peraiah, K.	Sr. Sweeper	Engg. Unit	30.06.2004
15	Venkatesan M	Sr. Helper	Engg. Unit	31.07.2004
16	Krishnaswamy, N.R.	Professor	Civil Engg.	31.08.2004
17	Gokularathnam, C.V.	Professor	Metl. Engg.	31.08.2004
18	Srinivasan R. Y.	Superintendent	Civil Engg.	31.08.2004
19	Balakrishnan S	Tech.offr. Gr. I	HSS	31.08.2004
20	Krishnan P.	Head Security Guard (SG)	Security Sec.	30.09.2004
21	Elango, K.	Professor	Civil Engg.	30.09.2004
22	Thomas Victor C.	UDC (SG)	Fin & Accts.	31.09.2004
23	Radhakrishnan T	AEE	Engg. Unit	31.10.2004
24	Lakshmana Gowda, B.H. *	Professor	Appl. Mech.	31.10.2004
25	Gopinathan, M.S.	Professor	Chemistry	31.10.2004
26	Neelakantan, N.R.	Professor	Chem. Engg.	30.11.2004
27	Thandaveswara, B.S.	Professor	Civil Engg.	30.11.2004
28	Ranganathan G.	Sr. Lab Asst.	Metl. Engg..	30.11.2004
29	Rama Rao, K.V.S.	Professor	Physics	31.12.2004
30	Annamalai S	Sr. Sci.Officer Gr.I	Metl. Engg.	31.12.2004
31	Arumugam, S.	Sr. Draughtsman (P)	Physics	31.01.2005
32	Nagarathinam K.	Sr. Attendant (Office)	Admn.II	31.01.2005
33	Lalitha, K.	Professor	Chemistry	31.01.2005
34	Kumar N L N N	Workshop Supdt.	CWS	31.01.2005
35	Vaya. P.R *	Professor	Elec. Engg.	12.02.2005
36	Venkateshaiah, C.	Professor	Elec. Engg.	31.03.2005
37	Jayabalan S.	Sr. Helper	Fin & Accts.	31.03.2005
38	Raveendran, T.K.	Sr. Mechanic (SG)	Aero. Engg.	31.03.2005

*. Voluntary Retirement

2.2.3 Expired: (while in service)

S.No	Name	Designation	Department	Date
1.	S.Nithiyandam	Supervisor	CWS	06.06.2004
2.	M. Balakrishnan	Junior Mechanic	CWS	26.10.2004
3.	Anbalagan	Sr. Helper	MSRC	09.02.2005
4.	Vancheesan. S	Professor	Chemistry	04.06.2004
5.	M Mohan	Driver Gr-I	Transport Cell	30.05.2004

2.2.4 Faculty/ Officers/ Staff on long leave:

Sl.No.	Name & Department	Duration	Nature of Leave
1.	Dr. P. Kesavan Nair Professor Metl & Matls. Engg.	18.6.2003 to 19.6.2005	EOL
2.	Dr. N. Siva Prasad Professor Mechanical Engg.	7.6.2003 to 8.6.2005	EOL
3.	Dr. Pramod s. Mehta Professor, Mechanical Engg.	14.6.2003 to 15.6.2008	EOL
4.	Dr. C.R. Muthukrishnan Professor Computer Sci. & Engg.	01.9.2003 to 31.8.2005	EOL

5.	Dr. K.M.M. Prabhu Professor Electrical Engg.	5.11.2003 to 30.6.2004	EOL
6.	Dr. M.S. Ramachandra Rao Assistant Professor Physics	18.9.2003 to 19.9.2004	EOL
7.	Dr. M.S. Mathews Professor Civil Engg.	20.12.2003 to 10.1.2005	EOL
8.	Dr. K. Radhakrishna Rao Professor Electrical Engg.	1.1.2004 to 31.12.2005	EOL
9.	Dr. Maha Seshasayee Professor, Physics	6.1.2004 to 30.6.2004	EOL
10.	Dr. M. Govardhan Professor Mechanical Engg.	17.06.2004 to 31.05.2006	EOL
11.	Dr. M. Madhusudana Rao Professor Mechanical Engg.	17.06.2004 to 23.02.2006	EOL
12.	Dr. K. Krishnaiah Professor Chemical Engg.	09.07.2004 to 24.06.2006	EOL
13.	Dr. Anantharaman Professor & Head Hum. & Soc. Science	19.08.2004 to 20.08.2006	EOL
14.	Sri. K. Gopalakrishna Assistant Professor Civil Engg.	25.03.2005 to 27.03.2007	EOL
15.	Dr.S.K.Bhattacharyya, Professor, Ocean Engg.	30.01.2003 to 28.05.2004	Sab. Leave/EL
16.	Dr. N. Narasimha Murthy Assistant Professor Chemistry	26.08.2003 to 27.08.2004	Sab. Leave
17.	Dr. Indrapal Singh Aidhen Assistant Professor Chemistry	01.10.2003 to 01.08.2004	Sab. Leave
18.	Dr. K. Giridhar Associate Professor Electrical Engg.	06.05.2004 to 05.05.2005	Sab. Leave
19.	Dr. P. Sriram Professor Aerospace Engg.	17.05.2004 to 16.05.2005	Sab. Leave
20.	Dr. C. Lakshmana Rao Associate Professor Applied Mechanics	31.07.2004 to 31.07.2005	Sab. Leave
21.	Ms. Ramadevi N.S. LDC Academic	11.8.2003 to 29.1.2004	EOL
22.	Sri. V.S. Balaji UDC Academic	09.07.04 to 07.07.05	EOL with FST
23.	Sri P.D. Dilli Raj Helper Gr.I Stores	23.02.04 to 22.10.05	EOL with FST
24.	Sri. V Venkatachalam Supervisor (SG) Civil Engineering	16.04.2004 to 30.06.2004	HPL
25.	Sri.Ravindranath Producer Gr-I ETC	19.04.2004 to 08.04.2006	EOL without FST
26.	Smt. Sulochana Technical Assistant CEC	04.08.2004 to 03.04.2004 & 03.01.2005 to 03.05.2005	Earned Leave

2.3 Staff Welfare:

2.3.1 Human Resource Development:

As part of human resources development activities, the Institute plans and implements programs for providing opportunities to technical and administrative staff to update and upgrade their knowledge and skills in order that they may perform their duties effectively. In addition, the programs are also aimed to enhance the pride and satisfaction they feel in their work. The overall feeling of happiness engendered by these programs also overflows to their home lives and contributes to a sense of well being for the entire family. These activities also form a part of the training requirements under the ISO dispensation.

The Ministry of Human Resources Development, Government of India constituted a Task Force in 2002 to review the administrative practices at the various IITs, National Institutes of Technology (erstwhile RECs) and other National Institutes of Higher Learning. One of the key components here was seen to be higher efficiency and Computerization of all Administrative processes. The inputs from HRD at each Institution were seen to be central to the efficiency improvement and computerization activities. IIT Madras has been commended for the early start it has taken in this direction.

In the past, the major thrust of the HRD activities at the Institute had been aimed at the non-teaching staff. In this year, courses have been organised for faculty, for students of the Institute and for the children of employees. Classes were held for interested employees, including special sessions for women employees, to upgrade their skills in computer use. As for hardware, employees were deputed for training and skills enhancement in a variety of areas such as CNC Machining, PLC Electro hydraulic of pneumatics, use of computers for secretaries, Training in supervision in machining, milling and shaping as well as in NDT and Advanced Evaluation of Concrete structures. Other than these, fighting fire hazards and yoga.meditation have also received attention.

Pre-Retirement counseling was done by professionals in the areas of health, yoga, meditation, accounting, auditing, managing finance, investing, socializing etc.

The HRD activities were initiated at the Institute in 1997 under the charge of a professor. During the period of reporting, the 9 programs were organised. The total numbers of participants were about 280.

The impact of the various programs, as seen from the feedback at the end of each program, appears to be advantageous to the Institute as the employees were able to upgrade their knowledge through these programs as the programs were designed on need based.

HRD Training Programmes at IITM:

Sl. No.	Name of the Training Programme	Period	No. of Participants
1.	Program on "Health & Socializing" for women as a part of women's day celebration.	8 th March 2004	30
2.	Program on "Communication skills" for women.	9 th June 2004	28
3.	Program on "Use of Computers & Programming" for Ladies Club Members.	19 th June 2004	20
4.	Program on "Improving interpersonal effectiveness and communication" for the faculty members of IIT Madras	8 th & 9 th Oct 2004	25
5.	Program on "disciplinary proceedings"for the assistants of IIT Madras	19 th & 20 th Nov. 2005	25
6.	Program on "Improving interpersonal effectiveness and communication" for the faculty members of IIT Madras.	21 st & 22 nd Jan. 2005	30
7.	Program for Group-D employees on "Yoga, meditation, health and socializing".	28 th Jan. 2005	22
8.	Program for Technical Assistants on "Improving Computer programming Skills".	18,19 & 25,26, Feb. 2005	25
9.	Program for UDC (SGs) / assistants on "Disciplinary Proceedings"	4 th & 5 th March 2005	25

Staff Members Sponsored for Training Program Outside IIT Madras

1.	(Sri.A.V.Sudarsanam) Assistant Registrar (S & P) to a seminar on "Good Auditing Practices, Connected with ISO 9000:2000 conducted by Quality Council of India".	1	04.02.2004	Rs. 3000/-
2.	D.Ravi Assistant Registrar (Estate) to a seminar on "Management Development Programme on 'Accounting for Non-profit Autonomous Organisations' by Natioanal Instt. Of Finanacial Management at Fridabad".	1	30.04.2004	Rs.500/-
3.	Prema Chakrapani Assistant Registrar (Placement) to Honeywell Bonding Program by M/s. Honey well Bangalore".	1	24.04.2004	
4.	(Shri.P.S.Lakshmi Narasimhulu) to a diploma course in Refrigeration and Airconditioning at SISI.	1	One year	Rs.4250/-
5.	Mr. V.Subramani, Central Workshop for "Training in the Trade of Carpenter". Govt. Industrial Training Institute (North) Chennai.	1	10.05.2004 to 09.06.2004	Rs.517/-
6.	Sri. T.Radhakrishnan & Sri. K.Ravichandran, "Power System SCADA" Power Systems Training Institute (PSTI) Banglore.	2	24 th to 28 th May.	Rs.6000/-
7.	Sri.M.Murali Prakesh, "Optical Fiber Communication"	1	6 th & 7 th May 2004	4000/-
8.	Mr. V.Subramani, "Training in the Trade of Carpenter". Govt. Industrial Training Institute (North) Chennai-21	1	10.05.2004 to 09.06.2004	517/-
9.	Mr. S.Paneer Selvam Supervisor (SG) & Mr.R. Elangovan Sr.Mechcnic Advanced Training in Electro Pneumatics.	2	21.06.2004 to 25 th June 2004	

10	Sri. V.Govindasamy, Mechanic ofr short course on Ultrasonic Testing Level-II	1	07.06.2004 to 11.06.2004	Rs.4900/-
11	Sri.P.Chandran, J.r, Mechanic CNC Programming and Production	1	07.06.2004 to 11.06.2004 & 21.06.2004 to 25.06.2004	
12.	Sri.K.Kumar, Mechanic-Roll on PLC in Hydraulics & Pneumatic Control. Sri. A.Prakash, Mechanic "Resharpening of Milling cutters Sri.N.T. SasiKumar, Mechanic, Computer Aided programme on SPC Techniques and Gauge Control". Sri.A.Prakash, Mechanic, Milling Practice. Sri. A.Murali, Junior Mechanic, Machine Shop Practice for Supervisors to the Advanced Training Institute, Guindy.	5	Three Weeks	Rs.13750/-
13.	Sponsored Shri.Thirunavukarasu, Mechnaic, R&AC Lab. For an advanced training program on Advanced Welding (TIG Welding) Advanced Training Institute, Guindy.	1	Three weeks	Rs.3750/-
14.	Mr.V.Balasubramanian "Repair & Maintenance of Power Supplies, Stabilizers Inverters and UPS" (2 modules). Mr.R.Thiruneelagandan "Programmable Logic Controller (PLC)"	2	28.06.2004 to 09.07.2004 19.07.2004 to 23.07.2004	Rs.2500/- Rs.1500/-
15.	One day seminar on Temperature/Mechanical Calibration for ISO 9000 conducted by the Electronics Test & Development Centre (GOI): P.Radhakrishnan, Technical Assistant	1	25.06.2004	Rs.1000/- + service tax
16.	One day seminar on Temperature/Mechanical Calibration for ISO 9000 conducted by the Electronics Test & Development Centre (GOI): Mr.J.A.Suresh, Technical Assistant	1	25.06.2004	Rs.1000/- + service tax
17.	Two day workshop on "Water Treatment & Reuse and Rainwater Harvesting on 16 & 17 July 2004: Sri.G.Ganesan, Superintending Engineer Sr.k.Rizwan Ali, Junior Engineer	2	16 & 17 July 2004	Rs.7500/-
18	Sri.S.Sundaravinayagam Assistant Registrar (Admn.I) to a seminar on "Role of Information Technology in University Management" at IIT, Allahabad"	1	13.09.2004 to 17.09.2004	Rs.2000/-
19	Dr.T.Suryakumar, Deputy Registrar (Academic) "Role of Information Technology in University Management" at Allahabad	1	13.09.2004 to 17.09.2004	Rs. 2500/-
20	Sri.B.Nagarajan, Assistant Registrar (Academic) Five day Orientation Course in Records Management for Departmental Records Officer for the year 2004-2005, at Pondichery.	1	11.10.2004 to 15.10.2004	-
21	Sri. A.V. Sudarsanam, Assistant Registrar (Stores and Purchase) five day Orientation Course in Records Management for Department Records Officer for the year 2004-2005, at Pondichery.	1	11.10.2004 to 15.10.2004	-
22	Sri.S.Sundaravinayagam Assistant Registrar (Admn.I) five day Orientation Course in Records Management for Department Records Officer for the year 2004-2005, at Pondichery.	1	11.10.2004 to 15.10.2004	-
23	Sri. Banavath Baman Assistant System Engineer (Computer Science) Construction, Maintenance and Programming of High Performance Clusters Utilizing off the Sheff Components at Bangalore	1	11.10.2004	-
24	Sri. C.S.Venkatesan Assistant System Engineer (Computer Science) Construction, Maintenance and Programming of High Performance Clusters Utilizing off the Sheff Components at Bangalore	1	11.10.2004	-
25	Sri.B.Nagarajan Assistant Registrar (Academic) Management Leadership & High Performing Teams by National Productivity Council, Jaipur.	1	20.11.2004 to 24.11.2004	Rs. 17,000/-
26	Sri.U.J. Suresh Assistant Registrar (CCW) Management Leadership & High performing Teams by National Productivity Council, Jaipur.	1	20.11.2004 to 24.11.2004	Rs. 17,000/-
27	Sri.G.Ravichandran Assistant Registrar (IC & SR) Management Leadership & High Performing Teams by National Productivity Council, Jaipur.	1	20.11.2004 to 24.11.2004	Rs. 17,000/-
28	Sri.C.R.Seakr, Assistant Librarian (Library) Capacity Building in Technical Libraries in the present Digital Era at Bangalore	1	05.11.2004 to 06.11.2004	-
29.	Training program on PSCAD/EMTDC software – A Tool for Electromagnetic Transient Studies. Mrs.M.malarvizhi, Technical Officer Mr.P.Murugan, Technical Assistant	2	5 days in the Month of Dec.2004	Rs.10,000/- each

30.	Advanced Training Programmes in CVAT: Mr.K.Kumar, Mechannic (Industrial Hydraulics) Mr.K.Balasubramani, mechanic (Electro Pneumatics) Mr.A.Prakash, Mechanic (Electro-Pneumatics) Mr.G.Veeramani, Mechanic.(PLC)	4	6-10 th Dec. 2004 13 to 17 th Dec.2004 20 th to 24 th Dec.2004 20 th to 24 th Dec.04	Rs.1500/- each
31	Sri. L.Venkataraman, Assistant Executive Engineer (Engineering unit) Sri. K.Dharmaraj, Assistant Executive Engineer (Engineering unit) Ms. Saramma Roy, Staff Nurse (Hospital) Sri.T. Ramakrishnan, SPA (Library) Sri.N.Muruganandam, LDC (Library) Sri.S.Dinakaran, Sr. Security Inspector (Security) "Seminar on "Learn not to Brun"	6	10.12.2004	Rs.5400/-
32	Sri.C.R.Seakr, Assistant Librarian (Library) Programme on Enchancing Utilisation of INDEST e-resources.	1	02.02.2005 to 03.02.2005	-
33	Sri. M.V.R.Seshagiri, UDC (Admn.) Two days workshop on Implementation on Official Language at Bhubaneswar.	1	07.02.2005 to 08.02.2005	-

2.3.2 Hindi Coaching (updated)

In accordance with the directions of the Government of India, Hindi classes were conducted regularly to both technical and administrative staff members to improve their knowledge in Hindi. In 2004-2005, 25 staff members were offered this course. As on 31.3.2005, 977 staff members were offered this course.

2.3.3 School Fee Concession:

Institute reimbursed fees paid by staff members for their childrens' education as per Government of India norms . During the period under report 46 staff members were benefited.

2.3.4 Transport Facilities to Children of the Staff:

Institute provides concessional fare to the children of the staff members to attend schools on the Campus. In the year 2004-2005, 564 children benefitted.

2.3.5 Advances:

During the period under report a sum of Rs. 60.37 lakhs was sanctioned for the following:

S.No.	Advance	No. of Employees	Amount sanctioned in Rs.
1.	House Building Advance	5	26,73,750
2.	Car Advance	5	8,85,000
3.	Two Wheeler Advance	22	5,57,820
4.	Personal Computer Advance	33	14,02,652
5.	Cycle Advance	4	6,000
6.	Festival Advance	341	5,11,500
Total			60,36,722

2.3.6 Meetings of the Authorities:

Board of Governors	:	Three meetings were held on 30.07.2004, 18.11.2004 and 15.02.2005.
Finance Committee	:	One meeting was held on 15.12.2005.
Buildings & Works Committee	:	Four meetings were held on 11.06.2004, 08.10.2004, 21.12.2004 and 23.03.2005.
Senate	:	Five meetings were held on 27.04.2004, 23.07.2004, 06.12.2004, 09.03.2005 and 21.03.2005.

2.4 List of faculty members and officers in the academic and general administration:

(i) Academic Administration

DIRECTOR

Prof. M.S. Ananth

Deans:

Academic Courses	:	Dr. K. Elango (upto 31.04.2004) Dr. S. Santhakumar (from 01.05.2004)
Academic Research	:	Dr. S. Narayanan
Administration	:	Dr. S.K. Seshadri
Industrial Consultancy & Sponsored Research	:	Dr. V. Kalayaraman
Students	:	Dr. V.G. Idichandy
Planning	:	Dr. S.V. Raghavan

Heads of Departments:

Aerospace Engg.	:	Dr. Job Kurian
Applied Mechanics	:	Dr. S. Radhakrishnan
Bio-Technology	:	Dr. Guhan Jayaraman
Chemical Engg.	:	Dr. A.R. Balakrishnan
Chemistry	:	Dr. S. Vancheesan (upto 04.06.2004) Dr. M.S. Gopinathn (In-charge upto 06.07.2004) Dr.M.N. Sudheendra Rao (from 07.07.2004)
Civil Engg.	:	Dr. B.S. Thandaveswara (upto 29.11.2004) Dr. S. Mohan (from 30.11.2004)
Computer Sci.& Engg.	:	Dr. S.Raman
Electrical Engg.	:	Dr. C.Venkateshaiah (upto 05.08.2004) Dr.S. Srinivasan (from 06.08.2004)
Humanities & Soc.Sci.	:	Dr. R.N. Anantharaman (upto 22.06.2004) Dr. S.C. Chaudhary (from 23.06.2004 to 29.11.2004) Dr.V.R.Muraleedharan (from 30.11.2004)
Mathematics	:	Dr. S. Kalpakam
Management Studies	:	Dr. L.S. Ganesh (from 08.07.2004)
Mechanical Engg.	:	Dr. S. Srinivasa Murthy
Metallurgical & Materials Engg.	:	Dr. K. Prasad Rao (upto 01.08.2004) Dr. S.D. Pathak (from 02.08.2004)
Ocean Engg.	:	Dr. V. Sundar
Physics	:	Dr.A. Subrahmanyam

Heads of Research Centres:

Composite Technology Centre	:	Dr. S.K. Malhotra
Materials Sciences Research Centre	:	Dr. S. Vancheesan (upto 04.06.2004) Dr. M.s. Gopinathan, In-charge (from 5.6.2004 to 7.7.2004) Dr.M.N. Sudheendra Rao (from 08.07.2004)
Regional Sophisticated Instrumentation Centre	:	Dr. S. Sankararaman (upto 31.08.2004) Dr. A.K. Mishra (from 31.08.2004)

Head of Special Facilities for interaction with Other Institutions:

Centre for Industrial Consultancy & Sponsored Research	:	Dr.V. Kalyanaraman
Centre for Continuing Education	:	Dr. K.Krishnaiah (upto 17.06.2004) Dr. M. Singaperumal (from 18.06.2004)
Central Electronics Centre	:	Dr. M. Kumaravel

(ii) Central Administration:

Director	:	Prof. M.S. Ananth
Registrar	:	Dr. Usha Titus, IAS

Deputy Registrar:

Academic : Dr. T. Suryakumar
Administration : Dr. K. Panchalan
Finance & Accounts : J. Rammohan
Stores & Purchase : A. Thirunavukkarasu

Internal Audit Officer : R. Esakkimuthu

Assistant Registrar:

Stores & Purchase : A.V. Sudarsanam
Finance & Accounts : S. Mahalingam
S. Sambasivam (from 01.07.2004)

Administration : S. Sundaravinayagam
IC & SR : B. Ramasamy (upto 11.07.2004)
G. Ravichandran
K. Unnikrishnan (from 12.07.2004)

Hostels : U.J Suresh (on deputation to University of Delhi)
B. Nagarajan (In-charge from 07.02.2005)

Academic : B. Nagarajan
Hospital : K. Unnikrishnan (upto 11.07.2004)
B. Ramasamy (from 12.07.2004)

Training & Placement : Prema Chakrapani
Chief Security Officer : K. Rajendran
Security Officer (SS) : G. Selvamani

Secretary (SG) to Director : G. Natarajan

Head of Central Services, Facilities and Section:

Central Library : Dr. Harish Chandra
Chairman, Council of Wardens : Dr. S.P. Subramanian (upto 08.06.2004)
Dr. R. Dhamodharan (from 09.06.2004)

Chief Medical Officer (Incharge) : Dr. N.A. Jayavelan
Air-conditioning Unit : Dr. G. Venkatratnam
Central Gas Supplies Unit : Dr. R.P. Viswanath
Central Glass Blowing Section : Dr. R.P. Viswanath

Central Photographic Section : Dr. B. Ramamoorthy
Central Workshop : Dr.L.Vijayaraghavan, Prof-in-charge
National Service Scheme : Dr. B. Subramanian
Advisor, Sports : Dr. T.K. Varadarajan (upto 27.02.2005)
Dr. K. Srinivasan (from 28.02.2005)

Advisor, Cultural : Dr. L. Vijayaraghavan (upto 19.07.2004)
Dr. M.Prakash Maiya (from 20.07.2004)

Foreign & Weaker Section Students : Dr. S. Mohan (upto 31.01.2005)
Dr. T.A. Gonsalves (from 01.02.2005)

Vigilance : Dr. M. Govardhan (upto 15.06.2004)
Dr. M.S. Shanmugam (from 16.06.2004)

Placement & Training : Dr. T.T. Narendran
Guidance & Counselling Unit : Dr. A. Mani (upto 29.09.2004)
Dr. David Koilpillai (from 30.09.2004)

Prof-in-charge (Alumini Affairs) : Dr. G. Sundararajan (upto 03.10.2004)
Dr.K.N. Satyanarayana (from 04.10.2004)

Engineering Unit

Chairman , Estate & Works Committee	:	Dr. R. Sundaravadivelu
Superintending Engineer	:	C. Ganesan
Sr, Executive Engineers	:	Sasank Sekar Sarma (on deputation) C.R. Harish (on deputation)
Assistant Executive Engineers	:	F. John De Britto V. Seenivasan K. Dharmaraj M. Ramachandran K. Viswanath L. Venkatarakan M. Murali Prakash
Public Health Officer	:	V. Veerasamy

3. ACADEMIC PROGRAMMES AND AWARD OF DEGREES

The Institute offered Ph.D. programme in 15 departments including one integrated Ph.D. programme in Chemistry department, M.S. programme in 10 departments, M.Tech programme in 30 streams/ specialisations, M.Sc. programme in 3 branches, B.Tech programme in 10 branches, Dual degree (B.Tech and M.Tech) programme in 13 branches and M.B.A. programme besides a preparatory course for SC/ST students during the year under report.

3.1 Admissions 2004-05:

Candidates for admission to B.Tech., Dual Degree and M.Tech. programmes were selected through JEE and based on GATE score respectively. Quite a few candidates were also selected for M.Tech. programme under Sponsored, Q.I.P. and User Oriented programme schemes through interview and/or written test. Selection for Ph.D. and M.S. programmes was done through test/interview. For M.Sc. branches of Mathematics and Physics, and Chemistry, selection was made through a common test conducted jointly by seven IITs.. This Institute was the nodal institute for this test. For M.B.A. programme selection was made through JMET and interview.

The number of students and scholars admitted to various programmes both in July 2004 and in January 2005 are given below:

TABLE 1 – Fresh Admission

Sl. No.	Department	B.Tech	Dual Degree	M.Sc	M.Tech	M.B.A	M.S	Ph.D	Total
1.	Aerospace Engg.	25	10	-	16	-	7	5	63
2.	Applied Mechanics	-	-	-	22	-	4	4	30
3.	Biotechnology	32	15	-	-	-	7	19	73
4.	Chemical Engg	53	12	-	36	-	3	16	120
5.	Chemistry	-	-	30	-	-	-	30	60
6.	Civil Engg.	46	15	-	90	-	12	28	191
7.	Comp. Sc. & Engg.	27	11	-	53	-	44	19	154
8.	Electrical Engg.	57	47	-	105	-	32	18	259
9.	Hum. & Soc. Sci.	-	-	-	-	-	-	10	10
10.	Management Studies	-	-	-	-	48	3	17	68
11.	Mathematics	-	-	31	6	-	-	18	55
12.	Mechanical Engg.	68	49	-	103	-	37	39	296
13.	Met. & Mat. Engg.	31	11	-	16	-	3	14	75
14.	Ocean Engg.	24	7	-	11	-	9	6	57
15.	Physics	10	-	25	8	-	-	12	55
	Total	373	177	86	466	48	161	255	1566

*Engineering Physics

Total no. of students admitted during the year includes the following :

Foreign Nationals	5	Q.I.P.	M.Tech	34	60
			Ph.D.	26	
Scheduled Castes	177	Sponsored	M.Tech.	29	29
Scheduled Tribes	44	Project	M.S.	16	27
			Ph.D.	11	
Physically Handicapped	1	External Registration	M.S.	7	18
Women Students	361		Ph.D.	11	
Defence Officers (M.Tech)	30	User-oriented Programme (M.Tech)			55

In addition to the above, 23 SC and 17 ST students joined Preparatory Course.

3.2 Students/Scholars Enrolment:

The total numbers of students on roll in various programmes of the Institute in the academic year 2004-05 are given below:

TABLE 2 – Students on roll

Sl. No.	Department	B.Tech	Dual Degree	M.Sc.	M.Tech.	M.B.A.	M.S.	Ph.D.	Total
1.	Aerospace Engg.	97	36	-	28	-	18	14	193
2.	Applied Mechanics	-	-	-	55	-	22	27	104
3.	Biotechnology	105	30	-	-	-	10	30	175
4.	Chemical Engg.	178	51	-	69	-	10	42	350
5.	Chemistry	-	-	49	-	-	-	132	181

Sl. No.	Department	B.Tech	Dual Degree	M.Sc.	M.Tech.	M.B.A.	M.S.	Ph.D.	Total
6.	Civil Engg.	169	53	-	162	-	50	89	523
7.	Comp. Sc.& Engg.	125	43	-	108	-	103	52	431
8.	Electrical Engg.	307	170	-	193	-	89	62	821
9.	Hum. & Soc. Sc.	-	-	-	-	-	-	29	29
10.	Management Studies	-	-	-	-	82	14	52	148
11.	Mathematics	-	-	59	14	-	-	52	125
12.	Mechanical Engg.	334	137	-	208	-	102	182	963
13.	Met. & Mat. Engg	113	31	-	31	-	24	65	264
14.	Ocean Engg.	79	24	-	23	-	38	35	199
15.	Physics	30	-	55	13	-	-	83	181
Total		1537	575	163	904	82	480	946	4687

*Engineering Physics

The above total includes the following:

Foreign Nationals	13	QIP	M.Tech	68	166
			Ph.D.	98	
DASA (Indian origin)	30	Sponsored	M.Tech	58	63
			M.S.	5	
Scheduled Castes	457	Project	M.S.	76	164
			Ph.D.	88	
Scheduled Tribes	101	External Registration	M.S.	12	101
			Ph.D.	89	
Physically Handicapped	9	Registration Kept Alive	M.S.	62	75
			Ph.D.	13	
Women students	534	User-oriented Programme (M.Tech)			91
Defence Officers (M.Tech)	61	Part Time Programme (M.Tech)			14

SC/ST Students on roll as on 31.3.2005

Sl.No	Programme	SC	ST
1.	B.Tech	215	45
2.	Dual Degree	56	11
3.	M.Sc.	10	-
4.	M.Tech	106	40
5.	M.B.A	9	4
6.	M.S	11	-
7.	Ph.D	51	4
Total		458	101

The branch/ discipline-wise and year-wise details of students enrolled in B.Tech, Dual Degree and M.Tech programmes are given below:

TABLE 3 - B.Tech students on roll

Sl. No.	Branch	2004	2003	2002	2001 & Others	Total
1.	Aerospace Engineering	23	23	26	25	97
2.	Biotechnology	33	38	34	-	105
3.	Chemical Engineering	49	40	46	43	178
4.	Civil Engineering	41	43	37	48	169
5.	Computer Sc. & Engg.	30	30	33	32	125
6.	Electrical Engineering	64	76	80	87	307
7.	Engineering Physics	9	11	10	-	30
8.	Mechanical Engineering	70	85	87	92	334
9.	Met. & Mat. Engineering	31	31	25	26	113
10.	Naval Architecture	22	17	19	21	79
Total		372	394	397	374	1537

TABLE 4 - Dual Degree (B.Tech & M.Tech) students on roll

Sl. No.	Branch	2004	2003	2002	2001	2000 & others	Total
1.	Aerospace Engineering	9	6	7	9	5	36
2.	Biotechnology	15	9	6	-	-	30

Sl. No.	Branch	2004	2003	2002	2001	2000 & others	Total
3.	Chemical Engineering	11	10	10	10	10	51
4.	Infrastructural Civil Engg.	13	10	8	10	12	53
5.	Computer Science & Engg.	12	9	7	7	8	43
6.	Micro Elec. & VLSI Design	19	12	10	15	12	68
7.	Communication Engg.	16	13	11	13	13	66
8.	Power Sys. & Power Electronics	17	9	10	-	-	36
9.	Energy Technology	16	8	7	6	9	46
10.	Intelligent Manufacturing	18	9	9	6	5	47
11.	Product Design	15	8	9	7	5	44
12.	Metallurgical & Materials Engg.	10	5	7	5	4	31
13.	Naval Arch. & Ocean Engg.	6	4	4	6	4	24
Total		177	112	105	94	87	575

TABLE 5 - M.Sc students on roll

Sl. No.	Branch	2004	2003 & others	Total
1.	Chemistry	26	23	49
2.	Mathematics	30	29	59
3.	Physics	23	32	55
Total		79	84	163

TABLE 6 - M.Tech students on roll

Sl. No.	Department \ Discipline \ Batch	2004	2003 & others	Total
1.	Aerospace Engineering	16	12	28
2.	Applied Mechanics:			
	AM 1 - Engineering Mechanics	5	7	12
	AM 2 - Industrial Tribology	5	7	12
	AM 3 - Maintenance Engg & Management	5	7	12
	AM 4 - Bio-medical Engineering	7	12	19
3.	CH 1 - Chemical Engineering	36	33	69
4.	Civil Engineering:			
	CE 1 - Building Technology	9	8	17
	CE 2 - Environmental Engineering	5	6	11
	CE 3 - Geotechnical Engineering	8	4	12
	CE 4 - Hydraulic & Water Resource Engg.	8	2	10
	CE 5 - Structural Engineering	20	12	32
	CE 6 - Transportation Engineering	10	9	19
5.	CE 7 - Construction Technology & Mgmt.	20	19	39
6.	CE 8 - Computational Engineering	10	12	22
7.	CS 1 - Computer Science & Engineering	53	49	102
8.	CS 2 - Information Technology	-	-	-
9.	CS 3 - Software Engineering	-	6	6
10.	Electrical Engineering:			
	EE 1 - Communication Systems	32	24	56
	EE 2 - Energy Systems Engineering	20	10	30
	EE 3 - Micro Electronics	24	29	53
	EE 4 - Control & Instrumentation Systems	19	18	37
11.	EE 5 - Digital Signal Processing	10	7	17
12.	Mathematics:			
	Industrial Maths & Scientific Computing	6	8	14
13.	Mechanical Engineering:			
	ME 1 - Thermal Engineering	37	40	77
	ME 2 - Design	37	34	71
	ME 3 - Manufacturing Engineering	18	20	38
14.	ME 4 - Automotive Engine Technology	11	11	22
15.	MM - Metallurgical & Materials Engg.	16	15	31
16.	OE - Ocean Engineering	11	12	23
17.	Physics:			
	PH - Solid State Technology	8	5	13
Total		466	438	904

TABLE 7 – M.B.A. students on roll

Sl. No.	Branch	2004	2003 & others	Total
1.	M.B.A	45	37	82

In addition to the above, 2 CSIR Research Associates and 40 Preparatory Course students were on the rolls.

3.3 Courses Offered:

In the academic year 2004-05, 1090 courses were offered of which 580 courses in July–Nov. 2004 and 510 courses in Jan–May 2005. The Department-wise details of the courses offered are given below:

TABLE 8 – No. of Courses offered

Sl. No.	Department	No. of courses offered in July – Nov 2004				No. of courses offered in Jan – May 2005			
		Core	Elect.	Lab.	Total	Core	Elect.	Lab	Total
1	Aerospace Engineering	15	6	5	26	10	10	4	24
2	Applied Mechanics	18	6	4	28	4	6	1	11
3	Biotechnology	9	1	2	12	6	3	3	12
4	Chemical Engineering	17	11	3	31	15	17	3	35
5	Chemistry	12	5	2	19	10	11	2	23
6	Civil Engineering	38	22	11	71	34	31	7	72
7	Computer Sc. & Engg.	16	15	7	38	10	14	4	28
8	Electrical Engineering	32	26	9	67	23	29	10	62
9	Hum. & Soc. Science	-	45	-	45	-	27	-	27
10	Management Studies	10	11	3	24	2	9	-	11
11	Mathematics	12	19	2	33	10	18	1	29
12	Mechanical Engineering	38	23	10	71	45	21	10	76
13	Met. & Mat. Engineering	15	18	8	41	12	16	6	34
14	Ocean Engineering	19	16	4	39	15	12	2	29
15	Physics	21	4	6	31	16	12	4	32
16	COMPTECH	1	2	1	4	-	4	1	5
	Total	273	230	77	580	212	240	58	510

3.4 Convocation:

The 41st Convocation was held on 30.07.2004. Prof. V S Ramachandran, Director, Centre for Brain and Cognition and Professor of Neuroscience and Psychology, University of California, San Diego delivered the Convocation address. 1082 candidates were awarded various degrees. 813 candidates received degrees in person. The department-wise details of degrees awarded are given below:

TABLE 9 – Degrees awarded

Sl. No.	Department	B.Tech.	Dual Degree	M.B.A.	M.Sc.	M.Tech.	M.S.	Ph.D.	Total
1.	Aerospace Engineering	23	7	-	-	9	8	1	48
2.	Applied Mechanics	-	-	-	-	33	9	5	47
3.	Chemical Engineering	38	14	-	-	22	4	6	84
4.	Chemistry	-	-	-	24	-	-	14	38
5.	Civil Engineering	41	9	-	-	77	5	8	140
6.	Computer Sc. & Engg.	24	6	-	-	54	21	6	111
7.	Electrical Engineering	92	21	-	-	62	15	2	192
8.	Management Studies	-	-	39	-	-	4	3	46
9.	Mathematics	-	-	-	27	6	-	7	40
10.	Mechanical Engineering	74	19	-	-	83	13	14	203
11.	Metallurgical & Materials Engg	25	5	-	-	15	6	2	53
12.	Ocean Engineering	19	4	-	-	6	5	3	37
13.	Physics	-	-	-	34	8	-	1	43
	Total	336	85	39	85	375	90	72	1082

With this Convocation, the total number of degrees awarded so far by the Institute is 27,189, the details of which are given below:

S.No.	Programme	No.
1	Ph.D.	2,498
2	M.S.	1,790
3	M.Tech	9,129
4	M.Sc.	2,045
5	M.B.A.	79
6	Dual Degree (B.Tech & M.Tech)	151
7	B.Tech	11,232
8	B.Sc(Tech)	20
9	DIIT	245

3.5 Award of Prizes to the students:

3.5.1 Convocation Prizes:

The following are the details of Prizes awarded to the students at the 41st Convocation:

- President of India Prize .. Sridharan D, Dual Degree (B.Tech and M.Tech), Aerospace Engg
- Governor's Prize .. A Piyush Shanker, B.Tech Electrical Engg.

□ Other Prizes:

Sl.No.	Donor	Department	Name of student
Doctor of Philosophy – Ph.D.			
1.	Prof Werner Prize	Chemistry	Alok Diwaker Bokare
2.	Prof C N Pillai Prize	Chemistry	P Ganapati Reddy
3.	Prof Langmuir Prize	Chemistry	R Ganesan
Master of Technology – M.Tech.			
1.	Air India Prize	Aerospace Engineering	Sadashiv Hiravennavar
2.	Indira Sivasailam Merit Prize	Industrial Tribology	Kranti Vishal Sharma
3.	Prof B V A Rao Endowment Prize	Industrial Tribology	Kranti Vishal Sharma [Industrial Tribology] Pankaj Kumar -Mechanical Engg. [Joint winners]
4.	Usha Kothandaraman Memorial Prize	Engineering Mechanics	Santhosh S S
5.	Institute Merit Prize	Maintenance Engineering and Management	Shidore Sumeet Vishnu
6.	Institute Merit Prize	Biomedical Engineering	Sanjay Dhawan
7.	Dr K Subba Raju Memorial Prize	Chemical Engineering	S Sailaja Perumalla
8.	Mico-Bosch Prize	Chemical Engineering	Damodar Rahul Ashok
9.	Valli Anantharamakrishnan Merit Prize	Civil Engineering	Danimon K
10.	K Devarajan Memorial Prize	Civil Engineering	Babu Krishna N
11.	L & T Endowment Prize	Construction Technology and Management	Harshitha S Kumar
12.	Institute Merit Prize	Computational Engineering	Sanjay Kumar
13.	CMC Prize	Computer Science & Engg.	Mohit Chakraborty
14.	Prof H N Mahabala Endowment Prize	Computer Science & Engg	Bharath Bhushan K R
15.	Siemens Prize	Electrical Engineering	D Mallikharjuna Reddy
16.	Dr. Ing. Dieter Kind Prize	Electrical Engineering	V Anandkumar
17.	Prof Helmut Neunzert Endowment Prize	Industrial Mathematics & Scientific Computing	Subramanyam Annadata B
18.	Prof B Sengupto Prize	Mechanical Engineering	Shigarkanthi Vinod Mallikarjun
19.	Dr S Vaidyanathan Memorial Prize	Mechanical Engineerin]	Sushant Shivanand Kolar
20.	Giri Brothers Prize	Mechanical Engineering	Jasmine Shah [Dual Degree]
21.	S Anantharamakrishnan Merit Prize	Mechanical Engineering	H Abdul Hameed
22.	Prof Ramamohana Rao Memorial Prize	Mechanical Engineering	Dharmadhikari Nitin Avinash

23. Delphi-TVS Diesel Systems Ltd. Prize	Automotive Engine Tech.	Chinmayananda Khandai
24. Sudharshan Bhatt Memorial Prize	Metallurg. & Mat. Engg	Md Imteyaz Ahmad
25. American Bureau of Shipping Prize	Ocean Engineering	Ripon Paul
26. Institute Merit Prize	Solid State Technology	C L Saravanan

Master of Business Administration - M.B.A.

1. Coka Parthasarathy Prize K V Arunkumar Memorial Prize	M B A	Butun Mohapatra
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Dual Degree - B.Tech. & M.Tech.

1. B Ravichandran Memorial Prize	Chemical Engineering	Ashish Kapoor
2. Institute Merit Prize	Civil Engineering	Piyush Sahni
3. Alumni Association Prize	Computer Science & Engg	Archana S
4. Philips India Prize	Electrical Engineering	Shankar T S
5. Prof G V N Rayudu Memorial Prize	Mechanical Engineering	Sambit Misra
6. S Anantharamakrishnan Memorial Prize	Metallurg. & Materials Engg	Prasanth R
7. Institute Merit Prize	Naval Architecture & Ocean Engineering	Pawan Gupta

Bachelor of Technology - B.Tech.

1. Bharat Ratna M Visvesvaraya Memorial Prize	}	Computer Science & Engg	S Sriram
2. B Ravichandran Memorial Prize			
3. C A Sastry Endowment Prize		Chemical Engineering	Krishnan Anita Kalyanaraman
4. Dr Shankar Dayal Sharma Prize		Electrical Engg.	Siddharth Tata
5. HAL Prize		Aerospace Engineering	Sachin Premasuthan
6. Reliance Heat Transfer Pvt. Ltd. Prize		Chemical Engineering	Vivek Pareek
7. Larsen & Toubro ECC Endowment Prize		Civil Engineering	Anita Rao
8. Siemen's Prize		Electrical Engineering	Krishna Prasanna Jagannathan
9. Banco Foundation Prize		Mechanical Engineering	Hemanth P
10. Sivasailam Merit Prize		Mechanical Engineering	V Rishikesh
11. Vaidy Krishnan Memorial Prize		Mechanical Engineering	Apurva Gollamudi
12. Bhagyalakshmi and Krishna Ayengar Award		Mechanical Engineering	Apurva Gollamudi N Arun V Chandrasekaran [Joint winners]
13. Dr Dhandapani Memorial Prize		Metallurgical & Materials Engg	R Arvind Subramaniam
14. American Bureau of Shipping Prize		Naval Architecture and Ocean Engineering	J Srinivasan

3.5.2 Institute Day Prizes:

On the basis of performance during the academic year 2004-05, the following students were awarded Merit Prizes on the Institute day held on 15.04.2004:

Sl.No.	Donor	Name of student
I. Institute Merit Prizes:		
B.Tech / Dual Degreee (1st & 2nd Semesters) (with a Silver Medal)		
1.	First Prize	EE02B071 B Sundeep
2.	Second Prize	CS02B017 V Muralidaran
B.Tech / Dual Degree (3rd & 4th Semesters) (with a Silver Medal)		
3.	Aerospace Engineering	AE01B024 Sriram D
4.	Chemical Engineeing	CH01B046 K Vinod Cartic
5.	Civil Engineering	CE01B055 Nirmal Jayaram

6.	Electrical Engineering	EE01B116	Abhishek Narayan Nadamani
7.	Mechanical Engineering	ME01B005	Anand Shrivastava
8.	Metallurgical & Materials Engineering	MT01B025	Shankar S
9.	Naval Architecture & Ocean Engg	NA01B003	Arun Srinivas S

**B.Tech/Dual Degree (5th & 6th Semesters)
(with a Silver Medal)**

10.	Aerospace Engineering	AE00015	Sachin Premasuthan
11.	Chemical Engineering	CH00076	Ravikanth A V N
12.	Civil Engineering	CE00083	Anita Rao
13.	Computer Science & Engineering	CS00163	S Sriram
14.	Naval Architecture & Ocean Engg.	NA00428	Bhagatwala Ankit Vijay
15.	Mechanical Engg.	ME00299	Hemanth P

**Dual Degree (7th & 8th Semesters)
(with a Silver Medal)**

16.	Aerospace Engineering	AE99037	Sridharan D
17.	Civil Engineering	CE99178	Piyush Sahni
18.	Chemical Engineering	CH99074	Manthena Vamsi Krishna
19.	Computer Science & Engineering	CS99212	Archana S
20.	Communication Engineering	EE99319	Parimal Parag
21.	Microelectronics & VLSI Design	EE99316	Ashish Lachhwani
22.	Intelligent Manufacturing	ME99444	Sambit Misra
23.	Product Design	ME99450	Jagannathan R
24.	Energy Technology	ME99434	Kalyan Raja Rokkalam
25.	Metallurgical & Materials Engineering	MT99496	Sandeep Verma
26.	Naval Architecture & Ocean Engg.	NA99527	Pawan Gupta

M.Sc (1st & 2nd Semesters)

27.	Chemistry	CY02C016	Samanwita Pai
28.	Mathematics	MA02C019	Sivaguru R

M.B.A (1st & 2nd Semesters)

29.	Management Studies	HS02A010	Butun Mohapatra
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II. Donors Prizes:

**B.Tech (3rd & 4th Semesters)
(with a Silver Medal)**

30.	Rajalakshmi Krishnamurthy English Prize	CH01B046	K Vinod Cartic
31.	Sri Biswajit Sain Endowment Prize (a silver medal and cash award of Rs.2000/-)	CS01B006	Arvind Thiagarajan

**B.Tech 5th & 6th Semesters)
(with a Silver Medal)**

32.	Sri Ramasarma V Kolluri Memorial Prize	EE00337	S Sriram
33.	Sri Ratna Rao Award	MT00377	R Arvind Subramaniam

B.Tech (First Four Semesters)

34.	Sri Raghavendra Memorial Prize	ME01B109	Maalika Priyadharsini M
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B.Tech (First Six Semesters)

35.	Dr. S. Chandrasekharan Memorial Prize (Cash prize of Rs.1000/- with a Silver Medal)	ME00299	Hemanth P
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B.Tech /Dual Degree (3rd to 8th Semesters)

36.	K Srinivasan and Indira Srinivasan Prize (Cas Prize of Rs. 5000/- with a Certificate and Silver Medal)	EE98229 NA99522	Karthik Raghupathy Vivek Jaiswal
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B.Tech/ Dual Degree (Best Project)

37.	Class NK-100 Award - First Prize (Cash Prize of Rs. 2000/- with a Silver Medal)	NA99504	Gautam Chandrasekharan
38.	Class NK-100 Award - Second Prize (Cash Prize of Rs. 2000/- with a Silver Medal)	NA98482 NA98483	Patrick Joy Rohit Trivedi (Joint Winners)
39.	Bhagyalakshmi & Krishna Ayengar Award (Cah Prize of RS. 5000/- for the faculty guided the project work in respect of Sri Siddharth Shastri, and Sri Y Vamsee Krishna)	Mech. Engg.	Dr. S K Das Prof. T Sundararajan DR. A Ramesh
40.	Prof C.S. Krishnamoorthy Endowment Prize (with a Certificate and a Silver medal)	CE99128	Karthik Vasudevan
41.	48 th Pharmaceutical Congress Prize (with a Silver Medal)	CH99095	Sreeja Gopal

**Dual Degree (7th & 8th Semesters)
(with a Silver Medal)**

42.	Prof V Radhakrishnan Endowment Award	ME98415	Veeraraghavan Sundararaghavan
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**Dual Degree (for cultural & co-curricular activities)
(with a Silver Medal)**

43.	Sri K M Ramamurthi Prize (Cash Award of Rs. 5000/-)	CE99172	Biju V M
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M.Sc (1st & 2nd Semesters)

44.	Chilukuri Ramasastry Memorial Prize (Cash prize of Rs.1500/-)	PH02C001	Anosh Joseph
45.	R Padmanbahan Memorial Prize (Cash prize of Rs.1000/-)	CY02C014	Ramajeyam S

M.Tech (1st & 2nd Semesters)

46.	Prof N Vekatarayulu Memorial Prize (Cash prize of Rs.1000/- with a Silver Medal)	ME02M021	Shigarkanthi Vinod Mallikarjun
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M.Tech (Best Project)

47.	Prof. V Ramamurti Award	AM01M018	Jasvir Singh
48.	Prof C.S. Krishnamoorthy Endowment Prize (with a Certificate and a Silver medal)	CE01M072	Vinit Anand
49.	Lucas – TVS Limited Prize (Cash Award of RS. 1000/- with a silver medal)	ME01M115	Jayakumar P

M.S (Best Thesis)

50.	Sri Sreeharsha Memorial Prize	CE00M11	Genu Unnithan U K
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Ph.D (Best Paper)

51.	CFD Award (Cash Awrard of Rs. 5000/-)	AE97P01	Prabhu Ramachadran
52.	A certificate to the following faculty:		
53.	CFD Award	Aerospace Engg	Sri S C Rajan
54.	CFD Award	Aerospace Engg	Dr. M Ramakrishna

**Notional Prize - Certificate and cash award of Rs.1000/- awarded to the following student
for having secured high position in the merit list of JEE 2003**

Simhadri Harsha Vardhan
B Dharrini
Aravindan V
S S Naidu Kandipalli
Sriram Kalyanaraman
Aravind Rangavajjula
K Ravi Shankar
Aswin V
G Srinivasan
Siddesh Karra
Anurag Verma
Adithya T M
Srinivasa Rangan
Sankar Adida
Donkada Sweatha

Sumesh Dutt Sharma
Deepak K S
Uday Kiran Reddy T
Hari Siddarth
B T Swapna
Vishnu Vardhan Reddy K
Challa Swati Reddy
Siva Kumar Sastry H
Ashish Gandhe
Ramkrishan Kumar
Abhijeet Mohanty
Raghunandan H K
Nizar M
Karkala Vinay
Srikanth Samudrala

4.1 DEPARTMENT OF AEROSPACE ENGINEERING

4.1.1 Introduction:

The Department of Aerospace Engineering was established in 1969 and has been offering B.Tech., M.Tech., M.S. and Ph.D. programmes. The areas of teaching and research of the Department are Aerodynamics, Propulsion and Structures.

4.1.2 Academic Programmes:

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	23	23	26	25	0	97
Dual Degree	9	6	7	9	5	36
M.Tech.	16	12	0	0	0	28
M.S.	9	3	1	2	3	18
Ph.D.	8	1	2	1	2	14
Total	65	45	36	37	10	193

Names of student/scholar attended Conference / Seminar and Symposia abroad/India:

Sl. No.	Name of the Student/Scholar	Programme	Name of the Conf./ Seminar/ Symposia	Date & Venue
Conference:				
1.	Prabhu Ramachandran Ph.D. Scholar	Python for CFD – A case study	Python for Scientific Computing Conference, SciPy'04	Sept. 2-3, 2004 California Institute of Tech., Pasadena, CA
1	O.J. Shreenivasan Ph.D. Scholar	Training activities	Investigation of the onset of Acoustic Instabilities in Turbulent Combustion	Technical Universitat Darmstadt during 30 th October to 28 th November 2004
2	C. Balaji Ph.D. Scholar	Training activities	Analysis of chamber acoustics in the engine combustion chamber	Technische Universitat Darmstadt during 14 th February to 11 th March 2005

4.1.3 Faculty and their Activities:

Faculty:

Name and Qualification	Major Area of Specialization
Professors:	
Gokhale S. S., Ph.D. (Univ. of Illinois, USA) Director, NIT Kozhikode	Aircraft and missile propulsion, computational methods, simulation and optimization, computer aided instructions
Job Kurian, Ph.D., (IIT Madras) Santhakumar S., Ph.D., (IIT Madras)	Gas Dynamics, Combustion, Shock tube flows and measurements Aerodynamics, flight mechanics, instrumentation
Subramanian G., Ph.D., (IIT Madras) Tulapurkara E.G., Ph.D., (IIT Madras)	Structural analysis, finite element and finite difference techniques, experimental moiré interferometry Aerodynamics, Fluid mechanics, turbulent flows, CFD
Ramakrishna M., Ph.D., (Univ. of Texas at Arlington)	Fluid Mechanics, numerical methods, computer solutions
Sriram P., Ph.D. (Georgia Inst. Of Technology)	Structural mechanics, fatigue & fracture, Parallel computing

Associate Professors:

Bhaskar K., Ph.D., (IIT Madras)
 Sujith R.I., Ph.D.,
 (Georgia Inst. of Technology)
 Chakravarthy., S.R. Ph.D.,
 (Georgia Inst. of Technology)

Structural mechanics, Plants & Shells, composite structures
 Acoustics and combustion Instability Optical Flow Diagnostics

Propulsion, Combustion & Fluid Mechanics

Assistant Professors:

Rajan S.C, M.Tech. (IIT Madras)
 R. Velmurugan., Ph.D. ,
 (IIT Delhi)
 H.S.N. Murthy, Ph.D
 Purdue University, USA
 K.V. Nagendra Gopal, Ph.D.
 IISc Bangalore

Aerodynamics, Theory and Computation of Vortex Dominated Flows
 Composite Structures Analysis and Design, Impact Mechanics, 3-D
 Composites
 Fatigue and Fracture, Non-destructive evaluation, Tribology, Advanced
 Materials, Elasticity
 Structural Mechanics, Composites and Advanced
 Materials, Fatigue and Fracture, Computational
 Mechanics
 Computational Fluid Dynamics, High Speed flows,
 Simulation and Modeling of Compressible

Short-term Courses/Workshops/Seminar/Symposia/Conferences organised by the faculty members:

S. No.	Co-ordinators	Title	Period
Short term Course:			
1.	E.G. Tulapurkara/ Y.V.S.S. Sanyasiraju	Short Term Course on "Comprehensive course in CFD"	IIT Madras 7 th June 2004 to 19 th June 2004

Short-Term Courses /Workshops /Seminars /Symposia /Conferences/ Training attended by the Faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Period
Workshop:			
1.	Prof. Job Kurian	International Workshop on contemporary research in Hypersonic. Talk entitled 'High Enthalpy activities using the Combustion driven shock tunnel'	IISc Bangalore 27-28 January 2005
Symposia:			
	S. R. Chakravarthy	Intl. Symposium on recent advances in Aero Acoustics & Active Flow Combustion Control at Goa conducted by IISc Bangalore and presented a paper entitled 'Unsteady Combustion Response of Burke-Schumann Diffusion Flame'	4-6 Jan 05
2.	R.I. Sujith	Intl. Symposium on recent advances in Aero Acoustics & Active Flow Combustion Control at Goa conducted by IISc Bangalore and presented a paper entitled 'Shock formation in Non uniform Gas Dynamic Flow'	4-6 Jan 05
Conference :			
1.	R. Velmurugan	Intl. Conference on Emerging Trends in Polymers and Textiles and presented a paper entitled 'Structure property correlation of epoxy/clay Nano composites	IIT Delhi, 7-8 Jan 2005
2.	E.G. Tulapurkara	31 st Fluid Mechanics Conference – talk on '100 years of boundary layers – some aspects'	Kolkata, Dec 16-18, 2004
3.	E.G. Tulapurkara	11 th International Conference on Inter disciplinary Mathematics and Statistics and delivered a talk entitled 'Developments in zero and one equation models a tribute to Prandtl'	27-29 Dec. 2004 Lucknow

Training:			
1.	E.G. Tulapurkara	Training on CFX Software .About 50 scholars from various departments participated in the training programme. Jointly organized by Computer Centre and CFD centre.	28 th Feb to 4 th March 2005 IIT Madras
Short term Course:			
1.	S.R. Chakravarthy / .R.I. Sujith	Short term course on 'Non intrusive laser based measurement techniques	DRDL Hyderabad

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of visit
1.	Prof. E.G. Tulapurkara	Yokohama, Japan	29.08.04 to 03.09.04	Chaired a session in the 24 th Congress of International Council of Aeronautical Sciences
2.	Dr. S.R. Chakravathy and Dr. R.I. Sujith	Peradeniya, Sri Lanka	17.05.04 to 21.05.04	attended and presented a paper entitled "A study of Swirler Flow field characteristic in a sudden expansion square chamber using PIV" at 10 th Asian Congress of Fluid Mechanics

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Award for	Date
1.	E.G. Tulapurkara	Excellence in Aerospace Education Award 2004	Aeronautical Society of India	Contributions to Aerospace Education and CFD	December 2004

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Level	Year
ISTE/CSI and others:			
1.	E.G. Tulapurkara	President, National Society of Fluid Mechanics and Fluid Power	2004
2.	S. Santhakumar	Member, Institute of Energy, Anna University	2004
3.	S. Santhakumar	Panel Member, 'EMCB' panel of ARMREB	2004
4.	S. Santhakumar	Board Member – NIT Warangal and PEC, Pondy	2004

4.1.4 Design and Development Activities:

Brief and specific details of Process/Instruments/Equipment/Software Designed and developed:

Software for the Aerodynamic Analysis for Air breathing Missiles

Finite Element Analysis software has been developed for the analysis of Composite Shells subjected to thermal and mechanical Loads. The software has the provision to estimate the interlaminar stress for the above loading conditions.

4.1.5 Research and Consultancy :

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-codinators
1	Numerical and Experimental Investigation of Low density jet - Shear Force and Heat Transfer Measurements	2004 - 2006	ARDB (Aerodyn.)	07.05	Prof. Job Kurian
2	Enhancement of Mass Transfer Rates in Chemical Engineering Processes using Acoustic Oscillations	April 2003- March 2005	MHRD	14.00	Dr. R.I. Sujith/ Dr. S. R. Chakravarthy
3	Investigation of Swirling Flow in an Acoustic Field	2004 - 2006	DRDO-ERIPR	27.76	Dr. R.I. Sujith
4	A numerical study of multiple jets with particulate suspension	2005 - 2007	CSIR	04.83	Prof. E.G. Tulapurkara
5	Low and Medium velocity impact studies on composite panels	2003-2006	ARMREB, New Delhi	14.80	Dr. R. Velmurugan
6	Vibration control of Nanocomposites, MHRD	2004-2006	MHRD	17.00	Dr. R. Velmurugan
7	Investigation of Titanium lined composite pressure bottles	2004-2006	RESPOND, Trivandrum	13.00	Dr. R. Velmurugan
8	Investigation of the Onset of Acoustic Instability in Turbulent Combustion System	April 2003- Sept. 2006	MHRD	32.38	Dr. S. R. Chakravarthy (PI)
9	Characterization of Nano-Aluminium Powder for Combustion in Solid Propellants	Jan 2004- Jan 2006	DRDO	09.48	S.R. Chakravarthy R. Sarathi C. Venkateseshiah
10	Facilities for Advanced Optical Diagnostics and Digital Image Processing of Fluid Flow and Combustion	Mar 2004- Mar 2006	MHRD	17.00	S.R. Chakravarthy
11	Low and Medium Velocity Impact & Projectiles on Laminated Plates ARMREB	2003-2006	ARMREB	14.83	Dr. R. Velmurugan

Industrial Consultancy:

S. No.	Name of the Faculty	Title	Industry	Amount
1	Chakravarthy S.R.	Evaluation of Kaveri Atomizer for Particle Size and Velocity	GTRE	4.10
2	Tulapurkara, E. G.	Numerical modeling of flow in a cavity	Neilsoft Ltd.	2.75
3.	R. Velmurugan	Analysis of Sample pots made of Sawdust and Stach	Progreen Products Pvt. Ltd.	0.6 lakhs
4	Velmurugan, R.	Mechanical and Chemical analysis of steel strip seals expansions	VEM Renong Engrs., Vizag.	0.16
5	Velmurugan, R.	Mechanical study of Friction pad assembly	TVS Chennai	0.16
6	Velmurugan, R	Mechanical Evaluation of clear casting plaques.	Polychem Resin, Dubai	0.69
7	Velmurugan, R	Testing & Evaluation of damaged wind mill blades	Bajaj Allianz	0.21

RBIC:

Sl. No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	S. Santhakumar BVSSS Prasad Sri. S.C. Rajan	Aerodynamic Analysis and Design of Grid fins	DRDL Hyderabad	14.76 lakhs
2.	Chakravarthy S.R.	Fuel Injector Characterization Studies	VSSC	6.03
3.	Job Kurian	Heat Transfer and Pressure Measurements on the model of Hypersonic Test Vehicle	DRDL	9.00
4.	Sujith, R. I.	Evaluation of Kaveri Atomiser for Particle Size and Velocity	GTRE Bangalore	4.83
5.	Tulapurkara, E. G.	Modelling of flow through annular diffuser and volute exhaust	GTRE Bangalore	4.96

Research Publications:

Total No. of papers published in Refereed National Journals	:	02
Total No. of papers published in Refereed International Journals	:	24
Total No. of papers presented in National Conference	:	11
Total No. of papers presented in International Conferences	:	28

In Refereed National Journals:

1. Karthik, B., Venkateswarlu, N., Kowsik, B. V. R., Chakravarthy, S. R., Sujith, R. I., and Tulapurkara, E. G., "Vortex-Resonant Sound Interaction in a Duct Containing an Orifice," *Journal of the Aeronautical Society of India*, 56(4), 2004, pp. 217-225.
2. Arun, M., Tulapurkara, E.G. and Sundararajan, T., "Computation of flow through an annular diffuser and volute exhaust," *Defence Science Journal*, scheduled to appear in April 2005 issue.

In Refereed International Journals

1. Ravishankar, T., Tulapurkara, E.G. and Balabaskaran, V., "An experimental investigation of flow in an elbow type draft tube with swirl" to appear in the quarter of 2005 in *International Journal Fluid Mechanics Research*.
2. Usha, R., Senthikumar, S. and Tulapurkara, E.G., "Stability characteristics of suspension flow through wavy-walled channels," *Acta Mechanica* published online Feb 11, 2005, Had copy to appear soon
3. Prabhu Ramachandran, S. C. Rajan and S. Santhakumar, "Engineering Estimates of Normal Loads on Slender Airbreathing Bodies", *Journal of Spacecraft and Rockets*, 41(6), 2004, pp 942-947.
4. T. Setoguchi, M. Takao, Y. Kinoue, K. Kaneko, S. Santhakumar, M. Inoue, "Study on an Impulse Turbine for Wave Energy Conversion", *International Journal of Offshore and Polar Engineering*, 10(2), May 2004, pp.137-140.
5. V. Vasudevan and M. Ramakrishna, "Computation of the average and harmonic noise power-spectral density in switched-capacitor circuits," *IEEE Transactions on Circuits and Systems I-Regular Papers*, 51(11), Nov. 2004, pp. 2165 – 2174
6. K. Kanaka Durga and M. Ramakrishna, "A new multigrid algorithm for non-linear equations in conjunction with time-marching procedures", *International Journal of Non-Linear Mechanics*, 39(2), 2004, pp 233-245.
7. K. Bhaskar & B. Kaushik, "Simple and exact series solutions for flexure of orthotropic rectangular plates with any combination of clamped and simply supported edges", *Composite Structures*, 63(1), 2004, 63-68.
8. Sarathi, R., Venkateshaiah, C., and Chakravarthy, S. R., "Studies on Generation and Characterization of Nano-Alumina Powder Using Wire Explosion Technique," *International Journal of Nanoscience*, 3(6), 2004, 1-9.
9. Chandra, B. U. and Chakravarthy, S. R., "Experimental Investigation of Cavity-Induced Acoustic Oscillations in Confined Supersonic Flow," accepted for publication in *ASME Journal of Fluids Engineering*, 2004.
10. Chakravarthy, S. R., Price, E. W., Sigman, R. K., and Freeman, J. M., "Combustion of Propellants with Ammonium Dinitramide," *Propellants, Explosives, Pyrotechnics*, 29(4), 2004, pp. 220-230.
11. Manoharan, S., Chandra, B. U., Chakravarthy, S. R., Ramakrishnan, S. R., and Subramanyam, J. D. A., "Experimental Studies on Supersonic Cold Flow Mixing with Ramp Mixers," accepted for publication in *Journal of Aerospace Engineering*, 2005.

12. RAJ and R. I. SUJITH, "Closed Form Solutions for the Free Vibration of Inhomogeneous Rods", *Journal of Sound and Vibration*, 283(3-5), 2005, pp 1015-1030.
13. R. I. SUJITH, "An Experimental Investigation of Interaction of Sprays with Acoustic Fields using PIV", to appear shortly in *Experiments in Fluids*.
14. K. BALASUBRAMANIAM and R. I. SUJITH, "Relativistic Shock Formation in the Presence of Radial Entropy Gradients", Accepted for publication in *Physics of Fluids*.
15. R. I. SUJITH, "Magnetohydrodynamic Shock Wave Formation: Effect of Area and Density Variation", Accepted for publication in *Physics of Plasmas*.
16. R. Velmurugan, N K Gupta and Solai Murugan, "Axial Compression of structured composite shells", *Int. J. of Impact Engg.* (In Print).
17. V. Manikandan, R. Velumurugan, S G Ponnambalam and Sabu Thomas, "Mechanical properties of Short and uni-directional palmyra Fiber Reinforced composites", *Int. J. of Plastic Technology*, 8, 2004, 205-216.
18. R. Sarathy, S. Chandrasekaran, V Sabari Giri, C Venkatasashesaiya and R. Velmurugan, "Analysis of surface degradation of high density polyethylene (HDPE) insulation material due to tracking", *Bulletin of Material Science*, 3, 2004, 1-12.
19. R. Sarathy, Supriya Das, C Venkatasashesaiya and R. Velmurugan, "Analysis of failure of XLDE polyethylene cables due to electrical treeing", *J. of Applied Polymer Science*, 93, 2004, 2169-2178.
20. R. Velmurugan and T P Mohan, "Room temperature processing of Epoxy -clay Nano Composites", *Journal of Material Sciences*, 39, 2004, 1-7.
21. Murthy, H., Harish, G. and Farris, T. N., "Efficient Modeling of Fretting of Blade / Disk Contacts Including Load History Effects," *ASME Journal of Tribology*, 126, 2004, pp 56-64.
22. Rajeev, P. T., Murthy, H. and Farris, T. N., "Load History Effects on Fretting Contacts of Isotropic Materials," *ASME Journal of Engineering for Gas Turbines and Power*, 126, 2004, pp. 385-390.
23. Murthy, H., Garcia, D. B., Matlik, J. F. and Farris, T. N., "Fretting Fatigue of Single Crystal/Polycrystalline Nickel Subjected to Blade/Disk Contact", *Acta Astronautica*, 57 (1), 2005.
24. Sinha, K., Mahesh, K., and Candler, G.V., "Modeling the Effect of Shock Unsteadiness in Shock-wave / Turbulent Boundary Layer Interactions", *AIAA Journal*, 43(3), 2005

In Proceedings of National Conference

1. Balaji, C., Sundararajan, T. and Chakravarthy, S. R., "Development of Solution Algorithm for Free Surface Flows", *31st National Conference on Fluid Mechanics and Fluid Power*, Kolkatta, India, Dec. 2004.
2. Prasath, M., Deshpande, A. P., and Chakravarthy, S. R., "Drop Spreading of Fluids and Their Dispersions on Planar and Patterned Surfaces," *31st National Conference on Fluid Mechanics and Fluid Power*, Kolkata, India, Dec. 2004
3. Desikan, S. L. N. and Kurian, J., "Study of Strut Based parallel Injection into Supersonic Flow," *Proceedings of National Conf. on Airbreathing Engines*, IIT Kanpur, 2004.
4. Mohammed Ali, M. C. and Kurian, J., "Study of Cavity Flow Field for Mixing Enhancement in Supersonic Flow," *Proceedings of National Conf. on Airbreathing Engines*, IIT Kanpur, 2004.
5. R. KUMAR, O. J. SHREENIVASAN, T. SAIKUMAR, R. I. SUJITH, and S. R. CHAKRAVARTHY, "Effect of Strut-Based Cavities on Supersonic Flow Mixing," *VII National Conference on Air-Breathing Engines and Aerospace Propulsion*, Kanpur, India, Nov. 2004.
6. KUMAR, R., SAIKUMAR, T., SHREENIVASAN, O. J., SUJITH, R. I., and CHAKRAVARTHY, S. R., "Supersonic Cold Flow Mixing Studies on Strut-Based Ramp Fuel Injectors," *VII National Conference on Air-Breathing Engines and Aerospace Propulsion*, Kanpur, India, Nov. 2004.
7. R. Velmurugan and Karthikeyan. K., "Dynamic characterization of polyester clay nanocomposites", *National Symposium of Nanocomposites-2003 (NSNC-2003)* organized by Institute of Advance technology & Environmental Studies, Bhubaneshwar, February 19-20, Page No.2-17, 2004.
8. R. Velmurugan and Karthikeyan K., "Studies on mechanical properties of polyester claynanocomposites", *National Symposium of Nanocomposites-2004(Nanosphere - 2004)* organized by S.V.C.E, Chennai, June 11-12, Page No.2-9, 2004.

9. R. Velmurugan and Karthikeyan K, "Nanoclay reinforcing effect on damping of polyester clay glass fiber hybrid laminated composites", *Third conference on Vibration & Engineering Technology Machinery (VETOMAC)*, IITK, December 6-9, 2004.
10. T. P. Mohan and R. Velmurugan, "Characterization Studies of Silicate Clay Nanoparticles and its Reinforcement Effect in Epoxy Polymer", *Proceeding of National Conference on Nano Science and Technology – Nanosphere 2004*, pp 18-26 of session.III. June-11-12, S.V.C.E, Chennai.
11. T. P. Mohan, M. Ramesh Kumar and R. Velmurugan, "Thermal Stability and Damping Characters of High Performance Epoxy filled with Nanolayered Silicate Clay Nanocomposites", *ISRMSE*, IIT Madras, December, 20-22, 2004.

In Proceedings of International Conference

1. Prasun Jana and K.Bhaskar, "Buckling of rectangular plates under non-uniform compression using rigorous plane stress solutions", *Proc. 3rd International Conf. on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM)*, IIT, Kharagpur, 28-30 Dec.2004, pp.364-366.
2. P. REDDY, N. JAYAPRAKASH, S. R. CHAKVARAVARTHY and R. I. SUJITH, "A Study of Swirler Flow Field Characteristics in a Sudden Expansion Square Chamber Using PIV," Paper No. D04, *X Asian Congress of Fluid Mechanics*, Peradeniya, Sri Lanka, May 2004.
3. P. REDDY, S. R. CHAKVARAVARTHY and R. I. SUJITH, "Swirler Flow Field Characteristics in a Sudden Expansion Combustor Geometry Using PIV", *AIAA-2005-0217, 43rd Aerospace Sciences Meeting and Exhibit*, Reno, Nevada, USA, January 10-13, 2005.
4. Srinivas, V. and Chakravarthy, S. R., "Computer Model of Aluminium Agglomeration in Combustion of Composite Solid Propellants," *AIAA Paper No. 2005-0743, 43rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, USA, Jan. 2005.
5. Karthick, K., Jaleel, A., Tyagi, M., and Chakravarthy, S. R., "Oscillatory Response of Leading Edge Flames in Heterogeneous Propellant Combustion", *AIAA Paper No. 2005-0744, 43rd Aerospace Sciences Meeting and Exhibit*, Reno, NV, USA, Jan. 2005.
6. Chakravarthy, S. R., Jamadar, N. M., Tyagi, M., "Oscillatory Response of a Burke-Schumann Diffusion Flame," *Invited Paper at the International Symposium on Recent Advances in Aeroacoustics and Flow-Combustion Control*, Goa, Jan. 2005.
7. Jose Kakkassery and Kurian, J., *Proceeding of the 24th International RGD Symposium*, Bari, Italy July 2004.
8. Subash, S. and Kurian, J., "Studies on Injection Strategies for Supersonic Combustion," *7th Asia Pacific Symposium on Combustion and Energy Utilisation*, HongKong December 2004.
9. Mohammed Ali, M. C. and Job Kurian, "Wall Mounted Cavities for Mixing and Flame Holding in Supersonic Flows," Accepted for presentation in the *XVII International Symposium on Airbreathing Engines*, September 2005, Munich, Germany.
10. Desikan, S. L. N and Job Kurian, "Comparitive Study of Injection Schemes for Supersonic Core Flow," Accepted for presentation in the *XVII International Symposium on Airbreathing Engines*, September 2005, Munich, Germany.
11. Desikan; S. L. N and Job Kurian, "Mixing Studies in Supersonic Flow Employing Strut Based Hypermixers," Accepted for presentation in the *41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, July 2005, Tuscon, Arizona.
12. Venkateswaran, N and Job Kurian, "Strut based Injection in to Supersonic Streams," Accepted for presentation in the *41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, July 2005, Tuscon, Arizona.
13. Aravind V. and Job Kurian, "Mixing Enhancement by Strut based Injection in Supersonic Flow," Accepted for presentation at the *25th International Symp.on Shock Waves*, July 2005 Bangalore.
14. M. Diwakaran, Sarith P. Sathian and Job Kurian, "Base Heating of sphere cone flare model in Hypersonic Flows," Accepted for presentation at the *25th International Symp. on Shock Waves*, July 2005 Bangalore.
15. V. AGA & SUJITH, "Investigation of Particle Dispersion in an Double Frequency Forced Shear Layer", *AIAA-2004-2648, 34th AIAA Fluid Dynamics Conference and Exhibit*, Portland, Oregon, June 28-1, 2004.
16. V. AGA & SUJITH, "Particle Dispersion in a Double Frequency Forced Shear Layer", *X Asian Congress of Fluid Mechanics*, Peradeniya, Sri Lanka, May 2004.
17. Panduranga Reddy, A., Jayaprakash, N., Sujith, R. I., and Chakravarthy, S. R., "A Study of Swirler Flow Field Characteristics in a Sudden Expansion Square Chamber Using PIV," Paper No. D04, *X Asian Congress of Fluid Mechanics*, Peradeniya, Sri Lanka, May 2004.

18. G. ANAVARADAM, O. J. SHREENIVASAN, R. I. SUJITH, S. R. CHAKRAVARTHY and S. PANNEERSELVAM, "Experimental Investigation of Transverse Liquid Injection in Confined Supersonic Flows", AIAA-2004-2847 10th AIAA/CEAS Aeroacoustics Conference, Manchester, United Kingdom, May 10-12, 2004.
19. K. K. DURGA, M. TYAGI and R. I. SUJITH, "Nonlinear Standing Waves in Horns", AIAA-2004-2944, 10th AIAA/CEAS Aeroacoustics Conference, Manchester, United Kingdom, May 10-12, 2004.
20. G. ANAVARADAM, O. J. SHREENIVASAN, R. I. SUJITH, S. R. CHAKRAVARTHY and S. PANNEERSELVAM "Investigation of Transverse Liquid Injection in Confined Supersonic Flow Over Cavities", AIAA-2004-4075, AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, Florida, USA, July 11-14, 2004.
21. O. J. SHREENIVASAN, RAKESH KUMAR, T. SAIKUMAR, R.I. SUJITH and S. R. Chakravarthy, "An Experimental Study on Fuel Air Mixing in a Confined Supersonic Flow Past Strut Based Cavity", AIAA-2004-4194, AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Fort Lauderdale, Florida, USA, July 11-14, 2004.
- A. PANDURANGA REDDY, R. I. SUJITH and S. R. CHAKRAVARTHY, "Swirler Flow Field Characteristics in a Sudden Expansion Combustor Using PIV," AIAA Paper No. 2005-0217, 43rd Aerospace Sciences Meeting and Exhibit, Reno, NV, USA, Jan 2005.
22. H. SANTOSH and R. I. SUJITH, "Prediction of Heat Release Transfer Function of a Premixed Flame", AIAA-2005-0936, 43rd Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, January 10-13, 2005.
23. S. VASU, M. TYAGI and R. I. SUJITH, "Nonlinear Wave Steepening and Shock Formation in Fanno Flows", AIAA-2005-0520, 43rd Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, January 10-13, 2005.
24. R. I. SUJITH and M. TYAGI, "Shock Formation in Nonuniform Gasdynamic Flows", invited paper, International Symposium on Recent Advances in Aeroacoustics and Active Flow-Combustion Control, Goa, India, January 4-6, 2005.
25. R. Velmurugan and Karthikeyan. K, "Specific damping capacity improvements of polyester clay nanocomposites via high-speed shear mixing", International Conference on Polymers, Macro – 2004.
26. R. Velmurugan and Karthikeyan. K, "Studies on mechanical property improvements of short fiber reinforced polyester composites by nanofiller dispersion via high-speed shear mixing", International Symposium on Advanced Materials, ISAMAP – 2K4, December 6-8, 2004.
27. T. P. Mohan and R. Velmurugan, "Micro and Nanoscale Silicate Clay Particles Reinforcement in Polymer (Epoxy) Matrix: Processing, Characterization and Mechanical Properties", International Conference on Recent Advances in Composite Materials, BHU-Varanasi, December, 17-19, 2004.
28. T. P. Mohan, M. Ramesh Kumar and R. Velmurugan, "Diffusivity Studies of Epoxy Polymer and Epoxy Filled with Nanosilicate Clay Particles in the Acid", Base and Water Medium, International conference on Polymers MACRO-04, Trivandrum, December, 15-17. 2004.

Distinguished Visitors to the Department:

S. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Dr. P. Ramachandran Scientist, RCI DRDO Hyderabad	27.04.05	Industrial Lecture
2.	Dr. T.N. Venkatesh Scientist, Flosolver Unit National Aerospace Laboratories (NAL) Bangalore	19.04.05	Guest Lecture
3.	Dr. S. Sundararajan DRDL Hyderabad	06.04.05	Industrial Lecture
4.	Prof. T.K. Bose Formerly Head (Retd.) Department of Aerospace Engineering IIT Madras	05.04.05	Guest Lecture
5.	Dr. Krishnamurthy DRDL Hyderabad	16.03.05	Industrial Lecture
6.	Mr. Ganesan Scientist CVRDE Avadi Chennai	11.03.05	Industrial Lecture
7.	Dr. Shanmugam Murugappan University of Cincinnati, Ohio USA	04.02.05	Guest Lecture
8.	Dr. Krishnendu Sinha, Univeristy of Cincinnati, USA	01.02.05	Guest Lecture

9.	Prof. Fredrick E.C. Culick CalTech, USA	22.01.05	Guest Lecture
10.	Mr. William Evans, Structures Group, Belle Helicopters, Texas, USA	13.10.04	Guest Lecture
11.	Dr. Suresh Chandra Pradhan IIT Kharagpur	08.10.04	Guest Lecture
12.	Dr. S. Sriram Research Associate Stanford University, USA	24.09.04	Guest Lecture
13.	Prof. Antony Jameson Professor of Engineering Department of Aeronautics & Astronautics Stanford University, USA	21.09.04	Guest Lecture
14.	Dr. Cherian Alex I. C. Department of Aerospace Engg. Engg. Mechanics University of Texas at Austin, USA	08.09.04	Guest Lecture
15.	Mr. Manikandan Ramasamy University of Maryland, USA	12.07.04	Guest Lecture
16.	Dr. R. Ramesh Centre for Hypersonic University of Queensland Australia	24.06.04	Guest Lecture
17.	Dr. Vaidyanathan Sankaran Post Doctoral Fellow Georgia Technological University Georgia	28.04.05	Guest Lecture
18.	Sri. K.A. Balakrishnan Manager (Air Traffic Control) Airport Authority of India (NAD) Southern Region, Chennai	18.04.04	Industrial Lecture
19.	Sri. J. Karunanithi Manager Engineering Projects Jet Airways (India) Ltd., Chennai	16.04.04	Industrial Lecture
20.	Sri. S.K. Saraswati Regional Executive Director Airport Authority of India (AAI) Southern Region, Chennai	12.04.04	Industrial Lecture

4.1.6 Other Activities:

A team consisting of Prof. Ravishankar Sharma, Prof. Tso-Chien and Prof. Dhanjoo N. Ghista, Nanyang Technological University, Singapore visited Aerospace Department laboratories and had interaction with the faculty members on 30th Sept. 2004.

4.2 DEPARTMENT OF APPLIED MECHANICS

4.2.1. Introduction:

The Department of Applied Mechanics was established in 1959, and it offers Ph.D., M.S. and M.Tech programmes. The major areas of teaching and research of the Department are the following:

The research in the Biomedical Engineering Division is concentrated in Bioinstrumentation, Biomechanics and Biomedical Image and Signal Processing. The faculties of this division are carrying out research in collaboration with hospitals and medical research institutes in the areas of Biomechanics of Leprotic hand and foot, Rehabilitation aids, finite element method, Image and Signal processing applications etc. Recent emphasis of the division is to develop medical diagnosis modalities in the areas of Macro-Micro-Hemodynamics, Laser and Artificial Neural Networks based instrumentation.

The faculty in the Solid Mechanics Division are doing research in Stress analysis of plates and shells by finite element and boundary element techniques, Elasto-plastic analysis, Fracture mechanics, Fatigue, Reliability, Metal matrix composites, High temperature design, Experimental Mechanics, Digital photoelasticity, Computer assisted experimentation, Natural Fiber composites, granular flow, continuum Mechanics, Smart Materials and structures.

The Fluid Mechanics Division is doing research in Industrial Aerodynamics, Automobile Aerodynamics, Helicopter Aerodynamics, Aerodynamics of Wind turbines, and Wind energy problems. Wind effects on buildings structures, and bridges; flow induced vibration, computational Fluid Dynamics, and Atmospheric boundary layers, Internal flow problems and Flow through conical and curved diffusers, turbulent shear flows, wall jets, turbulence modeling.

4.2.2. Academic Programmes:

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
M.Tech.	22	33	-	-	-	55
M.S.	7	10	4	1	-	22
Ph.D.	6	5	6	7	3	27
Total	35	48	10	8	3	104

Names of Student/Scholar who attended Conference/ Workshops /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
Conference:				
1.	V. Sivakumar	Ph.D	International Congress on Computational Mechanics & Simulation	9-12 Dec. 2004 IIT Kanpur
2.	Mohummad Gulab Shaikh	Ph.D	14 th International Conference on Computational Mechanics of Materials	23-25 September 2004, Goa, India
3.	Mohummad Gulab Shaikh	Ph.D	Indo Japan Conference on Damage Tolerant Design and Materials	Dec. 16-18, 2004 IIT Madras
4.	K. Jayavenkateswaran	Ph.D	National Conference on Biomechanics 2004 paper titled "Biomechanical analysis of stenting : A review"	19-21 Nov. 2004 IIT Delhi
5.	G. Baskaran	Ph. D	Review of progress in quantitative non-destructive evaluation, Colorado School of Mines, Golden, Colorado, USA	25-30 July, 2004
6.	G. Baskaran	Ph.D	ASME Pressure vessels and piping conference, Colorado, USA	July 2005
7.	J. Krishnan	Ph.D	National Symp. On Molecular basis of diseases	Jan 8-9, 2005 Dept. of Biotechnology, IIT Madras

8.	J. Krishnan	Ph.D	51 st Annual conference of the IACTS, Cochin	17-20, Feb. 2005 Cochin
9.	P. Vijayalakshmi	Ph.D	IATED, 3 rd Intl. Conf. On Biomedical Engg, BIOMED 2005	16-18 Feb INNSBRUCK, Austria
10.	J. Manivannan	Ph.D	II Australian Health and medical research congress	Nov 21-26, Sydney, Australia
11.	J. Manivannan	Ph.D	IATED, 3 rd Intl. Conf. On Biomedical Engg, BIOMED 2005	16-18 Feb INNSBRUCK, Austria
12.	Ms. Manika Puri	MS	IATED, 3 rd Intl. Conf. On Biomedical Engg, BIOMED 2005	16-18 Feb INNSBRUCK, Austria
Symposia / Workshop:				
1.	Mohammad Gulab Shaikh	Ph.D	Interactive Workshop on Smart Technology and Applications	19-20 March 2004 IISc, Bangalore

4.2.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major area of specialization (only 3 areas)

Professor:

Dr. S. Radhakrishnan
Dr. Palaninathan

Biomechanics, Rehabilitation Engineering
Structural Mechanics, Composite Materials and Structures, Finite Element Method

Dr. J. Raamachandran

Solid Mechanics, Experimental stress analysis, finite and boundary elements, Bio-mechanics and smart structures

Dr. K. Ramesh

Solid Mechanics, Experimental stress analysis, finite and boundary elements, Bio-mechanics and smart structures

Dr. M. Ramasubba Reddy

Bio-signal Processing, Bio-Instrumentation

Dr. J. Lakshminarasimhan

Incompressible aerodynamics, turbulent internal flows, curved flows and wakes, wind effects on structures

Associate Professor:

Dr. C. Lakshmana Rao

Fracture mechanics, micro mechanics of materials, boundary element method.

Dr. M.S. Sivakumar

Solid Mechanics, Plasticity, non-linear FEA thermo-mechanical fatigue, smart materials and structures

Dr.N.R. Panchapakesan

Fluid Mechanics, Turbulance, Stability and Transition

Assistant Professor:

Dr. S. Vengadesan
Dr. G.Santhanakrishnan

Fluid Mechanics, Turbulance modeling, LES, URANS

Emeritus Professor:

Dr. K.M. Patil

Bio-mechanics, Rehabilitation Engineering, Foot pressure measurement.

Short-term Courses/ Workshops/ Seminars/ Symposia /Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	Prof. Megha Singh Prof.S.Radhakrishnan	2 nd International Conf. On Medical Diagnostic Techniques & Procedures	1-3, April 2004.
Workshop:			
1.	Prof.K.Ramesh	One day workshop on Practical glass stress measurement	22.9.2004
Short term Course:			
1.	Dr. Venkateh Balasubramaniam	Primer course in Biomedical Engineering	May 31- June 5, 2004

Short-term Courses/ Workshops/ Seminars/ Symposia/ Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
Meeting:				
1.	Prof.S.Narayanan	Expert Committee Meeting on inclusion of other Institutions in the list of NDF (National Doctoral Fellowship) host Institutions	AICTE, New Delhi	29 April 2004
2.	Prof. M.Ramasubba Reddy	Board of Studies Meeting	Avinashilingam Institute for Homescience & Hr. Edn. For Women, Coimbatore	26 Feb 2005
3.	Prof. M.Ramasubba Reddy	Board of Studies Meeting	Pondicherry	5 March 2005
4.	Dr. M.S. Sivakumar	Board of Research in Nuclear Sciences	BARC, Bombay	3 March 2005
Symposia:				
1.	Dr. S. Vengadesan	7 th AnnualAeSI CFD symposium	AeSI & NAL, Bangalore	11-12 August 2004
Conference:				
1.	Prof. K. Ramesh	Recent Advances in Digital Photoelasticity National Conference on Optics & Opto electronics	NPL, New Delhi.	18 – 21 Jan. 2005
2.	Dr. B.H.L. Gowda	10 th Asian Congress of Fluid Mechanics	Univ. of Peradeniya, Srilanka	May 17-21, 2004
3.	Dr. V.Ramjee	10 th Asian Congress of Fluid Mechanics	Univ. of Peradeniya, Srilanka	May 17-21, 2004
4.	Dr. S. Vengadesan	10 th Asian Congress of Fluid Mechanics	Univ. of Peradeniya, Srilanka	May 17-21, 2004
5.	Dr. M. Ramasubba Reddy	Chaired session on "Biosensors"-4 th International Conference on trends in IM & Automation	CSIR Campus, Chennai	December 16 th , 2004
6.	Dr.Venkatesh Balasubramanian	Presented 2 papers and chaired a session on Ergonomics at Humanizing work and Working Environment 2004 (HWWWE 2004)	NITIE, Bombay	April 22-24, 2004
Short term Course:				
1.	Prof. K. Ramesh	Evaluation of fracture parameters by photo elasticity – Fracture of concrete	Civil Engg, IIT Madras	30 Nov. 2004
2.	Prof. M. Ramasubba Reddy	Biomedical Signal Processing – AICTE Short term course	Sathyabama Deemed Univ.	11 Dec. 2004
3.	Dr. M.S.Sivakumar	Smart Materials and Technology, STP course on construction materials	Civil Engg Dept, IIT Madras	July 2004
4.	Dr.M.S.Sivakumar	Biological materials modeling-short term course on Biomechanics	IIT Madras	June 2004

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue and Date
1.	Prof. K. Ramesh	Recent Advances in Digital Photoelasticity	Univ. of Southampton 3 September 2004
2.	Prof. Ramasubba Reddy	Inaugural address of student association "Instronics"	RMK Engg College, Gumudipoondy 4 August 2004
3.	Prof. Ramasubba Reddy	Guest lecture on Biomedical Instrumentation	Easwari Engg College, Chennai 23 Feb 2005
4.	Prof. Ramasubba Reddy	Biomedical signal processing – lecture	Sathyabama Institute of Science & Technology, Chennai 15 March 2005
5.	Dr.M.S.Sivakumar	Importance of English and communication	Jyothi English School October 2004
6.	Dr.M.S.Sivakumar	Nanomechanics-a peep into the tiny busy world	MGR Engg College, July 2004
7.	Dr.M.S.Sivakumar	Shape memory alloys	Quaed-e-milad Arts College for Women, October 2004
8.	Dr. S. Vengadesan	Turbulence modeling and CFD application: Technical Symposium-SYNERGY 05	NIT-Trichy, 24.02.05
9.	Dr. N.R. Panchapakesan	Colloquium talk on Measurements in a jet, a Chine and a Shear Layer	Jawaharlal Nehru Centre for Advances Scientific Research, Bangalore, 5 th May 2004.
10.	Prof. S.Narayanan	Delivered lectures on Vibration & Noise	Satyam Computers, Hyderabad 7-11 May 2004
11.	Prof. C. Sujatha	Delivered lectures on Vibration & Noise	Satyam Computers, Hyderabad 7-11 May 2004
12.	Dr. P. Chandramouli	Delivered lectures on Vibration & Noise	Satyam Computers, Hyderabad 7-11 May, 2004
13.	Dr. K. Ramesh	Preliminary board of studies for B.E Undergraduate Programme	Mech Engg Dept, S.C.S.V.M.V, Enathur, Kancheepuram, 11 th April, 2005
14.	Prof. S.Radhakrishnan	Recent trends in Analytical Instrumentation	SRM Institute of Science & Technology, Kattankulathur, 1 st April, 2005
15.	Prof. S. Swarnamani	Delivered lectures on Vibration & Noise	Satyam Computers, Hyderabad 7-11 May 2004

Visits abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit
1.	Prof. K. Ramesh	U.K.	2 – 8, Sept. 04	Attend BSSM Conf. And give lecture at Univ. of Southampton
2.	Dr.M.S.Sivakumar	Singapore	15-17, Dec. 2004	International conference on computational methods
3.	Dr. S. Narayanan	UK	May 26-28, 2004	Users Conference in Edinborough on Question mark perception
4.	Dr.S.Vengadesan	Sri Lanka	May 17, 2004 to May 21, 2004	10 th Asian Congress of Fluid Mechanics, organized at University of peradeniya.
5.	Dr.S.Vengadesan	UK	Dec 7, 2004 to 5 th Jan 2005	India-UK Science Network to have one-to-one meeting with host colleague to develop into new area of research

Books/ Monographs authored/co-authored:

Sl. No.	Name of faculty	Title	Publisher	Author/ Co-author
Books:				
1.	Dr.M.S.Sivakumar	Modeling of Engineering Materials – started writing	Anne Publishing House	-

2.	Dr.C.Lakshmana Rao	Modelling of Engineering Materials	Anne Books	Abhijit P.Deshpande Srinivasan M. Sivakumar Raju Sethuraman
3.	Dr. S. Radhakrishnan Dr. Megha Singh	Advances in Medical Diagnostic techniques and procedures	Anamaya	-
4.	Dr.S. Radhakrishnan Dr. Megha Singh Dr. M. Ramasubba Reddy Dr. K M Patil	Medical Diagnostic techniques and procedures	Narosa	-
5.	Dr.S.Radhakrishnan Dr.M.Ramasubba Reddy	Current trends in Biomedical Engineering	Allied	-
6.	Dr.M.S. Sivakumar	Engineering Mechanics	Prentice Hall of India	Dr.C.Lakshmana Rao Dr.J.Lakshminarasimhan Dr.Raju Sethuraman

Fellowships of Academies and Professional Societies:

Sl. No.	Name of faculty	Name of the Academy/ Professional Society	Level	Year of admission
ISTE/CSI & others:				
1.	Dr.S. Vengadesan	AeSI	Life Member	2004

4.2.4 Design and Development Activities:

Brief and specific details of Process/Instruments/Equipment/ Software designed and developed:

Prof. K. Ramesh :

1. P_SCOPE is simulation software that has been developed for familiarizing students with the technique of photoelasticity
2. Press Film is a software for quantitative evaluation of pressure using Pressure Sensitive Films.
3. Femfringes is comprehensive software for post processing two dimensional finite element results to plot fringe contours corresponding to different experimental techniques such as photoelasticity, moiré and holography.
4. PHOTOSIF is a comprehensive software for the evaluation of Stress Intensity Factor (SIF) for cracks in homogeneous materials using photoelastic data.

Prof. R. Palaninathan :

1. Erosion Modeling of HSTDV Nose Tip : This is a special purpose finite element method software to model the ablation of carbon-carbon nose of hypersonic technology demonstrator vehicle (HSTDV) under development in the country. The ablation is due to the oxidation of carbon material under high temperature environment. The surface recession has been modeled.

Dr.M.S.Sivakumar:

1. Smart Materials and structures lab - basic testing equipment and some preliminary facilities for fabricating smart materials based devices

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value (Rs. In lacs)
1.	High speed particle image velocimetry system Hot-wire anemometry equipment & A digital control system for the large wind tunnel	Grant under the FIST program of the DST of the Govt. of India. Rs.155 lakhs

Patents filed:

Title of Patent	Co-ordinator
Diabetic footwear for prevention of Foot-sole ulcers	Dr. K. M. Patil
Diabetic footwear for healing of Foot-sole ulcers	Dr. K. M. Patil

4.2.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. In lacs)	Co-ordinators
1.	Single shot data acquisition in digital photoelasticity	2003-05	ISRO cell	14.35	Prof. K. Ramesh
2.	Stress separation in digital photoelasticity	2005-07	ISRO cell	14.06	Prof. K. Ramesh
3.	Constitutive modeling for smart materials	2001-05	NPSM	29.5	Dr. M.S.Sivakumar
4.	Design and characterization of hydrophones	2004-07	MHRD	9	Dr. M.S.Sivakumar
5.	Buckling control of nozzle shells	2004-07	ISRO	18.5	Dr. M.S.Sivakumar
6.	Design of Polmyrah tree climber		Rutag	0.6	Dr.M.S.Sivakumar
7.	Study on learning and memory mechanisms in Cardiac activity	2004-06	DST	8.496	Dr S Radhakrishnan
8.	Stress Separation in Digital Photoelasticity	2004-06	ISRO	14.06	Dr. K. Ramesh Dr. S. A. Pillai, VSSC (TVM)
9.	Project grant under FIST for strengthening the research facilities in the Department		DST	155	Dr. S. Radhakrishnan Dr. N. R. Panchapakesan
10.	Buckling control of nozzle shell using PZT	2004-07	ISRO Cell	19.53	Dr.M.S.Sivakumar

RBIC projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. In lacs)
1.	Prof. K. Ramesh	Digital photelastic analysis of Kaveri K-10 engine components	GTRE	9.98
2.	Prof. R.Palaninathan	Erosion Modeling of HSTDV Nose Tip	DRDL, Hyderabad	13.74

Research Publications:

Total No. of papers published in Refereed National Journals	:	04
Total No. of papers published in Refereed International Journals	:	7
Total No. of papers presented in National Conferences	:	02
Total No. of papers presented in International conferences	:	19

In Refereed National Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	Dr.R. Palaninathan	Experiment Investigations on buckling of cylindrical shells under axial compression and transverse shear	SADHANA
2.	Dr.S. Vengadesan, Mr.A. Nakayama Mr.S. Yokojma	An investigation on the applicability of carusian grid approach to calculate flow over arbitrary terrain	Indian Journal of Engineering & Mat. Science Vol.11, pp 465-472, 2004.
3.	Mr. J.Krishnan Dr. V.S. Chakravorthy Dr. S. Radhakrishnan Dr. Solomon Victor Dr. Vijay Nayak	Neural Influence isessential for synchronising Cardiac Oscillators: A Computational Model	Indian Journal of Thoracic & Cardiovascular Surgery, New Delhi
4.	Dr. S. Vengadesan Mr. A. Nakayama	Evaluation of LES models for flow over bluff body from engineering application perspective	Sadhana

In Refereed International Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	Prof.K. Ramesh V. Sai Prasad K.R. Madhu	Towards effective phase unwrapping in digital photoelasticity	Optics and Lasers in Engineering, 42, pp 421-436, 2004
2.	Prof. R.Palaninathan	Buckling of cylindrical shells under transverse shear	Thin walled structures pp 1037-1328, 2004
3.	Dr.C.Lakshmana Rao Mr.G. Baskaran Dr.K. Balasubramaniam	Ultrasonic TOFD flaw and sizing and imaging in thin plates using Embedded Signal Identification Technique, (ESIT)	Insight, 46(2004) 537-542
4.	Dr.C.Lakshmana Rao Mr. G.Baskaran Dr. K. Balasubramaniam	Development of an advanced ultrasonic TOFD system	Journal of non-destructive testing and evaluation, 3 (2004) 24-32
5.	Mr. Mallikarjun S. Holi Dr. S. Radhakrishnan	Estimation of low bone mass for the assessment of Osteoporosis Fracture risk in Indian men & women using Quantitative Ultrasound & Dual energy X ray Absorptiometry	Journal of Mechanics in Medicine and Biology, Vol 4, NO 1, pp 47-59, 2004
6.	Mr.Thomas V Jacob Dr. K M Patil Dr. S Radhakrishnan	Three dimensional stress analysis for the mechanics of plantar ulcers in diabetic neuropathy	Medical & Biological Engg & Computing, 42, pp 230-235, 2004
7.	Dr.C.Lakshmana Rao G.Baskaran Dr. K. Balasubramaniam	Simulation of TOFD technique using ray theory	ASME Journal of Pressure vessel technology 2005, July 2005

In Proceedings of National Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1.	Dr. J.Raamachandran Dr. K. Jayavenkateswaran	Biomechanics 2004 paper titled "Biomechanical analysis of stenting : A review	IIT Delhi	19-21 Nov. 2004
2.	Dr.C.Lakshmana Rao	Simulation of ultrasonic technique using spectral element methods, NDE 2004	Pune	9-11 Dec. 2004

In Proceedings of International Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1.	Dr.S. Radhakrishnan Dr. M.Ramasubba Reddy Mr.K. Prahlad Rao	Development of tissue phantoms for functional study of photon propagation through Brain, 43 rd Annual conference of Japanese Society for Medical and Biological Engg (MBE 2004)	Kanazawa	19-21, May 2004
2.	Prof. S. Radhakrishnan M. Ponnibala, M.Tech	Use of Wavelets in classification of central retinal vein occlusion – Intl. Conf. On Trends in Industrial Measurement & Automation	CSIR, Chennai	16.12.2004
3.	Prof. S. Radhakrishnan Prof. M.Ramasubba Reddy, K. Prahlad Rao, Ph.D	Noninvasive measure of post occlusive parameters in human forearm blood by Near infrared Spectroscopy, 3 rd Intl. Conf. On Experimental Mechanics 2004 (ICEM 2004)	Singapore	29 th Nov – 1 st Dec. 2004
4.	Prof. M.Ramasubba Reddy, Dr.S. Thanikachalam, R. Ajay Kumar J.Manivannan,	Automatic detection of left ventricle systolic dysfunction from shape deformity" The annual conference of engineering and physical science in medicine	Geelong, Australia	Nov. 14-18, 2004
5.	Prof. M.Ramasubba Reddy, M.K. Suresh Kumar	Non-Invasive electrical imaging of heart – a patient specific approach – International workshop for Bioelectromagnetism	Aizu, Japan	Oct.31 Nov.2, 2004

6.	Dr. S. Radhakrishnan Jacob Thomas V Dr. K. M. Patil V. B. Narayanamurthy R. Parivalavan	Analysis of Foot Pressure images for different levels of foot sole sensory loss and thickness in Diabetes,	IIT Madras	April 1- 3, 27-30, 2004
7.	Prof. S. Radhakrishnan Prof. M.Ramasubba Reddy, S.S.K. Ayyar G. Mukartihal	Statistical analysis of visual evoked potentials in normal and optic neuropathy subjects – 2 nd Intl. Conf. On Medical Diagnostic Techniques & Procedures	IIT Madras	April 1-3, 2004
8.	Prof. M.Ramasubba Reddy, P. Vijayalakshmi,	Analysis of degree of dysarthria using automatic speech recognition system – IASTED, 3 rd International Conference on Biomedical Engg, BIOMED 2005	INNSBRUCK, Austria	16-18, Feb. 2005
9.	Prof. K. Ramesh, M. Ravichandran,	Determination of stress intensity factors for an interfacial crack in a bi-material by digital photoelasticity-Proc. Of Intl. Conf. On Advances in Experimental Mechanics,	York, USA	16-18 Sept. 2004
10.	Prof. K. Ramesh	Evaluation of stress and Intensity factor and intensity facial edge crack in a Bi-material by digital photoelasticity-Intl. Conf on Damage Tolerant Design and Materials	ICSR, IIT Madras	16 – 18 Dec. 2004
11.	Prof. R.Palaninathan & S. Bindu	Thermal Protection system for re-entry vehicles	IIT Kanpur (ICCMS-OW)	9-12 Dec. 2004
12.	Prof. R. Palaninathan V. Sivakumar	3-D stress analysis of solid rocket booster segment joint	IIT Kanpur (ICCMS-OW)	9-12 Dec. 2004
13.	Dr.M.S.Sivakumar Ms.Satyadevi Dr.S.S. Bhattacharya	Studies on fracture of materials under very low cycle fatigue,	IIT Madras	6-18 Dec 2004
14.	Dr. M.S.Sivakumar A Satyadevi Dr.S.S. Bhattacharya	Very low cycle fatigue behaviour of materials-Proc. Of Intl. Conf. On Advance sin Structural Integrity	Bangalore	14-17 July 2004
15.	Dr.C.Lakshmana Rao G. Baskaran G. Swamy K. Balasubramaniam C.V.Krishnamurthy	Application of TOFD technique to thin sections using ESIT and PSCT	Colorado School of Mines, Golden, Colorado, USA	2004
16.	Dr.C.Lakshmana Rao G. Baskaran K.Balasubramaniam	FE simulation of detection and imaging of defects using ultrasonics, Damage tolerant design and materials - DTDM 2004, pp 69-72	Chennai	December 16- 18, 2004
17.	C.Lakshmana Rao Thanga Illango Raju Sethuraman	Demonstration of leak before beak phenomenon on a full scale pipe bend in secondary sodium piping, Damage Tolerant Design and Materials- Proc. Of Indo Japan conf. On damage tolerance design & materials, DTDM 2004, pp-69-72.	Chennai	December 16- 18, 2004
18.	C.Lakshmana Rao G.Baskaran K. Balasubramaniam	Simulation of wave propogation in cracked beams using spectral element method, Com. To ASME pressure vessels and piping conf. 2005	Accepted for student paper competition	2005
19.	Prof. S.Radhakrishnan M. Ramasubba Reddy S.S.K. Ayyar G.B. Mukartihal	Intl. Conf on Biomedical Electronics & Telecommunications	Vizag	2004 pp 180-183

Distinguished Visitors to the Department:

Sl.No	Name of the visitor and Designation	Date of visit	Purpose of visit
1.	Prof. Arun Srinivasan, Dept. of Mech Engg TEXAS A& M, USA	13.12.2004	Talk on Bending of shape memory wires
2	S.K. Lele, Prof. Department of Aeronautics & Automatics, Stanford University, USA	30.12.2004	Talk on Noise radiated by high speed jets-some insights from Numerical solution
	Prof. Sanjiva Lele, Stanford University, Mechanical Engg Dept	03.01.2005	Delivered a talk on "Compressibility effects in Turbulence – revisited", Newton Hall, Applied Mech Dept
	Dr. Mohan Thanikachalan, Dept. of Cardio Thoracic Surgery, Papworth Hospital, Cambridge, UK	12.08.2004	Talk on Heart Transplantation
3.	Dr. Manivannan Muniyandi, Research Associate, MIT Boston	16.08.2004	Touch Lab-Laboratory for Human & Machine Haptics
4.	Dr.Rama Jayasunder, Associate Professor , AIIMS, Delhi	22.11.2004	Talk on Leech Therapy in Ayurveda and Modern Medicine, Newton Hall, Applied Mechanics Dept, IIT Madras
5.	Dr. Allan Taub, Executive Director (R & D) General Motors Corporation	28.04.2004	Visit to Biomechanics Lab
6.	Mr. Maheshkumar Kulandaivel, Ph.D Research Scholar, School of Mech Engg, Univer of Leeds, UK	06.01.2005	Talk on "The effects of Physiological Vessel wall motion on species transport, Newton Hall, Applied Mech Dept
7.	Abhijit Bhattacharya, Univ. of Arkansas, Little Rock, USA	10.01.2005	Talk on Micro-mirrors mems and shape memory alloys, Newton Hall, Applied Mech Dept
8.	Prof. Dr. Ing. Jorg Wauer, Univ. of Karlsruhe, Germany	21.02.05	Friction induced vibrations of disk brake models
9.	Prof. Dr. Ing. Jorg Wauer, Univ. of Karlsruhe, Germany	23.02.05	Modeling and vibration superession of telescope structural members
10.	Dr. K. Murugesan, Research Fellow, Hydrotech Research Institute, National Taiwan University	04.03.2004	Recent Developments on Numerical Solution algorithms for velocity-vorticity Navier-Stokes Equations
11.	Prof. Dr. Ing. Jorg Wauer, Univ. of Karlsruhe, Germany	25.02.05	Nonlinear dynamics of pezoceramic rods

4.2.6. Other Activities:

1. Dr. R. Palaninathan:

Title of software developed - Ablative Thermal protection for Hyper thermal loading conditions

Description:

This is a finite element based program for analysis of ablative thermal protection element system (TPS) required for aerospace vehicles that fly at hypersonic speeds. Thermal protection is offered through sacrifice of material to expend the energy. Two types of ablators are considered; low temperature ablators and high temperature ablators. The solution procedure in time steps involves:

1. Non linear transient heat conduction analysis
2. Computation of recession heat
3. Movement of boundary to the extent of surface recession

For LTAs, doubly curved layer shell elements and for HTAs, 3-D variable node solid elements are employed. The package can also be used for thermo-mechanical analysis of problems encountered in other technological areas.

Common M.Tech programme leading to specialization in Solid mechanics, Fluid Mechanics, Biomedical Engineering with intake from all branches of Engineering.

4.3 DEPARTMENT OF BIOTECHNOLOGY

4.3.1 Introduction:

The Department of Biotechnology was established in March 2004. It offers B.Tech, Dual Degree, M .S and Ph.D programmes. The major areas of research of the department are:

Cellular, Molecular and Structural Biology
Lipid Trafficking
Stem Cell Proliferation
Protein crystallography and structure prediction
Drug Design and QSAR
Bioorganic Chemistry
Biotransformations
Enzymes in Organic Synthesis
Biosensors
Environmental Biotechnology – Bioremediation
Green Chemistry
Biochemical Engg.

Bioreactor Modelling
Reactive Oxygen Species in Bioreactors
Recombinant Systems
Industrial Microbial Processes
Plant tissue and Animal cell culture
Downstream Processing
Protein Refolding
Bioinformatics and Computational Biology
Biomedical Engg. – Biomechanics
Biomaterials Computational Neuroscience
Molecular Genetics of Plant Development

4.3.2 Academic Programmes:

New Courses introduced:

Sl. No.	Course No.	Title
1.	BT101	Life Sciences
2.	BT203	Biochemical Thermodynamics
3.	BT204	Genetics and Molecular Biology
4.	BT208	Transport Processes and Unit Operations
5.	BT304	Immunology
6.	BT316	Medicinal Chemistry and Drug Design
7.	BT317	Enzyme, Structure & Mechanisms
8.	BT412	Biocatalysis and Bio transformation
9.	BT511	Advanced Molecular and cellular Biology
10.	BT512	Developmental Biology
11.	BT520	Plant Biotechnology

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	33	38	34	-	-	105
Dual Degree	15	9	6	-	-	30
M.S.	7	3	-	-	-	10
Ph.D.	22	3	3	1	1	30
Total	77	53	43	1	1	175

Names of Student/Scholar who attended Conference/ Workshops /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
Conference:				
1.	Kalyani Mahapatra	Ph.D	Int.Conference on anaerobic Digestion of Wastes	9-11 th Feb, 2005 at Anna Univesity
2.	B. Baskar	Ph. D	International Conference on Chemistry Biology Interface: Synergistic New Frontiers (Best Poster Award)	Nov. 21-26, 2004; Uni Delhi, N Delhi
Symposia:				
1.	D.Sunil Kumar Presented a paper on "Pectin Lyase" and won second prize.	Ph.D	National Symposium on "Recent Trends in Biotechnology" Biogenics05	9-10th March 05, Sree Budha College of Engg, Kerala.
2.	S.Gokulakrishnan Presented a paper on "Coffeine Degradation"	M.S	National Symposium on "Recent Trends in Biotechnology" Biogenics05	9-10th March 05, Sree Budha College of Engg, Kerala.
3.	P.Sivakumar	Ph.D	National workshop on Nanoscale imaging & Detection of Biomolecule	17-19th March 05, AUKBC, Anna University,
4.	B.Lavanya Madhuri	Ph.D	National Symposium on Molecular Basis of Diseases	8-9 th January 2005

4.3.3 Faculty and their activities:

Faculty:

Name and Qualifications **Major area of specialization (only 3 areas)**

Professors:

Lalitha.K (Ms)	Biochemistry
Chandra T.S (Ms)	Microbiology, Genetics
Suraishkumar, GK	Biochemical Engineering

Associate Professors:

Anju Chadha (Ms)	Bio-organic Chemistry
Doble Mukesh	Bioremediation, Biochemical Engineering, Drug Design
Guhan Jayaraman	Bioprocess and Biochemical Engineering
Rama Shanker Verma	Biochemistry & Molecular Biology

Assistant Professors:

Basker.R	Plant Sciences & Genetics
Chandraraj.K	Biochemistry & Genetic Engineering
Gopalakrishna.A	Mechanism of signal transduction, Membrane Proteins, Protein folding
Manoj.N	X-Ray Crystallography of Biomolecules
Sathyanarayana N Gummadi	Biochemical & Bioprocess Engineering
Srinivas Chakravarthy.V	Cardiac memory, Electrical Engineering
Surajit Bhattachariya	Structure Determination of Protein, Protein & Protein Ligand
Venkatesh Balasubramanian	Bio-mechanics, Rehabilitation Engineering

Visiting Faculty:

K.B.Ramachandran	Bio-Process technology
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Emeritus Scientist/ Professor:

Joseph Thomas	[Advisor]
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Short-term Courses/ Workshops/ Seminars/ Symposia /Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Symposia:			
1.	Dr. Joseph Thomas Convener. Dr.A.Gopalakrishna Org. Secretary	National Symposium on Molecular Basis of Diseases.	08-09 January 2005
2.	Mukesh Doble,	Chaired session on 'Bioprocess separation' at Joint Indo-US Chemical Engineering conference	Mumbai (Dec 2004)
Workshop:			
1.	Dr.T.S.Chandra	Web based & E-learning in Biotechnology & Biological Sciences for AICTE aided Engineering Colleges faculty in Biotechnology Departments.	1 day on 26-2-2005

Short-term Courses/ Workshops/ Seminars/ Symposia/ Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
1	Dr.T.S.Chandra	International Conference on Anaerobic Digestion of Wastes	Dept of Environmental Studies, Anna University	9-11 th February 2005
2	Suraishkumar, GK	Symposium on Awareness of Recent Advances in Science & Technology	RRL., Jorhat,	16-17 March 2005

3	Suraishkumar,GK	Biochemical Engineering Best Presentation	CHEMCON	December 2004
4	Dr. Guhan Jayaraman	Workshop on the proposed Bio-IT Park	Software Technology Parks of India, Bangalore. 01.04.2004	
5	Guhan Jayaraman	Key Note Address: Workshop on Chemical engineering Aspects of Biotechnology	ST. Joseph's College of Engineering Chennai.	22 nd February 2005
6	Dr. Rama Shanker Verma:	National Symposium on MuGA (Antheraea Assama) Silkworm Biochemistry Molecular Biology and Biotechnology to Improve Silk Production	Regional research Laboratory, Jorhat	Nov.18 th to 19 th 2004
7	Dr.Venkatesh Balasubramanian	Keynote lecture on "Human System Interface & #8211, Biofeedback in Automation"	Arulmigu Kalasalingam College of Engineering, Krishnankoil:	2.4.05
8	Dr.T.S.Chandra & K.P. Pooja Received the Best Paper award with a certificate and cash prize of Rs.1000/-	Presented a paper on "Studies on anaerobic nitrogen fixing xylanolytic" at International Conference on Microbial Diversity.	Dept of Microbiology, Univ. of Delhi South Campus	16-18 April 2005
9	V.S.Chakravarthy	Indo French Workshop on Neuroscience.	National Brain Research Centre, Haryana	14-2-05 & 15.2.05
10	Dr. V. S. Chakravarthy	The role of Basal Ganglia in Exploration during Reinforcement Learning in Rats	Science City, Calcutta	Nov 22 nd to 25 th 2004
Conference:				
1	Dr.Mukesh Doble	-	CHEMCON, Mumbai,	Dec 2004
2	K.B.Ramachandran	Discussion on Scaling up of a bioconversion Process for the Production of steroid intermediates'	Devi Ahilya University, Indore	4 th - 6 th February 2005

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue and Date
1.	N.Manoj	Signature of Quaternary Structure in Sequences of Legume Lectins	Dept of Chemical Engg. Annamalai University, 3 March 2005
2.	Satyanarayana N Gummadi	Invited talk on "Flippases" in the Dept. of Biotechnology.	Dept. of Biotechnology Sathyabama Deemed University. March 07 2005.
3.	Joseph Thomas	TV Desikachary Endowment Lecture on "Plant Biotechnology: The Evergreen Revolution in the Making"	Centre for Advanced Studies in Botany , University of Madras April 26, 2004
4.	Dr.Rama Shanker Verma	New Process Development for Biotechnology Products	Kemin Chemicals, Chennai 24.03.05
5.	Dr Anju Chadha	DST sponsored Workshop on Catalysis Talk title: Biocatalysis: Fundamentals and Applications	IITM: Dept. of Chemistry May 26, 2005
6.	Dr Anju Chadha	Biomedical Sensors Talk title: Triglyceride and Urea Sensor using Porous silicon	DST-NPL, N Delhi April 27-28, 2005

7	Dr Anju Chadha:	Catalysis-Sustainable Development through Catalysis, Talk Title: Biocatalytic Deracemisation: An Important strategy in the preparation of Chiral syntjhons	CSMCRI, Bhavnagar, 18-20 January, 2005
8	Dr Anju Chadha	Nobel Prize in Chemistry: 2004	Science Club; IMSc; Oct. 16, 2004
9	Dr Anju Chadha	Nobel Prize in Chemistry: 2004	Dr. MGR Educational and Research Institute, Maduravoyal, Chennai, 5 November, 2004
10	Dr Anju Chadha	Nobel Prize in Chemistry: 2004	Children's Club, Chennai, 5 Dec. 2004
11	Dr. Anju Chadha	Chemistry – Noble Prize 2004	Science Club, Institute of Mathematical Sciences, Chennai 16 Oct 2004
12	Dr. Anju Chadha	Chemistry – Noble Prize 2004	MGR Deemed University 05 Nov 2004
13	Dr Anju Chadha	Bio-Fuels and Xylose/Xylitol enzymes and production projects	Tata Chemicals Ltd. Bombay. 31 May 2005
14	Dr. Prof G.K. Suraishkumar	Seminar Talk on Improving Coherence in Technical Writing	IIT, Madras 03 Sep 2004
15	Dr.Guhan Jayaraman	New Challenges and Opportunities for Chemical Engineers in Biotechnology.	Sri Venkateswara College of Engineering, Sriperumbadur. 12 July.2004
16	Dr Mukesh Doble	QSAR & Drug design	Royal Society of Chemistry (Bombay Chapter) at Samiaya College, Bombay 21 Sep 2004
		Use of Natural Products in Drug Design	Royal Society of Chemistry (Bombay Chapter) at K.C. College, Bombay 22 Sep 2004
		Natural Products based drug design",	Royal Chemical Society of England, Bombay Chapter, Mumbai (Sept, 2004)
		Computer aided drug design"	Barathidasan University, Trichy (Nov, 2004)
		Drug design"	TB research institute, Chennai (Oct, 2004)
		"Design of anti inflammatory compounds",	Sashun Chemicals and Drugs Ltd, Chennai (Oct, 2004)
		QSAR based drug design",	Orchid Pharma and Drugs Ltd, Chennai (Jan, 2005)
		"Molecular modelling",	Anna University-KBC, Bioinformatics course (Feb, 2005)
		"Computer aided drug design",	Bharathi University, Chennai (March, 2005)
17	Dr.Mukesh Doble	Biodegradation of synthetic polymers", Use of natural products for new drug discovery	at Post Grad course on Technology and Sustainable dev, Organised by EPFL (Switzerland) and IIT Madras, at IIT Madras (Feb 2005)
		Drug Design and Modelling	Shashun Chemicals & Drug Limited, Chennai 11 Oct 2004
18	Dr.Mukesh Doble	Molecular Modelling Techniques.	Centre for Development of Advanced Computing, Bangalore. 14 July 2004
19	Dr.Mukesh Doble	Drug Design and Modelling	T.B. Research center, Chennai 29 Oct 2004

Honours and Awards obtained:

Sl.No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date of award
1.	Suraishkumar,G.K	Biochemical Engineering	CHEMCON	Best Presentation	2004

Books, Monographs authored/co-authored:

Sl. No.	Name of faculty	Title	Publisher	Author/ Co-author
Books:				
1	Mukesh Doble	Biotransformation and Bioprocesses	Marcell Dekker,	Co-Author

Fellowships of Academies and Professional Societies:

Sl. No.	Name of faculty	Name of the Academy/ Professional Society	Level	Year of admission
Humboldt Fellowship:				
1.	Anju Chadha	AvH foundation	AvH fellow	1991
ISTE/CSI & others :				
1.	Mukesh Doble	American Institute of Chemical Engineers	Member	1980
2.	Mukesh Doble	Indian Institute of Chemical Engineers	Fellow	1983

4.3.4 Design and Development Activities:**New facilities added or major equipment procured through project funds:**

Sl. No.	Name of Equipment	Value (Rs. in lacs)
1	UV Spectrophotometer- Jasco	3.00
2	Minus 20 deep freeze – INSERT	0.50
3	Bucci Rotovap	1.75
4	Lyophiliser-Martin Christ	3.00
5.	Temperature Controlled shaker	1.40
6.	Centrifuge and deep freezer (-20°C)	0.69
7.	Micro Scope	13.62
8.	Shakers	4.52
9.	Submarine Gel Electrophoresis	0.90
10.	High Speed Centrifuge	0.65
11.	Acquisition of Software & Hardware	5.60
12.	Affinity Discover Bundle	16.00
13.	Thermal Cycler Software (PCR)	6.50
14.	Laminar Air Flow	1.45
15.	Auto Clave/PH Meter	1.10
16.	Components of Bioreactor	2.25
17.	Refrigerator	2.25
18.	Shakers	5.25
19.	Ultrasonicator	1.86
20.	Refrigerate Centrifuges	9.57
21.	BOD Incubator	0.36
22.	Hot & Vacuum Oven	0.45
23.	Peristaltic Pump	5.50
24.	Walk in Cold Room	1.64

Patents filed:

A Process for the Monoacylation of Polyols with Alkyl and Aryl beta-ketoesters, Anju Chadha and Sanjib Karmee, IIT-Madras, Indian patent no. 1097/CHE/2004, filed on 19th October 2004.

4.3.5 Research and Consultancy:**Sponsored Research Projects:**

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lacs)	Co-ordinators
1.	Development of Recombinant Microbial strains for Conversion of Biomass to Ethanol	3 years	DST	11,40,000	Dr.K.Chandraraj
2.	Bioprocess Development for Recombinant streptokinase from <i>E.Coli</i>	3.5 years	MHRD	12 lakhs	Dr.Guhan Jayaraman
3.	Porous silicon based biosensors-	3-2-2004 to 2-2-2007	DST, GOI	Rs. 20.34 lakhs	Dr. Anju Chadha, BT
4.	Rapid Monitoring of Transesterification and Assessing Biodiesel Fuel Quality by Estimation of Glycerol	20-4-2004 to 19-4-2007	DST, GOI	Rs. 20.55 lakhs	Dr. Anju Chadha, BT
5.	Evaluation of a disposable eco- friendly cup as a substitute for all plastic beverage containers	May 2005- May 2006	RuTag project from IC & SR, IITM	0.8l akhs	Dr. Anju Chadha, BT Dr. Susy Varghese, Chem. Engn.
6.	Production, Purification & Characterization of Pectic Lyases	3 years	DST	5.16 laksh	Dr..Sathyanarayana N Gummadi.

RBIC projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lacs)
1.	Anju Chadha	Biocatalytic preparation of synthons for nutraceuticals	MDPL	~Rs. 7 lakhs
2.	Anju Chadha	Biocatalytic Biodiesel Preparation	Tata Chemicals Ltd.	Rs. 15 lakhs
3.	Anju Chadha	Chemoenzymatic method for the synthesis of nutraceuticals	Chemoenzymatic method for the synthesis of nutraceuticals	Rs. 5 lakhs
4.	Guhan Jayaraman	Downstream Processing of Rec. streptokinase	Shantha Biotech	2.25 laksh

Retainer Consultancy:

Sl.No.	Name of faculty	Title	Industry	Amount (Rs. in lacs)
1.	Anju Chadha	Making Biocatalytic Processes work	Matrix Labs	~ Rs. 2 Lakhs

Exchange programme with other Universities including Institutions/Universities under MOU;

- NIOT, Madras medical Mission

Journal Editorial Boards:

Sl. No.	Name of faculty	Level	Journal
	Mukesh Doble	Editorial board member	Chemical Engineer, McGraw Hill, USA

Research Publications:

Total No. of papers published in Refereed International Journals	:	22
Total No. of papers presented in National Conferences	:	02
Total No. of papers presented in International conferences	:	05

In Refereed International Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	Mukesh Doble	, Six Sigma and chemical process safety	International. J. Six Sigma and Competitive Advantage, Vol. 1, No. 2, 2005 229
2.	Mukesh Doble	Understand the myths surrounding Six Sigma	Hydrocarbon Processing, March 2005, 1.
3.	Suraishkumar,GK	Increase in enzyme productivity by induced oxidative stress in <i>Bacillus subtilis</i> cultures & analysis of its mechanism using microarray data	Process Biochemistry 40, 1863-1870
4.	Suraishkumar, GK	Intracellular Reactive Oxygen Species Mediate Suppression of Sporulation in <i>Bacillus subtilis</i> under shear stress.	Biotechnology and Bioengineering 87, 81-89
5.	Suraishkumar,GK	Improving Coherence in Technical Writing	Chemical Engineering Education, 38, 116-120
6.	Mukesh Doble	Comparison of Aerobic and Anaerobic processes	, Indian Chemical Engineers (Jan-March, 2005) 33
7.	Anju Chadha	Preparation of Biodiesel from Crude Oil of <i>Pongamia pinnata</i> ,	Bioresource Technoloy, 2005, available online 16th February 2005
8.	Anju Chadha	A Rapid and Simple Method of Monoacylation of Polyols by β -ketoesters Using Microwave Irradiation	Synthetic Communications, 2005, 35, 1151-1160
9.	Anju Chadha	Solid State Potentiometric Sensor for the Estimation of Tributyrin and Urea	Sensors and Actuators, B: Chemical, 2005, 107(1), 418-423
10.	Anju Chadha	Asymmetric Reduction of alkyl 2-oxo-4-arylbutanoates and -but-3-enoates by <i>Candida parapsilosis</i> ATCC 7330: assignment of the absolute configuration of ethyl 2-hydroxy-4-(<i>p</i> -methylphenyl)but-3-enoate by ¹ H NMR	Tet. Asymm., 2004, 15, 2961-2966
11.	Anju Chadha	Study of the Kinetics of Base Catalyzed Transesterification of Mono-glycerides from <i>Pongamia</i> oil	JAOCS, 2004, 81(5),425-430
12.	Anju Chadha	Microbial deracemisation of beta hydroxy esters- An important strategy towards various chiral intermediates	J. Mol. Cat. B. Enzymatic, 2004, 29, 25-29
13.	Anju Chadha	Highly Stereoselective Reduction of 4-Aryl-2-oxo but-3-enoic Carboxylic Esters by Plant Cell Culture of <i>Daucus carota</i>	
14.	K.B.Ramachandran	The effect of gas sparging in Cross-flow micro filtration of 2-3 butanedial fermentation brath.	Engineering in Life Science (2005) 5(1) 54-57
18.	S.N.Gummadi-	The mystery of phospholipid flip-flop in biogenic membranes- Cellular and Molecular	Cellular and Molecular Biology Letters.
19.	S.N. Gummadi-	Hydrolysis of starch by amylase from <i>Bacillus</i> sp. KCA102: a statistical approach-	Process Biochemistry
20.	S.N. Gummadi-	Chemical modification identifies two population of glycerophospholipid flippase in rat liver ER-	Biochemistry, USA
21.	Anju chadha	Tetrahedron Asymmetry; Sensors and Actuators, Enzyme and Microbial Technology an	Projects for DST and DBT, GOI
22.	Anju chadha	Potentiometric Biosensors based on silicon and Porous Silicon	Proc.Nanotech 2004 Vol 1 pp 224-227 Boston USA March 7-11-2004

In Proceedings of National Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1.	Suraishkumar, G.K	Proceedings of Annual Conference	Indian Institute of Chemical Engineers, Mumbai.	December 2004
2.	Anju Chadha	"Optimization of Porous Silicon Based EISCAP Structures for Triglyceride Sensors"	Nanotech conference-, Kolkata.	2004

In Proceedings of International Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1	Mukesh Doble	In silico modelling: a breakthrough in the design of nanoparticulate drug delivery system",	", 6th International Symposium On Advances In Technology and Business Potential Of New Drug Delivery systems, Mumbai.	18-19 February 2005
2	Mukesh Doble	Biodegradation of polyesters'	Alternative and Conventional anti-fouling strategies, Organised by International Biodeterioration an Biodegradation Society, Mulheim, Germany,	Sept 2004
3	Anju Chadha	Optimisation of porous silicon based EISCAP structures for triglyceride and urea sensors	PSST conference, Spain	May, 2004
4	Anju Chadha	Optimisation of Silicon and Porous Silicon based Biosensors for detection of Triglycerides	Nanotech 2005 Anaheim, USA (abstract accepted)	March, 2005
5	Sathyanarayana N Gummadi	Thermotolerant biocatalysts for conversion of biomass to fuel ethanol and Chemicals	2 nd International Ukrainian conference on Biomass for energy Kyiv, Ukraine session 2 (liquid fuels from Biomass).	(20-22 September 2004)

Distinguished Visitors to the Department:

Sl.No.	Name of the visitor and Designation	Date of visit	Purpose of visit
1.	Dr.Prasad Saripalli, Senior Scientist, Pacific Northwest National Lab, Seattle, Washington	30.12.04	Seminar talk on Molecular Dynamics Modeling of Base Excision and Repair (BER) in DNA using 8 Oxoguanine as an example
2.	Prof.Hartmut Michel, Noble Laureate Max Planck Institute of Biophysics, Frankfurtam Main, Germany	14.12.2004	Meeting with Faculty Members and an interactive session with students.
3.	Prof.RaghuSharma, Professor Emeritus, State University of New York Stony Brook USA	9-16 December 2004	Series of lectures on Protein Crystallography. A public lecture on "The life and Science of G N Ramachandran . Seminar on "The Molecular Biology of Cancer"
4.	Dr.Narasimhan Jammi, Dept. of Molecular Pharmacology, Stanford University	16.12.2004	Seminar talk on "The Mechanism of Activation of the RNA – Dependent Kinase PKR"
5.	Prof. Rajendra Prasad, JNU, New Delhi	07.12.2004	Seminar talk on "Multidrug Resistance from Microbes to Man
6.	Prof.Pitchappan, Head Dept. of Immunology Madurai Kamaraj University	03.12.2004	Seminar talk on "Journey of Man and Research Focus on Human Genetics"
7.	Dr.Mullassery Ajit.S , Dr.V.M.Kurien, Dr.Suresh Kumar, Institute of Cardio Vascular Diseases Hospital Research Trg. (A unit of Madras Medical Mission, Chennai.)	28.01.2005	To explore IITM-MMM Collaborative Research on Cardio-Vascular Diseases.

8.	Dr.Sarika Mehra, University of Minnesota, USA	01.02.2005	Seminar on "Genome-wide Analysis to Elucidate Secondary Metabolism Regulation in Streptomyces Coelicolor.
9.	Dr.Gopalakrishna Ramaswamy, Yale University USA	08.02.2005	Mechanism of miRNA action Role of multiple, dynamic miRNP complexes.
10.	Dr.Bhupinder Madan, President in Silico Scientifics Inc., USA	14.02.2005	Systems biology approaches to drug discovery.
11.	Professor M. P. Schneider, Professor in the Department of Organische Chemistry, Uni Wuppertal, Wuppertal, Germany	16-18 February, 2005	Seminars (in the Depts. Of BT and Chemistry), meeting with the Director and discussions regarding a possible tie up with some European (UK, Germany) and other scientists in the area of Biocatalysis
12.	Dr.M.Balasubramanayam, Senior Scientist, Madras Diabetes Res. Foundation, Chennai	24.02.2005	Oxidative Stress in Diabetes - Central Player or supporting actor?
13.	Dr.E.N.Prabhakaran Texas A & M University, USA	04.03.05	Effect of net charge on Conformational Stability, Cytotoxicity and solubility of RNase
14.	Dr.Seth Jon Davis Max Planck Institute for Plant Breeding and Research cologne, Germany	09.03.05	It is "time" to understand the integration of Plant Signaling Networks.
15.	Dr.Lotte Sogaard, Max Planck Institute for Terrestrial Microbiology Margburg, Germany	10.03.05	Signal transduction in bacterial adaptation and differentiation.
16.	Dr.Sobhanaditya .J Head, Dept of Biochemistry, Osmania University	22.03.05	Cellular Regulation by Ubiquitin.
17.	Dr.Sameer Jadhav, Johns Hopkins University	23.03.05	Flow Modulation of receptor mediated cell adhesion in inflammation and cancer metastasis.
18.	Dr.Priyadarsini Kumar University of California Davis.	31.03.05	Nicotini acetylcholine receptor subunits and associated proteins in human sperm.
19.	Prof.P.T.Manoharan I.I.T - Madras	21.04.05	Mechanism of Superoxide production in Hemoglobin under Hypoxic Condition
22.	Dr. Ramesh Anishetty, Institute for Mathematical Sciences, Chennai	08.04.2004	Seminar Talk on The Protein Folding Problem
21.	Dr. P. Gautham, Assistant Professor Center for Biotechnology	15.04.2004	Seminar Talk on Insights into Molecular Mechanisms of the Action of Candida rugosa Lipase
22.	Dr. Y. Ramanathan, Memorial Sloan-Kettering Cancer Centre, New York	22.04.2004	Seminar Talk on Functional Cloning of Nucleic Acid Binding Proteins-Towards a Proteomic Approach
23.	Dr. Shivashankar Sundaram, Director, Biomedical Technology Group, CFD Research Corp., Huntsville, AL, USA.	28.04.2004	Seminar Talk on Simulation-Based Design & Analysis of Microfluidics/Lab-on Chip Devices.
24.	Dr.D.Karunagaran Rajiv Gandhi Center for Biotechnology, Trivandrum	07.05.2004	Seminar Talk on Survival Tricks: Lessons from Cancer Cells.
25.	Ms.Vasantha Nagarajan, Biochemical Sciences and Engg. CR&D, Dupont, USA	08.07.2004	Seminar Talk on The New Face on Industrial Biotechnology: Genes, Pathways and Processes.
26.	Dr.Venkat Gopalan, Associate Professor of Biochemistry, Ohio State University, USA	10.08.2004	Seminar Talk on Biochemical Studies on RNaseP, a Catalytic RNP Complex.
27.	Dr.Sriram Naganathan, CellGate Inc., USA	19.08.2004	Seminar Talk on Research at the Chemistry Biology Interface: Application to Drug Delivery.

28.	Dr.B.G.Unni, Senior Assistant Director (Biochemistry), Regional Research Laboratory (CSIR), Jorhat	25.08.2004	Seminar Talk on Insect Neuropeptides and their Molecular Action in Vitro Studies.
29.	Prof. N.Gautham, Dept. of Crystallography and Biophysics, Madras University, Chennai.	26.08.2004	Seminar Talk on Protein Structure Prediction.
30.	Dr.Om Reddy, President & Chief Scientific Officer, Orchid Chemicals, Chennai.	30.08.2004	Seminar Talk on Industrial Research Vs. Academic Research.
31.	Dr. Ajith Anand, Plant Biology Division, The Samuel Roberts Noble Foundation, Ardmore, USA.	02.09.2004	Seminar Talk on Identification of Plant Genes involved in Agrobacterium-mediated Plant Transformation through VIGS Based Functional Genomics Analysis.
32.	Dr. Prof. Raj Mutharasan, Frank A.Fletcher Professor of Chemical Engg., Drexel University, Philadelphia	09.09.2004	Seminar Talk on Cellular Response to Fluid Mechanical Stresses
33.	Dr. Geetha Manivasagam, Post Doctoral Fellow, Clemson University, USA	14.09.2004	Seminar Talk on Experimental studies on biocompatible titanium alloys for implant applications
34.	Dr. Vijay Srinivasan	16.09.2004	Seminar Talk on Digital Microfluids-Enabling the Biochemical Processing Revolution
35.	Dr. Ashish Mukerjee, Chief Scientific Officer, Shasun Chemicals & Drug, Chennai	16.09.2004	Seminar Talk on Drug discovery Today – A Multidisciplinary Program
36.	Dr. Amitabha Sarkar, Indian Association for the Cultivation of Science, Kolkata	21.09.2004	Seminar Talk on Organometallic Bioconjugates of Bio-organometallics: What's in a Name
37.	Dr. Meenakshi Sundaram, Senior Manager R & D, Chennai Petroleum	05.10.2004	Seminar Talk on Catalysis in Petroleum Refining
38.	Dr. S. Gunasekaran, COE Leader, Micro & Nano Structure Lab, John F. Welsch Tech. Centre, Bangalore	12.10.2004	Seminar Talk on BIOMENS-Emerging Technology
39.	Mr. A. Sivakumar, Associate Director, Technologies Murugappa Group, Chennai	02.11.2004	Seminar Talk on Potential Areas of Innovation & Development In India for Biotechnologists
40.	Dr. Susan, cardiologies, Frontier Life, Chennai	09.11.2004	Seminar talk on Cryopreservative of Cardio Homograft
41.	Prof. P. Kanguane, National Technological University, Singapore	10.11.2004	Seminar Talk on Can Ends Justify the means? Digging Deep for Human Fusion Genes of Prokaryotic Origin

4.3.6 Other Activities:

Dr.G.K.Suraishkumar:

- Reviewer for articles submitted to Biochemical Engineering journal biotechnology progress.
- Reviewer for DST projects
- Session Chair, CHEMCON 2004.

Dr.Guhan Jayaraman

- Reviewer for articles submitted to Biochemical Engineering Journal.

Dr.Sathyanarayana N.Gummadi

- Reviewer for articles submitted to Journal of Agriculture and Food Chemistry (American Chemical Societies) and Process Biochemistry.

4.4 DEPARTMENT OF CHEMICAL ENGINEERING

4.4.1 Introduction:

The Department of Chemical Engineering was established in 1959. The department is organized into seven research groups with supporting laboratory facilities. The Transfer operation laboratory, Research Engineering Laboratory, Process Dynamics and Control Laboratory, Mechanical Operations Laboratory, High Engineering Laboratory, Biochemical Engineering Laboratory and Environment Engineering Laboratory.

4.4.2 Academic Programmes:

New Courses introduced:

Sl. No.	Course No.	Title
1	CH540	Micro Electronic Fabrication Processes
2	CH547	Graph Theory and its Applications in Process Design
3	CH324	Introduction to Semiconductor Manufacturing Processes
4	CH545	Applications of Particle Science in High Tech Industries
5	CH612	Particle Characterization

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	49	40	46	43	-	178
Dual Degree	11	10	10	10	10	51
M.Tech.	36	33	-	-	-	69
M.S.	6	1	1	-	2	10
Ph.D.	16	8	7	4	7	42
Total	118	92	64	57	19	350

Names of Student/Scholar who attended Conference/ Workshops /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
Conference:				
1	V.O.Rejini,	Ph.D	International Conference on Polymers for Advanced Technologies – Eight National Conference of the Society for Polymers Science, India	13-17 th Dec.2004 Thiruvananthapuram
2	Sathe Vivek & A.Seshagiri Rao,	Ph.D	"Delay Compensator for Unstable Systems with a large delay time" & "Simultaneous Relay Auto Tuning of Series Cascade Controllers" in the International Conference on "Trends in Industrial Measurements and Automation – TIMA-2004"	15-18 th Dec.2004 CSIR Madras Complex
3	S.Maharudrayya,	Ph.D	"Flow Distribution in a U-Type Parallel Chennel Configuration in Fuel Cell Distributor Plates in the International Conference on "Electrochemical Power Systems (ICEPTS-2)"	19-23 rd Dec.2004 SAEST-The Society for Advancement of Electro-Chemical Science and Technology, CECRI Campus, Kataikudi
4	A.Seshagiri Rao & P.Ganesh,	Ph.D M.Tech	"Dead Time Compensator for Systems with Large Time Delay & Decoupling Control of Non-Square Systems in the First National Conference on "Recent Trends in Instrumentation Applications- RETINA-2004"	23-24 th Dec.2004 National Engineering College, Kovilpatti.
5	M.Satish Kumar	M.Tech	"Spreading of Liquid Droplet Over a Heterogeneous Porous Fabric" in the Indo-US Conference CHEMCON 2004"	28-30 th Dec.2004 Mumbai

6	S.Sathe Vivek	Ph.D	"Simultaneous Relay Auto-Tuning of Parallel Cascade Controllers in the Indo-US Conference CHEMCON 2004"	28-30 th Dec.2004 Mumbai
7	Vidyasagar Shilapuram,	Ph.D	Young Researcher's Award for Doing Post-Graduate Studies in India after GATE Examination in the 57 th Annual Session-cum-Indian Chemical Engineering Congress (CHEMCON-2004)	28-30 th Dec.2004 Mumbai
8	C.ESwariah	Ph.D.,	Mineral Processing Technology, 2005	Jan.6-8, 2005 ISM , Dhanbad
9	Moiz Diwan	B.Tech	International Conference on Experimental Mechanics	Nov.29, 2004, Singapore

4.4.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization (only 3 areas)
Professors:	
A.R.Balakrishnan [Head]	Transport Processes, Energy Conservation
Dr.M.Chidambaram	Process Control
Dr.K.Krishnaiah	Chemical reactor analysis and design fluidization
Dr.DVS Murthy	Environmental Engineering, particle technology
Dr. R.Nagarajan	Particle Science & Technology
	Ultrasonic Processing, Statistical Quality Control
Dr.T.Panda	Bioprocess Optimization, bioprocess technology and enzyme design
Dr.S.Pushpavanam	Modelling and simulation, non linear dynamics, flow visualization
Dr.V.S.Ramachandra Rao	Advanced Control strategies, neuro fuzzy control
Dr.Shankar Narasimhan	Process design, data mining, fault diagnosis
Dr.T.Swaminathan	Environmental Management, Biotechnology, Membrane technology, Environmental risk assessment
Dr.PST Sai	Chemical reactor analysis and design
Dr.S.Sankara Narayanan	Particle Technology, Material recycling Biomass Fuel preparation systems
Associate Professors:	
Dr.R.Ravi	Applied statistical mechanics, foundations of thermodynamics and mechanics, process dynamics and control
Dr.Sreenivas Jayanti	Computational fluid dynamics
Assistant Professors:	
Dr.Abhijit Deshpande	Rheology of complex fluids, polymers and polymeric composites Processing flow visualization
Dr.A.Kannan	Rate enhancement of mass transfer processes
Dr.Susy Varughese	Physics & mechanics of polymeric materials, polymeric nano composites
Dr.S.Ramanathan	Semiconductor processing, Electrochemistry, Chemical Reaction Engineering
Dr.Tanmay Basak	Microwave application, mathematical modeling and simulation
Visiting Faculty:	
Dr.Arun K Tangirala	System identification and parameter estimation
Scientific Officers / Engineers:	
Dr. K. Krishnamurthy	

Short-term Courses/Workshops/Seminars/Symposia/Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
Workshop:				
1.	DVS Murthy T.Swaminathan	Third AIRPET workshop	SIDA Project in Hanoi, Vietnam	8-10 th Jan. 2004
2.	DVS Murthy T.Swaminathan	National workshop on Policies & Strategies for Fine Particulates in Ambient Air	IIT Madras	22 nd March 2004
3.	A.kannan	Workshop on Engineering Experimentation	IIT Madras	3 rd July 2004
Seminar:				
1.	K.Krishnaiah	National Seminar on Chemical Engg. Aspects of Biotechnology in ChECK 2004	RVR & JC College of Engineering	4 th March 2004
2.	DVS Murthy	Current Environmental Issues	C.Abdul Hakeem College of Engineering & Technology, Melvisharam	6 th May 2004
3.	AR Balakrishnan	Research Council Meeting of Regional Research Lab.	RRL Jorhat.	17-18 th May 2004
4.	Tanmay Basak	Safety, Environment and Energy Management (SEEM2004)	NIT Trichy	4 th June 2004
5.	GK Suraish Kumar	Improving Conference in Technical Writing	IIT Madras	3.9.2004
6.	Arun Tangirala	Methods for Plant- wide Oscillation Detection with Industrial Applications	IIT Madras	17 th Sep. 2004
7.	AR Balakrishnan	External Expert (DRDO)	DRDO, New Delhi	01 st Oct. 2004
8.	AR Balakrishnan	Council Meeting of RRL (CSIR)	Jorhat, Itanagar	25-27 th Oct. 2004
9.	NR Neelakantan	Expert Committee Meeting	Ministry of Environment & Forests, Delhi	28 th Oct. 2004
10.	AR Balakrishnan	Workshop on Advances in Sorption Based Thermal Devices	DST Sponsored delegate, Indo-Belarus Joint Workshop	2-3 rd Nov. 2004
11.	T.Panda	Expert Member in the Selection Committee for the Faculty Position	IIT Roorkee Dept of Paper Technology	30-31 th Dec. 2004
12.	NR Neelakantan	Selection Committee Meeting for the Post of Professor/Asst.Profs.	Centre for Polymer Science & Engg at IIT Delhi	22 nd Nov. 2004
13.	Shankar Narasimhan	Lecture	Bhilai Steel Plant	9 th Dec. 2004
Symposia:				
1.	S.Pushpavanam	Mathematical Methods In Chemical Engg. In MaCKiE-Symposium	Max-Planck Institute Germany	25-30 th May 2004
2.	R.Nagarajan	Indo-US Conference CHEMCON 2004	Mumbai	28-30 th Dec. 2004
Conference:				
1.	R.Nagarajan	CHEMCON 2004	IChE/AIChE	Dec. 2004
2.	S.Ramanathan	IChE 2004	IIT Bombay	27-30 th Dec. 2004
Training:				
1.	A.Kannan	Interpersonal skills & Communication, HRD Training Programme	IIT Madras	21-22 nd Jan. 2005

Short term Course:				
1.	S.Pushpavanam	Computational Techniques in Chemical Engineering	AICTE-ISTE sponsored Short Term Training Program	During Dec.2004 Maharashtra Academy of Engineering, Pune
2.	DVS Murthy	Recent Trends Wastewater Management	AICTE-ISTE sponsored short Term Training Programme	30 th Dec.2004 Sathyabama College of Engineering, Chennai

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue and Date
1.	T.Panda	Chemical Engineering Programme	BMS College of Engineering 2-4 th April 2004
2.	Tam Sridhar	Progress in Extensional Rheology	Australia -22 nd April 2004
3.	VSR Rao	Instrumentation for Safe Plant Oprtation	Regional Labour Institute, Chennai-113
4	A.Kannan	Process Intensification	24th Dec.2 004\ Bapatla Engineering Colleege, A.P.
5	A.R.Balakrishnan	Assessment Committee Meeting	10.02.2005, CLRI, Chennai.
6	N.R.Neelakantan	Assessment Committee Meeting Expert Committee Meeting	18.02.2005, IICHT, Hyderabad 28 th Feb.05 & 1 st Mar.05, Ministry of Environment & Forests, New Delhi
7	R.Nagarajan	Taguchi Cost of Quality Optimisation	CUMI Hosur, Sep.2004
8	R.Nagarajan	Contamination Control Technology	ISRO, Trivandrum , Nov.2004
9	PST Sai	Turbulent Bed Contactor-An Air Pollution Control Equipment	All India Seminar on "Advances in Fluidization Engineering" Institute of Engineers (Tirupathi Local Chapter) 26 th Feb. 2004
10	PST Sai	"Direct Reduction Process: Is It an Alternative to Blast Furnace "	National Conference on "Novel and innovative Approaches in Chemical Engineering and Biotechnology" St. Joseph's College of Engineering, Chennai, 4 th Feb.2004
11	DVS Murthy	Biological Secondary Waste Water Treatment	Satyabhama Institute of Technology
12	DVS Murthy	Issues in Industrial air pollution	National workshop on Incineration & Solid waste management, IIT Madras, April 05
13	DVS Murthy	Gaseous pollution monitoring and control	Advances in Energy Technology, 20-24 Dec.04
14	A.kannan	Unit Operations in Chemical Industry - Mixing,drying,spray drying and communication	4 hours invited talk in the Industry Old Mahabalipuram Road, 27 th Dec.2004
15	Abhijit P Deshpande	Flow visualization and spreading on Porous substrates	HLRC, Unilevers, Bangalore, 11 th June 2004

Visits abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit
1.	NR Neelakantan	University of Tours France	4.12.2003 to 31.8.2004	Research work at University of Tours, France
2.	DVS Murthy	Bangkok	08.11.2004 to 10.11.2004	ARRPET-Phase-II Review Workshop at the Asian Institute of Technology (AIT)
3.	T.Swaminathan	Second workshop on AUJICK(Asian Urban Information Centre of Kobe	21-11-2004 to 25-11-2005	Khon Kaen, Thailand.
4.	A.R.Balakrishnan	Miask, Belarus	Nov.1-5,2005	Member of Government of India delegation to Belarus lead by Minister of Science & Technology

Honours and Awards obtained:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date of award
1	Mr.K.R.Gopi	Gold Medal	Anna University	1st Rank	9 th Feb.2005 Graduation Day

Books, Monographs authored/co-authored:

Sl. No.	Name of faculty	Title	Publisher	Author/ Co-author
Books:				
1.	M.Chidambaram	Basics of Data Acquisition and Control in Handbook of Networking	Springer Verlag New York	--

Fellowships of Academics and Professional Societies:

Sl. No.	Name of faculty	Name of the Academy/ Professional Society	Level	Year of admission
INAE:				
1.	A.R.Balakrishnan		Fellow	2003
ISTE/CSI & others:				
1.	A.R.Balakrishnan		Member	1996
2.	A.R.Balakrishnan	American Institute of Chemical Engineers	Senior Member	1978

4.4.4 Design and Development Activities:

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value (Rs. in lacs)
1	58/132/172/192 KH7 Ultrasonic Systems	10.00
2	Cavitation Meter	02.50
3	Precision Turbidimeter	01.50
4	Frequency response analytor	10.50
5	Chemical, Mechanical, Polisher	02.50
6	UV VB Spactrophotometer (Dr.S.Pushpavanam)	03.00
7	Methane Gas Analyzer (Under Procurement)	03.96
8	Advanced ElectroChemical Instrument (PARSTAT 2263-Frequency Response Analyzer* Potentiostat* Galvanostat)	10.05
9	Dynamic shear rheometer	25.00
10	Goniometer	05.00
11	Strain controlled universal testing machine with temperature chamber	18.00

4.4.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. In lacs)	Co-ordinators
1	Localised Eco-friendly Sullage Treatment in Society	12.02.05 to 13.08.05	Socially Relevant Projects	0.575	S.Pushpavanam
2	Flow Boiling Heat Transfer inside narrow Tubes	03.03.2003 02.03.2006	ISRO	21.27	A.R.Balakrishnan S.K.Das (ME)
3	Ultrasonic De-Statification	Sep. 2004 Aug. 2006	ISRO	10.89	R.Nagarajan
4	Ultrasonic Cleaning	July 2004 June2005	CREST INC	02.50	R.Nagarajan
5	Separation of Marcasite from Pulverized Lignite Using Fludized Bed	Oct.2003 Sep.2005	Central Mine Planning & Design Institute Limited	15.06	PST Sai K.Krishnaiah
6	Experimental verification of multiple steady states in azeotropic distillation columns	-	MHRD Sponsored R&D Project	12.00	A.Kannan

7	Electrochemical Characterization of copper Chemical Mechanical Polishing for Micelectronic Fabrication	March 2004 to Aug.2007	MHRD (R&D)	15.00	S.Ramanathan
8	Experimental Characterization of Additive effects on particle size distribution and removal rate in Chemical Mechanical Planarization	March 2005- March 2007	MHRD(TAT)	15.00	S.Ramanathan
9	Recycling of Printed circuit boards	2005-2008	MHRD	15.00	Abhijit P Deshpande, Susy Varughese, S.k.Seshadri,Pratha p Haridoss, KCH kumar
10	Wetting dynamics on porous and particulate solids	2003-2006	MHRD	10.00	Abhijit P Deshpande Satyanarayana Chakravarty

Industrial Consultancy projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. In lacs)
1	R.Nagarajan	Erosion Modeling	CUMI	5.25
2	T.Pande	Tagichi Optimisation	CUMI	0.94
3	PST Sai	"Drying of liquid Humic acid Product"	Neyveli Lignite Corporation Ltd	0.551
4.	SS. Narayanan	Miling Studies on sice	BHEL, Trichy	6.46
5.	A.Kannan	Design Check on extractor Column	Asian Peroxides Ltd	Rs.50,000/-
6.	A.Kannan	Estimation of Interfacial tension	Asian Peroxides Ltd	Rs.15,000/-
7.	S.Ramanathan	Feasibility study for electrochemical removal of iron from sulfuric acid pickling bath	TI Cycles (Murugappa Group)	0.4

Journal Editorial Boards:

Sl. No.	Name of faculty	Level	Journal
1.	A.R.Balakrishnan	Associate Editor	International Journal of Heat and Mass Transfer
2.	A.R.Balakrishnan	Associate Editor	International Communications in Heat and Mass Transfer
3.	A.R.Balakrishnan	Associate Editor	Journal of Energy, Heat and Mass Transfer

Research Publications:

Total No. of papers published in Refereed National Journals	:	06
Total No. of papers published in Refereed International Journals	:	31
Total No. of papers presented in National Conferences	:	19
Total No. of papers presented in International conferences	:	06

In Refereed National Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	R.Padma Sree and M.Chidambaram	Control of unstable systems with an unstable zero	Indian Chemical Engr. 46 (2004) 21-26
2.	Sathe Vivek and M.Chidambaram	Cascade controller tuning by relay auto tune method	Jl. Ind. Inst.Sci.84 (2004) 89-97
3.	Nikhil Kumar, M.Pandit & M.Chidambaram	Multivariable Control of Four-Tank System	Ind.Chem.Engr.46 (2004) 216-221
4.	Vivek Sathe & M.Chidambaram	Simple method of tuning cascade control systems	Jl. Of IISc.,84 (2004) 233-242
5.	S.Ratheesh & A.Kannan	Holdup and Pressure Drop Studies in Structured Packings with Catalysts	Chem.Engg. J.104, 2004, pp 45-54
6.	A.kannan & Sadhi Khan Pathan	Enhancement of Solid Dissolution Process	Chem.Engg. J. 102, 2004, pp.45-49

In Refereed International Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	A.R.Balakrishnan	Nucleate Pool Boiling Heat Transfer of Multi Components Mixtures	Chemical Engineering Research & Design
2.	A.R.Balakrishnan	Heat Transfer in Nucleate Pool Boiling of Multi Components Liquid of Mixtures	Experimental Thermal & Fluid Science
3.	A.E.R.Bruce , PST Sai & K.Krishnaiah	Liquid holdup in turbulent bed contactor, A.E.R. Bruce,	Chem.Eng.J. 99, 203-212, 2004
4.	A.E.R.Bruce , PST Sai & K Krishnaiah	Characterization of liquid phase mixing in turbulent bed contactor Through RTD studies AER, Bruce	Chem.Eng.J., 104, 19-26, 2004
5.	PST Sai & Loni Dinesh V	A Model for residence time distribution of solids in a rotary Kiln,	Can.J.Chem.Eng. 82, 392-398, 2004
6.	Sharif Hussein, Sharif Zein, Abdul Rahman Mohamed, PST Sai	Studies on Catalytic decompositions of methane to hydrogen and carbon over Mn/Ni/TiO ₂ catalyst	Ind. Eng.Chem.Res. 43, 4864-70, 2004
7.	Sharif Hussein Sharif Zein, Abdul Rahman Mohamed, PST Sai & Noor Asmawati Zabidi	Production of Hydrogen and carbon nanotubes from methene	J. Ind. Eng. Chem., 10(6), 869-876, 2004
8.	M.Chidambaram & K Srinivasan	An improved auto tune identification method chem.Biochem	Chem. Biochem. JI. 18 (2004) 249-256
9.	R Padma Sree & M.Chidambaram	Simple method of designing controllers for stable and unstable FOPTD systems	Comp & Chem.Eng.28 (2004)2201-2218
10.	R Padma Sree & M.Chidambaram	Simple method of calculating set point weighting parameter for unstable systems with a zero	Comp.Chem.Engg.,28 (2004) 2433-2437
11.	A.Arvind Kumar, M.Chidambaram, ASR Rao and R.Pickhardt	Nonlinear PI controller for pH Process	Chemical Engg Commun., 191(2004)241-261
12.	R.Padma Sree & M.Chidambaram	Set point weighted PID controllers for unstable systems	Chemical Engg Commun., 192(2005) 1-13.
13.	R.Anandanatarajan, M.Chidambaram and T.Jayasingh	Design of controllers using variable transformation for a nonlinear process with dead time	ISA transactions,44 (2005) 81-91
14.	E.Sivakumar, Vivek sathe & M.Chidambaram	Improved saturation relay tuning Test for systems with larger dead time	Ind. & Eng. Chem.Res. 44 (2005) 2183-2190
15.	Vivek Sathe & M.Chidambaram	Identification using single symmetrical relay feed back test.	Comp.& Chem.Engg. 29 (2005) 1625-1630
16.	R.Padma Sree & M.Chidambaram	A simple Robust method of tuning PID controllers for Integrator/Dead time processes	Jl. Of Chem.Engg. of Japan, 38 (2005), 113-119
17.	DVS Murthy	Performance Evaluation of a compost Biofilter treating Toluene vapours	Process Biochemistry (International journal)
18.	S Sanakara Narayanan	Control of Ball Milling Circuit	Journal of Process Control
19.	SS Narayanan	Numerial Studies on rotating wheel air classifier	AiChE Journal
20.	Tanmay Basak	Self Organization and self similarity in boiling systems JL.	Journal of Heat Transfer-Transactions of the ASME, Vol.126,pp.661-662, Aug 2004
21.	Tanmay Basak & A.S.Priya	Role of resonance on microwave heating of oil-water emulsions	AiChE Journal 50, 2659-2675, 2004
22.	Tanmay Basak	Analysis of microwave propagation for multilayered material processing: Lambert's law versus exact solution	Industrial & Engineering Chemistry Research, 43, 7671-7675, 2004
23.	Tanmay Basak	Role of metallic and ceramic supportson enhanced Microwave heating processes	Chemical Engineering Science, 60 (10): 2661-2677, 2005
24.	Tanmay Basak & A.S.Priya	Generalized analysis on microwave assisted material processing for one dimensional slabs: Metallic support versus free space	Industrial & Engg Chemisty Research, 44 3075-3085, 2005
25.	Tanmay Basak	Role of reflective (metallic) support on microwave heating	AiChE Journal, 51 1319-1329, 2005

26.	Tanmay Basak	Role of ceramic supports on microwave heating of materials	Journal of Applied Physics, 97: Art. No.083537, 2005
27.	R.Ravi S.Ganesh Prakash, R.P.Chhabra	Corresponding States Theory and transport coefficients of liquid metals	Chemical Physics, 302 (2004) 149-159
28.	S.Karmee, P.Mahesh, R.Ravi & A.Chadha	Kinetic study of the Base-Catalyzed Transesterification of Monoglycerides from Pongamai Oil	JAOCS, 81 (2004) 425-430
29.	R.Ravi	A rigorous analysis of McCabe-Thiele assumptions: Critical role of parallel Enthalpy Lines	Chemical Engineering Communications 2005
30.	S.Maharudrayya, S.Jayanti & A.P.Deshpande	Pressure losses in laminar flow through serpentine channels in fuel cell stacks	Journal of Power Sources - 2005
31.	S.Maharudrayya, S.Jayanti & A.P.Deshpande	Flow distribution and pressure drop in parallel-channel configuration of planar fuel cells	Journal of power sources - 2005

In Proceedings of National Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1.	Dr.R.Nagarajan	Particle Science Initiatives	IICHE	Dec.2004
2.	P.Ganesh & M.Chidambaram	Decoupling control of non square systems	PP 1-8, Proc. Of Recent Trends in Instrumentation Applications, (RETINA 2004), (Ed) V.Subbiah & A.Abudhahir & N.Mohan Kumar	23-24 Dec.2004,
3.	A.Seshagiri Rao, R.Chandrasekhar	Dead time compensator for systems with large dead time	Pp1-8 Proc. Of Recent Trends in Instrumentation Applications, (RETINA 2004), (Ed) V.Subbiah, A.Abudhahir & N.Mohan Kumar	23-24 Dec, 2004,
4.	A.Seshagiri Rao & M.Chidambaram	Delay compensator for unstable systems with a large dead time	Pp263-269, TIMA-2004, Chennai	15-18 th Dec.2004,
5.	Sathe Vivek and M.Chidambaram	Improved auto tuning of parallel cascade controllers by simultaneous relay method	CHEMCON-2004, Mumbai	28-30 Dec, 2004
6.	Sathe Vivek and M.Chidambaram	Improved auto tuning of series cascade controllers by simultaneous relay method, PP 77-83,	TIMA-2004,	16-18 Dec, 2004, Chennai
7.	S.Arulselvi, G.Uma & M.Chidambaram	Simple PID controller tuning methods for process with inverse response: Application to power electronics	TIMA-2004	16-18 Dec. 2004
8.	P.Ganesh and M.Chidambaram	Multivariable controller tuning non square systems by genetic algorithm,	PP 296-301, International Conference on Intelligent Sensing & Information Processing, (Ed) M.Palaniswamy et.al.,	4-7 th Jan. 2005, Chennai
9.	DVS Murthy	Issues in Industrial Air Pollution	IIT Madras	April 05
10.	S.Ratheesh and A.kannan	Fluid Dynamics modeling of separation process equipment used in the chemical industry	NSMMA 2004	22 nd Dec. 2004
11.	Denish Shah and A.Kannan	Open loop non linear dynamics of a distillation column	NSMMA 2004	22 nd Dec. 2004
12.	N.Bhatt and A.kannan	Mathematical modeling and simulation of distillation column with vapor recompression	NSMMA 2004	22 nd Dec. 2004

13.	Dube Bharat and Dr.A.Kannan	Mathematical modeling and simulation of heat pump assisted distillation column	NSMMA 2004	22 nd Dec. 2004
14.	R.Srinivasan, S.Jayanti and Dr.A.Kannan	Mass Transfer from a rotating cylinder at high Reynolds numbers	ANSYS India Users Conference 2004	1-2 Dec. 2004
15.	G.Ramalinga Reddy & A.Kannan	Steady State and Dynamic Studies of a Homogenous-Azeotropic Distillation Process	INTERFACE 2004, HBTI, Kanpur	Feb.2004
16.	Sruthi Kalpana & Dr.A.Kannan	Analysis of batch distillation	NSMMA 2004 HBTI Kanpur	Feb.2004
17.	Sasmita Pradhan & Dr.A.Kannan	Simulation and Analysis of an Extractive Distillation Process	National Conference on Separation in Process Industries Conference Proceedings p.86-94 , 2003	14-16 th Feb. 2003
18.	M.Sudeshna, S.Ratheesh & Dr.A.Kannan	Revamping of Distillation Columns with structured Packing	CHEMCON 2002, 55 th Annual session of Indian Institute of Chemical Engineers,	Hyderabad 2002
19.	S.Sriram, A.P.Deshpande, & Pushpavanam	Flow Visualisation in a periodically Driven cavity using particle Image Velocimetry	Chemcon 2004	Mumbai, Dec.2004

In Proceedings of International Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1.	Dr.SS Narayanan	Studies on classification of ricehusk	I SM, Dhanbad	Jan.6-8, 2005
2.	S.Maharudrayya, S.Jayanti,A.P.Deshpande	Flow distribution in a U-type parallel configuration in fuel cell distributor plates	International Conference on electrochemical power systems	Hyderabad, Dec. 2004
3.	Manish Soni, Moiz Diwan and A.P.Deshpande	Characterization of Microscopic Deformation in Polymeric Thin Films using Particle Image velocimetry	The 3 rd International Conference on Experimental Mechanics in the 21st Century	29 th Nov. – 1 st Dec.2004 Singapore
4.	M.Sathish Kumar & A.P.Deshpande	Spreading of Liquid Droplet over a Heterogeneous porous fabric	Chemcon-Indo-US session	Dec.30, 2004, Mumbai
5.	P.Ganesh & M.Chidambaram	Multivariable Controller tuning for non square systems by genetic algorithm	Pp296-301 International Conference on Intelligent Sensing & Information Processing	4-7 th Jan, 2005, Chennai
6.	S.Arulselvi, G.Uma & M.Chidambaram	Design of PID Controller for boost converter with RHS zero	4 th International Power Electronics and motion control Conference (IPEMC)	14-16 th Aug. 2004, Xi'an, China, pp.532-537

Distinguished Visitors to the Department:

Sl. No	Name of the visitor and Designation	Date of visit	Purpose of visit
1.	S.Kilambai	23.3.2004	TATA Chemical Ltd., Bombay
2.	Andreas Seidel Morgenstern, Director, Max Planck Institute for Complex Technical Systems, Germany	04.2.2005	SeminarTalk titled "Crystallization of Enantiomers"
3.	Dr.Shrisudersan Jayaraman Post-doctoral Researcher Dept. of Chemical Engineering University of California, Santa Barbara	18.2.2005	Seminar Talk titled "Combinational Synthesis and screening of Fuel Cell Electro-oxidation Catalysis".
4.	Dr.P.K.Palanisamy Professor & Head Department of Physics, Anna University, Chennai-25	22.2.2005	Seminar Talk titled "Laser-based Instrumentation for Industrial Applications"

5.	Dr.V Sivakumar Scientist, CLRI	10.3.2005	Seminar Talk titled "Studies on the Application of Power Ultra-sound in Leather Processing"
6.	Mr.M.S.Srinivasan Principal Consultant,S Polaris Software Labs, Chennai	31.3.2005	Seminar Talk titled "Desination"
7	Mr Sunil Kathuria	11.06.2005	World Environmental Day Lecture
8.	Sudipta Roy Opportunities for interactions with IIT Madras	14 th May 2004	Seminar Talk titled "Opportunities for interactions with IIT Madras' Newcastle University
9.	Dr.Arun Giridhar Systems approach to Design of Catalysis for Manufacture of Polyethylene	7 th June 2004	Seminar Talk on " Systems approach to Design of Catalysis for Manufacture of Polyethylene'
10.	Dr.S.Balakrishnan Polymer Montmorillonite Clay Nanocomposites Development	9 th July 2004	Seminar Talk on " Polymer Montmorillonite Clay Nanocomposites Development'
11.	Dr.Jagannathan Mahadevan Transport in Permeable Media	26 th July 2004	Seminar Talk on "Transport in Permeable Media'
12.	Dr.Vinod Ammathi Suresh Fluid Mechanics & Gas Exchange in Liquid Filled Lungs	6 th Aug. 2004	Seminar Talk on "Fluid Mechanics and Gas Exchange in Liquid Filled Lungs'
13.	Dr.Krishnaswamy Rajagopal	9 th Sep. 2004	Seminar Talk on "A simulation Based Approach for Increasing Production Of Petroleum' University of Jenero, Brazil
14.	Dr.S.R.Bhat, General Manager Mangalore Refinery and Petrochemicals Limited	9 th Sep.2004	Seminar Talk on " Variable Speed Drives: Applications'
15.	Dr.Vaithianathan Thirunavukkarasu Postdoctoral Fellow	17 th Sep.2004	Seminar Talk on "A New Multi – Scale Mixing Model forTurbulent Reacting Flows'
16.	Eldon R Rene Research Scholar	6-11 th Sep. 2004	Seminar Talk on "Air Pollution Control forGas & Particulate Emission Catnet Asia & ITB, Bandung
17.	Mr. Hemanth Kumar Bilihall, University of Minnesota, USA	3 rd Dec.2004	Seminar Talk on "Heterogeneous Nucleation on Smooth Spherical Particles
18.	P.Ranganathan, Monash University, Australia	7 th Dec.2004	Seminar Talk on "Fast & Accurate Closure Approximations for Bead-Spring Models of Dilute Polymer Solutions

4.4.6 Other Activities:

1. Dr.R.Nagarajan:

Nominated as Chairman, R&D by India Affiliate chapter of them Institute of Environmental Sciences & Technology –Nov.2004

2. Dr.DVS Murthy:

Expert Committee Member-Tamilnadu Pollution Control Board

4.5 DEPARTMENT OF CHEMISTRY

4.5.1 Introduction:

The Department of Chemistry was established in 1959. The department today is very well equipped in terms of expertise and modern facilities and has actively engaged in frontier research and high quality teaching. The department offers a four semester master's (M. Sc) and doctorate degree programmes in chemistry and is also involved in teaching various aspects of chemistry at B. Tech and M. Tech degrees offered in the institute. The major areas of teaching at postgraduate level are:

Transition Metal Inorganic Chemistry Main Group Inorganic Chemistry Bioinorganic Chemistry Solid State Chemistry Organometallic Chemistry Nuclear Chemistry Analytical Chemistry Carbohydrate Chemistry Synthetic & Mechanistic Organic Chemistry	Electrochemistry Catalysis and Surface Science Photochemistry Polymer Chemistry Spectroscopy Quantum Chemistry Computational Chemistry Organic Chemistry Bioorganic Chemistry
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From 2006, a new program Integrated M.Sc degree will be offered.

New courses introduced:

S.No.	Course No.	Title
1	CY676	Principles of Surface Chemistry
2	CY741	Developments in Catalytic and Surface Science

4.5.2 Academic Programmes:

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & Others	Total
M.Sc.	26	23	-	-	-	49
Ph.D.	39	25	17	26	14	132
Total	65	48	17	26	14	181

Names of student/scholar attended conference/seminar and symposia abroad/India:

S.No.	Name of the student	Pro-gramme	Name of the conference/seminar/Symposia	Date and venue
(i) Conference:				
1	Susan Abraham	Ph.D	International Conference on Chemistry Biology Interface – Synergistic New Frontiers	Nov. 21-26, 2004 New Delhi
2	S. Sabiah	Ph.D	International Conference on "Bio-Inorganic Chemistry"	5 – 10 th Dec.04 Goa
3	R. Prakash Babu	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
4	A. V. Vivek	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
5	G. K. Raghuraman	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
6	N. S. Santhoh	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
7	Ch. Siva Kesava Raju	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
8	Vijaya Krishna Kari	Ph.D	Conference on Polymers "MACRO 2004"	14 – 17 th Dec.04 Trivandrum
9	M. V. V. M. Satya Kishore	Ph.D	International Conference on "Electrochemical Power Systems"	20 – 21 st Dec.04 Hyderabad
10	M. Anji Reddy	Ph.D	International Conference on "Electrochemical Power Systems"	20 – 21 st Dec.04 Hyderabad
11	M. Sathish	Ph.D	International Conference on "Environment, Ecology & Pollution"	6 th & 7 th Jan. 2005 Thiruvannamalai

12	V. Sivakumar	Ph.D	National Conference on "Luminescence and its Applications"	2 – 4 th Feb, 2005 Bangalore
13	N. Lakshmi Narasimhan	Ph.D	National Conference on "Luminescence and its Applications"	2 – 4 th Feb , 2005 Bangalore
14	S. Deepa	Ph.D	PITCON – 2005	Feb. 27 th – March 4 th , 2005 Orlando, USA
15	M. Sathish	Ph.D	National Conference on "Applied Research in Solid State Chemistry and Nanotechnology"	25 – 26 th Feb, 2005 Annamalai Univ.
(ii) Seminar:				
1	S. Shanmugam	Ph.D	13 th International Congress on "Catalysis"	11 – 16 th July , 04 Paris, France
2.	S. Sabiah	Ph.D	Recent Trends in Chemistry	Feb. 28, 05 The American College, Madurai
(iii) Symposia:				
1	Vijaya Krishna Kari	Ph.D	40 th IUPAC International Symposium on "Macromolecules, World Polymer Congress, MACRO 2004"	04 – 9 th July, 04 Paris, France
2	Udayanath Aich	Ph.D	22 nd International Carbohydrate Symposium	23 – 27 th July, 04, SECC Glasgow, UK
3	G. D. Kishore Kumar	Ph.D	5 th International Symposium on "Transition Metals in Organic Synthesis"	15 – 17 th Sept. 04 Glasgow, UK
4	J. Dhilip Kumar	Ph.D	Symposium on "Theoretical Chemistry"	9 – 12 th Dec.04 Mumbai
5	A. Saieswari	Ph.D	Symposium on "Theoretical Chemistry"	9 – 12 th Dec.04 Mumbai
6	S. Karthikeyan	Ph.D	Symposium on "Theoretical Chemistry"	9 – 12 th Dec.04 Mumbai
7	B. Ram Prasad	Ph.D	Symposium on "Theoretical Chemistry"	9 – 12 th Dec.04 Mumbai
8	P. Indra Neel	Ph.D	17 th National Symposium on "Catalysis"	18 – 20 th Jan.05
9	V. Chidambaram	Ph.D	17 th National Symposium on Catalysis	18 – 20 th Jan.05
10	P. Suresh	Ph.D	17 th National Symposium on "Catalysis"	18 – 20 th Jan.05
11	S. Srimurugan	Ph.D	17 th National Symposium on "Catalysis"	18 – 20 th Jan.05
12	M. Gomathi Sankar	Ph.D	VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
13	Subhendu Kumar Mohanty	Ph.D	VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
14	Shankara Gayathri	Ph.D	International Symposium of Research Students on Materials and Engineering	20-22 nd Dec.2004 IIT M
			VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
15	A. Saieswari	Ph.D	VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
16	C. Arunkumar	Ph.D	VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
17	C. Arunkumar	Ph.D	VII CRSI National Symposium in "Chemistry"	4 – 6 th Feb. 05 Kolkatta
18	S. Karthikeyan	Ph.D	Discussion Meeting on Advances in "Spectroscopy (DMAS 2005)"	21 -24 th Feb. 05, I.I.Sc., B' lore
19	Akhila Maheswari M	Ph.D	International Symposium on Nuclear and Radiochemistry	14 – 18 th Mar.05 Amristar
20	Ch. Siva Kesava Raju	Ph.D	International Symposium on Nuclear and Radiochemistry	14 – 18 th Mar.05 Amristar
Workshop				
1.	T. Rajkumar	Ph.D	Workshop of Indo French Laboratory for Solid State Chemistry (IFLaSc)	Dec 16 – 18, 2004 IISc., Bangalore

4.5.3 Faculty and their Development:

Faculty:

Name and Qualifications

Major area of specialization (only 3 areas)

Professors:

N. Chandrakumar
Ph.D (IITK)

Magnetic resonance imaging & spectroscopy; Chem. Physics;
Instrumentation

R. Dhamodharan Ph.D, (Mass,USA)	Chemistry of Macromolecules, Chemistry Polymers at Surfaces and Interfaces
M. S. Gopinathan Ph.D (IITK)	Quantum & Theoretical Chemistry, Molecular Spectroscopy, Nonlinear Dynamics & Chaos
D. Loganathan Ph.D (IITB)	Synthetic & Structural Organic Chemistry, Carbohydrate Chemistry and Bio-organic Chemistry
A. K. Mishra Ph.D (IITK)	Fluorescence Spectroscopy, Study of micro- and nano- organized systems
T. Pradeep Ph.D, (IISc, B'lore) Joint with SAIF	Chemical Physics, Advanced materials, Spectroscopy, Ion chemistry, Monolayers, clusters
M. V. Sangaranarayanan Ph.D (IISc, B'lore)	Modeling of Electrochemical Systems
S. Sankararaman Ph.D (Canada)	Organic chemistry, synthesis of acetylene macro cyclic systems and cyclophanes
M. S. Subramanian Ph.D (IITM)	Analytical chemistry, Radio Analytical Chemistry, Chromatography
M. N. Sudheendra Rao Ph.D (IISc, B'lore)	Main Group Inorganic Chemistry, Hypervalent Silicon systems, Inorganic Heterocycles
G. Sundararajan Ph.D (USA)	Organic – Organometallic - Polymer
U. V. Varadaraju Ph.D (IISc, B'lore) Joint with MSRC	Solid State chemistry, Materials joint with MSRC science
T. K. Varadarajan Ph.D (IITM)	Physical Chemistry (Catalysis, Chemical Kinetics)
R. P. Viswanath Ph.D (IITM)	Physics, chemistry, catalysis
Associate Professors:	
Archita Patnaik Ph.D (Varanasi)	Materials Science (Analytical/Physical chemistry)
S. Baskaran Ph.D (IITKanpur)	Asymmetric synthesis, Natural product and organometallic chemistry
Indrapal Singh Aidhen. Ph.D (Pune)	Synthetic organic chemistry. Carbohydrate chemistry
K. Mangala Sunder Ph.D (McGill)	Theoretical Chemistry, Spectroscopy, Chemical Reaction Dynamics
K. Vidyasagar Ph.D (IISc, B'lore)	Solid state chemistry
Assistant Professors:	
P. Bhyrappa Ph.D, (IISc, B'lore)	Bioinorganic Chemistry, Supramolecular Chemistry
Debashis Chakraborty Ph.D (Germany)	Synthetic Organometallic Chemistry
Dillip Kumar Chand Ph.D (IIT Kanpur)	Inorganic Chemistry, Supramolecular Chemistry, Metal driven self assembly
N. Narasimha Murthy Ph.D (IISc, B'lore)	Bioinorganic, Inorganic spectroscopic methods
G. Ranga Rao Ph.D (IISc, B'lore)	Heterogeneous catalysis, Surface Chemistry and Materials Chemistry
Sanjay Kumar Ph.D (IIT Kanpur)	Theoretical Chemistry, Molecular Reaction Dynamics
Santosh J. Gharpure Ph.D	Organic Synthesis, New Synthetic Methods, Asymmetric Synthesis,
G. Sekar Ph.D (IIT Kanpur)	Asymmetric Synthesis, Enantioselective total synthesis of biologically active natural products, Enzymatic and Non-enzymatic Kinetic resolutions

Emeritus Professor:

B. Viswanathan
Ph.D (IIT Madras)

Surface Science, Materials Science, Catalysis, Physical
Chemistry

Scientific Officer:

R. Balachandran Pillai
Ph.D (IIT Madras)

Alkylation, Hydrogenation molecular transformation, reactions of
heterocyclic compounds

Pool Officer (CSIR)

Dr. S. Mahalakshmi

Theoretical Chemistry

**Short-term courses/Workshops/Seminars/Symposia/Conferences/ Training attended by the faculty members
in Academic institutions and public sector undertakings:**

S.No	Name of faculty	Title	Period	Venue
Workshop:				
1	Dr. M. S. Gopinathan	Computational Portal in Chemistry	18 th – 19 th March, 2005	Technopark, Trivandrum
2	Dr. D. Loganathan	22 nd International Carbohydrate Symposium	July 23-27, 2004	SECC, Glasgow, UK
3	Dr. G. Sundararajan	Asymmetric synthesis – for Pharmacy students	Jan. 8, 2005	Annamalai University Chidambaram,
4	Dr. B. Viswanathan	Indo Belarus workshop on Advances in sorption based thermal devices	24 th Nov. 2004	Belarus
5	Dr. Mangala sunder	Computational Portal in Chemistry	18 th – 19 th March, 2005	Technopark, Trivandrum
6	Dr. G. Ranga rao	Workshop of Indo French Laboratory for Solid State Chemistry (IFLaSc)	December, 16 – 18, 2004	Indian Institute of Science, Bangalore
7	Dr. Sanjay kumar	Computational Portal in Chemistry	18 th – 19 th March, 2005	Technopark, Trivandrum
Seminar:				
1	Dr. R. Dhamodharan	Recent Advances in Macromolecules	30 th Sept. 2004	CLRI, Chennai
2	Dr. A. K. Mishra	National Seminar on Nanoscale Imaging	19 th March 2005	AUKBC, Chennai
		Optical Spectroscopy	1 st – 4 th March 2005	IIT Madras
3	Dr. G. Sundararajan	Recent Advances in Macromolecules	30 th Sept. 2004	CLRI, Chennai
Symposia:				
1	Dr. M. S. Gopinathan	Theoretical Chemistry (TCS 2004)	9 th – 12 th Dec. 2004	BARC, Mumbai
2	Dr. A. K. Mishra	6 th National Symposium of CRSI	6 th – 8 th Feb, 2005	IIT Kanpur
		XVII National Symposium on Photosciences for the Millenium	19 th – 21 st Feb, 2005	Sambalpur University, Orissa
3	Dr. M. V. Sangaranarayanan	Second Regional Symposium in Chemistry	7 th & 8 th January 2005	Bharathidasan University, Trichy
4	G. Sundararajan	Chemistry – Biology Interface Synergistic New Frontiers	Nov. 21-26, 2004	New Delhi
5	Dr. K. Mangala sunder	Biannual National DAE-BRNS Symposium on Theoretical Chemistry	9 th – 12 th Dec. 2004	BARC, Mumbai
6	Dr. Sanjay kumar	Theoretical Chemistry (TCS 2004)	9 th – 12 th Dec. 2004	BARC, Mumbai
Conference:				
1	Dr. A. K. Mishra	Polymer Network 2004	20 th & 21 st August, 2004	State Univ. New York
		23 rd Conference of Indian Council of Chemists	29 – 31, Oct. 2004	K.C. College, Mumbai
		International Conference on Soft Matter – 2004	18 th – 20 th Nov., 2004	Jadavpur University, Kolkatta
2	Dr. T. Pradeep	Nanoscience & Technology	March 2005	NCL, Pune
3	Dr. M. V. Sangaranarayanan	55 th Annual Meeting of International Society of Electrochemistry	19 th – 24 th Sept. 2004	Thessaloniki, Greece

		International conference on "Electrochemical Power System"	20 th & 21 st Dec. 2004	Hyderabad
4	Dr. G. Sundararajan	Gordon Conference on Organometallic Chemistry	July 12-19, 2004	Newport – Rhode Island - USA
		Innovation in Chiral Technology.	2 nd Feb. 2005	IICT, Hyderabad
5	Dr. R. P. Viswanath	15 th World Hydrogen Conference	27 th June – 4 th July 2004	Tokyo, Japan
		National Conference on "Applied Research in Solid State Chemistry and Nanotechnology"	25 th & 26 th Feb. 05	Annamalai Univ.
6	Dr. S. Baskaran	Innovation in Chiral Technology	2 nd Feb. 2005	IICT, Hyderabad
7	Dr. Indrapal Singh Aiden	Innovation in Chiral Technology	2 nd Feb. 2005	IICT, Hyderabad
8	Dr. K. Mangala sunder	Advances in Spectroscopy	23 rd Feb. 2005	IISc., Bangalore
		2- day International Conference on "Benchmarking of International Practices in the Use of Multimedia for Formal Education	20 th Jan. 2005	UN Training Centre, Bhopal, Ahmedabad
9	Dr. P. Bhyrappa	3 rd International Conference on "Porphyrins and Phtalocyanines"	11 th – 17 th July 2004	New Orleans, Louisiana, USA.
10	Dr. Dillip kumar chand	SIN CCCS-3	16 th & 18 th Dec. 2004	IIT Kanpur
11	Dr. Sanjay kumar	Advances in Spectroscopy	23 rd Feb. 2005	IISc., Bangalore

Special Lectures delivered by the faculty in other Institutions:

S. No.	Name of faculty	Topic of lecture	Venue and Date
1.	Dr. N. Chandrakumar	Approaches to EPF Imaging for Materials Applications	IISC., Bangalore 22 nd – 23 rd Nov. 2004
		CW EPR Imaging	Univ. of Pondicherry, 5 th Feb. 2005
		Technical aspects of creating NMR facility and its potential applications	CECRI, Karaikudi 14 th March 2005
		World of Physics	Bharathiar Univ. 18 th March 2005
2	Dr. R. Dhamodharan	Fulbright Experience and Community Service	Kozhikode 10 th – 12 th Jan. 2005
3	Dr. D. Loganathan	Towards Understanding Glycan Presentation on the Protein Surface: Chemoenzymatic Synthesis and X-Ray Crystallographic Investigation of N-Glycoprotein Linkage Region Mimetics	Glycobiology Section, Imperial College of Science, Technology and Medicine Harrow, London July 16, 2004
		Glycosidase Catalysed Oligosaccharide Synthesis using Biomimetically Designed N-Linked Saccharides as Acceptors in Transglycosylation and Reversed Hydrolysis	Department of Biotechnology, School of Biosciences, University of Westminster, London, July 20, 2004.
		<i>Towards Understanding Glycan Presentation on the Protein Surface : Chemoenzymatic Synthesis and X-Ray Crystallographic Investigation of N-Glycoprotein Linkage Region Mimetics</i>	MS Technology Centre, Waters Corporation, Manchester, United Kingdom July 21, 2004
		<i>Chemoenzymatic Synthesis and X-ray Crystallographic Investigation of N-Glycoprotein Linkage Region Models and Analogs</i>	School of Biological Sciences, University of Liverpool, Liverpool, United Kingdom July 22, 2004
		Research at the Interface of Chemistry, Biology and Medicine: Sweet Challenges and Opportunities	Department of Chemistry, Stella Maris College, Chennai, February, 10, 2005.

4	Dr. A. K. Mishra	Fluorescence studies on complex multifluorophoric systems	K.C College, Mumbai Pct. 29, 2004
		Study of Polyacrylamide gel by ans Fluorescence	Park Hotel, Kolkatta 18 – 20 th Nov. 2004
		ESPT Molecular Probes for Liposome Membranes	Sambalpur Univ. Orissa 19 – 21 Feb., 05
		Photophysical Chemistry	8 th March, 2004 A. M. Jain College, Chennai
5.	Dr. M. V. Sangaranarayanan	Principles of Electrode Kinetics	Loyola College 25 th Feb. 2005
		Electrical double layer theories	Madurai Kamaraj Univ. 11 th March 2005
6.	Dr. S. Sankararaman	Shape persistent Acetylenic Cyclophanes, Macrocycles and dendrimers	Bharathidasan Univ. Trichy 7 th & 8 th Jan. 2005
		Shape persistent acetylenic cyclophanes, macrocycles and dendrimers	Lady Doak College, Madurai 25 th Feb. 2005
7.	Dr. M. N. Sudheendra rao	Cure and Care of Coordination Bond	NIT Trichy 02 nd Oct. 2004
		Chemistry curriculum for First Year B. Tech students	NIT K 3 rd Dec. 04
		Coordination Chemistry and Periodic Table	St. Aloysius College, Mangalore 4 th Dec. 2004
		Role of Chemistry in the present world	NIT Jalandar 4 th March 2005
8.	Dr. G. Sundararajan	Experiments in Olefin Polymerisation and Asymmetric Synthesis – Use of Organometallic Catalysts bearing C2 and C3 symmetric ligands	IIT Guwahati 14 th June 2004
		Olefin polymerisation with non-metallocene catalysts	July 19, 2004, U. Maryland, USA
		C2-symmetric catalysts for polymerization and asymmetric synthesis	July 22, 2004, Penn State University, USA
		The Chemistry-Biology Interface: Synergistic New Frontiers	Vigyan Bhavan New Delhi, 21 st & 26 th November, 2004
		Single-site catalysts: Getafix potion for polyolefins	Loyola College 24 th Feb. 2005
		<i>Polymer Chemistry</i>	RRL, Trivandrum 14-16 th Dec. 2004
9	Dr. T. Pradeep	Nanoscience and Technology: An Introduction	Trichur Engg. College 27 th Oct. 2004
		Chemistry at ice surfaces	IACS, Kolkatta 4 th Feb., 2005
		Nanoscience and technology: an Indian perspective for the future	NSS College, Panthalam 9 th & 10 th Dec. 2004.
10	Dr. R. P. Viswanath	Nanomaterials for the removal of pollutants from water bodies	Alagappa University Karaikudi 10 th March 2005
		Electrolytic methods for the removal of pollutants from water bodies	Bharath Engg. College Chennai 11 th March 2005
11	Dr. K. Mangala sunder	Introductory Science – Exciting aspects with a biography on Ramanujan	Birla Planetarium, Chennai 24 th April 04
		Theoretical Methods in Rotational-vibrational spectroscopy	IIT Bombay 30 th April 04
		Quantum information processing using density matrix techniques	BARC, Mumbai 9 th – 12 th Dec. 2004
		Introduction of Grid portal Architecture and Web usage of packages	Technopark Thiruvananthapuram 18 – 19 th March 2005
		Introduction to Visual Aids for Chemical concepts and	
		Rotational vibrational spectroscopy energy levels and intensities	Bharathidasan Univ. Trichy, 23 – 24 th March, 05
12	Dr. G. Ranga rao	Application of ceria based oxides in catalysis	SSCU, Institute of Science, Bangalore 16 Dec 2004
		Structural, redox and catalytic chemistry of ceria based materials	Loyola College, Chennai January 6-7, 2004

13	Dr. Sanjay kumar	Quantum Mechanical <i>ab initio</i> bound-state theories and computations	Kerala Education Grid, Trivandrum 18-19 th March, 05
		Density functional theory & its application to computation chemistry	
		Time-dependent quantum mechanical wave packet approach to chemical dynamics	Bharathidasan Univ. Trichy, 23 – 24 th March, 05

Visits abroad by faculty:

S.No.	Name of faculty	Country visited	Date	Purpose of visit
1	Dr. N. Chandrakumar	GERMANY	23.05.04 – 16.07.04	Visiting Scientist
2	Dr. D. Loganathan	U.K	16.07.04 27.07.04	Conference & Visit to Universities
3	Dr. A. K. Mishra	NIH, Bethesda, USA	15.08.04 – 19.08.04	Polymer Networks 2004, Conference
		State Univ. of New York, Buffalo	19 th – 21 st Aug. 2004	Collaborative Research
4	Dr. M. V. Sangaranarayanan	GREECE	19.09.04 – 24.09.04	Conference
5	Dr. S. Sankararaman	GERMANY	15.05.04 - 23.07.04	Collaborative Research
6	Dr. G. Sundararajan	USA	04.07.04 – 28.07.04	Conference & Visits to Universities
		FRANCE	03.10.04 - 08.10.04	Indo-French Symposium
		GERMANY	10.10.04 - 13.10.04	Invited lectures
7	Dr. T. Pradeep	USA	08.11.04 – 19.11.04	Research Collaboration
		JAPAN	20.11.04 – 24.11.04	Research Collaboration
8	Dr. R. P. Viswanath	JAPAN	27.06.04 – 02.07.04	Conference
9	Dr. Indrapal Singh Aidhen	JAPAN	Oct. 2003 – July 2004	Availing JSPS Invitation award for Research
10	Dr. P. Bhyrappa	USA	15.05.04 - 10.07.04	Visiting Fellow – Univ. of Illinois at Urbana Champaign, USA
11.	Dr. N. N. Murthy	USA	Aug. 29, 03 – Aug. 28, 04	Visiting Professor on teaching and Research purpose

Honours and Awards obtained:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr. T. Pradeep	CRSI Bronze Medal	CRSI	Chemistry contributions	5 th Feb. 2005
2.	Dr. M. N. Sudheendra Rao	Vise President, South Zone, IACT	Indian Association of Chemistry Teachers, Mumbai		2005 - 2007
3.	Dr. G. Sundararajan	DST-PAC Organic	DST		April 2004
		Executive Member of the Council of Chemical Research Society of India	CRSI		January 2005
4.	Dr. Indrapal Singh Aidhen	JSPS Invitation Fellowship	JSPS – Japan	Japan Society for the Promotion	Ten month period ended on July 2004
5.	Dr. P. Bhyrappa	JSPS – Invitation Fellowship	JSPS – Japan	Japan Society for the Promotion	Dec. 29, 2004
6.	Dr. N. N. Murthy	Visiting Professor	Johns Hopkins USA	12 months Research collaboration	Aug. 2003

Books, Monographs authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/co-author
(i) Books:				
1.	Dr. B. Viswanathan	Fuel cell principles and Applications	University Press	-
		Photo/Electrochemistry and Photobiology in the Environment, Energy and Fuel 2004	Research Signpost, Kerala	K.Funasaka
		Practical Physical Chemistry	VIVA Books Pvt. Ltd.	

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Name of the Academy/Professional Society	Level	Year of Admission
(I) ISTE/CSI and others:				
1	Dr. Indrapal Singh Aiden	American Chemical Society	Regular Member	Feb. 2005
(II)FNAS				
1.	Dr. A.K. Mishra	National Academy of Science	Fellow	2004

4.5.4 Design and Development Activities:
Brief and specific details of Process/Instruments/Equipment/ Software designed and developed:

Sl. No.	Faculty	Technology Transferred to	Details in brief
1.	Prof S Sankararaman	EMCURE Pharmaceuticals Limited, Pune	The product which is a polymeric material having the capability of binding to phosphate ions has been developed along with the process details for the removal of phosphate ions. The above company has considered its manufacturing and marketing in India.
2.	Prof T Pradeep	Eureka Forbes, Bangalore	A technology for removal of ultra trace quantities of pesticides from drinking water has been developed using supported Nano particles. The above company is currently developing a filter suitable for Indian households.
3.	Prof U V Varadaraju	Anabond, Chennai	Multi colour after glow phosphor materials have been produced. The above company has marketed the product already.

New facilities added or major equipment procured through project funds:

Sl.No	Name of Equipment	Value (Rs.in lakhs)
1.	Polarimeter	7.7
2.	FTIR Spectrophotometer	8.0
3.	Electrochemical Workstation	8.0
4.	Magnetic Susceptibility balance	2.5

Patents filed:

Sl.No.	Name of the Faculty	Agency
1	Dr. Indrapal Singh Aiden	US Paten, Filed by Intellectual Property Rights Division, CSIR, New Delhi
2.	Dr. N. N. Murthy	US patent, filed by Univ. of MD and Johns Hopkins for collaborative research (Nov. 2004)

4.5.5 Research and Consultancy:
Sponsored Research Projects :

S.No	Title	Period	Funding agency	Amount (in lakhs)	Co-ordinators
1	Facility for Spatially Resolved Magnetic Resonance: Methodology Development and Applications to Investigation of Composite Materials and Biological Systems	3 years	DST	524.86	Dr. N. Chandrakumar Dr. B. Viswanathan Dr. M.S. Gopinathan Dr. M. S. Ananth Dr. K. Lalitha

2	Development of a portable fluorescence based fiber-optic sensor for polycyclic aromatic compounds in liquid media	3 years	MHRD	15.00	Dr. A. K. Mishra Dr. R. Sarathy
3	Development of Research Facilities	3 years	MHRD	60.00	Dr. M. N. Sudheendra rao
4	Asymmetric Catalysis	3 years	CSIR	12.00	Dr. G. Sundararajan
5	Synthesis of Novel Dendrimers and Study of their application as Fluorescent Molecular Sensors	3 years	DRDO	22.34	Dr. S. Baskaran Dr. A. K. Mishra
6	Synthesis & Structural Studies of N-glycoprotein Analogs	3 years	Indo-French Centre for the Promotion of Advanced Research, New Delhi	54.32	Dr. D. Loganathan
7	Molecular and Ionic processes at ice surfaces	5 years	DST	100.46	Dr. T. Pradeep
8	Nano MgO and CuO for environmental remediation	2 years	TT Funds & IIT M	1.50	Dr. T. Pradeep
9	Unit on Nano Science & Technology (UNANST-DST)	5 years	DST	235.52	Dr. T. Pradeep Dr. Sarit kumar das Dr. t. Sundararajan
10	Natural Dyes	6 months	Rural Technology Action Group	0.55	Dr. S. Sankararaman
11	Analysis of charge transfer processes across liquid/liquid interface	3 years	DST	11.04	Dr. M. V. Sangarayanan
12	Development of Membranes for Fuel Cell Applications	2 years	Min. of Non-Conventional Energy Sources	23.40	Dr. T. K. Varadarajan Dr. B. Viswanathan
13	Photoactive Nanoparticles for Photocatalytic Decomposition	2 years	DST	9.30	Dr. R. P. Viswanath
14	Investigation of dispersed heteropoly acids and oxide monolayers on ceria based oxide systems	2 years	DRDO	14.97	Dr. G. Ranga rao Dr. T. K. Vardarajan
15	Self-organized structures and electron transport in amphiphilic C60 Langmuir-Boldgett monolayers on heterogeneous substrates: and approach to molecular electronics	3 years	DST	15.08	Dr. Archita patnaik
16	Synthesis and Properties of Fullerene Porphyrin and Porphyrin Donor – Acceptor Complexes	2 years	DRDO	14.31	Dr. P. Bhyrappa
17	Metal driven self assembly coordination cages via modular approach	3 years	DST	13.92	Dr. Dillip kumar chand
18	Enantioselective Oxidative Kinetic Resolution: Asymmetric Version of Corey-Kim Oxidation and Swern Oxidation	3 years	DST	11.34	Dr. G. Sekar

RBIC projects:

S.No.	Name of faculty	Title	Industry	Amount (Rs.in lakhs)
1.	Dr. G. Sundararajan	Search for New Single-site Catalysts	Reliance	12.0
		Polymerisation of Vinyl Ethers	International Specialty Products	USD 25,000
		Electronic Polymers	GE-India Technology Centre	5.0

Journal Editorial Boards:

S.No.	Name of faculty	Level	Journal
1.	Dr. G. Sundararajan	Editor – Regional	Molecules
2.	Dr. B. Viswanathan	Member of Editorial Board	Eurasian Chemico-Technological Journal

Research Publications:

Total No. of papers published in Refereed National Journals	...	07
Total No. of papers published in Refereed International Journals	...	92
Total No. of papers presented in National Conference	...	02
Total No. of papers presented in International conferences	...	03

In Refereed National Journals:

Sl.No.	Name of Faculty	Title of the paper	Name of the Journal
1	Dr. D. LOGANATHAN	Acetylation of alcohols, phenols, thiols and amines catalysed by H-beta zeolite	Indian J Chem 43B, 892-894 (2004)
2	Dr. M. V. SANGARANARAYANAN	Doping behaviour of ions and polypyrrole-coated platinum in binary solvents – Influence of temperature and composition	Indian National Science Academy
3	Dr. T. K. VARADARAJAN	Synthesis and Characterization of cerium doped OMS-2 type manganese oxide materials – promising catalysts for oxidation of hazardous pollutants	Bulletin of the Catalysis Society of India
4	Dr. B. VISWANATHAN	Synthesis, Characterization and Catalytic properties of Vanadium Substituted Mesoporous Aluminophosphates	Bulletin of the Catalysis Society of India
5	Dr. INDRAPAL SINGH AIDHEN	An overview of various approaches for the synthesis of 1, 2-Dideoxy-β-Aryl or heteroaryl-D-ribofuranose framework.	National Academy of Science
6	Dr. G. RANGO RAO	Infrared reflection absorption study of water interaction with H-terminated Si(100) surfaces	Bull. Mater. Sci.
7	Dr. P. BHYRAPPA	Covalently linked bisporphyrins bearing tetraphenylporphyrin and perbromoporphyrins units: Synthesis and their properties	Journal of Chemical Sciences

In Refereed International Journals:

Sl.No.	Name of Faculty	Title of the paper	Name of the Journal
1	Dr. R. Dhamodharan	Very Rapid Copper-Mediated Atom Transfer Radical Polymerization of Benzyl Methacrylate at Ambient Temperature	Polymer Science
2		ATRP of Methyl Methacrylate Using a Novel Binol Ester-Based Bifunctional Initiator	Polymer Science
3		Photochemical Attachment of Polymers on Planar Surfaces with a Covalently Anchored Monolayer of a Novel Naphthyl Ketone Photochemical Radical Generator	Polymer Science
4		Synthesis and Characterization of Statistical Copolymers of Styrene and 4-(1-hydroxyalkyl) Styrene	Applied Polymer Science
5		Synthesis and Characterization of a Novel, Water-Soluble with Pendant Groups Carrying cis-Platinum Complex	Macromolecular Science
6	Dr. M. S. Gopinathan	Effects of delayed linear electrical perturbation of the belousov-zhabotinsky reaction: A case of complex mixed mode oscillations in a batch reactor	React. Kinet. Catal. Lett.
7		A two variable delay model for the circadian rhythm of <i>Neurospora crassa</i>	Journal of Theoretical Biology
8	Dr. D. Loganathan	Transglycosylation Catalyzed by Almond β-glucosidase and Cloned <i>Pichia etchellsii</i> β-glucosidase II using Glycosylasparagine Mimetics as Novel Acceptors	Biocat Biotrans
9		Binding of beta-D-glucopyranosyl bismethoxyphosphoramidate to glycogen phosphorylase b: Kinetic and crystallographic studies	Bioorg Med Chem,
10		Enzymatic synthesis of N-glycoprotein linkage region disaccharide mimetics using β-N-acetylhexosaminidases from <i>Aspergillus oryzae</i> and <i>Vigna radiate</i>	Tetrahedron Asymm,
11		Synthesis of N-(β-Glycopyranosyl)azidoacetamides	J Carb Chem, 24, 1–12 (2005)

12	Dr. A. K. Mishra	Self-association of protected Newkome-type second-generation dendrimers at nanomolar level concentrations in aqueous solution	Macromolecules,
13		Ground and excited state proton transfer reaction of 3-hydroxyflavone in dimyristoylphosphatidylcholine liposome membrane	Photochemistry and Photobiology
14	Dr. M. V. Sangaranarayanan	Electrochemical reductive cleavage of carbon-halogen bonds in 5-bromo-1,3-dichloro-2-iodobenzene	Tetrahedron
15		5-Bromo-1,3-dichloro-2-iodobenzene	Acta Cryst.
16		Estimation of the activation energies for heterogeneous catalytic processes from thermodynamic and structural considerations	Molecular Catalysis A: Chemical
17		Hydration energies of trihalides of lanthanide and actinide series – a novel simulation methodology	Molecular Structures (Theochem)
18		Estimation of exchange current density for ferric/ferrous reaction at electrode surfaces – influence of ionic desolvation and dipolar adsorption	Colloid and Interface Science
19		A simple simulation methodology for estimation of dehydration energies and surface potentials of concentrated NaCl solutions	Colloid and Interface Science
20		Stability of scanning tunneling microscopy Tip-Induced bimetallic nanoclusters: Influence of Hardness and Composition on the cohesive energies	Journal of physical Chemistry
21		Dehydration Energies of Alkali Metal Halides. A New simulation methodology involving mean nearest neighbor distances and thermodynamic forces	Langumir
22		Analysis of Electron Transfer Processes across liquid / liquid interfaces: Estimation of the equilibrium free energy of activation	Journal of physical Chemistry
23		Cleavage of an aromatic carbon-heteroatom bond in a single step or successive steps? A mechanistic distinction in the reduction of 5-bromo-1,3-dichloro-2-iodobenzene	Tetrahedron Letters
24		Electrochemical reductive cleavage of carbon tetrachloride in aqueous-nonaqueous binary solvents	Electroanalytical chemistry
25		Analysis of the diffusion layer thickness, equivalent circuit and conductance behaviour for reversible electron transfer processes in linear sweep voltammetry	Electrochimica Acta
26		Formulation of a simple analytical expression for irreversible electron transfer processes in linear sweep voltammetry and its experimental verification	Electrochimica Acta
27	Dr. M. N. Sudheendra Rao	Dianionic silicate derivatives of transition metals: Synthesis by a facile ion exchange route, characterization and thermolysis studies	Polyhedron
28		Crystal structure analysis of norbornadiene adduct of diphenyl hexamethyl lenimino phosphiniminocyclotrithiazene	Chemical Crystallography
29	Dr. G. Sundararajan	Highly efficient resolution of racemic diethanolamine using (-) camphor-10-sulphonic acid	ARKIVOC
30		Synthesis of β -amino alcohols by regioselective ring opening of arylepoxides with anilines catalyzed by cobaltous chloride	Tetrahedron Letters
31		A New Class of Mono- and Tetra-nuclear Titanatranes – Synthesis, Structure and Ethylene Polymerization Studies – Role of Single-Sited Active Species?	Organometallics

32	Dr. M. S. Subramanian	Synthesis, Characterization, and Metal Extractive Behaviour of Functionalized AXAD-16 Polymeric Matrix using Oxyacetone Acetamide	Separation Science and Technology	
33		Selective extraction of U(VI), Th(IV), and La(III) from acidic matrix solutions and environmental samples using chemically modified amberlite XAD-16 resin	Anal Bioanal Chem	
34		Selective extraction of U(VI), Th(IV), and La(III) from acidic matrix solutions and environmental samples using chemically modified amberlite XAD-16 resin	Anal Bioanal Chem	
35		Extraction of U(VI), Th(IV), and La(III) from acidic streams and geological samples using AXAD-16-POPDE polymer	Anal. Bioanal Chem	
36		Selective extraction of U(VI) over Th(IV) and La(III) from high acidic streams using a new chelating ion-exchange polymeric matrix	Talanta	
37		Selective extraction of U(VI) over Th(IV) from acidic streams using di-bis (2-ethylhexyl) malonamide anchored chloromethylated polymeric matrix	Talanta	
38		Selective extraction of Actinides using FEBEHBA Grated Polymer: A Green Process for Nuclear Reprocessing Program	Separation of Science and Technology	
39		Extraction chromatographic method for the separation of actinides and lanthanides using EDHBA grafted AXAD-16 polymer	Talanta	
40		AXAD-16-3,4-dihydroxy benzoyl methyl phosphonic acid: a selective preconcentrator for U and Th from acidic waste streams and environmental samples	Reactive and Functional Polymers	
41		Dr.T. Pradeep	Dynamics of Alkyl Chains in Monolayer-Protected Au and Ag Clusters and Silver Thiolates: A Comprehensive Quasielastic Neutron Scattering Investigation	Physical Chemistry
42			Concentration of CO ₂ over Melting Ice Oscillates	Physical Review Letters
43	Model for Heat Conduction in Nanofluids		Physical Review Letters	
44	Gas phase aggregates of protected clusters		Chemical Society Letters	
45	Carbon onions within silica nanoshells		Letters to the Editor / Carbon 42	
46	Mobility of haloforms on ice surfaces		Chemical Society Letters	
47	Stabilization of monolayers by metal nanoparticles manifested in oscillations of interfacial potentials		Materials Science & Engineering	
48	An investigation of the structure of stearate monolayers on Au@ZrO ₂ core-shell nanoparticles		Materials Chemistry	
49	Porosity of core-shell nanoparticles†		Materials Chemistry	
50	Mo(W) _n O _m [±] (n = 1-33; m = 2 – 75) clusters in the gas phase		Chemical Physics Letters	
51	Electrochemical Investigations of oxide coated nanoparticles		Indian National Science Academy	
52	Dr. U. V. Varadaraju	Eu ³⁺ luminescence – a structural probe in BiCa ₄ (PO ₄) ₃ O, an apatite related phosphate	Solid State Chemistry	
53		Thermal expansion behaviour of sodium zirconium phosphate structure type phosphates containing tin	Materials Research Bulletin	
54		Dr. R. P. Viswanath	A patent for generation of electrolytic hydrogen by a cost effective and cheaper route	Hydrogen Energy
55		Structural Properties and Catalytic Behaviour of CrO ₂ /TiO ₂ Systems	Eurasian Chem Tech Journal	
56		Dr. B. Viswanathan	Decontamination of water by photocatalytic means	Research Signpost
57		Synthesis, Characterization and Catalytic activity Mesoporous trivalent iron substituted Aluminophosphates	Molecular Catalysis A: Chemical	

58		Esterification by solid acid catalysis – a comparison	Molecular Catalysis A: Chemical
59		Preparation, characterization and catalytic properties cerium incorporated porous manganese oxide OMS-2 catalysts	Catalysis communications
60	Dr. Anju Chadha	Microbial deracemisation of aromatic β -hydroxy acid esters	Molecular Catalysis
61		Kinetic study of the Base-Catalyzed Transesterification of Monoglycerides from Pongamia Oil	JAOCS
62		Solid state potentiometric sensor for the estimation of tributyrin and urea	Sensors and Actuators – B Chemical
63	Dr. Archita Patnaik	C_{60} Aggregate Structure and Geometry in Nonpolar o-Xylene	Physical Chemistry
64		Surface/interface electronic structure in C_{60} anchored aminothiolate self assembled monolayer: An approach to molecular electronics	Chemical Physics
65		Surface confined self-assembled fullerene nanoclusters: a microscopic study	Applied surface science
66		Crystal structure of an ammonium thiocyanate complex of 18-crown-6	Crystal Research Technologies
67	Dr. S. Baskaran	A Highly Regio and Chemoselective Reductive Cleavage of Benzylidene Acetals with $EtAlCl_2-Et_3SiH$	SYNLETT
68		Opening of N-Tosyl Aziridines with Nucleophiles Catalyzed by Phosphomolybdic Acid Supported on Silica Gel	SYNLETT
69		1,3:4,6-Di-O-benzylidene-D-mannitol as a source for novel chiral intermediates through regioselective reductive cleavage	Tetrahedron Letters
70		Epoxide-Initiated Cationic Cyclization of Azides: A Novel Method for the Stereoselective Construction of 5-Hydroxymethyl Azabicyclic compounds and application in the stereo- and Enantioselective total synthesis of (+) – and (-) Indolizidine 167B and 209D†	Journal of Organic Chemistry
71		Heteropoly acid as a novel nitrene transfer agent: a facile and practical aziridination of olefins with Chloramine-T†	Chemical Communication
72		Self-Association of protected Newkome-Type Second-Generation Dendrimers at Nanomolar level concentrations in Aqueous Solution	Macromolecules
73		Ciprofloxacin-Protected Gold Nanoparticles	Langmuir
74	Dr. Indrapal Singh Aidhen	Towards the synthesis of vigabatrin using glycal chemistry	Macromolecules
75	Dr. Indrapal Singh Aidhen	Simple and highly convenient two step practical procedure for the synthesis of optically pure Methyl-d-erythro-2, 3 dihydroxybutanoate	Adv. Synth. Catal.,
76	Dr. Indrapal Singh Aidhen	Convenient Enantiopure Synthesis of (2S, 3R)-2-O-benzyl-3, 4-O-isopropylidene-D-Erythritol from D-(+)-Glucono- δ -lactone: A Potential C_4 Chiral Building block	Synthesis
77	Dr. Indrapal Singh Aidhen	Unambiguous assignment of the stereochemistry at the anomeric carbon in methyl- α -D-C-aryl-glucopyranoside derivative: A representative of products from our new strategy for 2-deoxy-C-aryl-glucopyranosides.	Journal of Carbohydr. Chem.
78		Efficient and Rapid Regioselective Deprotection of Isopropylidene Ketals	Z. Naturforsch (B)
79		Attachment of Arabino configured 3, 4, 5, 6-Tetrahydroxy Hexyl chain to an aromatic ring; Efforts toward 1,4-Phenylene spaced sugars	Trends in Carbohydrate Chemistry
80		An umpolung strategy for the synthesis of 2-deoxy-C-aryl Ribofuranosides	Trends in Carbohydrate Chemistry

81	Dr. K. Vidyasagar	Crystal structures and magnetic properties of $\text{CaSb}_2\text{Mn}_{1-x}\text{O}_3$ perovskites	Solid State Chemistry
82		Hydrothermal Synthesis and Characterization of New Pillared Layered Ethylenediphosphonates of Molybdenum (VI), $\text{A}_2[\text{Mo}_2\text{O}_5(\text{O}_3\text{PCH}_2\text{CH}_2\text{PO}_3)]$ (A = NH_4 , Tl, Cs, Rb) and $\text{K}(\text{H}_3\text{O})[\text{Mo}_2\text{O}_5(\text{O}_3\text{PCH}_2\text{CH}_2\text{PO}_3)]$	Inorganic Chemistry
83	Dr. P. Bhyrappa	Unusual solvent dependent electronic absorption spectral properties of nickel (II) and copper (II)-perhaloporphyrins	Journal of porphyrins and Phthalocyanines
84	Dr. Dillip Kumar Chand	Fundamentals and Applications of Anion Separators	Springer - Verlag
85	Dr. G. Ranga Rao	Three pairs of doublet bands assigned to SiH_2 scissoring modes observed in H_2O -induced oxidation of Si(100) surfaces	Physical Review
86		A comparative infrared study of H_2O reactivity on Si(1 0 0)-(2 × 1), (2 × 1)-H, (1 × 1)-H and (3 × 1)-H surfaces	Surface Science
87		Physicochemical and catalytic properties of Zr-pillared montmorillonite	Microporous Mesoporous Materials
88		Synthesis of CuO, Cu and CuNi alloy particles by solution combustion using carbonylhydrazide and N-tertiarybutoxy-carbonylpiperazine as fuels	Materials Letters
89		Location and interaction of cerium ions in Al- and Zr-pillared montmorillonite clays: UV-Vis diffuse reflectance spectroscopy study	Materials Chemistry and Physics
90		Assignment of surface IR absorption spectra observed in the oxidation reactions: $2\text{H} + \text{H}_2\text{O}/\text{Si}(100)$ and $\text{H}_2\text{O} + \text{H}/\text{Si}(100)$	Surface Science
91		Cerium containing Al- and Zr-pillared clays: promoting effect of cerium (III) ions on structural and catalytic properties	J. Porous Materials
92	Dr. Sanjay Kumar	Vibrationally inelastic collisions in $\text{H}^+ + \text{CO}$ system: Comparing quantum calculations with experiments	Chemical Sciences

In Proceedings of National Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1	Dr. Indrapal Singh Aiden	An umpolung Strategy for the Synthesis of 2-Deoxy-C-aryl ribofuranosides	CFTRI Mysore	Dec, 2003
2		Attachment of Arabino configured 3,4,5,6-Tetrahydroxy Hexyl Chain to an Aromatic Ring: Efforts Towards 1,4-Phenylene Spaced Sugar	CFTRI Mysore	Dec, 2003

In proceedings of International Conferences:

Sl.No.	Name of faculty	Title	Institution	Period
1	Dr. A. K. Mishra	Development of fluorimetric method to monitor aging of transformer oil	PITTCON - 2005	Feb. 26 th - 4 th March 2005.
2.	Dr. N. N. Murthy	Copper complexes of a Novel N_1 N-bidentate ligand	TIFT proceedings of Inorganic chemistry Bio	Dec. 2004
3.	Dr. P. Bhyrappa	Novel Mixed substituted porphyrins: Synthesis and their properties	New Orleans, Louisiana, USA	July 11-17, 2004

Distinguished Visitors to the Department

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1	Dr. YUDHITHIRA SAHOO, Research Scientist, Institute of Laser, Photonics and Biophotonics, State University of New York, Buffalo	03.05.2004	Seminar & Discussion

2	Dr. Sriram Naganathan, Cellgate, Inc, USA	20.08.2004	Seminar & Discussion
3	Dr. S. R. NARAYANAN, Group Supervisor, Electrochemical Technologies Group, NASA-Jet Propulsion Laboratory, Pasadena, California, USA	23.08.2004	Seminar & Discussion
4	Dr. VAIDEHI NARAYANAN, Director of Biomolecular Simulations, Materials & Process Simulation Center, Caltech, Pasadena, California, USA	23.08.2004	Seminar & Discussion
5	Dr. TAREK ABU ELMAATI, Mansoura University, Egypt	12.08.04 - 29.09.04	TWAS Associate ship
6	Dr. NURUN NAHAR, Associate Professor, Jahangirnagar University, Bangladesh	03.09.04 – 31.10.04	TWAS-UNESCO visiting program
7	Prof. YUAN T. LEE (Nobel Laureate) President, Academia Sinica, Taiwan, Republic of China	30.09.2004	Seminar & Discussion
8	Dr. K. SHANKARAN, Merck & Co., Inc., New Jersey, USA	05.10.04	Seminar & Discussion
9	Prof. JURGEN RUHE, Managing Director of the Institute of Micro System Technology (IMTEK), Germany	6-8.10.2004	Seminar & Discussion
10	Prof. PAN TSO-CHIEN Nanyang Technical University, Singapore	07.10.2004	Discussion on Research collaboration
11	Prof. Dhanjoo N Ghista, Nanyang Technical University, Singapore		
12	Prof. Dr. H. Kem, President, University of Goettingen	14.10.2004	Seminar & Discussion
13	Prof. Dr. H. C. L F. TIETZE, Director, Institute for Organic and Biomolecular Chemistry, Goettingen, Germany		Seminar & Discussion
14	Prof. RUSTUM ROY, Penn State University, USA	05.11.2004	Seminar & Discussion
15	Prof. AJIT VARKI, Departments of Medicine and Cellular & Molecular Medicine; Co-Director, Glycobiology Research and Training Centre, University of California, San Diego, USA	15.11.2004	Seminar & Discussion
16	Prof. SANKARAN SUBRAMANIAN, Radiation Biology Branch, National Institute of Health, Bethesda, Maryland	24.11.2004	Seminar & Discussion
17	Dr. AJAY GOPINATHAN, Departments of Physics and Materials Research Lab at University of California Santra Barbara, USA	01.12.2004	Seminar & Discussion
18	Dr. SAYANTANI GHOSH, Departments of Physics and California Nanoscience Institute at University of California, Santra Barbara, USA		
19	Prof. KIMURA KEISAKU, University of Hyogo, Japan	06.12.2004	Seminar & Discussion
20	Dr. STEVE SMITH SYNGENTA, UK	07.12.2004	Discussion on Research interest and placement opportunities
21	Dr. ROGER HALL SYNGENTA, UK		
22	Prof. Hartmut Michel (Nobel Laureate), Director, Department of Molecular Membrane Biology, Max Planck Institute of Biophysics, Frankfurt am Main, Germany	15.12.2004	Seminar & Discussion
23	Prof. T. KOMATSU Nagaoka University, Japan	22.12.2004	Discussion on collaborative programs
24	Dr. S. TANAKA Nagaoka University, Japan		
25	Prof. TATSUYA TSUKUDA, Institute for Molecular Science, Research Centre for Molecular-scale Nanoscience Myodaiji, Japan	10.01.2005	Seminar & Discussion

26	Dr. P. MADHUSUDHAN RAO, Post Doctoral Fellow, Blechner Centre for Industrial Catalysis and Process Development, Department of Chemical Engineering, Ben-Gurion University of the Negev	14.01.2005	Seminar & Discussion
27	Prof. Dr. J. F. G. VLIAGENTHART, Bijvoet Centre for Biomolecular Research, Dept. of Bio- Organic Chemistry, Utrecht University, Utrecht, Netherlands	19.01.2005	Seminar & Discussion
28	Dr. BHUPINDER MADAN President, In-Silico, New Jersey, USA	13 & 14.2.2005	Academic Discussion
29	Dr. M. NETHAJI IISc. Bangalore	17.2.2005	Seminar & Discussion
30	Prof. JOHN HEPBURN Dept. of Chemistry University of British Columbia, Vancouver B.C, Canada	28.02.05	Seminar & Discussion
31	Dr. E. N. PRABHAKARAN Scientist Dept. of Medical Biochemistry & Genetics Texas A & M University, USA	04.03.2005	Seminar & Discussion
32	Dr. GANESAN MANI DOC, Western Michigan University Kalamazoo, MI, USA	18.03.05	Seminar & Discussion
33	Prof. C. N. R. RAO, F. R. S JNCASR, Bangalore Linus Pauling Research Professor Chairman, Scientific Advisory Council to the Prime Minister, Govt. of India	25.3.05	Seminar & Discussion

4.5.6 Other Activities

Prof. P. T. MANOHARAN'S ENDOWMENT LECTURE:

Prof. C. N. R. Rao, F.R.S., JNCASR, Bangalore, Linus Pauling Research Professor, Chairman, Scientific Advisory Council to the Prime Minister of India delivered a lecture entitled "New Dimensions in Chemical Sciences" on 25th March 2005 for a packed audience in the IC & SR Auditorium. Prof. C. N. R. RAO visited the department for an hour and had two separate interactive sessions with i) students and ii) faculty of the department. The programme was a grand success.

4.6 DEPARTMENT OF CIVIL ENGINEERING

4.6.1. Introduction:

The Department of Civil Engineering has been in existence since the inception of IIT, Madras, in 1959, and has grown into a full-fledged Department with specialization in all the major branches of Civil Engineering. The departmental activities embrace Planning, Design, Construction and Management. The academic programmes of the Department in B.Tech., M.Tech., M.S. and Ph.D. are some of the best in the country, and perhaps, in the world. The faculty members have received advanced degrees and/or training from reputed Institutions in India, Germany, U.K., U.S.A., Canada, Netherlands, the former USSR., etc.

The activities of the Department are carried out under different disciplines administratively organized into five Divisions. There are fourteen well-equipped laboratories attached to different specializations. Environmental and Water Resources Engineering and Structural Engineering Laboratories have received substantial initial funding from the Federal Republic of Germany.

4.6.2. Academic Programmes:

The Department provides training to students in both theoretical and practical aspects of Civil Engineering. The students are trained in current state-of-the-art technologies to enable them to adapt themselves to fast changing technological developments in the world.

The Department has postgraduate programmes leading to M.Tech., M.S., and Ph.D. degrees in the various disciplines of Civil Engineering, in addition to the undergraduate B.Tech. programme in Civil Engineering.

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year	Total
B.Tech	41	43	37	48	-	169
Dual Degree	13	10	8	10	12	53
M.Tech.	80	72	-	-	-	162
M.S.	18	13	16	3	-	50
Ph.D.	32	17	20	12	8	89
Total	184	155	81	73	20	523

In addition to the above, several students from foreign countries like Germany and France attend our programs for one or two semesters every year under exchange programs.

Names of student / scholar attended Conference / Seminar and Symposium Abroad/India:

Sl. No.	Name of the student/ scholar	Programme	Name of the Conference/ Seminar/ Symposia	Date and Venue
International Conference				
1.	Mr. Bino I Koshy	Research Scholar Co-authored by Dr R Sivanandan and Dr. S.B.Pattnaik	Poster presentation on "Neural Network based Travel Modal Choice Analysis" at the International Conference on cognitive and Neural Systems, Boston University, USA.	May 19-22, 2004.
2.	S. Murugesan	Ph.D Scholar.	International Conference on Geosynthetics and Geoenvironmental Engineering, ICGGE – 2004	December 8 to 10, 2004. IIT Bombay

4.6.3. Faculty and their Development:

Faculty

Name and Qualifications	Major Area of Specialization
Professors:	
Dr.Devdas Menon, Ph.D. (IITM)	Structural Engineering
Dr.K.Elango, Ph.D. (IITM)	Environmental & Water Resources Engineering
Dr.S.R.Gandhi, Ph.D. (IITM)	Geotechnical Engineering
Dr.V.Kalyanaraman, Ph.D. (Cornell)	Structural Engineering
Dr.Koshy Varghese, Ph.D. (Texas, Austin)	Building Technology & Construction Management
Dr.N.R.Krishnaswamy, Ph.D. (IIT Kanpur)	Geotechnical Engineering
Dr.M.S.Mathews, Ph.D. (IITM)	Building Technology & Construction Management
Dr.A.Meher Prasad, Ph.D. (RICE)	Structural Engineering
Dr.B.S.Murty, Ph.D. (Washington St)	Environmental & Water Resources Engineering
Dr.S.Mohan, Ph.D. (IISc., Bangalore)	Environmental & Water Resources Engineering
Dr.K.Rajagopal, Ph.D. (Florida)	Geotechnical Engineering

Dr.A.Ramachandraiah, Ph.D. (IITM)
 Dr.K.Ramamurthy, Ph.D. (IITM)
 Dr.V.R.Rengaraju, Ph.D. (IISc. Bangalore)
 Dr. Ravindra Gettu, Ph.D. (North Western)
 Dr.K.N.Satyanarayana, Ph.D. (Clemson)
 Dr.K.Srinivasan, Ph.D. (IITM)
 Dr.V.Thamizh Arasan Ph.D. (IITM)
 Dr.B.S.Thandaveswara, Ph.D. (IISc Bangalore)
 Dr. A.Veeraragavan, Ph.D. (Bangalore University)

Building Technology & Construction Management
 Building Technology & Construction Management
 Transportation Engineering
 Building Technology & Construction Management
 Building Technology & Construction Management
 Environmental & Water Resources Engineering
 Transportation Engineering
 Environmental & Water Resources Engineering
 Transportation Engineering

Associate Professors:

Dr.A.Boominathan, Ph.D. (Moscow)
 Dr.Ligy Philip (Ms.) Ph.D. (IIT Kanpur)
 Dr.R.Sivanandan, Ph.D. (Virginia Tech.)

Geotechnical Engineering
 Environmental & Water Resources Engineering
 Transportation Engineering

Assistant Professors:

Dr.P.Alagusundaramoorthy Ph.D.(IITM)
 Dr.Amlan Kumar Sengupta Ph.D. (Univ. of Missouri)
 Dr.K.Ananthanarayanan, Ph.D. (IITM)
 Dr.G.Appa Rao Ph.D. (I.I.Sc. Bangalore)
 Dr.G.R.Dodagoudar Ph.D. (IIT Bombay)
 Shri.K.Gopalakrishna, M.Tech. (IIT Kanpur)
 Dr.Karthik K Srinivasan Ph.D. (Texas, Austin)
 Dr.Manu Santhanam Ph.D. (Purdue Univ.)
 Dr.J.Muralikrishnan Ph.D. (IITM)
 Dr.R.G.Robinson Ph.D. (IISc., Bangalore)
 Dr.S.R.Satish Kumar, D.Engg. (Nagoya Univ.)
 Dr.K.P.Sudheer, Ph.D. (IIT Delhi)

Structural Engineering
 Structural Engineering
 Building Technology & Construction Management
 Structural Engineering
 Geotechnical Engineering
 Environmental & Water Resources Engineering
 Transportation Engineering
 Building Technology & Construction Management
 Transportation Engineering
 Geotechnical Engineering
 Structural Engineering
 Environmental & Water Resources Engineering

Senior Scientific Officer Gr.I

Shri.M.Subbi Reddy, M.S. (IITM)

Transportation Engineering

Visiting Faculty

Prof. A.R.Santhakumar
 Dr. Jose Turmo Corderque

Structural Engineering
 Structural Engineering

Adjunt Faculty

Dr.C.Lakshmanarao
 Dr. M.S.Sivakumar

Structural Engineering
 Structural Engineering

Short-term Courses/Workshops/Seminars/Symposia /Conferences organized by the faculty members:

Sl. No.	Co-ordinators	Title	Period
1.	Prof. A. Ramachandraiah	Organised the summer meeting of MIRC-ASA (Madras India Regional Chapter of Acoustical Society of America), as a treasurer at SIVA ENT Hospital Chennai.	8-9 May, 2004
2.	Prof. S.R.Gandhi, Prof. K. Rajagopal Dr. A. Boominathan.	In-House Training Programme for L&T Engineers at Vadodara.	24 –26 May, 2004
3.	Prof. K.N. Satyanarayana Prof. Koshy Varghese	Executive Development Programme on "Construction and Project Management" in association with Construction Industry Development Council (CIDC) at ICSR, IIT Madras.	July 15-16, 2004
4.	Prof. K.N. Satyanarayana Prof. Koshy Varghese	One day training programme on "Construction Management", for Engineers of VA-TECH WABAG Limited, Chennai.	July 31, 2004.
5.	Dr.K.N.Satyanarayana	Executive Development Programme on Project Formulation, Cost Estimation & Quantity Surveying IIT Madras.	4 th & 5 th October 2004
6.	Dr.K.N.Satyanarayana	Occupational Health and Safety in Construction National Academy of Construction, Hyderabad.	20th Oct. 2004
7.	Dr. A. Meher Prasad	Short term course on <i>Seismic resistance of masonry structures</i> ,at IIT-Madras, Sponsored by NPEEE (MHRD).	21-26 June, 2004
8.	Dr. A. Meher Prasad	Short term course on <i>Structural dynamics and seismic design</i> , at IIT-Madras, Sponsored by NPEEE (MHRD).	14-19 June, 2004,
9.	Dr. A. Boominathan Dr. G. R. Dodagoudar	NPEEE short-term course on "Geotechnical Earthquake Engineering" (MHRD)	July 5-9, 2004

10.	Dr. G. R. Dodagoudar Dr. A. Boominathan	NPEEE short-term course on "Advanced Earthquake Geotechnical Analysis" (MHRD)	July 14-19, 2004
11.	Dr. A. Meher Prasad	Training programme on <i>Dynamic analysis of structures</i> at Larsen & Toubro ECC, Chennai.	11-12 October 2004
12.	Dr. G. Appa Rao	Fracture Mechanics of Concrete – Theory and Applications (under QIP & CEP)	29th Nov. 2004 to 3rd Dec. 2004
13	Dr. A. Meher Prasad Dr.S.R.Satish Kumar	Structural Dynamics and Seismic Design – SDSD 2004	13th to 18th Dec. 2004
14.	Dr. A. Veeraragavan	Conducted a five days training programme on Highway Construction and Management for the Senior Level Engineers of the R&B Department, Government of Andhra Pradesh	14th to 18th February 2005.
15.	Dr. A. Meher Prasad Dr.Amlan Kumar Sengupta	National Programme on Capacity Building of Engineers in Earthquake Engineering Risk Management (NPCBEERM) sponsored by Ministry of Home Affairs	21st February to 18th March 2005
16.	Dr. Devdas Menon	Convened a DST Sponsored workshop on Seismic Evaluation and Retrofit of Multi-Storeyed RC Buildings	12th March 2005

Short-term Courses/Workshops/Seminars/Symposia /Conferences/Training attended by the faculty members in other Academic Institutions and public Sector Undertakings:

Sl. No.	Name of Faculty	Title	Institution	Period/ Duration
Work shops:				
1.	Prof. V. Kalyanaraman	Attended a Research Council Meeting.	SERC, Chennai	24 th and 25 th May 2004.
2.	Prof.K.N Satyanarayana,	Attended kick-off meeting for European Commission sponsored Asia-Link Project on "EU-Asia Network for Competence on Public Private Partnerships (PPPs) in Infrastructure Development" Also visited Universitat Karlsruhe during May 24-26, 2004.	Bauhaus Universitat Weimar, Germany	May 17-19, 2004.
3.	Prof.A.Meher Prasad	Attended a workshop as Member of Programme Implementation Committee.	IIT Kanpur	22-23 April 2004.
4.	Dr. K.N. Satyanarayana	Attended workshop on Occupational Health and Safety in Construction.	National Academy of Construction, Hyderabad.	20 th October 2004.
5.	Dr.Alagusundaramoorthy	International Conference on Recent Advances in Composite Materials.	Benaras Hindu University, Varanasi, India,	December, 2004.
6.	Dr.Alagusundaramoorthy	International Conference on Current Trends in Aqueducts, Road, Rail and Marine Bridges, NBRDC.	Hyderabad, India,	December, 2004.
7.	Dr.Alagusundaramoorthy	International conference on advances in concrete composites and structures,	SERC, Chennai, India.	January 6-8, 2005,
8.	Dr.Alagusundaramoorthy	AICTE Sponsored National Conference on Production & Processing of Composite Materials (PPCM-2004),	Namakkal, India,	November, 2004.
9.	Dr. A. Meher Prasad Dr. S.R.Satish Kumar	Indo-US Workshop on NEES	IIT Bombay	4 th & 5 th January 2005
10.	Dr. A. Veeraragavan	Integrated Development of Rural and Arterial Road Network-Rural Roads Vision 2025	Indian Road Congress, New Delhi	25th to 27th February 2005.
Seminar:				
1.	Prof. S. Mohan	Presented a paper on "Evapotranspiration and Water requirements for crop production in green houses" with Ms. Mary Kutty Abraham and Ms. O. Padmakumari	National Seminar on "Perspectives on Agrarian Relations in Water Management" at Water and Land Management Institute, Bhopal	09.06.2004 and 10.06.2004.
2.	Prof.V. Kalyanaraman	Participated in the Scientific Research Council Workshop on and delivered a lecture on "Virtual Reality".	Organised by Indian Institute of Chemical Technology Engineering, at Hyderabad	05.06.2004

3.	Dr. R.Sivanandan	Chaired a technical session on Parking Management and Case studies in the workshop on 'Parking Requirements for Chennai Metropolitan Area'	Wilbur Smith Associates (P) Ltd., Chennai.	April 15, 2004.
4.	Amlan K. Sengupta	Rehabilitation of Concrete Structures	Anna University Chennai	23 rd June, 2003
5.	Dr. Koshy Varghese	Attended ISO-9000 Lead Auditor Training Programme.	Chennai.	02.08.2004 to 06.08.2004
Symposia:				
1.	Prof. V. Kalyanaraman	Attended a project meeting at Institute of Steel Development and Growth,	Kolkata, aided by SDF.	28.06.2004.
2.	Prof. A. Veeraragavan	Attended the Design Review Meeting for the Strengthening of the Existing Road Between Sriharikota and Sullurpeta, as a Pavement Expert. The meeting was convened on	Department of Space, Government of India.	24 th June 2004
3.	Prof. V. Kalyanaraman	Attended "Swamajayanthi Fellowship Meeting," organised by	Indian National Science Academy, New Delhi on	30.06.2004.
4.	Prof. V. Kalyanaraman	Attended a "Steel Bridge Committee Meeting".	Organised by IRC at New Delhi	09.07.2004
5.	Prof. A. Meher Prasad	Attended a meeting in connection with the "Revision of existing IS Codes for earthquake Hazard Mitigation",	Organised by Ministry of Home Affairs, at New Delhi	05.07.2004.
6.	Prof. Devdas Menon	Attended a PAC Review Meeting of Mechanical Robotics,	Organised by IISc., Bangalore.	07.07.2004.
7.	Dr.S.Mohan	National Symposium on Futuristic of Steel Structures & Application of GIS in Water Resources and Environmental Engineering	Karunya Institute of Technology & Sciences, Coimbatore	16 th Dec. 2004
Conference:				
1.	Dr. G.Appa Rao	Participated and presented two papers 1. Size effects in structural high strength concrete and 2. Ductility of high strength concrete	International Conference on 'Fracture Mechanics of Concrete and Concrete Structures – FRAMCOS –5, at Vail, Colarado, USA	12-16, April 2004.
2.	Dr. A. Boominathan	Presented a paper at the 5 th International Conference on Case Histories in Geotechnical Engineering	New York (USA)	13-17, April 2004.
3.	Dr. Ligy Philip	National Conference on 'Sweeping off the dust in Manila's Air – A Science and Policy Dialogues'.	AIRPET Representative at Goa	21.4.04.
4.	Dr. Manu Santhanam	Presented a paper entitled "Influence of the Degree of Flakiness of Local Agrigate on the Properties of Self Compacting Evaluation".	29 th Conference on "Our World in Concrete and Structures" at Singapore	25 th and 26 th August 2004
5.	Dr. A. Boominathan	Attended the 13 th World Earthquake Engineering.	Vancouver (Canada)	1 st to 6 th August 2004.
6.	Dr. S. R Gandhi	Presented a paper in National Seminar on "Developments in Open Cast Mining of Deep seated Deposits" on topic "Geotechnical Issues in Open Cost Mining – Slope Stability, Back-filling and Rehabilitation".	Neyveli Lignite Corporation	4 th September 2004
7.	Dr. A. Veeraragavan	Presented a paper on, "Design of Concrete Pavements for Highways" during the Annual Convention.	Indian Concrete Institute at Chennai	17 th September 2004
8.	Dr. S. Mohan	Participated in the All India Conference on "Reengineerig India by Linking her Rivers".	Kumara Rani Meena Muthiah Arts College, Chennai	19 th September 2004.
9.	Dr. Koshy Varghese	Presented two papers and chaired a session at the International Symposium and Robotics in construction.	South Korea	From 21.09.2004 to 25.09.2004.

10.	Dr.S.R.Gandhi	Ground Improvement at Int. Conf. on Geo-synthetics Presented a paper titled Experimental and Theoretical Evaluation of Stone columns in soft clay.	IIT Bombay	8 th to 10 th Dec. 2004
11.	Dr.S.R.Gandhi	Shallow and Deep Foundations at Indian Geotechnical Conference 2004	NIT Warangal	17 th to 19 th Dec. 2004
12.	Dr.G.R.D.Goudar	Numerical Methods in Geotechnical Engg. at Indian Geotechnical Engineering Conference	NIT Warangal	17 th to 19 th Dec. 2004
13.	Dr.G.Appa Rao	Presented a paper on Anchorage Bond in Reinforced Concrete in the International Conference on Advances in Concrete & Construction.	Vasavi Engineering College, Hyderabad	15 th to 18 th Dec. 2004
14.	Dr.A.Boominathan and Dr. S. Mohan	Presented a paper titled Neuro-Fuzzy Modelling for Liquefaction Prediction in the Indian Geotechnical Conf.	NIT, Warangal	17 th to 19 th Dec. 2004
15.	Dr. S. Mohan	Presented a paper titled Effect of the recirculation ratio on the activated sludge process with different wastage options in the 3 rd Indian Environment Congress 2004	Centre for Environment Development, Trivandrum	16 th to 18 th Dec. 2004
16.	Dr.A. Boominathan	Influence of Surface Layer as Lateral Dynamic Response of Piles in Clay	NIT Warangal	17 th to 19 th Dec. 2004
17.	Dr. S.R. Gandhi	Presented 3 papers titled - Improvement of lateral capacity of pile due to compaction of surrounding soil - Behaviour of Instrumented pile under vertical loading – A field investigation - Analysis of Hydrotest Results for steel tank on stone column improved grounds.	NIT Warangal	17 th to 19 th Dec. 2004
18.	Dr.Alagusundaramoorthy	Chairman for conducting the Technical Session on "Advanced Composites" in the AICTE Sponsored National Conference on Production & Processing of Composite Materials (PPCM-2004),	Namakkal, India,	November, 2004.
Expert Committee Work / Industry Visit:				
1.	Prof.A.R.Santhakumar	Attended a selection committee meeting by INSDAG	INSDAG Kolkotta	21.4.04 and 22.4.04.
2.	Prof.VKalyanaraman	Attended a PAC meeting of DST Project.	CBRI Roorkee	24.4.04.
3.	Prof.A.Meher Prasad	Attended a meeting at MHRD		26.5.04.
4.	Prof.S.Mohan	Attended the meeting of Ministry of Environment and Forest	New Delhi.	26.4.04.
5.	Prof. K.Rajagopal	Visited for Technical Discussions and giving expert opinion on the facilities at their laboratory	Geosynthetic Section at Garware Wall Ropes, Pune	May 27, 2004
6.	Prof. S.Mohan	Attended the meeting of Ministry of Environment and Forest	New Delhi.	28.05.2004.
7.	Prof. S.R.Gandhi	Participated as expert for faculty election.	Kalinga institute of Industrial Technology, Bhubaneswar.	12.06.2004.
8.	Prof. K.N. Satyanarayana	Reviewed the six-week summer programme for Dual Degree students.	Indian Institute of Management, Ahmedabad	17-19 June 2004.
9.	Prof. Koshy Varghese	Visited (i) EPFL Lausanne, to plan course on Technology & Sustainable development. (ii) T.U. Munchen Construction Management and Information Systems groups.		July 4-9, 2004
10.	Prof. A. Veeraragavan	Attended the workshop on Road Safety Policy and Road Safety Action Plan for Tamilnadu as expert member of the Group on Road Safety Policy for Tamilnadu.	Chennai	27 th July 2004.

11.	Dr. V. Kalyanaraman	Attended TDM Phase II meeting	IIT Kanpur.	09.08.2004
12.	Dr. V. Kalyanaraman	Attended the 27 th Meeting on National Science and Technology Entrepreneurship Development Board	Bangalore	20 th August 2004
13.	Dr. G. Appa Rao & Dr. Amlan K Sengupta	Participated in the Annual Convention of Indian Concrete Institute as a Member of the Organizing Committee, at Chennai.	Indian Concrete Institute.	17 th and 18 th September 2004.
14.	Dr. R. Sivanandan and Dr. Karthik Srinivasan	Attended Tele Trans 2004, a conference on Exposition on Telematics in Transportation.	Chennai	6-7 September 2004
15.	Dr. A. Veeraragavan	To evaluate adoption of New Technologies for Improved Pavement Structure / Design for Ensuring Longevity and Economy for the IT Corridor Road Project as expert.	TRDC, Chennai	15 th Oct. 2004
16.	Dr. S. Mohan	Visited PSNA College of Engineering & Technology, Muthunampatty, Dindigul as an AICTE Expert Committee Member.	PSNA College of Engineering & Technology, Muthunampatty	01.10.2004
17.	Dr. B.S. Thandaveswara	Visited as an AICTE Expert Committee Member.	Parva Rural Engg. College, Loni, Pune	22-24 October 2004.
18.	Dr. S.R. Gandhi	Visited NIT Calicut as an Expert for Selection of Faculty.	NIT Calicut	9 th October 2004.
19.	Dr. A. Veeraragavan	Attended a meeting as expert to evaluate adoption of New Technologies For Improved Pavement Structure / Design For Ensuring Longevity and Economy for the IT Corridor Road Project by the Tamilnadu Road Development Corporation, Chennai.	Tamilnadu Road Development Corporation, Chennai	15 th October 2004.
20.	Dr. V. Kalyanaraman	Visited	M/s Satyam Technology, Hyderabad	11th January 2005
21.	Dr.S.Mohan	HR & CE Dept. Govt. of Tamil Nadu, Chennai,	MoEF, Govt. of India, New Delhi	24th January 2005
22.	Dr. Amlan Kumar Sengupta		PWD, Kerala	25th January 2005
23.	Dr. G.Appa Rao	Advisory Committee meeting of Department of Civil Engineering	Vellore Institute of Technology, Vellore	12th February 2005.
24.	Dr. K. Srinivasan, Dr.Devdas Menon and Dr.Koshy Varghese	Invited as resource persons for curriculum for Post Graduate Education in NITs organised by the National Institute of Technology Karnataka	Surathkal	18th to 25th February 2005
25.	Dr.S. Mohan	AICTE Expert Committee visit for Approval of courses	Bangalore	21 st March 2005
26.	Dr.S. Mohan	Attended Expert Committee (Industry) meeting of Ministry of Environment & Forest	New Delhi	29 th March 2005
27.	Dr. S.R.Gandhi	Attended Fly ash utilization committee meeting	DST, New Delhi	24 th March 2005

Special Lectures Delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Prof.A.Meher Prasad	Delivered a Key Note address on 'Seismic Evaluation'	Bhimavaram during 2-4, April 2004.
2.	Prof.A.Meher Prasad	Delivered a special lecture	Kumaraguru College of Engineering, Coimbatore on 16.4.04.
3.	Prof. V. Thamizh Arasan	Made an invited technical presentation on the topic 'Coordination of Urban Transport Modes' in the seminar on 'Mass Transportation in Chennai City'.	Centre for Consumer Education, Research, Teaching, Training and Testing (CONCERT) at Madras on April 7, 2004.
4.	Dr.R.Sivanandan	Gave an invited presentation on 'Public Transportation in Chennai-Issues and Challenges' during the Seminar on Mass Transportation in Chennai City.	Centre for Consumer Education, Research, Teaching, Training and Testing (CONCERT) at Madras Institute of Development Studies, Chennai on April 17, 2004.
5.	Prof.A.R.Santhakumar	Delivered a lecture on the Invitation of Ministry of Steel.	Gujarath on 23.4.04

6.	Prof. S.R.Gandhi	Gave an Invited Lecture on "Recent Techniques in Soil Exploration".	Gujarat Engineering Research Institute, Baroda on 25 th May 2004.
7.	Prof. K. Rajagopal	Gave the following four lectures. a. Geosynthetics and their applications b. Design Construction of Reinforced Soil Retaining Walls c. Design and Construction of Reinforced Soil Embankments d. Finite Element Applications in Foundation Engineering.	L&T ECC, Baroda during May 25-26 2004.
8.	Prof. Mohan	Delivered a lecture on "Environment and Pollution Awareness".	Lakireddy Balireddy College of Engineering Mylavaram, Hyderabad on 12.06.2004
9.	Prof.A. Ramachandraiah	Gave a special lecture on Architectural Acoustics.	Tamilnadu Science and Technology Centre on 29.06.2004.
10.	Prof. S.R. Gandhi	Delivered two lectures for NTPC in In-house training programme as per details given below: 1.Ground Improvement Techniques 2.Analysis of Soil Parameters	NOIDA, Delhi on 8 th June 2004
11.	Prof. A. Veeraragavan	Delivered lectures on "Maintenance of Rural Roads", "Guidelines for Pradhan Mantri Gram Sadak Yojana" and "Preparation of Detailed Project Report for Pradhan Mantri Gram Sadak Yojana Works" during a six days training programme for the Kerala State Rural Development Department Engineers.	College of Engineering at Trivandrum on 12 th and 14 th June 2004.
12.	Prof. A. Veeraragavan	Delivered lecture on "Maintenance of Rural Roads" during a six days training programme on "Design Construction and Maintenance of Rural Roads", for the Karnataka State Rural Development Engineering Department Engineers.	Bangalore University at Bangalore on 26.06.04.
13.	Dr. K.P. Sudheer	Delivered a lecture on "Artificial neural network application in Hydraulic Engg.	RIT, Islampur, Pune during 15-18, June 2004.
14.	Prof. V. Thamizh Arasan	Gave an invited lecture on "Modelling Mixed Traffic Flow".	Institute of Mathematical Sciences, Taramani, Chennai on 3 rd July 2004.
15.	Dr. B. Nageswara Rao,	Participated in the International Conference on "Advances in Structural Integrity – ICASI 2004 and XIII NASAS" and presented paper on "Fracture analysis of functionally graded materials: a continuum shape sensitivity based method".	Bangalore during 14-17, July 2004, organised by IISc, Bangalore.
16.	Prof. S.R. Gandhi	Gave a lecture on "Ground Improvement" to IGS Local Chapter.	RVS & JC College, Guntur on 17 th July 2004.
17.	Prof. A. Meher Prasad	Delivered a lecture on "Earthquake effects on structures and resistant designs and techniques – Earthquake Risk Management" – in the "Sensitization Session of Pre-Disaster Measures Necessary for facing earthquakes",	Confederation of Indian Industry, on 17 th July, 2004 at Chennai.
18.	Prof. A. R. Santha Kumar	Delivered a lecture on "Road Ahead" in the sensitisation Session of Pre-Disaster Measures Necessary for facing earthquakes".	Confederation of Indian Industry, on 17 th July, 2004 at Chennai.
19.	Prof. S. Mohan	Delivered a lecture on "Risk Assessment in Water Distribution System".	Water Engineering and Development Centre (WEDC) Loughborough University U.K. on 20 th July 2004.
20.	Dr. A. Boominathan	Delivered a seminar talk on "Bending Behaviour of Piles in Clay Under Static and Dynamic Loads".	National University of Singapore on 28 th and 29 th July 2004
21.	Prof. A. Veeraragavan	Delivered invited lectures on, "Design of Rural Roads", "Maintenance of Rural Roads" and Quality Control in Rural Road Construction during a six days training programme on "Design, Construction and Maintenance of Rural Roads", for the Karnataka State Rural Development Engineering Department Engineers .	Ingersoll Rand's Road Institute at Bangalore on 24 th , 30 th and 31 st July 2004.
22.	Prof. V. Kalyanaraman	Delivered a lecture at the Civil Engineering Department,	SRM Engineering College on 06.08.2004.

23.	Dr. A. Veeraragavan	Delivered lecture on "Maintenance of Roads" to the engineers of L&T, ECC.	L&T-ECC Office, Chennai on 13 th August 2004.
23	Dr. J. Murali Krishnan,	Delivered lecture on, "Mechanistic-Empirical design of Highway Pavements" to the engineers of L&T-ECC.	on 13 th August 2004 at L&T-ECC office, Chennai.
24.	Dr. A. Veeraragavan	Delivered lectures on the following topics: 1. "Design of Rural Roads" 2. "Maintenance of Rural Roads" 3. "Quality Control for Rural Road Construction", for the Karnataka State Rural Development Engineering Department Engineers	Bangalore University and Ingersoll Rand's Road Institute at Bangalore on 14 th , 21 st and 28 th August 2004.
25.	Prof.K.Rajagopal	Controlled Yielding to Reduce Earth Pressures on Rigid Retaining Walls,	School of Aerospace, Civil and Mechanical Engineering, University of New South Wales, Canberra, Australia, September 2004.
26.	Dr. B.S. Thandaveswara	Delivered key note address and a lecture on "Effect of Urbanisation on Environmental and Pollution" for one day programme "Environment and Pollution Awareness".	On 24 th September 2004 at Anjalai Ammal Mahalingam Engineering College, Kovilvenni.
27.	Dr. B.S. Thandaveswara	Delivered a lecture on "Engineers in Environmental Protection" at "Engineer's Day" celebration.	On 15 th September 2004 at Crescent Engineering College, Vandalur.
28.	Dr. A. Veeraragavan	Delivered invited lectures on, "Design of Rural Roads" and "Quality Control for Rural Road Construction" during a six days training programme on "Design, Construction and Maintenance of Rural Roads", for the Karnataka State Rural Development Engineering Department Engineers.	Ingersoll Rand's Road Institute at Bangalore on 11 th September 2004.
29.	Dr. A. Veeraragavan	Delivered invited lectures on, "Design of Rural Roads" and "Maintenance of Rural Roads" during a six days training programme on "Design, Construction and Maintenance of Rural Roads".	Tamilnadu State Rural Development Engineering Department Engineers at the National Institute of Technology, Tiruchirapalli on 24 th September 2004
30.	Dr. A. Veeraragavan	Delivered invited lectures on, "Construction of Rural Roads" and "Maintenance of Rural Roads" during a six days training programme on "Design, Construction and Maintenance of Rural Roads".	Karnataka State Rural Development Engineering Department Engineers organized by the Bangalore University on 25 th September 2004.
31.	Dr. A. Meher Prasad	Visited NTPC, New Delhi for project discussion and delivered a Guest Lecture on "Design of tall structures like chimney and natural draught cooling towers".	NTPC, New Delhi, on 13.09.2004.
32.	Dr. S. R. Satish Kumar and Dr. A.R. Santha Kumar, Visiting Faculty	Delivered a Guest Lecture on "Disaster Resistant Design" and "Architectural forms for earthquake resistance". In the Workshop on "Disaster Resistant Structures" organised by the MGR Engineering College.	MGR Engineering College, Chennai on 23.09.2004
33.	Dr. Manu Santhanam	"Smart Materials and Alternative Reinforcement" Special Concrete	CPWD, Chennai 11-15 Oct. 2004
34.	Dr. A. Veeraragavan	Design, Construction and Maintenance of Rural Roads', for the Tamilnadu and State Rural Development Engineering Department Engineers'	NIT, Tiruchirapalli 7 th & 29 th Oct. 2004
35.	Dr. A. Boominathan	"Seismic Site Characterisation" at the National Seminar on Geotechnical Aspects of Earthquake Disaster Mitigation"	Ahmedabad 2nd Oct. 2004
36.	Dr. A. Veeraragavan	Design, Construction and Maintenance of Rural Roads', for the Karnataka and State Rural Development Engineering Department Engineers'	Bangalore 9 th Oct. 2004
37.	Dr. A. Veeraragavan	Road Infrastructure Development in India-Scope for Transportation Engineers'	NIT Warangal 16 th Oct. 2004
38.	Dr.A.Ramachandriah	Delivered keynote lecture on Sound transmission through structures, at the national symposium on Acoustics	Mysore, in Nov, 2004.
39.	Dr. Devdas Menon	Presented the Paper titled Modelling of RC elements for Non-linear Analysis in the STTP Course on ADC.COMS.	College of Engineering, Trivandrum 22nd & 23rd-Dec. 2004
40.	Dr. Manu Santhanam	Self-compacting concrete: An overview at REDEMAT 2004.	NIT Calicut, 2nd Dec. 2004.

41.	Dr. S. Mohan	Environmental Impact Assessment & Optimal Routing for the Transportation of Hazardous Waste using GIS	Kongu Engineering College, Perundurai 9 th Dec. 2004
42.	Dr. A.Veeraragavan	Preparation of DPR and Construction of Rural Roads for the benefit of the engineers of the Karnataka Rural Engineering Department	Ingersoll-Rand's Road Institute, Bangalore 11 th Dec. 2004
43.	Dr. A.Veeraragavan	Pavement Maintenance Management System at the National Seminar on Roads and Highways.	Mysore 12 th Dec. 2004
44.	Dr. S. Mohan	Environmental Management: Issues on Options in the Faculty Development programme on Environmental Engineering	A.C. College of Technology, Anna Univ., Chennai 13 th Dec. 2004
45.	Dr. S. Mohan	GIS Applications for Civil Engineering Infrastructure Systems during the Nat. Symposium on Futuristic of Steel Structures & Application of GIS in Water Resources & Environmental Engineering	Karunya Institute of Technology & Sciences, Coimbatore 16 th Dec. 2004
46.	Dr. A. Veeraragavan	Rural Road Construction and Quality Control for the benefit of the practicing engineers of the contractors	Ingersoll-Rand's Road Institute, Bangalore 22 nd Dec. 2004
47.	Dr. S. R. Satish Kumar	Seismic Behaviour and Design of Steel Structures, AICTE-ISTE course on Earthquake Resistant Design	PSG College, Coimbatore, 25-26 Nov 2004.
48.	Dr. S. R. Satish Kumar	Testing for Fatigue and Fracture	AICTE course on Fracture Mechanics, IIT Madras, 1-3 Dec 2004.
49.	Dr.S.R.Gandhi	Delivered a series of Lectures on Ground Improvement Techniques	AICTE/ISTE Short term course on Advances in Foundation Engg. At NIT Silchar, 3-4 January 2005
50.	Dr.S.R.Satish Kumar	Laboratory based research at IIT Madras	INDO-US NEES workshop organised by IIT Bombay on 4th & 5th January 2005
51.	Dr.G.Appa Rao	Delivered Lecture on Effect of Web reinforcement as shear strength of reinforced concrete beams	Intl. Conf. on Advances in Concrete Composites Structures at. SERC Chennai on 6th to 8th January 2005
52.	Mr. K. Gopalakrishna	Key note presentation on Hybrid reactors for the treatment of Sago Waste Water	Nat.Conf. on Environmental Pollution Control, Davanagere, Karnataka on 7th & 8th January 2005
53.	Dr.A.Veeraragavan	Delivered Lecture on Construction of Rural Roads & Maintenance of Rural Roads	Dept. of Rural Development, Karnataka at Bangalore on 21st January 2005
54.	Dr.A.Veeraragavan	Delivered series of Lectures on Pavement Management	Ingersoll-rand's Road Institute in Bangalore on 29th January 2005
55.	Dr.V.Thamizh Arasan	Delivered a Lecture on Enhancing Level of Safety at Traffic Signals	IIT Kharagpur on 25th January 2005
56.	Dr.V.Kalyanaraman	Delivered 3 Lectures in the one day workshop on Emerging Potential of Steel Composite as Powerful Alternative in Constructional Industry	SRM Engineering College on 7th February 2005.
57.	Dr.Ravindra Gettu	Delivered Lecture on Self Compacting Concrete	Grasim Cements, Aditya Birla Group, Chennai on 9th February 2005.
58.	Dr. A.Veeraragavan	Delivered a Lecture on Pavement maintenance and management in the Workshop on Recycling and other Pavement Rehabilitation Methods	IIT Kanpur on 10th February 2005
59.	Dr.S.R. Gandhi	Delivered a lecture on Tsunami damages at Andaman Islands and TN Coasts	Gujarat Engineering Research Institute, Baroda on 15th February 2005 and also at ICI (Gujarat Chapter) at Ahmedabad on 17th February 2005
60.	Dr. R. Sivanandan	Delivered a Lecture on ITS for Urban India-Issues and Challenges	Department of Civil Engineering, IIT Bombay on 21st February 2005.
61.	Dr.S.Mohan	Valedictory Address in the National Level Technical Symposium (Zenith-2005)	Vellore Institute of Technology, Vellore, (T.N) 26th February 2005.
62.	Dr. R. Sivanandan	Delivered a talk on Smart cars – Smart Highways: Future Transportation	Tamil Nadu Intellectuals Forum, Vepery, Chennai on 5th March 2005
63.	Dr. A. Boominathan	Delivered lecture on Soil Improvement for Earthquake Hazard Mitigation	Vellore Institute of Technology on 5th March 2005
64.	Dr. G. Appa Rao	Delivered a seminar talk on Influence of Silica Fume on the Performance of Concrete	Vellore Institute of Technology on 9th March 2005
65.	Dr.V.Kalyanaraman	Delivered a Lecture on Industrial Collaboration at a conference on Collaboration Research	Industry Institution Interaction Centre (IIIC), Avadi, Chennai on 22nd March 2005

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr. S. Mohan	Vientiane, Laos	26 th Oct. 2004	Chaired a technical session on Water Resources Cross cutting Sector Policy reform in the 30 th WEDC International Conference on "People-Centred Approaches to Water and Environmental Sanitation"
2.	Dr. S. Mohan	Vientiane, Laos	25 th – 29 th Oct. 2004	Presented the papers titled "Development of GIS based Contamination Risk Assessment in Water Distribution System" and "Community Wells for sustainable irrigation in tank commands"
3.	Mr.K. Gopalakrishna	Vientiane, Laos	25 th – 29 th Oct. 2004	Presented paper titled "Performance studies of aerobic FBBR for treatment of diary waste water"
4.	Dr. Manu Santhanam	Univ. of Cape town, South Africa	6 th to 20 th Dec. 2004	DST Sponsored Project
5.	Dr.K.Rajagopal	University of New South Wales, Canberra, Australia	July to Dec. 2004	Sabbatical Leave

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr. Koshy Varghese	Was selected to the Board of International Association of Automation and Robotics in construction			
2.	Dr. S.R. Gandhi	IGS – Smt. Indra Joshi Biennial Prize	Indian Geotechnical Society, New Delhi	Best Paper published.	
3.	Dr. K.P. Sudheer	INAE Young Engineer Award	INAE, New Delhi		

Books / Monographs authored or co-authored:

S U Pillai and Devdas Menon -	"Reinforced Concrete Design", Second edition, 875 pages	Tata McGraw-Hill Book Publ. Co., New Delhi
Devdas Menon	"Little things that matter in life", 50 pages	Reflections, IIT Madras
C.Lakshmana Rao, J. Lakshmi Narasimhan, Raju Sethuraman and S.M. Sivakumar	Engineering Mechanics,	Prentice Hall of India I Edition-2003

4.6.4 Research and Consultancy:

Sponsored Research Projects:

Sl.No	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	A Comparative Analysis of the Health and Well Being of Older Construction Workers in South Africa and India	3 years		6.84	Dr K N Satyanarayana
2.	Better Opportunities for Young Scientists Fellowship Scheme of the Department of Science and Technology (BOYSCAST)	6 MONTHS		1.5	Dr K P Sudheer
3.	Evaluation of relaxation loss in prestressing cables for 100 years	Three years	AERB	18.984	Dr G Appa Rao
4.	EU-Asia Network of competence enhancement on Public-Private-Partnerships (PPPs) in Infrastructure Development.	3 years		9.007	Dr K N Satyanarayana
5.	DST sponsored Indo-South African project on "Heat Evolution in High Performance Concrete and its effects on LongTerm Durability".	Duration – 3 years.		7.67 lakhs.	Dr. Manu Santhanam,

6.	Road Accident Modelling	6 months	Transport Research Laboratory, UK	10.0 lakhs	Dr.A.Veeraragavan
7.	Probabilistic Classification of Satellite Images to Obtain Landform Patterns	21 months	Defence R&D Organisation	22.92 lakhs	Dr.Koshy Varghese, CE Dr.Sukhendu Das, CSE Dr.B.Ravindran, CSE
8.	Reliability Analysis of Reinforced and Pre-stressed Concrete Structure,	2 Years	Board of Research in Nuclear Sciences, Mumbai	23.90 lakhs	Dr. B.Nageswara Rao and Dr.A. Meher Prasad

Industrial Consultancy:

Sl.No.	Name Of The Faculty	Title	Amount (in Rupees)
1.	Kalyanaraman V	Evaluating the space frame structure at SCL plant - II - Ambathur	1,37,750
2.	Devdas Menon	Relaxation test of 3x3 ply uncoated stress relieved strand for prestressed concrete.	27,000
3.	Gandhi S R	Design of compound wall at Ongole.	30,000
4.	G R Dodagoudar	Testing and analysis of rock core samples	20,000
5.	Devdas Menon	Testing of elastomeric bearings	44,000
6.	Ligy Philip	Packaged drinking water sample test	5,500
7.	Meher Prasad A	Testing of steel M.S channels and M.S. plates	15,000
8.	Meher Prasad A	Proof checking the structural design of the AFNHB Project - Ernakulam	2,50,000
9.	Appa Rao G	Design M25 grade concrete mix	20,000
10.	Gandhi S R	Foundation rectification	50,000
11.	Satish Kumar S R	Proof checking of factory shed roof structure at Thoraipakkam	30,000
12.	Devdas Menon	Testing of rebar for automotive glass plant at Sriperumbudur for Saint Gobain India Ltd.	33,000
13.	Devdas Menon	Bond & wear resistance test on HDPE pipe	1,08,000
14.	Devdas Menon	Bond & wear resistance test on HDPE pipe	1,10,200
15.	Meher Prasad A	Tensile and bend test for M.S. angle	5,000
16.	Robinson R G	Engineering properties of fly ash	20,000
17.	Devdas Menon	Testing of pre-stressing strand for PSC	2,00,000
18.	Devdas Menon	Relaxation test for PC wires	33,060
19.	Devdas Menon	Testing of rebar for automotive glass plant at Sriperumbudur	23,100
20.	Satish Kumar S R	Testing of Roofing Sheets Manufactured by M/s Century Wells & Preparing of Load Tables	77,140
21.	Gandhi S R	Analysis of Foundation for Oil Tank at Cochin	15,000
22.	Ramachandraiah A	Advise on Absorptivity of Foam Samples	16,000
23.	Ramachandraiah A	Advise on Noise Control	20,000
24.	Thandaveswara B S	Calibration of V - notch facility at ACCL	10,000
25.	Devdas Menon	Testing of elastomeric neoprene bearings	23,760
26.	Ligy Philip	Analysis of water for concreting worth (M20 & M10)	2,204
27.	Manu Santhanam	Non-destructive investigation of BSNL building	49,590
28.	Manu Santhanam	Testing of garnet dust in concrete	15,000
29.	Devdas Menon	Load tests of neoprene elastomeric bridge bearings	44,000
30.	Mohan S	Sea water sampling for desalination plant	6,000
31.	Appa Rao G	Design M-30 grade concrete mix	20,000
32.	Devdas Menon	Testing of high tensile steel wire	23,142
33.	Gandhi S R	Remedial measures for cracks in regional center	2,00,000
34.	Devdas Menon	Testing of bearings	1,87,340
35.	Devdas Menon	Testing of samples	27,550
36.	Devdas Menon	Testing of Props	88,160
37.	Gandhi S R	Proof checking of ash pond design for TSII expansion at Neyveli	2,25,000
38.	Devdas Menon	Construction of Krishnankotta Bridge - Design for prestressed superstructure	35,815
39.	Kalyanaraman V	Design manual for designing steel structures according to New IS : 800	13,86,000
40.	Kalyanaraman V	Enhancement of the use of Structural Steel in Construction - A Handbook on Architecture and Construction in Steel	13,00,000
41.	Meher Prasad A	Load Testing Procedures on Spherical Bearings	35,000
42.	Meher Prasad A	Design and foundation verification for 75m self supporting tower	40,000

43.	Thamizh Arasan V	Material testing and mix design for flexible pavements	77,691
44.	Gandhi S R	Design of ash dyke at HWP Manuguru	20,000
45.	Boominathan A	Dynamic pile load tests at Hazira	3,30,600
46.	Gandhi S R	Review of Foundation Recommendation	5,000
47.	Devdas Menon	Construction of OTM Accomodation for Army Digital Mapping Centre at Bangalore	77,140
48.	Devdas Menon	Testing of HT Strands	22,040
49.	Veeraraghavan A	Preparation of DIR for 4/6 Laning NH-47 Kanayakumari - Trivindrum	30,000
50.	Satish Kumar S R	Proof stress analysis for copper piece samples.	5,000
51.	Appa Rao G	Design M-30 Grade Concrete Mix	25,000
52.	Robinson R G	Evaluation and recommendation of Geo-fabric for rehabilitation of Roads	30,000
53.	Devdas Menon	Testing of Bars proposed Major Bridge between Tiruvarur to Thanjavur Section	33,060
54.	Devdas Menon	Testing of VSL 4-55 slab anchorage system	39,672
55.	Devdas Menon	Design of Lighthouse at Port Blair	25,000
56.	Devdas Menon	Bearings test for Bridge 358/1 (Aroor)	38,570
57.	Thamizh Arasan V	Mix design for flexible pavements	77,140
58.	Ramachandraiah A	Study of vibration levels in shop floor area	20,000
59.	Mohan S	Numerical modelling of Bhavani Kattalai Barrag -3	1,65,300
60.	Veeraraghavan A	Traffic Management Plan for Srikalahasti Town	2,16,078
61.	Rengaraju V R	Mix designs and advice for BM, DBM and SDBC	27,550
62.	Manu Santhanam	Non-destructive investigation of BSNL Building at Maraimalai Nagar	12,500
63.	Gandhi S R	Foundation Design for Citilights Meadows Project at Mogappair	10,000
64.	Satish Kumar S R	Torsional Elastic Limit Testing of Tubes	42,928
65.	Gandhi S R	Monitoring of mine slopes	20,000
66.	Meher Prasad A	Rapidwall - structural design of 4 storied low cost building for cost comparison	25,000
67.	Meher Prasad A	Load Testing of Front Axle	25,000
68.	Devdas Menon	Compression Testing of 32mm Rod with and without Sleeve	19,836
69.	Murty B S	Calibration of Water Current Meters	1,00,000
70.	Rengaraju V R	Mix designs and advice for semi-dense bituminous concrete.	1,50,000
71.	Devdas Menon	Relaxation test for 100 hrs.	1,50,000
72.	Boominathan A	Dynamic soil tests at PFBR site.	2,00,000
73.	Devdas Menon	Testing of elastomeric bearings.	22,800
74.	Devdas Menon	1000hrs relaxation test for 12.70mm dia LRPC strand as per AS-1311/1987.	27,000
75.	Meher Prasad A	Verification and approval of foundation design of Amaravati	40,000
76.	Gandhi S R	Protection Dwaraka Light House	20,000
77.	Gandhi S R	Checking foundation design for BPCL installation ar Tada.	25,000
78.	Ambalavanan R	Concrete mix design.	45,000
79.	Gandhi S R	Advise on excavation scheme.	10,800
80.	Devdas Menon	Testing of neoprene bearings	22,000
81.	Robinson R G	Design of soil stabilisation	25000
82.	Gandhi S R	Geotechnical design of trestles and caisson at Saugor Island	100000
83.	Devdas Menon	Army Institute of Hotel Management and Catering Technology at Bangalore - Drawings proof checking	2,70,000
84.	Boominathan A	Seismic study in the district of visakhapatnam	150000
85.	Devdas Menon	Anchorage assembly and load transfer tests	91,800
86.	Devdas Menon	1000 hrs. relaxation and physical test as per IS : 14268	33,000
87.	Devdas Menon	Testing of elastomeric bearings	22,000
88.	Devdas Menon	Proof checking of structural design drawings for three plants at Coimbatore, Delhi & Pune	7,70,000
89.	Devdas Menon	Static load testing of prestressed concrete beam for road over bridges between Vellore and Jolarpet for National Highways Authority of India.	8,80,000
90.	Thamizh Arasan V	Quality check for runway pavement material	24,840
91.	Devdas Menon	Relaxation test for 1000hrs.	27,000
92.	Gandhi S R	Checking the load test arrangement.	40,000
93.	Devdas Menon	Testing of H.T.Strand for 1000 hrs.	33,480
94.	Devdas Menon	Testing of neoprene bearings.	22,000
95.	Devdas Menon	Testing of neoprene bearings.	23,760

96.	Mohan S	Development of simulation model to analyse the flow pattern in the Cauvery Basin.	2,95,000
97.	Devdas Menon	Relaxation test for 1000hrs.	27,000
98.	Gandhi S R	Design of jetty at Maradu.	40,000
99.	Devdas Menon	Structural design for school buildings - type design.	43,200
100.	Thamizh Arasan V	Derivation of job mix formula for bituminous mixes for runway and taxiway pavements.	42000
101.	Meher Prasad A	Centre for finite element analysis and design (CFEAD)	18,00,000
102.	Manu Santhanam	Testing of materials.	4320
103.	Murty B S	Calibration of water current meters.	1,00,000
104.	Santhakumar A R	Design analysis including dynamic analysis for 40T/5T Gantry Crane in NLC Mine I	2,00,000
105.	Thamizh Arasan V	Estimation of traffic demand for establishing toll booth.	1,10,000
106.	Meher Prasad A	Calibration of 200 tonnes proving ring.	10,000
107.	Gandhi S R	Preliminary inspection of building for remedial measures.	10,000
108.	Santhakumar A R	Checking and approval of structural design of New Secretariat Complex at Chennai	1,35,000
109.	Ligy Philip	Testing of dried sludge at Nesapakkam Sewage Treatment Plant.	20,000
110.	Ramachandraiah A	Acoustic treatment.	10,000
111.	Devdas Menon	Relaxation test for 1000hrs. -	27,000
112.	Devdas Menon	Testing of neoprene bearings.	22,800
113.	Devdas Menon	Relaxation test for 1000hrs.	27,000
114.	Devdas Menon	Relaxation test for 1000 hrs.	27,000
115.	Ramachandraiah A	Acoustic treatment.	37800
116.	Gandhi S R	Design of gravel - fly ash mix.	30000
117.	Boominathan A	Dynamic tests on piles at MSQ project, IOCL at Haldia.	3,00,000
118.	Devdas Menon	Damage caused to fender dolphin at STB by 'Prathibha Cauvery'	1,25,000
119.	Ambalavanan R	Investigation of construction materials.	35,000
120.	Gandhi S R	Design of pile foundation for NTPC Unchahar.	20,000
121.	Ramachandraiah A	Study of vibration severity.	21,600
122.	Murty B S	Re-calibration of water current meters 24 nos.	25,920
123.	Devdas Menon	Relaxation test for 1000 hrs.	27,000
124.	Satish Kumar S R	Rainwater harvesting of fire water tanks in IOCL Quilon LPG bottling plant.	6,000
125.	Kalyanaraman V	Failure analysis of 70 m microwave tower at dhone.	2,16,000
126.	Rajagopal K	Evaluation of various geosynthetic products for RE wall construction.	97,826
127.	Ramamurthy K	Investigation on Granite samples.	45,000
128.	Gandhi S R	Design of pile foundation.	3,00,000
129.	Gandhi S R	Checking Design of ash dyke.	2,50,000
130.	Dr.S.Mohan	Numerical Modelling of Bhavani Kattalai Barrage, IHH Poondi, PWD, Govt. of Tamil Nadu	1,65,300/-

Research Publications.

Total No. of papers published in Referred National Journals	:	32
Total No. of papers published in International Journals	:	29
Total No. of presented in National Conference	:	45
Total No. of presented in Internationals Conference	:	91

In Refereed National Journals:

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2. Thamizh Arasan,V and Reebu Zachariah Koshy, "Simulation of Heterogeneous Traffic to Derive Capacity and Service-Volume Standards for Urban Roads", Journal of The Indian Roads Congress, Volume 65-2, October, 2004.
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89. G.Baskaran, C.Lakshmana Rao and K.Balasubramaniam, "Finite Element Simulation of Detection and Imaging of Defects Using Ultrasonics", Damage Tolerant Design and Materials, Proceedings of Indo-Japan conference on Damage Tolerance Design and Materials, DTDM- 2004, December 16-18, Chennai, India, pp. 253-258.
90. I. Thanga Ilango, Raju Sethuraman, and C.Lakshmana Rao, "Demonstration of Leak-Before-Beak Phenomenon on a Full Scale Pipe Bend in Secondary Sodium Piping", Damage Tolerant Design and Materials, Proceedings of Indo-Japan conference on Damage Tolerance Design and Materials, DTDM- 2004, December 16-18, Chennai, India, pp. 69-72.
91. G.Baskaran, C.Lakshmana Rao and K.Balasubramaniam, "Simulation of wave propagation in cracked beams using spectral element method", Communicated to ASME Pressure Vessels and Piping conference 2005. Accepted for student paper competition.

Distinguished Visitors to the Department:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Mr. Chandramouli Hindustan Coals (HINCOL)	20 th September 2004.	Delivered an invited talk on "Modified Binders for Long Lasting Pavements", for the benefit of the students of the department as part of the industrial lecture series
2.	Dr. Jennaro B. Odoki of the University of Birmingham, United Kingdom	23 rd September 2004	Delivered an invited lecture on "Highway Development and Management Tool – An Overview" as part of the activities of the Civil Engineering Students' Association
3.	Dr. John Fletcher and Mr. Simon Done of the Transport Research Laboratory, United Kingdom and Dr. Jennaro B. Odoki of the University of Birmingham, United Kingdom	16 th September 2004.	Met the Director and appraised about the Department for International Development funded collaborative research project in association with the Transportation Engineering Division on Road Accident Modeling for Highway Development and Management Tool (HDM-4)
4.	Prof. Gregory Hancock, Dean of the Faculty of Engineering, University of Sydney	7th February 2005	delivered the annual endowment lecture
5.	Dr.Carol Tomlinson-Keasey, Chancellor, Dr.Jeff Wright, Dean of Engineering and Dr. Ramakrishna Thondapu from University of California at Merced, USA	7th February 2005.	visited
6.	Dr. Tham Kwok Wai, Deputy Head (Research) and Prof. Chandrasekar, Director of External Relations, National University of Singapore	21st February 2005	visited
7.	Dr.J.P. Singh, Professor, University of California and Mr. Mathew J. Francis, PE, URS Corpn. USA	21st February 2005.	Visited
8.	Dr. G. Raghuram, Professor, Public System Group, IIM, Ahmedabad	17th March 2005	visited our Department and interacted with Dual Degree students

4.7 DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

4.7.1 Introduction:

Started as Computer Center in 1973, the Department of Computer Science and Engineering was established as a full-fledged department in 1983. It currently offers B.Tech, Dual Degree, M.Tech, M.Tech (Part-time UOP), M.S. and Ph.D programmes.

4.7.2 Academic Programmes:

New Courses Introduced:

SL.No.	Course No.	Title
1	CS612	Wireless Communication and Networks
2	CS669	Pattern Recognition
3	CS670	Reinforcement Learning

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year	Total
B.Tech	30	30	33	32	-	125
Dual Degree	12	9	7	7	8	43
M.Tech	53	55	-	-	-	108
M.S	59	16	12	14	2	103
Ph.D	22	5	9	10	6	52
Total	176	115	61	63	16	431

Names of student/Names of student/ Scholar attended Conference/ seminar and symposia abroad/ India:

Sl.No	Name of the Student/Scholar	Programme	Name of the Conf./Seminar/Symposia	Date & Venue
1	A. Nayeemulla Khan, A. Shahina, Anil Kumar Sao, K. Srirama Murthy	Ph.D.	IT-DA 2004 workshop.	19-03-2004 to 20-03-2004 at Bangalore.
2	V. Suresh, D.S.K. Satish, M. Chaitanya	M.S.	IT-DA 2004 workshop.	19-03-2004 to 20-03-2004 at Bangalore.
3	Leena Mary	Ph.D	Proceedings of ODYSSEY - The Speaker and Language Recognition Workshop.	31-05-2004 to 03-06-2004 at Toledo, Spain.
4	J.Rajesh	M.S	JIAD: A Tool to Inter Design Patterns in Refactoring.	24-08-2004 to 26-08-2004 at Verona, Italy
5	P. Vinod	Ph.D	Nominated to attend the Technische Universitaet Muenchen(TUM-IITB) Summer School.	20-09-2004 to 11-10-2004 at TUM-IITB.
6	S.Jayashree	M.S	10 th ACM International Conference on MOBICOM 2004.	26-09-2004 to 01-10-2004 at Philadelphia, PA, USA.
7	Anil Kumar Sao, Dhananjaya N, Guru Prasad, A. Shahina, K. Srirama Murthy	Ph.D	IITM-CAIR MoC workshop.	27-10-2004 at IITM, Chennai.
8	Mr.Rajesh M.Hegde	Ph.D	Intl.Conf.on Spoken Lang. Proc., INTERSPEECH.	04-10-2004 to 08-10-2004 at Jeju, Korea.
9	V. Suresh, M. Chaitanya	M.S.	IITM-CAIR MoC workshop.	27-10-2004 at IITM, Chennai.
10	Mr.A.Pavankumar	M.S	System on Programmable Chip World Event Contest 2004	02-11-2004 to 03-11-2004 at Bangalore.

11	K. Srinivasa Rao	Ph.D	ICONIP-04	22-11-2004 to 25-11-2004 at Calcutta.
12	K. Srinivasa Rao	Ph.D	ICON-04, KBCS-04.	20-12-2004 to 22-12-2004 at Hyderabad.
13	Vijay Srinivas	Ph.D	Annual National Convention of the Computer Society of India.	01-12-2004 to 04-12-2004 at Mumbai.
14	R. Gururaj	Ph.D	7 th International Conference on Information Technology (CIT 2004).	20-12-2004 to 23-12-2004 at Hyderabad.
15	Badarala Venkataramana	Ph.D	Intl. Trusted Internet Workshop held with Intl. Conf. on High Performance. Computing.	19-12-2004 to 22-12-2004 at Bangalore.
16	S. Jayashree, M.Dhanaraj, T.Bheemarjuna Reddy	MS MS PhD	11 th International Conference on High Performance Computing (Hi PC).	19-12-2004 to 22-12-2004 at Bangalore.
17	Sujatha.R. Upadhyaya	Ph.D	Intl. Conf. On Distributed Computing and Internet Technologies.	22-12-2004 to 24-12-2004 at KIIT, Bhubaneswar.
18	Vinod.P	Ph.D	Fourth Indian Conference on Computer Vision Graphics & image Processing.	16-12-2004 to 18-12-2004 at Kolkata.
19	Satya Sai Prakash	Ph.D	IEEE Intl. Conf. on Personal Wireless Commns.	23-01-2005 to 25-01-2005 at New Delhi.
20	B. Venkata Ramana	Ph.D	IEEE Intl. Conf. on Personal Wireless Commns.	23-01-2005 to 25-01-2005 at New Delhi.
21	G.V. Subramayam	Ph.D	Conf. on Management of Data (COMAD-05).	06-01-2005 to 08-01-2005 at International Center, Goa.
22	Shivani G Rao		Indian Conference on Graphics Vision & Image Processing (ICVGIP).	16-01-2005 to 18-01-2005 at Kolkata.
23	R. Manimegalai, K.Najeeb	Ph.D	18 th International Conference on VLSI Design.	03-01-2005 to 07-01-2005 at Kolkata
24	K. Uday Bhaskar, A. Pavan Kumar, Vivek Garg, Chakka Siva Sai Prasanna, E. Shyam Sundar Reddy	M.S	18 th International Conference on VLSI Design.	03-01-2005 to 07-01-2005 at Kolkata.
25	K. Maruthi Rao	M.Tech	18 th International Conference on VLSI Design.	03-01-2005 to 07-01-2005 at Kolkata.
26	Vikram Chandrasekhar, Sashi Kanth, E.Siva Sowmya, M.Prasanth, V.Murali	B.Tech	18 th International Conference on VLSI Design.	03-01-2005 to 07-01-2005 at Kolkata.
27	A. Nayeemullakhan, C. Krishna Mohan, R. Kumaraswamy, Rajesh Hegde, A.Shahina, Krothapalli sreenivasa Rao, Kodukula Sri Rama Murthy, Suryakanth V, Ganashetty, Leena Mary	Ph.D	Conference on Intelligent Sensing & Information Processing (ICISIP 2005).	04-01-2005 to 07-01-2005 at Chennai.
28	Vakkalanka Suresh	M.S	Conference on Intelligent Sensing & Information Processing (ICISIP 2005).	04-01-2005 to 07-01-2005 at Chennai.

29	Dinil Mon Divakaran R. Deepak	M.S M.S	National Conference on Commun.	January 2005, at IIT-Kharagpur.
30	Vikram Chandrasehkar	B.Tech	IEEE Field Programmable Technology (FPT-2004).	06-12-2004 to 08-12-2004 at Brisbane, Australia.
31	Vinay Saripalli	Dual Degree	Design Automation and Test in Europe (DATE 2005).	07-03-2005 to 11-03-2005 at Munich, Germany.
32	Rajesh M. Hegde		INTERSPEECH-2004.	06-10-2004 to 11-10-2004 at Jeju Island, South Korea.
33	Rajesh M. Hegde		ICISIP-2004.	04-01-2005 to 07-01-2005 at Chennai
34	Rajesh M. Hegde G. L. Sarada		SPCOM-2004.	17-12-2004 to 19-12-2004 at Bangalore
35	Samuel Thomas Dinil Mon Diwakaran		NCC-2005.	2005, at IIT, Kharagpur.

4.7.3 Faculty and their activities:

Prof. Gunter Haring from University of Vienna, Austria was the Gopalakrishnan chair professor from 01-11-2004 to 24-11-2004

Prof. K. Thulasiraman from University of Oklahoma was the Gopalakrishnan Chair Professor from 15-12-2004 to 15-01-2005. He delivered a series of lectures on security related issues.

Dr. Saripalli Prasad was Visiting Faculty in the Department during the month of November, and delivered a series of lectures on computer graphics and visualization.

Faculty:

Name and Qualifications

Major Area of Specialization

Professors:

Gonsalves T.A., Ph.D (Stanford)

Computer Networks, Distributed Systems, Operating Systems, Performance Evaluation Telecom Software, NMS.

Kalyana Krishnan R., Ph.D (Yale)

Computer Architecture, Computer System Design, Microprocessors, Digital Electronic systems, Computer Graphics, Statistical Signal Processing.

Kamala Krithivasan, Ph.D (Madras)

Theoretical Computer Science, Computational Geometry, Languages and Automata Theory Formal Languages and Automata Algorithms, Molecular Computing.

Muthukrishnan C.R., Ph.D (IIT, Kanpur)

Software Engineering, Computer Architecture, Distributed and parallel systems, Object Oriented Systems and databases.

Pandu Rangan C., Ph.D (IISc)

Algorithms, Parallel and VLSI algorithms, Graph Theory, Computational Geometry, Randomised Algorithms, Computational Learning theory, Crypto-analysis.

Raghavan S.V., Ph.D (IIT, Madras)

E-Banking E-Learning, Intelligent Search Engines, Multicasting, Multimedia Presentation Systems, Mobile Agents, Mobile Wireless Networks, Next Generation Web Browsers, Secure WAN Design in Heterogeneous Systems.

Raman S., Ph.D (IIT, Madras)	Computer System Design, Microprocessor based peripherals, Natural language processing, Multimedia Semantics.
Siva Ram Murthy C., Ph.D (IISc)	Parallel and Distributed Computing, Real time systems, Computer Network Architecture for High Performance computing, Dependable Computing, Lightwave Networks, Wireless Networks.
Yegnanarayana B., Ph.D (IISc)	Digital Signal Processing, Speech, Computer Vision, Neural Networks.
Janaki Ram D., Ph.D (IIT, Delhi)	Object Oriented Systems, Software Engineering, Parallel and Distributed Systems, Database Systems, Mobile Computing, Real-Time Systems, Computer Networks and Fault-Tolerant Computing Systems.
Associate Professors:	
Hema A Murthy, Ph.D (IIT, Madras)	Speech processing, Pattern Recognition, Computer Network.
Sreenivasa Kumar P., Ph.D (IISc)	Graph Theory, Algorithms, Parallel Computations, Data Mining and Data Bases.
Deepak Khemani, Ph.D (IIT, Bombay)	Artificial Intelligence, Knowledge based systems, Natural Language Processing and Neural Networks.
Sukhendu Das, Ph.D (IIT, Kharagpur)	Computer Vision, Image Processing and Pattern Recognition, Computer Graphics, Neural Networks, Digital and Analog Systems.
Chandra Sekhar C., Ph.D (IIT, Madras)	Speech Recognition, Artificial Neural Networks, Computer Architecture.

Assistant Professors:

Kamakoti V., Ph.D (IIT, Madras)	Software Aspects of VLSI Design, Computational Geometry, High Performance Computing.
Narayanaswamy N.S., Ph.D (IISc)	Algorithms & Complexity Theory.
Sudha N., Ph.D (IIT, Guwahati)	VLSI Architecture for Signal Processing, Neural Network, Computer Network.
Ravindran B., Ph.D (UMass, Amherst)	Machine Learning, Reinforcement Learning, Information Filtering, Knowledge Representation.

Short-term Courses/ Workshops/ Seminars /Symposia /Conferences / Training attended by the Faculty in Academic Institutions and Public Sector Units:

Sl.No.	Name of Faculty	Title	Period
1	Prof. B. Yegnanarayana & 6 other Faculty members	IT-DA 2004 workshop.	19-03-2004 to 20-03-2004 at Bangalore.
2	Prof. C. Siva Ram Murthy	13 th IEEE workshop on Local and Metropolitan Area Network.	25-04-2004 to 28-04-2004 at San Francisco, USA.
3	Prof. C. Siva Ram Murthy	A Novel Approach for protecting multicast sessions in Metropolitan WDM Ring Network.	25-04-2004 to 28-04-2004 at California, USA.
4	Dr. Hema A. Murthy	ICASSP-2004.	16-05-2004 to 21-05-2004 at Canada.
5	Prof. B. Yegnanarayana	International Conference on Acoustics.	17-05-2004 to 21-05-2004 at University of Maryland , USA.
6	Prof. B. Yegnanarayana	Extraction of pitch in adverse condition and Modeling Syllable in Indian Language using neural networks.	17-05-2004 to 21-05-2004 at University of Maryland , USA.
7	Prof. B. Yegnanarayana	ICASSP-04.	17-05-2004 to 21-05-2004 at Montreal, Canada.

8	Prof. B. Yegnanarayana	ODYSSEY-04.	31-05-2004 to 03-06-2004 at Toledo, Spain.
9	Prof. D. Janakiram	ECOOP Conference.	June 2004. at Norway.
10	Prof. B. Yegnanarayana	NIST-04.	03-06-2004 to 04-06-2004 at Toledo, Spain.
11	Prof. D. Janakiram	18 th European Conference on OOP 2004.	14-06-2004 to 18-06-2004 at Oslo, Norway.
12	Prof. D. Janakiram	18 th European Conference on Object Oriented Programming 2004.	14-06-2004 to 18-06-2004 at Oslo, Norway.
13	Prof. B. Yegnanarayana	CVPR-04.	27-06-2004 to 02-07-2004 at Washington DC, USA.
14	Dr. N.S. Narayanaswamy	Workshop on online Algorithms Copenhagen.	04-07-2004 to 07-07-2004 at Denmark.
15	Dr. N.S. Narayanaswamy	University of Munich.	12-06-2004 to 03-07-2004 at University of Munich.
16	Prof. (Mrs) Kamala Krithivasan	Grammar System Week 2004.	05-07-2004 to 09-07-2004 at Computer and Research Institute, Budapest, Hungary.
17	Prof. D. Janakiram and 5 Ph.D Students	6 th National conference on Object Oriented Technology.	05-08-2004 to 06-08-2004 at Trichy.
18	Prof C. Pandurungan	Optimal Perfectly Secured Message Transmission at the CRYPTO 2004.	15-08-2004 to 19-08-2004 at Santa Barbara, USA.
19	Dr. C. Chandra Sekhar	Anchperson Indexing and visual Table of Contents Generation for TV News and Person Authentication Using Acoustic and Visual Features.	23-08-2004 to 26-08-2004 at Cambridge, UK.
20	Dr. V. Kamakoti	Short Term Training Programme (STTP) QIP Course on VLSI FrontEnd Design.	06-09-2004 to 10-09-2004 at IIT Madras.
21	Dr. V. Kamakoti	Short Term Training Programme (STTP) Advanced aspects of VLSI Design Automation Course Sponsored by Indian Society for Technical Education (ISTE).	13-09-2004 to 17-09-2004 at IITM.
22	Dr. C. Chandra Sekhar	2004 IEEE Workshop on Machine Learning for Signal Processing.	29-09-2004 to 01-10-2004 at Sao Luis, Brazil.
23	Dr. C. Chandra Sekhar	IEEE Workshop on Machine Learning for Signal Processing.	29-09-2004 to 01-10-2004 at Sao Luis, Brazil.
24	Prof. B. Yegnanarayana	IITM-CAIR MoC Workshop.	27-10-2004 at Dept. of CSE, IITM.
25	Prof. B. Yegnanarayana	INTERSPEECH-04.	05-10-2004 to 08-10-2004 at Jeju, Korea.
26	Prof. B. Yegnanarayana and other faculty in Dept.	IITM-CAIR MoC workshop.	27-10-2004, at IITM, Chennai.
27	Prof. Siva Ram Murthy	11 th International conference on High Performance Computing (HiPC).	19-12-2004 to 22-12-2004 at Bangalore
28	Dr. B. Ravindran	KBCS 04.	20-12-2004 to 22-12-2004 at Hyderabad.
29	Dr. P. Sreenivasa Kumar	International Conference on Management of Data (COMAD-05).	06-01-2005 to 08-01-2005 at Goa, India.

30	Dr. Hema A. Murthy	NCC'05 National Conference on Commun	January 2005, at IIT-Kharagpur
31	Prof. T.A. Gonsalves	NCC'05 National Conference on Commun	January 2005, at IIT-Kharagpur
32	Prof. B. Yegnanarayana	EU Workshop on Cultural Dimensions in Digital Multimedia Security Technology in Magdeburg.	07-03-2005 to 08-03-2005 at Germany.
33	Prof. C. Siva Ram Murthy	Physical Research Laboratory	2004 at Ahmedabad.
34	Prof. C. Siva Ram Murthy	Indian Institute of Science	2005 at Bangalore.
35	Dr. Hema A. Murthy	ICASSP-2004	16-05-2004 to 21-05-2004 at Montreal, Canada.
36	Dr. Hema A. Murthy	ICISIP-2004.	04-01-2005 to 07-01-2005 at Chennai
37	Dr. Hema A. Murthy	Workshop on Speaker Verification and Identification.	January 2005, at ISI, Calcutta.
38	Dr. Hema A. Murthy	NCC-2005.	January 2005, at IIT, Kharagpur.
39	Prof. T. A. Gonsalves	NCC-2005.	January 2005, at IIT, Kharagpur.

Special lecture delivered by the faculty in other Institutions:

Sl.No	Name of Faculty	Topic of Lecture	Venue and Date
1	Prof. B. Yegnanarayana	Features for Speaker and Language Identification.	23-06-2004 at Dept. of CS, University of Maryland.
2	Prof. B. Yegnanarayana	Is Pattern Recognition a Statistical Problem?	25-06-2004 at Dept. of Statistics, Pene State University State College.
3	Prof. D. Janakiram	General Chair, NCOOT 2004: 6th National Conference on Object Oriented Technology.	August 2004, at Trichy, Tamilnadu.
4	Prof. D. Janakiram	Chaired the panel discussion, Has OO lost its root? Sixth National Conference on Object Oriented Technology (NCOOT 04).	07-08-2004. at Trichy, Tamilnadu.
5	Prof. B. Yegnanarayana	Series of 5 lectures for engineers from Bhilai Steel Plant.	10-09-2004 to 14-09-2004 at Dept. of Metallurgy, IITM, Artificial Neural Networks.
6	Prof. B. Yegnanarayana	Activities in Dept. of Computer Science and Engineering, IIT Madras.	25-10-2004, at Siemens, Bangalore.
7	Dr. B. Ravindran	Reinforcement Learning based Computational neuroscience models.	09-10-2004 at Univ. of Hyderabad.
8	Dr. B. Ravindran	Schemas for Reinforcement Learning.	05-11-2004 at IIT Kanpur.
9	Prof. B. Yegnanarayana	70 th Indian Academy of Sciences meeting, Person Authentication from Voice – The search for new features in Speech.	27-11-2004 at Benaras Hindu University, Varanasi.
10	Prof. B. Yegnanarayana	Signals that we do not process.	29-11-2004 at ECE Dept., at IIT Guwahati.
11	Prof. D. Janakiram	Future Trends in Data Mining, AICTE Workshop on Data Warehouses and Data Mining.	29-11-2004. at Bangalore.
12	Prof. D. Janakiram	Program Committee Chair, CSI 2004, CSI National Convention 2004.	01-12-2004 to 04-12-2004 at Mumbai.

13	Prof. B. Yegnanarayana	ISTE Data Mining Workshop, Data Mining.	10-12-2004 at SV College of Engineering, Sriperambudur.
14	Prof. D. Janakiram	Key note speech on Grid Computing Research at IIT Madras, Asia Pacific Conference on Objects and Components in Parallel and Distributed systems (ObComAPC-2004).	13-12-2004 to 15-12-2004 at Vellore, Tamilnadu.
15	Prof. D. Janakiram	General Chair, SoDA 2004: International Workshop on Software Design and Architecture.	23-12-2004 to 24-12-2004 at Bangalore.
16	Prof. B. Yegnanarayana	Plenary talk at ICISIP-05 titled Signals that we do not process.	07-01-2005 at Chennai.
17	Prof. D. Janakiram	Grid Computing Research at IIT Madras, CSI Students Convention 2005.	19-02-2005 at Kakinada.
18	Prof. D. Janakiram	Mobile Grids, National Conference on Networks and Distributed Systems (Networks 2005).	25-02-2005 at Osmania University, Hyderabad.
19	Prof. D. Janakiram	Education Grids for E-learning: An Application for Large Scale Distributed systems, Workshop on Distributed and Mobile Computing.	15-03-2005 at MIT, Anna University, Chennai.

Visits abroad by faculty:

Sl.No.	Name of faculty	Country visited	Date	Purpose of visit
1	Prof. B.Yegnanarayana	University of Maryland, College Park, USA	May 2004 to July 2004	Visiting Professor.
2	Prof. C. Pandu Rangan	University of Oklahoma, Norman, USA.	12-07-2004 to 30-07-2004	Technical discussions, draft MoU and Seminar series.
3	Dr. C Chandra Sekhar	United Kingdom.	27-08-2004	Visited University of Southampton.
4	Prof. B.Yegnanarayana	Jeju, Korea	04-10-2004 to 08-10-2004	INTERSPEECH 2004.
5	Prof. C. Pandu Rangan	Jeju, Korea	05-12-2004 to 09-12-2004	To Attend ASIACRYPT 2004.
6	Prof. C. Siva Ram Murthy	Canada	2004	University of British Columbia, Canada, 2004.
7	Prof. C. Siva Ram Murthy	Canada	2004	Simon Fraser University, Canada, 2004.
8	Prof. C. Siva Ram Murthy	USA	2004	SRI International, California, USA, 2004.
9	Prof. C. Pandu Rangan	Zurich, Switzerland	22-01-2005 to 29-01-2005	For Academic Discussions in ETH (Swiss Federal Inst. To Technology, Zurich) related to the book Randomized Algorithms he is jointly authoring.
10	Prof. B.Yegnanarayana	Magdeburg, Germany.	March 2005	EU Cultural Dimensions in Digital Multimedia Security Technology Workshop.

Honours and Awards obtained:

Prof. C. Siva Ram Murthy was the recipient of the Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Award for the year 2003 for scientific contributions and achievements in the field of Electronics, Informatics, Telematics & Automation. The Award carried a Medal and a Cash Prize of Rs. 50,000.

Prof. C. Siva Ram Murthy was the recipient of the Best Paper Award for the paper entitled "A Novel Battery Aware MAC Protocol for Ad hoc Wireless Networks", co-authored with S. Jayashree and B.S. Manoj, at the 11th International Conference on High Performance Computing (HiPC) held in Bangalore, India during December 19-22, 2004. The award carried a Citation and a Cash Prize of Rs. 25,000.

The paper entitled, "Efficient handling of sibling axis in XPATH", by G.V. Subramanyam and P. Sreenivasa Kumar, presented at the 11th International Conference on Management of Data (COMAD-05) was awarded the 'Best Student Paper' of the conference.

Dr. V.Kamakoti was awarded the "Best Instructor Award" in the NIOS SOPC world Design contest held at Bangalore. The award carried a certificate and a cash prize of Rs.10,000/-

The design entitled, "Robust Real-Time Biometric System Using Face Recognition", submitted by S.Pavan Kumar, Dr.V.Kamakoti and Dr.Sukhendu Das was awarded the First prize in the SOPC world Design contest Zode held at Bangalore. The carried a certificate and a cash prize of Rs.22000/-

4.7.4 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Project No.	Project Title	Coordinators	Start Date/ Close Date	Sponsor	Amount (in Rs.)
1.	CSE0304058DSTNSUD	VLSI Architectures for biometric processing with PCNN.	N. Sudha	03-03-2004 to 02-03-2006	DST	3,54,000
2.		Internal Development and Research Project: Communication Technology: Indic Computing.	Ashok Jhunjhunwala, Hema A. Murthy, C.S. Ramalingam	November 2003 to October 2006	IITM	25,00,000
3	CSE0304053DSTXHODX	Augmentation of research facilities.	HOD (Raman. S)	03-09-2003 to 2-09-2008	DST	62,50,000
4.	CSE0102042DSTXCSIV	Resource Management in High Performance Real-Time Systems and Networks	C. Siva Ram Murthy	14-09-2001 to 13-09-2006	DST	32,73,800
5.	CSE0102044DRDOHODX	Communication and Information Technology Research Program.	HOD, CSE B. Yegnanarayana	08-04-2002 to 07-04-2007	DRDO	1,30,00,000
6	CSE0304056DSTXVKAM	CAD for Reconfigurable Architectures.	Kamakoti. V	03-03-2004 to 02-03-2007	DST	1,62,000
7	CSE0304057DSTXNSNA	Algorithms and heuristics for dynamic storage allocation.	Narayana Swamy N. S	03-03-2004 to 02-03-2007	DST	1,62,000
8	CSE0304059MHRDVKAM	Modern wireless and security systems for the department computing facility.	Kamakoti. V, Raman. S	01-03-2004 to 28-02-2006	MHRD	15,00,000
9.	CSE0203048IITMRKAL	Operation of the IITM Web Site.	R.Kalyana Krishnan	05-09-2002 to 04-09-2007	IITM	10,00,000
10	CSE/02-03/047 /NMSW /TAGO	Advanced Network Mgmt Systems	T. A. Gonsalves, Hema A. Murthy, Ashok Jhunjhunwala	01-04-2002 to 31-03-2006	NMS Works Software Ltd	49,50,000
11	ELE/02-03/095 /MLAC/ASHO	PLDs for Access Devices	Ashok Jhunjhunwala, B. Ramamurthi, T. A. Gonsalves, Devendra Jalihal	17-02-2003 to 31-07-2005	MediaLab Asia	60,00,000
12	CSE/03-04/052 /ISPL/HEMA	Programme Translation for DSP Processor	Hema A. Murthy T. A. Gonsalves	1year	IsoftTech	3,00,000

Sponsored Research Projects:

Sl. No.	Project No.	Project Title	Coordinators	Start Date/ Close Date	Sponsor	Amount (in Rs.)
1	CSE0304060MHRDSUKH	Multi-modal biometrics based secure access system using face and fingerprint recognition.	Sukhendu Das, Raman. S	01-03-2004 to 28-02-2006	MHRD	20,00,000
2	CSE/04-05/066/MICR(FCP)/CSIV	A Next Generation Hybrid Wireless Mesh Networking Infrastructure for Rural Communities.	C. Siva Ram Murthy	February 2005- January 2006	Microsoft Research, USA	US\$ 30,000
3	CSE0405113NFSCBRAV	Autonomous discovery of hierarchies in reinforcement learning.	B. Ravindran	2004- 2007	IITM	5,00,000
4	CSE0405065DRDOSUKH	Probabilistic classification of Satellite Images to obtain landform patterns.	Sukhendu Das, Prof. Koshy Varghese, (Dept of Civil Engg), B. Ravindran	2005-2006	DRDO	2,92,000

Consultancy Research Projects:

Sl. No.	Project No.	Project Title	Coordinators	Start Date/ Close Date	Sponsor	Amount (in Rs.)
1	RB/03-04/CSE/002/NSTL/BYEG	High Performance Detection System.	B. Yegnanarayana	2003-2005	NSTL (DRDO), Visakhapatnam, India	12,00,000

Consultancy Research Projects:

Sl. No.	Project No.	Project Title	Coordinators	Start Date/ Close Date	Sponsor	Amount (in Rs.)
1.	RB0304CSE002NSTLBYEG	High performance detection system.	B. Yegnanarayana, N. Sudha	April 2004 to April 2006	NSTL	12,00,000
2	RB/04-05/CSE/005/NSTL/BYEG	Design and development of signal analyser algorithms.	B. Yegnanarayana	2004-2005	NSTL (DRDO), Visakhapatnam, India	5,00,000
3	RB/04-05/CSE/004/DLRL/BYEG	Word Spotting.	B. Yegnanarayana	2004-2005	DLRL (DRDO), Hyderabad, India	9,80,000

Retainer Consultancy:

Sl.No	Project No.	Name of faculty	Period	Industry	Amount (Rs.in lakhs)
1	RC:IT Consultant	Prof. S. Raman	-	Andhra Bank	Rs. 12,500 /- per visit

Research Publications:

Total No. of papers published in International Journals	:	19
Total No. of presented in National Conference	:	13
Total No. of presented in Internationals Conference	:	111

In Refereed International Journals:

Sl.No	Name of faculty	Title
1	Ch. Vijaya Saradhi, C. Siva Ram Murthy	Dynamic Establishment of Differentiated Survivable Lightpaths in WDM Mesh Networks, Computer Communications, vol. 27, no. 3, pp. 273-294, 2004.
2	N. Srinivas, C. Siva Ram Murthy	Design and Dimensioning of a WDM Mesh Network to Groom Dynamically Varying Traffic, Photonic Network Communications, vol. 7, no. 2, pp. 179-191, 2004.
3	G. Raghu Kiran, C. Siva Ram Murthy	QoS Based Survivable Logical Topology Design in WDM Optical Networks, Photonic Network Communications, vol. 7, no. 2, pp. 193-206, 2004.
4	N. Srinivas, C. Siva Ram Murthy	Throughput Maximization in Traffic Grooming in WDM Mesh Networks, Journal of High Speed Networks, vol. 13, no. 2, pp. 139-154, 2004.

5	G. Mohegan, G. Venison, C. Siva Ram Murthy	Randomized Routing and Wavelength Requirements in Wavelength-Routed MD Multistage, Hypercube, and Debugging Networks, Journal of Parallel and Distributed Computing, vol. 64, no. 3, pp. 385-399, 2004.
6	I. Kathyne, B.S. Manoj, C. Siva Ram Murthy	A Novel Scheme for Supporting Integrated Unicast and Multicast Traffic in Ad hoc Wireless Networks, Journal of Parallel and Distributed Computing, vol. 64, no. 10, pp. 1185-1210, 2004.
7	Harsha V. Madhyastha, C. Siva Ram Murthy	Efficient Dynamic Traffic Grooming in Service-differentiated WDM Mesh Networks, Computer Networks, vol. 45, no. 2, pp. 221-235, 2004.
8	K. Jayanth Kumar, B.S. Manoj, C. Siva Ram Murthy	RT-MuPAC: A New Multi-Power Architecture for Voice Cellular Networks, Computer Networks, vol. 47, no. 1, pp. 105-128, 2005.
9	I. Karthigeyan, B.S. Manoj, C. Siva Ram Murthy	A Distributed Laxity-Based Priority Scheduling Scheme for Time-Sensitive Traffic in Mobile Ad Hoc Networks, Ad Hoc Networks, vol. 3, no. 1, pp. 27-50, 2005.
10	D. Janakiram, P. Jithendra Kumar Reddy, M. S. Rajasree	Pattern Hybridization: Breeding New Designs Out of Pattern Interactions, ACM SIGSOFT Software Engineering Notes, Vol. 29, No. 3, May 2004, Pages: 1 – 10.
11	Chitra Babu, D. Janakiram	Method Driven Model: A Unified Model for an Object Composition Language, ACM SIGPLAN Notices, Vol. 39, No.8, August 2004, pp.61-71.
12	D. Janakiram, A. Vijay Srinivas, P. Manjula Rani	A Model for Parallel Programming Over CORBA, Journal of Parallel and Distributed Computing, Vol. 64, No. 11, November 2004, pp. 1256-1269.
13	M.A. Maluk Mohamed, A. Vijay Srinivas, D. Janakiram	Moset: An Anonymous Remote Mobile Cluster Computing Paradigm, To appear in Special Issue on Design and Performance of Networks for Super-, Cluster-, and Grid-Computing to appear in the Journal of Parallel and Distributed Computing (JPDC), 2005.
14	D. Janakiram, M. S. Rajasree	ReQuEst: Requirements-driven Quality Estimator, ACM SIGSOFT Software Engineering Notes, Vol. 30, No. 1, January 2005, Pages: 1 – 9.
15	P.C. Reghu Raj, S. Raman	A Phrase Grammar-based Conceptual Indexing Paradigm, Applied Artificial Intelligence, Taylor & Francis, in print for the issue in 2005, 18 (9-10).
16	V. Shiv Naga Prasad, B. Yegnanarayana	Finding axes of symmetry from potential fields, in IEEE Trans. Image Processing, vol. 13, no. 12, pp. 1559-1566, December 2004.
17	L. Kalyan Kumar, Aditya, S. Raman, Amol J. Mupid, V. Kamakoti	Pseudo-online Testing Methodologies for various components of field programmable gate arrays, Microprocessors and Microsystems 29 (2005) 99-119.
18	T Nagarajan, Hema A. Murthy	Group Delay based Segmentation of Spontaneous Speech into Syllable-like units, EURASIP Journal of Applied Signal Processing, Vol.17, pp.2614-2625, 2004.
19	V. Kamakshi Prasad, T. Nagarajan, Hema A. Murthy	Automatic segmentation of continuous speech using minimum phase group delay functions, it Speech Communications, Elsevier, vol.42, pp.429-446, 2004.

In Proceedings of National Conference:

Sl.No	Name of faculty	Title	Venue & Date
1	Dinil Mon Divakaran, Hema A. Murthy, Timothy A. Gonsalves	Effective bandwidth Utilization for Multimedia Data Over Low Bandwidth Links, Proc. NCC-2005, pp. 236-240.	January 2005 at IIT Kharagpur.
2	Krishanu Bhattacharya, N. Usha Rani, Timothy A. Gonsalves, Hema A. Murthy	An Efficient Algorithm for Root Cause Analysis, Proc. NCC-2005, pp. 447-451.	January 2005 at IIT Kharagpur.
3	R. Deepak, N. Usha Rani, Timothy A. Gonsalves, Hema A. Murthy	Network Security Management for a National ISP, Proc. NCC-2005, pp. 565-568.	January 2005 at IIT Kharagpur.
4	N. Hegde, K. Balaji, B. Venkata Ramana, B.S. Manoj, C. Siva Ram Murthy	Implementation and Performance Evaluation of a Hybrid Wireless Network Architecture for Rural Communication, in Proc. 11th National Conference on Communications (NCC 2005).	28-01-2005 to 30-01-2005 at Kharagpur

5	M. Saravanan, B. Ravindran, S. Raman	A review of automatic summarization, Presented in the Workshop on Optical character Recognition with workflow and Document Summarization.	19-03-2005 to 20-03-2005 at IIT Allahabad.
6	M. Saravanan, B. Ravindran, S. Raman	Learn to teach Autistic children, Presented in the National Conference on Computational Intelligence.	16-02-2005 to 18-02-2005 at St. Joseph's College, Trichy.
7	P. Sowjanya, K. Vijayalakshmi, G. Vijay Prakash, Kasi Rajan, M.S. Vidhya, T. Nagarajan, Srinivas Chakravarthy, N.S. Narayanaswamy, Hema A. Murthy	Hand Writing Interface enabled Tamil Search Engine, In Proc. 11'th National Conference on Communications, pp 661-665.	28-01-2005 to 31-01-2005 at IIT Kharagpur.
8	Dinil Mon Divakaran, Hema A. Murthy, Timothy A. Gonsalves,	Effective bandwidth Utilization for Multimedia Data Over Low Bandwidth Links, Proc. NCC-2005, pp. 236-240.	January 2005 at IIT Kharagpur.
9	Krishanu Bhattacharya, N. Usha Rani, Timothy A. Gonsalves, Hema A. Murthy	An Efficient Algorithm for Root Cause Analysis, Proc. NCC-2005, pp. 447-451.	January 2005 at IIT Kharagpur.
10	R. Deepak, N. Usha Rani, Timothy A. Gonsalves, Hema A. Murthy	Network Security Management for a National ISP, Proc. NCC-2005, pp. 565-568.	January 2005 at IIT Kharagpur.
11	S. Thomas, H. Murthy, C. Chandra Sekhar	Distributed speech synthesis for embedded systems - an analysis, NCC-2005, pp 273-276.	January 2005 at IIT Kharagpur.
12	Nageshwara Rao, S. Thomas, T. Nagarajan, H. Murthy	Text-to-speech synthesis using syllable-like units, NCC-2005, pp 277-280.	January 2005 at IIT Kharagpur.
13	N. Hemalatha, G. L. Sarada, T. Nagarajan, Hema A. Murthy	Connected Digit Recognition using Unsupervised and Incremental HMMs, NCC-2005, pp. 296-299.	January 2005 at IIT Kharagpur.

In Proceedings of International Conference:

SI.No	Name of faculty	Title	Venue & Date
1	N. Ram Mohan, C. Siva Ram Murthy.	A Novel Approach for Protecting Multicast Sessions in Metropolitan WDM Ring Networks', in Proc. 13th IEEE Workshop on Local and Metropolitan Area Networks.	25-04-2004 to 28-04-2004 at San Francisco, USA.
2	Vivek Vishnumurthy, T. Sandeep, B. S. Manoj, C. Siva Ram Murthy	A Novel Out-of-band Signaling Mechanism for Enhanced Real-time Support in Tactical Ad hoc Wireless Networks, in Proc. 10th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS).	25-05-2004 to 28-05-2004 at Toronto, Canada.
3	D. Janakiram A. Vijay Srinivas, Raghavendra Koti, A. Uday Kumar	Realizing Large Scale Distributed Event Style Interactions, Proceedings of the ECOOP Workshop on Communication Abstraction for Distributed Systems (CADS), CADS.	June 2004, at Oslo, Norway.
4	Chitra Babu, D. Janakiram	Object Identity Typing: Bringing Distinction Between Object Behavioural Extension and Specialization, Proceedings of the International Workshop on Mechanisms for Specialization, Generalization and Inheritance, The MASPEGHI Workshop at ECOOP 2004, MASPEGHI.	June 2004, at Oslo, Norway.
5	J. Rajesh, D. Janakiram	JIAD: A Tool to Infer Design Patterns in Refactoring Proceedings of the 6th ACM-SIGPLAN International Conference on Principles and Practice of Declarative Programming, PPDP.	August 2004, at Verona, Italy.

6	V. Mythili, B.S. Manoj, C. Siva Ram Murthy	A Wireless in Local Loop Architecture Utilizing Directional Multihop Relaying, in Proc. 15th IEEE International Symposium on Personal, Indoor, and Mobile Radio Communication (PIMRC).	05-09-2004 to 08-09-2004 at Barcelona, Spain.
7	Dilip Antony Joseph, B.S. Manoj, C. Siva Ram Murthy	Interoperability of Wi-Fi Hotspots and Packet Cellular Networks and the Impact of User Behaviour, in Proc. 15th IEEE International Symposium on Personal, Indoor, and Mobile Radio Communication (PIMRC).	05-09-2004 to 08-09-2004 at Barcelona, Spain.
8	S. Jayashree, B.S. Manoj, C. Siva Ram Murthy	A Battery Aware Medium Access Control (BAMAC) Protocol for Ad hoc Wireless Networks, in Proc. 15th IEEE International Symposium on Personal, Indoor, and Mobile Radio Communication (PIMRC).	05-09-2004 to 08-09-2004 at Barcelona, Spain.
9	S. Jayashree, B.S. Manoj, C. Siva Ram Murthy	On Using Battery State for Medium Access Control in Ad hoc Wireless Networks, in Proc. 12th ACM Annual International Conference on Mobile Computing and Networking (MobiCom).	26-09-2004 to 01-10-2004 at Philadelphia, USA.
10	Dilip Antony Joseph, B.S. Manoj, C. Siva Ram Murthy	Interoperability of Wi-Fi Hotspots and Cellular Networks, in Proc. 2nd ACM International Workshop on Wireless Mobile Applications and Services on WLAN Hotspots (WMASH), held in conjunction with 12th ACM Annual International Conference on Mobile Computing and Networking (MobiCom).	26-09-2004 to 01-10-2004 at Philadelphia, USA.
11	S. Archana, B.S. Manoj, C. Siva Ram Murthy	MARVIN: Movement-Aware Routing Over Interplanetary Networks, in Proc. 1st IEEE International Conference on Sensor and Ad hoc Communications and Networks (SECON).	04-10-2004 to 07-10-2004 at Santa Clara, USA.
12	T. Bheemarjuna Reddy, B. S. Manoj, C. Siva Ram Murthy	Multimedia Traffic Support for Asynchronous Ad hoc Wireless Networks, in Proc. Broadband Networks 2004 - Broadband Wireless Networking Symposium.	25-10-2004 to 29-10-2004 at San Jose, USA.
13	G.V. Chowdhary, C. Siva Ram Murthy	Grooming of Multicast Sessions in WDM Mesh Networks, in Proc. 1st Workshop on Traffic Grooming in WDM Networks, held in conjunction with Broadband Wireless Networking Symposium (Broadband Networks 2004).	25-10-2004 to 29-10-2004 at San Jose, USA.
14	G.V. Chowdhary, C. Siva Ram Murthy	Dynamic Multicast Traffic Engineering in WDM Groomed Mesh Networks, in Proc. 1st Workshop on Traffic Grooming in WDM Networks, held in conjunction with Broadband Wireless Networking Symposium (Broadband Networks 2004).	25-10-2004 to 29-10-2004 at San Jose, USA.
15	S. Sriram, T. Bheemarjuna Reddy, B. S. Manoj, C. Siva Ram Murthy	The Influence of QoS Routing on the Achievable Capacity in TDMA-based Ad hoc Wireless Networks, in Proc. IEEE Global Telecommunications Conference (GLOBECOM).	29-11-2004 to 03-12-2004 at Dallas, USA.
16	S. Jayashree, B.S. Manoj, C. Siva Ram Murthy,	Next Step in MAC Evolution: Battery Awareness? in Proc. IEEE Global Telecommunications Conference (GLOBECOM).	29-11-2004 to 03-12-2004 at Dallas, USA.
17	S. Sriram, T. Bheemarjuna Reddy, B. S. Manoj, C. Siva Ram Murthy	MuSeQoS: Multi-path Failure-tolerant Security-aware QoS Routing in Ad hoc Wireless Networks, in Proc. 11th International Conference on High Performance Computing (HiPC).	19-12-2004 to 22-12-2004 at Bangalore.
18	S. Jayashree, B.S. Manoj, C. Siva Ram Murthy	A Novel Battery Aware MAC Protocol for Ad hoc Wireless Networks, in Proc. 11th International Conference on High Performance Computing (HiPC).	19-12-2004 to 22-12-2004 at Bangalore.

19	B. Venkata Ramana, B.S. Manoj, C. Siva Ram Murthy	RTCP: An Adaptive Rate Based TCP for Ad hoc Wireless Networks, in Proc. 3rd International Trusted Internet Workshop (TIW 2004), held in conjunction with 11th International Conference on High Performance Computing (HiPC).	19-12-2004 to 22-12-2004 at Bangalore.
20	A. Ananda Rao, D. Janakiram	Three Level Semantics-Based Version Management in Unified Modelling Language, Proceedings of the Third International Conference on Computer Science, Software Engineering, Information Technology, e-Business, and Applications (CSITeA-04).	December 2004, at Cairo, Egypt.
21	K. Balaji, N. Hegde, B. Venkata Ramana, B.S. Manoj, C. Siva Ram Murthy	Performance Evaluation of a Hybrid Wireless Network Architecture for Rural Communication' in Proc. IEEE International Conference on Personal Wireless Communications (ICPWC 2005).	23-01-2005 to 25-01-2005 at New Delhi.
22	Chitra Babu, Wenonah Jaques, D. Janakiram	Dynamic Customization in Pervasive Computing Environments, Proc. of IEEE Conference on Enabling Technologies for Smart Appliances (ETSA).	January 2005.
23	D. Janakiram, R. Venkateswarlu	A Distributed Compositional Language for Wireless Sensor Networks, Proc. of IEEE Conference on Enabling Technologies for Smart Appliances (ETSA).	January 2005
24	M.A. Maluk Mohamed, D. Janakiram	Service Composition Based Middleware Architecture for Mobile Grid, To appear in the proceedings of the 2nd International Workshop on Ubiquitous Computing, in conjunction with the 7th International Conference on Enterprise Information Systems, IWUC 2005.	May 2005, at Miami, USA.
25	M. Dhanaraj, B.S. Manoj, C. Siva Ram Murthy	A New Energy Efficient Protocol for Minimizing Multi-hop Latency in Wireless Sensor Networks, in Proc. 3rd Annual IEEE International Conference on Pervasive Computing and Communications (PerCom).	08-03-2005 to 12-03-2005 at Hawaii.
26	S. Archana, B.S. Manoj, C. Siva Ram Murthy	Dynamic Coverage Maintenance Algorithms for Sensor Networks with Limited Mobility, in Proc. 3rd Annual IEEE International Conference on Pervasive Computing and Communications (PerCom).	08-03-2005 to 12-03-2005 at Hawaii.
27	D. Janakiram, A. Ananda Rao	Software Design Versioning using Propagation Probability Matrix In Proc. of 3rd International Conference on Computer Applications (ICCA'2005) (organized by Ministry of Science and Technology, Myanmar).	March 2005, at Yangon, Myanmar.
28	D. Janakiram, A. Ananda Rao	A Metrics Suite for Version Management In Proc. of the IEEE International Conference on Information Technology: Coding and Computing, ITCC 2005.	April 2005, at Las Vegas, Nevada, USA.
29	D. Janakiram, A. Ananda Rao	Change Propagation Probability Matrix for Design Version Management In Proc. of the 2005 Oklahoma Symposium on Information Technology and Entrepreneurship, ITE'05.	April 2005, at Oklahoma, USA.
30	M.A. Maluk Mohamed, D. Janakiram, Mohit Chakraborty	Surrogate Object Model: A New Paradigm for Distributed Mobile Systems To appear in the proceedings of the 4th International Conference on Information Systems Technology and its Applications, ISTA 2005.	May 2005, at Massey University, Palmerston North, New Zealand.
31	D. Janakiram, N. V. Palankeswara Rao, A. Vijay Srinivas, M. A. Maluk Mohamed	Sneha-Samuham: A Parallel Computing Model over Grids To appear in the proceedings of the 2005 International Conference on Grid Computing and Applications, GCA 2005.	20-06-2004 to 23-06-2004 at Las Vegas, USA.

32	Vakkalanka Suresh, S. Palanivel, B.Yegnanarayana	NVIBRS-News Video Indexing, Browsing and Retrieval System, IEEE Int. Conf. Intelligent Sensing and Information Processing (ICISIP-05), pp. 181-186.	04-01-2005 to 07-01-2005 at Chennai.
33	Vakkalanka Suresh, C.Krishna Mohan, R. Kumaraswamy, B.Yegnanarayana	Combining multiple evidence for video classification, IEEE Int. Conf. Intelligent Sensing and Information Processing (ICISIP-05), pp. 187-192.	04-01-2005 to 07-01-2005 at Chennai.
34	Nayeemulla Khan, B. Yegnanarayana	Vowel onset point based variable frame rate analysis for speech recognition (accepted), in Proc. Int. Conf. Intelligent Sensing and Information Processing.	January 2005 at Chennai.
35	Shahina, B. Yegnanarayana	Language identification in noisy environments using throat microphone signals, (accepted), in Proc. Int. Conf. Intelligent Sensing and Information Processing.	January 2005 at Chennai.
36	Leena Mary, K. Srinivasa Rao, B.Yegnanarayana	Neural Network Classifiers for Language Identification using Syntactic and Prosodic features, in Proceedings of International Conference on Intelligent Sensing and Information Processing.	January 2005 at Chennai.
37	K. Sri Rama Murty, S.R. Mahadeva Prasanna, B. Yegnanarayana	Neural Network Models for Extracting Complementary Speaker-Specific Information from Residual Phase, in Proceedings of International Conference on Intelligent Sensing and Information Processing.	January 2005 at Chennai.
38	K. Sri Rama Murty, S.R. Mahadeva Prasanna, B. Yegnanarayana	Speaker-specific information from residual phase, in SPCOM 2005.	January 2005 at Bangalore.
39	S.V.Gangashetty, C.Chandra Sekhar, B.Yegnanarayana	Combining Evidence from Multiple Classifiers for Recognition of Consonant-Vowel Units of Speech in Multiple Languages, IEEE Int. Conf. Intelligent Sensing and Information Processing, pp. 387-391	04-01-2005 to 07-01-2005 at Chennai.
40	Nayeemulla Khan, B. Yegnanarayana	Syllable as a unit for speech recognition: An information theoretic perspective, in Proc. Int. Conf. Natural Language Processing.	December 2004, at Mysore.
41	K.Sreenivasa Rao, B.Yegnanarayana	Impact of constraints on prosody modeling for Indian languages, in Proc. 2nd International Conference on Natural Language Processing (ICON-2004).	December 2004, at Hyderabad.
42	K.Sreenivasa Rao, B.Yegnanarayana	Neural network models for test-to-speech synthesis, in Proc. 5th International Conference on Knowledge Based Computer Systems (KBCS-2004).	December 2004, at Hyderabad.
43	K.Sreenivasa Rao, B.Yegnanarayana	Two-stage duration model for Indian languages using neural networks, in Proc. 11th International Conference on Neural Information Processing (ICONIP-2004), pp.1179-1185.	November 2004, at Kolkata
44	Dhananjaya. N, Guruprasad. S, B.Yegnanarayana	Speaker Segmentation Based on Subsegmental Features and Neural Network Models, in Int. Conf. on Neural Information Processing, pp.1210-1215.	November 2004, at Kolkata
45	Vakkalanka Suresh, C.Krishna Mohan, R. Kumaraswamy, B.Yegnanarayana	Content-Based Video Classification using SVMs, in Int. Conf. on Neural Information Processing, pp.726-731.	November 2004, at Kolkata
46	Nayeemulla Khan, B. Yegnanarayana	Speech enhanced multi-span language model, in Proc. Int. Conf. Spoken Language Processing (INTERSPEECH).	October 2004, at Korea.
47	S. V. Gangashetty, C. Chandra Sekhar, B. Yegnanarayana	Detection of vowel onset points in continuous speech using autoassociative neural network models, in Eighth Int. Conf. Spoken Language Processing (INTERSPEECH 2004 - ICSLP).	October 2004, at Korea.
48	Nayeemulla Khan, B. Yegnanarayana	Latent semantic analysis for speaker recognition, in Proc.Int.Conf. Spoken Language Processing (INTERSPEECH).	October 2004, at Korea.

49	M.Chaitanya, S.R.M. Prasanna, B.Yegnanarayana	Enhancement of reverberant speech using excitation source information, in INTERSPEECH.	October 2004, at Korea.
50	K. Sreenivasa Rao, B.Yegnanarayana	Intonation modeling for Indian languages, in 8th Int. Conf. on Spoken Language Processing (Interspeech-2004).	October 2004, at Korea.
51	S. V. Gangashetty, C. Chandra Sekhar, B. Yegnanarayana	Spotting consonant-vowel units in continuous speech using autoassociative neural networks and support vector machines, in IEEE Int. Workshop on Machine Learning for Signal Processing.	September 2004 at Sao Luis, Brazil.
52	Anvita Bajpai, B.Yegnanarayana,	Audio Clip Classification using LP Residual and Neural Networks Models, in IEUSIPCO – 2004.	06-09-2004 to 10-09-2004 at Vienna-Austria.
53	S.Palanivel, B.Yegnanarayana, B.V.K.Vijaya Kumar	Person authentication using acoustic and visual features, in Workshop on Biometric Challenges arising from Theory to Practice (BCTP).	August 2004, at Cambridge, UK.
54	V.Suresh, S.Palanivel, B.Yegnanarayana	Anchor person indexing and visual table of contents generation for TV news, in Workshop on Biometric Challenges arising from Theory to Practice (BCTP).	August 2004, at Cambridge, UK.
55	S. V. Gangashetty, C. Chandra Sekhar, B. Yegnanarayana,	Acoustic model combination for recognition of speech in multiple languages using support vector machines, in IEEE Int. Joint Conf. Neural Networks.	July 2004, at Budapest, Hungary.
56	K. Sreenivasa Rao, B.Yegnanarayana	Modeling syllable duration in Indian languages using neural networks, in Proc. IEEE Int. Conf. Acoust., Speech Signal Processing.	May 2004, at Montreal, Quebec, Canada.
57	S.R.M. Prasanna, B. Yegnanarayana	Extraction of pitch in adverse conditions, in Int. Conf. Acoust., Speech, Signal Processing.	May 2004, at Montreal, Quebec, Canada.
58	L. Mary, K.Sreenivasa Rao, Suryakanth V.Gangashetty, B.Yegnanarayana	Neural Network Models for Capturing Duration and Intonation Knowledge for Language and Speaker Identification, in Proc. of Int. Conf. on Cognitive and Neural Systems.	May 2004, at Boston.
59	L. Mary, K.S.R. Murty, S.R.M. Prasanna, B.Yegnanarayana	Features for speaker and language identification.	May 2004, at Odyssey.
60	P. Pratibha, Siva Nageswara Rao Borra, A. Muthukaruppan, S. Suresh, V. Kamakoti	ASPIRE: Automatic Spatial Partitioning in Reconfigurable Environments Using Genetic Algorithm, Mexican International Conference on Artificial Intelligence.	April 2004, at Mexico City.
61	Manoj Kumar.A, Jayaram Bobba, Manimegalai, V. Kamakoti	MemMap-pd: Performance Driven Technology Mapping Algorithm for FPGAs with Embedded Memory Arrays, 11th Reconfigurable Architectures Workshop (RAW2004).	at Santa Fe, New Mexico.
62	K Uday Bhaskar, G Chandramouli, V Kamakoti	Pariksa- Functional Verification Tool for x86 Architecture Appeared in the Proceedings of 8 th VLSI Design & Test Workshop (VDAT).	August 2004, at Mysore, India.
63	CH. Sivasai Prasanna, N. Sudha, V. Kamakoti	A Hardware-directed Face Recognition system based on Local Eigen Analysis with PCNN, International Conference on Neuro Information Processing ICONIP.	November 2004, at Kolkatta.
64	A. Pavan Kumar, Sukhendu Das, V. Kamakoti	Face Recognition Using Weighted Modular Principle Component Analysis, Accepted in International Conference on Neuro-Information Processing (ICONIP).	November 2004, at Kolkatta.
65	R. Manimegalai , B. Jayaram , A. Manojkumkar, V. Kamakoti	SHAPER: Synthesis for Hybrid FPGAs containing PLAs using Reconvergence Analysis, to appear in IEEE Field Programmable-Technology, (FPT).	December 2004, at Brisbane, Australia.

66	E. Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	A Novel CLB Architecture to Detect and Correct SEU in LUTs of SRAM-based FPGAs, IEEE International Conference on Field-Programmable Technology (FPT).	December 2004, at Brisbane, Australia.
67	A. Pavan Kumar, V. Kamakoti, Sukhendu Das	An Architecture for Real Time Face Recognition using WMPCA, to appear in the proceedings of Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP).	December 2004, at Kolkatta.
68	CH. Sivasai Prasanna, N. Sudha, V. Kamakoti	A Principal Component Neural Network-Based Face Recognition System and Its ASIC Implementation, To appear in the Proceedings of 18 th International Conference on VLSI Design.	January 2005, at Kolkatta.
69	K Uday Bhaskar, M Prasanth, G Chandramouli, V Kamakoti	A Universal Random Test Generator for Functional Verification of Micro-processors and System-on-Chip, To appear in the Proceedings of 18 th International Conference on VLSI Design.	January 2005, at Kolkatta.
70	R. Manimegalai, E. SivaSoumya, V. Muralidharan, B. Ravindran , D. Bhatia, V. Kamakoti	Placement and Routing for 3D-FPGAs using Reinforcement Learning and Support Vector Machines, To appear in the Proceedings of 18 th International Conference on VLSI Design.	January 2005, at Kolkatta.
71	Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	Detecting SEU-caused Routing Errors in SRAM-based FPGAs, Eighteenth International Conference on VLSI Design.	January 2005, at Kolkatta.
72	Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	Cluster-based Detection of SEU-caused Errors in LUTs of SRAM-based FPGAs, ACM/IEEE Asia and South Pacific Design Automation Conference (ASPDAC).	January 2005, at Shanghai, China.
73	Vivek Garg, Vikram Chandrasekhar, Sasikanth, V. Kamakoti	A Function Generator-based Reconfigurable System, IEEE/ACM SIGDA Asia South Pacific Design Automation Conference (ASPDAC).	January 2005, at Shanghai, China.
74	Vivek Garg, Vikram Chandrasekhar, Sasikanth, V. Kamakoti	A Novel Packing Algorithm for CLB Area Reduction, IEEE/ACM SIGDA Asia South Pacific Design Automation Conference 2005 (ASPDAC).	January 2005, at Shanghai, China.
75	E. Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti	Efficient Methodology for Detection and Correction of SEU-based Interconnect Errors in FPGAs using Partial Reconfiguration (Extended Abstract), 13th ACM International Symposium on Field Programmable Gate Arrays.	February 2005 at Monterey, California, USA.
76	R.Pradeep, S.Vinay, Sanjay Burman, V. Kamakoti	FPGA based agile algorithm-on-demand coprocessor, accepted in DATE 2005, Design Automation and Test in Europe.	07-03-2005 to 11-03-2005 at ICM, MESSE Munich, Germany.
77	E. Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	Online Detection and Diagnosis of Multiple Configuration Upsets in LUTs of SRAM-based FPGAs. 12th Reconfigurable Architectures Workshop (RAW 2005).	2005, at Colorado, USA.
78	E. Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	A CLB architecture for Online correction of SEU-based Errors in LUTs of SRAM-based FPGAs, European Test Symposium (2005).	2005, at Tallin.
79	E. Syam Sundar Reddy, Vikram Chandrasekhar, M. Sashikanth, V. Kamakoti, N. Vijaykrishnan	Efficient Methodology for Detection and Correction of SEU-based Interconnect Errors in FPGAs using Partial Reconfiguration, European Test Symposium (2005).	2005, at Tallin.

80	B Ravindran, Andrew G Barto	Approximate Homomorphisms: A Framework for Non-exact Minimization in Markov Decision Processes. In Proceedings of 5th International Conference on Knowledge Based Computer Science (KBCS).	December 2004. at Hyderabad.
81	U Senthil, Deepak Khemani	Adapting Plans with Durative Actions. In Proceedings of 5th International Conference on Knowledge Based Computer Science (KBCS).	December 2004. at Hyderabad.
82	Md.A.K. Sadiq, Deepak Khemani	Computation of Similarity Function Incorporated Confidence. In Proceedings of 5th International Conference on Knowledge Based Computer Science (KBCS).	December 2004. at Hyderabad.
83	K Prasanna, Deepak Khemani	GA-based Instance Set Selection for Case-Based Reasoning. In Proceedings of 5th International Conference on Knowledge Based Computer Science (KBCS).	December 2004. at Hyderabad.
84	Bharat Ranjan Kavuluri, Deepak Khemani	Timed Initial Literals in Temporal Planning. In Proceedings of 5th International Conference on Knowledge Based Computer Science (KBCS).	December 2004. at Hyderabad.
85	M K Madhu Mohan, Sujatha R Upadhyaya, P Sreenivasa Kumar	SAQI: Semantics Aware Query Interface. In Proceedings of 1st International Conference on Distributed Computing and Internet Technology (ICDCIT).	December 2004, at Bhubaneswar.
86	R Gururaj, P Sreenivasa Kumar	Survey of User Profile Models for Information Filtering Systems. In Proceedings of 7th International Conference on Information Technology (CIT).	December 2004, at Bhubaneswar.
87	R Shyam Sundar Yadav, Deepak Khemani	An Oracle based Meta-Learner for Function Decomposition. In Proceedings of 11th International Conference on Artificial Intelligence: Methodology, Systems, Applications, (AIMSA).	September 2004.
88	P Kiran Kumar, Deepak Khemani	Satellite Health Monitoring Using the CBR Framework. In Proceedings of 7th European Conference on Case Base Reasoning (ECCBR).	August 2004.
89	U Senthil, Deepak Khemani	A Domain Independent Algorithm for Adapting Temporal Plans. In Proceedings of International Conference on Artificial Intelligence (IC-AI).	2004, at Las Vegas, USA.
90	G V Subramanyam, P Sreenivasa Kumar	Efficient Processing of Multiple Structural Join Queries. In Proceedings of 21st British National Conference on Databases (BNCOD).	July 2004, at Edinburgh, Scotland.
91	R Gururaj, P Sreenivasa Kumar	Service Specification in a Value-added Broker Through XML. To appear in proceedings of International Association for Computer Information Systems (IACIS) Pacific Conference.	May 2004, at Taipei, Taiwan.
92	Md.A.K. Sadiq, Deepak Khemani	A Case for Usage of Case Usage in Case-Based Reasoning. In Proceedings of 18th Int. FLAIRS Conf.	16-05-2004 to 18-05-2004 at Clearwater Beach, Florida.
93	R Shyam Sundar Yadav, Deepak Khemani	An Oracle based Meta-Learner for ID3. In Proceedings of 18th Int. FLAIRS Conf.	16-05-2004 to 18-05-2004 at Clearwater Beach, Florida.
94	G V Subramanyam, P Sreenivasa Kumar	Efficient Handling of Sibling Axis in XPath. In Proceedings of 11th International Conference on Management of Data (COMAD).	06-01-2005 to 08-01-2005 at Goa.
95	Sujatha R Upadhyaya, P Sreenivasa Kumar	ERONTO: A Tool for Extracting Ontologies From Extended E/R Diagrams. In Proceedings of 20th ACM Symposium on Applied Computing (SAC, DTTA Track).	March 2005, at Santa Fe, New Mexico.
96	N. Sudha	A pipelined array architecture for Euclidean distance transformation and its FPGA implementation, it Microprocessors and Microsystems Journal Elsevier.	

97	Rajesh M.Hegde, Hema A.Murthy, Venkata Ramana Rao Gadde	Speech Processing using Joint Features Derived from The Modified Group Delay Function, Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing; ICASSP-2005. SP-P6.8.	March 2005, at Philadelphia, U.S.A,
98	Rajesh M.Hegde, Hema A.Murthy	Automatic Language Identification and Discrimination using The Modified Group Delay Feature, Proceedings of International Conference on Intelligent Sensing and Information Processing, ICISIP-2005, pp. 395 - 399, Jan 2005.	January 2005, at Chennai.
99	Rajesh M.Hegde, Hema A.Murthy	An Alternative Representation of Speech using The Modified Group Delay Feature, Proceedings of International Conference on Signal Processing and Communications, SPCOM-2004, Su C1.1.	December 2004, at Bangalore
100	G. L. Sarada, T. Nagarajan, Hema A. Murthy	Multiple Frame size and multiple frame rate feature extraction for continuous speech recognition SPCOM-2004.	December 2004, at Bangalore
101	Rajesh M.Hegde, Hema A.Murthy	Cluster and Intrinsic Dimensionality Analysis of The Modified Group Delay Feature for Speaker Classification, Lecture Notes in Computer Science, LNCS 3316, pp. 1172 - 1178, Springer Verlag, From Proceedings of the ICONIP-2004.	November 2004, at Calcutta, India.
102	Rajesh M.Hegde, Hema A.Murthy, Venkata Ramana Rao Gadde	Continuous Speech Recognition using Joint Features derived from The Modified Group Delay Function and MFCC, Proceedings of the INTERSPEECH 2004 - ICSLP, Vol. 2, pp. 905-908, vspace-0.06.	06-10-2004 to 11-10-2004 at Jeju, S. Korea
103	Rajesh M.Hegde, Hema A.Murthy, Venkata Ramana Rao Gadde	The Modified Group Delay Feature : A New Spectral Representation of Speech, Proceedings of the INTERSPEECH 2004 - ICSLP, Vol. 2, pp. 913-916.	06-10-2004 to 11-10-2004 at Jeju, S. Korea
104	Rajesh M.Hegde, Hema A.Murthy, Venkata Ramana Rao Gadde	The Modified Group Delay Feature : A New Spectral Representation of Speech, Proceedings of the INTERSPEECH 2004 - ICSLP, Vol. 2, pp. 913-916.	06-10-2004 to 11-10-2004 at Jeju, S. Korea
105	Nemala Sridhar Krishna, Hema A. Murthy	A New Prosodic Phrasing Model for Indian Language Telugu, INTERSPEECH-2004 - ICSLP, Vol.1, pp.793-796.	06-10-2004 to 11-10-2004
106	Veena Desai, Hema A Murthy	Distributed Speaker Recognition, INTERSPEECH-2004 - ICSLP, Vol.4, pp.2381-2384.	06-10-2004 to 11-10-2004 at S. Korea
107	G. L. Sarada, T. Nagarajan, Hema A. Murthy	Automatic Transcription of continuous speech Using Unsupervised and Incremental Training, pp. 405-408, INTERSPEECH - 2004.	06-10-2004 to 11-10-2004 at S. Korea
108	K Balamurgan, Hema A. Murthy, T. A. Gonsalves	Efficient methods for Propagation modeling in Fixed Wireless, 7th IASTED International conference on Computer Graphics and Image Processing.	17-08-2004 to 19-08-2004 at Kauai, Hawaii, USA.
109	Nemala Sridhar Krishna, Hema A Murthy	Duration Modeling of Indian Languages Hindi and Telugu, Proceedings of 5th ISCA Speech Synthesis Workshop, pp. 197-202.	14-06-2004 to 16-06-2004 at Carnegie Mellon University, Pittsburgh.
110	T Nagarajan, Hema A Murthy	Language Identification using Parallel Syllable-like unit Recognition, Proc. ICASSP-2004, Vol.I, pp.401-404.	17-05-2004 to 21-05-2004 at Montreal, Canada.
111	Rajesh M Hegde, Hema A Murth Venkata Ramana Rao Gadde	Application of the Modified Group Delay function to Speaker Identification and Discrimination, Proc. ICASSP-2004, Vol.1, pp.517-520.	17-05-2004 to 21-05-2004 at Montreal, Canada.

Distinguished Visitors to the Department:

SL.No	Name of the Visitor and Designation	Date of Visit
1	Prof. Reynouard, Ms. Veronique Darleguy, Dr. Rayaud INSA, France.	20-03-2004
2	Prof. S.K. Chou, Prof. S.C. Lim, Mr. Ling Chung Ho National University of Singapore.	24-03-2004
3	Dr. Frederick Lowy, Dr. Balbir S. Sahini Center for International Academic Cooperation, Concordia University, Canada.	19-04-2004
4	A 3 member Japanese Delegation led by Mr. Mutoh akhiro International Trade Policy Bureau, ministry of Economy, Trade and Industry.	24-05-2004
5	An 18 member Delegation led by Dr. Tatree Nontasak, Ph.d, Assistant President, International Network Development from Thailand.	26-05-2004
6	M/s Morgan Stanley, Mr. Ranjit Samra, Mumbai.	28-05-2004
7	Prof. Wendy Hall, Ms. Jo L Nesbitt, U.K.	04-06-2004
8	Dr. Bhargab B. Bhattacharya Indian Statistical Institute, Calcutta.	02-07-2004
9	Dr. Mukul Saxena, VP, Corporate Technology, Siemens and members, Board of Governor, IITM.	23-07-2004
10	Prof. Sven Koenig University of Southern California.	10-08-2004
11	Prof. Laks V.S Lakshmanan, University of British Columbia, Vancouver, Canada.	12-08-2004 to 13-08-2004
12	Dr. Gopal Balakrishnan, University of Wisconsin, Madison.	17-08-2004
13	Prof. Ravishankar Sharma, NTU Singapore Prof. Pan TSO Chein Prof. Dhanjoo N. Chinta	01-10-2004
14	Chinese Team from 14 different Universities.	11-10-2004
15	Prof. Neol Sharkey, Univ. of Sheffield, UK.	26-10-2004
16	Dr. Vijay Raghavan, SITAR, Bangalore.	28-10-2004
17	Prof. Barney Clover & Prof. Svetha Venkatesh, Curtin Univ. Australia.	01-11-2004
18	Dr. Puigianer Trepat Ramon, University of Illes Balears, Spain, Prof. Raymond Marie, Univ. of Rennies, France & Prof. Heinz Beilner, Univ. of Dirmund, Germany.	05-11-2004 to 24-11-2004
19	Dr.Gunter Haring, Univ. of Vienna, Austria	01-11-2004 to 24-11-2004
20	Malaysian Delegation	07-12-2004

4.8 DEPARTMENT OF ELECTRICAL ENGINEERING

4.8.1 Introduction:

The Department of Electrical Engineering encompasses Electrical, Electronics and Communication Engineering. The Department comprises of the following sections.

Communication Systems

- Digital Signal Processing Laboratory
- Microwave and Antenna Laboratory
- Telematics Laboratory
- Communication Laboratory

Power Systems, Machines and Drives

- Electrical Machines and Drives Laboratory
- Power Electronics Laboratory
- Power Systems Laboratory
- High Voltage Laboratory

Control and Instrumentation Systems

- Control and Robotics Laboratory
- Measurements and Instrumentation Laboratory
- Optical Networks Laboratory

Microelectronics and VLSI Design

- Microelectronics Laboratory
- Amorphous Semiconductor Devices Laboratory
- Digital Systems Design Laboratory
- FPGA Laboratory
- VLSI Laboratory

4.8.2 Academic Programmes:

B.Tech. Degree in Electrical Engineering

Integrated M.Tech. Degree in Electrical Engineering:

The Department offers an integrated undergraduate degree in Electrical Engineering that combines all aspects of power, control, electronics and communication and microelectronics engineering.

Five year integrated M.Tech. (Dual Degree) Programme is offered in three streams:

1. Communication Systems
2. Microelectronics and VLSI design
3. Power Systems and Power Electronics

M.Tech. Degree in Electrical Engineering

Five major streams of study are available at M.Tech. level

1. Communication Systems (EE1)
2. Power Systems and Power Electronics (EE2)
3. Microelectronics and VLSI design (EE3)
4. Control and Instrumentation Systems (EE4)
5. User-oriented DSP (EE5)

Areas of research for M.S. and Ph.D. Degree in Electrical Engineering

Amorphous Semiconductor Devices, Antennas, Communication Systems, Control Engineering, Digital Techniques and Computer Technology, Electrical Machines and Drives, Electromagnetic Interference and Compatibility, Electronic Circuits, High Voltage Engineering, Image and Digital Signal Processing, Laser Communication, Measurements and Instrumentation, MEMS, Microwave Engineering, Nano technology, Optical Communication, Power Electronics and Power Systems, Photonics, Semiconductor Devices, Robotics and VLSI.

New Courses introduced:

Sl. No.	Course No.	Title	From
1	EE543	Optical communications	July 2004
2	EE585	Software Engineering for Electrical Engineers	July 2004
3	EE642	Optical Communication Networks	July 2004
4	EE657	VLSI Data Conversion Circuits	July 2004
5	EE744	Advances in Fibre Optics and Photonics	July 2004

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	64	76	80	87	-	307
Integrated M.Tech.						
Communication Systems	16	13	11	13	13	66
Power Syst. & Power Electronics	17	9	10	-	-	36
Micro-Electronics & VLSI Design	19	12	10	15	12	68
M.Tech.						
Communication Systems	32	24	-	-	-	56
Power Syst. & Power Electronics	20	10	-	-	-	30
Micro-Electronics & VLSI Design	24	29	-	-	-	53
Control & Instru. Systems	19	18	-	-	-	37
M.Tech. (UOP)						
Digital Signal Processing	10	7	-	-	-	17
M.S.	53	18	11	7	-	89
Ph.D.	27	16	7	9	3	62
Total	301	232	129	131	28	821

Names of Student/Scholar who attended Conference/ Workshops /Seminar and Symposia Abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
Conference:				
1	Sam Alex	Conference	Intl Conf. on Photonics	Dec. 2004, Cochin
2	Abu Thomas	Conference	Intl Conf on Photonics	Dec. 2004, Cochin
3	Souvik Basu	Conference	MEMS	Dec. 2004, Chennai
4	V.T. Gopakumar	Conference	Photonics '04	Dec. 2004, Cochin
5	V. Venkatesh	Conference	Photonics '04	Dec. 2004, Cochin
6	P. Rajesh Kumar	Conference	ICISIP 2005	
7	M.P.Selvan	Conference	International Conference on Power Systems (ICPS 2004)	3 rd – 5 th , Nov. 04, Kathmandu, Nepal
8	M.P.Selvan	Conference	International Conference on Power System Technology (POWERCON 2004)	21 st – 24 th November 2004, Singapore
9	Rajeev Sheno	Conference	NCC 2005	28.01.05, IIT Kharagpur
10	M. Chandrashekar	Conference	NCC 2005	29.01.05, IIT Kharagpur
11	L.V. Mahesh	Conference	NCC 2005	Jan' 28-30, 2005
12	L.V. Mahesh	Conference	IEEE Int. Natl. Conf. on Personal and Wireless Commns.	Jan' 23-25, 2005
13	S. Chandrasekar	Conference	CBIP, New Delhi	June. 2004
		Conference	NPSC, Chennai	Dec. 2004
14	C. Murali Mohan	Conference	NCC 2005	Jan. 2005
15	M.J. Dehghani	Conference	IEEE TENCON 2004	Dec. 2004
16	Souvik Basu	Symposium	Symposium on Smart Materials and Systems	December 15-17, 2004, Chennai

4.8.3 Faculty and their Specialization:

Name and Qualification	Major area of specialisation
Professors:	
Bhaskar Ramamurthi, Ph.D.(California)	Digital Communication and Communication networks, Signal Processing
K.N. Bhat, Ph.D.(IIT Madras)	MEMS, Semiconductor Devices-Silicon and GaAS
David Koilpillai, Ph.D.(Cal Tech)	Wireless communication and signal processing
V.Jagadeesh Kumar, Ph.D.(IIT Madras)	Measurements, Instrumentation
C. Venkateshaiah, Ph.D (IIT Madras)	Power systems, Instrumentation and High voltage Engg.,
P.A.Janakiraman, Ph.D.(IIT Madras)	Robotics, Control Systems Instrumentation
A. Jhunjhunwala, Ph.D (Maine)	Communication Networks, Fibre optics, Surface Acoustic Wave Devices, VLSI, Semiconductor Devices.

S. Karmalkar, Ph.D.(IIT Madras)
K.M.M.Prabhu, Ph.D.(IIT Madras)
K.Radhakrishna Rao, Ph.D.(IIT Kanpur)
S.Srinivasan, Ph.D.(IIT Madras) - Head

Associate Professors:

Amitava Dasgupta, Ph.D.(IIT Kharagpur)
R.Aravind, Ph.D.(California)
Devendra Jalihal, Ph.D.(Duke)
Enakshi Bhattacharya, Ph.D.(TIFR Bombay)
Nandita Dasgupta, Ph.D (IIT Madras)
K.Sridharan, Ph.D (RPI, NY)
K.Giridhar, Ph.D.(California)
Harishankar Ramachandran Ph.D (California)

Assistant Professors:

Anil Prabakar Ph.D (Carnegie Mellon)
V.Jayashankar Ph.D (Anna. Uni.)
Krishna Vasudevan, Ph.D.(IIT Madras)
C.Mathiazhagan, Ph.D (Univ.California)
R. Manivasakam Ph.D (IIT Bombay)
A.N. Rajagopalan Ph.D (IIT Bombay)
C. S. Ramalingam Ph.D (Univ.Rhode Irland)

R.Sarathi, Ph.D.(IISc)
Y. Shanthi Pavan, D.Sc(Univ. Columbia)
Srinivas Chakravarthy Ph.D (Austin)
K.S. Swarup PhD (IISc)
T.G.Venkatesh, Ph.D.(IISc)
Vinita Vasudeven, Ph.D (IIT Bombay)
T.J.Vitto, Ph.D (IIT Madras)
Andrew Thangaraj, Ph.D (GA Tech, Atlanta)

A. Ravishankar,
B. Srikrishna, Ph.D (Rice Univ, Texas)

Nitin Chandrachoodan, Ph.D (Univ. of Maryland)
Balaji Srinivasan, Ph.D (Univ. of New Mexico)

Mahesh Kumar, Ph.D (IIT Kanpur)
Shanthi Bhattacharya, Ph.D (IIT Madras)

Visiting Faculty:

S.R. Kannan Ph.D (IIT Madras)

Analog Devices Chair Professor:

Mani Subramanian

Chief Design Engineer:

P.Ramaseshagiri Rao, M.S(IIT Madras)

Senior Scientific Officer Gr-I:

T.V.Gopal, M.S (IIT Madras)
H.Renganathan, M.S(IIT Madras)

Scientific Officer Gr-I:

K.Ponnuraju, Ph.D.(IIT Madras)

K. Prabhakar Rao

Instrumentation Engineer:

Jeyasudha Avudai Thangam

VLSI, Semiconductor Devices
Signal Processing
VLSI, Analog and Digital ICs
Digital Design, DSP Architecture and applications, VLSI Design, Semiconductor Devices

Si and GaAs Devices, Technology and Simulation
Image Processing and Compression
Statistical Signal Processing
Semiconductor materials and Devices
Si and III-V, Semiconductor Devices, Tech, Simulation
Robotics, Graphics, Web Programming
Communication Systems and Signal Processing
Electromagnetic Fields, Optical Networks

Electromagnetic fields, Optical Networks
Instrumentation and Measurement
Power Electronics
RF, Analog Circuits for Telematics
Communication Networks
Image Processing and Computer Vision
Digital Signal Processing, Speech Recognition and Speech Coding
High voltage Engineering
VLSI Design
Neural Networks, Handwritten script, Characterisation
Power systems, ANN, Distribution Automation
Computer Architecture and Networks
CAD for VLSI, VLSI Design
Semiconductor Devices, Analog Circuits
Error control coding, Information Theory, communication systems

Wireless communication, Information theory, Signal Processing for Communication

Optical Commns., Electro magnetics, Optical Components

Applied Optics, Interferometry, Optical components

High Voltage Engineering

Communication

Semiconductor device technology

Measurements, Computer System Management
DSP Microprocessor Systems

Solid State Electronic Devices, Semiconductor Technology
Communication Systems

Electric Machines and Drives

Short-term Courses/ Workshops/ Seminars/ Symposia /Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1	C. Venkateshaiah	13 th (NPSC 2004), DEE, IIT Madras	27-29 th Dec. 2004
Short term Course:			
1	R. Sarathi & C. Venkateshaiah	Recent trends in condition monitoring of power equipments and systems Under QIP program	23 rd to 29 th June 2004
2	R. Sarathi & C. Venkateshaiah	Recent trends in High voltage testing techniques sponsored by ISTE-AICTE, India	3-9 th Nov. 2004

Short-term Courses/ Workshops/ Seminars/ Symposia/ Conferences/ Training attended by the faculty members in Academic institutions and Public Sector Undertakings:

Sl. No.	Name of faculty	Title	Institution	Period
Workshop:				
1	Enakshi Bhattacharya	One Day International Workshop on MEMS	IISc, Bangalore	22 Dec. 2004.
Symposia:				
1	D. Jalihal	Intl. Symp. On Wireless Commn. Systems	Mauritius	Sept. 2004
2	Y. Shanthi Pavan	Internl. Symp. On Circuits and Systems, ISCAS 2005	Vancouver, Canada	
Conference:				
1	Andrew Thangaraj	NCC 2005	IIT Kharagpur	Jan 28-30, 2005
2	S. Balaji	Photonics '04,	Cochin	
3	S. Balaji	Teletec '04	Thyagarajar Coll. of Engg.Madurai	July27-29, 2004
4	Enakshi Bhattacharya	Nano-2004 India Int. Natl. Conf. on Nano-Materials	Kolkata	4 – 6 Nov., 2004.
5	R. Manivasakan	7 th ICACT 2005	Phoenix Park, Republic of Korea	21-02-2005 to 23-02-2005
Short term Course:				
1	S. Balaji	Recent Trends in Communication Techniques	MGR Engg. College, Chennai	10 th -15 th Feb. 2005

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue and Date
1	Nandita Das Gupta	Two lectures on "VLSI Technology" and "Towards One Billion Transistors"	Infineon Technologies India Pvt. Ltd, ITPL, White-field, B'lore on Feb 7 and 8, 2005.
2	Anil Prabhakar	Optical Amplifiers, STTC on Optical Networking	Kongu College of Engg, Erode, Nov. 2004
3	Anil Prabhakar	Modelling using Femlab	IIT Bombay, Jan. 2005
4	S. Balaji	Recent Trends in Optical Communications	MGR Engineering College, Chennai
5	S. Balaji	Optical Wireless Communications	Thiagarajar College of Engineering, Madurai
6	Y. Shanthi Pavan	Lectures on various aspects of Analog VLSI design in several companies and Institutions	National Semiconductor, Nulife Technologies, Genesis Micro-chip, Vellore Institute of Technology.
7	Enakshi Bhattacharya	Potentiometric Biosensors based on Silicon and Porous Silicon	ECES Dept. of Jadavpur Univ. on 9 Nov, 2004.
8	Enakshi Bhattacharya	'Porous Silicon' – Guest Lecture at the DST sponsored Refresher course for College Teachers	Anna University, 24 November, 2004
9	Enakshi Bhattacharya	'Surface micromachining' – Guest Lecture at the DST sponsored Refresher course for College Teachers	Anna University, 25 November, 2004

10	Enakshi Bhattacharya	'Surface Micromachining and stiction' at Society for IC Technology and Advanced Research (SITAR)	Bangalore on 21 December, 2004
11	Harishankar Ramachandran	Two talks at Institute for Plasma Research, Gandhinagar on edge plasma physics	July 2004
12	Harishankar Ramachandran	Talk at DA-IICT, Gandhi nagar, on the Passive Optical Network project ongoing	IIT Madras, July 2004
13	Manivasakan	Asynchronous Multiplexing and PDH/SDH networks in Short term training program on Optical communication networks for the next generation internet	Sri Venkateswara College of Engg., Ponnalur. Sriperumbadur
14	Shanthi Swarup	Power Systems of the Future: Deregulated Power Systems	Sastha Engg. College, Chenbarambakkam, Chennai on 29.01.2004
15	Shanthi Swarup	Appln. Of Artificial Intelligence in Electrical Systems Part -1. "Expert Systems for Power System Protection", Part - 2 "Genetic Algorithms Applns to Power Syst.", for (ISTE-STTP)	Sir M Visvesvaraya Institute of Technology (MVIT), Bangalore on 6 th February 2004.
16	Shanthi Swarup	Energy Management Systems' for AICTE STTP Lecture	MEPCO SCHLINK Engg. College, Sivakasi on 12 th March 2004.
17	Shanthi Swarup	Fuzzy Logic Appln. For Power Systems, "Fuzzy Systems approach to decision making in Deregulated Power Systems Market Operations" Guest Lecture for the AICTE STTP course	K. S. Rangaswamy College of Tech., Tiruchengode, 20 th March 2004
18	Shanthi Swarup	"Fuzzy Logic in Engineering", Fuzzy Optimization and their application to Power System. A case study in Fuzzy Dynamic Programming for Unit Commitment", Guest Lecture for the AICTE- STTP course	Dept. of Mathematics and Information Tech. at the Sir M.Visvesvaraya Instt. Of Tech. (SMVIT), Bangalore 25 th March 2004
19	Shanthi Swarup	Fuzzy Logic and its Application to Power Systems: 'Reactive Power Dispatch using Fuzzy Systems' and 2) 'Fuzzy Optimal Power Flow', Guest Lecture for the AICTE ISTE two week STTP programme	Dept. of EEE at Bapuji Instt. Of Engg. Tech., Davangere Karnataka, 25 th March 2004
20	Shanthi Swarup	Computer Control of Power Systems	DEE Velamal Engineering College, 26 th June 2004
21	Shanthi Swarup	Optimal capacitor Placement in Distributed Systems using Genetic Algorithms	Department of Electrical Engineering Indian Institute of Technology, Madras, 29 th June 2004
21	Shanthi Swarup	Fuzzy Systems Applications to Power Systems", "Part I: Fuzzy Linear Programming, Part II: "Multi Objective Optimization", Part - III, "Computational Intelligence	CSE Dept. VIT, Vellore, 15 th July 2004
22	Shanthi Swarup	Power Quality and Relay Coordination	Electrical Power Training Institute, TNEB Members, Chennai, 24 th July 2004
23	Shanthi Swarup	Computer Control of Electric Power Systems and Energy Management Systems	EEE Dept., Hindustan College of Engineering, Chennai, 19 th August 2004
24	Shanthi Swarup	Implementation of Methodologies for Power System Restoration	EED, IIT Madras, Sep. 2004
25	Shanthi Swarup	Energy Management and Trading	Dhanalakshmi Srinivasan Engg. Natl. Tech. Symp. "Cadenza '04 College, Perambalur
26	Shanthi Swarup	Artificial Neural Networks for Forecasting, Clustering and Optimization	M N M Jain Engineering College, Chennai, 17 th Sep. 2004
27	K.M.M. Prabhu	Multirate DSP	Satyabhama Deemed Univ., 9 th Dec. 2004
28	R. Sarathi	Influence of environmental factors on the performance of outdoor polymeric insulation structures.	Akita University, Japan (Invited Lecture), Aug. 25, 2004

Visits abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit
1	Anil Prabhakar	Bangpa-in, Thailand	June 2004	Western Digital Corporation
2	D. Jalihal	Mauritius		To attend Intl symposium on wireless communication systems
3	Y. Shanti Pavan	California,	May-July 2004	BigBear Networks Inc, Sunnyvale
4	Y. Shanti Pavan	Vancouver, Canada	May 2004	International Symposium on Circuits and Systems
5	Nandita DasGupta	Visited Institut fur Halbleiter-technik in Darmstadt, Germany	May 2004 – July 2004	Alexander von Humboldt Re- invitation program
6	R. Manivasakan	7 th ICACT'2005, Phoenix Park, Korea	21 st - 23 rd , Feb. 2005	Conference visit
7	S. Karmalkar	University of South Carolina, Columbia and Rensselaer, Polytech. Institute, Troy, New York	May 11 to July 10, 2004	Visiting Researcher
8	Krishna Vasudevan	Tech. University Ilmenau, Germany	June 2004	Visiting Researcher
9	R. Sarathi	Akita University, Japan	26.07.2004 to 30.09.2004	Visiting Researcher
10	R. Sarathi	Nagaoka University	03.12.2004- 21.12.2004	Visiting Researcher
11	Bhaskar Ramamurthi	USA	28.02.05 to 07.03.05	Tech. Program and discussion in connection with Wireless Project.

Honours and Awards obtained:

Sl. No.	Name of faculty/student	Name of Award	Awarded by	Awarded for	Date of award
1	Prof. Bhaskar Ramamurthy	Tamilnadu Scientist Award 2003	Tamilnadu State Council for Sci. & Tech.	Contributions to Science & Technology	May 2004
2	Prof. K.N. Bhat	Rashtriya Gaurav Award	India International Friendship Society (IIFS)		31.07.2004
3	A. Jhunjunwala	UGC Hari Om Ashram Trust Award	UGC, New Delhi	Outstanding Social Sciences: Science & Society	01.09.2004
4	A. Jhunjunwala	27 th IETE Ram Lal Wadhwa Gold Medal	The Instn. of Electronics & Telecommun. Engineers at Ahmedabad	Outstanding contribution in the field of Elec & Commn. Engg. In the broadband sense	26.09.2004
5	A. Jhunjunwala	Skoch Summit Challengers 2005 Award	Business India	Rural Delivery Systems	20-02-2005
6	Aditya Pandey, Ayan Chakraborty (DD students)	Best Outgoing Intern Award	Talent acquisition Team at GE India Technology Centre Pvt. Ltd.	Summer Internship	May-July 2004
7	Roy Paily Palathinkal (former Ph.D. student)	IBM Outstanding Ph.D. student	IBM global Services India Pvt. Ltd.	Studies on improved gate dielectrics for VLSI MOS devices	01.11.2004

Books, Monographs authored/co-authored:

Sl. No.	Name of faculty	Title	Publisher
1	A. Jhunjunwala	Chapter on "Wireless in the local loop towards connecting India" in the book "Asia Unplugged"	Sage Publications India Pvt. Ltd.

Patents awarded:

1. S. McLaughlin and A. Thangaraj, "Advanced Forward Error Correction", US patent # 6,842,873.

4.8.4 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lacs)	Co-ordinators
1	Study of Stiction in Surface Micromachined Structures	2001-2005	DRDO	20.42	E. Bhattacharya, K. N. Bhat, PRS Rao, N. DasGupta and A. DasGupta
2	Design and Development of MOS Integrated Piezoresistive Pressure Sensors, NPSM	2001-2005		2,54.10	E. Bhattacharya, K.N. Bhat, PRS Rao, , N. DasGupta and A. DasGupta
3	Porous silicon based Biosensors	2002-2005	DST	17.21	E. Bhattacharya, Anju Chadha
4	Design and Fabrication of Silicon Micropump for drug delivery and drug dosage control	2004-2006		259.60	E. Bhattacharya, K.N. Bhat with PRS Rao, , N. DasGupta, A. DasGupta, S. Karmalkar, K. Gopinath , M. Singaperumal and V. Balasubramaniam
5	IDRP project on BioMEMS	2003-2005			K. N. Bhat
6	Design and Development of Sensor Head for Remote Sensing of Conductive Deposits	1-3-2005 to 30-11-2006	IGCAR	19.63	Krishna Vasudevan, Prof. V. Jagadeesh Kumar
7	Development of CAD tools for deep submicron VLSI	-	under new faculty scheme, by ICSR	-	Ravishankar A
8	Study of learning and memory mechanisms in cardiac activity	June 2004-2006	DST	8.50	Srinivas Chakravarthy S. Radhakrishnan.
10	Development of MEMS pressure sensors for operation upto 30 bar absolute and Gauge pressure	Jan 2005-July 2005	RCI, HBad	9.66	K.N. Bhat PRS Rao
11	Design and Development of sensor head for remote sensing of conductive deposits	March 2005-Nov.2006	IGCAR	19.63	V. Jagadeeshkumar Krishna Vasudevan V. Anatha Subramanian

Industrial Consultancy projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lacs)
1	Amitava Dasgupta	Testing and characterization of Silicon devices and Microstructures	GE India Technology Centre, Bangalore	4.00
2	Ravishankar A	Design and Deveopment of a datacard for rual applications	AID-India	0.18
3	C. Venkateshaiah R. Sarathi	Impulse Voltage testing of transformers	Transformer industry	3.79
4	Jagadeeshkumar.V Jayashankar.V	Testing and Calibration of meters	Emmess controls Ascott Electricals	0.83
5	C. Venkateshaiah R. Sarathi	Reference voltage test on LA	Lamco systems	0.55

6	V. Jagadeeshkumar V. Jayashankar	Noload and short circuit test	Venkateshwara Electrial Industries	0.50
7	Sasidhara Rao.P	Transient simulation of a DC aotomative solenoid	Lucas-TVS Ltd	0.28
8	R. Sarathi C. Venkateshaiah	Calibration of HV test kit	System control Engg.,	0.11
9	Sasidhara Rao Krishna Vasudevan	Study of alternator fault conditions	Larson and Toubro Ltd.	1.25
10	Andrew Thangaraj	Development of LDPC behavioral model	Radiospire Networks, USA	5.4
11	R. Sarathi C. venkateshaiah	Impulse voltage testing of transformer	Venkateswara Elect.	6.98
12	Amitava Dasgupta K.N. Bhat	Testing of silicon devices and microstructures	GE India Technology Centre Pvt. Ltd.	4.0

RBIC projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lacs)
1	N. Dasgupta A. Dasgupta	Development of PINFET Optical Detector for Operation at 1.3 and 1.55 μ m	Research Center Imarat (RCI), Hyderabad	9.88
2	Shanthi Pavan	Analog Circuit Design	Nulife Semiconductor (I) Pvt. Ltd	3.6
3	Anil Prabakar		SCM Microsystems	0.6
4	Shanthi Pavan	Analog Circuit Design	Gemini Communication Ltd.	0.5
5	V. Jayashankar	Development of PD test kit	Emmess control Pvt. ltd	0.72
6	Shanthi Pavan	High speed AD converters	Texas Instruments(I) Ltd	21.89
7	B. Srinivasan A. Prabakar	Optical Time domain reflectometer development	Aishwarya Telecom Pvt. Ltd	10.14
8	R. sarathi V. Jayashankar K.S. Swarup Maheshkumar	Development of costeffective model for arc fault detector for aerospace application	Hineywell Tech. Solutions, Pvt. Ltd.	12.51
9	A.N. Rajagopalan	Computation of shape from defocused observation	Benchmark vision systems Pvt. Ltd.	3.25

Research Publications:

Total No. of papers published in Refereed National Journals	:	02
Total No. of papers published in Refereed International Journals	:	44
Total No. of papers presented in National Conferences	:	21
Total No. of papers presented in International conferences	:	29

In Refereed National Journals:

1. R. Sarathi, S. Chandrasekar, V.Sabari Giri, C. Venkateshaiah and R. Velmurugan, Analysis of Surface Degradation of High Density Polyethylene (HDPE) Insulation Material due to Tracking , Bulletin of Materials Science, Indian science Academy, Vol27, No.3, pp1-12. June 2004.
2. K. S. Swarup and M.P. Selvan, "Economic Dispatch Solution Using Hopfield Neural Network", Journal of the Institution of Engineers (India), Vol. 85: pp. 77-82 Sep. 2004

In Refereed International Journals:

1. R. Sarathi, Supriyo Das, C.R. Anil Kumar and R. Velmurugan, Analysis of failure of XLPE cables due to electrical treeing, Journal of Applied Polymer Science, Interwiley Publication.
2. R. Sarathi, S.R. Chakravarthi, Sabari Giri and C.Venkateshaiah, Studies on Generation and Characterisation of Nano Al₂O₃ Powder using Wire Explosion Technique, Materials Letters, Vol.58, pp1047-1050,Elsevier science, 2004.
3. R. Sarathi, C.R.Anilkumar and R. Jayaganthan, Influence of homo and hetero charges on growth dynamics of electrical trees, Materials Letter, Vol.58, No.19, pp 2386-2392 July 2004.
4. R. Sarathi, Deepa, and Rohit.K Vora Investigation into the Effect of Transformer Oil on Polyimide and its Nanocomposites, Journal of metastable and nano crystalline materials, Vol-23, pp347-350, 2005.

5. R. Sarathi and S. Chandrasekar, Investigations of Tracking Phenomena in Silicone Rubber using Moving Average Current Technique, *Plasma Science and Technology*, Vol-6, No.5, pp2514-2520, Oct. 2004.
6. R. Sarathi and P. Gani Raju, Diagnostic Studies of electrical treeing phenomena in underground XLPE cables using Acoustic emission technique, *Polymer Testing*, Vol-23, No.8, pp863-869, Dec. 2004.
7. R. Sarathi and P. Gani Raju, Study of Electrical Treeing in XLPE cable samples using Acoustic emission technique, *Electric Power System Research*, Vol-73, No.2, pp159-168, Feb. 2005.
8. R. Sarathi, S.R. Chakravarthi and C. Venkateshaiah, Studies on generation and characterization of Nano Alumina powder using wire explosion technique, *Int. Journal of Nano Science*, Vol-3, No.6, pp1-9, 2004.
9. Anil Prabakar, Estimation of sub-micron read width in magnetic recording, *IEEE Trans. Mag*, vol 40, July 2004.
10. Rajkhowa, K.R. and Ramachandran, H., "Characteristics of gravitationally affected colloidal plasma sheath", *Phys. Plasmas* 11(3), pp 1203-1213 (March 2004)
11. M. Joseph and D. Jalihal, "DSP Algorithms for Satellite Transmultiplexer and Receiver," *IETE Journal of Research*, Vol. 50, No. 5, Sep-Oct 2004.
12. J. Klutto Milleth, K. Giridhar and Devendra Jalihal, "Closed loop transmit diversity schemes for five and six transmit antennas", *IEEE Signal Processing Letters*, Vol 12, No. 2, pp 130-133, Feb 2005.
13. G.V.Rangaraj, D.Jalihal and K.Giridhar, "On OFDM Systems with Spatially Correlated Antennas in Low Multipath Diversity Situations," *IEEE Signal Processing Letters*, Dec 2004, 945-947
14. G.V.Rangaraj, D.Jalihal and K.Giridhar, "On Usefulness of multipath diversity for multiple antenna OFDM systems," *IETE Technical Review*, Special issue on Broadband Wireless Technologies, Vol 21, No. 5, September-October, 2004.
15. Lixin Wang, Mounir Hamdi, R. Manivasakan and Danny H. K. Tsang "Multimedia - MAC Protocol: Its Performance Analysis and Applications for WDM Optical Networks", to appear in *IEEE Transactions on Communications*.
16. D. Jalihal Closed loop transmit diversity schemes for five and six transmit antennas *IEEE Signal Processing Letters*, Vol 12, No. 2, pp 130-133, Feb 2005
17. S.K. Lam, K. Sridharan and T. Srikanthan Hardware-efficient schemes for logarithmic approximation and binary search with application to visibility graph construction *IEEE Transactions on Industrial Electronics*., Vol. 51, No. 6, Dec. 2004, pp. 1346-1348
18. K.Sridharan and T.K. Priya A parallel algorithm for constructing reduced visibility graph and its FPGA implementation, *Journal of Systems Architecture*, Elsevier, Vol. 50, Issue 10, October 2004, pp. 635-644
19. K. Sridharan ,A course on Web languages and Web-based applications, *IEEE Transactions on Education*, May 2004, pp. 254-260
20. N. Sudha and K. Sridharan , A high-speed VLSI design and ASIC implementation for constructing Euclidean-distance based Discrete Voronoi diagram, *IEEE Transactions on Robotics and Automation*, Vol. 20, No. 2, April 2004, pp. 352-358
21. Basu, R.V. Subramanian, A. Mathew, A. M. Kayastha, A. Chadha and E. Bhattacharya, Solid State Potentiometric Sensor for the Estimation of Tributyrin and Urea, *Sensors and Actuators B*, in press, available on line 21st Dec. 2004.
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Refereed National Conferences:

1. R. Sarathi, S. Chandrasekar and C. Venkateshaiah, Investigation of tracking phenomena in silicone rubber insulation material under DC voltages, *CPRI*, Aug. 2004.
2. R. Sarathi, C. R. Anilkumar and C. Venkateshaiah, Study of electrical treeing in underground cable under different voltage profiles, *CPRI*, Aug. 2004.
3. R. Sarathi, C. Venkateshaiah and S. Chandrasekar, Investigation of tracking phenomena in outdoor insulation structure using moving average technique, *NPSC 2004*, Dec. 2004.
4. R. Sarathi, S. Chandrasekar and N. Yoshimura, Understanding tracking phenomena in outdoor insulation materials using leakage current measurements, *INDICON*, Kharagpur, India, Dec. 2004.
5. R. Sarathi, Vishal Dubey and Y.G. Srinivasa, Identification of Incipient Discharges in Gas Insulated System using Acoustic Emission Technique, *CPRI, Bangalore*, Feb. 10, 2005.
6. Mahesh K., Linash P. K., "A fast transient response single phase active power filter," *National System Power System Conf*, Dec. 27-29, 2004, organized by IIT Madras.

7. M. S. Ballal, Z. J. Khan, Mahesh K and R. L. Sonolikar, "Fuzzy logic Approach for the Detection of Winding Insulation Condition and Bearing Wear in Induction Motor," National System Power System Conf, Dec. 27-29, 2004, organized by IIT Madras.
8. Jayalalitha S, Palani A, Jayashankar V, "Programmable continuous time filters for impulse testing of transformers", Proc. IEEE INDICON-2004, Kharagpur, India, pp. 99-102, Dec'2004.
9. Mahesh G, George B, Jayashankar V, Jagadeesh Kumar V, "Instrument transformer performance under distorted conditions ", Proc IEEE INDICON-2004, Kharagpur, India, pp.468-471 , Dec'2004.
10. Ravishankar Arunachalam Static transition probability analysis under uncertainty, IEEE International Conference on Computer Design, San Jose, 2004
11. Sunil Bandaru and K. S. Swarup, "Web-Based Developmental Tool for Power System Analysis", 13th Annual Symposium on Power Systems, IEEE Bangalore Section, 26th - 27th November 2004, Paper no Sym_P_1.
12. Ashish Vashisht and K. S. Swarup, "Power System Analysis using Java 3D", 13th Annual Symposium on Power Systems, IEEE Bangalore Section, 26th - 27th November 2004, Paper no Sym_P_2.
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14. Shobit Maini and K. S. Swarup, "Security Constrained Economic Dispatch using interior Point Method", 13th Annual Symposium on Power Systems, IEEE Bangalore Section, 26th - 27th November 2004, Paper no Sym_P_11.
15. Ravishankar Arunachalam Gate Level Dynamic Power Estimation in the Presence of Varying Process Parameters, Proceedings of the 8th VLSI Design and Test Workshops, Mysore, 2004
16. Selvan M.P & Swarup K.S. "Object Oriented Modeling of Distribution System with Dispersed Generation for Power Flow Analysis", 13th National Power Systems Conference (NPSC), IIT Madras, 27-30 December 2004, pp 122-127.
17. Prasad Reddy K V. & Shanti Swamp K. "Artificial Neural Network Based Pattern Recognition of Power Systems Security and Generator Severity Ranking", 13th National Power Systems Conference (NPSC), IIT Madras, 27-30 December 2004, pp 475-481.
18. Ravi Shanker K., Nagamani C. & Shanti Swarup K. , "Investigations of UPFC for Independent Active and Reactive Power Flow Control", 13th National Power Systems Conference (NPSC), IIT Madras, 27-30 December 2004, pp 896-901.
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20. Ravishankar Arunachalam Maximization of Aggressor Influence in Crosstalk-Delay Testing, Proceedings of the 8th VLSI Design and Test Workshops, Mysore, 2004
21. T. G. Venkatesh, Delivered a pre-conference tutorial entitled "Mobile multimedia applications" in the National Conference on Mobile Computing, Feb 2, 2005, Crescent Engineering college, Chennai -600 048

Refereed International Conferences:

1. R.Sarathi, S. Chandrasekar and N. Yoshimura, Investigations of tracking phenomena in outdoor polymeric insulation using wavelets, International conference on Electrical maintenance, CBIP, New Delhi, feb. 2004.
2. R. Bhattarai, C. Venkateshaiah and R. Sarathi, Investigations of breakdown characteristics of Nitrogen and SF6 gas under non-standard transient voltages, Int. Conf. On power systems, pp261-264, Kathmandu, Nepal
3. R. Sarathi, S. Chandrasekar and N. Yoshimura, Investigations of tracking phenomena in outdoor polymeric insulating material under DC voltage, INSULEC-2005.
4. R. Sarathi, C. Venkateshaiah and P. Gani Raju, Study of treeing phenomena in XLPE cable insulation using AE technique, IASTED conference, Nov. 2004, Florida, USA.
5. Rohit Kumar P, K. Shanti Swarup, Particle Swarm Optimization For Economic Dispatch With Line Flow And Voltage Constraints, International Conference on Intelligent Sensing and Information Processing , (ICISIP - 2004), Chennai, 4-7 January 2004.
6. Simi P Valsan, K. Shanti Swarup, , Hopfield Neural Network Approach To The Solution Of Economic Dispatch And Unit Commitment, , International Conference on Intelligent Sensing and Information Processing , (ICISIP - 2004), Chennai, 4-7 January 2004.
7. M.P.Selvan and K. S. Swarup, "Object-Oriented Software Modeling of Unbalanced of Distribution System", International Conference on Power Systems (ICPS 2004), 3rd - 5th November 2004, Kathmandu, Nepal.

8. M.P.Selvan and K. S. Swarup, "Distribution System Load Flow using Object-Oriented Methodology", International Conference on Power System Technology (POWERCON 2004), 21st - 24th November 2004, Singapore.
9. K. Shanti Swarup, Rupesh Mastakar and K. V. Prasad Reddy, 'Decision Tree for Steady State Security Assessment and Evaluation of Power Systems', 2nd Intl Conference on Intelligent Systems and Information processing (ICISIP 2005), January 2005, Paper no 48, pp.211-216.
10. K. Shanti Swarup and P. S. Subash, 'Neural Network Approach to Voltage and Reactive Power Control in Power Systems', 2nd Intl Conference on Intelligent Systems and Information processing (ICISIP 2005), January 2005, Paper no 39, pp. 223-227.
11. K. Shanti Swarup and K. V. Prasad Reddy, 'Neural Network based Pattern Recognition for Power System Security Assessment', 2nd Intl Conference on Intelligent Systems and Information processing (ICISIP 2005), January 2005, Paper no 36, pp.225-233.
12. K. Shanti Swarup and Anand Natrajan, "Constrained Optimization using Evolutionary Programming for Dynamic Economic Dispatch", 2nd Intl Conference on Intelligent Systems and Information processing (ICISIP 2005), January 2005, Paper no 31, pp. 313-319.
13. Jayalalitha S, Palani A, Jayashankar V, " The influence of winding type on the recognition of partial discharges", IEEE-Conference on Electrical Insulation and Dielectric Phenomena, 2004 Annual report, pp. 446-449, Oct'2004.
14. Palani A, Jayashankar V, Usa S, Venketesh S, Udayakumar K, "Switching surge test in windings", IEEE-Conference on Electrical Insulation and Dielectric Phenomena, 2004 Annual report, pp. 202-205. Oct'2004
15. A. Taparia, K. Garg and R. Manivasakan, "Performance of parallel scheduling algorithms under correlated traffic", The 7th International Conference of Advanced Communication Technology (ICTACT'2005), Korea, 2005.
16. Arun Mathew, R.Venkata Subramanian, Ganesh Pandian, Anju Chadha, and Enakshi Bhattacharya, Optimisation of Porous Silicon based EISCAP Structures for Triglyceride Sensors, Proc. of Nano - 2004 - India : International Conference on Nano-Materials: Synthesis, Characterisation and Application; Kolkata, 4 - 6 November, 2004.
17. Souvik Basu, Anil Prabhakar and Enakshi Bhattacharya, Seventh Order Polynomial Solution for Pull-in Voltage of Cantilever Beam, Proc. of International Symposium on Smart Materials and Systems, Chennai, December 15-17, 2004, p 23-30.
18. K. N. Bhat, E. Bhattacharya, A.DasGupta, N. DasGupta, P.R.S. Rao, V.Vinoth Kumar, K.Sivakumar, S.R. Manjula, S.P. Madhavi, and R.J. Daniel, Silicon Micromachining and SOI Technology for Pressure Sensors, Proc. of International Symposium on Smart Materials and Systems, Chennai, December 15-17, 2004, p 41-51.
19. J. Klutto Milleth, K. Giridhar and Devendra Jalihal, "Performance of transmit diversity scheme with quantized phase-only feedback", IEEE Conference SPCOM, IISc December 2004.
20. N. Balamurali and D. Jalihal, "An efficient algorithm for joint carrier frequency offset and channel estimation in IEEE 802.16 OFDM Systems," ISWCS-2004, Mauritius, 2004.
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22. J.Klutto Milleth, K. Giridhar and Devendra Jalihal, "Transmit diversity schemes for channel Orthogonalization using low bit-rate feedback", Proceedings of 2005 Wireless World Research Forum, WWRF#13 Meeting, Korea, March 2005.
23. A. Thangaraj, A. R. Calderbank, S. McLaughlin and J.-M. Merolla, "Codes on graphs over the wire tap channel," IEEE International Symposium on Information Theory and Applications, Parma, Italy, October 2004.
24. L.V. Mahesh and K.M.M. Prabhu, "Particle filtering detection in SFBC coded BLAST-OFDM systems", IEEE International Conference on Personal Wireless Communications, pp. 130-133, Jan 23-25, 2005, New Delhi, India.
25. L.V. Mahesh and K.M.M. Prabhu, "Soft turbo-BLAST detection for MIMO OFDM systems," National Conference on Communications, pp. 521-525, 28-30 January, 2005, IIT-Kharagpur, India.
26. L.V. Mahesh and K.M.M. Prabhu, "Joint estimation of timing delay and multipath parameters using Sequential Monte Carlo," IEEE International Conference on Communication systems, pp. 405-409, Sept 6-8, 2004, Singapore.
27. Y. Shanthi Pavan, A fixed transconductance bias circuit technique for CMOS Analog ICs, International Symposium on Circuits and Systems, ISCAS 2005, Vancouver, Canada, May 2004.
28. Y. Shanthi Pavan, Analysis of traveling wave & Traversal analog adaptive equalizers, International Symposium on Circuits and Systems, ISCAS 2006, Kobe, Japan, May 2005.
29. P. Rajesh Kumar, K. Sridharan and S. Srinivasan, An efficient algorithm for topological map construction in a planar environment explored using proximity sensors, Proceedings of Second International Conference on Intelligent Sensing and Information Processing (ICISIP) 2005, Sponsored by IEEE EMBS.

Distinguished Visitors to the Department:

Sl.No.	Name of the visitor and Designation	Date of visit
1	M.S. Swaminathan, Chairman, M.S. Swaminathan Res. Foundation	04.05.2004
2	Rekha Jain, Professor in IIM Ahmedabad	06.05.2004
3	Mr. Gopal Rao, CMD of Bharat Electronics Ltd., Bangalore	06.05.2004
4	Mr. Ticky Thakkar, Intel Corporation, USA	07.05.2004
5	Mr. Pradip Baijal, Chairman TRAI	21.07.2004
6	Mr. Dayanidhi Maran, Minister for Commn. & Informn. Tech.	23.07.2004
7	Md. Shahid Uddin Akbar, ICT Consultant, Services Divn. Bangladesh	15.09.2004
8	Al-Sultan, National Technology Enterprise Company, Kuwait	16.09.2004
9	Mr. Ray Stata, Chairman, Analog Devices, USA	06.10.2004
10	Mr. Ravi Mathur, Jt. Secy., to Govt. of India	25.10.2004
11	V.S. Ramamurthi, Secy., DST	13.11.2004
12	Steven W. McLaughlin, Professor, Gerogia Tech., Lorraine	05.01.2005
13	Anil Khandelwal, Cheif Managing Director, Dena Bank, Mumbai	02-02-2005
14	Mr. Simon Monta, COO, HSBC Bank, Chennai	02-02-2005
15	Karol Tomilson, Chancellor, University of California	07-02-2005
16	Jeff Wright, Dean of Engineering, University of California	07-02-2005
17	Mr. Ray Stata, Chairman, Analog Devices, USA	22-02-2005
18	Mr. Nripendra Misra, Chairman & Secretary Telecomm, DoT, New Delhi	12-03-2005

4.9 DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

4.9.1 Introduction:

The Department of Humanities and Social Sciences has existed from 1959, when the Institute was established. This was in tune with the recommendations of the Niranjana Sarkar Commission which designed the format of the IITs. In 1969, the Department introduced two Postgraduate Programmes (M.Tech) one each in Industrial Engineering and in Industrial Management. The Industrial Engineering Programme was merged with the Industrial Management Programme in 1981. The Department started an MBA programme replacing the M.Tech (IM) programme from the Academic year July 2001. In 2004, the Department of Humanities and Social Sciences was bifurcated and a new Department of Management Studies was created. The present Department of Humanities and Social Sciences continues to offer research programmes (Ph.D) in the various disciplines of Humanities and Social Sciences (and a masters' level research programme (MS). The major areas in the Department are teaching and research:

Undergraduate courses in Humanities and Social Sciences.

M.S. Programme in Applied Economics, Applied Sociology, Business History, Environmental Management.

Ph.D Programme in British, American, Commonwealth Literature New Literatures in English, Linguistics, Sociolinguistics, Psycholinguistics, English Language Teaching (ELT), German Studies. Modern Indian History, Socio-Economic and Cultural Developments, Economics, Sociology, Science and Technology Policy Studies, Environment and Natural Resources Policy, Development Studies.

4.9.2 Academic Programmes:

New Courses Introduced:

SL.No	Course No.	Title
1.	HS213	Contemporary German Philosophy
2.	HS214	Literature in Translation
3.	HS301	Advanced Structural Study of German
4.	HS302	Advanced Communication in German
5.	HS416	German for scientific purposes
6.	HS417	Business German
7.	HS418	Readings in German Literature and Culture
8.	HS453	Philosophy of Technology
9.	HS477	International Trade and Finance
10.	HS478	Financial Economics
11.	HS707	Philosophy and Critical Theory
12.	HS708	Philosophy of Language
13.	HS709	Philosophical Hermeneutics
14.	HS710	Contemporary Analytic Philosophy
15.	HS720	Regional Indian Literatures in Translation
16.	HS121	English O Level
17.	HS221	English Advanced Level

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
Ph.D	16	4	2	5	2	29

Names of student/scholar who attended Conference/Workshops/Seminars and symposia abroad/India:

S. No.	Name of the Student	Paper presented / Participation	Name of the Conference/seminar/ Symposia	Date and Venue
Conference/Seminar:				
1.	Mr.S.N.Rajesh Raj Ph.D. (co-author Dr Malathy Duraisamy)	Participated and Presented a paper "Structure, Employment and Productivity Growth: Evidence from the Unorganised Manufacturing Sector in India, 1984/5 to 1994/5".	3 rd International Conference on SMEs in a Global Economy	6 th and 7 th , July 2004. Kuala Lumpur, Malaysia

2.			Journal of International Business and Entrepreneurship (JIBE) Vol.11, No.1	January 2005
3.		"Employment, Manufacturing Investment and Value added in the Unorganised Manufacturing sector in the Pre- and Post-Reform Periods: An Analysis of Indian States"	Proceedings of the Conference on Economic Reforms and Social Justice in India: Achievements and the Way Ahead.	4 th and 5 th March 2005. Centre for Economic and Social Studies (CESS), Hyderabad.
4.		"Structural change and Labour Productivity in Rural Unorganised Manufacturing Sector in India – 1984/95"	National conference on Human Resource and Development.	7 th March 2005. Department of Econometrics Univ.of Madras
5.	Ms.Pushkala Lakshmi Ratan Ph.D.	"Energy and Environment"	Joint International Conference on Energy and Environment	30 th Nov. to 4 th Dec. 2004 Bangkok
6.	Ms.R.Evangeline Sabina, Ph.D. and Ms.K.Kanthimathi Ph.D.	Participation	International Conference on Classroom realities and ideals by English Language Teachers' Association of India	4 th and 5 th Feb. 2005 D.G.Vaishnav College, Chennai.
7.	K.Kanthimathi Ph.D.	"Mixed Codes: A case of Lexical Scarcity and Lack of Publicity among Tamil Speakers"	2 nd International Conference on Indian Lexicography	21 st to 23 rd March, 05. Department of Tamil Language, Univ. of Madras.
8.	S.Sumitha Ph.D.	Research Methods in Labour Economics	V.V.Giri National Labour Institute	17 th Nov. to 7 th Dec., 2004 Noida
9.	S.Sumitha, Ph.D. (co-author Dr Malathy Duraisamy)	"Trends in Women's Labour Force Participation in Kerala".	National conference on Human Resource and Development.	7 th March 2005 Department of Econometrics Univ.of Madras
10.	S Sumitha, Ph.D.	Participated in a Workshop	"Research Methodology in Social Sciences"	28 th . March, '05, Univ. of Madras
11.	S.Sunitha, Ph.D. (co-author Dr Malathy Duraisamy)	Technical Education in Kerala – Issues and Concerns	National Seminar on Technical Manpower Planning in India at the Jawaharlal Nehru Technological University.	5 th to 7 th Sept.2004. Hyderabad.
12.		"Structure, Growth and Financing of Technical Education in Kerala".	National conference on Human Resource and Development.	7 th March 2005. Department of Econometrics Univ.of Madras
13.		Participated in a Workshop	"Research Methodology in Social Sciences"	28 th . March, '05, Univ. of Madras
14.	K Prabheesh, Ph.D. (co-author Dr Malathi Duraisamy and Dr R.Madhumathi)	Effectiveness of Sterilized Intervention by Reserve Bank of India	First National Conference on Finance and Economics	26 th and 27 th Nov.2004. ICFAI Business School, Bangalore.
15.	K.Prabheesh, Ph.D.	Participated in a Workshop	Econometrics of Financial Markets and Banking: Theory and Practice	3 rd to 8 th Jan. '05. Indra Gandhi Institute of Development Research,(IGIDR), Mumbai.

16.		Participated in a Workshop	"Research Methodology in Social Sciences"	28 th . March, '05, Univ. of Madras
17.	Ms.O.J.Joycee, Ph.D. and Ms.K.A.Geetha Ph.D.	Self Consciously Indian, Sub-Consciously Judaic: A Study of Nissim Ezekiel's Poems.	International Seminar on Nissim Ezekiel and Indian Literature in English	15 th to 22 nd Jan.'05. Banares Hindu University Varanasi.
18.	Ms.R.Evangeline Sabina Ph.D.	Participated in the Training programme.	Evaluation for Research Scholars (Basic Level)	9 th to 18 th Feb. '05 Central Institute of Indian Languages, Mysore

4.9.3 Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialisation (Only 3 Areas)

Professors:

V.R.Muraleedharan, Ph.D (IIT Madras)
(Head)

Health Economics/Public Policy/
History of Healthcare in South India
Theoretical Linguistics, ELT & Need Based Courses in English

Shreesh Chaudhary, Ph.D.
(CIEFL Hyderabad)

American Literature, English, French

Evangeline Manickam, Ph.D.(Madras)

Malathy Duraisamy, Ph.D.(Madras)

Applied Economics/Econometrics
Labour Economics/Economics of Science and Technology
German Studies, Philosophy

B.Subramanian, Ph.D. (Karnataka)

Assistant Professors:

Devaki Reddy, Ph.D.(JNU)
S.Mohan, M.A. (Madras)

English, Sociolinguistics, ELT
English, Science Fiction, Technical Report Writing, Business
Communication Indian Writing in English

Prema Rajagopalan, Ph.D. (IIT Kanpur)

Sociology of Science and Technology/ Development / Women
in Science and Technology

D.Veeraraghavan, Ph.D. (IIT Madras)

Social and Economic History,
Labour Movements

K.Srilata, Ph.D.

African Literature, Cultural Studies,
Creative Writing.

John Bosco Lourdasamy, D.Phil(Oxon)

History of Science; Science Technology and Society

Milind Brahme, Ph.D. (JHU)

German Studies, Comparative Literature and Modern Marathi
Literature

Debashis Acharya, Ph.D.(Univ.of Hyd.)

Macro and Monetary Economics, International Trade and
Finance

N.Sreekumar, Ph.D. (Univ. of Hyd.)

Philosophy

Umakant Dash, Ph.D. (IIT Kanpur)

Energy Economics

DAAD Visiting Faculty

Ms.Bettina Dinter

German

Part-time Faculty

Ms.Pranjali Bandhu

German

Mr.Manikandan S.

German

Ms.Veena Selvam

English

Ms.Aysha Viswamohan

English

Short-term Courses/Workshops/Seminars/Symposia/Conferences Organized by the faculty members:

S.No.	Co-ordinator	Title	Period
1.	Prof.B.Subramanian, Dr.Milind Brahme and Ms.Bettina Dinter	European Union Studies: Issues and Curricular Possibilities in the Indian Academic context.	16 and 17 th February '05

Short-term Courses/Workshops/Seminars/Symposia/Conferences Organized by the faculty members:

S.No.	Co-ordinator	Title	Period
1.	Prof.B.Subramanian, Dr.Milind Brahme and Ms.Bettina Dinter	European Union Studies: Issues and Curricular Possibilities in the Indian Academic context.	16 and 17 th February '05

Short-term Courses/Workshops/Seminars/Symposia/Conferences /Training attended by the Faculty members in Academic Institutions and Public Sector Undertakings.

S.No	Name of the Faculty	Title	Institution	Period
1.	Prof.V.R.Muraleedharan	Health Sector Reforms in India: Experiences of Select States	Ministry of Health and Family Welfare, Government of India in collaboration with Government of Andhra Pradesh and Administrative Staff College of India, Hyderabad.	14 th and 15 th Feb. '05
2.	Prof.S.C.Chaudhary	Expert-cum-course Writers Meeting for the Revision of EEGOI.	IGNOU, New Delhi.	8 th Sep. 2004
3.	Prof.Evangeline Manickam	Liaison between Universities and BPO/Call centre Industry to train prospective job candidates in communication skills.	Electronics Corporation of Tamil Nadu Ltd.	20 th July 2004
4.	Prof.Malathi Duraisamy	National Seminar on Technical Manpower Planning in India.	Jawaharlal Nehru Technological University.	5 th to 7 th Sep. '04
5.		Accelerating Growth with Equity – Tamil Nadu Perspective	World Bank and Govt. of Tamil Nadu	6 th and 7 th Oct. 2004
6.		Research and Evaluation Studies under Sarva Shiksha Abhiyan	State Project Directorate, Chennai	18 th Oct. 2004
7.		The Role of Human Capital in the Modern Growth Economics	46 th Annual Conference of the ISLE- Institute of Development Studies, Jaipur	15 th to 17 th Dec. 2004
8.		Attended and Chaired the session <i>Inferring Horizontal Inequality from Census Data...</i>	Madras School of Economics	10 th March '05
9.	Prof.B.Subramanian	The Concept of Paedeia	Centre of German Studies, JNU and Goethe Society of India.	17 th and 18 th March '05
10.	Dr.Devaki Reddy	Dicourse Analysis and Effective – Technical Communication	BITS, Pilani, Rajasthan.	10 th and 11 th Sep. 2004.
11.	Dr.Debashis Acharya	Colloboration with European Case Clearing House	IITM Kozhikodu, Kerala	19 th and 20 th Oct. 2004
12.		Indian Association for Research on National Income and Wealth	Central Statistical Organisation, MOSP, New Delhi	5 th to 7 th Nov. 2004

13.		8 th National Conference on e-Governance.	Jointly organised by Dept. of Information Technology, Government of India and the Department of Administrative Reforms and Public Grievances, Govt. of India and the information Technology	3 rd to 5 th Feb. '05
14.		National Seminar on Post Deng China	Department of Central Asian Studies, Punjab University, Chandhigarh	21 st Feb. '05
15.		Attended the Census Data Dissemination Workshop	Madras School of Economics	10 th March '05
16	Dr. Milind Brahme	Broch and Schiller: Aesthetic Education and the Identification of Kitsch Papers presented at the National Seminar on Schiller, Aesthetic Education and Globalisation.	Centre of German Studies, JNU and Goethe Society of India.	17 th and 18 th March '05
17	Dr. Umakant Dash	Improving Interpersonal Effectiveness and Communication for Faculty Members of IIT Madras	IIT Madras	8 th and 9 th October 2004
18.		Collaboration with European Case Clearing House	IITM Kozhikode, Kerala	19 th and 20 th October 2004
19		Attended the Census Data Dissemination Workshop	Madras School of Economics	10 th March '05

Special Lectures delivered by the faculty in other Institutions:

S. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Prof. V.R. Muraleedharan	Impact of Globalization on the Poor	District Rotary Club, Ooty on 5 th Feb. 2005.
2.		Public-Private Partnership in Healthcare.	Indian Institute of Management, Ahmedabad, Gujarat on 18 th Feb. 2005
3.	Prof. S C Chaudhary	Teaching Spoken English.	UGC- Academic Staff College, Bharathiar University, Coimbatore. 21 st March '05
4.	Prof. B. Subramanian	Policy Planning and Advocacy Skills	Indian Institute of Information Technology and Management, Gwalior on 6 th to 12 th April 2004.
5.	Dr. Prema Rajagopalan	Project Presentation on Information Extraction for Sociology of Environment	ICSSR, New Delhi on 8 th to 10 th Dec. 2004.
6.	Dr. K. Srilata	Teaching Women's Writing	Government College, Thrissur on 5 th Jan. 2005.
7.	Dr. Debashis Acharya	Long term success of Firms	Business Economics Refresher course, Annamalai University on 7 th Dec. 2004.
8.		Structural Vector Auto Regression Modeling	1 st Advanced Econometrics workshop for Research Officers, RBI staff college, Chennai on 27 th and 28 th Dec. 2004.

9.		Co-integration of macro economic variables.	RBI Staff College, Chennai on 20 th Jan. '05
10.		Error Correction Mechanism and Short run dynamics	RBI Staff College, Chennai on 24 th Jan. '05
11.		Money Stock Measures	Dept. of Economics Pondichery University on 16 th Feb. '05
12.	Dr.N.Sreekumar	Dissent in Democracy: Philosophical Analysis	A National Seminar in P.M. Govt. College, Chalakudy on 13 th and 14 th Jan. 2005.

Visits Abroad by Faculty:

S.No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Prof.B.Subramanian	Germany	14.05.'04 to 13.07.'04	To carry out research work at the Department of Philosophy, TU Dresden under Alexander Von Humboldt Foundation.
2.	Prof.V.R.Muraleedharan	UK	2.09.'04 to 3.09.'04	To participate in a meeting to discuss and design "Collaborative Research Plans" for the next 5 years.
		Costa Rica	16.09.'04 to 18.09.'04	To participate in a symposium on "Innovations for sustainable Development".
		UK	21.10.'04 & 22.10.'04	To participate in a workshop on Future Health Systems: Challenges for Development.
3.	Dr.Prema Rajagopalan	France	26.01.'05 to 29.01.'05	Board Meeting of the World Congress of Sociology 2006, South Africa – (Research Committee 30 – Sociology of Work) organized by International Sociological Association.
4.	Dr.Umakant Dash	New Zealand	07.12.'04 to 16.12.'04.	Professional Visit – To meet Prof.Vikram Murthy, RIM Consultants Ltd., Meadowbank
		Tanzania	14.01.'05 to 16.01.'05	To attend a meeting organized by Ifakara Health Research and Development Centre, an Affiliate of the National Institute for Medical Research.

Honours and Awards obtained:

S.No	Name of Faculty	Name of Award	Awarded By	Awarded For	Date
1.	Prof.S C Chaudhary	Second Spell of Associateship of IUC for the Humanities and Social Sciences	Indian Institute of Advanced Study , Rashtrapathi Bhavan, Shimla	Humanities and Social Sciences	1 st to 31 st August '04
2.	Dr. Debashis Acharya	Best paper award	International Seminar on Globalisation and competitiveness, IIT Kharagpur and AIB India.	The paper titled: Indian Trade with Indian Ocean RIM.	11 th to 13 th Jan.'05
3.	Ms.Pushkala Lakshmi Ratan Ph.D. Scholar	International Scholarship (Rs.5 Lakhs)	South Asia Network for Development and Environment	Ph.D. Research Work	December 2004

4.9.4 Research and Consultancy:

Sponsored Research Projects:

Sl.No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Enrollment and retention of Girls in Elementary Education in Tamil Nadu	6 months Feb. – July 2005	State Project Director, Sharva Shiksha Abhiyan, TN	Rs 1.5 lakhs	Prof. Malathy Duraisamy

Research Publications

In Refereed National Journals:

1. The paper "Ethics, Professions and Developmental concerns" by Dr N Sreekumar, Assistant Professor, has been published in The Economic and Political Weekly (EPW), Vol. XXXIX No.26, June 26th, 2004.
2. The papers "Impact of ADR listing on Asset Prices in Indian Market and Market Volatility", (Dr Debashis Acharya and Dr. Arun Kumar Gopaldaswamy) and "Money and Stock Prices in the Deregulated Indian Environment" (Dr Debashis and S Amanulla) have been published in the proceedings of the International Conference 2003 on Business and Finance, Vols.I &II, ICFAI Press, July 2004
3. The book titled: "Science and National Consciousness in Bengal 1870-1930", authored by Dr John Bosco Lourdasamy, Assistant Professor, has been published by Orient Longman Pvt. Ltd., July 2004.
4. The book titled: "Better Spoken English" authored by Dr Shreesh Chaudhary and Dr Aysha Viswamohan, has been published by Vikas Publishing House, Pvt. Ltd., New Delhi., July 2004.
5. The book titled: "English for Engineering Students – 1 " authored by Dr S C Chaudhary, Dr Veena Selvam and Dr Sujatha Priyadarshini has been published by Vikas Publishing House, Pvt. Ltd., New Delhi, July 2004.
6. The paper "Teaching Vocabulary through Games" by Dr.S. Devaki Reddy has been published in the Journal of English Language Teaching (India), Vol.40, No.5.

Distinguished Visitors to the Department

Sl/No	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Dr. Kunhaman, Professor, Department of Economics, University of Kerala.	14.09.2004	Delivered a Lecture on Globalisation and Exclusion
2.	Dr.R.Radhakrishnan, Professor of English and Comparative Literature and Chair of the Department of Asian American Studies at the University of California, Irvine.	25.09.2004	Delivered a Lecture on Cultural Studies and the Question of Values..
3.	Prof. John Harris, London School of Economics	04.03.2005	Delivered a Lecture on "Social Capital and Development "
4.	Dr. Binoy Gupta, Assistant Commissioner, Indian Revenue Services, Chennai.	18.03.2005	Delivered a Lecture on "Union Budget-2005".
5.	Mr. Murugesan, Lecturer, University of Queensland, Australia	28.03.2005	Delivered a Lecture on "Singapore's Unique Constitutional model for pragmatic governance".
6.	Mr. Theodre Baskaran, Film Critic	30.03.2005	Delivered a Lecture on "Cultural eminence of the emerging of star politicians in South India ".

4.9.5 Other Activities:

- Dr.Umakant Dash, Assistant Professor on Contract for 2 years has joined the Department with effect from 20th May 2004.
- Ms.Bettina Dinter, DAAD Visiting Faculty has joined in the Department with effect from 21st July 2004.

Department of Humanities and Social Sciences and Management Studies arranged a programme on Communication Skills for M.S. / Ph.D. Scholars which was held on 3,10,17 and 24 September 2004.

German Language Programme for the Administrative Staff of the Institute started from 1st September 2004 with two classes per week.

The Department organized the 4th Prof. A.V.Krishna Rao Memorial Lecture by Dr.Gita Krishnankutty titled 'The Translator's Dilemma' on 24th September 2004.

The Department celebrated the International Philosophy Day on 18th November 2004 with a seminar reflecting on the theme "Interrelationship between Philosophy, Science and Culture. Dr. Sundar Sarukkai, Fellow, History and Philosophy of Science Unit National Institute of Advanced Studies, IISC., Bangalore was the main speaker and he delivered his talk on "Philosophical Challenges to Science".

The Department organized the Humanities Lecture Series on 5th, 12th and 19th January 2005 by Dr. Manfred Stassen, Professor of Letters, The Johns Hopkins University.

The Department held the Inauguration of the Research and Discussion Forum on 11th January 2005.

Prof.B.Subramanian was the Chairman for the MBA Selection Committee at Indian Institute of Information Technology and Management during 22nd – 24th April 2004.

Prof. (Ms) Evangeline Manickam, attended the meeting of Preparatory course co-ordinators of all IIT's at IIT Kanpur on 13th July'04. The purpose of the meeting was to finalise the distribution of students in various IIT's and prepare the guidelines for the year 2004-2005.

Dr Aysha Viswamohan and Dr Veena Selvam have joined as part time faculty (English) with effect from 26th July, 2004.

Dr.Prema Rajagopalan, Assistant Professor attended the Board of Studies Meeting in the Department of Sociology at Pondhicherry University on 24th August 2004.

Mr.S.Manikandan and Ms. Pranjali Bandhu have joined as part time faculty (Philosophy and German respectively) with effect from 02.08.2004.

Dr.Shreesh Chaudhary was invited by the British Council, South India to be one of the Trainers at the 'Examiner Refresher Training Programme' for IELTS examiners in South India from 3rd to 6th September 2004.

Prof.B.Subramanian was nominated as expert for selection of Professor (German) at the University of Pune on 5th March 2005.

4.10 DEPARTMENT OF MANAGEMENT STUDIES

4.10.1 Introduction

The Department of Management Studies is the youngest in IIT Madras, having been established in April 2004. It seeks, in its vision, to be a globally unique and most valuable source of knowledge, insight, creativity and expertise in management thought and practice. There are innumerable aspirants wanting to gain admission into its education (MBA) and research (MS and PhD) degree programmes. The Department has strong and active links with industrial and business organizations.

The research work and atmosphere of the Department are highly acclaimed and the number of well-qualified and experience-rich applicants, especially from industrial and business organizations, has been growing exponentially.

The MBA, MS (Entrepreneurship) and SIMAP programmes have a unique, practical business perspective and content, and are used as benchmarks by several other institutions. The MBA programme prepares students to serve as intelligent, insightful, creative and sensible managers. The MS (Entrepreneurship) programme is aimed at developing young technopreneurs and business persons through a rigorous technology and business mentorship experience. The SIMAP programme is designed to impart management knowledge and skills that would enable students to serve the cause of small and medium enterprises.

The students and alumni of the Department continue to make significant contributions through their work, and have earned laurels for themselves as well as the organizations they work for located in different continents. Many have earned explicit recognition and acclaim in the form of honours, awards, and prizes within their organizations and from their peer groups.

The full-time and visiting faculty members form an eclectic mix in terms of academic expertise and professional experience. They collectively bring in methodological mastery, intellectual rigour, business perspectives and practical experience into their academic and professional work.

4.10.2 Academic Programmes:

New Courses Proposed:

S.No.	Course No.	Title
1	MP713	International Human Resource Management
2	MP613	Organization Theory & Design
3	MP638	Information Systems Auditing and Control
4	MP772	Global Business Management

Students on Roll:

Programme	I year	II year	III year	IV year	V year	Total
MBA	45	37	-	-	-	82
MS	3	6	3	2	-	14
PhD	24	12	7	7	2	52
Total	72	55	10	9	2	148

Name of Students/Scholars attended Conferences/Seminars and Symposia Abroad/India:

Sl.No.	Name of Student	Programme	Name of conference	Date and venue
1	Mayuri Duggirala	MS	Defining and measuring quality in health care	May 2004, Thiagarajar College of Engineering, Madurai
2	Sony Thomas	PhD	Dynamic Interactions between Hedging Activity and Spot market Volatility in Indian Stock Market	July 17 th -18 th , 2004 ICICI Bank, NSE and GIM, Goa
3	T Godwin	PhD	Freight Trains Pathing Logistics along with fixed path route on a passenger railroad	3 rd - 5 th august 2004 PSG College of Technology
4	K R Ravishankar	PhD	Formulating a supply chain model for augmented services offered to institutional customers in remote markets	3 rd - 5 th august 2004 PSG College of Technology
5	P Arun Prasad	PhD	Aligning The Strategic Human Resource Practices Towards Knowledge Economy.	24 th & 25 th September 2004 Cosmar 2004. Indian Institute Of Science, Bangalore

6	Sony Thomas	PhD	Innovations in Science and Technology	20-09-04 - 11-10-04 Technische Universitaet Munchen(TUM),Munich,Germany IIT Bombay
7	Sony Thomas	PhD	Causal Relationship between Speculative Activity and Spot Market Volatility	8-10 Nov 2004 MIT Cambridge USA
8	Manish Kumar	PhD	Forecasting Nifty Index Futures Return using Neural Networks and ARIMA models	8-10 Nov 2004 MIT Cambridge USA
9	Madhuri Malhotra	PhD	Structure and Operation of Indian Debt Market: Critical Issues for Development	19-20 Nov 2004 National Conference in Business Research – PSG Institute of Management, Coimbatore
10	R Venkatesh	PhD	NGOs as Societal Actors ; Health and Social Services	26-28 Nov 2004 Indian Institute of Health Management Research, Jaipur
11	S Radha	PhD	Modeling and Forecasting Short Term Interest Rates: A Literature Survey	Nov 2004, National Conference in Business Research, PSG Institute of Management, Coimbatore
12	Elizabeth Devasia	PhD	The Role of Advertisements in Consumer Persuasion Process – with Emphasis on Print Media	14-15 December 2004 ICCS 2004 & NIIT New Delhi
13	Revathi G Sridhar	PhD	Development of an instrument to Assess Interest in the Information Technology (IT) Profession as part of a study on Turnover Intension of IT Professionals	14-15 December 2004 ICCS 2004 & NIIT New Delhi
14	Lata Dayaram	PhD	Understanding the Role of Heterogeneity in Work Teams	14-15 December 2004 ICCS 2004 & NIIT, New Delhi
15	P Arun Prasad	PhD	The Tangible Link: Learning Driven Culture Through Effective People Management Practices	14-15 December 2004 ICCS 2004 & NIIT New Delhi
16	Komala Kashi Iyengar	PhD	Rationale for Spirituality in Organizations	14-15 December 2004 ICCS 2004 & NIIT New Delhi
17	K Ganesh	PhD	Heuristic Algorithm Based Clustering and Rank Based Simulated Annealing for Vehicle Routing Problem with Simultaneous Delivery and Pick-up	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
18	G Kumara Raja Singh	PhD	NONA: An Analytical Approach for Resource Allocation for Labour Intensive Cell in Cellular Manufacturing	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
19	T Godwin	PhD	Multi-Objective Locomotive Assignment for Freight Trains with Scheduling in a Passenger Rail Network	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
20	V Nagendrakumar	MS	Effective Dispatching Rules for Semiconductor Wafer Fabrication	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
21	K R Ravishankar	PhD	Efficient Customer Support for High Tech products in unexplored markets – Simulation Approach	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
22	Komala Kashi Iyengar	PhD	Workplace Spirituality; A new management approach	28 th – 31 st December 2004 IIM Calcutta
23	K Gopalakrishnan	PhD	Enabling Knowledge Creation in Organizations – A Review of SECI Framework	28 th – 31 st December 2004 IIM Calcutta
24	R Venkatesh	PhD	Quality Management In Healthcare Services And Marketing	Jan 7 th -9 th 2005 IIM kozhikode.
25	Lata Dayaram	PhD	When Differences Matter:Heterogeneous Team At Work	Jan 11 th – 13 th 2005 IIT Kharagpur
26	Arun Prasad	PhD	Resource Based Perspective For Sustained Competitive Advantage Through Organizational Learning	Jan 11 th – 13 th 2005 IIT Kharagpur

27	Venkatesh R	PhD	Globalization and Industry Competitiveness	Jan 11 th – 13 th 2005 IIT Kharagpur
28	Suhanya	PhD	HR Scorecard: Measuring The Contribution Of Human Resources To Business Results	28 th – 30 th Jan 05 Nirma Institute Of Management Nirma University
29	P Arun Prasad	PhD	Knowledge Strategy: The Contingency Factor for Sustained Competitive Advantage	28 th – 30 th Jan 05 Nirma Institute Of Management Nirma University
30	Sony Thomas	PhD	Dynamic Interactions and Causal Relationship among Spot Market Volatility, Open Interest, Volume and Arbitrage: Evidence from Indian Futures Market	January 10 th -12 th , 2005 Securities and Exchange Board of India(SEBI) Mumbai
31	V Vijayalakshmi	PhD	Transactional Analysis and Hindu Mythoogical Characters	28 th – 30 th January 2005 International Transactional Analysis Association, Trissur Chapter.
32	Aveek Majumdar	MS	International Conference on Services Management	March 11-12, 2005 Radisson Hotel New Delhi
33	Bindu Narayan	PhD	International Conference on Services Management	March 11-12, 2005 Radisson Hotel New Delhi
34	S. Santhi	PhD	International Conference on Services Management	March 11-12, 2005 Radisson Hotel, New Delhi
35	Manish Kumar	PhD	Static and Dynamic Neural Network in Forecasting Exchange Rate Returns	March 17-19, 2005 Indian Institute of Management Lucknow
36	Radha S	MS	Long-run relationship between interest rates and inflation: An Error Correction Model	20 th –21 st December 2004 Eighth Capital Markets Conference IICM Mumbai
37	Radha S	MS	Forecasting TB Yield Using ARIMA Model",	26 th –27 th November 2004 First National Conference on Finance & Economics, ICFAI Bangalore
38	Radha S	MS	Short-term interest rates and Macroeconomic variables: An OLS model	26 th –27 th December 2004, Second International Conference on Business and Finance, ICFAI Hyderabad
39	Lawrence Harold	PhD	Evaluation of Information Technology Investments – Methods and approaches in Banking Sector	7 th -8 th January, 2005 International Conference of Banking and Insurance Birala Institute New Delhi
40	K. Ganesh	PhD	International Conference on Services Management	March 11-12, 2005 Radisson Hotel, New Delhi

Symposia/Workshops attended by scholars:

Sl. No.	Name of Student Programme	Title of the Workshop	Date, Venue
1	K.Gopalakrishnan, Ph.D Scholar	Workshop On Knowledge Management	22 nd Dec. to 24 th Dec. 2004 National Institute of Technology Suratkal
2	Bandanam Suresh, Ph.D Scholar	Workshop On Knowledge Management	22 nd Dec. to 24 th Dec. 2004 National Institute of Technology Suratkal
3	Ajith Kumar, Ph.D Scholar	Workshop On Knowledge Management	22 nd Dec. to 24 th Dec. 2004 National Institute of Technology Suratkal
4	Suhanya	HR Strategies for competitive advantage	CII 27 th August 2004
5.	Rajendra Sethupathi, Pandikumar, Ravishankar	A Deliberation on Contemporary Operations	CII, 15-16 Dec. 2004
6.	Elizabeth Devasia Joshy Joseph	Brand Summit 2005	CII, Feb. 17-18 2005
7.	T Godwin	Workshop on Rail Modeling Research and Software Development at Railway Staff College, Vadodara	Vadodara, 08-09 April 2005

4.10.3 Faculty and their Activities:

Faculty:

Sl.No.	Position	Name	Specializations
1	Professor	Ganesh L S (Head)	Systems Thinking and Applications, Project Management, Technology Management
2	Professor	Anantharaman R N	Organizational Behaviour, Human Resources Management, Industrial Relations
3	Professor	Jayachandran S	Marketing Management
4	Professor	Kamalanabhan T J	Industrial Psychology, Organizational Behaviour, Human Resources Management
5	Professor	Narendran T T	Operations Management, Cellular Manufacturing, Logistics and Supply Chain Management
6	Professor	Rajendran C	Production and Operations Management, Scheduling, Computer Simulation
7	Professor	Raghunathan S	Information Systems, IT Security, It Economics
8	Professor	Srinivasan G	Operations Research, Supply Chain Management, Cellular Manufacturing
9	TTK Chair Professor	Vijayaraghavan P	Strategic Marketing, Brand Management, Advertising and Sales Promotion
10	Associate Professor	Ramasubramanian G	Customer Relationship Management, Service Operations, Logistics and Supply Chain Management
11	Associate Professor	Thenmozhi M	Financial Management, Strategic Management, Computational Finance
12	Assistant Professor	Arun Kumar G	Market Micostructures, IPOs, Joint ventures and multinational business
13	Assistant Professor	Bharadwaj S	Consumer Behaviour, International Marketing, Brand Management
14	Assistant Professor	Madhumathi R	Financial Management and Accounting, Working Capital Management, Forex Research
15	Assistant Professor	Sanghamitra B	Organizational Behaviour, Human resources Management

Short term courses/ Workshops/Seminars/Symposia organized by faculty:

Sl.No.	Coordinator(s)	Title	Period
1.	T J Kamalanabhan and M Thenmozhi	Small Industries Management Programme	May 2004-August 2004 (14 weeks)
2.	T J Kamalanabhan	'Business Education – New Paradigm and Models'	1-2 December 2004
3.	G Srinivasan and P Vijayaraghavan	Services Management (QIP course)	19-24 January 2005
4.	G Arun Kumar	Cost effectiveness through ABC and target costing	19-24 January 2005
5.	M Thenmozhi	"Enhancing Performance of Small Scale Industries"	March 28-30, 2005
6.	M Thenmozhi	MDP on Valuation and Risk Management in Fixed Income Markets	Nov. 5-6, 2004
7.	M. Thenmozhi	Workshop on multivariate data analysis	7-12 May, 2004

Short-term Courses / Workshops / Seminars / Symposium / Conferences / Training attended by the faculty members:

Sl. No.	Name of the faculty	Title	Event/Institution	Period
1	G Arun Kumar	Case Teaching Workshop	European Case Clearing House" (ECCH) venue IIM K.	19 -20 October 2004
2	G Arun Kumar, Sanghamitra B and G Srinivasan		PAN IIT Meet Delhi	Dec. 2004
3	R Madhumathi	Effectiveness of BPO outsourcing	Accounting Research Federation, Kolkata	Jan 6 - 8, 2005
4	R Madhumathi	Implications of Derivative Use for Commercial Banks	International Conference on Banking and Insurance Birla Institute of Management Technology, Noida.	Jan 8, 2005
5	M Thenmozhi	Dynamic Interactions and Causal Relationship among Spot Market Volatility, Open Interest, Volume and Arbitrage: Evidence from Indian Futures Market	International Conference 2005 on Emerging Securities Markets – Challenges and Prospects ICFAI University and SEBI, Mumbai;	Jan 10-12 2005

6	T J Kamalanabhan		Fuibrigh South Asian Regional Conference IIM, Kozhikode	Jan 10 - 12, 2005
7	R Madhumathi	"Investment Decision Styles in the Indian Capital Market: A Behavioral Perspective"	12 th Annual Meeting of the American Society of Business and Behavioral Sciences	Las Vegas, USA. 24 - 27 Feb. 2005
8	T T Narendran	"Use of Simulators in Defence Forces	National Seminar SEM - SIM 2005 Simulator Development Division, Indian Army, Secunderabad	25 th Feb 2005
9	T J Kamalanabhan	"Entrepreneurship Education for a Sustainable Future"	9 th Annual Meeting of National Collegiate Inventors and Innovators Alliance (NCIIA) and Symposium San Diego, California, USA	16 - 20 March 2005
10	Sanghamitra B	Workshop on Case teaching Methodology in Entrepreneurship Education	ISB Hyderabad	14 -16 April 2005
11	G Arun Kumar	Intensive workshop on Infrastructure Finance	Institute of Financial Management & Research (IFMR) Chennai	April 15 -16 2005
12	T T Narendran	Workshop on Rail Modeling Research and Software Development at Railway Staff College	Vadodara	08 - 09 April 2005

Special lectures delivered by faculty in other institutions:

SI.No	Name of faculty	Title	Venue and date
1.	Sanghamitra B	Team Dynamics and Conflict Management	Sustainable Development Course
2	Sanghamitra B	Group Dynamics	Gammon India, Nov 2004
3	T T Narendran	Practical Vehicle Routing Problems: Challenges and Solution Methods – <i>Keynote Address</i>	Operational Research Society of India, IIM Ahmedabad. Jan 8 - 11, 2005
4	T J Kamalanabhan	'HR Practices in India'	DG Vaishnav College Arumbakkam January 17, 2005
5	T T Narendran	Introduction to Supply Chain Management	NIT Trichy Feb 2005
6.	G Arun Kumar	Credit Rating Methodologies	Velammal College of Management & Computer Studies, 10-10-2004
7.	M. Thenmozhi	Neural Network Applications in Finance	Madras School of Economics Chennai, 13 th Dec. 2004
8.	M. Thenmozhi	Research in Finance	Satyabama Deemed University Chennai, 10 th March 2005
9.	T T Narendran	Rail Related Research at IIT Madras	Workshop on Rail Modeling Research and Software Development at Railway Staff College, Vadodara

Visits abroad by faculty:

SI.No.	Name of faculty	Country Visited	Date	Purpose
1	C Rajendran	Germany	May-July 2004	Alexander von Humboldt Research Fellowship
2	R Madhumathi	USA	Feb 24-27 2005	To Chair a Session and also present a paper at the International Conference. (American Society for Behavioural Sciences)
3	T J Kamalanabhan	USA	March 16-20 2005	To attend a Symposium at the National Collegiate Inventors and Innovators Alliance and also meet the faculty members of different Universities

Honours and Awards Obtained:

- Prof. C. RAJENDRAN was invited to be the Chairman of the Technical Session on Logistics And Operations Management at the Second International Conference on Logistics And Supply Chain Management organized by PSG College of Technology, Coimbatore in collaboration with The Center for Supply Chain Management Central Michigan University, Mt. Pleasant, USA during 3-5 August 2004
- K. GANESH, Doctoral Student, was invited to serve as a referee for The fifth international conference on knowledge based computer systems organized by the centre for development of advanced computing at Hyderabad, 19 to 22 December, 2004.
- Debashish Ghosh and Nishtha Asthana Second year MBA students bagged the first and second prizes and Nalin Ladiwala (First Year MBA) bagged the special prize for the "best presentation skills" at the Paper Presentation Contest organized by LIC OF INDIA on 4th September 2004.
- S. Radha, Research Scholar and Dr. M. Thenmozhi received a cash award of Rs.1000/- for their paper "*Long term relationship between interest rates and inflation – An Error correction model*" at the UTI Institute of Capital Markets Conference, 2004 held at Mumbai in Dec 2004.
- Best Paper Awards won by our research scholars and faculty at the VIII Annual International Conference of The Society of Operations Management in association with National Institute of Industrial Engineering (NITIE) Mumbai, India and College of Administrative Science, University of Alabama in Huntsville, USA December 17-20, 2004
 - K. Ganesh and T.T.Narendran, '*Heuristic Algorithm Based Clustering and Rank Based Simulated Annealing for Vehicle Routing Problem with Simultaneous Delivery and Pick-up*'.
 - T.Godwin, Ram Gopalan, and T.T.Narendran, '*Multi-Objective Locomotive Assignment for Freight Trains with Scheduling in a Passenger Rail Network*'.
 - Nagendra Kumar, and G.Srinivasan, '*Efficient Dispatching Rules for Semiconductor Wafer Fabrication*'.
- A team of 2 MBA Students (Ms. Rashmi Nair and Mr. Dipankar Mukherjee) and a Research Scholar (Mr. Aavek Majumdar) won the Second Prize in the National Business Plan Competition organized by the National Innovation Foundation and held at the Indian Institute of Management, Ahmedabad on January 5, 2005. i
- A team of 6 MBA Students (Archana, Nitin, Rohin, Sowmya, Srinath and Vadivelu) won the 'Overall Championship' and also the 'Entrepreneurship Managerial Skill Games' at Amrita School of Business, Coimbatore during February 5-6, 2005.
- Prof. T.T. Narendran delivered the Keynote Address on '*Practical Vehicle Routing Problems: Challenges and Solution Methods*' and was the Chairman of the Technical Session on OPERATIONS RESEARCH IN STRATEGIC APPLICATIONS at the 37th Annual Convention of the OPERATIONAL RESEARCH SOCIETY OF INDIA (ORSI) held at Ahmedabad Management Association, IIM Ahmedabad, January 8 – 11, 2005
- Dr. R. Madhumathi won the 'Best Applied Research Paper' award for her paper '*Implications of Derivative Use for Commercial Banks*' at the International Conference on Banking and Insurance Organized by Birla Institute of Management Technology, Noida & Dainik Bhaskar, January 8, 2005
- Dr. R. Madhumathi was invited to be the Chairperson of the Session: 'BEHAVIOURAL ACCOUNTING' at THE 12TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF BUSINESS AND BEHAVIORAL SCIENCES held at the Boardwalk Hotel, Las Vegas, USA., 24th to 27th February, 2005.
- Dr. S. Jayachandran, invited by the Vice-Chancellor of Bharathiar University, Coimbatore, to serve as an Expert in their Selection Committee to recruit Lecturers for their Dept of Management.
- Mr Aavek Majumdar, Research Scholar won the Best Paper Award in Retail Management at the International Conference on Services Management organized by IIMT Oxford Brooks University (UK) and the Journal of Services Research held at Radisson Hotel, New Delhi during March 11-12, 2005.

Books/Monographs Authored:

No.	Name of faculty	Title	Publisher	Coauthor
1	S Jayachandran	Marketing Management: Text and Cases	Excel Books Delhi	NIL

4.10.4 Design and Development Activities

New facilities added or major equipment procured through project funds

Sl.No.	Name of equipment	Value in lacs
1.	Computers (18) , UPS (2), Printers (4)	11 lakhs

4.10.5 Research and Consultancy

Sponsored Research Projects:

Sl.No.	Title	Period	Agency	Amount	Coordinators
1.	Creation and development of Operations management learning laboratory for mba programme and executive development programmes	1-4-2003 to 31-3-2005	MHRD (MODROBS)	Rs 17 lakhs	G Srinivasan

Industrial Consultancy Projects:

Sl.No.	Name of faculty	Title	Industry	Amount
1	G Srinivasan	Destination Planning module-Algorithm Development	TAKE Solutions Ltd.	Rs 1 lakh
2	G Arunkumar Debashis Acharya Sanghamitra B	Study on Public Perception of Security in India	Centre for Security Analysis (CSA)	Rs 1 lakh

Research Publications

No. of papers published in Refereed National Journals	:	06
No. of papers published in Refereed International Journals	:	18
No. of papers published in National Conferences	:	29
No. of papers published in International Conferences	:	14

In Refereed National Journals:

Sl.No.	Name of faculty	Title	Journal
1	T.J. Kamalanabhan and Amat Taap Manshoor	Organisational Health: A Comparative study	<i>Journal of Technical and Vocational Education</i> Vol.21, No.2, pp.11-17, 2004
2	S. Ajinth and T.J. Kamalanabhan	Risk Assessment on BPO (IT) New Venture Opportunity in India	<i>Review of Professional Management</i> Vol.2, No.2 pp. 9-17, 2004
3	Lata Dyaram and T.J. Kamalanabhan	HR Profession in Transition	<i>ICFAI Journal of Organisational Behaviour</i> Vol. IV, No.2, pp.46-50, 2005
5	M. Thenmozhi and M Sony Thomas	"Impact of Index Derivatives on S&P CNX Nifty Volatility: Information Efficiency and Expiration Effects"	The ICFAl Journal of Applied Finance Vol 10 No.9 pp 36-55, 2004
6	Manish Kumar, M. Thenmozhi and C Rajendran	"Forecasting Daily Returns of Exchange Rates Using Artificial Neural Network and ARIMA model"	The ICFAl Journal of Applied Finance Vol.10 No.11 pp.16-36, 2004

In Refereed International Journals:

Sl.No.	Name of faculty	Title	Journal
1	Piyush Sharma and Bharadhwaj Sivakumaran	Investigating Impulse Buying and Variety Seeking: Towards a General Theory of Hedonic Purchase Behaviors	<i>Developments in Marketing Science (United States)</i> Vol. 27, pp. 61, 2004
2	George Issac, Rajendran, C and Anantharaman, R.N	A conceptual frame work for total quality management in software Organizations	<i>TQM & Excellence</i> vol-15, No:3, 307-334 (2004)

3	Paul, A.K, and Anantharaman, R.N	Influence of HRM practices on organisational commitment: a study among software professionals in India	Human resource development Quarterly vol-15, No:1, 77-88 (2004)
4	Issac, G., Rajendran, C. and Anantharaman, R.N	"Significance of quality certification: The case of software industry in India"	<i>Quality Management Journal</i> , Vol. 11, No. 1, 8-32 (2004).
5	Pugazhendhi, S., Thiagarajan, S., Rajendran, C., and Anantharaman, R.N	Generating non-permutation schedules in flowline-based manufacturing systems with sequence-dependent setup times of jobs: a heuristic approach	<i>International Journal of Advanced Manufacturing Technology</i> Vol. 23, 64-78 (2004).
6	Rajendran, C and Ziegler, H	Ant-colony algorithms for permutation flowshop scheduling to minimize makespan / total flowtime of jobs	<i>European Journal of Operational Research</i> Vol. 155, 426-438 (2004)
7	Pugazhendhi, S., Thiagarajan, S., Rajendran, C., and Anantharaman R.N	Relative performance evaluation of permutation and non-permutation schedules in flowline-based manufacturing systems with flowtime objective	<i>International Journal of Advanced Manufacturing Technology</i> Vol. 23, 820-830 (2004)
8	Jayamohan, M S, and Rajendran, C	Development and analysis of cost-based dispatching rules for job shop scheduling	<i>European Journal of Operational Research</i> Vol. 157, 307-321 (2004)
9	George Issac, Rajendran C and Anantharaman, R.N	A holistic framework for TQM in the software industry: A confirmatory factor analysis approach	<i>Quality Management Journal</i> Vol. 11, No. 3, 35-60 (2004).
10	Hasija, S. and Rajendran, C	Scheduling in flowshops to minimize total tardiness of jobs	<i>International Journal of Production Research</i> , Vol. 42, No. 11, 2289-2301 (2004).
11	Daniel, J S R., and Rajendran, C	A simulation-based genetic algorithm for inventory optimization in a serial supply chain	<i>International Transactions in Operational Research</i> , Vol. 12, 101-127 (2005).
12	Daniel, J S R., and Rajendran, C	"Determination of base-stock levels in a serial supply chain: A simulation-based simulated annealing heuristic	<i>International Journal of Logistics Systems and Management</i> Vol. 1, 149-186 (2005).
13	Rajendran, C. and Ziegler, H	Two ant-colony algorithms for minimizing total flowtime in permutation flowshops	<i>Computers & Industrial Engineering</i> , Vol. 48, No. 4, 789-797 (2005).
14	Hiseyin Cavusoglu, Birendra Mishra and Raghunathan S	The value of intrusion detection systems in IT security architecture	<i>Information Systems Research</i> Vol 16, No.1, 2005 28-46
15	Ashutosh Prasad, Birendra Mishra, Raghunathan S and Sui Hui	Open Source versus Closed source: Software Quality in Monopoly and Competitive markets	<i>IEEE Transactions on Systems, Man and Cybernetics, Part A</i> Accepted Nov 2004
16	Hasan Cavusoglu, Huseyin Cavusoglu and Raghunathan S	Economics of IT Security Management: Four improvements to Current Security Practices	<i>Communications of the AIS</i> . Vol 14, No 3, July 2004
17	M.Punniyamoorthy and P. Vijayaraghavan	Justification of Automatic Storage and Retrieval System (AS/RS) in a Heavy Engineering Industry	The International Journal of Advanced Manufacturing Technology, Springer – Verlag London Ltd 12 Jan 05
18	Arun Prasad and T.J. Kamalanabhan	A Study of the Evaluation and Assessment of Managerial Competencies	<i>Journal of Technology and Management</i> , Vol. 2, No.2, pp. 31-36. (Malaysia) 2004

In proceedings of National Conferences:

Sl.No.	Name of faculty	Name of conference	Date and venue
1	Sony Thomas and M Thenmozhi	Dynamic Interactions between Hedging Activity and Spot market Volatility in Indian Stock Market	July 17 th -18 th , 2004 ICICI Bank, NSE and GIM, Goa
2	T Godwin, Ram Gopalan and T T Narendran	Freight Trains Pathing Logistics along with fixed path route on a passenger railroad	3 rd – 5 th august 2004. PSG College of Technology.

3	K R Ravishankar, T T Narendran and P Vijayaraghavan	Formulating a supplychain model for augmented services offered to institutional customers in remote markets	3 rd – 5 th august 2004. PSG College of Technology
4	P Arun Prasad and T J Kamalanabhan	Aligning The Strategic Human Resource Practices Towards Knowledge Economy	24 th & 25 th September 2004. Cosmar 2004.Indian Institute Of Science,Bangalore.
5	Sony Thomas and M Thenmozhi	Innovations in Science and Technology	20-09-04 - 11-10-04 Technische Universitaet Munchen(TUM),Munich,Germany IIT Bombay
6	Sony Thomas and M Thenmozhi	Causal Relationship between Speculative Activity and Spot Market Volatility	8-10 Nov 2004 MIT Cambridge, USA
7	Manish Kumar and M Thenmozhi	Forecasting Nifty Index Futures Return using Neural Networks and ARIMA models	8-10 Nov 2004 MIT Cambridge, USA
8	R Venkatesh and S Jayachandran	NGOs as Societal Actors ; Health and Social Services	26-28 Nov 2004 Indian Institute of Health Management Research, Jaipur
9	S Radha and M Thenmozhi	Modeling and Forecasting Short Term Interest Rates: A Literature Survey	National Conference in Business Research. PSG Institute of Management, Coimbatore, Nov 2004
10	Revathi G Sridhar and T J Kamalanabhan	Development of an instrument to Assess Interest in the Information Technology (IT) Profession as part of a study on Turnover Intension of IT Professionals	14-15 December 2004 ICCS 2004 & NIIT, New Delhi
11	Lata Dayaram and T J Kamalanabhan	Understanding the Role of Hetrogenity in Work Teams	14-15 December 2004 ICCS 2004 & NIIT, New Delhi
12	P Arun Prasad and T J Kamalanabhan	The Tangible Link: Learning Driven Culture Through Effective People Management Practices	14-15 December 2004 ICCS 2004 & NIIT, New Delhi
13	Komala Kashi Iyengar and R N Anantharaman	Rationale for Spirituality in Organistions	14-15 December 2004 ICCS 2004 & NIIT, New Delhi
14	K Ganesh and T T Narendran	Heuristic Algorithm Based Clustering and Rank Based Simulated Annealing for Vehicle Routing Problem with Simultaneous Delivery and Pick-up	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
15	T Godwin, Ram Gopalan and T T Narendran	Multi-Objective Locomotive Assignment for Freight Trains with Scheduling in a Passenger Rail Network	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
16	V Nagendrakumar and G Srinivasan	Effective Dispatching Rules for Semiconductor Wafer Fabrication	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
17	K R Ravishankar, T T Narendran and P Vijayaraghavan	Efficient Customer Support for High Tech products in unexplored markets – Simulation Approach	17-20 December 2004 NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
18	Komala Kashi Iyengar and L S Ganesh	Workplace Spirituality; A new management approach	28 th – 31 st December 2004 IIM Calcutta
19	K Gopalakrishnan and L S Ganesh	Enabling Knowledge Creation in Organizations – A Review of SECI Framework	28 th – 31 st December 2004. IIM Calcutta
20	R Venkatesh and S Jayachandran	Quality Management In Healthcare Services And Marketing	Jan 7 th -9 th 2005.IIM kozhikode.
21	Lata Dayaram, and T J Kamalanabhan	When Differences Matter:Heterogeneous Team At Work	Jan 11 th – 13 th 2005,IIT Kharagpur
22	Arun Prasad and T J Kamalanabhan	Resource Based Perspective For Sustained Competitive Advantage Through Organizational Learning	Jan 11 th – 13 th 2005,IIT Kharagpur
23	Venkatesh R and S Jayachandran	Globalization and Industry Competitiveness	Jan 11 th – 13 th 2005,IIT Kharagpur

24	Suhanya and T J Kamalanabhan	HR Scorecard: Measuring The Contribution Of Human Resources To Business Results	28 th – 30 th Jan 05. Nirma Institute Of Management, Nirma University
25	P Arun Prasad and T J Kamalanabhan	Knowledge Strategy: The Contingency Factor for Sustained Competitive Advantage	28 th – 30 th Jan 05. Nirma Institute Of Management, Nirma University
26	Sony Thomas and M Thenmozhi	Dynamic Interactions and Causal Relationship among Spot Market Volatility, Open Interest, Volume and Arbitrage: Evidence from Indian Futures Market	January 10 th -12 th , 2005 Securities and Exchange Board of India(SEBI) Mumbai
27	M. Thenmozhi and Madhuri Malhotra	Structure and Operations of Indian Debt Market:Critical Issues for Development	19 th -20 th November 2004 <i>Third National Conference on Business Research</i> , PSG Coimbatore
28	M. Thenmozhi and Radha S,	Long-run relationship between interest rates and inflation: An Error Correction Model	20 th -21 st December 2004, <i>Eighth Capital Markets Conference</i> , IICM Mumbai
29	M. Thenmozhi and Radha S	Forecasting TB Yield Using ARIMA Model	26 th -27 th November 2004, <i>First National Conference on Finance & Economics</i> , ICFAI Bangalore

In proceedings of International Conferences:

SI.No.	Name of faculty	Title	Conference
1	Piyush Sharma, Bharadhwaj Sivakumaran	Self-Indulgence or Loss of Self-Control? Or, is it a Bit of Both? Investigating Cross-cultural Aspects of Impulse Buying Behavior	Association for Consumer Research Conference South Korea 2004
2	Piyush Sharma, Bharadhwaj Sivakumaran	Investigating Impulse Buying and Variety Seeking: Towards a General Theory of Hedonic Purchase Behaviors	Academy of Marketing Science Conference Canada, 2004
3	Nur Halimah Chew Abdullah Bharadhwaj Sivakumaran	Unraveling Cross-cultural Differences: Effects of Observability, Self Monitoring and Desire for Unique Consumer Products on Tendency to Seek Variety	Association for Consumer Research Conference, , South Korea, 2004
4	Sharma Piyush, Bharadhwaj Sivakumaran, Roger Marshall	Exploring Impulse Buying in Services versus Products: Towards a General Theory of Impulse Buying	SERVSIG Research Conference Singapore, 2005
5	Bharadhwaj Sivakumaran, Sharma Piyush	Store Environment and Impulse Buying Behavior: A Super-Market Perspective	Academy of Marketing Science Annual Conference United States, 2005
6	Huseyin Cavusoglu, Hasan Cavusoglu and Raghunathan S	How to disclose software security vulnerabilities responsibly?	Workshop on Information Technology and Systems WITS, December 2004
7	Tridib Bandhopadhyay, Varghese Jacoband Raghunathan S	Security Investment Strategies for Supply Chain Partnering firms: Effects of physical connectivity and shared information assets	Workshop on Information Technology and Systems, WITS, December 2004
8.	M. Thenmozhi and Radha S	Short-term interest rates and Macroeconomic variables: An OLS model	26 th -27 th December 2004, <i>Second International Conference on Business and Finance</i> , ICFAI Hyderabad
9.	Lawrence Harold and M.Thenmozhi	Evaluation of Information Technology Investments – Methods and approaches in Banking Sector	7 th -8 th January, 2005, International Conference of Banking and Insurance Birala Institute
10	T Godwin, Ram Gopalan and T T Narendran	Freight Trains Pathing Logistics along with fixed path route on a passenger railroad.	3 rd – 5 th august 2004.PSG College of Technology.

11	K R Ravishankar, T T Narendran and P Vijayaraghavan	Formulating a supplychain model for augmented services offered to institutional customers in remote markets	3 rd – 5 th august 2004.PSG College of Technology
12	K Ganesh and T T Narendran	Heuristic Algorithm Based Clustering and Rank Based Simulated Annealing for Vehicle Routing Problem with Simultaneous Delivery and Pick-up	17-20 December 2004 – NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
13	T Godwin, Ram Gopalan and T T Narendran	Multi-Objective Locomotive Assignment for Freight Trains with Scheduling in a Passenger Rail Network	17-20 December 2004 – NITIE, Mumbai and Univ. of Alabama in Huntsville, USA
14	K R Ravishankar, T T Narendran and P Vijayaraghavan	Efficient Customer Support for High Tech products in unexplored markets – Simulation Approach	17-20 December 2004 – NITIE, Mumbai and Univ. of Alabama in Huntsville, USA

Distinguished Visitors to the Department:

Sl.No.	Name of the visitor and Designation	Date of visit	Purpose
1.	K. Venkata Rao, Managing Director, Samalpatti Power Co, Chennai	Dec. 2004	Guest Lecture
2	S Varadarajan, Executive Director, Bharat Petroleum Corporation Ltd, Chennai	Dec 2004	Guest Lecture
3	Dr. V.G. Ratnam, Sr Vice President (Business Development), Pricol Limited, Coimbatore.	Dec 2004	Guest Lecture
4	Professor Ramayya Krishnan, Carnegie Mellon University, USA	Dec, 2004	Guest Lecture
5	Prof. Mohanasundaram, PSG College of Technology, Coimbatore	12-13 February, 2005	Conducted a workshop on 'ARENA' a simulation package for MBA students and Research Scholars
6	Mr. Sudhir Krishna, B. Tech. Mechanical Engineering (IITM, 1976) MBA (Harvard) President and CEO	3 rd to 28 th Jan. 2005	MBA Course on "Management of Change" and Special Lecture to Research Scholars on "Globalization"
7	Mr. Venkat A. R. Subramanian President & CEO, Angarai International, Maryland, USA.	13 th January, 2005	Guest Lecture
8	Mr. V. S. Pradeep Kumar, CEO, Sara Lee Household & Body Care India Pvt. Ltd.	18th January, 2005	CEO Speak
9	Dr. Chakravarthy Narasimhan, Professor of Marketing, Olin School of Business, Washington University, USA	19th January, 2005	Guest Lecture
10	Dr. Madhu Mehta Chief Architect NirmaLabs, Ahmedabad	March 2, 2005	Discussed on our MBA and also Research Programmes
11	Mr. Anil Kumar Chief Resource Person NirmaLabs, Ahmedabad		
12	Prof. Peter Haug Distinguished Fulbright Teaching Fellow	March 9 -10, 2005	Lectured twice to MBA students and Research Scholars
13	Anu Sharma Global Head, HR iGate Global Solutions	March 18, 2005	Lectured to MBA students and Research Scholars
14	Mr R. Kannan, Director & Mr S. Mohan Kumar, Professor - Institute for Financial Management & Research (IFMR), Chennai-34	March 24, 2005	Interaction with students – both MBA and Research Scholars
15	Dr. Vasantha Bharucha Formerly Economic Advisor, Ministry of Commerce, Govt. of India	March 28, 2005	Lectured to MBA students and Research Scholars

16	Prof. Dr. Ronald Gleich Dean of Executive Education	March 30, 2005	To learn about our MBA and research programmes, and also have discussions regarding their interests in promoting EBS in Asia.
17	Prof. Dr. Peter Russo Programme Director <i>European Business School, Winkel, Germany</i>	-	-
18	Dr Susanne Gerl, Managing Director <i>CCG GmbH, Munich, Germany</i>	-	-
19	Mr. L. Ravichandran Managing Director, Chennai Online	March 30, 2005	Interacted with MBA students as part of their 'e-Business Strategies' course

4.11 DEPARTMENT OF MATHEMATICS

4.11.1 Introduction:

The Department of Mathematics was established in 1959 along with the Institute. It offers M.Sc. programme in Mathematics, M.Tech. programme in Industrial Mathematics and Scientific Computing [IMSC] and Ph.D. programme. In addition, the Department has taken the responsibility of teaching Mathematics courses to B.Tech., M.Tech. (Other than IMSC) and Ph.D students of the Institute. The major areas of research of the department are:

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| <ol style="list-style-type: none"> 1. Algebra and its applications 2. Applied Probability 3. Approximation Theory 4. Computational Fluid Dynamics 5. Continuum Mechanics 6. Coding Theory 7. Complex Analysis 8. Data Networks 9. Differential Equations 10. Inverse and Ill- Posed problems 11. Fluid Mechanics 12. Functional Analysis 13. Fuzzy Sets and Systems 14. Graph Theory and Combinatorics | <ol style="list-style-type: none"> 15 Harmonic Analysis 16. Inventory and Reliability 17. Mathematical logic & Applications 18. Mathematical Modelling 19. Mathematical Physics 20. Nonlinear Analysis 21. Numerical Analysis 22. Operations Research 23. Operator Theory 24. Queueing Theory 25. Statistical Quality Control 26. Stochastic Processes and their applications 27. Theoretical Computer Science 28. Wavelets and their applications |
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4.11.2 Academic Programmes:

New Courses Introduced:

S.No.	Course No.	Title
1.	MA500	Real Analysis and Elements of Topology
2.	MA512	Measure and Integration
3.	MA525	Fundamentals of Discrete Mathematics
4.	MA605	Dynamical Systems
5.	MA606	Nonlinear Conservation Laws: Theory and Numerics (Elective)
6.	MA607	Topological Vector Spaces (Elective)
7.	MA608	Fourier Analysis (Elective)

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & Others	Total
M.Sc.	30	29	-	-	-	59
M.Tech.	6	8	-	-	-	14
Ph.D.	23	10	6	8	5	52
Total	59	47	6	8	5	125

Names of Students/Scholars attended Conferences/Seminars and Symposia abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia/Workshop	Date and Venue
Conferences :				
1.	Mr. D. Anil Kumar	Ph.D.	Summer School on Computational Fluid Mechanics	Aug. 23 – Sep 17, 2004 University of Potsdam, Germany
2.	Ms. S. Lavanya Ms. Indhumathi R	Ph.D.	International Conference on Discrete Mathematics and its Applications	Dec. 9 - 11, 2004, Amrita Vishwa Vidyapeetham Ettimadai, Coimbatore
			Asia Pacific Conference on Parallel and Distributed Computing Technologies	Dec.13-15, 2004, Vellore Institute of Technology, Vellore.
3.	Mr. K. Paramasivam	Ph.D.	National Conference on Graphs, Combinatorics, Algorithms and Applications (NCGAA 2004)	Nov.25-29, 2004 AKCE Krishnan Koil Tamilnadu.

			National Conference on Discrete Mathematics and its Applications (DMA 2004)	Dec.9-11, 2004 AIT, Coimbatore
4.	Mr. H. Ramesh Mr.S. Sivananthan	Ph.D. Project staff	CONIAPS VII	Dec. 21-23, 2004 Allahabad University Allahabad
5.	Mr. V. Sankar Raj Ms. J. Anuradha Mr. A. Antony Eldred Ms. Pallavi Mahale	Ph.D.	Conference on Recent Trends in Nonlinear Analysis and its applications	Dec. 11-13, 2004, IIT Bombay Mumbai
6.	Mr. Swadesh Kumar Sahoo	Ph.D.	National Conference on Partial Differential Equations and Applications	March 10-11, 2005 Bharathiar University Coimbatore
7.	Dr.(Ms.) B. Uma	Post-Doctoral Fellow, NBHM	Summer School and Conference on Dynamical Systems	July 19 - Aug 6, 2004 ICTP, Trieste Italy
8.	Mr. V. Antony Vijesh Mr. V. Murugan	Ph.D.	SCRA 2004 FIM XI	Dec. 27-29, 2004 Institute of Engg & Tech, Lucknow
Seminar :				
1.	Mr. Moon Kumar Chetry	Ph.D.	National Seminar on Recent Trends Developments in Mathematics and its Applications (RDMA – 2005)	Jan. 20 -22, 2005 University of North Bengal Darjeeling West Bengal-734 430
2.	Mr. K. Paramasivam	Ph.D.	Seminar on Graph Theory and its Applications	Aug.2-3, 2004 Lady Doak College Madurai.
3.	Mr. R. Rajkumar	Ph.D.	National Seminar on Recent Trends in Cryptography with Coding Theory	Feb. 24 – 26, 2005 Union Christian College, Alwaye, Kerala
Symposia :				
1.	Mr. K. Paramasivam	Ph.D.	National Symposium on Mathematical Methods and Applications (NSMMA 2004)	Dec.22, 2004 IIT Madras
2.	Mr. S. Sivananthan Mr. Jitendriya Swain Mr. Venku Naidu	Ph.D.	Recent trends in Analysis	March 2-4, 2005 Ramanujan Institute for Advanced Study in Mathematics, Chennai
Summer Term Course:				
1.	Mr. V. Antony Vijesh Mr. V. Murugan	Ph.D.	QIP Short-term course on Fourier Analysis	July 5-10, 2004 IIT Madras
Workshop:				
1.	Ms. Anuradha J	Ph.D.	Fifth Workshop on Discrete Dynamical Systems	June 2004 Central University Hyderabad
2.	Ms. G. Chandhini Mr. I. Mohammed Rizwan Sadiq Mr. Antony Vijesh	Ph.D.	Workshop on Scientific Computation, Numerical Analysis and Applications	Jan. 24 – Feb. 4, 2005 IISc., Bangalore
3.	Ms. S. Lavanya Ms. R. Indhumathi	Ph.D.	Sixth International Workshop on Distributed Computing 2004	Dec. 27-31, 2004 Indian Statistical Institute, Kolkata.
4.	Mr. E. Natarajan Mr. Param Jeet Mr. M. Sathya Moorthy	Ph.D. Ph.D. M.Tech.	Workshop on "Convection 05"	March 1-2, 2005 IISc., Bangalore
5.	Mr. G. Ramesh Mr. P. Ravi Shankar Mr. Jitendriya Swain	Ph.D.	Annual Foundation School – 1 (AES) 2004	May 10 - June 5, 2004 IIT Bombay, Mumbai
6.	Mr. D. Sukumar	Ph.D.	Workshop on Low-dimensional topology and geometric group theory.	July 12 - 24, 2004 Indian Statistical Institute, Bangalore

7.	Mr. Jitendriya Swain	Ph.D.	Instructional Workshop on Harmonic Analysis	June 21 – July 9, 2004 Indian Statistical Institute, Bangalore
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4.11.3 Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialisation

Professors:

A Avudainayagam, Ph.D. (IIT Madras)
S. A. Choudum, Ph.D. (IIT Madras)
S. Kalpakam, Ph.D. (IIT Madras) [Head]

Fluid Mechanics, Wavelet applications
Graph Theory, Combinatorics and Discrete Mathematics
Applied Probability and Stochastic Processes, Operations Research

S. H. Kulkarni, Ph.D. (IIT Bombay)
P. R. Parthasarathy, Ph.D. (Annamalai)

Functional Analysis and Numerical Analysis
Applied Probability and Stochastic Models, Mathematical Ecology, Operations Research, Statistical Inference, Population Models, Compartmental Theory and Carcinogenesis

A. Rangan, Ph.D. (IIT Madras)

Probability Theory, Stochastic Processes, Operations Research, Applications to Biological Sciences, Ecology and Reliability

P. V. Subrahmanyam, Ph.D. (IIT Madras)

Fixed Point Theory and Applications, Fuzzy sets, Functional Equations, Summability Theory, Mathematics Education
Spectral Approximation, Operator Equations, Inverse and Ill-posed Problems

M. Thamban Nair, Ph.D. (IIT Bombay)
PDF (Univ. Grenoble)

Fluid Dynamics

R. Usha, Ph.D. (IIT Madras)

Fixed Point Theorems and their Applications to Problems in Optimization and Best Approximation, Fuzzy Set Theory

P. Veeramani, Ph.D. (IIT Bombay)

Associate Professors:

Arindama Singh, Ph.D. (IIT Kanpur)
S. G. Kamath, Ph.D. (IIT Delhi)
S. Ponnusamy, Ph.D. (IIT Kanpur)

Numerical Analysis and Mathematical Logic.
Mathematical Physics
Complex Analysis, Function Spaces, Special functions and Conformal Geometry
Theoretical Computer Science
Heat and Mass Transfer, Boundary Layer Theory
Numerics for Differential Equations, Modelling and Simulation, Numerical Analysis, Numerical Linear Algebra, Databases and Data mining
Non-Smooth Optimization, Fixed Point Theory

R. Rama, Ph.D. (Anna University)
Satyajit Roy, Ph.D. (IISc. Bangalore)
S. Sundar, Ph.D. (IIT Madras)

V. Vetrivel, Ph.D. (IIT Madras)

Asst. Professors:

R. Radha, Ph.D. (Matscience Madras)
Y.V.S.S. Sanyasiraju, Ph.D. (IIT Madras)
K.C. Sivakumar, Ph.D. (IIT Madras)
Ch. Srinivasa Rao, Ph.D. (IISc. Bangalore)
W.B. Vasantha, Ph.D. (Ramanujan Institute for Advanced study in Mathematics, Chennai)

Harmonic Analysis, Wavelets
Computational Fluid Dynamics
Functional Analysis and Mathematical Programming
Non-linear Differential Equations
Group Theory, Ring Theory, Lattice Theory, Semigroups, Coding Theory, Application of Algebra, Fuzzy Algebra and Linear Algebra

Senior Scientific Officer (Gr.I):

K. Swaminathan, Ph.D. (Agra University, Agra)

Fluid Dynamics, Ship Hydrodynamics, Mathematical Problems related to Naval Architecture and Ocean Engineering, Systems Simulation and Development of Software for Control Systems, Image Processing and Computer Graphics.

Short-term Courses / Workshops / Seminar / Symposia/ Conferences organised by faculty members:

Sl. No.	Title	Date	Co-ordinator(s)
Workshop:			
1.	Modelling & Simulation in Life Sciences, Materials and Technology	Dec. 7 – 8, 2004	Prof. A. Avudainayagam Dr. S. Sundar

Short-term Course:			
1.	Comprehensive course on CFD	June 7 – 19, 2004	Dr. Y. V. S. S. Sanyasi Raju Prof. E. G. Tulapurkara
2.	QIP Short Term Course on Fourier Analysis	July 5 – 10, 2004	Prof. P. V. Subrahmanyam
3.	ISTE-STTP on Numerical Linear Algebra	Nov.29 – Dec.10, 2004	Prof. R. Usha and Prof. S.H. Kulkarni
4.	QIP-STTP on Fourier Transform Wavelet Transform and Applications	Dec. 13 – 24, 2004	Prof. R. Usha and Prof. A. Avudainayagam

Short-term Courses / Workshops / Seminars / Symposia/ Conferences/ Training attended by the faculty in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title	Institution	Period
Workshop:				
1.	Prof. P. V. Subrahmanyam	Workshop on Development of material on Mathematics laboratory for Class IX	Central Board of Secondary Education Shiksha Sadan, New Delhi	Feb.21 – 24, 2005
2.	Prof. R. Usha	International Workshop on Pattern formation Instabilities in thin liquid films; From Fundamental Aspects to Applications	Max Planck Institute for Physics of Complex Systems, Dresden, Germany	Sep. 21-28, 2004.
3.	Dr. S. Ponnusamy	Differential inequalities in the complex plane	Bharathiar University Coimbatore	Mar. 10-11, 2005
4.	Dr. S. Sundar	Modeling & Simulation in Life Sciences, Materials and Technology	ICTP, Trieste, Italy	Mar. 7– April 4, 2004
5.	Dr. V. Vetrivel	Modeling & Simulation in Life Sciences, Materials and Technology	ICTP, Trieste, Italy	Mar. 7 – April 4, 2004
Symposia:				
1.	Dr. Satyajit Roy	NSMMA-2004 (National Symposium on Mathematical Methods and Applications)	Burdwan University, West Bengal.	Dec.21 – 23, 2004.
Conference :				
1.	Prof. S. A. Choudum	National Conference on Graphs and Combinatorics	AKCE Engg College Madurai	Nov.25-27, 2004
2.	Prof. P. R. Parthasarathy	40 th Anniversary Conference on Abdus Salam International Centre for Theoretical Physics	Trieste, Italy	Oct.4-8, 2004
3.	Dr. R. Rama	CONIAPS-2004	University of Allahabad Allahabad	Dec. 21– 23, 2004
4.	Dr. K. Swaminathan	Computing the Curve-Skeletons of Images	World Multi Conference on Systems Cybermatics and Informatics at Oriando, Florida, USA	July 18 – 21, 2004

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Delivered at	Date
1.	Prof. S. Kalpakam	Perishable Inventory System and Cost Optimization	Department of Economics University of Bielefeld Germany	June 22, 2004
2.	Prof. S. H. Kulkarni	Gelfand's Proof of Wiener's theorem	Workshop on Fourier Analysis , IIT Madras	July 2004
		Numerical Linear Algebra	ISTE-STTP Workshop On Numerical Linear Algebra IIT Madras	Nov.-Dec. 2004

		Compact Linear Maps	Workshop on Operator Theory and Numerical Analysis at Siddharth Academy, Vijayawada	February, 2005
3.	Prof. P. R. Parthasarathy	Stochastic models of carcinogenesis	University of Kaiserslautern Germany	June 8, 2004
		Applied Birth-Death Processes	University of Kaiserslautern Germany	July 6, 2004
		Industrial Mathematics	Rajalakshmi Engineering College	Sep. 17, 2004
		Mathematics Curriculum for B.Tech.	National Institute of Technology, Surathkal, Karnataka	Dec. 3, 2004
		Fluid queues driven by birth and death processes	Conference on Modeling and Simulation, IIT Madras	Dec.7-8, 2004
		Tridiagonal Matrices	Short term course on Numerical Linear Algebra IIT Madras	Dec.9, 2004
		Continued Fractions and Applications Professor K Subramanian Endowment Lecture	Vivekananda College Chennai	Dec. 20, 2004
		Continued Fractions Professor A Narasinga Rao Endowment Lecture	Association of Mathematics Teachers of India, Nasik	Dec.28, 2004
		Continued Fractions, Orthogonal Polynomials and Birth-Death processes	Presidency College Chennai	Feb. 10, 2005
		Applied Birth & Death Models	Presidency College Chennai	Feb.11, 2005
		Applied Birth and Death Models	Government Arts College, Coimbatore	March 24, 2005
Transient solution of a state dependent birth and death process	The Gandhigram Rural Institute Gandhigram, Dindigul	March 25-26, 2005		
4.	Prof. P.V.Subrahmanyam	A Newton- type Method and its Applications	International Conference on CNA'A'04 IIT Bombay, Mumbai	Dec. 11 – 13, 2004
		A Two Point Variant of Newton's Method and its Applications	Plenary speaker for the International Conference SCRA 2004 (FIM) XI Institute of Engineering and Technology, Lucknow	Dec. 27 – 29, 2004
		Inaugural lecture	Mathematics Workshopt, YN College Narsapur	Dec. 22, 2004
5.	Prof. M. Thamban Nair	Truncations of Fourier series as best approximants	QIP Short-term course on Fourier Analysis IIT Madras	July 7, 2004
		Ill-posedness of backward heat conduction problem	One-Day National level Seminar on Mathematical Modelling PSGR Krishnammal College for Women Coimbatore	Aug. 6, 2004
		Least-square solutions of matrix equations	National Seminar on Recent Trends in Mathematics NSS Hindu College Changanacherry Kerala	Aug. 20, 2004
		Functional Analysis	Theivanai Ammal College for Women Villupuram	Oct.15, 2004

		D.B. Wagh Endowment Lecture on Ill Posed Equations and their Regularization	Goa University Goa	Oct.25, 2004
		Least-square solutions of matrix equations	Two lectures at the ISTE-short Term Training Programme on Numerical Linear Algebra Dept. of Mathematics IIT Madras	Dec.6-7, 2004
		Wavelet-Galerkin method	QIP-Short Term Training Programme on Fourier transform, Wavelet Transform and Applications Dept. of Mathematics IIT Madras	Dec. 16, 2004
		A spectral characterisation of closed range operators	National Seminar on Analysis, Topology and Applications Chittoor Govt. College Palakkad, Kerala	Jan. 8-9, 2005
		Solution of matrix equations	MNM Jain Engg College Chennai	Jan. 28, 2005
		General source conditions for inverse heat conduction problems	International Indo-French Workshop on PDE and Applications Indian Institute of Science Bangalore	Feb. 7-8, 2005
		On Tikhonov Regularization using Hilbert Scales.	Ramanujan Institute for Advanced Studies Chennai	March 4, 2005
6.	Prof. R. Usha	Wave dynamics of thin viscoelastic film down an inclined plane	Max Planck Institute for Physics of Complex Systems, Dresden, Germany	Sep. 26, 2004
7.	Prof. P. Veeramani	Best Proximity pair Theorems and Their Applications	IIT Bombay	Dec. 11 -13, 2004
		Introduction to Fuzzy Set Theory & Applications	St. Joseph's College Trichy	Dec. 3, 2004
		Contractions, Cyclic Contractions and Best Proximity Pair Theorems	St. Xavier's College Palayamkottai	Jan. 27 – 29, 2005
		Real Analysis	Presidency College Chennai	Feb.11, 2005
		On Best Proximity Pair Theorems in Hyper Convex Metric Spaces	12 th Ramanujan Symposium, Ramanujan Institute for Advanced Study in Mathematics University of Madras, Chennai	March 2, 2005
		On Hyper Convex Metric Spaces	National Seminar on Recent Trends in Analysis Alagappa University Karaikudi	March 19, 2005
8.	Dr. Arindama Singh	Automata Theory	Jain College of Engg. Chennai	May, 2004
9.	Dr. S. Ponnusamy	Harmonic Functions	Theivanai Ammal College for Women, Villupuram	Dec.20, 2004
		First SQU Workshop on Topology and its Applications – Keynote address	Sultan Qaboor University	Dec. 27, 2004 – Jan. 3, 2005
		Harmonic Functions	S R C College, Tiruchirapalli	Jan. 24, 2005
		1) Elementary Functions 2) Applications of Riemann Mapping Theorem	Thanthai Hans Roever College Perambalur	Jan 24-25, 2005

		Harmonic Functions and Conformal Mappings	Misrimal Navajee Munoth Jain Engineering College Chennai	Jan.27, 2005
		Differential Inequalities in the complex plane	Bharathiyar University Coimbatore	March 10-11, 2005
10.	Dr. R. Rama	Membrane Computing	Anna University MIT, Chennai	July 30 – 31, 2004.
11.	Dr. Satyajit Roy	Non-uniform slot injection (suction) in boundary layer flows	Burdwan University West Bengal	Dec. 22, 2004
12.	Dr. S. Sundar	Recent Developments in Fluid Dynamics	Naval Science Techni-cal Laboratory, Vizag	August 23-27, 2004
		Fluid Dynamics and Numerical Techniques	DRDO Visakhapatnam	Aug. 23 -24, 2004
		Wavelet-Galerkin method	Fourier transform, Wavelet Transform and Applications	Dec.16, 2004
13.	Dr. V. Vetrivel	Conjugate Gradient Methods	QIP Short term Course IIT Madras	Dec. 15, 2004
14.	Dr. R. Radha	Fourier series and wave equations	QIP Short term Course on Fourier Analysis IIT Madras	July, 2004
		Wavelets and Image compression.	ISTE-STTP on Numerical Linear Algebra IIT Madras	Dec. 2004
		Compactly supported wavelets and applications	QIP-STTP on Fourier transform, Wavelet transform and Applications IIT Madras	Dec.2004
		Fourier Series and applications	MNM Jain Engg. College, Chennai	Jan. 28, 2005
		Hardy's inequalities for Hermite expansions	Ramanujan Institute for Advanced Study in Mathematics Chennai	March 4, 2005
15.	Dr. Y. V. S. S. Sanyasi Raju	Finite Difference Method	Comprehensive Course on CFD, IIT Madras	June 7- 19, 2004
		A higher order semi compact scheme to solve unsteady viscous incompressible flows	National Seminar on Recent Advances in Applied Mathematics Andhra University Visakhapatnam	June 30 – July 1, 2004
		Newtonian Mechanics and Numerical algorithms for differential equations	CEP course: 6DOF Trajectory Simulation for Underwater(Air) VehiclesNSTL Visakhapatnam	August 23-24, 2004
		Numerical Linear Algebra	ISTE Short-term Training programme, IIT Madras	Nov.29 - Dec.10, 2004
		An introduction to Matlab	QIP-STTP on Fourier transform, Wavelet transform and Applications IIT Madras	Dec.13 -24, 2004
16.	Dr. K. C. Sivakumar	On a class of Optimization Spaces	Sardar Patel University Gujarat	March 14-15, 2005

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1	Prof. S. Kalpakam	Germany	June 8- July 10, 2004	IIT-BMBF Indo-German Project
2.	Prof. P. R. Parthasarathy	Germany	May 6 – July 23, 2004	Has gone as Visiting Professor at Technische Universtat Kaiserslautern

		Italy	Oct. 2004	To participate 40 th Anniversary Celebrations of the Abdus Salam International Centre for Theoretical Physics, Trieste
3.	Prof. R. Usha	Germany	Sep 20 – 29, 2004	To attend an International Workshop on Pattern Formation Instabilities in Thin Liquid Films: From Fundamental Aspects to Applications, Dresden
4.	Prof. P. Veeramani	Canada	Aug. 16 – 22, 2004	To present a paper at the Conference on Fixed Point Theory and applications at University of Montreal
			Aug. 23 – Sep. 10, 2004	To visit the department of Mathematics of Dalhousi University of Halifax, Canada
5.	Dr. S. Ponnusamy	Germany	Oct.4 - 29, 2004	DST-DAAD Joint Research Programme
		Oman	Dec. 27, 2004 – Jan. 3, 2005	To deliver a Keynote address at First SQU Workshop on Topology and its Applications
6.	Dr. S. Sundar	Italy	March 7 – April 4, 2004	Attended Workshop on Modeling & Simulation in Life Sciences, Materials and Technology
		Germany	May 15 – July 15, 2004	Has gone as Visiting Professor at FB Mathematik, Technische Universtat Kaiserslautern
7.	Dr. V. Vetrivel	Italy	March 7- April 4, 2004	To attend Workshop on Modeling & Simulation in Life Sciences, Materials and Technology
8.	Dr. K.C.Sivakumar	Canada	June 29 – July 31, 2004	Visiting Researcher University of Manitoba, Winnipeg
9.	Dr. K. Swaminathan	U.S.A.	July 18 – 21, 2004	To present a paper at the 8 th World Multi Conference on Systems Cybermatics and Informatics at Oriando, Florida
			July 23 – Aug 17, 2004	To visit universities in U.S.A.

Honours and Awards obtained:

Sl.No	Name of Faculty	Name of the Award
1.	Dr. S. Ponnusamy	Selected for the Tamilnadu Scientist Award(TANSA)-2003 under the discipline Mathematical Sciences by Tamilnadu State Council for Science and Technology, Chennai
2.	Prof.P.V. Subrahmanyam and Mr. Antony Vijesh	Awarded second prize for the paper presented in the International Conference SCRA 2004 FIM XI at Lucknow.

Books/Monographs authored or co-authored:

S.No.	Name of Faculty	Title	Publisher	Author/Co-author
1.	Prof. P.R.Parthasarathy Dr.R.B.Lenin	Applied Birth and Death Models	American Sciences Press Columbia	Author

4.11.4 Research and Consultancy:

Sponsored Research Projects:

SL. No.	Title	Period	Funding Agency	Amount (Rs.in lacs)	Co-ordinators
1.	Parameter Estimation and Inverse Solution of Non-Linear Heat Conducting Problems	3 years	ISRO-IIT(M) Cell	11.08	Dr. T. S. Prasanna Kumar (MM) and Prof. A. Avudainayagam
2.	Embeddable Properties of graphs and interconnection networks	Jan. 2003- July 2005	DST	12.41	Prof. S. A. Choudum

3.	Application of Queueing Models in Production and Inventory Management	3 years Jan. 1, 2002 – Dec. 31, 2004	DLR- IIT Madras		Prof. S. Kalpakam, and Prof. K. P. Kistner (Faculty of Economics University of Bielefeld Germany)
4.	Stochastic Modelling of Naval Logistics	Oct.1, 2004- Sep.30, 2005	NAVY, Visakhapatnam	4.83	Prof. A. Rangan
5.	A Numerical Study of multiple Jets with particulate suspension	2 years	ISRO-IIT(M) Cell	7.82	Prof. R. Usha and Prof. E. G. Tulapurkara (AE)
6.	Mathematical Aspects of Parallel Computing	3 years	DST	11.11	Dr. R. Rama Prof. Kamala Krithivasan(CS)
7.	Mathematics of Distributed Systems	(3 years) June, 2003- June 2005	DST	10.00	Dr. R. Rama, Dr. Arindama Singh and Prof. Kamala Krithivasan (CS)
8.	Knowledge Based Systems for Spatial Databases and GIS	2003-2006	ISRO-IIT, Madras	10.62	Dr. S. Sundar and Dr. K. M. M. Rao (NRSA, Hyderabad)
9.	Non-smooth calculus and Bundle Methods	2002-2005	DST	5.05	Dr. V. Vetrivel
10.	Wavelets in Signal & Image Processing	3 years	ICSR, IIT Madras	4.50	Dr. R. Radha
11.	Studies in Numerical Harmonic Analysis	3 years	DAE	4.85	Dr. R. Radha and Prof. S. H. Kulkarni
12.	Numerical Solutions of Infinite Linear Programs	3 years	ICSR, IIT Madras	4.70	Dr. K. C. Sivakumar
13.	A Study of Generalized Burgers Equations	3 years	ICSR, IIT Madras	4.30	Dr. Ch. Srinivasa Rao

Student Exchange programme with other Universities under MoU:

Sl.No.	Programme Name	Name of University	Student Name	Guide Name
1.	DAAD Sandwich – M.Tech.	TU-Darmstadt, Germany	S. Ramalakshmi	Prof. S. Kalpakam
2.	DAAD Sandwich- M.Tech	TU-Darmstadt, Germany	Narni Nageswara Rao	Dr. S. Sundar

Journal Editorial Boards:

Sl.No.	Name of Faculty	Level	Journal
1.	Prof. S. H. Kulkarni	Guest Editor	Journal of Analysis, Vol. 12
2.	Prof. P.R. Parthasarathy	Advisory Editor	Journal of Statistics & Management Systems
		Advisory Editor	Journal of Information and Optimization Sciences
		Regional Editor	Statistical Theory and Methods Abstracts
		Associate Editor	Journal of Applied Statistical Sciences International Journal of Computer Mathematics American Journal of Mathematics & Management Sciences Pure & Applied Matematika Sciences Journal of decision & Matematika Sciences Assam Statistical Review
3.	Dr. V. Vetrivel	Member of Editorial Board	Journal of Functional Analysis and Approximation Theory

Research Publications:

Total No. of papers published in Refereed National Journals	..	07
Total No. of papers published in Refereed International Journals	..	30
Total No. of papers published in Proceedings of National Conferences	..	05
Total No. of papers published in Proceedings of International Conferences	..	04

In Refereed National Journals:

Sl.No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	Arindama Singh	Cantor's Little Theorem	Resonance: Journal of Science Education, 9, 8-17 (2004)
2.	Sushama Agrawal and S.H. Kulkarni	Spectral Theorem for an Unbounded Normal Operator in a Real Hilbert Space	Journal of Analysis, 12, 93-100 (2004)
3.	S.H. Kulkarni and K.C. Sivakumar	Three Types of Operator Monotonicity	Journal of Analysis, 12, 129-140 (2004)
4.	M. Thamban Nair	Eigen-Pairs of Perturbed Matrices	Journal of Analysis, 12, 147-158 (2004)
5.	R. Rama and K. Lakshmanan	Internal Contextual grammar versus natural languages	Combinatorial and Computational Math. Narosa Pub., 88-102
6.	R. Radha and S. Thangavelu	Multipliers for Hermite and Laguerre Sobolev Spaces	Journal of Analysis, 12, 159-168 (2004)
7.	K. Kamaraj, K. Ramanathan and K.C. Sivakumar	Indefinite Product of Matrices and Applications to Indefinite Inner Product Spaces	Journal of Analysis, 12, 121-128 (2004)

In Refereed International Journals:

Sl.No.	Name(s) of the author(s)	Title of the paper	Name of the Journal
1.	S.A. Choudum and M.A. Shalu	Dissolved graphs and strong perfect Graph Conjecture	ARS Combinatoria 73, 49-52 (2004)
2.	S.A. Choudum and R. Usha Nandini	Complete Binary Trees in Folded and Enhanced Cubes	Networks 43(4), 266-272 (2004)
3.	Klaus-Peter Kistner and S. Kalpakam	On the output of Tandem Queues	CEJOR, 12, 129-156 (2004)
4.	P.R. Parthasarathy K.V. Vijayashree and R.B. Lenin	Fluid queues driven by a birth and death process with alternating flow rates	Math. Problems in Engineering, 5, 469-489 (2004)
5.	P.R. Parthasarathy B. Sericola and K.V. Vijayashree	Exact Transient Solution of an M/M/1 driven Fluid Queues	Computer Mathematics, 83, 307-319(2004)
6.	M. Thamban Nair and U. Tautenhahn	Lavrentiev's regularization under general source conditions	Zeitschrift fur Analysis und ihre Anwendungen, 23, 167 - 185 (2004)
7.	M. Thamban Nair and S. George	Optimal order-yielding discrepancy principle for simplified regularization Hilbert scales: Finite dimensional realizations	International J. Mathematics and Mathematical Sciences, 37, 1973-1996 (2004)
8.	M. Thamban Nair and Shinelal	Finite dimensional realization of mollifier method: A new stable approach	Journal of Inverse and Ill-Posed Problems, 12 No.5 (2004).
9.	R. Usha and B. Uma	Modelling of Stationary Waves on a thin viscous film down an inclined plane at high Reynolds numbers and Moderate Weber numbers using energy integral approach	Physics of Fluids, 16, 2679-2696 (2004).
10.	R. Usha and B. Uma	Long waves on a viscoelastic film flow down a wavy incline	International Journal of Nonlinear Mechanics, 39, 1589-1602(2004).
11.	B. Uma and R. Usha	Interfacial phase change effects on the stability characteristics of thin viscoelastic liquid film down a vertical wall	International Journal of Engineering Science, 42, 1381-1406 (2004).
12.	Arindama Singh	Prime Implicants of first order formulas	International Journal of CS & Applications, 1, No.1, 1-11, (2004)
13.	Arindama Singh	Prime Implicants of FOF via transversal clauses	International Journal of Computer Maths, 81, No.2, 157-167

14.	Arindama Singh	Showalter's regularization of an elliptic	Journal of Appl. Maths & Computation, 158 , 19-28 (2004)
15.	Arindama Singh	Laurentief Regularization of an elliptic	Journal of Appl. Maths & Computation, 18 , 189-205 (2004)
16.	R.W. Barnard, S. Naik, M. Obradovic and S. Ponnusamy	Two parameter families of close -to-convex functions and convolution theorems	Analysis (Munich) 24 , 71-94 (2004)
17.	Y.C. Kim, S. Ponnusamy and T. Sugawa	Geometric properties of nonlinear integral transforms of certain analytic functions	Proc. Japan, Acad. 80 (5), 57-61(2004)
18.	Y.C. Kim, S. Ponnusamy and T. Sugawa	Mapping properties of non-linear integral operators and pre-Schwarzian derivatives	Journal of Mathematical Anal. and Appl. 299 , 433-447(2004)
19.	S. Ponnusamy, V. Singh and P. Vasundhra	Starlikeness and convexity of an integral transform	Integral Transforms and Special Functions, 15 (3), 267-280 (2004)
20.	S. Ponnusamy and P. Vasundhra	Univalent functions with missing Taylor coefficients	Hokkaido Mathematical Journal 33 , 341-355 (2004)
21.	R. Balasubramanian, S. Ponnusamy and D.J. Prabhakaran	Duality techniques for certain integral transforms to be starlike	Journal of Math. Anal. and Appl. 293 , 355-373 (2004)
22.	M. Anbudurai, R. Parvatham, S. Ponnusamy and V. Singh	Convolution theorems for starlike and convex functions in the unit disc	Annales Polonici Mathematici, 84 (1), 27-39 (2004)
23.	D. Anil Kumar and Satyajit Roy	Self-similar solution of the unsteady mixed convection flow in the stagnation point region of a rotating sphere	Heat and Mass Transfer, 40 , 487 – 493, (2004)
24.	Satyajit Roy, H.S. Takhar and G. Nath	Unsteady MHD flow on a rotating cone in a rotating fluid	MECCANICA, 39 , 271 – 283 (2004)
25.	Satyajit Roy and D. Anil kumar	Unsteady mixed convection from a rotating cone in a rotating fluid due to the combined effects of thermal and mass diffusion	International Journal of Heat and Mass Transfer, 47 , 1673 – 1684 (2004)
26.	D. Anil kumar and Satyajit Roy	Unsteady mixed convection flow on a rotating cone in a rotating fluid	Applied Mathematics and Computations, 155 , 545 – 561 (2004)
27.	Satyajit Roy and P. Saikrishnan	Steady laminar water boundary layer flow over a yawed cylinder	International Journal of Applied Mechanics and Engineering, 9 , 4, 739 – 747 (2004)
28.	Satyajit Roy and P. Saikrishnan	Non-uniform slot injection (suction) into water boundary layer flow past yawed cylinder	International Journal of Engineering Science, 42 2147 – 2157, 2004
29.	V. Vetrivel	Lipschitz Continuity of the solution map in semi definite linear complementarity problems	Mathematics of Operations Research, 30 No.2 (2005)
30.	R. Radha and S. Thangavelu	Hardy's inequalities for Hermite and Laguerre Expansions	Proceedings of American Mathematical Society, 132 No.12 (2004) 3525 – 3536

In Proceedings of National Conferences:

1. Parthasarathy, P.R. and Vijayashree, K.V., Fluid Queues driven by birth and death processes, *Proceedings of the WKMS 2004, Narosa*, 200-228 (2005).
2. Tiwari, S., Kuhnert, J. and Sundar, S., Grid free method for Poisson Equation, *Wavelet Analysis and Applications, New Age International Publishers*, 151-166 (2004).
3. Singh, A.K., Axelklar, Banda, M.K. and Sundar, S., Lattice Boltzmann Method for Complex Geometrics, *Combinatorial & Computational Mathematics*, Narosa, 207-220 (2004).
4. Mohan Kumar, S., Sundar, S. and Vetrivel, V., Navier Stokes – Brinkmann Model for incompressible Flow over a Porous Layer, *Proceeding of the WKMS 2004, Narosa*, 283-293 (2005).

5. Bhaskar Subramanyam, A. and Sundar, S., Parallel BiCGSTAB with Latency Hiding, *Proceedings of the WKMS, 2004, Narosa*, 328-335, (2005).

In Proceedings of International Conferences:

1. Rama, R., Towards constructing optimal strip move sequences, *COCOON LNCS 3106 Springer – Verlag*, 33-42 (2004).
2. Vetrivel, V, Lipschitz Continuity and semi definite Linear Complementarily problems, *Proceedings of International Conference of OR*, 181-187 (2004).
3. Sanyasiraju, YVSS and Manjula, V., Higher Order Semi Compact scheme to flow past an impulsively started circular cylinder for $Re \leq 1000$, *Forty ninth congress of ISTAM*, 156-163 (2004).
4. Sanyasiraju, YVSS and Chandhini, G., Grid free scheme for steady convection diffusion equation using multi-quadratics, *Proceedings of Forty ninth congress of ISTAM*, 164-170 (2004).

Distinguished visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date	Purpose of visit
1.	Dr. C. R. Subramanian Institute of Mathematical Sciences, Chennai	08.04.04	Seminar Talk
2.	Prof. A. K. Biswas Head, Indian Statistical Institute Chennai	15.04.04	Seminar Talk
3.	Prof. R. Balasubramanian Director, Institute of Mathematical Sciences Chennai	27.08.04	Seminar Talk
4.	Prof. S. Senthamarai Kannan, Chennai Mathematical Institute, Chennai	03.09.04	Seminar Talk
5.	Prof. R. Parvatham Ramanujan Institute for Advanced Study in Mathematics Madras University, Chennai	Sep.7, 2004- March 6, 2005	Visiting Faculty on Sabbatical leave
6.	Prof. R. Sahadevan Ramanujan Institute for Advanced Study in Mathematics, University of Madras, Chennai	10.09.04	Seminar Talk
7.	Dr. R. Padma AU-KBC Research Centre MIT Campus, Anna University, Chennai	17.09.04	Seminar Talk
8.	Prof. V. Balakrishnan Department of Physics, IIT Madras, Chennai	01.10.04	Seminar Talk
9.	Dr. Sudarshan Tiwari Fraunhofer Institute for Industrial Mathematics Germany	Oct.10 – 15. 2004	Discussion with faculty and to give series of lectures
10.	Dr. Ram R. Bishu Professor Industrial and Management Systems Engg., University of Nebraska Lincoln, U.S.A.	15.10.04	Seminar Talk
11.	Prof. R. Anantharaman, Clark Atlanta University, Atlanta, U.S.A.	One month from Oct. 14, 2004	Discussion with faculty and to give series of lectures
12.	Prof. K. Viswanath Professor Emeritus University of Hyderabad, Hyderabad	01.11.04	Seminar Talk
13.	Prof. K. Parthasarathy Ramanujan Institute for Advanced Study in Mathematics, University of Madras, Chennai	22.11.04	Seminar Talk
14.	Prof. K. P. Kistner University of Bielefeld, Germany	Dec.3-29, 2004	BMBF Project discussion with Prof. S. Kalpakam
15.	Prof. Katta G. Murthy Dept. of IOE, University of Michigan, USA	10.01.05	Seminar Talk
16.	Mr. Nageswaran Visweswaran Graduate Student University of Massachusetts, Amherst, USA	19.01.05	Seminar Talk

17.	Dr. S. Shrihari The Institute of Mathematical Sciences CIT Campus, Chennai	20.01.05	Seminar Talk
18.	Prof. V. Kannan Department of Mathematics and Statistics, University of Hyderabad Central University, Hyderabad	27.01.05	Seminar Talk
19.	Prof. E. G. Tulapurkara Department of Aerospace Engineering IIT Madras, Chennai	28.01.05	Seminar Talk
20.	Prof. Uichiro Narusawa Mechanical & Industrial Engineering, Northeastern University Boston, USA	31.01.05	Seminar Talk
21.	Dr. Naren Naik (Ph.D from Indian Institute of Science) P.D.F. from Vrije Universiteit Brussel, Belgium	04.02.05	Seminar Talk
22.	Prof. V. S. Sunder The Institute of Mathematical Sciences Chennai	11.02.05	Seminar Talk
23.	Prof. S. Kesavan The Institute of Mathematical Sciences Chennai	18.02.05	Seminar Talk
24.	Prof. Peter A Hasto Research Visitor Norwegian University of Science and Technology, Norway	Feb.27 – Mar. 30, 2005	for a Joint Research work with Dr.S. Ponnusamy
25.	Prof. R. Shivaji Department of Mathematics Mississippi State University, USA	09.03.05	Seminar Talk
26.	Prof. V. Thangaraj Ramanujan Institute for Advanced Study in Mathematics, University of Madras, Chennai	18.03.05	Seminar Talk
27.	Dr. Jayaraman Sethuraman Professor Emeritus and Adjunct Professor Department of Statistics Florida State University, USA	Six months from March 21, 2005	Fulbright Visiting faculty

4.11.5 Other Activities:

The faculty members of the department have been

- Reviewers for Mathematical Reviews/Zentral blatt fur Mathematik
- Referees for various National and International Journals
- Members of Evaluation Committees of project proposals
- Members of various Committees/Boards of IIT Madras / Universities / National Institutions
- Members of various Academies and Professional Societies such as AMS, IMS, ISPS, ISTE, ICTP & AeSI.

M.Sc. JOINT ADMISSIONS TEST (JAM 2004) :

From the year 2004, students were admitted to the two year M.Sc. (Mathematics) programme through an All India Joint Admission test (JAM) common to IITs.

National Symposium on Mathematical Methods and Applications (NSMMA – 2004) :

A one day 'National Symposium on Mathematical Methods and Applications (NSMMA 2004)' to commemorate the birth anniversary of Sri Srinivasa Ramanujan was conducted on 22nd December 2004. The Head of the Department Prof. S. Kalpakam was the Chairperson and Dr. Ch. Srinivasa Rao was the Secretary of the above national symposium.

The day's events were inaugurated by Prof. M. S. Ananth, Director, IIT Madras, Chennai. There were three invited talks in the morning session by Prof. Krishna B. Athreya, Iowa State University, USA, Prof. Klaus Peter Kistner, University of Bielefeld, Germany and Prof. Adimurthi, TIFR, Bangalore. About 112 registered participants attended the symposium and 83 of them presented their work in parallel sessions conducted during the symposium. The valedictory function was chaired by Prof. S. Santhakumar, Dean of Academic Courses.

FORAYS 2005– A MATH FEST:

FORAYS, the annual mathematics festival organized by the students of the Department of Mathematics was held on 26th and 27th February, 2005. Prof. S. Kalpakam, Head of the Department was the Chairperson, Dr. K. C. Sivakumar, the Faculty Co-ordinator and Mr. Vaidyanathan Prahlad, the student Co-ordinator of FORAYS 2005.

FORAYS 2005 started with the Inaugural function chaired by Prof. V. G. Idichandy, Dean (Students), followed by an invited lecture on "Isoperimetric Inequalities" by Prof. S. Kesavan, The Institute of Mathematical Sciences, Chennai. Events such as Quiz, Olympiad, Hodge Podge, Big Fight and Informals were conducted as part of the math fest. FORAYS 2005 was well attended with nearly 80 colleges participating in the events. The Valedictory function was chaired by Prof. V. Kalyanaraman, Dean (IC & SR) who also distributed the prizes to the winners.

4.12 DEPARTMENT OF MECHANICAL ENGINEERING

4.12.1 Introduction:

The Department of Mechanical Engineering was established in the year 1959. The Department offers Ph.D, M.S., M.Tech and B.Tech programmes. The Department has excellent facilities to carry out state-of-the-art research in three major disciplines of Mechanical Engineering namely, Thermal Engineering Stream, Design Stream and Manufacturing Engineering Stream.

The Thermal Engineering Stream comprises of six laboratories namely, Heat Transfer and Thermal Power, Hydro-Turbo Machines, I.C. Engines, Refrigeration & Aircoditioning, Thermal-Turbo Machines and Thermodynamics & Combustion.

The Design Stream consists of the Machine Design Section, Machine Dynamics laboratory and Composites Technology Centre.

The Manufacturing Engineering Stream consists of the Manufacturing Engineering Section and Precision Engineering & Instrumentation laboratories.

4.12.2 Academic Programmes:

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	70	85	87	92	-	334
Dual Degree	49	25	25	19	19	137
M.Tech.	103	105	-	-	-	208
M.S.	50	27	21	4	-	102
Ph.D.	62	42	31	24	23	182
Total	334	284	164	139	42	963

Names of Student/Scholar who attended Conference/Seminar and symposia abroad/India

Sl. No.	Name of the Student/Scholar	Programme	Name of the Conference/Seminar/ Symposia	Date and Venue
Conference:				
1.	M.Sreekumar	Ph.D	National conference on Advances in Manufacturing and Resource Analysis	18 & 19 th Feb.2005 Dindugul
2.	Uma Maheshwar P.Usha Sri Murari Sridhar BVN. Rama Kumar	Ph.D.	Third International Conference on Theoretical, Applied, Computational and Experimental Mechanics	December 28 – 30, 2004 at IIT Kharagpur.
3.	Senthil Kumar R.	Ph.D.	31 st National conference on fluid mechanics and fluid power	16 th to 18 th Dec 2004 Jadavpur University, Kolkata
4.	Sathish Kumar S.	Ph.D.	Trombay symposium on desalination and water reuse	10 th & 11 th Feb. 2005 Bhaba Atomic Research Centre, Mumbai
5.	Muthukumar P.	Ph.D.	International conference on solid state hydrogen storage materials and applications	Jan. 31 to Feb. 1, 2005 -International Advanced Research Center for Powder Metallurgy and New Materials (ARCI), Hyderabad.
6.	Rajesh, N.	Ph. D.	Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr. 2, 2004, Indian Institute of Technology Madras, Chennai.
7.	Ajmal Deen Ali, MS	Ph. D.	Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr.2, 2004, Indian Institute of Technology Madras, Chennai.

8.	John Rozario Jegaraj, J	Ph. D.	21 st All India Mfg. Technology Design and Research Conference	Dec. 20-22, 2004, Vellore Institute of Technology, Vellore
			Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr. 2, 2004, Indian Institute of Technology Madras, Chennai
9.	Mohān, L.V.	Ph. D.	International Conference on Precision Engg. 2004	March 2004 Singapore
			Conference on Advances in Materials and Manufacturing Technology (CAMMT)	April 2, 2004, Indian Institute of Technology Madras, Chennai.
10.	Vikram Kumar, Ch. R.	Ph. D.	All India Seminar/ Conference on Advances in Mechanical Eng.	Aug. 20-21, 2004, S.V. University, Tirupati.
			21 st All India Mfg. Technology Design and Research Conference	Dec. 20-22, 2004, Vellore Institute of Technology, Vellore
			Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr. 2, 2004, Indian Institute of Technology Madras, Chennai
			Emerging Technologies in Intelligent System and Control (EISCO-2005)	Jan. 2005, Kumaraguru college of Technology, Coimbatore
11.	Srinivas, D.S.	Ph. D.	All India Seminar/ Conference on Advances in Mechanical Eng.	Aug. 20-21, 2004, SVU, Tirupati
			21 st All India Mfg. Technology Design and Research Conference	Dec. 2-2004, Vellore Institute of Technology, Vellore
			Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr. 2004, Indian Institute of Technology Madras, Chennai
			Emerging Technologies in Intelligent System and Control (EISCO-2005)	Jan. 2005, Kumaraguru college of Technology, Coimbatore
12.	Murugan, S.	Ph. D.	Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr. 2, 2004, Indian Institute of Technology Madras, Chennai.
13.	Anand Ronald. B.	Ph. D.	Conference on Advances in Materials and Manufacturing Technology (CAMMT)	Apr.2, 2004, Indian Institute of Technology Madras, Chennai.
14.	Dhanasekar, B.	Ph. D.	21 st All India Mfg. Technology Design and Research Conference	Dec.20-22, 2004, Vellore Institute of Technology, Vellore
			Emerging Technologies in Intelligent System and Control (EISCO-2005)	Jan. 5-7, 2005, Kumaraguru College of Technology, Coimbatore.
			Advances in Metrology (Admet – 2005)	Feb. 2005, National Physical Laboratory (NPL), Delhi
15.	Venkaiāh. N.	Ph.D.	All India Seminar/ Conference on Advances in Mechanical Engg. 21 st All India Mfg. Technology Design and Research Conference	Aug. 20-21, 2004, S.V University, Tirupati Dec. 20-22, 2004, Vellore Institute of Technology, Vellore
16.	Kannan, T.R.	Ph.D.	Global congress on Manufacturing and Management (GCM04)	Dec. 8-9, 2004 Vellore Institute of Technology, Vellore.

17.	Saravana Kumar, P.	M.S.	International Conference on Emerging Technologies in Intelligent System and Control-2005	Jan. 2005, Kumaraguru College of Technology, Coimbatore.
18.	Vijaya Bhaskar, S.	M.S.	All India conference on Advances in Mechanical Engineering.	Jan. 2005, S.V. University, Tirupathi
19.	A.S. Krishnan	Ph.D.	6 th World Conf. on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics	April 17-21 Matshushima, Miyagi, Japan
20.	J. Narayana Reddy	M.S.	National Conf. on "State-of-the-art of Technologies in Mech. Engg.	June 29-30 2004 JNTU, Hyderabad
21.	B. Balakrishna Reddy	M.S.	National Conf. on "State-of-the-art of Technologies in Mech. Engg.	June 29-30 2004 JNTU, Hyderabad
22.	J. Nazar	Ph.D.	National Conf. on "State-of-the-art of Technologies in Mech. Engg.	June 29-30 2004 JNTU, Hyderabad
23.	J. Narayana Reddy	M.S.	4 th Int. Symp. on Fuels and Lubricants	Oct. 27-29, 2005 Hotel Le Meridien, New Delhi
24.	S. Ganesan S. Suresh Kumar T. Anand Kumar	Ph.D M.S. Ph.D.	2 nd Star-CD User Conference Meet	7.2.2005 Hotel Le Meridien, Bangalore
25.	Vijaya Shree V. Jyothish Kumar	Lab. Asst. Ph.D.	SAE Youth Conference-2005	March 3-5, 2005 PSG College of Tech., Coimbatore
26.	E. Porpatham	Ph.D.	International Seminar Viz. PRITHVI 2005	19-28 Feb. 2005 Hotel Muscut Trivandrum
27.	M. Loganathan	Ph.D.	Second National Conference on Automotive Infotronics, SAE India	10 th & 11 th Dec. 2004 IIT Madras
28.	P.V. Manivannan	Ph.D.	Second National Conference on Automotive Infotronics, SAE India	10 th & 11 th Dec. 2004 IIT Madras
29.	Ramesh R	Ph.D.	International Conference on Advanced Tribology (iCAT2004), Singapore	1-3 December 2004, Singapore
30.	G Srinath	Ph.D.	1 st International Conference on Advanced Tribology; iCAT 2004.	Dec 1-3 2004 National University of Singapore
31.	G. Baskaran	M.S.	Attended the Review of Progress in QNDE held at Golden Colarado,	July 2004, USA
32.	G Srinath	Ph.D.	International Exhibition & Conference on Advancements in Materials ASM International and FCCI and Processes for the Transportation Sector; Transmat 2004, Mumbai	Nov 8-10, 2004 Mumbai
33.	Ramesh R	Ph.D.	International convention on surface engineering, INCOSURF2004,	August 25-27, 2004, Bangalore, India
34.	G Srinath	Ph.D.	International symposium of Research scholars; ISRS 2004, Chennai	Dec 20-23 2004 IIT Madras
35.	S Senthilvelan	Ph.D.	TRANSMAT 2004, International Exhibition & Conference on Advancement in Materials and Processes for the Transportations Sector	November 8-10, 2004, Mumbai

36.	S. Senthilvelan	Ph.D.	Third ISAMPE National Conference on Composites,	October 7-9, 2004, .Research and Development Establishment (Engrs), Pune
37.	S. Senthilvelan	Ph.D.	21 st AIMTDR Conference	20-22 December, 2004. Vellore Institute of Technology, Vellore
38.	S. Senthilvelan	Ph.D.	Indo Japan Conference on Damage Tolerant Design and Materials	Dec 16-18,2004 IIT Madras
39.	Ramesh R	Ph.D.	International Conference on Heat Treatment ASM,	9-10 January 2004, , Chennai
40.	Ramesh R	Ph.D.	Indo-Japan conference on Damage tolerant design & Materials (DTDM)	16-18 December 2004, IIT Madras
41.	Rajesh K. Bhangale	Ph.D.	3rd International Conference on Vibration Engineering and Technology of Machinery and the 4th Asia-Pacific Conference on System Integrity and Maintenance	6-9 December 2004 Hotel Intercontinental The Grand, New Delhi
42.	Rajesh K. Bhangale	Ph.D.	1st International Congress on Computational Mechanics and Simulations	9-12 December 2004 IIT Kanpur
43.	Rajesh K. Bhangale	Ph.D.	3rd International Conference on Theoretical Applied and Computational Mechanics	27-30 December 2004, IIT Kanpur
Seminar:				
1.	M.Sreekumar	Ph.D	National seminar on Advances in Image processing & Robotics	25-26 Feb.2005 Anna University Chennai.
2.	J.Nagaraju	M.Tech	National Seminar on advances in Image Processing & Robotics	25-26 Feb.2005 Anna University Chennai.

4.12.3 Faculty and their activities:

Faculty:

Name and Qualifications

Major area of specialization (only 3 areas)

Professors

- | | | |
|-----|---------------------------------|--|
| 1. | Ajit Kumar Kolar, Ph.D. | Fluidised Bed Combustion, Biofuels, Fuel Cells |
| 2. | Balabaskaran, V, Ph.D. | Hydroturbomachines, Ducted propeller, CFD |
| 3. | Das, SK, Ph.D. | Heat Exchangers, Two phase flow, Nano fluids, Jet Oscillations, Nuclear Heat Transfer |
| 4. | Ganesan, N, Ph.D. | Finite Element Analysis, Vibration and Smart Structures |
| 5. | Ganesan, V, Ph.D. | Simulation, CFD, Fluid Flow in Engines and Gasturbines |
| 6. | Gopinath, K, Ph.D. | Design of test rigs, presses, SPM |
| 7. | Govardhan, M | Thermal Turbomachines. (On EOL) |
| 8. | Krishnaiah Chetty, OV, Ph.D. | Conventional and Unconventional Machining, FMS, CIM, Scheduling Petrinets |
| 9. | Krishnakumar, R, Ph.D. | Non-linear Finite Elements, Computer Aided Design, Simulation of Manufacturing Process, Tire Mechanics and Bio Mechanics |
| 10. | Krishnan Balasubramaniam, Ph.D. | Nondestructive Evaluation |
| 11. | Kumaraswamy, S, Ph.D. | Fluid Mechanics – pumps and hydroturbines – design, analysis and testing, cavitation in hydroturbo machines – computer aided design and instrumentation – pumps applications |
| 12. | Madhusudana Rao, M, Ph.D. | Mechanical Handling |
| 13. | Maiya, MP, Ph.D. | Sorption Systems, Desiccant and evaporative, cooling, Air-conditioning |

14. Mani, A, Ph.D. Solar energy, refrigeration and airconditioning, Cryogenic Engineering, Alternate working fluids, Effluent treatment
15. Nagarajan, T, Ph.D. Robotics, Pneumatics Medical Instruments
16. Narayanan, S, Ph.D. Vibration, Smart Structures
17. Narayanasamy, K, Ph.D. Precision Engineering, High Precision Manufacturing, Surface Technology.
18. Pramod S Mehta, Ph.D. Combustion Modelling, Fluid Dynamics in IC Engines, Engine Emission Control
19. Prasad, BVSSS, Ph.D. Turbomachines, Fluid Mechanics, Heat Transfer.
20. Premananda Shet, US, Ph.D. Design of gas oil and solid fuel burners, swirl combustion, flame image analysis, control of combustion generated pollutants, super-sonic combustion, thermodynamics, combustion and propulsion
21. Raju Sethuraman, Ph.D. Computational Solid Mechanics, Fatigue and Fracture of Material
22. Ramamoorthy, B., Ph.D. Metrology, CAI/Sensors/Mfg. Engg/Quality control
23. Ramesh Babu, N, Ph.D. CNC, CAM, LBM, WJM, Grinding, PLC Applications in Manufacturing
24. Ramesh, A, Ph.D. IC Engine Combustion and Emissions, Electronic Engine Management, Alternative Fuels
25. Shunmugam, MS, Ph.D. Metrology, BTA, Gear Machining, Grinding, EDM, Statistical Quality Assurance, Automation, Computer Aided Manufacturing Systems and Control
26. Singaperumal, M, Ph.D. Fluid Power, System Simulation, Mechatronics Precision Engineering.
27. Siva Prasad, N, Ph.D. CAD, Design
28. Srinivasa Murthy, S, Ph.D. Refrigeration, Thermal Energy Conservation and Heat Pumps, Solar energy, Cryogenic Engineering, Food Processing, Hydrogen energy
29. Srinivasa, Y G, Ph.D. Control Active Suspension, Active Vibration Control, Extrude Honing
30. Sujatha, C (Ms.) , Ph.D. Machine Dynamics, Machinery Diagnostics; Vehicular Vibration, Instrumentation and signal analysis
31. Sundararajan, T, Ph.D. Droplet Combustion, Super-sonic Reacting Jet flows, Computational Fluid Dynamics
32. Swarnamani, S, Ph.D. Smart Structures, Active Vibration Control, Machinery Diagnostics
33. Venkatarathnam, G, Ph.D. Cryogenic Systems, Cryo-coolers, Compact Heat Exchangers, Mixed Refrigerant Systems, Natural Gas liquefaction
34. Venkateshan, SP, Ph.D. Heat Transfer, Instrumentation
35. Vijayaraghavan, L, Ph.D. Metal Cutting, CAD, Grinding, Condition Monitoring and Surface Technology

Associate Professors:

36. Babu Viswanathan, Ph.D. CFD, High speed Reacting Flows, High performance computing
37. Chakravarthy Balaji, Ph.D. Computational Heat Transfer, Free Convection and Radiation Heat Transfer, Design and Optimisation of Thermal Systems, Second Law Analysis of Heat Transfer Systems, Inverse Heat Transfer, Atmospheric Radiation, High Speed Heat Transfer
38. Chandramouli, P, Ph.D. Nonlinear Dynamics, Acoustics & Noise Control and Vibration
39. Gnanamoorthy, R, Ph.D. Machine Design, Advanced Materials, Fatigue and Fracture Mechanics, Failure Analysis, Tribology
40. Mayuram, M M, Ph.D. Wear, Fatigue, Surface Engineering
41. Muthuveerappan, G, Ph.D. Gear Design
42. Raghu Prakash, V, Ph.D. Experimental Fatigue Analysis, Structural integrity, Test systems design.
43. Sitaram, N, Ph.D. Thermal Turbomachines

Assistant Professors:

44. Arunn Narasimhan, Ph.D. Heat Transfer and Fluid Flow in Porous Media, Phase Change and Convection
45. Dhiman Chatterjee, Ph.D. Cavitation, Turbomachines and Two phase Flow
46. Mallikarjuna, JM, Ph.D. Simulation of Engine processes, Data Acquisition, Design of Engine Components
47. Samuel, JM, Ph.D. Micro Machining, CAD-CAM, FMS
48. Shamit Bakshi, Ph.D. CFD in I.C. Engines, Liquid Atomization and Spray Systems, Fuel Nozzle Modeling

49. Shankar Krishnapillai, Ph.D. FEM, Vibration, Design Optimisation
 50. Srinivasa Reddy, K, Ph.D. Renewable Energies, Solar Energy, Energy Conservation, Energy Environment, Energy Auditing
 51. Srinivasan, K, Ph.D. Jet Flow and Noise, Active and Passive Flow Control, Measurement and Instrumentation

Henry Ford Chair Professor:

52. Sharma, RP Engine Design, Tribology and Emission Control

Emeritus Fellow (AICTE):

53. Krishnamurthy, R, Ph.D. Metal Cutting, Grinding, Unconventional Machining Ceramics
 54. Nagalingam, B, Ph.D. I.C. Engines

Scientific Officer Gr. II

55. Raja Rao, S., M.E. Engineering Drawing, Machine Drawing, Computer Graphics

Short-term Courses/Workshops/Seminars/Symposia/Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	V. Chandramouli (Coordinator)	Technology Appreciation Programme on Acoustics and Noise Control for Industry	April 13, 2005
2.	Prof. S. Srinivasa Murthy & Prof M.P. Maiya	IIT Madras-ISRO joint workshop on Technologies for utilization of hydrogen energy for ground based applications	Feb 8, 2005
3.	Prof. M. S. Shunmugam Prof. L. Vijayaraghavan Dr. M. Mayuram	National Conference on Advances in Materials and Manufacturing Technology (CAMMT)	April 2, 2004
4.	R Gnanamoorthy	Indo Japan Conference on Damage Tolerant Design and Materials	16-18 December 2004
5.	S Srinivasa Murthy	International Conference on Solid State Hydrogen Storage-Materials and Applications, Hyderabad	January 31- February 1, 2005
Workshop:			
1.	Krishnan Balasubramaniam	Ultrasonic Modeling and Simulation	June 3-5, 2004
2.	S. Mohan U.S.P. Shet, and S.R. Gandhi	National Workshop on Incineration and Solid Waste Management for Clean Environment	April 29-30, 2005
3.	R.P. Sharma	Engine Tribology for Fuel Economy and Reduced Emissions, SAE Top Tech Program	April 16, 2005
Short Term Course:			
1.	S. Narayanan	Acoustics: Measurement and Abatement, Satyam IDC Hyderabad	May 10 to 14, 2004
2.	L. Vijayaraghavan S. Venkataramaniah	AICTE Sponsored QIP Short-Term Program on "Trends in Handling Technologies (T-HAT)"	July 2-3, 2004
3.	C. Balaji S.P. Venkateshan	Optimization of Thermal Systems	6 th Dec. to 17 Dec. 2004
4.	Srinivas Reddy Ajit Kumar Kolar	Advanced Energy Technologies	20 th Dec. to 24 th Dec. 2004
5.	Ajit Kumar Kolar BVSSS Prasad K. Srinivas Reddy	Bio-fuel Conversion	14 th Dec. to 16 th Dec. 2004
6.	A. Ramesh J.M. Mallikarjuna	Advances in Automotive Engine Technology	1.11.2004 to 5.11.2004
7.	P. Chandramouli/ C. Sujatha/ S. Swarnamani	Vehicle Dynamics	Dec 2004

Short-term Courses / Workshops / Seminars / Symposia / Conferences / Training attended by the faculty members in Academic institutions and public sector undertakings:

Sl. No.	Name of faculty	Title	Period
Workshop:			
1.	R.P. Sharma	Workshop on Effect of Pollution on Environment Engineering College, Trivandrum	Nov. 8, 2004
2.	R.P. Sharma	Joint-Indo Swedish Workshop on Biofuels IITM	Dec. 16, 2004
3.	C. Sujatha	Two day customized program on improving interpersonal effectiveness and communication	IIT Madras October 2004
Conference:			
1.	J.M. Mallikarjuna	National Conf. on "State-of-the-Art of Technologies in Mech. Engineering, JNTU, Hyderabad	June 29-30, 2004
2.	A. Ramesh Mr. J. Narayana Reddy	National Conf. on "State-of-the-Art of Technologies in Mech. Engineering, JNTU, Hyderabad	June 29-30, 2004
3.	A. Ramesh	4 th Int. Sym. On Fuels and Lubricants Hotel Le Meridien, New Delhi.	Oct. 27-29, 2004
4.	A. Ramesh	National Conference on Advances in Mech. Engg. (Chaired a Technical Session) Sri Venkateswara Univ., Tripathi	Aug. 20, 2004
5.	A. Ramesh	International Seminar Viz., PRITHVI 2005 Hotel Muscut Trivandrum	Feb. 19-28, 2005
6.	R.P. Sharma	Int. Conf. on Hydrogen Energy Manila, Philipines	Jan. 5-11, 2005
7.	R.P. Sharma	International Conference on Solid State Hydrogen Storage – Materials and Applications Hyderabad	Jan. 31 & Feb. 1. 2005
8.	R.P. Sharma	4 th Int. Sym. On Fuels and Lubricants New Delhi	Oct. 27-29, 2004
9.	R.P. Sharma	Symposium on International Indian Automotive Technology, ARAI, Pune	Jan. 21-22, 2005
10.	A. Ramesh	Second National Conference on Automotive Infotronics, SAE India, IIT Madras	Dec. 10 & 11, 2004
11.	Krishnan Balasubramaniam	Review of Progress in Quantitative NDE, Goldan, Colorado, USA	July 27-30, 2004
12.	Krishnan Balasubramaniam	NDE 2004	Dec. 11-13, 2004, Pune.
13.	Narayanan S	International Conference on Theroretical, Applied Computational and Experimental Mechanics IIT Kharagpur	December 2004
14.	Chandramouli P	International Conference on Theroretical, Applied Computational and Experimental Mechanics IIT Kharagpur (Along with S. Jayasankar, Research Scholar)	December 2004
15.	Chandramouli P and S. Narayanan	VETOMAC-III, New Delhi (along with M. D. Narayanan)	-
16.	Chandramouli P	Invited Lectures for Workshop in Rotordynamics at MIT Manipal, Karnataka	Dec 2004
17.	Krishnan Balasubramaniam	Attended the INDO-US Workshop on Smart Systems held in Mumbai and presented a technical talk.	Dec. 20-22, 2004
18.	Krishnan Balasubramaniam	Attended the ISSS Workshop on Advances in Smart Materials and Structures in Bangalore and presented an invited talk.	Dec. 20-22, 2004
19.	Raju Sethuraman	Finite element displacement based evaluation of stress intensity factors for semi elliptical surface cracks, International congress on computational mechanics and simulation, International congress on computational mechanics and simulation, PP 548-555	December 2004 IIT-Kanpur, India

20.	Raju Sethuraman	Element free Galerkin method based pseudo elastic analysis of elasto-plastic problems, International congress on computational mechanics and simulation, PP 340-347, IIT-Kanpur, India.	December 2004
21.	Raju Sethuraman	Demonstration of LBB phenomenon on a full scale pipe bend in secondary sodium piping, Indo Japan conference on Damage Tolerant design and materials, PP 69-72, IIT-Madras, India	December 2000
22.	Raghu Prakash	Investigation of Fatigue Damage in Polymeric Composites using multiple Fibre Bragg Grating Sensing, at the Third International Conference on Fatigue of Composites (ICFC3), Kyoto, Japan	Sep 13-16, 2004
23.	T.Nagarajan	International Conference ASPE-Annual Meeting at Orlando,Florida, USA,	24.10.2004 to 29.10.2004
24.	K.Narayanasamy	International Conference ASPE-Annual Meeting at Orlando,Florida, USA	24.10.2004 to 29.10.2004

Special Lectures delivered by the faculty in other Institutions:

Sl.No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	S. Narayanan	Introduction to Probability Theory and Stochastic Process	NPEEE sponsored short term course on Advanced Earthquake Geotechnical Analysis (AEGA 2004), July 12-16, 2004
2.	U.S.P. Shet	Combustion Technologies For a Clean Environment	Sardar Vallabhbhai National Institute of Technology, SURAT – 395 007, Gujarat Feb 28, 2005
3.	U.S.P. Shet	Basic Processes in Atomization and Performance Characteristics of Plain-Orifice, Pressure-Swirl and Air-Blast Atomizers at the Workshop on Droplet and Spray Combustion	Dept. of Mechanical Engineering, Jadavpur University, Kolkata, March 11-12, 2005
4.	U.S.P. Shet	Flame Stabilization in Scramjets	M.I.T., Chrompet, Chennai- 44 April 6, 2005
5.	Ramesh Babu, N.	Guest lecture on "Rapid Response Manufacturing" Guest lecture on "Motion Planning of Robots"	(i) NIT Jalandhar (28.09.04) (ii) NIT Trichy, (30.12.04) (iii) NIT Warrangal (24.3.05) Arunai Engg. College, 7.12.04
6.	Shunmugam, M.S.	Keynote talk on "Surface finish measurement" at National Conf. on Competitive Manuf. Technol. & Mgmt for Global Mktg. Keynote address on "Gear cutting tools and generation processes" at National Conf. on Emerging Technol. in Adv. Manuf.	Jan 2005, VIT Vellore KLN College, Madurai, Feb.19, 2005
7.	Vijayaraghavan, L.	Invited talk on "Basics of Machining" Key note address on "Micro-Machining" Invited talk on "Advances in Machining"	Honeywell Trg. Cntr, Madurai, 27.02.04 Bharat Institute of Technology, Chennai, 29.7.04, Annamalai Univ., 16.11.04
8.	K. Srinivas Reddy	Solar Paraboloidal Dish Collector for Viable Power Generation	For a short-term training Program on Energy and Cryogenic Engg., sponsored by AICTE-ISTE at Vellore Engg. College, on 22 nd Nov. 2004
9.	Sarit K. Das	Advances in the Research in Plate Heat Exchangers	Lund Univ. Sweden. June 2004
10.	A. Ramesh	Electronics and the Automobile. Key note talk	JNTU, Hyderabad June 29-30, 2004

11.	A. Ramesh	Use of LPG in I.C. Engines	Dept. of Mech. Engg. Annamalai Univ. June 10, 2004
12.	R.P. Sharma	Trends on Engine Designs	Kongu Engineering College, Erode 27.8.2004
13.	R.P. Sharma	Use of CNG/LPG in Automotive Engine	Workshop on Refinery Technology held at Indian Institute of Petroleum, Dehradun, Aug. 8, 2004
14.	R.P. Sharma	Engine Design and Automotive Emissions	Workshop on Refinery Technology held at Indian Institute of Petroleum, Dehradun, Aug. 8, 2004
15.	R.P. Sharma	Engine Design and Automotive Emissions	Vellore Institute of Technology, March 12, 2005
16.	R.P. Sharma	Use of Bio-diesel in India	Periyar College of Engineering, Tanjore, Oct. 9, 2004
17.	R.P. Sharma	Biodiesel – An Indian Perspective	Indo-Swedish Workshop, on Biofuels, IITM, Dec.18, 2004
18.	R.P. Sharma	Industrial Lecture on Energy, Efficiency and Emissions Of Automotive Engines	Dept. of Civil Engg., IIT Madras, March 18, 2004
19.	R.P. Sharma	Engine Design and Automobile	Hindustan College of Technology, Chennai Aug.7,2004
20.	R.P. Sharma	Perspective on Automotive Emission	SRM College of Engineering, Chennai Aug.13, 2004
21.	R.P. Sharma	Engine Emission Workshop on Auto	Sri Chandrasekharendra Saraswati Viswa Maha Vidayala, Kanchipuram, July 24, 2004
22.	R.P. Sharma	Future of Automotive Emissions	PSG College of Engg., Coimbatore, July 31, 2004
23.	R.P. Sharma	Perspective in Automotive Engineering	College of Engineering, Thiruvananthapuram Nov. 8, 2004
24.	R.P. Sharma	CNG/LPG as an Automotive Fuels	Training course at IIP Dehradun for Refinery Engineers April 18, 2005
	J.M. Mallikarjuna	Materials for components of Internal Combustion Engines	BIET, Davanagere Aug. 23, 2004
26.	A. Ramesh	Future Trends in Automotive Electronics	SAE India Collegiate Club, Dept. of Automobile Engg., SACS M.A.V.M.M. Engineering College, Madurai, Oct. 11, 2004
27.	J.M. Mallikarjuna	FEM Problem Solving using Ansys	JNTU, Kakinada Jan 3, 2005
28.	A. Ramesh	Data Acquisition and Analysis in Engine Research and Development	Pune Institute of Engg. Technology, Pune, Dec. 18, 2004
29.	V. Ganesan	Future Trends in Automotive Designs	Jaya Engg. College, Thirunindravoor, Feb. 4, 2005
30.	V. Ganesan	CFD – An Overview	Sri Ram Engg. College, Perumalpattu, Feb. 17, 2005
31.	Krishnan Balasubramaniam	New Paradigm in NDE	ISNT AGM, July 2003
32.	Krishnan Balasubramaniam	Advanced NDE Methods	Sri Venkateswara Engineering Collage, Nov 2003
33.	Krishnan Balasubramaniam	Advances in Ultrasonic NDE	Anna University, Nov 2003
34.	P. Chandramouli	Noise Control in Industry	Sree Muthukumaran Institute of Technology, March 2005
35.	Dr. V. Balabaskaran Dr. Dhiman Chatterjee	Comprehensive course on CFD a) Mechanics of Cavitation Noise b) Acoustic cavitation	A short term course under CCE, IIT Madras, June 7-19 2004 Naval Science & Technological Laboratory, Visakhapatnam 27 th – 31 st Dec, 2004

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1.	T. Nagarajan	USA	24.10.2004 to 29.10.2004	Conf. Paper Presentation
2.	K.Narayanasamy	USA	24.10.2004 to 29.10.2004	Conf. Paper Presentation
3.	B.V.S.S.S. Prasad	Pisa, Italy	22.09.2004 to 24.09.2004	To attend 3 rd International Symposium on "Two Phase Flow Modeling and Experimentation".
4.	B.V.S.S.S. Prasad	Goteborg, Sweden	July 2004	To attend Indo-Swedish Workshop on Bio Fuel Conversion, presented a paper and held discussion at Chalmers University of Technology.
5.	B.V.S.S.S. Prasad	Stockholm Sweden	July 2004	Visited to Royal Institute of Technology for visiting the laboratory of Chemical Technology to see the Bio-fuel gasification and fuel cell test facilities.
6.	S. Srinivasa Murthy	Spain	July 2004	International Conference on "Integration of Thermally Activated Account with Reradiated Generation Systems" University RoviraVirgili
7.	S. Srinivasa Murthy	UK	July 2004	To finalize a proposal on Renewable Energy Network, University of Nottingham, UK
8.	S Srinivasa Murthy	Bahrain	8-10, March 2004	International Solar Energy Conference
9.	S. Srinivasa Murthy	Republic of Belarus	1st to 5th Nov. 2004	As the leader of a scientific delegation formed by The Department of Science and Technology. Also for organizing a joint workshop on "Advances in Sorption Based Thermal Devices" at Minsk.
10.	Ramamoorthy, B.	Germany	October 12-15, 2004	International Conference
11.	Vijayaraghavan, L.	Singapore	Jan. 2005	International Conference
12.	Sarit K. Das	Sweden	June 2004	Collaborative Project
13.	Sarit K. Das	South Korea	November 2004	Invited Talk
14.	R.P. Sharma	Philippines	Jan. 5-11, 2005	Attend Int. Conf. on Hydrogen Energy
15.	Krishnan Balasubramaniam	USA	9/7/04	Participate in the WFNDEC meeting and attend QNDE Conference.
16.	Krishnan Balasubramaniam	Montreal, CANADA	30/8/04	World Conference on Nondestructive Testing in and presented 2 invited technical paper and 1 Contributed paper.

Honours and Awards obtained:

Sl. No	Name of Faculty	Name of Award	Awarded by	Awarded for	Date of Award
1.	G. Venkatarathnam	--	27th National Symposium on Industrial Gases	Best technical paper	January 2004
2.	V. Ganesan	Tamil Nadu Scientist Award (TANSA 2003)	Tamil Nadu State Council for Science & Tech.	Outstanding Research Work in the field of Engg. & Technology	23.7.2004

3.	V. Ganesan	State Level Periyar Award for the Best Engineering College Teacher	ISTE, Tamil Nadu and Pondicherry Section	The best Engineering College Teacher in Tamil Nadu & Pondicherry	26.11.2004
4.	V. Ganesan	N.K. Iyengar Memorial Prize for the best paper published	The Institution of Engineers (India)	The best paper published in The Institution of Engineers (India) in the year 2003	Nov. 18, 2004
5.	V. Ganesan	SVR CET Surat Prize	Jadavpur University, Kolkatta	The best paper presented in the 31 st Nat. Conf. on Fluid Mechanics and Fluid Power	Dec. 16-18, 2005
6.	Vijaya Shree, Lab. Asst. V. Jyothish Kumar, Ph.D. Scholar	Certificate of Honor and Special Honorary Prize	SAE India – PSG College of Tech., Coimbatore	Project exhibited at 2 nd National Automotive SAE India Youth Conference 2005	3-5 th Mar. 2005
7.	V. Ganesan	Khosla National Award	IIT Roorkee	Life Time Achievement	28.3.2005
8.	K. Gopinath	Alumni Excellence award	NIIT Surathkal	Technical Education	25-12-2004
9.	K. Gopinath	Vikas Rathna Award	International Institute for Success Awareness, New Delhi	Contributions & achievements in the Mechanical Engg. Design field	9-1-2005

Books/Monographs authored or co-authored:

S.No.	Name of Faculty	Title	Publisher	Author/Co-author
Books:				
1.	S.P. Venkatesan	A First Course in Heat Transfer	M/s ANE Books, New Delhi	Nil
2.	S.K. Das	Process Heat Transfer	Narosa Publishers, Delhi	Nil
Monographs:				
1.	C Sujatha	Communicated invited paper on "Electrodynamics"	As part of "Dynamics in Engineering Parlance"	To be published in INSA Proceedings-Part A (Physical Sciences)

Fellowships of Academies and Professional Societies :

Sl.No.	Name of Faculty	Name of the Academy /Professional Society	Level	Year of Admission
INAE:				
	R. Krishnakumar	FNAE	Fellow	2004
Others:				
1.	S Srinivasa Murthy	International Energy Foundation	Fellow	2004
2.	S Srinivasa Murthy	American Society for Mechanical Engineers	Fellow	2005

4.12.4 Design and Development Activities:

An electronically controlled fuel injection system was developed for a two-wheeler engine. The electronic control module and the software were developed in the Internal Combustion Engines Laboratory. After data collection and optimization in the test bed the system was tested on the road. This system can be further optimized for extremely low levels of emissions.

A system to vary the diesel and biogas flow rates in a dual fuel engine with electronic control has been developed. This can be modified to suit engines of any size. The system will improve the efficiency and lower emissions.

Brief and specific details of Process/Instruments/Equipment/Software Designed and developed:

1. Software for high and low speed data acquisition in engines has been developed in Lab view and tested in the lab. This software has capabilities for on line analysis of engine cylinder pressure to yield combustion parameters.
2. Design and Development of a Polymer Composite Gear Test Rig
Design and Development of a Fretting Wear Test Rig
Design and Development of a Liquid Peening Machine
Design and Development of a Novel Tribo Meter
3. The auto-tuning algorithm to tune and control several vibration modes

New facilities added or major equipment procured through project funds:

- i. Instruments have been donated by M/s National Instruments to the I.C. Engines lab for data acquisition and analysis for development of engine management systems.
- ii. A state of the art multi point fuel injection engine with an eddy current dynamometer has been procured from Maruthi Ltd and AVL India for post graduate experimental work from funds generated through the User Oriented M.Tech. Program in Automotive Engine Technology
- iii. Incylinder Pressure Sensors & Combustion Analyser – by M/s Kistler Instruments, Switzerland – Rs.35.00 lacs.

Patents filed:

Prof. Krishnan Balasubramaniam is a co-inventor on the patent filed jointly by IITM and Sieger Spintech Pvt Ltd on "Ultrasonic Contaminant Detection System"

4.12.5 Research and Consultancy :

Sl. No	Title of the Project	Period	Funding Agency	Amount (Rs.in lacs)	Co-ordinators
1.	Design of air conditioning system for 10meter EMC chamber	2004-05	Centre for Electromagnetics SAMEER, CIT Campus, Taramani 600113	0.25	M.P.Maiya

Sponsored Research Projects :

S.No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Design and Development of a self guided Vehicle (SGV) with Embedded System Controller.	04.11.2003 to 03.11.2005	DST	15,38,000/-	Y.G.Srinivasa
2.	Hardware –in-loop Design Fabrication and Testing of Real time closed-loop	17.05.2004 to 16.05.2006	ISRO	10,71,600/-	Y.G.Srinivasa
3.	Establishment of High Speed Turbo-machinery Laboratory	Sanctioned for 5 years	DST	38,00,000/-	M. Govardhan BVSSS Prasad
4.	Investigation of Subsonic Impulse and Reaction Turbine Cascades	April 2003- Sept. 2006	MHRD	10,00,000/-	M. Govardhan
5.	Turbine Rotor/Stator Interaction including Film Cooling Effects	April 2003- March 2006	ARDB	9,10,000/-	BVSSS Prasad
6.	Performance Improvement of Centrifugal Compressors by means of Squealer Tips	March 2003- Feb. 2006	CSIR	5,10,000/-	-
7.	Modernisation and Removal of Obsolescence in Thermal Turbo-machines Laboratory	April 2002- June 2004	MHRD	15,00,000/-	M. Govardhan
8.	Diffusers for Energy Efficient Centrifugal Compressors	Feb. 2001- August 2004	CSIR	5,10,000/-	M. Govardhan

9.	Control of Liquid Sprays using Hartmann Whistle	2 years	ISRO	10,16,000/-	K. Srinivasan, T. Sundararajan
10.	Optimization of Water injection system for suppression of lift-off noise	2 years	ISRO	14,76,000/-	T. Sundararajan, K. Srinivasan SR. Chakravarthy,
11.	Transient Temperature, Pressure and Flow Distribution in the Steam Generator Building Consequent to a Sodium Pool Fire	3 years	IGCAR	12,00,000/-	U.S.P. Shet, T.Sundararajan Sreenivas Jayanti
12.	Development of desiccant assisted air conditioner for low humidity applications (Concluded).	2001 - 2004 3.5 years	Ministry of Human Resource Department	10,00,000/-	M.P.Maiya S.Srinivasa Murthy
13.	Vapour compression heat pump chiller (ongoing).	2002 – 2004 4 years	Kirloskar McQuay Pvt.Ltd., Pune	15,00,000/-	S.Srinivasa Murthy M.P.Maiya A.R. Balakrishnan
14.	Demonstration of Solar Heat Driven Metal Hydride Based Heat Pump (ongoing).	2003 – 2006 3 years	MNES	23,90,000/-	S.Srinivasa Murthy M.P.Maiya
15.	Synthesis and Evaluation of Hydrogen Absorbing Alloys by Mechanical Alloying	2003 – 2006 3 years	MNES	20,00,000/-	S.Srinivasa Murthy M.P.Maiya
16.	A Study on the Performance of Tools with Nano-coatings on Machining of Hard Materials	2004 – 2005	ARDB	9,68,000/-	B Ramamoorthy M.S. Ramachandra Rao
17.	Biofuel Conversion	2003-2005	SIDA	15.00	Ajit Kumar Kolar BVSS Prasad
18.	Fundamental Studies on Thermal Properties on Nano Fluids	2003-2005	DRDO	21.00	S.K. Das
19.	Thermal and Electrical Conduction in Nano Fluids	2004-2006	DST	9.00	S.K. Das
20.	Boiling in Narrow Channels	2003-2005	ISRO	19.00	A.R. Balakrishnan S.K. Das
21.	Development of a generalized radiative transfer model including scattering for retrieval of geophysical parameters from microwave remote sensing observation from satellites	Feb. 2002 to Sept. , 2004	SAC ISRO	10.35	S.P. Venkateshan C. Balaji
22.	Development of a generalized Radiative Transfer Model including Polarization and Robust Retrieval Algorithms to obtain Geophysical Parameters over Sea and Land Surfaces using Microwave Remote Sensing Data	2 ½ years w.e.f. Sept. 2004	ISRO	15.58	S.P. Venkateshan C. Balaji
23.	Unit on Nano Science and Technology (UNANST-DST) at Indian Institute of Technology	Five years w.e.f. Nov. 2004	DST	230.00	T. Pradeep S.K. Das T. Sundarajan
24.	Porous Medium Enhanced Energy Efficient Solar Parabolic Trough Collector	3 ½ years w.e.f. from Apr. 05	MHRD	15.00	K. Srinivas Reddy Arunn Narasimhan
25.	Fuel Nozzle Modelling	2002-2005	Aeronautical R & D Board	7.47	V. Ganesan
26.	Development of High Performance Bio-gas Vegetable Oil Dual Fuel Engine	30.1.2003 to 29.1.2006	Ministry of Non-conventional Energy Sources	18.00	A. Ramesh B. Nagalingam

27.	Development of a mixture Injection System for Improved Performance and reduced emissions in two-stroke SI Engines	1.4.2003 to 30.9.2005	MHRD	10.00	A. Ramesh V. Ganesan B. Nagalingam
28.	Health Monitoring of Composite Structures using Ultrasonic Guided Wave Methods.	2001-2004 (3 Years) Ongoing	ADA	50.82	Krishnan Balasubramaniam
29.	Development of NDE Techniques for Bond Interface Evaluation in Rocket Motor	2002-2004 (2 Years) Ongoing	ISRO - SHAR	13.26	Krishnan Balasubramaniam
30.	Smart Structural Concepts for guided Wave Evaluation of Composites with Embedded Polymer Film Transducers	2002-2005 (3 Years) Ongoing	ARDB	3.53	Krishnan Balasubramaniam B.S. Prabhu
31.	Development of high power ultrasonic transducer for NDE of thick concrete structures	2002-2004 (2 Years) Ongoing	DST	13.37	Krishnan Balasubramaniam G. Makandeyalu, V.S. Murthy
32.	NDE Technology Development for Infrastructure Asset Management	2003-2006 (3 Years) Ongoing	DST	49.00	Krishnan Balasubramaniam
33.	Development of Advanced NDE Techniques for Enhanced Sensitivity, Reliability and Reduced Inspection Time for Detection and Characterization of Defects in Nuclear Components	2003-2006 (3 Years) Ongoing	BRNS	154.38	Krishnan Balasubramaniam
34.	Processing and Performance Evaluation of Polymer Composite Gears	2001-2005 (3 Years)	DST	15.7	Dr R Gnanamoorthy
35.	Modernisation of Coir Ratt	2005	Rural Technology Project (Rutag)	0.6	Shankar Krishnapillai
36.	Smart Structures for vibration Control	2002 -2004	MHRD	12.0	Dr S Narayanan Dr C Sujatha Dr P Chandramouli Dr N Ganesan
37.	Centre of Excellence for Tyre and Vehicle Dynamics		JK Tyres	143.00	R Krishnakumar
38.	Scattering Radiation and Transmission of Acoustic Signals in Composite Structures	4 yrs	Naval Research Board	30.00	S Narayanan P Chandramouli S Swarnamani C Sujatha
39.	Active Vibration Control of Plates	2 yrs	Research Centre Imarat, Hyderabad	4.95	Dr C Sujatha S Swarnamani
40.	Smart Structures for Vibration Control	3 yrs	MHRD	12.00	S Swarnamani P Chandramouli C Sujatha
41.	Scattering Radiation and Transmission of Acoustic Signals in Composite Structures	4 yrs.	Naval Research Board	30.00	S. Narayanan P.Chandramouli S.Swamamani C. Sujatha-
42.	Active Vibration Control of Plates	2 years	Research Centre Imarat, Hyderabad	4.95	S. Swarnamani
43.	Smart Structures for Vibration Control	3 years	MHRD	127	-
44.	Exploratory studies on a cavitation-induced ignition system for non-hypergolic propellant rockets	2 years	ISRO-IIT(M)	18.66	Dr. Dhiman Chatterjee Prof. S. Kumaraswamy

Industrial Consultancy projects:

S.No	Name of Faculty	Title	Industry	Amount (Rs. In Lakhs)
1.	N.Sitaram	Design, fabrication and calibration of Prandtl probe	Flakt India	0.05
2.	N.Sitaram	Calibration of Thermal Anemometer	Techmark	0.025
3.	B.V.S.S.S.Prasad	CFD Analysis of air flow for a rotating wheel drum assemble	Wheels India Ltd, Chennai	2.00
4.	B.V.S.S.S.Prasad	Design validation of pneumatic pipeline system for ICF	ICF, Chennai	3.00
5.	B.V.S.S.S.Prasad	Thermal analysis of liquid oxygen and liquid hydrogen thrbopumps	LPSC, Trivananthapuram	1.90
6.	T. Sundararajan	CFD Modelling of Injection Metering Valve	Lucas TVS	0.4
7.	T. Sundararajan	Modelling of Ageing furnace	Precision Engg. Controls	0.5
8.	B. Ramamoorthy M. S. Shunmugam	Improving efficiency of plant	Godrej Agrovet, Ambattur	0.5
9.	M. S. Shunmugam B. Ramamoorthy N. Ramesh Babu	Expert Opinion Report	(Police Department)	2.5
10.	N. Ramesh Babu	Intelligent Aids in Manufacturing – Verification of PLC Ladder Logic diagrams	General Motors (India) Pvt. Ltd., Bangalore	1.20
11.	N. Ramesh Babu	Development of software tools for automatic conversion of raster and raw vector data into clean views	Amadasoft India Pvt. Ltd. Chennai	3.60
12.	S.K. Das	Trouble shooting of the design software for six special application heat exchangers	M/s Symbiosys Technologies, Visakhapatnam	0.40
13.	Krishnan Balasubramaniam	Ultrasonic C-scan evaluation of bonded Si samples	JWTC, GE Bangalore	0.65
14.	S.Swarnamani/ P Chandramouli	Endurance Test of Breakers	Alstom, Chennai	0.54
15.	P Chandramouli	Seismic Test 245KvCT	BHEL, Jhansi	0.4968
16.	S.Swarnamani/ C Sujatha	Seismic Test on 17.5kv vcb	Alstom Allahabad	0.54
17.	C Sujatha	Seismic Test on 200kv CT	Alstom Bangalore	0.4986
18.	S.Swarnamani C.Sujatha	Seismic Test on 12kv PCVCB	Megawin Salem	0.551
19.	S.Swarnamani PChandramouli	Seismic Test 420 Pantograph	HIVELM,Chennai	0.70528
20.	S.Swarnamani S Narayanan	Seismic Test 420kVDBI	Switchgears&Strcturalsh yderabad	0.61712
21.	S.Swarnamani S Narayanan	Seismic Test 245KvDBI	Switchgears&Strcturals/ Hyderabad	0.61712
22.	S.Swarnamani PChandramouli	Seismic Test 420kVDBI	HIVELM,Chennai	0.61712
23.	S.Swarnamani P Chandramouli C Sujatha	Ride Measurement Equipment selection	Wheels India Chennai	0.47
24.	S.Swarnamani N Ganesan	Seismic Test 132KvCVT	Alstom Bangalore	1.52
25.	PChandramouli C Sujatha S.Swarnamani	Analysis of vibration	Karnatak Powercorp	0.33
26.	S.Swarnamani C Sujatha	Seismic Test on 36kv PCVCB	Megawin Salem	0.55
27.	S.Swarnamani PChandramouli S Narayanan	Noise level on crackers	CPCB NewDelhi	0.77
28.	S.Swarnamani P Chandramouli	Seismic Test 420kVDBR	Elpro Hyderabad	0.61
29.	S.Swarnamani C Sujatha	Seismic Test 245kVDBR	HIVELM,Chennai	0.92
30.	S.Swarnamani P Chandramouli	Seismic Test 145kVvcb	HIVELM,Chennai	0.67

31.	S.Swarnamani P Chandramouli	Seismic Test 145kVCBI	HIVELM,Chennai	0.67
32.	S.Swarnamani N Ganesan	Seismic Test 420kVDBR	Elpro Hyderabad	0.61
33.	C Sujatha S.Swarnamani	Seismic TestVCB	Alstom,calcutta	1.12
34.	C Sujatha S.Swarnamani P Chandramouli	Shockvibration Test25kvinverter	BombadierBaroda	072
35.	N. Ganesan	Datar Switchgear Ltd., Nashik	Seismic test on DB	33,000
36.	P.Chandramouli	Baliga Lighting Equipment Pvt. Ltd., Chennai	Seismic Test on Explosion proof lighting fixtures	19,440
37.	S. Swarnamani	Megawin Switchgear Ltd., Salem	Seismic Test on 12 kV PCVCV	55,100
38.	N. Ganesan	Alstom Ltd., Chennai	Seismic Analysis of Panel	48,600
39.	N. Ganesan	Switchgear and Structurals India Pvt., Ltd., Hyderabad	Seismic test 420 kV double break isolator	50,600
40.	P.Chandramouli S.Swarnamani	Wheels India Ltd., Chennai	Ride measurement equipment selection and development of software for ISO ride indices – calculation	88,160
41.	S. Narayanan	Alstom Ltd., Bangalore	Seismic Test on 245 kV CT	50,692
42.	P.Chandramouli	Alstom Ltd., Bangalore	Seismic Test on 120 kV gapless surge arrester	50,692
43.	P.Chandramouli S Swarnamani	Karnataka Power Corporation Ltd., Bangalore	Analysis of Vibration studies on Nagjhari power house turbine unit	33,060
44.	S.Swarnamani	Megawin Switchgear Ltd., Salem	Seismic Test on 36 kV PCVCB	55,000
45.	S.Swarnamani	Hivelm Industries, Chennai.	Seismic Test on 245 kV DBR Isolators	92,558
46.	N. Ganesan	BHEL Jhansi	Seismic Test on 132 kV CT	56202
47.	S.Swarnamani P.Chandramouli	Alstom, Kolkata	Seismic Test on Indoor VCB Panels	112404
48.	S.Swarnamani	TELK, Angamally	Seismic Test on 420 kV CT	50692
49.	S.Swarnamani P.Chandramouli	Bombardier transportation India Ltd., Vadodara	Shock and vibration test on Inverter	72732
50.	M P Maiya	SAMEER, Chennai	Design of AC System for EMC Chamber	25,000

RBIC Projects:

S.No.	Name of Faculty	Title	Industry	Amount (Rs. in Lakhs)
1.	B.V.S.S.S.Prasad	Development of set up for calibration of Heat Flux Sensor	BHEL, Trichy	9.82
2.	B.V.S.S.S. Prasad	Conjugate Heat Transfer analysis of Gas Turbine Nozzle Guide vane.	GTRE	3.40
3.	B.V.S.S.S. Prasad	Study on departure from Nucleate Boiling and Tube Dry out, Metal Temperature calculation, Heat Transfer Correlation and flow instability for super critical once through Boilers	BHEL Trichy	15.00
4.	T. Sundararajan	Modelling of Steady state and Transient characteristics of CE-20 engine testing	LPSC, ISRO	5.00
5.	V. Babu, T. Sundararajan	Modelling of Supersonic combustion based on Ramp mounted Injector	DRDL	10.00
6.	V. Babu, T. Sundararajan	Modelling of Supersonic combustion based on Strut mounted Injector	DRDL	10.00
7.	V. Ganesan	Flow Field Studies and Optimization of a Short Gas Turbine Combustor under Isothermal and Reacting Conditions using Fluent Code	GTRE, Bangalore	4.95

8.	V. Ganesan	Optimization of Fuel Manifold Position in after Burner Configuration and Parametric Studies using Fluent Code.	GTRE, Bangalore	4.95
9.	A. Ramesh V. Ganesan Mr. N. Achuthan	Indigenous Development of Engine Controller	CVRDE, Avadi, Chennai	23.00
10.	A. Ramesh	Evaluation of the Royal Enfield A350 Motor Cycle Engine	Royal Enfield, Chennai	1.50
11.	A. Ramesh	Performance, Emission and Combustion Characteristics of Bio-diesel produced from Rubber Seed Oil	Kochi Refineries Limited, Kerala	3.00
12.	V. Ganesan R.P. Sharma	Modelling of Steady Flow through Intake and Exhaust Manifolds	Infosys Technologies, Bangalore	14.00
13.	V. Ganesan R.P. Sharma	CFD Modelling and Analysis of Intake and Exhaust System	Engg. Solutions, Larsen & Toubro Vadodara	11.615
14.	Krishnan Balasubramaniam	Development of Data registry and Data Analysis algorithms for NDE Inspection of Large Area Aircraft Structures	US Airforce Research Lab./ Univseral Technology Corporation, USA	70.00
15.	Krishnan Balasubramaniam	Development of an Ultrasonic Viscosity Measurement Sensor for Glass Melts	Corning Inc., USA	9.00
16.	Krishnan Balasubramaniam	Nanoceramics Inspection and Nonlinear Experiments	GE India Technology Centre Pvt. Ltd	12.45
17.	Krishnakumar R	Determination of rolling resistance and temperature generator using FEA	J K Tyres	7.00
18.	C.Sujatha	Theoretical modeling and evaluation of vibration levels in a multi-stationed tracked vehicle installed with hydrogas suspension system	CVRDE, Avadi	1.73

Retainer Consultancy:

S.No.	Name of Faculty	Title	Industry	Amount (Rs. In Lakhs)
1.	P. Chandramouli	Noise and Vibration for automotive applications	TVS Motor Company, Hosur	0.85

Exchange programme with other Universities including Institutions/Universities under MoU:

Indo-German project on "Adaptive Control of Abrasive Water Jet Cutting Process with Soft Computing Approaches" (August 2002 – August 2005)

Value of Project: Euro 99,400

Co-ordinators : Prof. N. Ramesh Babu, IIT Madras
Prof. Dr. Ing. Hartmut Louis, Univ. of Hannover, Germany
Funding Agency: Volkswagen Foundation, Germany

Mr. Adarsh and Ms. R. Radha Malini, Product Design Dual degree students spent the summer at Michigan State University, USA, working in the area of Nondestructive Evaluation.

Mr. Akshay Rajwade, student of B.Tech. degree program spent the summer at Imperial College, London, UK, working in the area of Nondestructive Evaluation.

Sri K.B.Sudharsan M.S. Research Scholar went to Germany under student exchange program

Mr. Marc Linder of IKE Stuttgart, Germany visited R & AC Lab, IIT Madras on IIT-DAAD Fellowship

Journal Editorial Boards:

S.No.	Name of Faculty	Level	Journal
1.	M. Govardhan	Member of the Editorial Board	Journal of Thermal Sciences
2.	T. Sundararajan	Associate Editor	Computers, Materials and Continua
3.	S. Srinivasa Murthy	Associate Regional Editor	International journal of Applied Thermal Energy, Elsevier
4.	S. Srinivasa Murthy	Editorial Board Member	International Journal of Low Carbon Technologies
5.	S. Srinivasa Murthy	Editorial Board Member	Journal of Energy, Heat and Mass Transfer
6.	S. Srinivasa Murthy	Editorial Board Member	Innovative Refrigeration and Airconditioning
7.	Sarit K. Das	Associate Editor	Heat Transfer Engineering (Taylor and Francis)
8.	V. Ganesan	Member	Indian Journal of Engg. and Material Science
9.	C Sujatha	Member	Indian Journal of Transport Management
10.	C Sujatha	Member	Advances in Vibration Engineering

Research Publications:

Total Number of papers published in Refereed National Journals	:	05
Total Number of papers published in Refereed International Journals	:	68
Total Number of papers presented in National Conferences	:	52
Total Number of papers presented in International Conferences	:	103

In Refereed National Journals:

Sl.No.	Name of the faculty	Title of the paper	Name of the Journal
1.	Ananda Reddy, G. Ganesan, V	Non-reacting Flow Analysis from Combustor Inlet to Outlet using Computational Fluid Dynamics Code	Defence Science Journal, Vol. 54, No. 4, Oct. 2004, pp 455-467
2.	Kale, S.C. and Ganesan, V	Investigation of the Flow Field in the Various Region of Intake Manifold of a SI Engine	Indian Journal of Engg. and Material Sciences, India, Vol. 11, 2004, pp 85-92.
3.	Suresh Kumar, J. and Ganesan, V	Flow Through S.I. Engine Air Intake System Using CFD at Part Throttle and Full Throttle	Indian Journal of Engg. and Material Sciences, India, Vol. 11, 2004, pp 93-99
4.	Suresh Kumar, J. and Ganesan, V	Flow Analysis of S.I. Engine Air Intake System during Idling	Journal of Institution of Engineers, India., Vol. 85, 2004, pp 118-121
5.	Baskaran, G, Balasubramaniam, K and Lakshmana Rao, C	Development of an Advanced Ultrasonic TOFD System	Journal of Non-Destructive Testing & Evaluation, 3(2004) 24-32

In Referred International Journals:

S.No.	Name of the faculty	Title of the paper	Name of the Journal
1.	Y.G.Srinivasa S.S.Parthasarathy	Design of Active suspension system for a quarter car Road vehicle model using model reference control	Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineering, Part-I
2.	V. Purushotham, S. Narayanan and S.A.N. Prasad	Multi-fault diagnosis of rolling bearing elements using wavelet analysis and thidolen Markov model based fault recognition	NDT & E International, Vol.38, Issue 8, 2005
3.	J. M. Issac N. Sitaram and M. Govardhan	Effect of Diffuser Vane Height and Position on the Performance of a Centrifugal Compressor	Proceedings of the Institution of Engineers, Part A: Journal of Power and Energy, Vol. 218, No. 6, pp. 647-654, 2004.

4.	Reby Roy K.E., B.V.S.S.S. Prasad, S.Srinivasa Murthy and N.K.Gupta	Conjugate Heat Transfer in an Arbitrary Shaped Cavity with a Rotating Disk	Int. J. Heat Transfer Engineering, Volume 25, pp.69-79, 2004
5	T. Sundararajan	Heat transfer from a totally blocked fuel subassembly of a liquid metal fast breeder reactor - II. Numerical simulation	Nuclear Engineering and Design 235 (8): 897-912 Apr 2005
6.	T. Sundararajan	Model for heat conduction in nanofluids	Physical Review Letters 93 (14): Art. No. 144301 Oct 1 2004
7.	T. Sundararajan	Hydrodynamic and thermal oscillations in a non-isothermal laminar jet	International Journal of Heat and Mass Transfer 47 (17-18): 3957-3969 Aug 2004
8.	K. Srinivasan	Aeroacoustic features of coupled twin jets with spanwise oblique shock-cells	Journal of Sound and Vibration, vol.278, pp.155-179, Nov. 2004.
9.	K. Srinivasan	Acoustic Characterization and Prediction of Surface Roughness	Journal of Materials Processing Technology, vol.152, pp.127-130, 20 Oct 2004
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62.	Raju Sethuraman	Pseudo elastic analysis of material non-	Journal of the Chinese

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63.	S. Senthilvelan and R. Gnanamoorthy	Damage Mechanisms in Injection Molded Unreinforced, Glass and Carbon Reinforced Nylon 66 Spur Gears	Applied Composite Materials, Vol 11, Dec 2004, pp 377-397
64.	S. Senthilvelan and R. Gnanamoorthy	Wear Characteristics of Injection Molded Unfilled and Glass Filled Nylon 6 Spur Gears	Journal of Engineering Tribology, Proc of Ins Mech E Part J, Vol 218(6), Dec 2004, pp 495-502.
65.	K. Jayaraj, N. Ganesan and C. Padmanabhan	A New Finite Element Formulation Based on the Velocity of Flow for Water Hammer Problems	International Journal of Pressure Vessels and Piping, vol. 82, pp. 1-14.
66.	Y. V. Sivaprasad, N. Ganesan and C. Padmanabhan	Acoustic Radiation from Compressor Shells	International Journal of Acoustics and Vibration, vol. 9, pp. 81-86
67.	K. Jayaraj, N. Ganesan and C. Padmanabhan	Efficient Computation of Parametric Instability Regimes In Systems with Large Degrees-Of-Freedom	Finite Elements in Engineering Analysis Journal, vol. 40, pp. 1123-1138
68.	Raghu V. Prakash	Fatigue crack growth at stress concentrators under spectrum loading	J. Strain Analysis for Engineering Design, vol. 40, no. 2, 117-127, February 2005.

In Proceedings of National Conferences:

S. No	Name of the faculty	Title	Institution	Period
1.	Murari Sridhar, B V S S Prasad, N. Sitaram, S.Karthik and BHL Gowda.	Experimental and Numerical Study on the Formation of Horsehoe Vortex Around as Isolated Cambered Airfoil	National Conference of Fluid Mechanics and Fluid Power, pp. 711-718, Kolkata,	December 16-18, 2004
2.	U.S.P. Shet	Noise radiating from air-jets issuing from orifice with upstream cavity in flow-line	National Symposium on Acoustics, Sri Jayachamarajendra College of Engineering, Mysore, organized by the Acoustical Society of India	November 25- 27, 2004
3.	U.S.P. Shet	Effect of external air-swirl on stability of Co-axial premixed tubular burner flames	The 31st National Conference on Fluid Mechanics and Fluid Power, Jadavpur University, Kolkata.	December 16-18, 2004
4.	U.S.P. Shet	Studies on interaction between twin-unequal supersonic jets	The 31st National Conference on Fluid Mechanics and Fluid Power, Jadavpur University, Kolkata	December 16-18, 2004
5.	M.D. Narayanan S. Narayanan and P. Chandramouli	Identification of nonlinear dynamical systems using multiple harmonic input	Conference on Perspectives in nonlinear dynamics (PNLD2004), IIT Madras and IMSc. Chennai,	July 12-15, 2004
6.	M.D. Narayanan, S. Narayanan and P. Chandramouli	Non-linear system identification using chaotic excitation	2nd National Conference on Nonlinear Systems and Dynamics, pp. 198-201	Feb. 2005, Aligarh.
7.	K Srinivasan	Experimental study of stickslips dynamics in a friction	VETOMAC-3, New Delhi	December 6-9, 2004
8.	A. Mani	Solar refrigeration	'Application of Renewable Source of Energy in Energy conservation Programme' Energy Users Association, Chennai	Nov. 2004
9.	Mani. A. and Senthil Kumar, R S. Kumaraswamy	Selection of pumps for vacuum desalination system using ocean thermal energy	31 st National conference on fluid Mechanics and fluid power, Jadavpur Univ.	December 2004

10.	M. Prakash Maiya and S. Srinivasa Murthy	Metal hydride water pumping system for low head-high discharge applications	IIT M – ISRO Joint Workshop on Technologies for Utilization of Hydrogen Energy for Ground based Applications, IIT Madras, India,	8 th February 2005.
11.	M. Prakash Maiya and S. Srinivasa Murthy	Studies on thermal compression of hydrogen using metal hydrides,	IIT M – ISRO Joint Workshop on Technologies for Utilization of Hydrogen Energy for Ground based Applications, IIT Madras, India,	8 th February 2005.
12.	Shajan Kuriakose and Shunmugam, M. S.	Variation of slot width in wire-EDM process	Conf. Adv. in Mat. and Manuf. Tech., IIT Madras, pp. 35-36.	April 2004
13.	L.V. Mohan and Shunmugam, M.S.	Profiling of tool for machining of worm by thread whirling process	Conf. Adv. in Mat. and Manuf. Tech., IIT Madras, 19-20.	April 2004
14.	S. Sai Kumar and Shunmugam, M.S.	Implementation of a control scheme for CNC milling in aerospace manufacturing	Conf. Adv. in Mat. and Manuf. Tech., IIT Madras, 121-122	April 2004
15.	Shunmugam, M.S.,	Need for strong manufacturing base (keynote address)	Nat. Conf. Global Technol. In Manuf. & Thermal Sciences, GTMTS-2004	July 2004
16.	Venkaiah N, and Shunmugam, M. S	Minimum zone evaluation of circularity error	All India Conf. Adv. Mech. Engg., SV Univ., Tirupati,	Aug 2004, A10-A12.
17.	Jagadeesha Kumar and Shunmugam, M.S.	Computation of least squares reference profile for surface roughness assessment	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India,	December, 2004, pp. 337-342
18.	Venkaiah N and Shunmugam M.S	Minimum zone evaluation of spatial straightness	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India,	December, 2004, pp. 317-321.
19.	Dhanasekar, B. and Ramamoorthy, B	Surface Roughness Estimation Using Computer Vision and Artificial Neural Network	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India,	December, 2004, pp.
20.	Arul, S., Vijayaraghavan, L. and Malhotra, S. K	Studies on vibratory drilling of polymeric composites	Proc. of 21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India	December, 2004, pp. 73-78.
21.	Arul, S., Vijayaraghavan, L. and Malhotra, S. K.	Performance of tool material in drilling of GFRP composites	Proceedings of the All India Seminar / Conference on Advances in Mechanical Engineering,	Tirupati, India, August, 2004. pp 7-9.
22.	Rajesh, N. and Ramesh Babu, N.	A model for the prediction of strain rate in water jet peening	Conference on Advances in Materials and Manufacturing Technology (CAMMT), 2004	IIT Madras, April 2, pp. 41-42.
23.	Ajmal Deen Ali, M.S., Ramesh Babu, N., and Koshy Varghese	Design and control of a prototype lift system for cooperative manipulation of objects	Proceedings of the Conference on Advanced Materials and Manufacturing Technology (CAMMT), 2004	IITM, Chennai, pp 117-118.
24.	John Rozario Jegaraj, J., and Ramesh Babu, N	Influence of orifice and focusing tube bore variations on depth of cut in abrasive water jet cutting	Proceedings of the conference on Advances in Materials and Manufacturing Technology (CAMMT),	IITM, Chennai, April 2004, pp. 39-40.
25.	Jasmine Shah, John Rozario Jegaraj, J., and Ramesh Babu, N	A novel method for nozzle wear monitoring in abrasive waterjet cutting	Proceedings of the conference on Advances in Materials and Manufacturing Technology (CAMMT),	IITM, Chennai, April 2004, pp. 123-124.
26.	John Rozario Jegaraj, J., and Ramesh Babu, N.	Condition monitoring of orifice and focusing tube based on suction characteristics in abrasive waterjet cutting system	Proceedings of 21 st All India Manufacturing Technology, Design and Research (21 st AIMTDR) Conference	Vellore Institute of Technology, Vellore, pp.161 - 167, 2004

27.	Srinivasu, D.S., Ramesh Babu, N. and Srinivasa, Y.G.,	Multiple regression and artificial neural networks in prediction of depth of cut in abrasive water jet cutting of 6063-T6 aluminum alloy	Proceedings of the All India Conference on Advances in Mechanical Engineering, 2004	S.V. University, Tirupathi, pp.A31-A33.
28.	Srinivasu, D.S. and Ramesh Babu, N.	Artificial Neural Networks for prediction of depth of cut in abrasive waterjet cutting	Proceedings of the Conference on Advances in Materials and Manufacturing Technology (CAMMT)	I.I.T Madras, Chennai, April 2004, pp. 43-44.
29.	Srinivasu, D.S., Ramesh Babu, N. and Srinivasa, Y.G.	Neuro-Genetic approach for automatic selection of process parameters in abrasive waterjet cutting considering the variation in bore diameter of focusing nozzle	Proc. of 21 st All India Manufacturing Technology Design and Research Conference, (21 st AIMTDR)	Dec.20-22, pp. 887-893, 2004, Vellore
30.	Murugan, S. and Ramesh Babu, N.	Selection of feed rate for quality machining of sculptured surfaces	Proceedings of the Conference on Advances in Materials and Manufacturing Technology (CAMMT)	I.I.T Madras, Chennai, April 2004, pp.115-116.
31.	Vijaya Bhaskar, S., Ramesh Babu, N. and Koshy Verghese	Trajectory planning of robots using algebraic and trigonometric splines	Proceedings of the All India conference on Advances in Mechanical Engineering, (2004)	S.V. University, Tirupathi, pp. A51- A53.
32.	Dhanasekar, B., Ramamoorthy, B.	Surface Roughness Evaluation using Machine vision and Artificial Neural Network	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India	December, 2004, pp.322-327.
33.	Manohar, M., Rakesh, S. and Ramamoorthy, B	A study on high speed machining of Aluminum alloy for space applications	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India	December, 2004, pp.40 - 45.
34.	Vikram Kumar Ch. R. and Ramamoorthy, B.	A study on the performance of alumina coated carbide cutting tools",	21 st All India Manufacturing Technology, Design and Research Conference, Vellore, India	December, 2004.
35.	Vikram kumar, Ch. R., Ramamoorthy, B.,	The performance of the coated tools in machining hardened steel under minimum fluid application	Proceedings of the conference on Advances in Materials and Manufacturing Technology (CAMMT), April 2004, pp. 21-22	Indian Institute of Technology Madras, Chennai
36.	Vikram Kumar, Ch.R., Ramamoorthy, B	Advances in Coatings for Metal Cutting Tools	AISCAME, SV University, Tirupathi, 2004, pp.A1-A3	
37.	Rajesh, N. and Ramesh Babu, N.	A model for the prediction of strain rate in Water Jet Peening	Conference on Advances in Materials and Manufacturing Technology (CAMMT)	IITM, Chennai, April 2, 2004, pp. 41-42.
38.	Suyambazhahan, S., Sundararajan, T. and Sarit Kumar Das	Numerical Simulation of Flow and Thermal Oscillations in Non-isothermal Turbulent Multiple Jets	Proc. of the 17 th National Heat & Mass Transfer Conference and Sixth ISHMT/ASME Heat and Mass Transfer Conference, Kalpakkam	January 5-7, 2004.
39.	Srinivas Reddy, K. and Senthil Kumar, N	Solar Dish Power System for Rural Electrification	Proc. of the National Conference on Options for Rural Electrification and Energy Management, Organised by Energy Society of Bhopal	Oct. 2004
40.	Mallikarjuna, J.M.,	FEM Thermal Analysis of Standard and Composite Pistons	Proc. of the National Conference on "State of the Art of Technologies in Mech. Engg., JNTU, Hyderabad	June 29-30, 2004
41.	A. Ramesh and Narayana Reddy, J	Effect of Injector Opening Pressure on the Performance of a Jatropa Oil Fuelled CI Engine	National Conference on "State of the Art of Technologies in Mech. Engg., JNTU, Hyderabad, pp 415-421	June 29-30, 2004,

42.	Nazar, J, Sandesh, G., Ramesh A. and Nagalingam, B	Use of Vegetable Oils in Diesel Engines	Proc. of the National Conference on "State of the Art of Technologies in Mech. Engg., JNTU, Hyderabad, pp 422-429	June 29-30, 2004,
43.	Ramesh, C.S., Jagadeesh, S.K. and Mallikarjuna, J.M.,	-	Proc. of the National Conference on Advances in Mechanical Engineering Sciences, NACAMES-04, SSIT, Tumkur	Sept. 24-25, 2004, (CD Publication)
44.	Ganesan, V., Sivakumar, M. and Balasubramanian, V	Two Phase Flow Analysis of a Side Draught Carburettor using CFD	Proc. of the 31 st National Conference on Fluid Mechanics and Fluid Power, Jadavpur Univ., Kolkatta	Dec. 16-18, 2004
45.	Loganathan, M., Manivannan, P.V., and Ramesh, A	Development of Manifold Injection system for a Small S.I. Engine	Proc. of the 2 nd National Conference on Automotive Infronics, held by SAE India in Chennai	Dec. 10-11, 2004.
46.	Vijayashree, Jyothish Kumar, V. and Ganesan, V	GANESH: Graphical and Numerical Engine Software Hub", 2 nd National Automotive SAE India Youth Conference- 2005	PSG College of Technology, Coimbatore	March 3-5, 2005, (CD Publication)
47.	S. Senthilvelan and R. Gnanamoorthy	Third ISAMPE National Conference on Composites	Research and Development Establishment (Engrs), Pune pp. 176-181.	October 7-9, 2004
48.	S. Senthilvelan and R. Gnanamoorthy	Effect of Gear Tooth Fillet Radius on The Performance of Injection Molded Polymer Gears	21 st AIMTDR Conference Vellore Institute of Tech., Vellore, India, pp. 762-767	20-22 December, 2004
49.	S. Jayasankar, S. Narayanan and C. Padmanabhan	Acoustic scattering from elastic composite shells	National Symposium on Acoustics	Mysore, November 23-24, 2004

50.	V. V. Phani kiran, S. Narayanan and C. Padmanabhan	Investigation of coupling loss factor for stiffened panels with riveted and welded joints	National Symposium on Acoustics, Mysore	November 23-24, 2004
51.	S.Swarnamani, Chiruvai P. Vendhan	Application of active vibration control for reduction of sound radiated from an isotropic plate using piezoelectric actuators,	JCT, Mysore	NSA2004, Nov 25-27, 2004
52.	J.Manjusha, Venkatesh Balasubramanian & C.Sujatha,	Finite element modeling of L2/3 Functional spine unit"	Proc. National Conference on Biomechanics, IIT Delhi, pp. 19-21	November 2004

In Proceedings of International Conferences:

S. No.	Name of the faculty	Title	Institution	Period
1.	T.Nagarajan Y.G.Srinivasa and Satheesh Kumar	Stiffness for complex Contours in Machine Tool Applications	First International congress design and Modelling of Mech. Systems, CMSM	March 23- 25,2005
2.	S Srinivasa Murthy, M Prakash Maiya and P Muthukumar	Comparison of some metal hydrides for hydrogen storage	The 8 th Arab International Solar Energy Conference and Regional World Renewable Energy Conference, Baharain	8-10, March 2004
3.	S Srinivasa Murthy, & M Prakash Maiya	Dry Sorption systems research at IIT Madras; an Overview	The 5 th Inter-national Heat and Mass Transfer Forum, Minsk, Belarus	23-28, May 2004
4.	K Krishnakumar, G Venkatarathnam, & S Srinivasa Murthy	Heat Transfer and flow friction characteristics of perforated plate matrix heat exchangers	The 5 th Inter-national Heat and Mass Transfer Forum, Minsk, Belarus	23-28, May 2004

5.	G Venkatarathnam G Ravindranatha Reddy & S Srinivasa Murthy	Performance of a very low temperature refrigeration system operating with natural fluids	20 th International Cryogenic Engineering Conference, Beijing, China	11-14, May 2004
6.	S Prasanth Kumar, BVSSS Prasad, G Venkatarathnam, S Srinivasa Murthy & K Ramamurthi	Transient Natural Convection with surface evaporation in partially filled tanks	3 rd International Symposium on "Two phase flow modeling and experimentation, Pisa	22-24 Sept, 2004
7.	S Srinivasa Murthy M Prakash Maiya & P Muthukumar	Solid State Storage of Hydrogen in Metal Hydrides: Thermodyna-mics, Heat and Mass Transfer aspects.	Advances in Sorption based Thermal devices, Proc. Indo-Belarus Joint Seminar, Minsk, pp 34-54	2-3 November, 2004
8.	S Srinivasa Murthy M Prakash Maiya & P Muthukumar	Studies on Metal Hydride based Hydrogen Compressor :	Advances in Sorption based Thermal devices, Proc. Indo-Belarus Joint Seminar, Minsk, pp 5-25	2-3 November, 2004
9.	B Viswanthan, M Sankaran & S Srinivasa Murthy	Carbon Nano-materials for Hydrogen Storage	Advances in Sorption based Thermal devices, Proc. Indo-Belarus Joint Seminar, Minsk, pp 65-73	2-3 November, 2004
10.	B Viswanthan, L Hima Kumar & S Srinivasa Murthy	Alanates as Hydrogen Storage materials	Advances in Sorption based Thermal devices, Proc. Indo-Belarus Joint Seminar, Minsk, pp 210-218	2-3 November, 2004
11.	R Ravindranatha Reddy, P.S.Kumar, G Venkatarathnam & S Srinivasa Murthy	Performance of single stage vapour compression cycle refrigerators at low temperatures, CHEMCON 2004	57 th Annual Session of the Indian Institute of the Chemical Engineers and 1 st Joint Meeting of II ChE & AIChE; Mumbai, India	27-30, December 2004
12.	P Muthukumar, M Prakash Maiya, S Srinivasa Murthy R Vijay & R Sundaresan	Tests on Mechanically alloyed Mg ₂ Ni for hydrogen storage	International Conference on Solid State Hydrogen Storage, Hyderabad, India	31 st January – 1 st February, 2005
13.	R Vijay G V N Rao R Sundaresan M Prakash Maiya & S Srinivasa Murthy	Sorption behaviour of Mg-MmNi ₅ mechanically alloyed Nano-structured composite	International Conference on Solid State Hydrogen Storage, Hyderabad, India	31 st January – 1 st February, 2005
14.	P V Jaya Prakasha Reddy & S Srinivasa Murthy	Studies on Ejector-Absorption Hybrid Refrigeration system with new working fluid pairs	Proc. RIO 5 – World Climate and Energy Conference – Rio de Janeiro – Brazil, pp 113-122	15 th – 17 th February, 2005
15.	N Gopalakrishnan, BVSSS Prasad & S Srinivasa Murthy	Natural Convection in Stratified hot water storage tanks	Proc. RIO 5 – World Climate and Energy Conference – Rio de Janeiro – Brazil, pp 267-275	15 th – 17 th February, 2005
16.	T.Nagarajan & Y.G.Srinivasa Satheesh Kumar	Analysis of the Stewart Platform for Complex Trajectories	4 th International Conference on Trends in Industrial Measurements and Automation	December 15-18, 2004 CSIR Madras Complex, Chennai
17.	Y.G.Srinivasa & Sri S.S.Parthasarathy	Model reference control (MRC) based Active suspension Design	NASA Research Centre Virginia USA	September 20-22, 2004
18.	P. Usha Sri and N. Sitaram	Computational Study of Tip Clearance Effects in a Centrifugal Compressor	Proc. of the International Conference of Computational Methods, Singapore	December 15-17, 2004
19.	P. Usha Sri and Dr N.Sitaram	Tip Clearance Effects on Flow Field of a Centrifugal Compressor	Proc. of the International Conference on Theoretical, Analytical, Computational and Experimental Mechanics, Kharagpur	December 28-30, 2004

20.	Murari Sridhar, B. V. S. S. S. Prasad and N. Sitaram	Computational Study of the Effects of Inlet Wake on Turbine Cascade Air Injection	Proc. of the International Conference on Theoretical, Analytical, Computational and Experimental Mechanics, Kharagpur	December 28-30, 2004
21.	B.V.N.Rama Kumar and B.V.S.S.S.Prasad	A combined CFD and Network Approach for a simulated turbine blade colling systems	Proc. of the International Conference on Theoretical, Analytical, Computational and Experimental Mechanics, Kharagpur	December 28-30, 2004
22.	V.Uma Maheshwar, M.Govardhan and N.Sitaram	Effects of Relative wall motion on secondary and tip clearance flows in a linear turbine cascade	Proc. of the International Conference on Theoretical, Analytical, Computational and Experimental Mechanics, Kharagpur	December 28-30, 2004
23.	B.V.S.S.S.Prasad, S.Karthik, K.Nagalakshmi, N.Nanjunda Rao and V.Sethu Manavalan	A Combined CFD and Flow Network Approach for the Simulation of Secondary Air System of Aero Engines	ISROMAC, Hawaii, USA	March 7-11, 2004
24.	B.V.S.S.S. Prasad, S.Prasanth Kumar, G.Venkatarathnam, S.Srinivasamurthy and K.Ramamurthy	Transient Natural Convection with surface evaporation in partially filled tanks	3 rd International Symposium on two phase flow modeling and experimentation, Italy.	Sep. 2004
25.	U.S.P. Shet	Stability of Partially Premixed Flames with Co-Flow and External Swirl-Air	The 5th Asia-Pacific Conference on Combustion, The University of Adelaide, South Australia, 5005 AUSTRALIA	July 17-20, 2005 Accepted
26.	U.S.P. Shet	Studies on Flame Characteristics of Swirled-Turbulent Open Premixed Nozzle Flames	The 5th Asia-Pacific Conference on Combustion, The University of Adelaide, South Australia, 5005, AUSTRALIA	July 17-20, 2005 Accepted
27.	K. Srinivasan	Coupling of Twin Jets of Complex Geometry: Nozzle Orientation Effects	40th AIAA/ASME/ SAE/ASEE Joint Propulsion Conference and Exhibit, Fort Lauderdale, Florida	July 11-14, 2004
28.	A. Mani and R. Senthilkumar	'Analysis of jet pump assisted vacuum desalination system using power plant wate heat'	L' Aquila, Italy	November, 15 th to 17 th 2004
29.	A. Mani and Sathish Kumar, S.	'Desalination using spary tower and vapour compression refrigeration system'	BARC Bombay	February 10 th to 11 th 2005
30.	Mohan, L. V. and Shunmugam, M.S	Application of genetic algorithm in determination of disc type tool profile and setup for generation of helical groove, pp. 490-495.	Int. Conf. Precis. Engg., Singapore,	Mar 2004
31.	Shajan Kuriakose and Shunmugam, M. S	Influence of electrode material on wire-cut electro discharge machining process, pp. 546-553.	Intl. Conf. Precis. Engg., Singapore	Mar 2004
32.	V. Ashok Kumar Reddy, Shunmugam, M. S. and Siva Prasad, N	Application of neural networks to gear design based on bending strength, pp. 852 - 857.	Int. Conf. AI in Engg. & Technol., Univ. Malaysia Sabah, Malaysia	Aug. 2004
33.	M. Murali Krishna, M.S. Shunmugam and N. Siva Prasad	Selection of flanged pipe joints with gasket using expert system and analysis using FEM, pp. 871-877	Int. Conf. AI in Engg. & Technol., Univ. Malaysia Sabah, Malaysia,	Aug. 2004
34.	Kannan, T.R. and Shunmugam, M. S	A virtual sheet metal bending setup planner, 41-46.	1 st Int. Conf Manuf. & Magmt., GCOMM-2004, Vellore Institute of Technology, Vellore, India	

35.	Murali Krishna, M. Shunmugam, M. S. and Siva Prasad, N	Finite element analysis of flanged pipe joints with gaskets, Univ. Malaysia Sabah, Malaysia, pp. 7 - 13.	Int. Conf. Prod. Design & Dev., 1st ICPDD	Dec. 2004
36.	Shunmugam, M. S	Form measurement and its application to manufacturing processes	Proc. 8 th Indo-Japan Workshop, IIT Kanpur, pp. 81 - 89.	Feb. 2005
37.	Deva Prasad, S., Rajendran, C. and Krishnaiah Chetty, O. V	A Multi-Objective Genetic Algorithm for Permutation Flowshop Scheduling to minimize Makespan, Total Flowtime and Total Tardiness of jobs	Int. Conf. on Responsive Supply chain and organizational Competitiveness (RSC-2004), A Technology watch, Coimbatore Institute of Technology, Coimbatore.	
38.	Arul, S., Vijayaraghavan, L., Malhotra, S. K. and Krishnamurthy, R	Strain toughening of polymeric composites for enhanced performance during drilling	Proceedings of the 13 th International Conference on Processing and Fabrication on Advanced Materials, Singapore,	Dec. 2004
39.	Arul, S., Vijayaraghavan, L. and Malhotra, S. K.	Strain toughening of composites for thrust minimization during drilling	Proceedings of the International Conference on Manufacturing and Management, Vellore Institute of Technology, Vellore, India, pp. 227-231.	December 2004
40.	S. Arul, L. Vijayaraghavan and S.K. Malhotra	Evaluation of tool performance during vibratory drilling of polymeric composites	Proceedings of the International Conference on Recent Advances in Composite Materials, Varanasi, India, pp.107-112.	Dec. 2004
41.	Ajmal Deen Ali, M.S., Vijaya Bhaskar, S., Ramesh Babu, N., and Koshy Varghese	Development of a construction work cell for cooperative lift planning	Proceedings of 20 th ISARC, Jeju, Korea, pp. 297-303.	2004
42.	Ramesh Babu, N	Studies on adaptive control of abrasive water jet cutting	Proceedings of the 7 th Japan - India Joint Seminar on advanced Manufacturing Systems, Machida, Japan pp.65-75	2004
43.	Govindan, P, Dhanasekar, B and Ramamoorthy, B	Geometric Search Technique for Surface Roughness Evaluation Using Machine Vision	8 th International Symposium on Measurement and Quality Control in Production, pp. 93-100, Germany	October 12 th -15 th , 2004
44.	Ajmal Deen Ali, M.S., Ramesh Babu, N. and Koshy Varghese	Fabrication and Control of a Prototype Heavy Lift Planning System for Cooperative Lift	Proc. of 20 th ISARC, North Korea.	2004
45.	Dhanasekar, B., and Govindan Ramamoorthy, B	Geometric Search Technique for Surface Roughness Evaluation using Machine Vision	Final program 8 th International symposium on Measurement and Quality control in production, Erlangen, Germany, pp. 93-100	October 12 th - 15 th 2004
46.	Dhanasekar, B. and Ramamoorthy, B	Surface Roughness Evaluation using Hurst operator	EISCO - 2005 International Conference on Emerging Technologies in Intelligent System and Control	January 5- 7, 2005, Coimbatore
47.	Dhanasekar, B. and Ramamoorthy, B	Surface Roughness Evaluation using image processing	5 th International Conference on Advances in Metrology (AdMet-2005), National Physical Laboratory(NPL), New Delhi	February 23-25, 2005
48.	Dhanasekar, B. and Ramamoorthy, B	Surface Roughness Estimation by Machine vision using Adaptive neuro-fuzzy inference system	QCAV 2005, 7 th international Conference on Quality Control by Artificial Vision, Japan	May 18-20, 2005

49.	Vikram Kumar, Ch. R. and Ramamoorthy, B	Study on the performance of Sputter deposited alumina on the cutting tools	International Conference on Emerging Technologies in Intelligent System and Control, Coimbatore, India	January 5- 7, 2005
50.	Saravanakumar, P., Ramamoorthy, B. and Singapermal, M	Investigations on the friction behaviour of actuator and spool valve due to macro geometric irregularities	International Conference on Emerging Technologies in Intelligent System and Control, Coimbatore, India	January 5-7, 2005
51.	Srinivas Reddy, K. and Senthil Kumar, N	Performance Evaluation of Cavity Receivers for Energy Focal Solar Dish Concentrator	Proc. International Congress on Renewal Energy ICORE-2005, organized by SESI, Pune, pp 396-410	20 th Jan. – 22 nd Jan. 2005
52.	Kartik Srivatsa, Dibakar Rakshit and Balaji, C	Numerical Studies on Mass and Thermodynamic Optimization of a Finned Channel with Conjugate Convection using Genetic Algorithms	Proc. of the 5 th International Conference on Compact Heat Exchangers for Process Industry, Whistler, Canada, 2005,	(to be presented)
53.	Mrinal Verma, Krishnan, A.S., Venkateshan, S.P. and Balaji, C	Experimental Studies on Combined Mixed Convection and Surface Radiation between Vertical Parallel Plate	6 th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics held at Matshushima, Miyagi, Japan, (Paper No. 8- 6-2)	April 17 to 21, 2005
54.	Narasimhan, A. and Lage, J.L.	Effect of Variable Viscosity on the Pump Power Gain of Non-isothermal Micro-porous Enhanced Cold Plates	Proc. ISHMT/ASME 2004 Conference, Kalpakkam, TN., India,	Jan. 5-7, 2004.
55.	Wilson, L., Narasimhan, A. and Venkateshan, S.P	Effect of Inlet Velocity Profile on the Permeability and Form Coefficient of Porous Medium Ducts	Proc. 2 nd Int. Conf. on Applications of Porous Media, Evora, Portugal,	May 24-27, 2004
56.	Bilkan, A. Le Corre, O. and Ramesh, A	A paper titled "Comparison experimentale de la combustion Dual-Fuel par analyse adimensionnelle sur deux moteurs	Presented by the Co-authors at the International Conference, COFRET '04, 22-24, Nancy, France.	April, 2004
57.	Nazar, J, Ramesh, A. and Sharma, R.P	Performance and Emission Studies on the use of SVO and Bio-diesel from Different Indian Feed-stock	Proc. of the 4 th Int. Symposium on Fuels and Lubricants, Net Delhi,	Oct. 27-29, 2004
58.	Ramesh, A. and Narayana Reddy, J	Experimental Studies on a Straight Vegetable Oil-Biogas Dual Fuel Engine	Proc. of the 4 th International Symposium on Fuels and Lubricants, Hotel Le-Meridien, New Delhi	Oct. 27-29, 2004, Paper No. 2004-28-031.
59.	Nazar, J., Ramesh, A. and Sharma, R.P	Performance and Emission Studies on the use of SVO and Bio-diesel from Different Indian Feed-stock	Proc. of the 4 th International Symposium on Fuels and Lubricants, Hotel Le-Meridien, New Delhi	Oct. 27-29, 2004, Paper No. 2004-28-071
60.	Sivakumar, M., Balasubramanian, V and Ganesan, V	Flow Field Analysis of a Carburettor using CFD	Symp. of International Automotive Technology (SIAT 2005), ARAI, Pune	Jan. 19-22, 2005, pp 681
61.	Mallikarjuna, J.M. and Pradeep Kumar, K	Computer Simulation of Gasoline Direct Injected (GDI) extended Expansion Engine	Symposium of International Automotive Technology (SIAT-2005), ARAI, Pune,	Jan. 2005, pp 669-680.
62.	Ramesh, A., Nazar, J. and Nagalingam, B	Improvement of Karanja Oil Fuelled CI Engine by dual Fueling with LPG	International Seminar namely PRITHVI 2005, Global Eco Meet, Trivandrum,	Feb. 19-28, 2005 (CD Publication)
63.	Porpatham, E., Ramesh, A. and Nagalingam, B	Investigations on the use of Biogas and LPG in a Spark Ignition Engine	International Seminar namely PRITHVI 2005, Global Eco Meet, Trivandrum,	Feb. 19-28, 2005 (CD Publication).

64.	Suresh Kumar, S., Anand Kumar, T. and Ganesan, V	Numerical Study of Isothermal Flow in an Afterburner System using Star CD	2 nd Star CD User Conference conducted by CD-Adapco, Hotel Le Meridien, Bangalore,	7 th Feb. 2005.
65.	Anand Kumar, T., Suresh Kumar, S. and Ganesan, V	Study of Flow through the Intake Manifold of a Four Stroke Single Cylinder SI Engine Using Star CD	2 nd Star CD User Conference conducted by CD-Adapco, Hotel Le Meridien, Bangalore	7 th Feb. 2005.
66.	Ganesan, S., Kishore Kumar, S., Venkataraman Shankar and Ganesan, V	Cold and Hot Flow Analysis in an Afterburner of a Gas Turbine Engine	2 nd Star CD User Conference conducted by CD-Adapco, Hotel Le Meridien, Bangalore,	7 th Feb. 2005. (Got the first prize as the best paper presented at the Conf.)
67.	Alfred Herman, S. and Ganesan, V	Effect of Injection Rate Control in a HSDI Diesel Engine	The Six International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines	COMODIA 2004, Yokohama, Japan, August 2-5, 2004, Paper No. A-4, 189
68.	Ramesh R, Gnanamoorthy R	Fretting wear behaviour of borided structural steel, En24, against bearing Steel, En31	1 st International Conference on Advanced Tribology (iCAT2004)	Dec. 1-3, 2004 Singapore
69.	G Srinath and R Gnanamoorthy	Friction and wear characteristics of Nylon clay Nanocomposites	1 st International Conference on Advanced Tribology; iCAT 2004, Singapore	Dec 1-3 2004 organised by National University of Singapore
70.	G Srinath and R Gnanamoorthy	Tribo-behavior of advanced reinforced Nylons,	International Exhibition & Conference on Advancements in Materials and Processes for the Transportation Sector; Transmat	Nov 8-10, 2004, Organised by ASM International and FCCI, Mumbai
71.	Ramesh R, Gnanamoorthy R	Effect of post oxidation on the fretting wear performance of liquid nitrided En24 steels	International convention on surface engineering, INCOSURF2004,	August 25-27, 2004, Bangalore, India.
72.	G Srinath and R Gnanamoorthy	Processing and abrasive wear behaviour of Nylon clay nanocomposites	International symposium of Research scholars; ISRS 2004	Chennai, Dec 20-23 2004, organised by Metallurgical Dept. IIT M
73.	S Senthilvelan and R Gnanamoorthy	Performance and Failure Analysis of Injection Molded Carbon Reinforced Nylon Gears	7th Biennial ASME Conference Engineering Systems Design And Analysis	July 19-22, 2004, University of Manchester, UK.
74.	S Senthilvelan and R Gnanamoorthy	New Thermoplastic Polymer Composite Gear for Automotive Applications, TRANSMAT 2004,	International Exhibition & Conference on Advancement in Materials and Processes for the Transportations Sector, ASM Intn,	November 8-10, 2004, Mumbai.
75.	S. Senthilvelan and R. Gnanamoorthy	Effect of Fiber Length on Surface Failure of Injection Molded Glass Reinforced Nylon Gears	Indo Japan Conference on Damage Tolerant Design and Materials	Dec 16-18, 2004 IITM Chennai, pp. 277-280.
76.	Ramesh R, Gnanamoorthy R	Fretting Wear Studies on bearing steels.	ASM, Proceedings of International Conference on Heat Treatment	9-10 January 2004, Chennai, India, 2004, p.A29
77.	Ramesh R, Gnanamoorthy R	An investigation on fretting wear properties of MoS ₂ bonded solid lubricant coatings	Proceedings on Indo-Japan conference on Damage tolerant design & Materials (DTDM)	16-18 Dec. 2004, IITMadr, Chennai, India, p175

78.	S. Jayasankar, S. Narayanan and C. Padmanabhan	Acoustic scattering from submerged elastic composite shells	Proceedings Third International Conference on Theoretical Applied Computational and Experimental Mechanics (ICTACEM)	Indian Institute of Technology Kharagpur, December 28-30, pp. 175-178.
79.	M. D. Narayanan, S. Narayanan and C. Padmanabhan	Nonlinear System Identification using multiple harmonic excitation	Proceedings Third International Conference on Vibration Engineering and Technology of Machinery (VETOMAC III), New Delhi,	Dec 6-9.
80.	S. K. Nandi and C. Padmanabhan, 2004	Effect of bubbles at the lubricant-refrigerant interface on the noise generated by refrigerating compressor	Proceedings Third International Conference on Vibration Engineering and Technology of Machinery (VETOMAC III), New Delhi,	Dec 6-9
81.	R. K. Bhangale, N. Ganesan and C. Padmanabhan	Free vibration and buckling behaviour of functionally graded cylindrical shell conveying hot liquid sodium	Proceedings International Congress on Computational Mechanics and Simulation (ICCMS), Indian Institute of Technology Kanpur	December 9-12, vol. II, pp. 604-611
82.	Raghu V. Prakash	Limitation of unloading compliance to correlate with physical crack size during single specimen J-integral testing	Proceedings of the 15th European Conference on Fracture, Sweden	August 2004
83.	Prabhu Rajagopalan, Krishnan Balasubramaniam, Krishnamurthy C V, and M. Shankar	A Novel Inversion Algorithm for the Determination of Stress Gradients using Ultrasonic Raleigh Wave Dispersion	Review of Quantitative Nondestructive Evaluation, American Institute of Physics, Vol. 23, ed. by D. O. Thompson and D. E. Chimenti, pp. 1200-07,	2004
84.	Veeraraghavan Sundararaghavan, Krishnan Balasubramaniam, and Ramesh Babu	A multi-frequency eddy current inversion method for characterizing water jet peened aluminum alloys	Review of Quantitative Nondestructive Evaluation, American Institute of Physics, Vol. 23, ed. by D. O. Thompson and D. E. Chimenti, pp. 651-58,)	2004
85.	Naveen V Nair, Krishnan Balasubramaniam and Sarit K Das	A 2-D Inverse Heat Conduction Formulation For Determination Of Heat Source Characteristics From Thermal Images	Review of Quantitative Nondestructive Evaluation, American Institute of Physics, Vol. 23, ed. by D. O. Thompson and D. E. Chimenti, pp. 453-60	2004
86.	Krishnamurthy C V, and M. Shankar and Krishnan Balasubramaniam	Ultrasonic Benchmark Problems- Numerical and Experimental Simulations, Review of Quantitative Nondestructive Evaluation	American Institute of Physics, Vol. 23, ed. by D. O. Thompson and D. E. Chimenti, pp. 1545-53	2004
87.	Veeraraghavan Sundararaghavan ¹ , and Krishnan Balasubramaniam	Eddy Current Benchmark Problem 3 - Optimisation of Pipe Inspection probe Design, Review of Quantitative Nondestructive Evaluation,	American Institute of Physics, Vol. 23, ed. by D. O. Thompson and D. E. Chimenti, pp. 1574-80	2004
88.	S. Swarnamani C. Sujatha	Automatic vibration control of an isotropic plate using piezoelectric actuators.	IIT New Delhi Fourth Asia-Pacific Conference on Systems Integrity and Maintenance (ACSIM)	Vetomac3 & ACSIM2004 ,6-9 Dec 2004
89.	S.Swarnamani	Induction motor fault detection using artificial intelligence methods	IIT New Delhi Fourth Asia-Pacific Conference on Systems Integrity and Maintenance (ACSIM)	-do-

90.	N. Ganesan, and S. Swarnamani	Static Studies on Piezomagnetic Beam,	IIT Kanpur, vol.2, pp 621-627	Proc. First International Congress on Computational Mechanics & Simulation (ICCMS-04), 9-12 Dec, 2004
91.	S. Swarnamani, Chiruvai P.Vendhan	Experiments on active control of sound radiated from an isotropic plate using piezoelectric actuators	Velammal Engg College, Chennai, Dec 15-17 2004 ,pp 87-96	International Symposium on Smart Materials & Systems 2004, Chennai ISSMS
92.	S. Swarnamani, Chiruvai P.Vendhan	Multimode Vibration Control of a Plate using Piezoelectric Actuators	IIT Kharagpur	Third International Conference on Theoretical, Applied, Computational & Experimental Mechanics ICTACEM, December 28-30, 2004
93.	Dhiman Chatterjee Co-authors: K. Sarkar and P. Jain	Destruction of Definity microbubbles used for ultrasound imaging and drug delivery	ASME IMECE, Anaheim, CA, USA	Nov, 2004
94.	Dhiman Chatterjee Co-authors: K. Sarkar and P. Jain	Modeling of thin-walled microbubbles for medical ultrasound	ASME IMECE, Anaheim, CA, USA,	Nov, 2004
95.	S. Narayanan and V. Balamurugan	Active Control of Impact Response in Laminated Composite Plates using Distributed Piezoelectric Sensors and Actuators	7 th International Conference on Motion and Vibration Control (MOVIC 2004) at Washington University, St. Louis, USA	August 8-11, 2004.
96.	S. Narayanan and V. Balamurugan	Active control of FGM plates using distributed piezoelectric sensors and actuators	21 st International Congress of Theoretical and Applied Mechanics (ICTAM04) at Warszawa, Poland	August 15-21, 2004
97.	V. Balamurugan, B. Manikandan, S. Narayanan, P. Asokan, and M. Umaphathy	A coupled piezothermo-elastic model for active control of smart structure based on higher order plate theory",	International Symposium on Smart Materials and Systems (ISSMS 2004), pp. 354-367, Chennai	Dec. 2004
98.	V. Balamurugan and S. Narayanan	Finite element modeling of piezolaminated smart functionally graded plates/shells",	International. Symposium on Smart Materials and Systems (ISSMS-2004), pp.264-267, Chennai,	Dec. 2004.
99.	S. Narayanan and V. Balamurugan	Active vibration control with piezoelectric smart structures	International Symposium on Smart Materials and Systems (ISSMS-2004), Chennai	Dec. 2004
100.	S. Narayanan	Piezolaminated Smart Structures – Mechanics and Mathematical Modeling	International Conference on Theoretical Applied Computational and Experimental Mechanics (ICTACEM 2004), IIT, Kharagpur	Dec. 2004
101.	P. Ramachandran and S. Narayanan	Modal Density of Stringer Stiffened Cylindrical Shell Structure	Third International Conference on Theoretical Applied Computational and Experimental Mechanics (ICTACEM 2004), IIT Kharagpur	Dec. 2004

102.	S. Jayasankar, S. Narayanan and P. Chandramouli	"Acoustic Radiation from submerged Composite Cylindrical Shells	Third International Conference on Theoretical Applied Computational and Experimental Mechanics (ICTACEM 2004), IIT Kharagpur	Dec. 2004
103.	M. Sabu-Sebastian, K.C.Unnikrishnan and S. Narayanan	Dynamic Mechanical Properties of Kevlar Fabric Strength Member	Third International Conference on Theoretical Applied Computational and Experimental Mechanics (ICTACEM 2004), IIT Kharagpur	Dec. 2004

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Dr. Prahlada, Director, DRDL, Hyderabad	2005	Discuss ongoing projects
2.	Brigadier A.K. Chaturvedi, Commandant, Bengal Engineer Group & Centre, Roorkee	2005	Informal meeting with past and current faculty of the lab, since he is an alumnus of our lab.
3.	Dr. Nandini C.Mouli and Mr. Upal Roy, DuPont, USA and Dr. Venki Raman, Protium Energy, USA	August 2004	-
4.	Prof. Ravishankar Sharma, Prof. Pan Tso-Chien and Prof. Dhanjoo N Ghista, Nanyang Technological University, Singapore.	30 th Sep 2004	-
5.	Prof. M. Groll, IKE, University of Stuttgart, Germany	Jan 2005	Under Indo-German project
6.	Dr. Sriram Somasundaram, Pacific North West National Laboratory, USA	7 th to 10 th February 2005	Invited talks
7.	Dr. Sunita Satyapal and Dr. John Petrovic, Los Alamos National Lab, USA	9 th Feb 2005	As delegates of IIT Madras-ISRO joint workshop on Technologies for utilization of hydrogen energy for ground based applications
8.	Prof. Tham Kwok Wai, and Prof. Chandrasekar, National University, Singapore	21 st Feb2005	Invited talks
9.	Sri. Ravi Balasubramanian Robotics Institute, Carnegie Mellon University	6 th Jan. 2005	SEMINAR TALK ON LEGLESS LOCOMOTION (What should a robot do when trapped?)
10.	Dr. Chanan S Syan Senior Research Fellow Head, International Manufacturing Research Centre Warwick University, UK.	6 th Dec 2004	SEMINAR TALK ON "Product Development Practices & Advances"
11.	Dr. Lee Loke Chong Deputy Executive Director (Industry) Singapore Institute of Manufacturing Technology Singapore.	6 th Dec 2004	"Presentation on SIMTech"
12.	Dr. V. C. VENKATESH Professor, University of Technology Malaysia; Malaysia	24 th Dec 2004	SEMINAR TALK ON "Electro-Chemical Mechanical Polishing of Copper and Chemical Mechanical Polishing of Glass"
13.	Prof. S. Chandrasekar Director, Center for Materials Processing and Tribology, Purdue University West Lafayette, Indiana, USA.	23 rd July 2004	SEMINAR TALK ON "Machining Processes with Controlled External Modulation"
14.	Ranga Komanduri Regents Professor and A. H. Nelson, Jr. Chair Mechanical & Aerospace Engineering Oklahoma State University Stillwater, OK	18 th June 2004	SEMINAR TALK ON "A Unified Approach to Thermal Aspects of Various Manufacturing Processes Using User-Friendly Interactive Programming"

15.	Dr. David Attinger State University of New York Stony Brook USA	5 th April 2004	To give lecture on "Micro Scale Transport Phenomena Involving Drops and Bubbles"
16.	Dr. Varaprasad Calmidi M/s Edicott Interconnect Technologies, Inc., USA	13.9.2004	To give lecture on "Thermal Design and Performance of a High-end Flip-chip Electronic Package"
17.	Dr. Avijit Bhunia, Research Scientist Rockwell Scientific Company Thousand Oaks, CA, USA	18 th Oct. 2004	To give lecture on "Gas-Liquid Two-Phase Flow and Phase Change Heat Transfer in the Normal & Microgravity Environment"
18.	Prof. Bengt Sunden, Head, Dept. of Heat & Power Engineering Univ. of Lund, Sweden	17 th Jan. & 18 th Jan. 2005	To give Lecture on the topic on (1) Numerical Simulation of Two-phase Fluid Flow and Heat Transfer in a Complex PEM Fuel Cell Duct. (2) Simulation and Analysis of SOFC Fuel Cells
19.	Dr. Keith Lovegrove Deputy Director Centre for Sustainable Energy Systems Australian National University	15 th February 2005	To give lecture on (1) Introduction to the Centre for Sustainable Energy Systems (ii) Solar Thermal Power Systems
20.	Mr. Duane Tiede President SAE International USA	11 th Jan. 2005	Delivered a Lecture on the topic on "A Systems Approach to Intelligent Vehicles"
21.	Dr. S.M. Shamed, Vice President Advanced Technology, Garret Engine Boosting System, Honeywell International Inc., USA	24 th Feb. 2005	Delivered a Technical lecture on "Impact of Turbocharging on Emissions and Fuel Economy – Diesel and Gasoline"
22.	Prof Y Mutoh, Nagaoka University, Japan	16 Dec 2004	Discussions and Talk
23.	Prof S Tanaka, Nagaoka University, Japan	16 Dec 2004	Discussions and Talk
24.	Prof Masaki Okane, Tokaido University, Japan	16 Dec 2004	Discussions and Talk
25.	Prof Manabu Takahashi, Ehime University, Japan	16 Dec 2004	Discussions and Talk
26.	Prof T Komatsu, Nagaoka University, Japan	16 Dec 2004	Discussions and Talk

4.13 DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

4.13.1 Introduction:

The Department of Metallurgical Engineering was established in 1959. President of India in his capacity as the Visitor of IIT Madras approved the change of name of the Department of Metallurgical Engineering as Department of Metallurgical & Materials Engineering with effect from 12th March 2003. The Department offers B.Tech., Dual Degree, M.Tech., M.S. and Ph.D. programmes. Following are major areas of teaching, research and consultancy activities of the department.

- Metal Casting
- Metal Joining
- Metal Forming
- Materials Technology

4.13.2 Academic Programmes:

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	31	31	25	26	-	113
Dual Degree	10	5	7	5	4	31
M.Tech.	16	15	-	-	-	31
M.S.	7	8	5	2	2	24
Ph.D.	20	13	13	11	8	59
Total	84	72	50	44	14	264

Names of Student/Scholar who attended Conferences / Seminars and Symposia Abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia	Date & Venue
Conference:				
1	N. Ramesh Babu	Ph.D.	The 1 st International Conference on Nano Technology 2004	July 13-17, 2004, Singapore
2	B.Yogesha	Ph.D.	Eighth International Conference on non-ferrous metals - 2004	August 6-7, 2004, Bangalore.
3	A. Krishnaiah	Ph.D.	8 th International Conference on Non-Ferrous Metals	August 2004, Bangalore
4	A. Siddharthan	Ph.D.	International Conference on Nano-Materials: Synthesis, Characterisation and Application	4 - 6 November, 2004, Kolkata
5	S V Balasubramanian	Ph.D.	Transmat Expo	November 2004 Mumbai
6	A. Krishnaiah	Ph.D.	58 th Annual Technical meeting of IIM	November 2004, Trivandrum
7	N. Ramanaiah	Ph.D.	-do-	-do-
8	T Venugopal	Ph.D.	-do-	-do-
9	B.Yogesha	Ph.D.	3 rd International Conference on material processing for properties and performance (MP ³)	November 24-26, 2004, Singapore.
10	P. Jawahar	Ph.D.	International Conference on Recent Advances in Composite Materials	Dec. 17-19, 2004, Varanasi
11	J. Chandradass	Ph.D.	-do-	-do-
12	K. Venkateswaran	Ph.D.	Indo - Japan Conference on Damage Tolerant Design and Materials (DTDM 2004)	Dec. 16-18, 2004, IITM, Chennai
13	N. Ramesh Babu	Ph.D.	Indo-Australian Conference BITE 2005	19-22 Jan., 2005, Trivandrum
14	D. Baskar	Ph.D.	Indo-Australian Conference Biomaterials, Implantable Devices & Tissue Engg.	January 19-21, 2005, SCTIMST, Thiruvananthapuram.

15	D. Baskar	Ph.D.	SBAOI National Conference	January 21-22, 2005, SCTIMST, Thiruvananthapuram.
16	A. Krishnaiah	Ph.D.	The Materials Society (TMS) Annual Meeting and Symposium on Flow and Forming of Crystalline Materials	February 14-17, 2005, San Francisco, USA
17	K. R. Sriraman	M. S.	International Conference on Materials for Transportation (Transmat Expo)	November 2004 Mumbai
18	K. Suresh Kumar	M. S.	-do-	-do-
19	Anup Kumar Keshri	M.S.	-do-	November 2004, Mumbai
20	K. R. Sriraman	M. S.	58 th Annual Technical meeting of IIM	November 2004, Trivandrum
21	K. Suresh Kumar	M. S.	-do-	-do-
22	C.Padmavathi	M.S.	Physical Metallurgy: Research, Techniques and Applications (PMRTA-2004)	December 2-3, 2004 BARC, Mumbai.
23	Sunita Prem Victor	M.S.	Indo-Australian Conference on Biomaterials, Implantable Devices & Tissue Engg.	January 19-21, 2005, SCTIMST, Thiruvananthapuram.
24	Sunita Prem Victor	M.S.	SBAOI National Conference	January 21-22, 2005, SCTIMST, Thiruvananthapura.
25	Sraboni Dutta	B. Tech.	58 th Annual Technical meeting of IIM	November 2004, Trivandrum
26	B. Aswini	B. Tech.	-do-	-do-
Symposia:				
1	N. Ramesh Babu	Ph.D.	1 st Nano-Engineering and Nano-Science Congress 2004	7-9 July 2004, Singapore
2	R Priya	Ph.D.	International Symposium on Joining of Materials, SOJOM-2004	July 22-24, 2004, Trichy
3	N.Ramanaiah	Ph.D.	-do-	-do-
4	S. Ananda Selvi	Ph.D.	-do-	-do-
5	J. Chandradass	Ph.D.	International Symposium on Advanced Materials & Processing	Dec. 6-8, 2004 Kharagpur.
6	B.Vamsi Krishna	Ph.D.	International Symposium of Research Students on Materials Science & Engg.	Dec. 20-22, 2004 Chennai.
7	J. Chandradass	Ph.D.	-do-	-do-
8	P. Jawahar	Ph.D.	-do-	-do-
9	K. Praveen	Ph.D.	-do-	-do-
10	B. Yogesha	Ph.D.	-do-	-do-
11	Md. Imteyaz Ahmed	Ph.D.	-do-	-do-
12	N. Ramesh Babu	Ph.D.	-do-	-do-
13	A. Krishnaiah	Ph.D.	-do-	-do-
14	N. Ramanaiah	Ph.D.	-do-	-do-
15	S. Anandaselvi	Ph.D.	-do-	-do-
16	A. Thirunavukkarasu	Ph.D.	-do-	-do-
17	A. Siddharthan	Ph.D.	-do-	-do-
18	D. Baskar	Ph.D.	-do-	-do-
19	N.Ramanaiah	Ph.D.	International Welding Symposium (IWS 2K5)	February 18-20, 2005 at Hyderabad
20	S. Anandaselvi	Ph.D.	-do-	-do-
21	C.Padmavathi	M.S.	International Symposium on Joining of Materials, SOJOM-2004	July 22-24, 2004, Trichy
22	C. Girish Shastry	M.S.	International Symposium of Research Students on Materials Science & Engg.	Dec. 20-22, 2004 Chennai
23	C. Padmavathi	M.S.	-do-	-do-
24	P. Surya Prakash Rao	M.S.	-do-	-do-

25	M.Jayaprakash	M.S.	-do-	-do-
26	V. Vinothini	M.S.	-do-	-do-
27	Anup Kumar Keshri	M.S.	-do-	-do-
28	D. Nagarajan	M.S.	-do-	-do-
29	Sunita Prem Victor	M.S.	-do-	-do-
30	C. Padmavathi	M.S.	International Welding Symposium (IWS 2K5)	February 18-20, 2005 at Hyderabad

4.13.3 Faculty and their Activities

Faculty:

Name and Qualification	Major Area of Specialization
Professors:	
Achar, D.R.G. Ph.D. (IIT Madras)	Welding Technology, Failure Analysis, Corrosion, Industrial Metallurgy
Guha, B., Ph.D. (IIT Madras)	Fatigue & Fracture of Welded Joints, Application of FEM/CAD in the area of Welding Technology
Kesavan air, P. , Ph.D. (IIT Madras)	Physical Metallurgy, X-ray Diffraction, Materials Science and Technology
Murty, B.S., Ph.D. (IISC Bangalore)	Physical Metallurgy, x-ray Diffraction, Electron Microscopy, Nano materials, Bulk Metallic Glasses, Composites
Paramanand Singh, Ph.D. (IIT Bombay)	Powder Metallurgy, Ceramics, Composites and Materials Science
Pathak, S.D, Ph.D. (IIT Madras) . [Head]	Materials Science and Technology, Mechanical Behaviour, Mechanical Metallurgy, Mechanical Testing, Fatigue, Fracture Mechanics
Prasad Rao, K. , Ph.D. (IIT Madras)	Joining Materials, Surface Technology, Nano Technology, Powder Metallurgy
Prasanna Kumar, T.S , Ph.D. (IIT Madras)	Metallurgical Process Modeling, Steel Plant Automation and Off-line Simulators, Metal Casting
Raghavan, S. Ph.D. (IISc Bangalore)	Process and Extractive Metallurgy, Thermodynamics, Solid Electrolyte Chemical Sensors, Hot Corrosion
Seshadri, S.K. ,Ph.D., (Imperial College, London)	Chemical Metallurgy, Surface Technology, Corrosion
Venugopal, P. , Ph.D. (IIT Madras)	Solid State Joining of Dissimilar P/M Metals, Metal Forming Processes, Press Tool Design, Hammers and Presses, Cold Extrusion of Materials
Associate Professors:	
Bhattacharya, S.S., Ph.D. (IIT Madras)	Superplasticity and High Temperature Behaviour, Metal Forming
Harikumar, K.C., Ph.D. (IIT Delhi)	Computational Thermochemistry, Phase Diagrams, CALPHAD
Assistant Professors:	
Balasubramanian, M. Ph.D. (IIT Madras)	Processing and Characterization of Composite Materials, Ceramic Processing
Ganesh Sundara Raman, S. Ph.D. (IIT Madras)	Mechanical Behaviour, Fatigue, Fracture Mechanics, Fretting
Kamaraj, M. Ph. D. (IIT Madras)	Mechanical Behaviour, Creep, High Temperature Materials, Life Assessment, Surface Engineering
Phanikumar, G. Ph.D. (IISc, Bangalore)	Solidification Processing, Transport Phenomena in Manufacturing Processes
Prathap Haridoss Ph.D. (Univ. of Wisconsin – Madison, USA)	Fuel Cells, Rechargeable Batteries, Electrochemistry, Materials Characterization
Sampath, V. Ph.D. (IISc, Bangalore)	Materials Technology & Science, Composite Materials, Physical Metallurgy, Surface Modification
Sampath Kumar T.S, Ph.D.(IISc, Bangalore)	Biomaterials, Surface Sciences, Analytical Instrumentation
Subramanya Sarma, V., Ph.D. (IIT Madras)	Materials Processing, Development, Characterization and Microstructure - Mechanical Properties Correlations in Engineering Materials

Uday Chakkingal Ph.D., (Rensselaer Poly Inst., USA) Materials Processing and Characterization, Aluminium Alloys, Surface Coatings

Emeritus Professor:

Sundarasan, S., Ph.D (IIT Madras) Metal Joining, Welding Metallurgy, Mechanical Behaviour

Visiting Faculty:

Nageswar Rao, M. Ph. D. (Univ. of Pennsylvania, USA) Development, Production, Characterisation (Quality Control) and Application Engineering of Special Steels, Superalloys and Titanium Alloys with Particular Reference to Use in Strategic Sectors - Defence, Space and Atomic Energy

Rodriguez, P., Ph. D. (IISc, Bangalore) Nuclear Metallurgy, Mechanical Metallurgy
AICTE-INAE Visiting Faculty

Gokularathnam, C.V. Ph.D. (Florida) Physical Metallurgy, X-ray Diffraction, Powder Diffraction, Powder Metallurgy, Advanced Ceramics, SEM and TEM

Scientific Officers:

Jothinathan, G. , M.Tech. (IIT Madras) NDT, Metal Casting, Electro Met., Corrosion, Ceramics

Short Term Courses/Workshops/Seminars/Symposia/Conferences organized by the Faculty Members:

Sl. No.	Co-ordinators	Title	Institution	Period
Workshop:				
1	Prof. K. Prasad Rao & Mr.G. Jothinathan	Failure analysis of Industrial Components	IIT Madras	April 2004
2	Prof. K. Prasad Rao & Mr. G. Jothinathan	Metallurgy for Non-metallurgists	IIT Madras	August 2004
3	Prof. T.S. Prasanna Kumar & Dr. Uday Chakkingal	Rolling Technology and Mathematical Modeling	IIT Madras	06.09.2004 to 17.09.2004
4	Prof. K.Prasad Rao & Mr. G. Jothinathan	Welding & Inspection	IIT Madras	13.09.2004 to 23.09.2004
5	Dr. M. Balasubramanian & Dr.P.Alagusundaramoorthy	Intensive Workshop on Fibre Reinforced Thermoset Plastics	IIT Madras	27.09.2004 to 02.10.2004
6	Prof. Krishnan Balasubramanian & Mr.G.Jothinathan	NDE for Present and Future	IIT Madras	18.2.2005 to 20.02.2005
Symposium:				
1	Prof. S.D. Pathak Prof. B.S. Murty	International Symposium of Research Students on Materials Science & Engineering.	IIT Madras	Dec.20-22, 2004
Conference:				
1	Prof. B.K. Dhindaw Prof. B.S. Murty	International Conference on Solidification Science and processing (ICSSP-2004)	IIT Kharagpur & IIT Madras	Nov.17-20, 2004
2	Dr.R.Gnanamoorthy Dr. M. Kamaraj Prof. Y.Mutoh	Indo Japan Conference on Damage Tolerant Design and Materials	IIT Madras	Dec.16-18, 2004

Short-term Courses / Workshops / Seminars / Symposia / Conferences / Training Attended by the Faculty Members in Academic Institutions and Public Sector Undertakings:

Sl. No.	Name of Faculty	Title	Institution	Period
Conference:				
1	Dr. T.S.Sampath Kumar	7th World Biomaterials Congress	Sydney, Australia	17-21 May, 2004
2	Prof. S. Sundaresan	Symposium on Joining of Materials	BHEL & IWS, Trichy	22 & 23 July, 2004
3	Prof. B.S. Murty	International Conference on Nano Materials: Synthesis, Characterization and Application (Key Note Speaker and Chairman of a Session)	Kolkata	November 4 - 6, 2004

4	-do-	National Metallurgists Day, Annual Technical Meeting	Indian Institute of Metals, Trivandrum	November 17-19, 2004
5	Dr. V. S. Sarma	-do-	-do-	-do-
6	Dr. T.S.Sampath Kumar	3 rd International Conf. on Materials Processing for Properties and Performance	Singapore	24 – 26 NOVEMBER 2004
7	Prof. D.R.G.Achar	Indo Japan Conference on Damage Tolerant Design and Materials	IIT Madras, India Nagaoka University of Tech., Japan	December 16 –18, 2004
8	Dr M Nageswar Rao	-do-	-do-	-do-
9	Dr. P. Rodriguez	Indian Chemical Engineering Congress ,Chemcon -2004	Mumbai	December 27-30, 2004
10	Dr. T.S.Sampath Kumar	Indo-Australian Conference BITE 2005	Trivandrum	19-22 Jan., 2005
11	Prof. D.R.G. Achar	International Welding Congress-IWC 2005	Ind. Inst. of Welding and the Int. Inst. of Welding, Mumbai	February 16-19, 2005
12	Prof. S. Sundaresan	-do-	-do-	-do-
13	Dr. M. Kamaraj	-do-	-do-	-do-
Symposium:				
1	Dr. M. Nageswar Rao	METTLE 2005, A National Level Students' Technical Symposium	NIT, Trichy	March 3-4, 2005
Workshop:				
1	Dr. P. Rodriguez	PMRT, Physical Metallurgy, Research Techniques	BARC Mumbai	December 1-3, 2004
Seminar:				
1	Dr. T.S.Sampath Kumar	9th Seminar & Meeting on MATERIALS FOR TISSUE ENGINEERING	Faenza, Italy	Sept. 28 – Oct. 1., 2004
2	Dr. P. Rodriguez	National Seminar on New Product Development	IIT Mumbai	December 17, 2004
3	Dr. M. Balasubramanian	Interactive Seminar with ARCI and Ceramic Entrepreneurs	ARCI, Hyderabad	February 21, 2005

Special Lectures Delivered By the Faculty in Other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1	Prof. T. S. Prasanna Kumar	Steel Plant Application Software: For Quality and Productivity	ESSAR Steel, April 2004
2	Dr. M. Kamaraj	Advanced Surface Modification Processes for Wear Applications	Lakshmi Machine Works Ltd., Coimbatore May 12, 2004
3	Prof. S. Sundaresan	Welding of Stainless Steels	IQC / AWS, Chennai, June 1, 2004
4	Prof. S. Sundaresan	Welding Processes, Metallurgy and Mechanical Properties	IQC / AWS, Chennai, June 9-11, 2004
5	Prof. D.R.G. Achar	Computational Modelling of Heat flow in Pulsed GTA Weldments	BHEL & IWS, Trichy July 22-23, 2004
6	Prof. S. Raghavan	Chemical Sensors in Materials Processing	IISc, Bangalore July 22 & 23, 2004
7	Prof. P.Venugopal	Aspects of Metal Forming Machines	St. Joseph College of Engineering, Chennai Aug. 13-14, 2004
8	Prof. S. Sundaresan	Metallurgy of Welding Steels, Welding of Al and Ti Alloys, Welding of Dissimilar Materials	WRI, Trichy, Aug. 20 & 21, 2004
9	Prof. S. Sundaresan	Joining Problems in High Temperature Steels	IIM / IIW, Trichy, Aug. 20, 2004
10	Dr. P. Rodriguez	Managing Creativity and Innovation	Indian Rare Earths Ltd., Always Aug. 23-24, 2004
11	Dr. M. Nageswara Rao	Production of Gun Barrels – Where Principles of Metallurgy Manifest in Living Colours	Sept. 03, 2004

12	Prof. S. Sundaresan	Welding Processes, Metallurgy and Mechanical Properties	IQC / AWS, Chennai Sept. 8 – 10, 2004
13	Dr. P. Rodriguez	Career Opportunities in DRDO and DAE	Sept. 22, 2004
14	Prof. P. Venugopal	Cold Forging and Extrusion	Engineering Staff College of India, Hyderabad Oct. 4 - 6, 2004
15	Prof. S. Sundaresan	Stainless Steels	ASM, Chennai Oct. 10, 2004
16	Dr. P. Rodriguez	i) Fracture Mechanics: Basics and Principles ii) Fracture Mechanics: Applications	NIT Suratkai, Karnataka Oct. 28-29, 2004
17	Dr. V.S.Sarma	Development of Coated conductors - An Overview and Current Status	NIT, Trichy. Nov. 01, 2004
18	Prof. S. Sundaresan	Welding Processes, Metallurgy and Mechanical Properties	IQC / AWS, Chennai Nov. 3 – 5, 2004
19	Dr. M. Balasubramanian	Resin Transfer Moulding	Mepco Schelenk Engg. College, Sivakasi Nov. 26, 2004
20	Dr. M. Balasubramanian	Recycling of Composites	Mepco Schelenk Engg. College, Sivakasi, Nov.26.,2004
21	Dr. V. Sampath	Biomedical Applications of Shape Memory Alloys	National University of Singapore, Nov. 29, 2004
22	-do-	Shape Memory Alloys in Biomedical Applications	Nanyang Technological University, Singapore Nov. 29, 2004
23	Prof. S. Sundaresan	Welding of Stainless Steels	IQC / AWS, Chennai Nov. 30, 2004
24	Prof. D. R. G. Achar	Advances in Welding Technology	Sathyabama Institute of Science and Technology Deemed University, Chennai Dec. 7, 2004
25	Prof. P. Venugopal	Cold Sintered Powder Metallurgical Extrusion of Commutator Sleeve – Techno-Economic Aspects	-do-
26	Prof. S. Sundaresan	Welding Processes, Metallurgy and Mechanical Properties	IQC / AWS, Chennai Dec. 8 – 10, 2004
27	Prof. T. S. Prasanna Kumar	Mathematical Modeling of Hot Rolling of Steel Plates/Strips	Bhilai Steel Plant, Bhilai, Dec. 11, 2004
28	Dr. P. Rodriguez	The Simple Tensile Test, What All We Can Learn From It?	VNIT Nagpur Dec. 21, 2004
29	-do-	Strengthening Mechanisms	VNIT Nagpur Dec. 22, 2004
30	-do-	Career Opportunities in Design, Research, Development and Engineering in DAE and DRDO	VNIT Nagpur Dec. 23, 2004
31	Prof. D.R.G. Achar	Welding Metallurgy of Ferrous Materials	IWS Chennai Centre Feb. 05, 2005
32	Dr. T.S.Sampath Kumar	Biomaterials: Future Medicine, under T.S.Ramadurai Endowment Programme	Vivekananda College, Chennai, 8 th Feb., 2005
33	Prof. T.S. Prasanna Kumar	Fundamentals of Solidification and Computer Simulation of Castings	RRL, Trivandrum Feb. 25, 2005
34	Dr. V. S. Sarma	Development of Coated High Temperature Superconducting (HTS) Cables	Andhra University College of Engg. Visakhapatnam, Feb. 26, 2005
35	Dr. M. Nageswar Rao	Special Alloys – Processing and Applications in Strategic Sectors	NIT, Trichy March 04, 2005
36	Dr. P. Rodriguez	Interaction Between Theory and Experiments in Materials Science and Engineering	VNIT Nagpur March 04, 2005
37	Prof. S. Sundaresan	Welding Processes, Metallurgy and Mechanical Properties	IQC / AWS, Chennai March 9 – 11, 2005
38	Dr. P. Rodriguez	Strengthening Mechanisms	NIT, Trichy March 14, 2005

39	-do-	Interaction Between Theory and Experiments in Materials Science and Engineering	-do-
40	-do-	Research Development, Design and Engineering Career Opportunities for Engineers in DRDO & DAE	NIT, Trichy March 15, 2005
41	Dr. V. S. Sarma	Steels in Automotive Industry – Recent Developments	Sri Venkateswara College of Engg., Sriperumbdur March 2005

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1	Prof. S.K.Seshadri Dr. S.S.Bhattacharya Dr. S. Ganesh Sundara Raman	Germany	April 21 – 29, 2004	To discuss the details of a possible research cooperation under DST-DFG programme
2	Dr. T.S.Sampath Kumar	Australia	17-27 May, 2004	Participation at the World Biomaterials Congress and visit to Universities in Sydney and in Melbourne
3	Dr. T.S.Sampath Kumar	Italy	Sept. 28 – Oct. 7, 2004	Participation at the 9th CCT Seminar and visit to Universities in Italy
4	Dr.V.Sampath	Singapore	Nov.22-30,2004	To present a paper in a conference
5	Dr. T.S.Sampath Kumar	Singapore	24-30 Nov. 2004	Participation at the 3 rd MP3 Conference and visit to Universities in Singapore

Honours and Awards Obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	Prof. B.S. Murty	National Metallurgist	Ministry of Steel & Mines	Research Contributions to Metal Sciences	Nov. 19, 2004
2	-do-	Binani Gold Medal	Indian Institute of Metals (IIM), Kolkatta	The Best Non-Ferrous Paper published in the Transactions of the Indian Institute of Metals in the year 2003-2004	-do-
3	Prof. P. Venugopal & Prof. K. Srinivasan	2 nd Prize for oral presentation in Ferrous category	IIM, Kolkatta	Oral Paper in Annual Technical Meeting	Nov. 19, 2004
4	Dr. Uday Chakkingal & Prof. P. Venugopal along with students Mr. D. Nagarajan and Mr. K. Kumaran	3 rd Prize for poster paper in the Non Ferrous category	IIM, Kolkatta	Poster Paper in Annual Technical Meeting	Nov. 19, 2004
5	Prof. K. Prasad Rao & Prof. B.S. Murty along with their student Mr. T. Venugopal	3 rd Prize in the Metal Science category	IIM, Kolkatta	Poster Paper in Annual Technical Meeting	Nov. 19, 2004
6	Dr.M.Balasubramanian	Second Prize	International Conference on Recent Advances in Composite Materials	Poster Presentation	Nov. 19, 2004
7	Prof. S. Sundaresan	KCP Award	Indian Inst. of Welding	Best Research Paper on Welding Fabrication	Feb. 16, 2005

Books/Monographs Authored or Co-authored :

S.No.	Name(s) of Author(s)	Title of Text Book/ Monograph	Publisher
1	Prof. T. S. Prasanna Kumar	Mathematical Modeling of Continuous Casting of Steel for Plant Application	Narosa Publishing House

Patents:

- M.Palaniappa and S.K. Seshadri, A process for the preparation of wear and corrosion resistant coatings for electroless deposition on metal substrates, Patent application number 1424/MAS/04 dated 21.12.2004.
- Accepted with application no. 955/ CHE/ 2003 with Dr.T.S.Sampath Kumar as Principal Investigator and Prof. S.K. Seshadri as Investigator.

Technology Transfer:

- Transferred knowhow, based on patent mentioned above, on 24.01.2005 to Lakshmi Ring Travellers Limited, Coimbatore for producing wear resistant Ni-W-P coatings on rings and ring travellers.

4.13.4 Research and Consultancy:
Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinator(s)
1	Surface Modification on 316 LN Austenitic Stainless Steel and Wear Characterization of Hardfacing Alloys	2005-2007	BRNS	23.457	Dr. M. Kamaraj Prof. K. Prasad Rao
2	Parameter Estimation and Inverse Solution of Non-Linear Heat Conduction Problems	2005 - 2008	VSSC	11.07	Prof. T. S. Prasanna Kumar
3	Development of Zr,Ti and Hf based Bulk Metallic Glasses and Bulk Nanocrystalline Alloys	3 years	BRNS	4.30	Prof. B.S. Murty
4	Microscopy & Microanalysis of Modern Materials	5 years	DST (FIST)	150	Prof. S.D. Pathak Dr. Prathap Haridoss
5	Friction welding of Ti/304 L	2004-2005	IGCAR	8.6	Prof. K. Prasad Rao
6	Protection of H-15 (AA 2014) and H-20 (AA 6061) Aluminium Alloys from Corrosion	2004-2005	DRDL	10	Prof. K. Prasad Rao
7	Improvement of Mechanical properties of H-20(AA 6061) welds-	2004-2005	DRDL	10	Prof. K. Prasad Rao
8	Effect of planishing on mechanical properties of AA 2219 alloy welds	2004-2005	DRDL	10	Prof. K. Prasad Rao
9	Life Enhancement of Hydroturbine Components by Surface Coatings	2004 - 2007	DST	13.83	Dr. M. Kamaraj Prof. K. Prasad Rao
10	Modernisation of Powder Metallurgy and Ceramics Laboratory	2003 - 2005	MHRD	10	Prof. Paramanand Singh
11	Life Enhancement through Surface Engineering of Ti-6Al-4V under Fretting Fatigue	2003 - 2006	MHRD	10	Dr. S. Ganesh Sundara Raman Prof. S.D. Pathak
12	Nanomaterials and Nanotechnology	2003 - 2006	DST	105	Prof. K. Prasad Rao
13	Cost Effective Weld Seam Tracking and Adaptive Control using Optical Sensors and Neural Networks	2003 - 2006	DST	14.50	Prof. K. Prasad Rao Dr. M. Kamaraj
14	Improvement of Mechanical Properties of 2219 Alloy Welds	2003 - 2006	ISRO	14.95	Prof. K. Prasad Rao Dr. M. Kamaraj

15	Effect of Pulsed Current and Arc Oscillation Welding Techniques on the Fatigue Behaviour of Ti-6Al-4V and Inconel 718 Welds	2003 – 2006	DRDO	19.96	Dr. S. Ganesh Sundara Raman Prof. S.D. Pathak
16	Applicability of Equal Channel Angular Extrusion to the Processing of Aluminium Alloys	2003 – 2006	DST	19.83	Dr. Uday Chakkingal Prof. P. Venugopal Dr. S.S. Bhattacharya
17	Development of Sol-gel Protective Coating on Metals	2002 – 2005	UGC	3.31	Dr. M. Balasubramanian
18	Fretting Fatigue Behaviour of a Structural Steel	2002 – 2005	DST	7.68	Dr. S. Ganesh Sundara Raman
19	Sol-gel Processing of Advanced Ceramic Fibres	2002 – 2005	MHRD	8.00	Dr. M. Balasubramanian Dr.P. Alagusundaramoorthy
20	Representation of composite materials in IDEAS for FEA ISRO Bangalore	2002 - 2004	ISRO	11.00	Prof. T. S. Prasanna Kumar
21	Design and Development of ESR spectrometer for Radiation Dossimeter	1999-2005	AERB	29.7	Prof.S.P.Venkatesan, Dr.T.S.Sampath Kumar

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1	Dr. V.S. Sarma Prof. S.D. Pathak	Characterisation & Torsional Fatigue Behaviour of Dual Phase Steel Tubes	Tube Investment of India Ltd., Chennai	7.50
2	Prof.T.S.Prasanna Kumar	Improving Service Life of Cast Iron Dies for Cast Iron Auto Components	Brakes India Foundry Division, Sholingur	4.50
3	Prof.T.S.Prasanna Kumar	Improving Die Life for Casting Gray Iron Auto Components	Brakes India, Chennai	5.60
4	Prof. T.S. Prasanna Kumar	Mathematical Modeling of Burden Distribution in Blast Furnaces	NML, Jamshedpur	8.50
5	Dr. K.C. Hari Kumar	Sintering of High-Alumina Ore	R&D, Tata Steel Jamshedpur	1.51
6	Dr. M. Balasubramanian	Development and Characterization of Aluminium Matrix Composites for Tracked Vehicle Application	CVRDE, Chennai	4.50
7	Dr. M. Kamaraj Prof. K. Prasad Rao	Performance Evaluation of Ball Valve coatings	M/s Audco India Ltd. Chennai	2.97

4.13.5 Industrial Consultancy Projects:

Seventy six (76) industrial consultancy assignments for a total value of about Rs. 18.5 lakhs were completed. The details of some major assignments of value Rs. 20,000/- and above are given below.

Sl. No.	Title	Industry
1	Evaluation of design parameter	Jindal Pipes Ltd., Chennai
2	X-ray analysis on a worms and worm shafts	Madras Engg. Industries, Maraimalainagar
3	TEM facilities to carry out research work	Tata Steel, Jamshedpur.
4	Residual stress analysis on worm gears and shafts	Madras Engg. Industries, Maraimalainagar
5	Stress analysis on shafts and gears	Madras Engg. Industries, Maraimalainagar
6	Qualitative phase analysis of four nitrated samples	Sundaram Fasteners Ltd, Velappanchavadi
7	Stress analysis on six samples	L.G.Balakrishnan & Bros.Ltd, Coimbatore
8	Residual stress analysis on connecting rod	M/s Ashok Leyland Ltd., Chennai
9	Residual stress analysis on shoulder bolts	Madras Engg. Industries, Maraimalainagar
10	Residual stress analysis on auto components	M/s Indo Shell Mould Ltd., Coimbatore
11	Tensile & fatigue testing	Guindy Machine Tools Ltd., Chennai
12	Fatigue testing & micro study	Guindy Machine Tools Ltd., Chennai

13	Servicing of dual phase tube and standard tubes for fatigue testing	Tube Investments of India Ltd., Chennai
14	Fatigue testing of tubes	Tube Products of India Ltd., Chennai
15	Fatigue testing of TFF tubes	Tube Products of India Ltd., Chennai
16	Fatigue testing of TFF tubes	Tube investment of India Ltd., Chennai
17	Failure investigation studies – turbo charger turbine wheel	Turbo Energy Ltd., Chennai
18	Some variable for the mfg. of helical seam submerged arc weld pipes	PSL Ltd., Kancheepuram
19	Metallurgy of seawater heater exchanger tubes	Larsen & Toubro Ltd., Chennai
20	Analysis of iron boxes	Ms Anitha Ramachandran Director, DWMA, A.P.
21	SEM analysis of stents	Cordis, Chennai
22	Analysis of hard chrome coated rings	Lakshmi Machine Works, Coimbatore
23	Abrasion test on ENP coated samples	Audco India Ltd., Chennai
24	Failure analysis of copper bar samples	Dr Bir Kapoor, Mumbai
25	Failure analysis of Cu-bar samples	Aditya Birla Management Corporation

Research Publications:

No. of papers published in Refereed National Journals	..	11
No of papers published in Referred International Journals	..	47
No of papers published in Referred National Conferences	..	22
No of papers published in Referred International Conferences	..	67

Journal Editorial Boards:

SI.No	Name of Faculty	Chairman/Member	Journal
1	Dr. T.S.Sampath Kumar	Associate Editor	Trends in Biomaterials and Artificial Organs

In Refereed National Journals:

1. K.Srinivasa Rao, N.Sreedhar, B.Madhusudana Rao and K.Prasad Rao: Effect of Pre-Treatment on Corrosion resistance of chromate coated and anodized AA2219 Alloy. Transactions of Indian Institute of Metals, Vol.57, No.2, April 2004, pp 133-140.
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4. T.Venugopal, K. Srinivasa Rao and K. Prasad Rao "Studies on friction stir welded AA 7075 aluminum alloy" Transactions of Indian Institute of Metals, Vol.57, No.6, Dec 2004, p 659-663.
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3. D. R. G. Achar, R. Munoz-Arroyo, L. Singheiser and W. J. Quadackers, Modelling of Phase Distributions in MCrAlY Coatings and their Interactions with Nickel Based Alloys, *JOURNAL DE PHYSIQUE IV Proceedings*, Vol. 120, 2004, 231-238.
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5. B.S. Murty, P. Barua, V. Srinivas, F. Schurack and J. Eckert, Synthesis of $(Al_{65}Cu_{20}Fe_{15})_{100-x}Si_x$ quasicrystalline alloys by mechanical alloying, *J. Non-Cryst. Sol.*, 2004, 334/335, 44-47.
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9. B.S. Murty, R.V. Koteswara Rao and N.K. Mukhopadhyay, "Stability of nanoquasicrystalline phase in Al-Cu-Fe, Al-Cu-Co and Al-Pd-Mn alloys during High energy ball milling", *J. Non-Cryst. Sol.*, 2004, 334/335, 48-51.
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9. T. S. Prasanna Kumar, Fundamentals of Solidification and Metal Casting Simulation, Workshop on Computer Simulation of Casting Solidification – CSCS-05, Regional Research Laboratory (CSIR), Trivandrum, 25th February 2005.
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10. Ravi , G. Markandeyulu and K. Prasad Rao, Effect of Al on Magnetic Properties of Nd₂Fe_{27.5}Ti_{1.5} International Symposium of Research Students on Materials Science and Engineering (ISRS-2004) being held at IIT Madras, December 20-22, 2004 .
11. M. Ashfaq, T. Venugopal and K. Prasad Rao, Analysis of Milling Parameters on Reduction of CuO/Cu₂O with Aluminum in a High-Energy Ball Milling using Taguchi Techniques International Symposium of Research Students on Materials Science and Engineering (ISRS-2004) being held at IIT Madras, December 20-22, 2004 .
12. C. Padmavathi, K. Srinivasa Rao, and K. Prasad Rao, Corrosion Studies on Gas Tungsten Arc Surface Modified AZ91C Magnesium Alloy, International Symposium of Research Students on Materials Science and Engineering (ISRS-2004) being held at IIT Madras, December 20-22, 2004 .
13. N.Ramesh Babu, A.Gupta , M.Harish , K.Prasad Rao and T.S.Sampath kumar, Nanocrystalline Ca₁₀(PO₄)₆(OH) 1.6F0.4 Bioceramic by Microwave Processing, International Symposium of Research Students on Materials Science and Engineering (ISRS-2004) being held at IIT Madras, December 20-22, 2004 .
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53. A. Krishnaiah, Uday Chakkingal and P. Venugopal, Production of ultrafine grain sizes in aluminium sheets by severe plastic deformation using the technique of groove pressing, 8th International Conference on Non-Ferrous Metals, Bangalore, August 2004.
54. Anup Kumar Keshri, Paramanand Singh and Uday Chakkingal, Cu-Al-Ni as Smart Materials for Automotive Applications, International Conference on Materials for Transportation (TRANSMAT), November 2004, Mumbai.
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Distinguished Visitors to the Departments:

Sl. No.	Name of the Visitor & Designation	Date of Visit	Lecture Title
1	Dr. Narendra J.Noolu, Palomar Technologies, Canada	2.4.2004	Partial Diffusion Reactions and Degradation in Thermally Exposed Au-Al Ball Bonds
2	Dr. Shaju K Albert Materials Technology Division IGCAR, Kalpakkam	7.4.2004	Type IV Cracking in Ferritic Steel Weld Joints – Its Origin, Manifestations and Possible Remedies
3	Dr. L. Chandrasekaran, Principal Scientist, QINETTQ, Farnborough, UK	15.4.2004	Shape Memory Alloy Development and Applications
4	Dr. B.C Pai, Senior Deputy Director Regional Research Laboratory Thiruvananthapuram	22.4.2004	Tailored Discontinuous Aluminium Matrix Composites for Engineering Applications
5	Mr. G. Ramesh Kumar, Ph.D Scholar North Carolina State University, Raleigh, NC, USA.	8.5.2004	The Evaluation of Mechanical Properties using Shear Punch Test Technique
6	Dr. Raghavan Srinivasan, Professor Department of Mechanical & Materials Engg. Wright State University, Dayton, USA.	28.6.2004	Forging Studies on Severe Plastic Deformation (SPD) Processed AA-6061
7	Vilupanur A. Ravi, Associate Professor Dept. of Chemical & Mat. Engg. California State Polytechnic University, USA	14.7.2004	Titanium Alloys with Boron Additions-Structure, Processing and Properties
8	Dr. A. Srinivasa Rao Naval Surface Warfare Centre West Bethesda, USA	09.08.2004	Characterisation of the Surface Film Growth during the Corrosion Process
9	Dr. A. Srinivasa Rao Naval Surface Warfare Centre West Bethesda, USA	10.08.2004	Effect of Iron Implantation of the Structure of Materials
10	Padmashri Dr. C.G.K.Nair Vice Chancellor, MATS University & President SIATI	16.08.2004	Process Failure Analysis
11	Dr. Ravi Ravindran Professor, Dept. of Mech. & Ind. Engg. Ryerson University, Ontario, Canada	25.08.2004	New Development in Mg Alloy Technology for Automotive and Aerospace Applications
12	Dr. N. Gowrishankar Executive Director, IP Rings Ltd., Chennai	24.09.2004	Surface Engineering of Piston Rings
13	Dr. O. Prabhakar Professor (Retd), MME and Dr Subramanian Venkatraman Associate Professor School of Materials Engg., Division of Bioengineering (Joint) NTU, Singapore	27.10.2004	Research in NTU Singapore in the Field of Metallurgy and Materials Engineering
14	Dr. Yashveer Singh Regional Marketing Manager, Nanomaterials and Nanotechnologies, PANalytical	01.12.2004	Small Angle X-Ray Scattering
15	Prof. R. S. Chandel Head, ADOR Centre, Advani Oerlikon, Mumbai	06.12.2004	Ferritic Weld Metals – How Much We Understand and the Knowledge Gap

16	Dr. Subrata Saha Professor of Bio-materials Alfred University, New York, USA	04.01.2005	Bio-materials: New Opportunities and Challenges
17	Dr. John Banhart Hahn-Meitner-Institute, Berlin, Germany	17.01.2005	Aluminium Foam Technology – Science and Industrial Implementation
18	Dr. R. Gopalan Defence Metallurgical Research Laboratory Hyderabad	24.01.2005	Nano Phase Magnetic Materials
19	Prof. T.S.Ramachandran Non-Ferrous Technology Development Centre Hyderabad	25.01.2005	Al-Li Alloys
20	Prof. Mahesh C.Chaturvedi, Distinguished Professor Canada Research Chair in Aerospace Materials University of Manitoba	21.02.2005	On Crack-Free Welding of Cast IN-738 Superalloy
21	Dr. Karthik Subramanian Ohio State University, USA	02.03.05	Physically-based Micromechanical Modelling of Creep Mechanisms in Intermetallics
22	Dr. Shantanu Chakrabarti Tata Steel, Jamshedpur	04.03.05	1. The World of Galvanizing: The Prospects and the Problems 2. Learning from Failure: A Case of Radiant Tube Failure in Galvanizing Furnace
23	Dr. T.V.L.N. Rao Aeronautical Materials Testing Lab & Projects, Hyderabad	14.03.05	Intelligent Processing of Materials & Production of Functionally Graded Aero Engine Discs
24	Dr.P.P. Chandrachoodan, Programme Officer, BRNS-DAE	17.03.05	R&D Programmes and Projects Supported by BRNS
25	Dr. Mouli Vaidyanathan Texas Instruments Inc., USA	18.03.05	An Approach to Yield Improvement in CMOS Technologies
26	Prof. Bishu, University of Nebraska Lincoln	24.03.05	Current Tools in Process Improvement in Industries
27	P. Ravi, USA		Investment Casting

4.13.6 Other Activities:

Induction, Superannuation and Resignation:

- **New Faculty**
Prof. B. S. Murty joined the Department as professor in May 2004.
Dr. V. Subramanya Sarma and Dr. G. Phani Kumar joined the Department as Assistant Professor in July, 2004 and February 2005 respectively.
- **Superannuation**
Prof. C. V. Gokularatnam Professor and Sri. S. Annamalai SSO superannuated in September and December 2004 respectively.
- **Resignation**
Dr. S. Atreya, Assistant Professor was relieved of his duties in the Institute based on his resignation in 2004.

QUIZ:

Prof. Brahm Prakash Memorial Materials Quiz:

On 16.10.2004, Prof. Brahm Prakash memorial quiz (preliminary) for Class XI and XII students of the various schools in Chennai was conducted. A total of 75 students participated in this event. After the preliminary written quiz, 12 finalists were selected. After the oral finals, six school students were selected to represent IIM Chennai Chapter in the National Level Prof Brahm Prakash Memorial Materials Quiz – 2004 held in Kalpakkam on 27th October 2004.

All India Materials (AIM) Quiz 2005:

All India Materials (AIM) Quiz 2005 was conducted on 5th March 2005 at IIT Madras. The programme was organized by IIT Madras Student Chapter of ASM International along with ASM International Chennai Chapter and IIM Chennai

Chapter. A total of seven teams from IIT Bombay, NIT Trichy, NIT Warangal, GEC, Selam, PSG College of Technology, Coimbatore, JNTU Hyderabad along with the host team participated in it. Dr. Shantanu Chakraborty, of Tata Steel who is a seasoned Quiz Master has conducted the quiz. The host team won the first prize and NIT Trichy won the second prize.

Invited Lectures and Sessions Chairman:

- On invitation Prof. D. R. G. Achar presented a key note paper "Computational Modelling of Heat Flow in Pulsed GTA Weldments" at the International Symposium "Symposium on Joining of Materials (SOJOM 2004)", held during 22-23 July, 2004 organised by BHEL & IWS, Trichy. Also, he chaired a technical session during the Symposium.
- Prof. B.S. Murty delivered a Key Note Lecture and Chaired a Session in the International Conference on Nano Materials: Synthesis, Characterization and Application organized at Kolkata during November 4-6, 2004.
- Dr. P. Rodriguez visited Kalpakkam and delivered the Prof. Brahm Prakash Memorial Lecture to the participant-students of the IIM National Metals and Materials quiz on October 27, 2004.
- Prof. D.R.G. Achar chaired a Technical Session at the first International Welding Congress-IWC 2005, jointly organized by the International Institute of Welding and the Indian Institute of Welding, in Mumbai from 16.2.2005 to 19.02.2005. Also presented a paper titled "Fatigue Life Estimation of Welded Joints with Notch-Like Defects Using a Two-Stage SIF Approach".
- Dr. S. S. Bhattacharya chaired a session on Metal Forming and Modelling in Manufacturing at the National Conference on Competitive Manufacturing Technology and Management for Global Marketing, held during 7th – 8th January 2005 at the B.S. Abdur Rehman Crescent Engineering College, Chennai.
- Dr. T. S. Sampath Kumar chaired a session (Appatite-I Session) at the 7th World Biomaterials Congress held at Sydney, Australia during May 17 – 21, 2004.
- Dr. T.S.Sampath Kumar chaired a session (Composite for tissue engineering) at the 9th Ceramics, Cells and Tissues Seminar and Meeting on Materials for Tissue Engineering (9th CCT) at Faenza, Italy, during Sep. 28 – Oct. 1, 2004.
- Prof. S.Sundaresan delivered an invited keynote lecture on *Advanced Ferritic Steels for Power Plant Service* at the International Symposium on Joining of Materials (SOJOM 2004) organized by BHEL and IWS at Tiruchi on July 22, 2004. He also chaired a session at the Symposium.
- Prof. S.Sundaresan chaired a session at the International Congress of the International Institute of Welding held at Mumbai during Feb.16-19, 2005.

Nominations:

- Dr. K. Prasad Rao, Professor, Department of Metallurgical and Materials Engineering has been nominated by the Naval Research Board, DRDO as Chairman, Materials Panel of NRB.
- Prof. B. S. Murty has been nominated as a member of the Programme Advisory Committee on Materials, Mining and Minerals of DST for the period of 2004-2007.
- Prof. T. S. Prasanna Kumar has been nominated as a member, Materials Panel of AR & DB.
- Prof. B. S. Murty has been nominated as a member, Member, Board of Sciences, VNIT, Nagpur for the period of 2005 – 2008.
- Prof. B. S. Murty has been nominated as a member, Member, Board of Sciences, Andhra University, Visakhapatnam for the period of 2005 – 2008.
- Prof. S. K. Seshadri was elected as Vice President for Society for Biomaterials and Artificial Organs India (SBOAI).
- Prof. S. K. Seshadri was elected as Vice President for NACE International India Section (NIIS) Southern Zone.
- Prof. S.Sundaresan has been nominated as the Chairman of the Technical Committee of the Indian Institute of Welding.
- Dr. P. Rodriguez continues to be a member of the Scientific Advisory Committee to the Indian Cabinet.
- Dr. Rodriguez who has been Honorary Secretary of the Indian National Academy Engineering for the years 2002 to 2004 has been elected Vice President of the Academy for the year 2005-2006.
- Dr. P. Rodriguez has been nominated as the Chairman of the Monitoring Committee for the networked (Inter-Laboratory) research initiative on Technology for Engineering Critical Assessment (TECA), coded COR-022 of the Council of Scientific and Industrial Research:

Professional Activities:

- Prof. S.D. Pathak served as an expert in the selection committee of Department of Metallurgical and Materials Engineering, IIT Bombay, Mumbai during Feb. 23 & 24, 2005.
- Prof. T.S.Prasanna Kumar facilitated the PG Course Development Workshop conducted by Dept. of Metallurgical and Materials Engg., NITK, Surathkal, during 18th and 19th Feb. 2005.

- Dr. S. S. Bhattacharya served as a member of the Task Force committee for the preparation of B.Tech and Dual Degree curriculum at IIT Madras.
- Dr. M. Kamaraj was nominated as one of the members of the selection committee of Central Power Research Institute (CPRI), Bangalore. In this connection he visited Central Power Research Institute on 11th Sep. 2004.
- Dr. M. Kamaraj was nominated as a Doctoral Committee member for Ph.D. students in the Department of Metallurgical Engineering at National Institute of Technology (NIT), Trichy.
- Dr. M. Balasubramanian was elected as the council member of the Indian Ceramic Society for the years 2005 – 2006.
- Dr. T. S. Sampath Kumar was elected as the Joint Secretary of Society for Biomaterials and Artificial Organs-India for the period 2002 – 2005.

Visits to Research Establishments:

- A team of five faculty members (Professors K. Prasad Rao, B.S. Murty, Drs. S. Atreya, Uday Chakkingal, and K.C. Harikumar) visited DMRL, DRDL, Hyderabad research establishments. The visit also helped the new faculty members to interact closely with scientists in these laboratories and to establish contacts with potential research teams.
- Dr. S. S. Bhattacharya visited ARCI, Hyderabad to discuss details concerning an ARCI sponsored collaborative programme involving the setting up of a Chemical Vapour Synthesis unit at IIT Madras for the preparation of nanocrystalline titania.
- M.S. and Ph.D. scholars visited IGCAR Kalpakkam along with faculty members. This is part of the course co-curriculum activities of the Department. Dr. S.L. Mannan of IGCAR Kalpakkam coordinated the programme and helped the scholars to go around the IGCAR and to see the activities and R&D programmes.

Visit to Indian Rare Earths Ltd.

During August 23 - 24, Dr. P. Rodriguez visited Indian Rare Earths Ltd., Rare Earth Plant at Udhyogamandal, Alwaye. Discussions were held relating to the activities of the plant. On August 24, Dr. Rodriguez delivered a lecture on "Managing Creativity and Innovation" to the Scientists and the Engineers of the plant.

Industrial Visit:

VI semester B.Tech. students visited Lucas-TVS on 14th March 2005 as part of their co-curricular activities.

Revamping & Infrastructure Development:

Damaged Two High Rolling Mill was revamped within four months to facilitate research. (Prof P. Venugopal & Dr. Uday Chakkingal). (Courtesy: Workshop Supdt. Mr NLLN. Kumar of CWS for his keen involvement and participation.)

Expert Opinion – Central Excise Customs:

Central Excise Customs, Chennai, Hearing was held on 3rd November, 2004 (regarding Prof. P. Venugopal's opinion furnished related to product identification) at our ICSR Building. The Commissioner along with his two Superintendents and a steno plus seven members from M/S TVS Sundaram Fasteners (including a Lawyer) were clarifying and cross examining Prof. Venugopal's opinion. The minutes of the cross examination was signed on 09th Dec, 2004.

Felicitations Function:

Dr. Baldev Raj, Director, IGCAR Kalpakkam visited our Department on 4th October 2004 to participate in the Felicitations Function and he delivered a technical talk. In this connection number of functions were organized. Dr Baldev Raj also met our department colleagues and discussed the aspects between IIT Madras and IGCAR on several collaborations and R&D activities. Our Director, Prof M.S. Ananth, Faculty members and Research Scholars/students of MME participated in the programmes.

Get-Together Meetings:

- Department of Metallurgical and Materials Engg., IITM, Metallurgical and Materials Engineering Students Association and IIT Madras Student's Chapter of ASM International jointly organized a programme for the First Year students and invited them for a "FRESHERS PARTY" on August 24, 2004 at our Seminar Hall (MSB 104). Faculty Members and their family members, students, staff members attended the programme.
- METSA get-together: Metallurgy Students Association (METSA) arranged a "get-together" on 8th November 2004 at our MSB 104 (Metallurgy Seminar Hall) between 5.00 p.m. to 9.00 p.m. in which about 150 students and 20 faculty members of MME participated in the programme. The programme had a few cultural events among the faculty and students of MME.
- Staff get-together meeting was organized in Metallurgy Workshop on 8th March 2005. All the non-technical staff and Professors of MME have participated in the get-together meeting. This was arranged as a token of appreciation to the staff members who worked for the ISRS-2004 programme. Prof.S.D.Pathak, HOD thanked all the staff members for their cooperation for the successful conduct of the ISRS-2004 Symposium.

- Family get-together was organized on 29th March 2005 in which all the faculty members and staff members and their family participated. Few cultural programmes were also organized.

A Report on the International Symposium of Research Students on Materials Science and Engineering (ISRS-2004)

Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras had successfully organized **International Symposium of Research Students on Materials Science and Engineering (ISRS-2004)** in association with Indian Institute of Metals Chennai Chapter, ASM International Chennai Chapter, IIT Madras Student Chapter of ASM International, Metallurgical and Materials Engineering Student Association-IIT Madras during December 20-22, 2004. The Symposium was inaugurated by Mr. B. Muthuraman, Managing Director, Tata Steel, Jemshedpur. Prof. M.S. Ananth, Director, IIT Madras presided over the function. Dr. Baldev Raj, Director, IGCAR, Kalpakkam released the Souvenir. Mr. V.L. Sridharan, Managing Director, Econo Valves, Chennai released the Proceedings.

Mr. B. Muthuraman, Dr. Baldev Raj, Prof. S. Ranganathan (Honorary Professor, IISc, Bangalore) and Dr. C.G. Krishnadas Nair (Vice Chancellor, MATS University, Bangalore) delivered Keynote lectures in order to motivate the participants to carry out high quality research. Prof. Takashi Sekiguchi (Tsukuba University, Japan) highlighted the materials research opportunities in Japan.

To the best of our knowledge this was the first ever International Symposium dedicated to Research Students working on Materials Science and Engineering. Research Students (both MS and PhD students) from various academic institutions, scientists of various Research Laboratories and Industry across the globe presented their original research work in ISRS-2004. ISRS-2004 had participation of 137 national and 31 international students (20 foreign students), belonging to 40 Indian institutes and 20 overseas institutes from USA, UK, Germany, Australia, Japan, China, Malaysia, Turkey and Sri Lanka. All the 168 papers were presented in the following 12 Technical Sessions. 70 of these were on oral and the remaining in poster sessions. The abstracts of all the papers were printed along with the departmental profile and advertisements from sponsors in the Souvenir. All the manuscripts received from the authors were incorporated into the proceedings CD. The Best Technical Papers will be published in a special issue in Transactions of the Indian Institute of Metals after peer review. All the presenting authors of the papers were provided with domestic TA and local hospitality.

Session I Joining, Casting and Solidification	Session IV Magnetic Materials
Session VII Surface Engineering & Environmental Degradation	Session X Advanced Materials – II
Session II Advances in Iron and Steel	Session V Composites
Session VIII Nano Materials	Session XI Mechanical Behavior of Materials
Session III Advanced Ceramics	Session VI Process Modelling and Simulation
Session IX Advanced Materials – I	Session XII Advances in Materials Processing and Evaluation

All the manuscripts received before December 10, 2004 were evaluated by a team of experts and 12 were chosen for Best Technical Paper Awards. Six of these awards were sponsored by ARCI, Hyderabad and the remaining by ISRS-2004. Apart from these, 26 best Oral/Poster presentation awards were also given. Some of these are Endowment Awards by Ashok Leyland, ASM Chennai Chapter, AWS-India International Section, Econo Valves, Lucas-TVS, MMSP, Wave Current Automotives Ltd., Dr. K. Bhanu Sankara Rao, Prof. O. Prabhakar, Prof. V. M. Radhakrishnan and the remaining are by the Dept. of Metallurgical & Materials Engineering, IIT Madras.

These awards consist of a merit certificate and cash prize and were presented during the concluding session by Prof. S. Narayanan, Dean (Academic Research), IIT Madras.

The cultural programme of Indian Classical Music and Dance was appreciated by all. The participants also thoroughly enjoyed the visit to Mamallapuram on December 23, 2004. ISRS-2004 has occupied a memorable place in the heart of all the participants and organizers. There has been unanimous agreement among the organizers and the participants that the ISRS should be a biennial Symposium and be taken up by the other countries too in future so that it becomes a regular global event.

The Organizers would like to thank all the International Advisory Committee members, participants, Invited Speakers and the Sponsors for their support in making ISRS-2004 a Grand Success. We are extremely happy to announce that ISRS-2006 will be held during December 18-20, 2006 at IIT Madras. We look forward to your support and suggestions for better organization of ISRS-2006.

4.14 DEPARTMENT OF OCEAN ENGINEERING

4.14.1 Introduction:

The Department of Ocean Engineering (OED) was established in 1977. It offers B.Tech. (Ocean Engineering), Dual Degree (Naval Architecture and Ocean Engineering), M.Tech. (Ocean Engineering), M.S. and Ph.D. programmes. The major areas of teaching and research at the Department are:

- Structural analysis, Design and Testing
- Wave Hydrodynamics
- Floating and Submerged Bodies
- Marine Geotechniques
- Materials in Ocean Environment
- Ocean Energy
- Naval Architecture
- Underwater instrumentation

4.14.2 Academic programmes:

New Minor Stream Courses introduced:

Sl. No.	Course No.	Title
1.	OE 317	Introduction to Ocean Technology
2.	OE 318	Offshore and Coastal Structures
3.	OE 432	Ships and Floating Systems
4.	OE 433	Management of Coastal and Ocean Systems
5.	OE 434	Ocean Energy System

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech	22	17	19	21	-	79
Dual Degree	6	4	4	6	4	24
M.Tech	11	12	-	-	-	23
M.S.	13	12	6	6	1	38
Ph.D	12	7	2	9	5	35
Total	64	52	31	42	10	199

Names of student/scholar attended Conference/Seminar and Symposia abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia	Date & venue
Conference:				
1	Mr. V. Hariprasad	M.S	6 th International Conference on Hydrodynamics	November 24-26, 2004 Western Auastralia
2	Mr. K. Vijayalakshmi	Ph.D	To attend and present paper at the 6 th International Conference on Hydrodynamics	November 24-26, 2004 Western Australia
3	Mr. A. Venkata Subbaiah	Ph.D	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
4.	Mr. R. Balaji	Ph.D	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
5.	Mr. Sankar Babu Kamam	Ph.D	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
6.	Mr. T. Nasar	Ph.D	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
7.	Mr. Manas Ranjan Behera	M.S	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
8.	Mr. V. Sriram	M.S	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa

9.	Mr. A.A. Ramaiah	Ph.D	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	December 06-10, 2004 NIO, Goa
10	Mr. Ankit Bhagatwala	Dual Degree	Attended and presented paper at the 14th International Symposium on Environmental Hydraulics and 14th Congress of the Asia and Pacific Division of the International Association of Hydraulic Engineering and Research,	December 15-18, 2004 Hong Kong, China
11	Mr. N. Darga Kumar	Ph.D	Indian Geotechnical Conference 2004 on "Ground Engineering: Emerging Techniques"	17.12.2004 to 19.12.2004 National Inst. of Technology, Warangal
12	Mr. A.N.S. Prasad	MS	International symposium on Smart Materials and Systems	December 15-17, 2004 Velammal Engineering College Chennai – 66
13	M. Suneel Kumar	Ph.D	International Conference on Structural and Road Transportation Engineering (START 2005)	1.1.2005 to 8.1.2005 IIT Kharagpur
Symposium::				
1.	P. Dinakar	Ph.D	Second International Symposium on Concrete Technology for Sustainable Development Emphasis on Infrastructure	Feb 27 – March 3, 2005 SISCT Visakhapatnam
2.	D. Pavan Kumar	Ph.D	Second International Symposium on Concrete Technology for Sustainable Development Emphasis on Infrastructure	Feb 27 – March 3, 2005 SISCT Visakhapatnam

4.14.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major Area of Specialization
Professors: S.K. Bhattacharyya, Ph.D. (IIT, Madras)	Computer aided structural analysis, Analysis of motion characteristics of floating bodies, Model studies
K. Ganesh Babu, Ph.D. (IIT, Madras)	Analysis and design of ocean structures, Behaviour of materials in Ocean Environment
V.G. Idichandy, Ph.D.(IIT, Madras)	Experimental techniques, Instrumentation, Analysis and testing of structural models and prototypes
J.S. Mani, Ph.D.(IIT, Madras)	Coastal Processes, Wave hydrodynamics
K. Rajagopalan, Ph.D.(IIT, Madras)	Computer aided analysis, Design of ship, underwater and offshore structures, Reinforced and pre-stressed concrete structures
V. Sundar, Ph.D.(IIT, Madras) [Head]	Wave Structure Interaction, Coastal Erosion & Shore Protection, Fluid Flow Problems
SP.Subramanian, Ph.D. Madras University	Geological oceanography, Engineering geology
R. Sundaravadivelu, Ph.D. (IIT, Madras)	Computer aided analysis design, Experimental studies of Coastal and Offshore Structures, Port and Harbour structures
C.P. Vendhan, Ph.D., (IIT, Kanpur)	Offshore structures, Dynamics of floating systems, finite element

Name and Qualifications	Major Area of Specialization
Professors: S.K. Bhattacharyya, Ph.D. (IIT, Madras)	Computer aided structural analysis, Analysis of motion characteristics of floating bodies, Model studies modeling
Associate Professors:	
V. Anantha Subramanian, Ph.D., (IIT, Madras)	Naval Architecture, computer aided design, experimental ship hydrodynamics
R. Natarajan, Ph.D. (IIT, Madras)	Ship Hydrodynamics, Design of small crafts, Model testing of launches, tugs, trawlers etc., Mooring analysis of floating structures
S. Neelamani, Ph.D. (IIT, Madras)	Hydrodynamics, Wave structure interaction, Wave energy and coastal engineering problems
S. Surendran, Ph.D. (Yokohama National Univ., Japan)	Ship motion Dynamics, Ship Structural Dynamics, Non-linear Dynamics
Assistant Professor S.A. Sannasiraj (IIT Madras)	Wave hydrodynamics, Wave-structure interaction, Floating body dynamics
K. Murali (IIT Madras)	Coastal and Ocean Hydrodynamics, Hydro-elasticity; Interfacial flow phenomena
Emeritus Professor S. Narasimha Rao, Ph.D.(IISc.)	Geotechnical Engineering, Marine Geotechnics and Marine Foundation

Short-term courses/Workshops/ Seminars/ Symposia/ Conferences Organized by the Faculty Members

Sl. No.	Name of Faculty	Title	Period
Workshop:			
1.	Prof. V. Sundar Prof. R. Sundaravadivelu Prof. SP Subramanian	Workshop on "Coastal Protection Measures" at Kanyakumari organized by DOE, IIT Madras jointly with the IOI (India)	November 5-6, 2004
2.	Prof. V. Sundar Dr. S.A. Sannasiraj Prof. SP Subramanian	"Coastal Problems and Solutions" jointly with IOI (India)	Feb 3-4, 2005
Short Term Course:			
	Prof. V. Sundar Dr. S.A. Sannasiraj Prof. SP Subramanian	"Coastal Engineering" jointly with IOI (India)	Jan 31 – Feb 2, 2005

Short term courses/Workshops/Seminars/Symposia/Conferences/Training attended by the faculty in Academic Institutions and public sector undertakings:

Sl. No.	Name of Faculty	Title	Institution	Period
Workshop:				
1	Prof. V.G. Idichandy	PETROTECH 2005	ONGC New Delhi	16.1.2005 to 18.1.2005
2	Prof. V. Sundar	Action Plan for Chennai City Waterways	Chennai	21.04.2004
3	Prof. V. Sundar	National Workshop on Formulation of Science plan for "Coastal Hazard Preparedness"	Goa	18.02.2005 & 19.02.2005
4	Prof. R. Sundaravadivelu Dr. S.A. Sannasiraj Dr. K. Murali	Coastal problems and solution	Dept. of Ocean Engineering, IIT Madras	3.2.05 4.2.05

5	Dr. S.A. Sannasiraj Dr. Dr. K. Murali	Coastal Protection Measures	Organised in Kanniyakumari by DOE, IIT Madras jointly with the IOI (India)	November 5-6, 2004
Seminar:				
1	Prof. V. Sundar Prof. R Sundaravadivelu Dr. S.A. Sannasiraj Dr. K. Murali	Ports and Environment	Indian Section of PIANC	23.09.04 and 24.09.04
2	Prof. V. Sundar	Tsunami and Coastal Protection	Science Technology and Environment Dept. Thiruvananthapuram	11.02.2005
3	Prof. V. Sundar Dr. S.A. Sannasiraj	Coastal Area Construction Management	Indian Navy	2-3 Nov., 2004
Symposia:				
1	Prof. R. Sundaravadivelu	Asian Wetland Symposium 2005	Chilika Development Authority, Bhubaneshwar, Orissa	February 6-9, 2005
Conference:				
1	Prof. V. Sundar Prof. J.S. Mani Dr. K. Murali	Third Indian National Conference on Harbour and Ocean Engineering [INCHOE 2004]	National Institute of Oceanography, Goa	06.12.04 to 10.12.04
2	Prof. V. Sundar Prof. SP Subramanian	International Conference on Education for a sustainable future	Centre for Environment Education Ahmedabad	18.01.2005 to 20.01.2005

Special Lectures Delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1	Prof. S Narasimha Rao	Important Events in the Career of Karl von Terzhagi- The Father of Soil Mechanics, Guest Lecture	Indian Geotechnical Society Local Chapter, Chennai, Oct 2004.
2	Prof. S. Narasimha Rao	Earth Quake Resistance Design of Foundations, Guest Lecture	Institute of Engineers Local Chapter, Tirupati, Jan 2005
3	Prof. S. Narasimha Rao	Discussion on Input Parameters Required for Disaster Management	Institute of Mathematical Sciences, Chennai, (January 2005)
4	Prof. V. Sundar	Role of Entrepreneurship in Coastal, Port and Ocean Engineering	Bannari Amman Institute of Technology, Sathyamangalam, Aug. 27, 2004
		Coastal Structures and its behaviour in Littoral Zone	ICMAM, Dept. of Ocean Development, Govt. of India, 14 Sep'04
		Coastal Protection Measures Between Chennai and Ennore Ports	INCHOE'04, 7-9 Dec 2004, NIO Goa
		Tsunami and its after effects	University of Madras, 27.01.2005
5	Prof. C.P. Vendhan	Tsunami Propagation and its effects	Anna University, 09.03.2005
6	Prof. C.P. Vendhan	Response of structures to underwater explosion	NSTL, Vishakapatnam 06.01.2005
7	Prof. C.P. Vendhan	Deformation and rupture of thin rectangular plates	NSTL, Vishakapatnam 07.1.2005
8	Prof.R.Sundaravadivelu	Tsunami Effect on Coastal Structures	Kumaraguru College of Technology on 26.02.2005
9	Prof.R.Sundaravadivelu	Rehabilitation of pile damaged by Earthquake at Kandla	Kumaraguru College of Technology on 26.02.2005
9	Prof. J.S. Mani	Coastal Processes	ICMAM-PD, NIOT Campus, Chennai on 14 th Feb'05.
		Tsunami and Coastal Protection	Center of Earth Science Studies, Tiruvananthapuram on 11 th Feb'05.
		Coastal Erosion and Management	IOM, Anna University, Chennai on 25 th Jan'05.

		Problems in Infrastructural planning in Coastal cities	National Institute of Technology Karnataka on 20 th Dec'04
		Fundamentals of Wave hydrodynamics	ICMAM-PD, NIOT Campus, Chennai on 13 th Sep'04.
		Fundamentals of Physical Oceanography	ICMAM-PD, NIOT Campus, Chennai on 7 th Jul'04
10	Dr. S. Surendran	Ship Roll Dynamics	Pusan National University, PUSAN, June 2004
11	Dr. S.A. Sannasiraj	Enhancing the wave prediction capabilities along our Indian coasts	SAC, Ahmedabad 20-21 Dec., 2004
12	Dr. S.A. Sannasiraj	Tsunami – Generation, propagation and mitigation measures	Thiagarajar College of Engg., Madurai, 14 February, 2005
13	Dr. K. Murali	Post Tsunami surveys	IMD, February 28, 2005

Visits abroad by Faculty:

Sl. No	Name of Faculty	Country visited	Date	Purpose of visit
1	Prof. S. Narasimha Rao	Bangkok Thailand	22.11.2004 To 26.11.2004	To attend and present paper at the 15 th South Asian Geotechnical Conference
2	Prof. C.P. Vendhan	USA	(i) 24.05.2004 to 28.05.2004 (ii) 31.05.2004 to 02.06.2004	(i) Attended and presented paper at the 147 th meeting of the Acoustical Society of America (ii) Visited Florida Atlantic University
3	Prof. V. Sundar	Germany	08.05.2004 to 18.5.2004	Visited the University of Wuppertal, Germany under DAAD Visiting Research Fellowship
4	Prof. V. Sundar	Scotland	21.5.2004 to 19.6.2004 and 26.6.2004 to 10.07.2004	Visited the University of Glasgow & Heroit Watt University, Scotland
6	Prof. V. Sundar	Vancouver, Canada	20-25, June 2004	Attended the International Conference OMAE 2004.
7	Prof. V. Sundar Dr. K. Murali	Hong Kong China	15.12.2004 to 18.12.2004	To present paper at the APD-IAHR and chaired a session and also presented the proposal for hosting 15 th APD-IAHR in IIT Madras
8	Prof. V. Sundar Dr. K. Murali	Singapore	19.12.2004 to 21.12.2004	National University of Singapore and Nanyang Technical University
9	Prof.R.Sundaravadivelu	Newzealand	19 –24 th November 2004	Visit to Fosroc Chemicals Ltd., New Zealand
10	Prof. R. Sundaravadivelu	Western Australia	24.11.2004 To 26.11.2004	To attend and present paper at the 6 th International Conference on Hydrodynamics at Perth
11	Prof. J.S. Mani	Spain.	From 26.4.2004 to 28.04.2004	Attended and presented a paper at the International Conference on "Coastal Environment 2004"
12	Dr. V. Anantha Subramanian	Denver, Colorado, USA	28.8.2004 to 3.9.2004	Attended and presented paper at the World Renewable Energy Congress VIII

13	Dr. V. Anantha Subramanian	USA	5.9.2004 to 10.9.2004	University of Nevada, Las Vegas (UNLV)
14	Dr. S. Surendran	South Korea	22.05.2004 to 23.07.2004	Pusan National University, as Researcher under Brain Pool Project
15.	Dr. S.A. Sannasiraj	Singapore	06.05.2004 to 05.06.2004	Visited the National University of Singapore as Visiting Research Fellow in the Tropical Marine Science Institute
16	Dr. S.A. Sannasiraj	Singapore	21 st to 24 June 2004 25.6.2004 to 4.7.2004 5.7.2004 9.7.2004	Attended the sixth International Conference on Hydroinformatics (HIC2004) Visited the National University of Singapore Attended the AOGS 1 st Annual meeting and APHW Second Conference 2004

Honours and Awards obtained:

Sl. No	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	Prof.V.Sundar	Rashtra Pratibha Puraskar Award	Integrated Council for Socio-Economic Progress, N.Delhi	praiseworthy services, excellent performance & memorable contribution for the overall progress of the society	Dec' 2004

4.14.4 Design and Development Activities

Brief and specific details of Process/Instruments/Equipment/Software designed and developed:

Dr. V. Anantha Subramanian

Software designed and developed B-spline based ship design codes for surface development, hydrostatics and cross curves.

S.No.	Name of Equipment	Value (in Rs.)
1.	Thrust torque transducers for propeller measurements	18 lakhs
2.	Servo controlled drive for ship propulsion testing	6 lakhs

New facilities added or major equipment procured through project funds:

S.No.	Name of Equipment	Value (in Rs.)
1.	Dynamometer	22,63,360/-
2.	Pressure Transmitter	2,50,625/-
3.	DHI Wave Amplifier + Gauge	17,39,640/-
4.	2 Camera Propeller System	19,00,000/-
5.	Servo Controlled drive for ship propulsion testing	6,00,000/-

Enhanced class room capacity for Design class by modifying existing furniture and making new furniture

4.14.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Industry	Amount (in lakhs)	Co-ordinators
1.	Development of predictive modes for long and short term coastal change	18.03.02 17.03.05	DST New Delhi	9.42	Prof. J.S. Mani

2.	Studies on Tidal Inlets along East Coast of India	03.01.03 02.01.06	Department of Ocean Development	45.60	Prof. J.S. Mani
3.	Augmentation of research facilities	2003-07	Dept. of Science and Technology	117.00	Head, OED
4.	Design of Light Catamaran for Testing Applications	April' 03 April' 04	National Institute of Ocean Technology	4.48	Dr. V. Anantha Subramanian
5.	Hydrodynamic Model Studies and Applicability of Rans Solvers for Ship Control	Feb' 2004 Feb' 2007	Naval Research Board	26.69	Dr. V. Anantha Subramanian Dr. K. Murali
6.	Development of Coastal Protective Measure Structure in Tamilnadu	March' 04 March' 06	Ministry of Water Resources New Delhi	17.88	Prof. J.S. Mani
7.	Hydrodynamic Performance Characteristics of Vertical Wave Screens with Circular Horizontal Intercepting Elements	Jul' 04 Jul' 07	Department of Science and Technology	15.34	Dr. V. Sundar Dr. S.A. Sannasiraj
8.	Studies on the Influence of Hull Firder Whipping due to Slamming Loads on the Fatigue of Ship-shaped FPSOs	Sep. '04 Sep. '05	Class NK Nippon Kaiji Kyokai, Mumbai	4.50	Prof. CP Vendhan Prof. SK Bhattacharyya Dr. V. Anantha Subramanian
9.	Energy Dissipation and Entrainment due to Breaking Waves	Feb' 2005 Feb 2008	Naval Research Board New Delhi	25.20	Prof. V. Sundar Dr. S.A. Sannsiraj
10.	System Identification for Non-linear Maneuvering and Sea-keeping of Ships	March '05 March '08	Naval Research Board	28.40	Dr. S.K. Bhattacharyya
TOTAL				294.51	

Industrial Consultancy:

Sl. No.	Name of the Investigator	Title of the Assignment	Address of the Client	Amount (Rs.inlakhs)
1.	Prof. S Narasimha Rao	Opinion on land and marine investigation at Mangalore	NATWEST Construction Pvt Ltd Bangalore - 25	0.10
2.	Prof. R. Sundaravadivelu Prof. SR Gandhi	Construction of Galvanised steel bridge at Basanthipur and Chairpur - Design and drawing for piers and abutments	Andaman Harbour Works Rangat Bay 744 205	2.00
3.	Prof. R. Sundaravadivelu Prof. S.R. Gandhi	Preliminary design of Marine structures for coal handling terminal at Ennore Port	Adani Exports Ltd Ahmedabad 380009	3.00
4.	Prof. S. Narasimha Rao	Provision of Baffle Range at OTA Chennai	The Garrison Engineers Chennai - 43	0.30
5.	Dr. V. Anantha Subramanian	Flow lines and resistance of ocean going vessel	Mr. Denny Lim Topniche Associates Pvt Ltd Singapore	2.00
6.	Dr. R Sundaravadivelu Dr. S.R. Gandhi	Technical advisory service for extension Iron one berth to hand 75000 DWT vessels at Paradip	Paradip Port Trust Orissa	7.50
7.	Dr. V. A. Subramanian Dr. C.P. Vendhan Dr. K. Murali	Design and dynamics of Rig-on-Barge system for road connectivity project	GEA Energy System Ltd. Chennai - 18	6.50
8.	Dr. R. Sundaravadivelu	Construction of deep water wharf at Campbell bay	Andaman Harbour Works Andaman	1.00

9.	Prof. R Sundaravadivelu	Dredging at Jakhau Port	M/s Good Earth Maritiem Pvt Ltd., Chennai	2.50
10	Prof. J.S. Mani	Protection to the coastal road	Finolex Industries Ltd., Pune	0.40
11	Prof. V. Sundar Dr. K Ananthanarayanan	Development of adequate road connectivity to Chennai and Ennore Port – Sea protection work -	RDS Project Ltd Chennai	4.50
12	Prof. S Narasimha Rao	Site visit and cross checking of Random samples	M/s VPC Concrete & Geo Technologies Vishakapatnam	0.20
13	Prof. V. Sundar Prof. R Sundaravadivelu	Bathymetry survey and numerical model study for Kovalam Groin work Extension	The Chief Engineer WRO, PWD Madurai - 2	4.00
14	Prof. S. Narasimha Rao	Soil Investigation for Tamil Nadu Police Housing Corp. Ltd.,	Tamil Nadu Police Housing Corporation Ltd., Chennai – 10	0.22
15	Dr. V. Anantha Subramanian	Henderson International Dubai, UAE	Propulsion, streamlines test for high speed service vessel	2.60
16	Prof. V.G. Idichandy	TEAM, Vandalur Chennai – 48	Stress analysis of Titanium Air Bottle during Proof Pressure Test	0.25
17	Prof. S. Narasimha Rao	SOMA Enterprises Ltd., Hyderabad – 500 034	Construction of Nellore Bypass Road	0.50
18.	Prof. S. Narasimha Rao	Design of rigid foundations for storage tanks, GFCL, Kakinada	M/s Godavari Fertilizers and Chemicals Kakinada - 33	0.70
19	Prof. V. Sundar	Technical opinion on Insurance claim – Insured M/s NIOT – sinking of sand mining	United India Insurance Co., Ltd., Chennai 14	0.16
20	Prof. R. Sundaravadivelu Dr. S.R. Gandhi	Proof checking of design of Marine liquid terminal of Ennore Port for IMC Limited	Mr. M. Jayaram Flat No.9, 19/45, Dr. Rangachari Road Chennai - 4	0.40
21	Dr. V.G. Idichandy	Stress Analysis of Instrumentation for Titanium Air Bottles	TEAM Chennai - 48	1.25
23	Dr. R Sundaravadivelu Dr. S.A. Sannasiraj	Proof checking of detailed design of Ethylene jetty at Karaikal	Chemplast Summer Ltd Chennai - 86	3.30
24	Dr. S. Narasimha Rao	Soil Investigation at Sriperumbudur	Er. Engineer Chennai Central Division, CPWD	0.10
25	Dr. V. Sundar Dr. S.A. Sannasiraj	Offshore pipe protection for GIDC Effluent pipeline	Larsen & Toubro Ltd Chennai - 89	0.16
26	Dr. V. Anantha Subramanian	Powering and wake fraction estimation of bunker tanker	Dubai Dry Docks Dubai, UAE	5.00
27	Prof. J.S. Mani	Design of Plant boundary protection system for Kalpakkam plant	IGCAR Kalpakkam	5.00
28	Prof. V. Sundar Prof. R. Sundaravadivelu	Tamil Nadu Sea Coast Effect of Tsunami proposal for construction of RMS Walls / Groynes / Retaining walls – consultancy services	Water Resources Organisation PWD Chennai - 5	3.55

29	Prof. R. Sundaravadivelu Dr. P. Alagusundaramoorthy	Rehabilitation of Diaphragm wall at Paradip Port	Paradip Port Trust Orissa 754 142	4.40
30	Prof. R. Sundaravadivelu Prof. S.R. Gandhi Dr. A. Boominathan Dr. P. Alagusundaramoorthy	Rehabilitation of Haddo Wharf	Andaman Harbour Works Port Blair 744 101	13.77
31	Prof. R. Sundaravadivelu Dr. K. Ananthanarayanan Prof. S.R. Gandhi	Design of jetty for Inland Water Transport	Director of Inland Water Transport	13.22
32	Prof. R. Sundaravadivelu	Investigation of the condition of North Quay berth and formulation of remedial measures	Chennai Port Trust Chennai - 1	0.55
33	Prof. R. Sundaravadivelu Dr. A. Boominathan	Integrity test on piles and rectification of cracks at Eastern and Western sides of Inner Harbour entrance	Chennai Port Turst Chennai - 1	4.40
34	Prof. R. Sundaravadivelu Dr. V. Anantha Subramanian	Rehabilitation of Dry dock and shipway at Port Blair	Andaman Harbour Works Port Blair 744 101	13.77
35	Prof. R. Sundaravadivelu Prof. S.R. Gandhi Dr. P. Alagusundaramoorthy	Rehabilitation of Junglighat jetty and Phoenix Bay Complex at Port Blair	Andaman Harbour Works Port Blair 744 101	11.20
36	Prof. V. Sundar Dr. S.A. Sanniraj	Construction of a groyne field - Numerical Model Studies and site survey at Chennai Port	Chennai Port Trust Chennai - 1	8.50
37	Prof. S Narasimha Rao	Foundation Advise for Ethylene storage terminal at Karaikal	M/s Technip India Ltd Chennai - 32	0.20
38	Prof. K. Ganesh Babu	Proof checking of RoBs – Nagpur to Hyderabad section of NH7	National Highway Authority of India Hyderabad	3.30
39	Prof. V.G. Idichandy	Stress Analysis of Torroidal Air Bottles by Strain measurement during proof test	M/s TEAM Chennai 600 048	0.30
TOTAL				130.80

RBIC Projects:

S.No	Name of faculty	Title	Industry	Amount (Rs. In lacs)
1.	Dr. V. Anantha Subramanian Dr. V. Jagdeesh Kumar	Active Fin Control for motion stabilization of fast vessel	VELJAN HYDRA Air Ltd Hyderabad - 37	6.50
2	Prof. V.G. Idichandy	Design and Development of Pressure Measurement system	D.R.D.L. Hyderabad - 69	9.90
TOTAL				16.40

Exchange Programme with other Universities:

- (a) Srinivasan Jagannathan carried out his project work in Hochschule Bremen, Bremen, Germany under Students Exchange Program
- (b) Prof. Mahmoud M.R. Haddara, Memorial University of Newfoundland, Canada joined the Department as the Visiting Faculty for a period of six weeks from 5.7.2004.

Journal Editorial Boards: / Institution

Sl. No.	Name of faculty	Chairman/Member	Journal / Institution
1	Prof. V. Sundar	Member	Coastal Protection and Development Advisory Committee (CPDAC) by the Central Water Commission, New Delhi
2	Prof. V. Sundar	Member	Indian Journal of Marine Sciences

Research Publications:

No. of papers published in Refereed National Journals	:	1
No. of papers published in Refereed International Journals	:	16
No. of papers presented in National Conferences	:	36
No. of papers presented in International Conferences	:	33

In Refereed National Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1.	Dr.V.Anantha Subramanian	CFD based assessment of Series propeller with comparison (the above has received second best paper award at Commodore Garg Memorial Lecture at Delhi)	Indian Institution of Naval Architects

In Refereed International Journals:

Sl.No	Name of the faculty	Title of the paper	Name of the Journal
1	C.P. Vendhan K. Ramajeyathilagam	Deformation and rupture of thin rectangular plates subjected to underwater shock	Journal of Impact Engineering, pp 30(2004) 699-719
2	Narasimha Rao, S G. Rajasekaran	Falling cone method to measure the strength of marine clays	Journal of Ocean Engineering, pp 1915-1927
3	M. Ram Babu, Narasimha Rao, S Sundar V	Scour due to Waves and Currents around Piles in Clay	Journal of Oceanic Engineering, Canada, Dec 2004
4	Sundar, V Abbasi, M.R., Roopsekhar, K.A	"Probabilistic Analysis of wave forces on pipelines"Hansa,	International Maritime Journal, (in German), Dec. 2004, pp.53-57.
5	Sundar, V., Sundaravdivelu, R. Kalyani,M.	Forces Due to Oblique Waves On A Submerged Open Moored Cylinder In Deep Waters'	Ocean Engineering Journal,32, 2005, pp651-666
6	Shaffiudin, A.S. and Mani, J.S.	Performance of rigidly interconnected multiple floating pontoons	Journal of Naval Architecture and Marine Engineering
7	Anantha Subramanian, V	A method for rapid hull form development and resistance of catamarans	Marine Technology Journal, vol 38,2004
8	Anantha Subramanian, V	Parametric studies on Motion Behaviour of High Speed Planing catamarans	Ship Technology Research Vol.51, 2004
9	Surendran, S	Non-linear roll dynamics of a Ro-Ro ship in waves	Ocean Engineering
10	Surendran, S	Roll performance of a small fishing vessel with live fish tank	Ocean Engineering
11	Sannasiraj, S.A.	Enhancing tidal prediction accuracy in a deterministic model using chaos theory	Advances in Water resources
12	Sannasiraj, S.A.	Hydrodynamic model with wave-current interaction in coastal regions	Estuarine, Coastal and Shelf Science
13	Sannasiraj, S.A.	Error correction of a predictive ocean wave model using local linear approximation	Journal of Marine Systems
14	Sannasiraj, S.A.	Local model approximation in the real time wave forecasting	Coastal Engineering

15	Rajendra M Patrikar Murali K	"Thermal distribution calculations for block level placement in embedded systems"	Microelectronics Reliability. Vol. 44(1), pp 129-134, Li Er Ping. (2004)
16	Sudharsan, N.M., Murali, K K. Kumar	Finite Element Analysis of non-linear Fluid Structure Interaction in Hydrodynamics using mixed Lagrangian-Eulerian Method	International Journal of Computational Engineering Science, World Scientific, Vol. 5 No. 2 (June 2004).

In Proceedings of National Conferences:

Sl. No	Name of the faculty	Title	Institution	Name of the Conf./ Period
1.	Venkata Ravi, V., Narasimha Rao, S Srinivasa Rao, P	Settlement analysis of large piled raft foundations in non-homogeneous soils using FEM	NIT Warangal	Indian Geotechnical Conference, Dec 17-19, 2004, pp. 309-313
2.	Vendhan C.P. Idichandy V.G. Ravi Challa	Hydrodynamic analysis of a space capsule impacting water	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India
3.	Sundar, V Darga Kumar, N., Narasimha Rao, S.	"Lateral deflection of a caisson in marine clay"	Indian Institute of Science, Bangalore	Proc. National Symposium on advances in Geotechnical Engineering, 22-23 July, 2004, pp 179-184.
4.	Sundar, V Darga Kumar, N., Narasimha Rao, S.	"Lateral resistance factors for caissons in marine clay"	NIT, Warangal	Proc. Indian Geotechnical conference on Ground Reinforcement-Emerging Techniques, 17-19 Dec 2004
5.	Sundar, V	Coastal Zone Management Between Chennai and Ennore Ports	Ennore Ports Chennai	Proc. Seminar on Ports and Environment (Indian Section of PIANC), 23-24 Sep 2004, pp 76-84.
6.	Sundaravadivelu, R., Sundar, V., Nagabhushan, N. Kamesh Arun, K	Application of geotextile and gabions for shore protection against erosion along south west coast of India".	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India, vol.1, pp. 334-339.
7.	Sundar V Nasar T., Balaji R.,	Hydrodynamic Characteristics and Stability of Rubble Mound Breakwater with Geobags as Core"	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 492-497
8.	Sundar V., Sannasiraj S A., Sriram V., Chitra Devi G V., Balaji R. Sheik Pareeth P I	Numerical Model Studies for the proposed fishing harbour at Mahe"	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 579-586
9.	Sundar V. Sannasiraj S.A., and Balaji, R.,	Stability of CORE-LOC armoured rubble mound breakwater	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 658-665
10.	Sundar, V Prasad, G.N.V., Sundaravadivelu, R.,	Experiments on Ringing Response of Vertical Cylinder in Waves"	NIO, Goa	Proc. 3 rd Natl. Conf. on harbour & ocean Engg. (INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 531-540

11.	Sundar, V Darga Kumar, N., Narasimha Rao,S.	"Experimental p-y curves for caissons in marine clay"	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 231-239
12.	Sundar,V. Abbasi, M.R., Schlenkhoff, A.	Numerical Model of Wave Forces On Semi submerged Obstacle"	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 541- 549
13.	Sundar, V., Suresh, P.K., Selvarajah, A. Jayapalan M.	" Model Studies For the Proposed Fishing Harbour In Rameswaram"	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India, vol.2, pp 606-612
14.	Sundar, V.	"Coastal Protection – an overview"	IIT Madras	Workshop on Coastal Protection Measures Nov. 2004.
15.	Sundar, V., Sannasiraj, S.A	"Structural design of rubble mound groins"	IIT Madras	Workshop on Coastal Protection Measures Nov. 2004.
16.	Sundar, V., Sundaravadivelu, R.	"Layout of groin field shoreline changes (Kurumbanai, Vaniyakudi and Simoncolony)"	IIT Madras	Workshop on Coastal Protection Measures, Nov. 2004
17.	Sundar, V Sundaravadivelu, R.	"Layout of groins and shoreline changes (Kovalam, Periyakadu, Arokiapuram & Enayam)"	IIT Madras	Workshop on Coastal Protection Measures, Nov. 2004.
18.	Sundar, V	Coastal Erosion and Protection – an overview	IIT Madras	Workshop on Coastal Problems and Solutions, Feb. 2005
19.	Sundar, V Sannasiraj, S.A., Er.P.I.Sheik Pareeth	Shoreline changes at Muthalapozhy Harbour in Kerala	IIT Madras	Coastal Problems and Solutions, Feb. 2005
20.	Sundaravadivelu, R. Sundar, V.	Layout of Groins and Shoreline Changes	IIT Madras	Workshop on Coastal Problems and solutions, Feb. 2005.
21.	Sundar, V	Protection Measures against Erosion due to Ocean waves for the Highway connecting Chennai and Ennore Ports	IIT Madras	Workshop on coastal Problems and solutions, Feb. 2005
22.	Sundar, V	Tsunami – Generation, Propagation and Effects	IIT Madras	Workshop on Coastal Problems and solutions, Feb. 2005
23.	Sundaravadivelu R,	Case Studies on Coastal zone Management" Symposium on Ports & Environment,	Chennai Port Trust	Ports &Environmental 23-24 September 2004
24.	V.Hariprasad, S.Neelamani and Sundaravadivelu, R.	Experimental studies on wave slamming forces on Horizontal Circular members in intertidal zone	NIO Goa	Third Indian National Conference on Harbour and Ocean Engineering (INCHOE –2004) 7-9 December 2004
25.	Vijayalakshmi,K. Neelamani, R. Sundaravadivelu,R Murali K	Experimental study on random wave loads on a perforated circular caisson and suction pipe of a seawater intake structure	NIO Goa	Third Indian National Conference on Harbour and Ocean Engineering (INCHOE –2004) 7-9 December 2004
26.	Sundarvadivelu R	Integrated Coastal zone management of Chilika lake	IIT Madras	Workshop on Coastal Problems and Solution 3-4 February 2005
27.	Sundaravadivelu R	Tsunami effect on Coastal structures" Workshop on Coastal Problems and Solutions	IIT Madras	Workshop on Coastal Problems and Solution 3-4 February 2005

28.	Murali, K Sundaravadivelu R.,	Post Tsunami Studies at Andaman and Northern Andaman Islands" Workshop on Coastal Problems and Solutions	IIT Madras	Workshop on Coastal Problems and Solution 3-4 February 2005
29.	Ramanamurthy M.V., Subramanian B.R. and Mani J.S.	Shoreline Oscillations caused by Port – Methods of assessment and evaluation	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
30.	Amar S.S. Mani J.S.	Performance of triple pontoon floating breakwater – A numerical approach	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
31.	Sudharsan N., Ramkumar S., Prasanna Venkatesan K., Mani J.S	Performance of perforated seawater intake and outfall systems	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
32.	Praveen Reddy K., Mani J.S.	Wave environment in the vicinity of an isolated structure of arbitrary shape – A numerical approach	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
33.	Sannasiraj, S.A.	Stability of core-loc armoured rubble mound breakwater	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
34.	Sannasiraj, S.A.	Numerical model for the proposed fishing harbour at Mahe	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
35.	Murali, K Behera M.R	Application of interface tracking methods in ocean engineering	NIO, Goa	Proc.3 rd Natl.Conf. on harbour & ocean Engg..(INCHOE'04), 7-9 December, 2004 Goa, India
36.	Sudharsan N.M.; Ajaykumar R.; Murali K. Kumar K	A comparative study of dynamic mesh updating methods used in the simulation of fluid-structure interaction problems with a non-linear free surface	MECH	Proceedings of the I MECH E, Part C, Journal of Mechanical Engineering Science, 1 March 2004, Professional Engineering Publishing, Vol. 218, no. 3, pp. 283-300(18)

In Proceedings of International Conferences:

Sl.No	Name of the faculty	Title	Institution	Name of the Conf./ Period
1	Darga Kumar, N., S. Narasimha Rao, S Sundar V,	Lateral bearing capacity prediction of caisson type of seawall in difficult sub soil conditions	Asian Institute of Technology, Bangkok	15th South East Asian Geotechnical Conference on Development in Geotechnical Engineering for practice., Nov. 22-26, 2004. Pp.259-264
2	Darga Kumar, N., S. Narasimha Rao Sundar, V	Performance of Caisson type of seawall embedded in soft clay	Japanese Geotechnical Society	International Symposium on Engineering practice and performance of soft deposits. June 2-4, 2004. Pp. 525-530

3	Darga Kumar, N., S. Narasimha Rao Sundar, V	Lateral capacity of caissons	University of Science and Technologies of Lille, France	International conference on Geotechnical Engineering, Beirut. May 19-22, 2004. Paper No.A147
4	Narasimha Rao, S., N. Darga Kumar and Sundar, V	Influence of Cyclic load on model caisson seawalls embedded in marine clay	University of Bochum, Germany	Cyclic behaviour of soils and liquefaction phenomena. Triantafyllidis(ed)© 2004 Taylor & Francis Group, London, ISBN 90 5809 620 3. Pp. 425-429
5	Sundar, V Darga Kumar, N., Narasimha Rao, S.,	Studies on model caissons embedded in marine clay for coastal protection wall	OMAE Canada	Proc. 23 rd International conference on OMAE.. 20-25 June 2004. Paper no: OMAE2004-51396
6	Sundar, V Darga Kumar, N., Narasimha Rao, S.,	Design of pressure cell for measurement of lateral earth pressure	IIT Madras	Proc. Intl. conference on modern trends in foundation engineering and Geotechnical challenges and solutions. Jan'26 – 30, 2004
7	Sundar, V Balaji, R.	Wave damping by chambered breakwaters	APD-IAHR Hong Kong, China	Proc. 14 th Congress of Asia Pacific Division of IAHR (APD-IAHR 2004), Hong Kong, China, Dec 15-18, 2004, Vol.1, pp 1029-1034
8	Sundar, V Vijayakumari, P.L., Murali, K.	Wave induced pressures and forces on parallel submarine pipelines at low kc numbers	APD-IAHR Hong Kong, China	Proc. 14 th Congress of Asia and Pacific division of IAHR (APD-IAHR 2004), Hong Kong, China, December 15-18, 2004, Vol.1, pp1003-1008
9	Sundar, V., Sannasiraj, S.A., Nasar, T. Balaji, R	Anti-Sea Erosion Work at coastline north of Royapuram Fishing Harbour	Indian Navy	Intl. Seminar on Coastal Area Construction Management, 1-2 Nov 2004, Mumbai. pp 57-61
10	Sundaravadivelu, R., Sundar, V. Nagabhushan, N Kamesh Arun, K	Application of Geotextile and Gabions for Shore Protection against erosion along south west coast of India	IIT Bombay	Proc. Intl. Conf on Geosynthetics and Geoenvironmental Engineering, (ICGGE), Dec 8-10, 2004, IIT Bombay, paper No: ICGGE 45
11	Sundar, V., Sannasiraj, S.A. Balaji, R	Design of Groins for Sea Protection Work at North Chennai Coast	Indian Navy	Intl. Seminar on Coastal Area Construction Management, 1-2 Nov 2004, Mumbai, pp 41-48.
12	Sundar, V., Sundaravadivelu., R. Nagabhushan, N	Groins Field as coastal protection measure for the coast of Kanyakumari, Tamilnadu	Indian Navy	Intl. Seminar on Coastal Area Construction Management, 1-2 Nov 2004, Mumbai. pp 49-56.
13	Balaji, R. Sundar, V	Theoretical investigation on the wave transmission through horizontal slotted screens	IAHR Korea	2 nd Asia-Pacific Workshop on Marine Hydrodynamics (AP Hydro 2004), Busan, Korea, June 21 – 22, 2004
14	Sundar, V Prasad, G.N.V., Sundaravadivelu, R.	Experimental Study of Higher Wave Forces on Vertical Cylinder	U.S.A	Civil Engineering in the Ocean VI, Oct 20-22, 2004, Baltimore, U.S.A

15	Sundar, V Vijayakumari, P.L., Murali, K.	Hydrodynamic Interference of Parallel Submerged Pipelines in Random Wave Field Near a Sloping Boundary	Cemil Topuzlu Cad., Italy	Proc.3 rd International Conference on Marine Waste Water Disposal and Marine Environment , MWWD 2004, 28 Sep- 2Oct 2004 , Catania, Italy , Paper No: 137
16	Sundar, V Narasimha Rao, S., Darga Kumar.,	Design studies of caissons for coastline protection using model testing .	NAGREF / Forest Research Institute, Greece	An International conference on Eco- Engineering and the use of vegetation to improve slope stability. Thessaloniki, Greece, Sept. 13-17, 2004
17	Muthukkumaran,K Sundaravadivelu,R, Gandhi,S.R.	"Monitoring of lateral deflection in a berthing structure during dredging- A case study",	New York	Fifth International Conference on case histories in Geotechnical Engineering, 13-17 April 2004
18	V.Hariprasad S.Neelamani Sundaravadivelu, R	"Wave slamming force on horizontal circular cylinders in Intertidal zone	OMAE Canada	International Conference on Offshore Mechanics and Artic Engineering (OMAE 2004), 20-25 June 2004
19	K.Vijayalakshmi S.Neelamani Sundaravadivelu, R	Wave loads on a perforated circular caisson and suction pipe of a seawater intake structure	OMAE Canada	International Conference on Offshore Mechanics and Artic Engineering (OMAE 2004), 20-25 June 2004
20	Muthukkumaran,K Sundaravadivelu, Gandhi,S.R., R.,	Seismic effect on pile supported sloping ground"	Vancouver convention and Exhibition center, Canada	13 th world Conference on Earthquake Engineering, 1-6 August 2004
21	V.Hariprasad Sundaravadivelu, R. S.Neelamani	Slamming forces due to Random waves on Horizontal circular members in Intertidal zone	American Society of Civil Engineers Baltimore, U.S.A	Civil Engineering in the Oceans VI (CEO6), 20-22 October 2004
22	V.Hariprasad Sundaravadivelu, R S.Neelamani. "	Slamming force due to Regular waves on Horizontal circular members in intertidal zone"	Hong Kong Inst.of Engineers Hong Kong, CHINA	International Conference on coastal infrastructure development and challenges in the 21 st Century (HKIE), 22 - 24 November 2004
23	K.Vijayalakshmi Sundaravadivelu, R S.Neelamani, Murali, K	"Hydrodynamics of a perforated circular caisson and suction pipe of seawater intake structure"	University of Western Australia,	6 th International Conference on Hydrodynamics 24-26 November 2004
24	V.Hariprasad S.Neelamani, Sundaravadivelu, R	Slamming – Horizontal circular member in intertidal zone"	University of Western Australia	6 th International Conference on Hydrodynamics 24-26 November 2004
25	K.Vijayalakshmi Sundaravadivelu, R S. Neelamani and Murali, K	Hydrodynamics of a perforated circular caisson and suction pipe of a seawater intake structure.	University of Western Australia,	Sixth International Conference on Hydrodynamics (IChD VI) 24-26, Nov., 2004

26	K.Vijayalakshmi S.Neelamani, Sundaravadivelu, R Murali, K	Watersurface fluctuations inside the perforated circular caisson of a sea water intake structure. Environmental Hydraulics and Sustainable Water Management -	International Association Of Hydraulic Engineering And Research, Hong Kong, China	The 4th International Symposium On Environmental Hydraulics And 14th Congress Of Asia And Pacific Division, 15-18 December 2004
27	Mani J.S.	Artificial headlands for coastal restoration	Wessex Institute, Spain	Conference on Coastal Environment
28	Shaffiudin, A.S. and Mani J.S.	Performance of multiple pontoons floating breakwater – A numerical approach	ASCE Maryland, USA	Civil Engineering in Oceans 6, ASCE
29	Anantha Subramanian, V	A diffuser augmented hubless wind energy turbine	World renewable energy congress	World Renewable Energy Congress VIII, Denver, Colorado August 2004.
30	Sannasiraj , S.A.	Data assimilation scheme using error covariances	IAHR China	Int. Conf. on Hydro informatics
31	Sannasiraj , S.A.	Assimilative wave modeling for the South East Asian seas	AOGS Singapore	Joint AOGS 1st annual meeting and APHW 2nd conference
32	Sannasiraj , S.A.	Anti-sea erosion work – Coastline north of Royapuram fishing harbour	Indian Navy	Intl. Seminar on Coastal Area Construction Management, 1-2 Nov 2004, Mumbai
33	A. Bhagatwala Murali K,	Modelling headland equilibrium bays with rotating DLA clusters	IAHR Hongkong	4 th International symposium on Environmental Hydraulics and 14 th Congress of the Asia & Pacific Division of the International Association of Hydraulic Engineering and Research 15-18 December 2004

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of visit	Purpose of visit
1.	Dr. V.T. Deeptha Thattai Chennai 600 041	2.4. 2004	Delivered an lecture on "Modeling the hydrometeorology and circulation in the Gulf of Honduras and the Meso American Lagoon, Western Caribbean"
2.	Mr. A.P. Dash, DRDL, Hyderabad	16.4. 2004	Delivered an Industrial Lecture on "Hydrodynamic testing for ballistic missile design"
3.	Mr. B. Madhusudhan Accent Technologies, Chennai	21.4.2004	Delivered an lecture on "Embedded Systems"
4.	Prof. Mahmoud M.R. Haddara, Memorial University of Newfoundland Canada	3.8. 2004	Delivered a seminar talk on "Parametric identification roll Motion of ships"
5.	Dr. M.M. Bhaskaran, Wayne State University, USA	5.8.2004	Delivered a seminar talk on "An Overview on the Applications of Short-lived Radionuclides as Tracers and Chronometers in the Coastal Ocean"
6.	M.Sc (Tech) students, Dept. of Marine Geology and Geophysics, Cochin University of Science and Technology, Kochi	26.8.2004	Department visit
7.	A group of Engineers from Green Palm Marine Engineering Company, Dubai	8.9.2004	Department Visit

8.	Mr. Philip Swamy and his group Technip India Private Limited, Chennai	9.9.2004	Visited the Department on and discussed with regard to carrying out M.Tech Project work by our Department students' in their company and R&D projects etc.,
9.	Dr. Kumaran Raju Tropical Marine Science Institute Singapore	16.11.2004	Delivered a talk on GIS for Coastal and Marine Applications
10.	Group of Air Force Officers, Air Force Station, Tambaram	30.11.2004	Department visit
11.	Science Camp 2004 students from the Science City, Chennai 600 025	28.12.2003	Department visit
12.	Prof. Neil Bose, Memorial University of Newfoundland	30.12.2004	Bilateral research program with Prof. S.K. Bhattacharyya and delivered a talk on "Autonomous Underwater Vehicle Research Activities at Memorial University"
12.	Mr. S. Karan Venayagamoorthy School of Engineering STANFORD, USA	04.1.2005	Delivered a seminar talk on "Energetics and dynamics of internal waves on slope"
13.	Prof. Harry Yeh Oregon State University Japan	07.1.2005	Visited the Department in connection with the post-tsunami run up field survey with our department staff
14	Dr. Sridhar Anandakrishnan Dept. of Geosciences Pennsylvania State University	13.1.2005	Delivered a seminar talk on "Tidal Influences on Glacier Flow Speeds"
15	Mr. N. Srinivasan Larsen & Toubro Limited, Chennai	28.1.2005	Delivered an Industrial Lecture on "Installation of Log Sea Outfall at Dahej for GIDC"
16	Team of Dr. Carol Tomlinson-Keasey, Chancellor, Dr. Jeff Wright, Dean of Engineering and Dr. Ramakrishna Thondapu, Univ. of California at Merced, USA	7.2.2005	Department visit
18	Dr. Krishnan Murugesan, National Taiwan University	28.2.2005	New Solution algorithms for Navier Stokes Equations
17	Prof. Dr.-Ing. A Schlenkhoff University of Wuppertal, Germany	7.3.2005	Delivered a seminar talk on "Water Quality Management in Reservoir Systems"
18	Dipl.-Ing M. Datig University of Wuppertal, Germany	7.3.2005	Delivered a seminar talk on "Visualization of certain phenomena under a deep water breaking wave"
19	Four students from University of Wuppertal, Germany	7.3.2005	Delivered talks on topics related to Ocean / Coastal and Hydraulic Engineering
20	Delegation including Prof. Dr. Hamdan Suhaimi, Deputy Rector [Academic], from Kolej Universiti Sains Dan Teknologi Malaysia	29.3.2005	Department visit

4.14.6 Other Activities:

- The prestigious Indira Gandhi Paryavaran Puruskar – 2002 award is conferred by the Ministry of Environment and Forests, Govt. of India on Chilika Development Authority, Orissa for the outstanding contribution in successful conservation and restoration of the eco-system of Chilika lagoon with the strong support from our Institute through Prof. R. Sundaravadivelu, Dept. of Ocean Engineering.
- Mr. A.N. Suryanarayana Prasad, Ph.D Research scholar received the "K. Suryannarain Rau Memorial Senior Student Award" and cash award of Rs.5000/- for Research and Development in Smart Technology 2004" from the Indian Society for Advancement in Material and Process Engineers, Bangalore.
- Memorandum of Understanding between Dredging Corporation of India, Vishakapatnam and IIT Madras was signed on October 18, 2004

4.15 DEPARTMENT OF PHYSICS

4.15.1 Introduction:

The department of physics was established in the year 1959 and now has Ph.D. and M.Sc. programmes in physics as well as an M.Tech programme in Solid state technology and a B.Tech (Engg. Physics) programme. In addition, the department teaches various core and elective courses in physics to B.Tech. students. The department also undertakes a large number of sponsored research and consultancy projects. Introduction of Holding a Joint Admn.Test to M.Sc programme in all IITs on all India Basis approved in Director's meeting on 9.3.2003.

4.15.2 Academic programmes:

Engg. Physics (B.Tech), M.Sc., M.Tech, (Solid State Technology) and Ph.D.

New Courses Introduced:

S.No.	Course No.	Course Title
1	PH 584	Quantum Computation and Quantum Information
2	PH 585	Laser Cooling and Trapping
3	PH 106	Electromagnetic Field Theory

Students on Roll :

Programme	I Year	II Year	III Year	IV Year	V Year	Total
Engg. Physics (B.Tech)	9	11	10	-	-	30
M.Tech	8	5	-	-	-	13
M.Sc.	23	32	-	-	-	55
Ph.D	16	24	12	16	15	83
Total	56	72	22	16	15	181

Names of students/scholars who attended Conferences/Seminars and Symposia abroad/ in India:

Sl. No	Name of the Scholar	Programme	Name of the Conference/ Seminar/Symposia	Date & Venue
Conference:				
1.	Uilash Kumar Barik	Ph.D	International Confrence (ICMCTF 2004)	19.04.04 to 23.04.04 San Diego, USA
2.	P. Ranjith	Ph.D	Conf. On Soft & Biological Matter	05.6.04 to 01.07.04 Tanjjan, Iran
3.	P.S.Anantha	Ph.D	9 th Asian Conference in Solid State Ionics	06.06.04 to 11.06.04 Jeju, South Korea
4.	M.Kandavel	Ph.D	15 ^h World Hydrogen Energy Conference – WHEC15	27.06.04 to 02.07.04 Conference Centre of Pacifico Yokohama, Japan
5.	P.Ranjith	Ph.D	22 nd IUPAP International Conference on Statistical Physics.	04.07.04 to 09.07.04 IISC, Bangalore
6.	K.C.Kumari Lakshmi	Ph.D	22 nd IUPAP International Conference on Statistical Physics.	04.07.04 to 09.07.04 IISC, Bangalore
7.	P.Ranjith	Ph.D	International Summer School	02.08.04 to 28.08.04 Les Houches in France
8.	P.Malar	PH.D	International Conference Ternary and Multinary Compounds	27.09.04 to 01.10.04 Denver, Colorado, USA
9.	Amrtha Bhide	Ph.D	6 th NCSSI (Conf.) Physics	05.10.04 to 07.10.04 Jadaupur Univ. Kolkata.
10.	R.Prasada Rao	Ph.D	6 th National Conference on Solid State Ionics	03.10.04 to 09.10.04 Jadaupur Univ. Kolkata.
Seminar:				
11.	E.D.V.Nagesh	Ph.D	13 th National Seminar on Ferro-electrics & Dielectrics	25.11.04 to 25.11.04 Univ of Delhi, New Delhi
12.	Dibyaranjan Rout	Ph.D	13 th National Seminar on Ferro-electrics & Dielectrics	20.11.04 to 28.11.04 Univ of Delhi, New Delhi
13.	T.Vishwam	Ph.D	13 th National Seminar on Ferro-electrics & Dielectrics	23.11.04 to 25.11.04 Univ of Delhi , New Delhi

Symposia:				
14	R.Srilatha	Ph.D	Int. Symposium of Research students on Material Science & Engg. (ISRS - 2004)	22.12.04 to 25.12.04 IITM
15	Umakanta Tirupathy	Ph.D.	59 th Ohio State University International Symposium on Molecular Spectroscopy	June 21-25, 2004 Ohio, USA

4.15.3 Faculty and their Activities:

Faculty :

Name and Qualification	Areas of specialization
Professors:	
V.Balakrishnan, Ph.D (Brandeis Univ., USA)	Mathematical Physics, Statistical Physics and Dynamical Systems
V.Damodara Das, Ph.D (SPU,Vidyanagar)	Thin film science and technology
P.C.Deshmukh, Ph.D (Nagpur Univ., Nagpur)	Atomic and Molecular Physics
K.Hariharan, Ph.D (IIT, Madras)	Solid state ionics
M.P.Kothiyal, Ph.D (IIT, Madras)	Physics - Applied optics
(Mrs) Maha Seshasayee, Ph.D (RPI, New York, USA)	Condensed matter physics, (structure studies)
V.R.K.Murthy, Ph.D (IIT, Madras)	Microwaves and Dielectrics
T.S.Natarajan, Ph.D (IIT, Madras)	Conducting polymers, Instrumentation Electronics
(Mrs) Neelima M. Gupte, Ph.D (SUNY, Stony Brook, USA)	Dynamical systems, Statistical Physics
S.Ramaprabhu, Ph.D (IIT, Madras)	Metal hydrides, Resonance Spectroscopy
K.V.S.Rama Rao, Ph.D (Andhra Univ., Waltair)	Magnetism and magnetic materials, Hydrogen in metals, Actuators/Sensors
G.Rangarajan, Ph.D (IISc, Bangalore)	Low temperature physics, Superconductivity & Magnetism
R.S.Sirohi, Ph.D (IIT, Delhi)	Optics
A.Subrahmanyam (IIT, Kharagpur) (Head)	Semiconductor Devices, photovoltaics Transparent conducting thin films
Associate Professors:	
S.Kasiviswanathan, Ph.D. (IIT, Madras)	Thin Films
(Mrs) S.Lakshmi Bala, Ph.D (Madras Univ.)	Theoretical Physics with specialization in gauge theories, dynamical systems and chaos
G.Markandeyulu, Ph.D (IIT, Madras)	Magnetism and magnetic materials
V.S.Murty, Ph.D (IIT, Madras)	Resonance spectroscopy
P.B. Bisht, Ph.D (Kumaun Univ., Nainital)	Ultrafast laser optics and spectroscopy
M.S.Ramachandra Rao Ph.D (IIT, Kharagpur)	Experimental Solid State Physics (Electronic and Magnetic Materials - Thin films and bulk)
V.Sankaranarayanan, Ph.D (IIT, Madras)	Superconductivity, Low Temperature Physics, Cryogenics
M.V.Satyanarayana, Ph.D (Madras Univ.)	Photonics, Quantum optics
K.Sethupathi, Ph.D (Moscow State Univ., Russia)	Low temperature physics and Superconductivity
P.B. Sunil Kumar, Ph.D. (IISc, Bangalore)	Condensed Matter Physics
Suresh Govindarajan Ph.D (Pennsylvania Univ., USA)	Theoretical Physics with specialization in Field Theory & Dynamical Systems
C.Vijayan, Ph.D (IIT, Madras)	Photonics, Nonlinear Optics
Assistant Professors:	
Dr. Arul Lakshminarayan	Quantum Chaos, Mathematical Physics, Nonlinear Dynamics
Dr. N.Harish Kumar	Condensed Matter Physics – Superconductivity, Magnetic Materials
Dr. Mahaveer Kumar Jain	Ceramics Sensors
Dr. Priya Mahadevan	Electronic structure of solids, magnetism
Dr. P.N.Santhosh	Magnetism and Magnetic materials , condensed matter Physics
V.Subramanian, Ph.D. (IIT, Madras)	Microwaves, Semiconductors, Ferroelectrics
Chief Design Engineer:	
D.K.Sharma, Ph.D (IIT, Madras)	Optical instrumentation, lens design

Senior Scientific Officer Gr.I:
Dr.N.Krishna Mohan

Applied Optics

Scientific Officer – Gr.II
Dr.T.R.Kesavan
Sri S.Sainathan
Dr.A.T.Seshadri
Sri M.Veerabhadra Rao

Metal Hydrides

Experimental solid state Physics/condensed matter physics
X-ray crystallography

Short-term Courses/Workshops/Seminars/Symposia/Conferences organized by the faculty member:

Sl. No.	Name of the Faculty	Title	Institution	Period/Duration
1	Dr.Neelima M.Geupte	Perspectives in Nonlinear Dynamics	IITM	July 12-15 2004
2	Dr.V.S.Murty	Recent Trends in Environmental Physics	IITM	November 22-27 2004.
3	Dr.T.S.Natarajan & Dr.S.Kasiviswantham	ISTE-AICTE STTP on PC Based Measurements in the Laboratory	IITM	December 1-11 2004

Short-Term Courses/Workshops/Seminars/symposia/Conferences/ Training attended by the Faculty in Academic Institutions and Public Sector Undertakings:

Sl.No.	Name of the Faculty	Title	Institution	Period/Duration
1	Dr.V.Balakrishnan	First SERC School on Non-linear Dynamics	PRL, Ahmedabad	28.11.04 to 08.12.04
2	Dr.Arul Lakshminarayan	First SERC School on Non-linear Dynamics	PRL, Ahmedabad	December 06 – 17, 2004
3	Dr.Neelima M.Gupte	First SERC School on Non-linear Dynamics	PRL, Ahmedabad	December 13 – 18, 2004
4	Dr.V.Balakrishnan	XV National Conference on Atomic & Molecular Physics	Indian Society of Atomic & Molecular Physics, Ahmedabad	December 20-24, 2004
5	Dr.C.Vijayan	National Symposium on Thermal Physics	Goa University, Goa	January 19-21, 2005

Special Lectures Delivered by the Faculty in other Institutions:

Sl.No	Name of Faculty	Topic of Lecture	Venue & Date
1	K. Sethupathi	UGC Refreshers Programme	Anna University Madras 23 rd and 24 th June 2004
2	Dr. P.C.Deshmukh	Some Problems of Current Interest in the Physics of Atomic Collisions and Spectroscopy'	Nuclear Science Centre New Delhi, India, June 14-15, 2004
3	Dr. A.Subrahmanyam	Recent Trends in Stealth Technology	ARCI Hyderabad 10.09.2005
4	Dr.P. C. Deshmukh	'New Correlation Effects in Dipole and Non-Dipole Matrix Elements in Atomic Photoionization'	VI Asian International Seminar on Atomic and Molecular Physics, Beijing, Sept.20-23, 2004.
5	Dr. P. C. Deshmukh	Computer Aided Exposition of Some Fundamental Principles in Classical Mechanics'	Department of Physics, Bangalore University, Bangalore, November 3-4, 2004.
6	Dr.A.Subrahmanyam	Advances in Plasma Diagnostics	IIT, Kharagpur January 10-11, 2005
7	Dr.A.Subrahmanyam	Science: The Magic of Nature	SAMEER 28.02.2005
8	Dr. T.S.Natarajan	Beyond Chalks and Talk	Trichy 5.3.05 to 6.3.05
9	Dr. M.S.Ramachandra Rao	Hydrogen as alternative fuel	JNTU, Hyderabad 16.3.05
10	Dr.S.Ramaprabhu	Hydrogen as Alternative fuel	JNTU, Hyderabad 16.3.05
11	Dr. Suresh Govindarajan	Theoretical and High energy Physics I	IIT Roorkee 16.3.05 to 20.3.05

12	Dr. A.Subrahmanyam	Plasma in Processing Technology: Opportunities and Challenges (Theoretical Physics Seminar Circle)	Dept. of Physics, Delhi Uni. & IIT Roorkee 21.3.05 to 22.3.05
13	Dr. V.Balakrishnan	Theoretical Physics Seminar Circuit	Bharathidasan Univ. Trichy 31.3.05 to 2.4.05

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1	Dr. A.Subramanyam	USA	19.04.04 to 26.04.04	International Conference
2	Dr. V.Damodara Das	USA	19.04.04 to 30.04.04	International Conference
3	Dr. G.Markandeyulu	Germany	20.04.04 to 30.04.04	DST-DRF Programme
4	Dr.V.Balakrishnan	Italy	06.05.04 to 06.06.04	Professional Visit
5	Dr.V.Subramanian	Italy	10.05.04 to 26.05.04	Professional Visit
6	Dr.P.B.Sunil Kumar	UK & Denmark	10.05.04 to 10.07.04	Professional Visit
7	Dr.Sruesh Govindarajan	USA	10.05.04 to 29.06.04	Professional Visit
8	Dr.Priya Mahadevan	Italy	24.05.04 to 11.06.04	International Conference
9	Dr.P.B.Bisht	Munich, Germany	08.07.04 to 28.07.04	Indo-German Project
10	Dr.T.S.Natarajan	Singapore	07.07.04 to 09.07.04	Nano Engineering Conference
11	Dr.A.T.Seshadri	USA	01.08.04 to 06.08.04	Gordon Research Conference
12	Dr.P.C.Deshmukh	China	20.09.04 to 23.09.04	6 th AISAMP-2004
13	Dr. A.Subramanyam	USA	14.11.04 to 26.11.04	International Symposium
14	Dr. G.Rangarajan	USA	07.11.04 to 31.12.04	Annual Conference
15	Dr.G.Markandeyulu	USA	08.11.04 to 12.11.04	Annual Conference
16	Dr.Prem B .Bisht	Oman	29.03.05 to 30.03.05	International Conference

Honours and Awards obtained:

Sl. No.	Name of the Faculty	Name of the Award	Award by	Awarded for	Date
1	Dr.M.S.Ramachandra Rao	Certificate	University of Maryland	In recognition of excellent achievements in Science education Outreach in 2004-2005	2004

Awards:

Dr.P.C.Deshmukh has been elected as the President of the ISAMP for the period 2004-2006 at the NCAMP (National conference on Atomic & Molecular Physics) held at PRL, Amedabad (December 20-23, 2004).

The paper titled "Optical properties of nanoclusters" presented as a poster by Ms.Pushpa Ann Kurian, Mr.Beson K Money, Mr.M.Krishnamruthy and Dr.C.Vijayan of the Department of physics, at the International Conference on Nanomaterials held during November 2004 at Kolkata was awarded III Prize in the order of merit.

Dr.Thomas Thundat, Distinguished Scientist, Oak Ridge National Laboratory, USA an alumnus of the Department (M.Sc Physics, 1980) has been awarded the "Distinguished Alumnus" award this year. He is also chosen among the top 50 Physicists by Scientific American.

Fellowships/Memberships of Academies and Professional Societies:
(Humboldt/INAE/INSA/Hon. FRA, etc.)

Sl. No.	Name of Faculty	Name of Academy / Professional Society	Level	Year of Admission
1.	Dr.A.Subrahmanyam	American Vacuum Society	Member	1993
2.	Dr.K. Hariharan	Materials Research Society of India	Life Member Through Payment	2001
3	Dr.C. Vijayan	Indian Physical Society	Life Member	1998
4	Dr.C. Vijayan	Indian Association of Physics Teachers	Life Member	1992
5	Dr.C. Vijayan	SPIE Madras Chapter	Member	1997
6	Dr.C. Vijayan	Luminescence Society of India	Member	1999
7	Dr.D.K. Sharma	Optical Society of India	Fellow	1980
8	Dr.D.K. Sharma	SPIE-India Chapter	Secretary	1995
9	Dr.A.Subrahmanyam	Indian Vacuum Society	Life Member	2005
10	Dr.A.Subrahmanyam	Semiconductor Society	Life Member	1997

4.15.4 Design and Development Activities:

Brief and specific details of Process/Instruments/Equipment/Software Designed and Developed:

1. Alternate Energy Technology Laboratory

- Development of hydrogen storage devices.
- Synthesis of CNTs using novel metal-hydride catalysts.
- A Fuel cell with CNTs as catalyst support for Pt electrocatalyst.
- Development of a CNTs based supercapacitor.

2. Atomic & Molecular Physics

- **Photoionization Studies of Confined Atoms:**

Studies of quantum systems trapped in confining potentials such as an atom endohedrally trapped in a fullerene cage have attracted considerable attention in recent years. Atomic photoionization parameters have been investigated for @H, @Li²⁺ and @Ca using the (*non-relativistic*) random phase approximation with exchange [Dolmatov *et al.* Radiation Phys and Chem **70**, 417 (2004)].

- **Photoionization studies in the dipole approximation:**

Our recent studies on atomic xenon and mercury have led to an understanding of:

- Dynamical effects due to spin orbit activated intrachannel coupling.
- Multiple minima in 6s photoionization of atomic mercury.
- Near-threshold energy-dependence of nf photoionization.

- **Study of Spin Polarization Parameters of Photoelectrons:**

Spin polarization parameters for photoelectrons from 4d subshells of xenon are being investigated in the wake of recent experiments at Argonne National Laboratory.

3. Solid State Ionic Laboratory

Investigation on Na⁺, Li⁺ ion conductors and cathode materials:

Glassy Ionics:

- Preparation of ionic glasses by melt quenching route and high energy ball milling. Conductivity and crystallization kinetics studies of these glasses.

Polymer Ionics:

- Preparation and characterization of PEO based polymer electrolytes on addition of nitrates and phosphate salts of Li and Na.

Nanocomposite polymer electrolytes:

- Enhancing the ionic conductivity and mechanical properties of polymer electrolytes, on addition of nanosized inert fillers.

Intercalation cathode materials:

- Synthesis of cathode materials for solid state sodium secondary battery application.

4. X-ray laboratory

Preparation of sulfide and oxysulfide glasses using mechanical milling and melt quenching methods. X-ray RDF and MD analysis of glasses. Preparation of rechargeable batteries using oxysulfide glasses as electrolyte.

5. Microwave laboratory

- Preparation and characterization of relaxor ferroelectric materials, dielectric resonator materials
- Development of coaxial probe technique for dielectric dispersion studies on liquids.
- Development of scanning near field microwave microscope.
- Fundamental and applied research on colossal magnetoresistive materials in both bulk and thin film – fabrication of magnetic tunnel junctions (MTJs) with novel nanoscale insulating barriers.
- Colour tuning and development of photoluminescent (PL) and electroluminescent (EL) materials for thin films for EL flat panel displays.
- Search for new transition and rare earth doped dilute magnetic semiconductors (DMS) for spintronic studies.
- Fundamental and applied research on piezoelectric materials in both bulk and thin film.
- Study of optical, magnetic properties and electrical transport properties of thin film transparent conducting oxides
- Fabrication of nanostructured thin films by pulsed laser deposition (PLD)

6. Ultrafast Optics

- A technique of time-correlated single photon counting (TCSPC) for fluorescence lifetime measurements was established in the laboratory with the partial support of IDRP (CPMB) funding of the institute.
- Fluorescence lifetime measurements with ~350 ps time-resolution, of samples as small as a few micrometers in dimensions are being carried out routinely
- Another technique of Confocal fluorescence microscopy for 1 μ m resolution has also been set up with the partial support of IDRP (CPMB) funding of the institute

7. Magnetism and Magnetic Materials Laboratory

Magneto-Transport and Magnetic Properties of $Dy_{0.73}Tb_{0.27}Fe_{2-x}Mn_x$ and $Ho_{0.85}Tb_{0.15}Fe_{2-x}Mn_x$

- A magnetostrictive transducer has been designed and fabricated for NDE of concrete structures. The transducer has been tested for satisfactory performance at the CNDE, Dept. of Mechanical Engineering.
- Large Curie temperature has been observed in Ga substituted $R_3Fe_{27.5}Ti_{1.5}$ intermetallics.
- A non-stoichiometric $R_2Fe_{17}M$ compound has been synthesized

8. Complex Fluids Laboratory:

On the theoretical side research during this period was mainly focused on the dynamics of semiflexible polymers, active membranes, molecular motor microtubule mixtures and phase separation induced dynamics of passive membranes.

On the experimental side the work has been carried out on the phase separation of nematic isotropic mixtures and rheological behavior of certain surfactant solutions.

9. Semiconductor and thin films laboratory:

- Solid state fast electro chromic devices
- Nano silver oxide for optical memories
- Design of cylindrical magnetron cathodes
- Thermal control in micro bolometers and micro satellites

DCA:

The departmental computing facilities, which now have five servers and about 30 desktop machines is managed by two faculty members and two Ph.D students.

New facilities added and Major equipment procured through the Department funds:

Differential Scanning Calorimeter (DSC) - 200 PC/1/H PHOX
Thermal Gravimetric Analyzer (TGA) – Pyryx 6 – 1No.

Spectrophotometer V-570 PC
Spectrofluorometer - FP 660

Agilent Microwave network analyzer

Lab-equip

Low Temperature type cryostat (18K – 550K) with complete automatic.

Patents filed:

A New technique for Dye Concentration Sensing in Microspheres. No.ICSR: Patents:2005/6150 dated 18.02.2005. by Dr.Prem B.Bisht

A Single step process for synthesis of single-walled carbon nanotubes, alloy nanowire encapsulated multi-walled carbon nanotubes and production of hydrogen. by Dr.S.Ramaprabu.

4.15.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No	Title of the Project	Period	Funding Agency	Value (Rs. Lakhs)	Co-ordinators
1	Technology Development for Indium Tin Oxide Coatings on Video Monitors (Phase II)	2004-2005	MIT	22.10	Dr.A.Subrahmanyam (PI)
2	Active Membranes and Membrane-Polymer Complexes	2004-2007	CSIR	9.06	Dr.P.B.Sunil Kumar (PI)
3	Theoretical and Experimental Spectroscopic studies of Atomic Systems in Atypical Stages	2004-2007	BRNS	17.80	Dr.P.C.Deshmukh (PI) Dr. C.Vijayan (Co-PI)
4	Implementation of Phase Shifting Techniques for Speckle Fringe Analysis	2004-2006	ISRO	14.82	N. Krishna Mohan (PI) M.P.Kothiyal (Co-PI)
5	Vanadium Oxide Thin Films for Temperature Sensor and Thermal Control Applications'. Exploratory Studies	2004-2007	ISRO	20.08	Dr.A.Subrahmanyam PI) Dr.Mahaveer Kumar Jain (CO-PI)
6	Development of Giant Magnetostrictive Thin Films	2005-2008	DRDO	26.90	Dr.G.Markandeyulu (PI)
7	Microscopic TV Holography for Non-Destructive Evaluation of Micro-Electro Mechanical Systems (MEMS)	2005-2008	DRDO	27.71	Dr.N.Kirhsna Mohan (PI) Dr.M.P.Kothiyala & Dr.D.K.Sharma (Co-PI)
8	Development of thin film metal hydrides for optical switching devices	2003-2005	DST	14.4	Dr.S.Ramaprabu (PI) Dr. N. Rajalkashmi (Co-PI)
9	Hydrogen storage properties of CNTs synthesized by alloy hydride catalytic route of pyrolysis	2003-2005	DRDO	13.19	Dr.S.Ramaprabhu (PI)
10	Information, Randomness & Entropy in Classical & quantum Dynamics	2002-2005	DST	19.33	Dr.S.Lakshmi Bala (PI)
11	Active Membranes & Membrane-polymer Complexes	2004-2007	CSIR	09.00	Dr.P.B.Sunil Kumar (PI)
12	Development of thin film fiber-optic hydrogen sensors	2003-2005	MNES	19.27	Dr.S.Ramaprabhu (PI) Dr. M.S. Ramachandra Rao (CO-PI)
13	Theoretical Studies of Photoionization Processes Involving Free & Confined Atoms	2002-2005	DST-NSF		Dr.P.C.Deshmukh (PI) S. T. Manson
14	Synchrotron Radiation Spectroscopy at Indus	2004-2006	CPMB-IDRP IIT-M		Faculty from Department of Physics & Chemistry, IIT-M

15	Computational Chemical Physics	2004-2006	CPMB- IDRP IIT-M.		Faculty from Department of Physics & Chemistry, IIT-M
16	Doppler Michelson Interferometer for measuring in-bore velocity time history	2001-2005	DRDO (Balasore)	78.00	M.P.Kothiyal & N. Krishna Mohan
17	White light interferometry	2001-2005	DAE	18.00	Dr. M.P.Kothiyal & Dr. D.K.Sharma
18	Investigation on the improvement of dielectric properties of microwave dielectric resonators for higher efficiency in microwave devices	2004-2007	DRDO	31.55	Dr. V.R.K.Murthy Dr. B.Viswanathan & Dr. V.Subramanian
19	Information, Randomness and Entropy in Classical and Quantum Dynamics	2002-2005	DST	19.33	Dr.S.Lakshmi Bala Dr.M.V.Satyanarayana & Dr.V.Balakrishnan
20	Development of electroluminescent (EL) phosphors for thin film EL (TFEL) displays	2002-2005	MHRD	12.00	Dr.M.S.Ramachandra Rao
21	Project on Low Temperature and High magnetic Fields	2002-2005	DST	65.00	Dr.G.Rangarajan Dr.V.Sankaranarayanan
22	Study of Magnetocaloric Effect for Magnetic Refrigeration Applications.	2004-2006	MHRD	14.00	Dr.V.Sankaranarayanan Dr.S.Ramaprabhu
23	Project on Low Temperature and High magnetic Fields	2002-2005	DST	65.00	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr. K. Sethupathi
24	Study of Magnetocaloric Effect for Magnetic Refrigeration Applications	2004-2006	MHRD	14.00	Dr.V.Sankaranarayanan Dr. K. Sethupathi Dr.S.Ramaprabhu
25	Development of rare earth based complex perovskites for dielectric resonator and photonic band gap applications	2002-2005	CSIR	10.78	Dr.V.Subrahmanian (PI) Dr.V.R.K.Murthy (Co- PI)
26	Development of microwave Hall effect technique and study of mobility in semiconductors and heterostructures	2002-2005	DRDO	20.61	Dr.V.Subrahmanian (PI) Dr.V.R.K.Murthy (Co- PI)

RBIC:

Sl No.	Name of the Faculty	Title	Industry	Amount (in Lakhs)
1.	Dr.Mahaveer Kumar Jain	Battery charging of photovoltaics in electric driven car	Akash Education and Research Trust	2.5

Exchange programme with other Universities:

Sl. No.	Name of the Faculty	Level	Journal
1	P. B. Bisht	Research (IIT-BMBF)	Ludwig-Maximillian University, Munich
2	Rohit Soni M.Tech (Roll No.PH03M004)	DAAD – exchange programme	2004-05

Journal Editorial Boards:

Sl. No.	Name of the Faculty	Chairman/Member	Journal
1	Dr.MahaveermKumar Jain	Member	Sensor Letters

Research Publications:

Total No. of papers published in Refereed National Journals	:	45
Total No. of papers presented in National Conference	:	44

In Refereed National Journals:

1. Synthesis of multi walled carbon nanotubes in high yield using Mm based AB_2 alloy hydride catalysts and the effect of purification on their hydrogen adsorption properties. M.M. Shaijumon, N. Rajalakshmi, Hojin Ryu and S. Ramaprabhu *Nanotechnology* 16, 518-524 (2005).
2. Effect of substitutional elements on hydrogen absorption properties in $ZrMnFe_{0.5}Ni_{0.5}$ and $ZrMnFe_{0.5}Co_{0.5}$. N. Mani and S. Ramaprabhu *Int. J. Hydrogen Energy*, 30, 53-67 (2005).
3. N. Rajalakshmi, Hojin Ryu, M. M. Shaijumon, S. Ramaprabhu (2005) Performance of polymer electrolyte membrane fuel cells with carbon nanotubes as oxygen reduction catalyst support material. *Journal of Power Sources* 140, 250- 257.
4. Catalytic growth of carbon nanotubes over Ni/Cr hydrotalcite – type anionic clays and the effect of its purification on their hydrogen storage properties. M. M. Shaijumon, N. Bejoy and S. Ramaprabhu, *Appl. Surf. Science* 242, 192 - 198 (2005).
5. Studies of yield and nature of carbon nanostructures synthesized by pyrolysis of ferrocene and hydrogen adsorption studies of carbon nanotubes. M.M. Shaijumon and S. Ramaprabhu *Int. J. Hydrogen Energy* 30, 311- 317 (2005).
6. Hydriding properties of Ti-substituted non-stoichiometric AB_2 alloys M. Kandavel and S. Ramaprabhu *J. Alloys and Compounds*, 381, 140-150 (2004).
7. Effect of electroless coating of Cu, Ni and Pd on $ZrMn_{0.2}V_{0.2}Fe_{0.8}Ni_{0.8}$ alloy used as anodes in Ni-MH batteries. R. Parimala, M.V. Ananth, S. Ramaprabhu, M. Raju *Int. J. Hydrogen Energy* 29 (2004) 509– 513
8. Effect of Substitutional Elements on Hydrogen Absorption properties in Mm-based AB_5 alloys. N. Mani and S. Ramaprabhu *J. Alloys and Compounds*, 363 (2004) 275-291.
9. Chaitanya Das, G. Srinivasa Murthy, Gopal Pandurangan and P.C. Deshmukh, 'The real effects of pseudo-forces', *Resonance*, Vol.9, Number 6, 74 –85 (2004).
10. P. Chaitanya Das, G. Srinivasa Murthy, K. Satish Kumar, T.A. Venkatesh and P.C. Deshmukh 'Motion of Charged Particles in Electromagnetic Fields and Special Theory of Relativity', *Resonance*, Vol.9, Number 7, 77-85 (2004).
11. Pranawa C. Deshmukh , Some recently found interchannel coupling effects in atomic photoionization processes, *Radiation Physics and Chemistry*, Vol. 70, 515-523 (2004).
12. Structure and ionic transport studies of Sodium borophosphate glassy system P.S. Anantha and K.Hariharan. *Mat. Chem. Physics* 89 (2005) 428-437.
13. Physical and ionic transport studies on Poly(ethylene oxide)– $NaNO_3$ polymer electrolyte system. P.S. Anantha and K. Hariharan. *Solid State Ionics* 176 (2005) 155-162.
14. Dielectric study of the Phase transition in $Pb_{1-x}Ba_x(Yb_{1/2}Ta_{1/2})O_3$ ceramics Dibyaranjan Rout, V. Subramanian, K. Hariharan, V. Sivasubramanian and V.R.K. Murthy *Ferroelectrics* 300 (2004) 67-78.
15. Frequency dependent transport characteristics of mechanochemically synthesized $PbSnF_4$. P.S. Anantha and K. Hariharan. *Solid State Ionics: The Science and Technology of Ions in Motion*, World Scientific, (2004) 955-962.
16. Molecular dynamics simulation of ternary glasses $Li_2O-P_2O_5-LiCl$. R.Prasada Rao and M. Seshasayee. *Solid State Comm.* 131 (2004) 537-542.
17. Structural studies on $xLi_2S-(1-x)P_2S_5$ glasses by X-ray RDF and Molecular Dynamics Simulation. R.K.Sistla and M. Seshasayee. *J. Non-Cryst. Solids*, 349 (2004) 54-59.
18. Structural study of lithium phosphate glasses by X-ray RDF and computer simulations. R.K.Sistla and M. Seshasayee *J. Non-Cryst. Solids*, 349 (2004) 22-29.
19. V. Madhurima, J. Sobhanadri and V.R.K. Murthy – ^{13}C NMR and dielectric relaxation studies of methanol+nitrile systems – *Indian Journal of Pure and Applied Physics*, Vol. 42, 837-840, 2004.

20. Rallabandi Sailaja and Prem B. Bisht, Upconversion dye lasers: Experiments and theoretical simulations on lasing by single and multiphoton pumping under ns and ps excitation, *Laser Horizon* 7, 17-22 (2004)
21. Structural and magnetic properties of $\text{ErPrFe}_{17-x}\text{M}_x$ ($\text{M} = \text{Ga}, \text{Si}; x = 0 - 3.5$), J. C. Ingersoll, G. Markandeyulu, V. S. Murty and K. V. S. Rama Rao, *J. Alloys and Compounds*, 354, 29 – 34 (2004)
22. Magnetic properties of ball-milled TbFe_2 and $\text{TbFe}_{2-x}\text{B}_x$, J. Arout Chelvane, S. Kasiviswanathan, M. V. Rao and G. Markandeyulu, *Bull. Mater. Sci.*, 27, 169 – 173 (2004)
23. Magnetic and electrical properties of $\text{Ho}_{0.85}\text{Tb}_{0.15}\text{Fe}_{2-x}\text{Mn}_x$ [$0, 0.5, 1.0, 1.5$], J. Arout Chelvane, S. Kasiviswanathan and G. Markandeyulu, *J. Magn. Mater.*, 277, 175 – 180 (2004)
24. Structural, electrical and magnetic properties of $\text{Ho}_{0.85}\text{Tb}_{0.15}\text{Fe}_2\text{B}_x$ J. Arout Chelvane, G. Markandeyulu, *J. Magn. Mater.*, 281, 1-5 (2004)
25. Manifestations of wave packet revivals in the moments of observables', C. Sudheesh, S. Lakshmibala and V. Balakrishnan, *Phys. Letts. A* 320 (2004) 14.
26. On the connection between biased dichotomous diffusion and the one-dimensional Dirac equation, V. Balakrishnan and S. Lakshmibala, *New J. Phys.* 7,(2005) 11.
27. Bibekananda Sundaray, V. Subramanian, T. S. Natarajan, Rong-Zheng Xiang, Chia-Cheng Chang and Wun-Shain Fann - Electrospinning of continuous aligned polymer fibers - *Appl. Phys. Letters*, vol. 84, 1222-1224, 2004.
28. V. Sivasubramanian, R. Kesavamoorthy, V. S. Sastry and V. Subramanian - Study of surface acoustic phonon modes in relaxor $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ - *Appl. Phys. Letters*, 85(4), 2004.
29. R. R. Vedantam, V. Subramanian, V. Sivasubramanian and V. R. K. Murthy - Low frequency Dielectric studies on $\text{Pb}(\text{Fe}_{1/2}\text{Nb}_{1/2})\text{O}_3$ - *Materials Science and Engineering B*, vol. 113, 136-142, 2004.
30. E. D. V. Nagesh, G. Santosh Babu, V. Subramanian, V. Sivasubramanian and V. R. K. Murthy - Microwave propagation in two dimensional structures using lossy cylindrical glass rods - *Eur. Phys. J. B*, vol. 41, 177-184, 2004.
31. S. Angappane, M. Pattabiraman, G. Rangarajan, K. Sethupathi and V.S. Sastry Electron magnetic resonance study in a single crystal of the colossal magnetoresistance manganite $\text{Nd}_{0.5}\text{Sr}_{0.5}\text{MnO}_3$ *Physical Review B* 69, 094437 1 - 8 (2004)
32. S. Angappane, M. Pattabiraman, G. Rangarajan, K. Sethupathi, G. Balakrishnan, D. McK. Paul, M.R. Lees, V.S. Sastry ESR study of $\text{Nd}_{0.5}\text{Sr}_{0.5}\text{MnO}_3$ single crystal *Journal of Magnetism and Magnetic Materials* 272–276, 1807–1809 (2004)
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34. Effect of rare earth ion substitution on the magnetic and transport properties of $\text{Pr}_{0.7}\text{RE}_{0.04}\text{Sr}_{0.26}\text{MnO}_3$ ($\text{RE} = \text{Er}, \text{Tb}$ and Ho) N. Rama, J.B. Philipp, M Opel, A. Erb, V. Sankaranarayanan, R. Gross and M.S. Ramachandra Rao *Euro. Phys. J. B* 38 553-557 (2004)
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38. Self-organized pattern formation in motor-microtubule mixtures Sumithra Sankararaman, Gautam Menon and P.B. Sunil Kumar *Phys. Rev. E.* 70,031905 (2004)
39. Crosscaps in Gepner models and type IIA orientifolds by Suresh Govindarajan & Jaydeep Majumder. *JHEP* 0402:026,2004.

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43. N.Rama, V.Sankaranarayanan and M.S.Ramachandra Rao Effect of A-site disorder on the percolative transport of $Pr_{(0.7-y)}Ho_ySr_{0.3}MnO_3$ ($y=0,0.04,0.08$ and 0.1) *Journal of Magnetism and Magnetic Materials* 292, 468-475 (2004).
44. Carrier Transport Mechanism in Indium tin oxide (ITO)/Silicon hetero Junctions: Effect of Chlorine V. Vasu and A. Subrahmanyam, *Applied Physics A* vol 80 pp 823 -827 (2005)
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In Proceedings of Conferences:

1. K. P. Sunanda, Tanima Banerjee, Hari Varma R, Ummal Momeen, P.C.Deshmukh ' Newly found Dynamical Effects on Photoelectron Parameters in the Dipole Approximation for Atomic Xe' XV National Conference on Atomic and Molecular Physics, Physical Research Laboratory, Ahmedabad, India, December, 20-23, 2004
2. Tanima Banerjee, K. P. Sunanda, Hari Varma R, Ummal Momeen, P. C.Deshmukh 'Interchannel Coupling Effects on Non-dipole Photoionization Parameters of Atomic Xenon and Mercury.' XV National Conf.on At. & Mol. Phys., Phys.Res. Lab., Ahmedabad, December 20-23, 2004
3. Hari Varma R, Tanima Banerjee, Ummal Momeen, P. C. Deshmukh 'Consequences of Quantum Confinement on Atomic Photoionization Parameters' XV National Conf. on At. & Mol. Phys., Phys.Res. Lab., Ahmedabad, December 20-23, 2004.
4. S. K. Debnath, N. Krishna Mohan, D. K. Sharma, M. P. Kothiyal, "Optical profiling using white light interference in spectral domain", *Photonics-2004*, Dec. 9-11, Cochin, 60, (2004).
5. S. K. Debnath, N. Krishna Mohan, D. K. Sharma, M. P. Kothiyal, "Analysis of Spectrally Resolved white light interferograms : Different Methods" XXX Optical Society of India (OSI) Symposium on Optics and Opto-Electronics, Jan. 19-21, New Delhi, 43, (2005)
6. X-ray and electrical study of Fe-substituted $Pb(Yb_{1/2}Ta_{1/2})O_3$ ceramics Dibyanjan Rout, V. Subramanian, V. Sivasubramanian, K. Hariharan and V.R.K. Murthy. International symposium on Advanced Materials and Processing, IIT Kharagpur, December 2004.
7. Effect of annealing on dielectric response of $(Pb_{0.8}Ba_{0.2})(Yb_{0.5}Ta_{0.5})O_3$ ceramics. D. Rout, V. Subramanian ,V. Sivasubramanian ,K. Hariharan and V.R.K. Murthy International symposium of Research Students on Materials Science and Engineering, IIT Madras, December 2004.
8. Molecular dynamics simulation of sodium phosphate glasses. R.Prasadara Rao and M. Seshasayee 6th National Conference on Solid State Ionics, Oct. 2004 (Kolkata).
9. X-ray RDF study of sodium phosphate glasses. R.Prasadara Rao and M. Seshasayee. 49th annual DAE Solid State Physics Symposium, Dec. 2004 (Amritsar).
10. Molecular dynamics simulation of ternary glasses $Li_2S-P_2S_5-LiI$. R. Prasada Rao and M. Seshasayee. International symposium of research students-2004, Dec. 2004, IITM.
11. Enhancement in dielectric properties of $(Pb_{0.8}Ba_{0.2})(Yb_{0.5}Ta_{0.5})O_3$ ceramic by oxygen annealing - Dibyanjan Rout, V. Subramanian, V. Sivasubramanian, K. Hariharan and V.R.K. Murthy - XIII National Seminar on Ferroelectrics and Dielectrics, Delhi, 2004.
12. E.D.V. Nagesh, V. Subramanian, V. Sivasubramanian and V. R. K. Murthy Microwave band gap structures and the effect of line defects on microwave propagation - XIII National Seminar on Ferroelectrics and Dielectrics, Delhi, 2004.

13. Band gap and defect mode in a double periodic one dimensional microwave band gap structure - G. Santosh Babu, V. Subramanian, V. Sivasubramanian and V. R. K. Murthy XIII National Seminar on Ferroelectrics and Dielectrics, Delhi, 2004.
14. Carrier mobility measurement at microwave frequencies by using square and circular bimodal cavities D. V. B. Murthy, V. Subramanian and V. R. K. Murthy XIII National Seminar on Ferroelectrics and Dielectrics, Delhi, 2004.
15. J.Venkatesh and V. R. K. Murthy- Dielectric Relaxation in $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-PbTiO}_3$ Relaxor Ferroelectrics.- XIII National Seminar on Ferroelectrics and Dielectrics, Delhi, 2004.
16. Dibyanjan Rout, V. Subramanian, K. Hariharan, V. Sivasubramanian and V. R. K. Murthy - XRD, EDX and FT-IR studies on Ba substituted Lead Ytterbium Tantalate ceramics - Poster presented at 49th DAE Solid State Physics Symposium, Dept. of Physics, Guru Nanak Dev University, Amritsar, Dec. 2004.
17. C. Krishnamoorthy, K. Sethupathi and V.Sankaranarayanan Electrical transport properties of manganite nanoparticles Presented at National conference in Emerging Areas in Applied Physics, Indian School of Mines, Dhanbad during 21-23rd February, 2004.
18. C. Krishnamoorthy, K. Sethupathi and V. Sankaranarayanan Synthesis, characterization and electrical transport properties of manganite nanoparticle Presented in the International Symposium of Research Scholars (ISRS2004) held in IIT-Madras in December 2004
19. C. Krishnamoorthy, K. Sethupathi and V. Sankaranarayanan Interfacial effects on electrical transport properties of Manganite nanoparticles Presented in the DAE SSPS held in Gurunanak Dev University Amritsar in December 2004
20. K. Mohan Kant, K.Sethupathi and M.S.Ramachandra Rao Magnetic properties of 4f- element doped SnO_2 Presented in the International Symposium of Research Scholars (ISRS2004) held in IIT-Madras in December 2004
21. K.Mohan Kant, K.Chandrasekaran, S.Ogale, T.Venkatesan, K.Sethupathi, M.S.Ramachandra Rao Magnetization studies on Rare earth doped SnO_2 Presented in the DAE SSPS held in Gurunanak Dev University Amritsar in December 2004
22. C. Krishnamoorthy, K. Sethupathi and V.Sankaranarayanan Electrical transport properties of manganite nanoparticles Presented at National conference in Emerging Areas in Applied Physics, Indian School of Mines, Dhanbad during 21-23rd February, 2004.
23. C. Krishnamoorthy, K. Sethupathi and V. Sankaranarayanan Synthesis, characterization and electrical transport properties of manganite nanoparticles Presented in the International Symposium of Research Scholars (ISRS2004) held in IIT-Madras in December 2004
24. C. Krishnamoorthy, K. Sethupathi and V. Sankaranarayanan Interfacial effects on electrical transport properties of Manganite nanoparticles Presented in the DAE SSPS held in Gurunanak Dev University Amritsar in December 2004
25. N. Rama, J.B. Philipp, M. Opel, V. Sankaranarayanan, R. Gross and M.S. Ramachandra Rao Influence of A-site disorder on the magnetoresistance in $\text{Pr}_{0.74}\text{Sr}_{0.26}\text{MnO}_3$ and $\text{Pr}_{0.7}\text{Ho}_{0.04}\text{Sr}_{0.26}\text{MnO}_3$ manganites. International symposium of research Scholars on materials Science and engineering (ISRS 2004) held in IIT-Madras from December 20-22 (2004)
26. Hari Varma R, Tanima Banerjee, P. C. Deshmukh 'Interchannel Coupling and Atomic Confinement on Photoionization of Atomic Zinc', VI Asian International Seminar on Atomic and Molecular Physics, Beijing, September 20-23, 2004.
27. Effect of ceramic fillers on ionic transport in PEO- NaNO_3 polymer electrolyte system. P.S. Anantha and K. Hariharan .9th Asian Conference on Solid State Ionics, Jeju, South Korea, June 2004.
28. Synthesis of Na_xCoO_2 intercalation cathode by ball milling and subsequent firing. Amrtha Bhide and K.Hariharan. Sixth National Conf. on Solid State Ionics, Dept. of Physics, Jadavpur University, Kolkata, October 2004.
29. Electrical conductivity studies of $\text{Na}_2\text{SO}_4\text{-P}_2\text{O}_5$ glassy system. P.S. Anantha and K. Hariharan. Sixth National Conf. on Solid State Ionics, Dept. of Physics, Jadavpur University, Kolkata, October 2004.
30. E. D. V. Nagesh, G. Santosh Babu, V. Subramanian and V. R. K. Murthy - Effect of point and line defects in microwave band gap structures – Proceedings of the Int. Conference on Optoelectronics Technology, 376 – 379, 2004.

31. D.V.B. Murthy, V.Subramanian and V.R.K.Murthy - Electrical characterisation of semiconductors at microwave frequencies using bimodal cavity - Asia Pacific Microwave Conference, Dec. 2004.
32. G. Santosh Babu, V. Subramanian, V.Sivasubramanian and V. R. K. Murthy - Microwave propagation through one dimensional microwave band gap structures - Asia Pacific Microwave Conference, Dec. 2004.
33. E. D. V. Nagesh, V. Subramanian, V. Sivasubramanian and V. R. K. Murthy - Fabry- Perot Resonators using low dielectric microwave band gap structures - Asia Pacific Microwave Conference, Dec. 2004.
34. Dibya ranjan Rout, V.Subramanian, K.Hariharan, V.Sivasubramanian, and V.R.K. Murthy – X-ray and electrical study of Fe- substituted $Pb(Yb_{1/2} Ta_{1/2})O_3$ ceramics – Proceedings of the International Symposium on advanced materials and processing, 2004.
35. Study of Magnetic properties of $A_2B'NbO_6$ ($A=Ba, Sr, (BaSr)$; and $B'= Fe$ and Mn) double perovskites. N.Rama, J.B.Philipp, M.Opel, K.Chandrasekaran, V.Sankaranarayanan, R.Gross and M.S. Ramachandra Rao 9th Joint MMM/Intermag conference held on 9th Jan 2004 in Anaheim California
36. Effect of A site disorder on the magnetism and transport of $Pr_{0.7-y}Ho_ySr_{0.3}MnO_3$ ($y= 0.04, 0.08$ and 0.1). N.Rama, V.Sankaranarayanan and M.S.Ramachandra Rao Third international conference on Physics and applications of spin related phenomena in semiconductors held in Santa Barbara, USA on 23rd July 2004
37. Ferromagnetism in 4f-element doped SnO_2 Diluted Magnetic Semiconductor system M.S.R. Rao, D. Kundaliya, S. R. Shinde, S. Dhar, Sascha Welch, N. D. Browning, S.E. Loffland, R.L. Green, S.B. Ogale and T. Venkatesan Third international conference on Physics and applications of spin related phenomena in semiconductors held in Santa Barbara, USA on 23rd July 2004
38. A-site dependent percolative thermopower and Griffiths phase in $Pr_{(0.7-x)}Ho_xSr_{0.3}MnO_3$ ($x = 0, 0.04, 0.08$ and 0.1). N.Rama, M.Opel, V.Sankaranarayanan, R.Gross, S.B. Ogale, T.Venkatesan and M.S.Ramachandra Rao 49th Annual conference on magnetism and magnetic materials (MMM) held in Jacksonville Florida from November 7th to 11th 2004
39. Effect of transition metal ion doping on the optical and magnetic properties of $Ce_{1-x}T_xO_2$ ($T = Fe, Mn, Cr$ and $x = 0.04$ and 0.05) J .Sarala Shanthy, K. Sethupathi, S.B.Ogale, T.Venkatesan and M.S.R. Rao 49th MMM conference held in November 2004 in Jacksonville, Florida USA
40. Magnetic and optical properties of rare earth doped $Sn_{0.95}RE_{0.05}O_{2-\delta}$ ($RE=Gd, Dy, Er$) K. Mohan Kant, K. Chandrasekaran, S.B.Ogale, T.Venkatesan, K. Sethupathi and M.S. Ramachandra Rao 49th MMM conference held in November 2004 in Jacksonville, Florida USA
41. Study of the percolative nature of thermoelectric power and resistivity in $Pr_{0.66}R_{0.04}Sr_{0.3}MnO_3$ ($R = Tb, Y, Ho$ and Er) manganites. N. Rama, V. Sankaranarayanan and M.S. Ramachandra Rao MRS (Materials Research Society) fall meeting held in Nov.2004 in Boston, USA.
42. Umakanta Tripathy, and Prem B. Bisht, Study of nonlinear optical parameters by solvent induced changes in the optical density, Proceedings of seventh international conference on optoelectronics, fiber optics & photonics, Cochin University of Science and Technology, Kochi, 9-11 Dec. 2004, p. 271.
43. P. Sandeep and Prem B. Bisht, Influencing luminescence properties of molecules by embedding in single polymer microspheres, Proceedings of seventh international conference on optoelectronics, fiber optics & photonics, Cochin University of Science and Technology, Kochi, 9-11 Dec. 2004, p. 433.
44. T. Bizjak, P. B. Bisht, S. Lochbrunner, and E. Riedle, Ultrafast photodynamics of indole, Proc. of Meeting of German Physical Society, Munich, March 22-26, 2004.

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor & Designation	Date of Visit	Title of the Lecture
1	Dr.Jaydeb Chakrabarti, SNBNCBS, Kolkata	06.04.2005	Phenomenological Theory for flow induced Potential in Nanoparticle Assembly
2	Dr.Sandeep Krishna	08.04.2005	Instabilities in a nonequilibrium model of an evolving network
3	Dr.Amitava Raychaudhuri, Palit Professor of Physics, University of Calcutta	18.05.2004	Neutrino Novelties lecture

4	Dr.Panchanan Pramanik Department of Chemistry IIT Kharagpur	20.07.2004	Nano-sized inorganic materials
5	Dr.Mohit Randeria Dpeartment of theoretical Physics, TIFR, Mumbai	23.07.2004	Superconductivity: Past Triumphs and New Challenges
6	Dr.V.P.N.Nampoori, International School of Physics, Cochin Univerisy of Sci. & Tech. Cochin	04.08.2004	Optical Limiting – Materials and Applications
7	Dr.Prasanta K.Tirupathy, TIFR, Mumbai	22.09.2004	New vacuum configurations for superstrings
8	Dr.G.Baskaran, Institute of Mathematical Science, Chennai	19.10.2004	Diamond Route to High Tc Superconductivity
9	Dr.Pankaj Jain, Department of Physics, IIT Kanpur	25.10.2004	Is there a preferred direction in the Universe ?
10	Dr.L.Ramdas Rammohan, Department of Physics, Worcester Polytechnic Institute, Worcester	01.11.2004	Designing Magnetic Sensors with Enhanced Geometric Magnetoresistance
11	Dr.Madan Rao, Raman Research Institute & National Centre for Biological Sciences, Bangalore	03.11.2004	Organisation and Dynamics of Intracellular Trafficking
12	Dr.Chandrasekhar Roychoudhuri, Department of Physics, University of Connecticut, Storrs, USA	06.12.2004	Should we Propagate the Fourier Frequencies of the Carrier Frequency of a Light Phase
13	Dr.Sylvaian Franger, Laboratory of Solid State Physico- Chemistry, Institute of Molecular & Materials Chemistry, Orsay	13.12.2004	Synthesis, Characterization and electrochemical properties of low temperature materials as Lithium intercalation compounds for secondary lithium batteries
14	Dr.Thomas Thundat, Distinguished Scientist, Oak Ridge National Laboratory & University of Tennessee, Knoxville, USA	17.12.2004	Nanomechanics: Molecular Recognition in Chemistry and Biology
15	Per Lyngs Hansen, MEMPHYS, Department of Physics, university of Southern Denmark, Denmark	05.01.2005	Symmetry at the break point: oysters and spontaneous vesicles
16	Dr.John M.Lupton, University of Munich, Germany	11.01.2005	Taking a close look at molecular semiconductors
17	Dr.P.S.Ramanujam Optics & Plasma Research Department of Risoe National Laboratory, Denmark	09.02.2005	Photoinduced phenomena in azobenzene polymers
18	Dr.Madhav Ranganathan Institute of Physics Sci.&Tech. University of Maryland, College Park, MD	14.02.2005	Spiral Steps on Lead Crystallites
19	Dr.Mohamed Laradji Department of physics University of Memphis, Tennessee, USA	16.02.2005	Isotropic and Anisotropic Nanoparticles in Multicomponent Fluids
20	Dr.R.Suryanarayanan Crystal Growth Lab CNRS Orsay, France	25.02.2005	Spin – glass effects and CMR in manganites
21	Prof. Sunil Mukhi Theory Group, TIFR, Bombay.	01.03.2005	String theory and M theory
22	Mr.Bill Zoeckler Quantum Design, USA	02.03.2005	Advances in Physical Property Measurement Systems (PPMS) & Magnetic property Measurement Systems
23	Mr.Sunil Saxena Managing Director, Ane Books	03.03.2005	The Art and Science of Scientific Book Publishing
24	Dr. Raghavan Rangarajan Physical Research Laboratory Ahmedabad	09.03.2005	Baryogenesis in the Early Universe

25	Dr. Mahendra K. Varma Dept. of Physics IIT Kanpur	15.03.2005	Pattern formation and Intermittency in Convective flows.
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4.15.6 Other Activities:

- Sir C.V.Raman's Birthday has been celebrated in the Department on 7th November 2004. Dr.S.Narayanan Director-in-charge was invited as Chief Guest and delivered lecture on that day.
- An Intercollegiate Physics Quiz Competition has been organized in the Physics Department on 7th November 2004.
- PAN-IIT MEET was held during December 24-25, 2004 at IIT Delhi. Dr.T.S.Natarajan and Mr.C.Krishnamurthy, Research scholar of Physics Department have represented the Department.
- All Physics HOD's of all IITs meeting was held on 21.01.2005 in the Physics Department, IIT Madras. Out of the 7 HOD's, 5 HOD's have been participated in the meeting. Our Director Prof.M.S.Ananth and Dean, Academic Courses Prof. S.Santhakumar have addressed the meeting.

5.1 COMPOSITES TECHNOLOGY CENTRE

5.1.1. Introduction:

Composites Technology Centre formerly known as Fibre Reinforced Plastics (FRP) Research Centre was established in 1974 as an interdisciplinary Centre for carrying out teaching, research, design and development in the field of Composite Materials and their applications. The centre was renamed as Composites Technology Centre in 1997.

The centre currently works on polymer, metal and ceramic matrix composites and their applications. The areas of expertise of the Centre include: –

- Materials Research and Development
- Composites Manufacturing Technology
- Composite Product Design and Development
- Quality Assurance of Composites

The Centre has undertaken a large number of sponsored projects and established close interaction with the industries by offering consultancy and technical guidance.

5.1.2 Academic Programmes:

Students on roll:

This centre enrolls the students/scholars for M.Tech, M.S and Ph.D programmes. But they are admitted in the respective departments for award of degree,. As on 31.3.2005, the following numbers of students/scholars were with this centre:

M.Tech - 7
M.S - 1
Ph.D - 4

Names of student / scholar attended conference / seminar and symposia abroad / India:

S.No.	Name of the student	Programme	Name of the conference/seminar/symposia	Date and venue
Conference				
1.	K.M. Usha	PhD	Intl. Conf. on Polymers (Macro-2004)	Dec 15–17, 2004, Trivandrum
2.	S. Arul	PhD	Intl. Conf. on Manufacturing & Management	Dec 8–10, 2004, Vellore
3.	S. Arul	PhD	21 st AIMTDR Conference	Dec 20–21, 2004, Vellore
4.	P. Jawahar	PhD	Intl. Conf. on recent advances in Composite Matls.	Dec 17–19, 2004 Varanasi
5.	J. Chandradass	PhD	Intl. Conf. on recent advances in Composite Matls.	Dec 17–19, 2004 Varanasi
6.	R.V.S. Reddy	PhD	Indo – Japan Conf. on Damage Tolerant Design & Matls.	Dec 16–18, 2004, Chennai
7.	R.V.S. Reddy	PhD	Intl. Conf. on current trends in aqueducts, marine bridges.	Dec 20–22, 2004, Hyderabad
8.	S. Suriya Prakash	MS	Intl. Conf. on advances in Concrete & Composite Structures	Jan 6–8, 2005, Chennai
9.	R.V.S. Reddy	PhD	National Conf. on New Perspectives Civil Engg Systems (NPPCES – 2005)	Jan 10–11, 2005, Coimbatore
10.	R.V.S. Reddy	PhD	National Conf. on Prod. & Processing of Composite Structures (PPCM–2004)	Nov 25–27, 2004, Namakkal
11.	T.P. Mohan	PhD	National Conf. on Nanoscience & Tech – NANO SPHERE 2004	June 11–12, 2004, Chennai
12.	T.P. Mohan	PhD	Intl. Conf. on emerging trends in Polymers & Textiles	Jan 7–8, 2005, IIT, Delhi
13.	K. Karthikeyan	MS	NANOSPHERE – 2004	June 11–12, 2004, Chennai
14.	K. Karthikeyan	MS	Intl. Conf. on Polymer Blends, Composites, IPNS& Gels – ICBC 2005	March 21–23, 2005, Kottayam

15.	V. Manikandan	PhD	ICBC – 2005	March 21–23, 2005, Kottayam
Symposium				
1.	J. Chandradass	PhD	Intl. Symposium on Advanced Matls & Processing	Dec 6–8, 2004, Kharagpur
2.	J. Chandradass	PhD	Intl. Symposium of Research Students on Matls Sci & Engg (ISRS– 2004)	Dec 20–22, 2004, Chennai
3.	V. Vinothini	MS	ISRS – 2004	Dec 20–22, 2004, Chennai
4.	P. Jawahar	PhD	ISRS – 2004	Dec 20–22, 2004, Chennai
5.	T.P. Mohan	PhD	Intl. Symposium on Smart Matls. & Structures – ISSMS – 2004	Dec 15–17, 2004, Chennai
6.	T.P. Mohan	PhD	ISRS–2004	Dec 20–22, 2004, Chennai
7.	D.A. Meenal	PhD	ISSMS–2004	Dec 15–17, 2004, Chennai

5.1.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Dr. S.K. Malhotra, Ph.D (IIT, Madras)(Head)	Composite Materials Research, Analysis and Design of Composite Products, Quality Control of Composites.
Dr. M. Balasubramanian, Ph.D (IIT, Madras)	Ceramics and Ceramic Composites, Polymer Composites, Sol–gel Process
Dr. P. Alagusundaramoorthy, Ph.D (IIT, Madras)	FRP Composites for Civil Engg., FRP Chemical Plant Structures, Retrofitting and Rehabilitation of Concrete Structures.
Dr. R. Velmurugan, Ph.D (IIT, Delhi)	Composite Structures Analysis and Design, Impact Mechanics, 3–D Composites

Short-term course / Workshops / Seminars/ Symposia / Conferences organized by the faculty members:

S.No.	Coordinator(s)	Title	Period
Workshop			
1.	Dr. M. Balasubramanian & Dr. Alagusundaramoorthy	Fibre Reinforced Thermoset Plastics	Sept 27 to Oct. 2, 2004
2.	Dr. R. Velmurugan	Tech. Appreciation Programme – High Performance Composites	Oct. 29, 2004

Short term courses/ Workshops/ Seminars/ Symposia / Conferences / Training attended by faculty members in Academic Institutions and public sector undertakings:

S.No.	Name of Faculty	Title	Period & Venue
1.	Dr. S.K. Malhotra	2 nd Intl. Conf. on Composite Technology & Model Identification	Sept 21–23, 2004, Bristol, UK
2.	Dr. S.K. Malhotra	Intl. Conf. on Advances in Polymer Blends, Composites, IPNS & Gels	March 21–23, 2005, Kottayam
3.	Dr. M. Balasubramanian	ISRS – 2004	Dec 20–22, 2004, Chennai
4.	Dr. P. Alagusundaramoorthy	Intl. Conf. on Recent Advances in Composite Matls.	Dec 17–19, 2004, Varanasi
5.	Dr. P. Alagusundaramoorthy	Intl. Conf. on Current Trends in Aqueducts & Marine Bridges	Dec 20–22, 2004, Hyderabad
6.	Dr. P. Alagusundaramoorthy	Intl. Conf. in advances in Concrete & Composite structures	Jan 6–8, 2005, Chennai

7.	Dr. P. Alagusundaramoorthy	National Conf. on New Perspectives Civil Engg systems	Jan 10-11, 2005, Coimbatore
8.	Dr. P. Alagusundaramoorthy	National Conf. on Production & Processing of Composite Matls	Nov 25-27, 2004, Namakkal

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of Faculty	Topic of Lecture	Venue & Date
1.	Dr. S.K. Malhotra	Processing & Testing of Fibre Reinforced Polymer Composites	Mepco Schlenk Engg College, Virudhu Nagar, Nov 23, 2004
2.	Dr. M. Balasubramanian	Resin Transfer Moulding	Mepco Schlenk Engg College, Virudhu Nagar, Nov 26, 2004
3.	Dr. M. Balasubramanian	Composite Matls – Application in Automotive Industry	Sri Venkateswara College of Engg Sriperumbudur March 18, 2005
4.	Dr. P. Alagusundaramoorthy	Manufacturing of Advanced Composites	Mahendra Engg College, Namakkal, Nov 25, 2004
5.	Dr. R. Velmurugan	Introduction to Composite Structures	Honey Well Tech Solu, Madurai, Aug 21-22, 2004
6.	Dr. R. Velmurugan	Analysis of Laminated Composites	Mepco Schlenk Engg College, Virudhu Nagar Nov. 22, 2004
7.	Dr. R. Velmurugan	Advanced Composite Materials	Sri Venkateswara College of Engg, Sriperumbudur, March 29, 2005

Visits abroad by faculty:

Dr. S.K. Malhotra attended 2nd Intl. Conf. on Composites Testing & Model Identification held at Univ. of Bristol, U.K. during Sept. 21-23, 2004.

5.1.4 Design and Development Activities:

New facilities added or major equipment procured through project funds:

S.No.	Equipment	Value (in Rs)
1.	Impact hammer and accelerometer	2.5 lacs
2.	Oscilloscope	2.5 lacs
3.	Data acquisition system	5.0 lacs

5.1.5 Research and Consultancy:

Sponsored Research Projects:

S. No.	Title	Period	Funding agency	Amount (Rs in lacs)	Co-ordinators
1.	Processing & performance evaluation of light weight composite gears	Feb. 2002–Jan. 2005	DST	12.43	Dr. R. Gnanamoorthy (Mech. Engg.) Dr. S.K. Malhotra
2.	Development of sol-gel protective coating on metals	Oct 2002–Sept. 2005	UGC	3.3	Dr. M. Balasubramanian
3.	Development of FRP rebars for reinforcing concrete structures	April 2003–March 2005	MHRD	12.0	Dr. P. Alagusundaramoorthy Dr. M. Balasubramanian

4.	Vibration Control of Nano Composites	March 2004– Feb 2006	MHRD	17.0	Dr. R. Velmurugan Dr. R. Sarathi
5.	Low & Medium vel impact of projectiles on laminated plates	August 2003– July 2006	ARMREB	14.83	Dr. R. Velmurugan
6.	Seismic evaluation & retrofit of existing multistory bldgs.	June 2002– March 2005	DST	28.00	Dr. P. Alagusundaramoorthy
7.	Investigations of Ti-lined composite pressure bottles	Oct 2004– Sept 2006	ISRO– Respond	12.32	Dr. R. Velmurugan Dr. R. Palaninathan

Industrial Consultancy Projects:

S.No.	Name of Faculty	Title	Industry	Amount (Rs. in lacs)
1.	Dr. P. Alagusundaramoorthy	Repair of light houses at Gujarat	Min. of light houses & light ships	1.32
2.	Dr. P. Alagusundaramoorthy (other Coordinator)	Preparation of feasibility report for setting up an impounded deck	Kandla Port Trust, Kandla	15.00
3.	Dr. P. Alagusundaramoorthy (other Coordinator)	Rehabilitation of Junglighat Jetty & Phoenix bay complex at Port Blair	Andaman Harbour Works	11.02
4.	Dr. P. Alagusundaramoorthy (other Coordinator)	Rehabilitation of Haddo Wharf, Port Blair	Andaman Harbour Works	13.77
5.	Dr. P. Alagusundaramoorthy (other Coordinator)	Rehabilitation of diaphragm wall at Paradip Port	Paradip Port Trust	4.40
6.	Dr. M. Balasubramanian	SEM analysis of stents	Cordis, Chennai	1.43
7.	Dr. R. Velmurugan	Chemical & Mech analysis of stup seal	VEM – Renonng Enn, Vizak	0.55

RBIC Projects:

S.No.	Name of Faculty	Title	Industry	Amount (Rs in lacs)
1.	Dr. S.K. Malhotra Dr. P. Alagusundaramoorthy	Design & Analysis of FRP Cab for DMU/DPC	Hindustan Fibreglass Works, Vadodara	1.5
2.	Dr. M. Balasubramanian	Development & Characterisation of alum.matrix composites for tracked vehicle appln.	CVRDE, Chennai	4.5

Research Publications:

Total No. of papers published in Refereed International Journals	:	6
Total No. of papers published in proceedings of National Conferences	:	5
Total No. of papers published in proceedings of International Conferences	:	28

In Refereed International Journals:

1. J. Ramkumar, S.K. Malhotra, R. Krishnamurthy, "Effect of Workpiece Vibration of drilling of GFRP laminates", J. of Materials Processing Technology, v-152 pp.329-332, 2004.
2. V. Viswabaskaran, F.D. Gnanam, M. Balasubramanian, "Mullite from clay-reactive alumina for insulating substrate application," Applied Clay Science, v-25, pp. 29-35, 2004.
3. R. Sarathy, S. Chandrasekaran, V. Sabari Giri, C. Venkateshaya, R. Velmurugan, "Analysis of surface degradation of HDPE insulation material due to tracking," Bulletin of Matls. Sci, v-3, pp.1-12, 2004.
4. R. Velmurugan, N.K. Gupta, Solai Murugan, "Axial Compression of Structured Composite Shells," Intl. J. of Impact Engg, v-30, n-8-9, pp.923-938, 2004.
5. R. Velmurugan, T. Mohan, "Room temperature processing of epoxy-clay nanocomposites", J. Matls. Sci, v-39, pp. 7333-39, 2004.

6. V. Manikandan, R. Velmurugan, S.G. Ponnambalam, Sabu Thomas, "Mechanical properties of short & unidirectional palmyra fibre reinforced composites", *Intl.J. of Plastic Technology*, v-8, pp.205-216, 2004.

In Proceedings of National Conferences:

1. S. Arul, L. Vijayaraghavan, S.K. Malhotra, "Studies on vibratory drilling of polymeric composites", *Proc of 21st AIMTDR Conf. held at Vellore during Dec. 20-21, 2004*, pp.73-78.
2. R.V.S. Reddy, P. Alagusundaramoorthy, "Material selection & Fabrication of GFRP Composite Bridge deck panels." *Proc. of PPCM-2004 Conf., Namakkal, Nov. 25-27, 2004*, pp. 44-52.
3. R.V.S. Reddy, P. Alagusundaramoorthy, "Contact moulding – handlay up GFRP highway bridge deck panels" *Proc. of NPPCES-2005 Conf., Coimbatore, Jan 10-11, 2005*, pp.295-302.
4. T.P. Mohan, R. Velmurugan, "Characterisation studies of silicate clay nano-particles & its reinforcement effect in epoxy polymer", *Proc. of Nanosphere 2004 Conf., Chennai, June 11-12, 2004*, pp. 18-26.
5. R. Velmurugan, K. Karthikeyan, "Study of mechanical properties of polyester nanoclay composites," *Proc. of Nanosphere 2004, Conf., Chennai, June 11-12, 2004*, pp. 2-10.

In Proceedings of International Conferences:

1. S.K. Malhotra, R. Krishnamurthy, J. Ramkumar. "Modelling of Left over strength in drilling of Composite laminates", *Proc. of 2nd Intl. Conf. on Composites Testing & Model Identification (CD-rom) held at Bristol, UK during Sept. 21-23, 2004*.
2. S.K. Malhotra, Paramanand Singh, A. Thirunavukkarasu, "Synthesis of alumina-zirconia nanocomposites by sol-gel process," *Proc. of Intl. Conf. on Nanomaterials; Synthesis, Characterization, & Application, held at Kolkata during Nov. 4-6, 2004*, pp. 94-104.
3. K.M. Usha, K.J. Scariah, K.N. Ninan, N.R. Neelakantan, S.K. Malhotra, "Consolidation & compact effect of pressure on temperature profile during cure of Silica-Phenolic Composites Laminates", *Proc. of Intl. Conf. on Polymers (CD-rom) held at Trivandrum during Dec 15-17, 2004*.
4. S. Arul, L. Vijayaraghavan, S.K. Malhotra, "Strain toughening of Composites for thrust minimization during drilling," *Proc. of Intl. Conf. on Manufacturing & Management held at Vellore during Dec. 8-10, 2004*, pp. 227-231.
5. S. Arul, L. Vijayaraghavan, S.K. Malhotra, "Evaluation of tool performance during vibratory drilling of Polymeric composites", *Proc. of Intl. Conf. on Recent Advances in Composite Materials, held at Varanasi during Dec 17-19, 2004*, pp.107-112.
6. J. Chandradass and M. Balasubramanian, "Sol-gel processing of alumina-zirconia fibers", *Proc. of the 106th Annual Session of the American Ceramic Society, Indianapolis, USA, April 18-21, 2004, Published by the American ceramic society as Ceramic Transaction, v-165, Ceramic Matrix Composites x, edited by J. P. Singh, Narottam P. Bansal, and Waltraud M. Kriven, pp.3-12*.
7. J. Chandradass and M. Balasubramanian, "Sol-gel based extrusion of alumina fibres," *Proc. of International Symposium on Advanced Materials and Processing, Kharagpur, December 6-8, 2004*, pp.1134-1142.
8. V. Vinothini, Paramanand Singh and M. Balasubramanian, "Synthesis of barium lead titanate nanopowder using polymeric precursor method", *Proc. of International Symposium on Advanced Materials and Processing, Kharagpur, December 6-8, 2004*, pp.446-452.
9. P. Jawahar and M. Balasubramanian, "Polyester-clay nanocomposites: Characterization and comparison of properties", *Proc. of International Conference on Recent Advances in Composite Materials, Varanasi, December 17-19, 2004*, pp.61-65.
10. J. Chandradass and M. Balasubramanian, "Extrusion of Alumina fibres by sol-gel process", *Proceedings of International Conference on Recent Advances in Composite Materials, Varanasi, December 17-19, 2004*, pp.377-381.
11. J. Chandradass and M. Balasubramanian, "Effect of Magnesium Oxide on Sol-Gel Spun Alumina Fibres", *Proc. of International Symposium of Research Students on Materials Science & Engineering (CD-rom), Chennai, December 20-22, 2004*.
12. V. Vinothini, Paramanand Singh and M. Balasubramanian, "Optimization of Barium Titanate Slip for Tape Casting", *Proc. of International Symposium of Research Students on Materials Science & Engineering (CD-rom), Chennai, December 20-22, 2004*.
13. P. Jawahar and M. Balasubramanian, "Alkali Resistance of Polyester-Clay Nanocomposites", *Proc. of International Symposium of Research Students on Materials Science & Engineering (CD-rom), Chennai, December 20-22, 2004*.

14. S. Shanmugam, S. Narayanan, S. Selvamani and M. Balasubramanian, "Development of Nitrile Rubber O-Ring for Wider Temperature Application in Air Brake System," Proc. of International Conference on Advances in Polymer Blends, Composites, IPNS and Gels: Macro to Nano Scales (CD-rom), Kottayam, March 21-23, 2005.
15. R.V.S. Reddy, P. Alagusundaramoorthy, "Behaviour of Fibre Glass composites bridge deck panels under wheel load," Proc of Indo-Japan conf. on Damage Tolerant Design & Materials, Chennai, Dec 16-18, 2004, pp. 264-267.
16. P. Alagusundaramoorthy, R.V.S. Reddy, "Static behaviour of glass fibre reinforced polymer composite bridge deck panels," Proc. of Intl. Conf. on current trends in aqueducts, road, rail & marine bridges, Hyderabad, Dec 20-22, 2004, pp. 295-309.
17. R.V.S. Reddy, P. Alagusundaramoorthy, "Experimental & analytical studies on glass fibre reinforced polymer composite bridge deck panels," Proc. of Intl. Conf. on current trends in aqueducts, road, rail & marine bridges, Varanasi, Dec 17-19, 2004, pp. 121-127.
18. S. Prakash, P. Alagusundaramoorthy, "Static behaviour of masonry walls retrofitted with FRP Composites," Proc of Intl. Conf on advances in Concrete & Composite Structures, (CD-rom) Chennai, Jan 6-8, 2005.
19. K. Karthikeyan, R. Velmurugan, "Specific damping capacity improvements in polyester / clay nano composites via high speed shear mixing", Proc. of Intl. Conf. on Polymers for advanced technologies, Macro-2004 (CD-rom) Trivandrum, Dec 15-17, 2004.
20. R. Velmurugan, M. Shanmugam, R. Palaninathan, D. Poomani, "Estimation of interlaminar stresses in laminated shells subjected to thermal and mechanical loads," Proc. of Intl. Conf. on delamination tolerant design, Chennai, Dec 2004, pp.107-111.
21. T.P. Mohan, Ramesh Kumar, R. Velmurugan, "Diffusivity studies of epoxy polymer filled with nanosilicate clay particles in acid, base and water medium," Proc. of Intl. Conf. on Polymers for advanced technologies, Macro-2004 (CD-rom) Trivandrum, Dec 15-17, 2004.
22. T.P. Mohan, Ramesh Kumar, R. Velmurugan, "Glass/ epoxy polymer clay nanocomposite manufacturing, thermal and mechanical properties", Proc. of ISSMs-2004, Dec 15-17, 2004, pp.81-87.
23. T.P. Mohan, R. Velmurugan, " Macro and nonoscale silicate clay particles reinforced in polymer matrix: processing, characterization and mechanical properties," Intl. Conf. on recent advances in Composite Materials, "Varanasi, Dec 17-19, 2004, pp.38-48.
24. R. Velmurugan, D.A. Meenal, T. Sekar, "Vibration characteristics of laminated composite plates," Proc of ISSMS-2004, Chennai, Dec 15-17, 2004, pp.72-80.
25. T.P. Mohan, Ramesh Kumar, R. Velmurugan, "Thermal stability and damping characteristics of high performance epoxy layered silicate nanocomposites" Proc. of Intl. Symposium of Research students on Mats Sci and Engg, (CD-rom), Chennai, Dec 20-22, 2004.
26. T.P. Mohan, R. Velmurugan, " Structure-property correlation of epoxy /clay nanocomposites," Proc. of Intl. Conf. on emerging trends in Polymers and Textiles, New Delhi, Jan 7-8, 2005, pp. 266-271.
27. V. Manikandan, R. Velmurugan, "Experimental investigation on the use of Palmyra Fibre as reinforcement", Proc. of ICBC-2005, (CD-rom) M.G. Univ., Kottayam, March 21-23, 2005.
28. K. Karthikeyan, R. Velmurugan, "Polyester /Clay Nanocomposites: High damping materials for aerospace applications," Proc of ICBC-2005, (CD-rom), M.G. Univ., Kottayam, March 21-23, 2005.

5.2 MATERIALS SCIENCE RESEARCH CENTRE

5.2.1. Introduction:

Materials Science Research Centre (MSRC) was established in 1975 as an interdisciplinary centre for carrying out research in the frontier areas of advanced ceramics and solid state materials. The major research areas of the Centre are:

- Electrode Materials for Li-batteries and Fuel Cells
- Thermoelectric Materials
- Magnetoresistance oxides
- PLZT ferroelectric ceramics/thin films
- Luminescent materials
- Diluted magnetic semiconductors (DMS)
- Rare Earth based Colourants
- Thin fFlm Multilayers/Heterostructures
- Electroluminescent (EL) Thin Films
- Spintronics/Nanostructured Films
- Thin Film Multiferroics

5.2.2. Academic Programs:

The Centre enrolls students/scholars for M.Tech, M.S. and Ph.D. programs. However, they are admitted in the respective departments for award of degree. As on 31.3.2005, the following numbers of students/scholars were associated with the center:

Ph.D. - 10

Names of student/scholar attended conference/seminar and symposia abroad/India:

S.No.	Name of the student	Programme	Name of the Conference/ seminar/ symposia	Date and venue
1.	M. Anji Reddy and U.V. Varadaraju (poster)	Li ₃ Cu ₂ Sb ₆ as an Electrode Material for Secondary Lithium Batteries	International Conference on Electrochemical Power Systems,	20-21 Dec. 2004, Hyderabad Two Papers were awarded 2 nd and 3 rd Prize in the Poster Session.
2.	M.V.V.M. Satya Kishore and U.V.Varadaraju (poster)	Sn ₄ P ₃ as an Anode Material for Rechargeable Lithium Batteries –		
3.	M.V.V.M. Satya Kishore and U.V.Varadaraju (poster)	Effect of Isovalent Cation Substitution on the Cycling Performance of LiCoPO ₄		
4.	M. Kottaisamy (Poster)	Electroluminescence of Mn Activated Y ₂ O ₃ -ZnO Composite Yellow Emitting Phosphor by Sol-Gel Method	Seventh International Conference on Optoelectronics, Fibre-Optics and Photonics (Photonics 2004)	December 9-11, 2004, Le Meridian, Cochin.
5.	T. Thiagarajan, M. Kottaisamy, K. Sethupathy and M.S. Ramachandra Rao. (Poster)	A New Red Phosphor-Ba Doped ZnS-Mn for Electroluminescent (EL) Display Devices		
6	N. Rama, J. B. Philipp, M. Opel, K. Chandrasekaran, V. Sankaranarayanan, R. Gross and M. S. Ramachandra Rao (Poster)	Study of Magnetic properties of A ₂ B'NbO ₆ (A = Ba, Sr, (BaSr); and B' = Fe and Mn) double perovskites	9 th Joint MMM/Intermag. conference	January 9 th 2004 in Anaheim, California.
7	N. Rama, V. Sankaranarayanan and M. S. Ramachandra Rao (Poster)	Effect of A site disorder on the magnetism and transport of Pr _{0.7-y} Ho _y Pr _{0.3} MnO ₃	Third international conference on physics and application of spin related phenomena in semiconductors	Santa Barbara, USA on 23 rd July 2004

8.	M.Kottaisamy (oral)	Development of Phosphors for Luminescent Conversion Light Emitting Diodes (LUCOLEDs) and Thick Ceramic Thin Electro-luminescence (TCTFEL) Display Devices",	Indo-Japan workshop on Crystal Growth and Application of Advanced Materials for Opto-Electronics	December 7-9, 2004 Anna University, Chennai.
9.	K. Mohan Kant, K. Sethupathi and M.S. Ramachandra Rao (oral)	Magnetic Properties of 4f Element Doped SnO ₂ Diluted Magnetic Semiconductor	International Symposium of Research Scholars on Materials Science and Engineering,	Dec 20 th to 22 nd organized by Dept of Materials and Metallurgical Engineering IIT Madras
10	N. Rama, J.B. Philipp, M. Opel, V. Sankaranarayanan, R. Gross and M.S. Ramachandra Rao (Poster) <i>[Received the best poster award]</i>	Influence of A-Site Disorder on the Magnetoresistance in Pr _{0.74} Sr _{0.26} MnO ₃ and Pr _{0.7} HO _{0.04} Sr _{0.26} MRO ₃ Manganites (Best paper in magnetic session)		
11	P. Thiyagarajan, M. Kottaisamy, K. Sethupathi and M.S. Ramachandra Rao (oral)	Effect of Co-Dopants on Colour Tuning of ZnS:Mn Yellow Phosphor		
12	N. Rama, J.B. Philipp, M. Opel, V. Sankaranarayanan, R. Gross and M.S. Ramachandra Rao (Poster)	A site dependent percolative thermopower and griffiths phase in Pr _{0.7-x} Ho _x Sr _{0.3} MnO ₃ (x = 0.004, 0.08 and 0.1)	49 th annual conference on Magnetism and Magnetic Materials (MMM)	Nov. 7-11, 2004, Jacksonville, Florida, USA
13	K. Mohan Kant, K. Chandrasekaran, S. B. Ogale, T. Venkatesan, K. Sethupathi and M. S. Ramachandra Rao	Magnetic and Optical properties of rare earth doped Sn _{0.95} RE _{0.05} O _{2-d} (RE = Gd, Tb, Er)	49 th annual conference on Magnetism and Magnetic Materials (MMM)	Nov. 7-11, 2004, Jacksonville, Florida, USA
14	P. Thiyagarajan, M. Kottaisamy, K. Sethupathi and M.S. Ramachandra Rao (poster)	Preparation of luminescent properties of SrS:Ce by addition of Sulphur and co-activator in SrSO ₄ :Ce(SO ₄) ₃ .4H ₂ O by carbothermal reduction	MRS fall meeting	November-December 2004 in Boston, USA
15	N. Rama, V. Sankaranarayanan and M. S. Ramachandra Rao (poster)	Study of percolative nature of the thermoelectric power and resistivity in Pr _{0.66} R _{0.04} Sr _{0.3} MnO ₃		
16	K. Mohan Kant, K. Chandrasekaran, K. Sethupathi and M. S. Ramachandra Rao (poster)	Magnetic properties of 4f element doped SnO ₂ diluted magnetic semiconductor	DAE SSPS	December 2004, Guru nanak Dev University, Amritsar
17	M. Kottaisamy (Oral Presentation).	Development of phosphors for luminescent conversion light emitting diodes (LUCOLEDs) solid state lighting	National Conference on Luminescence and its Applications, (NCLA 2005), National Conference on Luminescence and its Applications, (NCLA 2005),	February 2-4, 2005, Bangalore February 2-4, 2005, Bangalore

18	M. Kottaisamy (Poster)	Manganese activated Y_2O_3 and Y_2O_3-ZnO composite for thick ceramic thin film electroluminescent (TCTFEL) display by sol-gel method.		
19	N. Lakshminarasimhan and U.V.Varadaraju (Poster).	White light generation in $Sr_2SiO_4:EuCe$ Phosphor for solid state lighting,		
20	V. Sivakumar and U.V.Varadaraju (Poster).	Photoluminescent properties of $NaY(WO_4)_{2-x}(MoO_4)_x$: Eu, Bi phosphor,		
21	V. Lakshminarasimhan and U.V.Varadaraju (Poster).	Photoluminescence and afterglow in $Sr_2SiO_4-Eu^{2+}, RE^{3+}$ phosphors,		
22	V. Sivakumar and U.V.Varadaraju (Poster).	Novel red phosphors for solid state lighting: the system $AgM(WO_4)_{2-x}(MoO_4)_x:Eu^{3+}$ (M = Gd, Y),		

5.2.3. Faculty and their activities:

Faculty:

Name and Qualification

Major Areas of Specilization

Professors:

Prof. M.N.Sudheendra Rao Ph.D.,
(IISc, Bangalore) [Head]

Inorganic Chemistry

Prof. U.V. Varadaraju
Ph.D. (IISc, Bangalore)

Thermoelectric materials, Materials for lithium ion batteries, Luminescent materials, Inorganic Colourants.

Assistant Professor:

Dr. M.S. Ramachandra Rao
Associate Professor
Ph.D. (IIT, Kharagpur)

Spintronics, Multilayers, Heterostructures growth of nano structured films, manganites, PLZT ferroelectrics for sensor applications, Electroluminescent films and DMS

Senior Scientific Officer:

Dr. K.D. Chandrasekaran
S.S.O. - I, Ph.D. (IIT, Madras)

Oxide ceramic systems for practical applications, High temperature heating element composition.

Dr. K. Chandrasekaran
S.O. - I, Ph.D. (IIT, Madras)

Perovskite, Pyrochlore type oxides, Double perovskites for multiferroics

Special Lectures delivered by the faculty in other Institutions:

S. No	Name of Faculty	Topic of lecture	Venue and Date
1.	Dr M S Ramachandra Rao	"Thin Film Hydrogen Sensors", in One-day Workshop on "Hydrogen As Alternative Fuel - Emerging Technologies Production, Storage, Handling and Applications",	Institute of Science and Technology Hyderabad on 16 th March 2005
2.	Dr. K. D. Chandrasekaran	High Temperature Superconductors Ceramics Recent Developments in Nanotechnology	Science Programme of the Children's Club (Mylapore, Chennai 600 036) Members (XI and XII Std Students) 21-24, April 2004

Talks delivered by Dr. M.S. Ramachandra Rao in Universities/Institutions abroad:

1. Magntotransport in doped manganites: January 2004 – Centre for Superconductivity Research, University of Maryland, College Park, MD 20742, USA.
2. Diluted magnetic semiconductors for Spintronic applicatrons: February 2004 -- Physics Department, Rowan University, New Jersey, USA.
3. Ferromagnetism and mechanism of FM in doped HfO₂ thin films: March 2004 -- Materials Research Science and Engineering Center (MRSEC) meeting, Department of Physics, University of Maryland, College Park, MD 20742, USA
4. Ferromagnetic (FM) insulators for solid state quantum devices: May 2004 -- CSR, Department of Physics, University of Maryland, College Park, MD 20742, USA
5. A site disorder effect on the magnetism and transport of Pr_{0.7-y}Ho_ySr_{0.3}MnO₃: July 2004 -- 3rd international conference on Physics and applications of spin related phenomena in semiconductors held in Santa Barbara, USA.
6. Magnetism in high-k dielectric thin films for potential spintronic applications: August 2004 – One day meet with DARPA, and INTEL corporation at UMD, USA.
7. Oxide based high-k dielectric insulators for spintronic and magneto-optic applications: October 2004 -- One day meet with SEAGATE Technologies at UMD, USA.
8. Percolation model to understand ferromagnetism in Co and Fe doped HfO₂: December 2004 -- CSR, Department of Physics, University of Maryland, College Park, MD 20742.

Visits abroad by faculty:

S.No	Name of faculty	Country visited	Date	Purpose of visit
1.	Dr. M. S. Ramachandra Rao	U.S.A	15 months.	Visiting Faculty in the Department of Physics, University of Maryland, College Park, MD 20742, USA

5.2.4. Design and Development Activities:

Brief and specific details of Process/Instruments/Equipment/Software designed and developed:

P. Thiagarajan, M.M.K.Samy and M.S.Ramachandra Rao, "Zinc silicate-manganates Zn₂SiO₄.Mn green emitting phosphor – bulk preparation" done successfully. Useful in plasma display, electroluminescent projection television.

New facilities added or major equipment procured through project funds:

S. No.	Name of Equipment	under.	Value (in Rs.)
1.	UV Visible Spectrophotometer with Colour Coordinate Measurement Capability	Prof. U.V.Varadaraju's NMITLI Project	12.5 lakhs

5.2.5. Research and Consultancy:

Sponsored Research Projects:

S. No.	Title	Period	Funding Agency	Amount (Rs. in Lakhs)	Co-ordinators
1.	Environmentally Secure Rare Earth based Colorants for surface Coatings	1 year	CSIR under NMITLI (New Millenium India Technology Leadership Initiative)	20.90	Prof. U.V.Varadaraju
2.	Development of ElectroLuminescent (EL) Phosphors	1 year	DST	6	Dr. M. Kottaiswamy Dr. M.S.Ramachandra Rao.

Research Publications:

No. of papers published in Refereed National Journals	01
No. of papers published in Refereed International Journals	14

In Refereed National Journals:

1. V. Sivakumar and U. V. Varadaraju, "Environmentally benign novel green pigments: $\text{Pr}_{1-x}\text{Ca}_x\text{PO}_4$ [$x = 0 - 0.4$]", *Bulletin of Materials Science*, (2005) June issue.

In Refereed International Journals:

1. M.V.V.M. Satya Kishore and U.V.Varadaraju, " Electrochemical Reaction of Lithium with Zn_3P_2 ", *Journal of Power Sources*, v 144, n1 (2005) 204-207.
2. N. Rama, M.S.Ramachandra Rao, V. Sankaranarayanan, P. Majewski, S.Gepreägs, M. Opel and R. Gross, " A-site-disorder-dependent percolative transport and Griffiths phase in doped manganites", *Physical Review B* 70, 224424 (2004).
3. Eu^{3+} luminescence – a structural probe in $\text{BiCa}_4(\text{PO}_4)_3\text{O}$, an apatite related phosphate, N. Lakshminarashimhan and U.V. Varadaraju, *Solid State Chemistry*, 177, 3536-3544 (Oct. 2004).
4. N.Lakshminarashimhan and U.V.Varadaraju, " Eu^{3+} Luminescence – A Structural Probe in $\text{BiCa}_4(\text{PO}_4)_3\text{O}$, an apatite related phosphate", *Journal of Solid State Chemistry* v 177 , n10 (2004) 3536-3544.
5. M.V.V.M. Satya Kishore, U.V.Varadaraju, and B. Raveau, "Electrochemical Performance of LiMnO_4 (M = Fe, In) Phases with Ramsdellite Structure as Anodes for Lithium batteries", *Journal of Solid State Chemistry*, v 177, n 11 (2004) 3981-3986.
6. Study of Magnetic properties of $\text{A}_2\text{B}'\text{NbO}_6$ (Ba, Sr, BaSr) and $\text{B}'=\text{Fe}$ and Mn) double perovskite, N. Rama, J. B. Phillipp, M. Opel, K. Chandrasekaran, V. Sankaranarayanan R. Gross and M. S. Ramachandra Rao, *J. App. Phys.* 95 7528(2004).
7. Effect of rare earth ion substitution on the Magnetic and transport proerties of $\text{Pr}_{0.7}\text{RE}_{0.04}\text{Sr}_{0.26}\text{MnO}_3$ (RE=Er, Tb and Ho), N. Rama, J. B. Phillipp, M. Opel, A. Erl, V. Sankaranarayanan, R. Gross and M. S. Ramachandra Rao, *Eur. Phys. J. B* 38 553-557 (2004).
8. N. Rama, V. Sankaranarayanan and M. S. Ramachandra Rao, Study of the percolative nature of thermoelectric power and resistivity in $\text{Pr}_{0.66}\text{R}_{0.04}\text{Sr}_{0.3}\text{MnO}_3$ (R = Tb, Y, Ho and Er) manganites., *MRS (Materials Research Society) Proceedings vol 848 FF9.22.1-6 (2005)*.
9. P. Thiyagarajan, M. Kottaisamy, K. Sethupathi and M. S. Ramachandra Rao, Preparation of luminescent properties of $\text{SrS}:\text{Ce}$ by addition of Sulphur and co-activator in $\text{SrSO}_4:\text{Ce}(\text{SO}_4)_3 \cdot 4\text{H}_2\text{O}$ by carbothermal reduction, *MRS (Materials Research Society) Proceedings vol 829 B2.33.1-7 (2005)*.
10. M. S. R. Rao, Darshan C. Kundaliya, S. Dhar, Claudio Cardoso, S. Welz, S. B. Welz, S. B. Ogale, S. Lofland, N. D. Browning and T. Venkatesan, Magnetism in Co and Fe-doped HfO_2 thin films for potential spintronic applications, *MRS (Materials Research Society) Proceedings vol 830 D6.13.1-14 (2005)*.

Distinguished Visitors to the Centre:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Dr. Rodney L. Taylor, Sr. Vice-President, Research & Development, Columbian Chemicals Company, Georgia, USA	Jan. 2005	to explore possible collaboration
2.	Prof. Jeitschko, University of Munster, Germany,	24-01-05	Polyanions in Solid Structural Chemistry, Physical Properties and Chemical Bonding, Lecture
3	Dr Suryanarayanan, CNRS, Orsay, France	Feb. 2005	Delivered a lecture – PSMO crystals
4	Dr. Revkolevshky, Director, Crystal growth lab, CNRS, Orsay, France	Feb. 2005	Visit and scientific discussions

5.2.6. Other Activities:

1. New pigment compositions based on inexpensive monazites have been synthesized for use in high temperature colorant applications

2. Prof. U.V.Varadaraju and his Research Group:NMITLI Project: Review Meeting Held on June 23, 2004. Further proposals/projection submitted for Two years.
3. Materials Development: Dr. M Kottaisamy – Development of YAG-Yellow-emitting phosphor blue (463 nm) LED.
4. Mr. K. Chandrasekaran, Scientific Officer has been awarded, Ph.D. under the Guidance of Prof. U.V.Varadaraju
5. New Glove Box Installed
6. New Battery cycle unit installed
7. Blue, green and red emitting phosphors were developed for near UV and blue LED excitable phosphors
8. Prof. U.V.Varadaraju attended Workshop on Indo-French Laboratory for Solid State Chemistry, on December 16-18 Dec. 2004, in IISc, Bangalore.
9. PAN – Indian Institute of Technology Meeting attended by M. Kottaisamy at Prakrithi Maidan, Delhi, 24,25 Dec. 2004, on Technology Development to represent MSRC.
10. Dr. M.S. Ramachandra Rao, has been awarded a certificate by The UMD-NSF Materials Research Science and Engineering Centre (MRSEC), University of Maryland in recognition of Excellent Achievements in Science Outreach in 2004-2005.
11. Dr. M. S. Ramachandra Rao was awarded the 1st prize Mentor award at the Annual Science conference (April 24, 2004) held during APS meet at the University of Maryland for guiding the best UG project.
12. Ph.D. Thesis: A Ph.D. thesis entitled "Luminescence of Eu³⁺ and Eu²⁺ in Certain Phosphates, Silicates and Oxides: Structure–Property Correlations" by N. Lakshminarasimhan under the supervision of Prof. U.V. Varadaraju has been submitted December 2004
13. Ph.D. Thesis: A Ph.D. thesis entitled "Electrochemical studies on certain oxides and phosphides as electrode materials for secondary Lithium batteries" by M.V.V.M. Satya Kishore under the supervision of Prof. U.V. Varadaraju has been submitted December 2004
14. Inorganic materials Recent Advances, Editors – Dharendra Bahadur, Satish Vitta and Om Prakash, Narosa Publishing House, New Delhi (2004). M.V.V.M. Satya Kishore and U.V. Varadaraju, " Synthesis, characterization and Electrochemical Studies of a New Layered Lithium Nickel Arsenate
15. Best poster award (Magnetism session): N. Rama, M.S. Ramachandra Rao et al., Influence of A-Site Disorder on the Magnetoresistance in Pr_{0.74}Sr_{0.26}MnO₃ and Pr_{0.7}HO_{0.04}Sr_{0.26}MRO₃ Manganites. International Symposium of Research Scholars on Materials Science and Engineering, Dec. 2004, IIT Madras.

List of Patents:

1. Discovery of room temperature ferromagnetism and giant magnetic moment in Co-doped HfO₂ high-k dielectric thin films: March 30, 2004, University of Maryland Invention Disclosure (US patent # PS-2004-033): M. S. R. Rao et al.
2. Discovery of magnetism above room temperature in a new class of amorphous oxide diluted magnetic insulator thin films for spintronic applications: August 6, 2004, University of Maryland Invention Disclosure (US Patent # PS-2004-075): S. B. Ogale, M. S. R. Rao et al.

5.3 SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

5.3.1 Introduction:

Sophisticated Analytical Instrument Facility (SAIF) established with financial support from the Department of Science and Technology provides sophisticated instrument and equipment facilities to Scientists / Faculties of Educational Institutions, National Laboratories, Industries and IIT Madras.

SAIF also undertakes on specific request, servicing of sophisticated instruments at other institution and also provide training for operation and maintenance.

Periodically SAIF conducts workshops, seminars and conferences to expose new trends in sophisticated instrumentation and methods. Contact programs for college students and open house for school children are conducted every year to motivate them towards scientific careers.

5.3.2 Academic Programmes:

New Courses Introduced:

Title	Faculty
Special Course on EPR spectroscopy to students in Biotechnology/Chemistry Departments started in March- May 2005	P.T. Manoharan

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	-	-	-	2 (Project) 3 (Project)	-	2 (Project) 3 (project)
Dual Degree	-	-	-	-	2 (Project)	2 (Project)
M.Sc.	-	1	-	-	-	1
M.Tech.	-	-	-	-	-	-
M.B.A.	-	-	-	-	-	-
M.S.	1	1	1	-	-	3
Ph.D.	2	4	2	2	1	11
Total	3	6	3	7	3	22

These students/scholars registered with other Department

Names of student/Research Officer attended Conference/seminar and symposia abroad/India:

S.No.	Name of the Student	Programme	Name of the Conference/Seminar	Date and venue
Conference:				
1.	S.Deepa	Ph.D	PITTCO - 2005	Feb. 27 th – March 4 th Oriando, USA.
2.	N.Ramesh Babu	Ph.D	1 st Nano-Engineering and Nano-Science Congress 2004	7-9 July 2004 Singapore
3.	N.Ramesh Babu	Ph.D	5 th International Symposium of Research Students	2-24 Dec. , Chennai
4.	N.Ramesh Babu	Ph.D	Indo-Australian Conference BITE 2005	19-22 Jan. 2005, Trivandrum
5.	A.Siddharthan	Ph.D.	International Conference on Nano-Materials: Synthesis, Characterisation and Application	4-6 November 2004 Kolkata
6.	A.Siddharthan	Ph.D	Indo-Australian Conference BITE 2005	19-22 Jan. 2005 Trivandrum
7.	Sunita Prem Victor	Ph.D	Indo-Australian Conference BITE 2005	19-22 Jan. 2005 Trivandrum
8.	D.Baskar	Ph.D	Indo-Australian Conference BITE 2005	19-22 Jan., 2005 Trivandrum
Seminar:				
	R. Amsarani		i) International School on EPR /ESR Spectroscopy and Free Radicals Research workshop, in BARC ii) Short term course in Optical Spectroscopy	Mumbai Nov.17-20, 2004 IIT/M, March 1-4, 2005
	S. Balaji		i) International School on EPR/ESR Spectroscopy and Free Radicals Research workshop, in BARC ii) Short term course in Optical Spectroscopy	Mumbai, Nov. 17-20, 2004 IIT/M, March 1-4, 2005

5.3.3 Faculty and their activities :

Faculty

S.No./	Name and Qualification	Major area of specialization (only 3 areas)
1	Professor: Dr. A.K.Mishra (HEAD)	Flourescence Spectroscopy, Physical Photochemistry
2	Associate Professor: Dr.T.Pradeep, Ph.D	Chemical Physics, Spectroscopy, Ion Chemistry, Monolayers, Clusters
3	Assistant Professor:	
4	T.S.Sampath Kumar, Ph.D	Biometerials, Surface Sciences, Analytical Instrumentation.
5	Visiting Faculty	
6	Emeritus Professor: P.T.Manoharan	Spectroscopy, Bioinorganic Chemistry
7	Scientific Officers : Dr.M.S.Moni Dr.R.Murugesan Dr.Babu Varghese	NMR Spectroscopy Mass Spectroscopy X-ray crystallography

Short-term Courses/Workshops/Seminars/Symposia/Conferences organised by the faculty members:

Sl. No.	Co-ordinators	Title	Period & Venue
Short - Term Course			
1.	Dr.R.Murugesan	DST Sponsored short term course on Optical Spectroscopy at S.A.I.F., IIT/M.	1-4, March 2005
Symposia:			
1.	Prof.P.T.Manoharan	Second Asian Symposium in Bioinorganic Chemistry (one of the Organizers)	Goa, Dec. 2004

Short-term courses /Workshops/Seminars/Symposia/Conference /Training attended by the faculty members in Academic institutions and Public Sector undertakings:

Sl.No.	Name of faculty	Title	Period	Venue
Workshop:				
1.	N.Sivaramakrishnan	National Workshop on Instrumentation and Measurement Technology.	14-15 March 2005	Dept. of Physics Bharathidasan University, Trichy.
2.	C. Baby	International workshop on Recent trends in Solid State NMR in Biological Systems.	24-26 January 2005	Bangalore
Seminar:				
1.	A.K.Mishra	National Seminar on Nanoscale Imaging	19 th March 2005	AUKBC, Chennai
2.	A.K.Mishra	Optical Spectroscopy	1-4 March 2005	IIT Madras
3.	T.S.Sampath Kumar	7 th World Biomaterials Congress	Sydney, Australia	17-21 May, 2004
4.	T.S.Sampath Kumar	9 th Seminar & Meeting on Materials for Tissue Engineering	Faenza, Italy	Sept. 28 – Oct.1., 2004
5.	R.Murugesan	National seminar in Chemistry at Bharathidasan University	Trichy	Jan. 6-7, 2005
Conference:				
1.	A.K.Mishra	23 rd Conference of Indian Council of Chemists	29-31, Oct. 2004	K.C.College Mumbai
2.	A.K.Mishra	International Conference on Soft Matter – 2004.	18-20 th Nov. 2004	Jadavpur Univ., Kolkotta.
3.	P.T.Manoharan	i) ASBIC-II/SABIC 2004) Mechanism of Superoxide Production Under Hypoxic Condition	Goa	Dec, 5-10, 2004
		ii) Nanomaterials Conference (Inagural address on Nanoscience)	BDU (Trichy)	Feb. 24, 2004

		iii) Nanoscience and Technology Meeting (Inaugral address on Nanoscience)	Alagappa University, Karaikudi	March 9, 2004
		iv) JNCASR Annual Meeting	JNCASR, Bangalore	Nov. 13-14, 2004
		v) Asia-Pacific EPR Meeting Interactions EPR of Exchange Interaction		
		vi) Conference on Biological Magnetic Resonance "Probing the Sulfhydryl group by spin alabel"	IICT, Hyderabad	Jan. 24, 2005
		vii) CRSI Annual Meeting	IACS, Kolkata	Feb. 4-6, 2005
4.	T.S.Sampath Kumar	3 rd International Conference on Materials Processing and performance	Singapore	24-26 November 2004
		Indo-Australian Conference BITE 2005	Trivandrum	19-22 Jan. 2005
5.	R.Murugesan	Luminescence and the application	Bangalore Univ.	Feb.2-4, 2005
6.	C. Baby	XXI International Conference on Magnetic Resonance in Biological Systems.	Hyderabad	Jan 16-21, 2005
Symposia				
1.	A.K.Mishra	6 th National Symposium of CRSI	6-8 th Feb. 2005	Dept. of Chemistry, I.I.T., Kanpur
2.	A.K.Mishra	XVII – National Symposium on photosciences for the millennium	19-21 th Feb, 2005	Sambalpur University, Orissa.
3.	P.T.Manoharan	Third World Academy of Sciences (Chairing Session)	JNCASR, Bangalore	Sept. 27-26 2004
4.	P.T.Manoharan	Subunit Heterogeneity in Reconstituted hemoglobin	Indo-French Symposium (GOA)	Dec. 3-5, 2004

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue & Date
1.	A.K.Mishra	Photophysical Chemistry	8 th March, 2004, A.M.Jain College, Chennai.
2.	P.T.Manoharan	Mechanism of Radical Production in Hemoglobin under Hypoxic condition	University of Stuttgart June 18, 2004
3.	P.T.Manoharan	Convocation Address	Agarsen College April 2, 2004
4.	P.T.Manoharan	Quality Education	Consortium of Universities April, 2004
5.	P.T.Manoharan	Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe(II) Complex	University of Sud Paris June 22, 2004
6.	P.T.Manoharan	Mossbauer Spectroscopy	BDU (Trichy), 2004
7.	P.T.Manoharan	Submit Heterogeneity Reconstituted Hemoglobin	University of Fribourg Switzerland, June 25, 2004
8.	P.T.Manoharan	Mechanism of Radical Production in Hemoglobin under Hypoxic condition	BDU(Trichy) 2005
9.	P.T.Manoharan	Blue Copper Proteins	MKU, Madurai, March 11, 2005
10.	P.T.Manoharan	Mechanism of Radical Production in Hemoglobin under Hypoxic condition	University of Pittsburgh, June 6, 2004
11.	P.T.Manoharan	Does no interact with Cobalamin?	NCI, NIH, June 15, 2004
12.	P.T.Manoharan	Nanoscience and Technology	SRM Deemed University July, 24, 2004
13.	P.T.Manoharan	"A view from the bottom"	Gurunanak College, Chennai Dec. 17, 2004

14.	P.T.Manoharan	"Value System in Higher Education"	Mangalore University Dec. 29, 2004
15.	P.T.Manoharan	"Proteomics"	Stella Maris College, Jan 7, 2005
16.	P.T.Manoharan	A view of Nanoscience and nano technology	WCC, Chennai Feb. 15, 2005
17.	P.T.Manoharan	Mechanism of Radical Production in Hemoglobin under Hypoxic condition	BDU(Trichy), Feb.24, 2005
18.	P.T.Manoharan	A view of Nanoscience and Technology	INSA Local Chapter Lecture, J.M.College, Feb. 24,2005
19.	P.T.Manoharan	Future of Science (Science Day Lecture)	Presidency College, Feb. 28, 2005
20.	P.T.Manoharan	"My science" – A lecture at 25 th year of RCL.	IGCAR, Kalpakkam, Feb. 2005
21.	P.T.Manoharan	"Reonance Raman Spetscopy"	IIT/M workshop, March 2, 2005
22.	P.T.Manoharan	Mossbauer Spectroscopy	MKU, Madurai March 9, 2005
23.	P.T.Manoharan	A view of Nanoscience and Technology	Mahatma Gandhi University, Kottayam, March 16, 2005
24.	P.T.Manoharan	Spectroscopy of Nanoscience	MS University and VOC College, Tuticorin, March 28, 2005.
25.	T.S.Sampath Kumar	Biomaterials: Future Medicine, under T.S.Ramadurai Endowment Programme	Vivekananda College Chennai, 8 th Feb. 2005

Visit abroad by faculty

Sl.No.	Name of faculty	Country Visited	Date	Purpose of visit
1.	A.K.Mishra	NIH, Bethesda, USA	15-19 th Aug, 2004	Polymer Networks 2004, Conference.
2.	A.K.Mishra	State University of Newyork Buffalo	19-21, Aug. 2004	-
3.	P.T.Manoharan	USA	June 1-16, 2004	Collaborative Research Project + Lectures in Universities.
4.	P.T.Manoharan	France	June 21-27, 2004	IFS sponsored collaborative research in the university Sud Paris
5.	P.T.Manoharan	Switzerland	June 25-27, 2004	Lectures
6.	P.T.Manoharan	Germany	June 17-20 and June 28-30, 2004	Lectures
7.	T.S.Sampath Kumar	Australia	17-27 May, 2004	Participation at the World Biomaterials Congress and visit to Universities in Sydney and in Melbourne.
8.	T.S.Sampath Kumar	Italy	Sept. 28 – Oct. 7, 2004	Participation at the 9 th CCT Seminar and visit to Universities in Italy.
9.	T.S.Sampath Kumar	Singapore	24-30 November 2004	Participation at the 3 rd MP3 Conference and visit to Universities in Singapore.

Honours and Awards obtained:

S.No.	Name of Faculty	Name of Award/ Honour	Awarded by	Awarded for	Date
1.	Dr.P.T.Manoharan	University Decennium Lecture Award and Medal	Mahatma Gandhi University, Kottayam	Excellence in Scientific Research	March 16, 2005

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Title	Level	Author/ Co-author
1.	A.K.Mishra	National Academy of Sciences, India	Fellow(FNASC)	2004
2.	P.T.Manoharan	INSA	F.N.A.	1985
		Indian Academy of Sciences	F.A.Sc.	1982
		Third World Academy of Sciences	FTWAS	2002
		World Innovation Foundation	FWIF	2002
		Chemical Research Society of India	Treasurer / Vice President	1999-2002 2002-2004
3.	T.S.Sampath Kumar	Society for Biomaterials and Artificial Organs-India	Joint Secretary	2002-2005

5.3.4 Design and Development Activities:

Brief and specific details of Process/Instruments/Equipment/ Software designed and developed:

P.T.Manoharan

The following two instruments have been brought back to full life after careful repair with the help of Mr.Kamalnab and Mr.Palanisamy.

- i) Varian E-112 X-Q band EPR spectrometers
- ii) Canberra Mossbauer Spectrometer.

Patents filed:

One accepted with application no.955/CHE/2003 with Dr.T.S.Sampath Kumar as Principle Investigator and Prof.S.K.Seshadri as Investigator.

5.3.5 Research and Consultancy:

Sponsored Research Projects:

S.No	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Development of a portable fluorescence based fiber-optic sensor for polycyclic aromatic compounds in liquid media.	2004-2007	MHRD	15,00,000	Dr. A.K. Mishra Dr.R.Sarathy
2.	Synthesis of Novel Dendrimers and Study of their application as Fluorescent Molecular Sensors.	2002-2005	DRDO	22.34 lacs.	Dr.S.Baskaran Dr.A.K.Mishra (Co-ordinator)
3.			DBT		Dr.T.S.Chandra Dr. A.K.Mishra
4.	Multispectroscopic approach to Biological and Inorganic Materials	2002-5	DST Govt. of India	15,00,000	Prof.P.T.Manoharan and T.Pradeep
5.	Design and Development of ESR spectrometer for Radiation Dossimeter	1999-2005	AERB	29.7	Prof.S.P.Venkatesan Dr.T.S.Sampath Kumar

Journal Editorial Boards:

Sl.No	Name of Faculty	Chairman/Member	Journal
1.	Dr.T.S.Sampath Kumar	Associate Editor	Trends in Biomaterials and Artificial Organs.

Research Publications:

No. of papers published in Refereed National Journals	..	4
No. of papers published in Refereed International Journals	..	11
No. of papers presented in International conferences	..	9

In Refereed National Journals:

Sl. No	Name of Faculty	Title of the paper	Name of the Journal
1.	S.Ramasamy, Swarnalatha Venkatesh Rao, J.M.Rifkind and P.T.Manoharan.	Metal Ion Co-ordination in 'R' and 'T' State Hybrid Hemoglobins as revealed by Optical, EPR and Sulfhydryl Reactivity Studies.	J.Chem.Sc.(2005) 117, 85-97
2.	T.K.Kundu and P.T.Manoharan	Jahn-Teller Effect in Copper(II) Systems, Proc. Ind. Nat.Sci. Acad (2005) in press	2005
3.	N.Ramesh Babu, K.Prasad Rao and T.S.Sampath Kumar	Effect of coralline derived biphasic calcium phosphate shot blasting on titanium surfaces	Trans IIM, 57(2004) 85
4.	N.Ramesh Babu, Sushant Manwatkar, K.Prasada Rao and T.S.Sampath Kumar	Bioactive coatings on 316L stainless steel implantsm	Trends Biomater, Artifi Organs. Vol.17(2004) 43-47
5.	Rajnikant, Dinesh, Mousmi, Varghese Babu, Sharma, Bandhan	X-ray structural analysis of 1H, 4H-terahydroquinolizino-(9,9a,1gh) coumarin.	2005 79(1), 73-75
6.	R.Murugesan	Composition of gallstones in south India, Indian journal of Gastroenterology	2004 12

In Refereed International Journals:

Sl.No.	Name of Faculty	Title of the paper	Name of the Journal
1.	A.K.Mishra	Self-association of protected Newkome-type second-generation dendrimers at nanomolar level concentrations in aqueous solution.	Macromolecules, 37, 5364 - 5369 (2004)

2.	A.K.Mishra	Ground and excited state proton transfer reaction of 3-hydroxyflavone in dimyristoylphosphatidylcholine liposome membrane.	Photochemistry and Photobiology, 80, 309-315 (2004)
3.	P.Thangadurai, S.Ramasamy and P.T.Manoharan	²⁰⁷ Pb MAS NMR and Conductivity Studies on Nanostructures Superionic Conductor Lead (II) Fluoride	Eur.J.Phys.B(2004) 37, 425-432
4.	B.Venkatesh, S.Venkatesh Rao, J.Santhanalakshmi, J.M.Rifkind and P.T.Manoharan	Studies on Heme release from normal and metal-ion reconstituted hemoglobin mediated through ionic surfactant, Biopolymers	Peptide Science 2005 80, 18-25.
5.	R.Muthukumaran, G.V.R.Chandramouli and P.T.Manoharan	Intra and Inter-modular Exchange Interactions in Bis(alpha aminoisobutyrate) oxalamidedicopper, [Aib-COCO-Aib] Cu ₂ ,	Chem. Physics Lett.(2005) 404, 227-231
6.	P.Thangadurai, S.Ramasamy, T.K.Kundu and P.T.Manoharan	EPR study and extraction of α -phase EPR spectra in Mn ²⁺ doped nanocrystalline PbF ₂ ,	Eur.Phys.J.B (2005) (In press)
7.	J.M.Rifkind, S.Ramasamy, P.T.Manoharan, E.Nagababu, J.G.Mohanty	Redox reactions of hemoglobin	Antioxidant & Redox Signaling (2004) 6,657-666
8.	V.Swarnalatha and P.T.Manoharan	Conformational Changes Monitored by Fluorescence Study on Reconstituted Hemoglobins	Spectrochimica Acta Part A (2004) 60, 2523-2526
9.	A.Siddharthan, S.K.Seshadri & T.S.Sampath Kumar	Microwave accelerated synthesis of nanosized calcium deficient hydroxyapatite	J.Mat.sci.: Mat. Med.15 (2004) 1279-85
10.	T.S.Sampath Kumar, N.Ramesh Babu and K.Prasad Rao	Deposition of hydroxyapatite on titanium foils by microwave processing	Surf. Mod. Tech. XVII (in press)
11.	R.Murugan, T.S.Sampath kumar, F.Yang and S.Ramakrishna	Hydroxyl Carbonate -apatite Hybrid Bone Composites Using Carbohydrate Polymer	J.Comp. Mat. (in press)
12.	Sundararajan, Govindarajan, Vijayakrishna, Kari, Varghese Babu	Synthesis of β -amino alcohols by regioselective ring opening of arylepoxides with anilines catalyzed by cobaltous chloride	Tetrahedron Letter (2004), 45(44), 8253-8256
13.	Sankararaman, Sethuraman, Srinivasan, Manivannan, Narayanan, Vijay, Varghese Babu	Synthesis of cyclophanes bearing 1,4-dioxabut-2-yne and 1,6-dioxahexa-2,4-diyne bridges and nanoscale cavities	2004 43B(7), 1499-1503
14.	Arun Prasad M, Varghese Babu, Sangaranarayanan M.V	5-Bromo-1,3-dichloro-2-iodobenzene	2004 E60(11), 1933-1934
15.	Bandyopadhyay, Arkasish, Varghese Babu, Sankararaman, Sethuraman	(Z)-3,6-Diethyny 3,6-dihydroxycyclohexa-1,4-diene.	2004 E60(12), 02247-02248
16.	Srinivasan, R., Sougandhi, I, Velavan, K., Venkatesan, R., Varghese Babu, Rao, P.Sambasiva	Synthesis and characterization of [Cu ₂ (L) ₂ (OCOCH ₃)(HOCH ₃)]Cl ₁₀ {L=2-[(4-methylpyridin-2-ylimino)methyl]phenol}: EPR and X-ray studies.	Polyhedron (2004) 23(7), 1115-1123
17.	Tangellamudi, Neelima D., Varghese Babu, Sundararajan, Govindarajan	Highly efficient resolution of racemic diethanolamine using (-) camphor-10-sulfonic acid.	ARKIVOC(Gainesville, FL, United States) (2005) (11), 137-145
18.	Rajnikant, Gupta, V.K., Dinesh Kumar, A., Deshmukh M.B., Salunke, D.K., Mulik A.R., Varghese B.	Crystallographic Investigations of 1,4-benzothiazin-2(1H) one and 3-methyl-1,4-benzothiazin-2(1H)one	Crystallography Reports (Translation of Kristallografiya) (2004)49(3), 427-429
19.	Pokhrel, S., Nagaraja K.S., Varghese B.	Synthesis, Characterization, and X-ray Diffraction Analysis of Triethylenetetraammonium Tetrathiomolybdate	Translation of Zhurnal Strukturnol Khimii(2004) 44(4) 689-694
20.	R.Murugesan	Application of spectroscopy in the study of pigment gallstone in India	Biospectroscopy 2004 - 195-205

In proceedings of International Conferences:

Sl.No	Name of Faculty	Title	Insitution	Period
1.	A.K.Mishra	Development of fluorimetric method to monitor aging of transformer oil.	PITTCO - 2005	Feb 26 th - March 4, 2005
2.	P.T.Manoharan	"Mechanism of Superoxide Production in Hemoglobin Under Hypoxy Condition"	SABIC (2004) and ASBIC-II P.65	2004
3.	B.Venkatesh and P.T.Manoharan	Studies on Heme release from normal and metal ion reconstituted hemoglobins	SABIC (2004) and ASBIC-II p.194	2004
4.	P.T.Manoharan	Subunit Heterogeneity in Hemoglobin	Indo-French Symposium (2004)	2004)

5.	A.Siddharthan, D.Siva Rama Krishna, S.K.Seshadri and T.S.Sampath Kumar	Influence of Microwave Power on Nanosized Hydroxyapatite Particles, Materials Processing for properties and performance	Vol.3, Eds. K.A.Khor et al, Institute of Materials East Asia, Singapore	2004 p.395-399
6.	N.Ramesh Babu, K.Prasada Raop and T.S.Sampath Kumar	Heat treatment of Hydroxyapatite nano ceramics by microwave processing	Heat Treat – 2004, A7,	pp1-4, 9-10 Jan. 2004
7.	N.Ramesh Babu, T.G.Prabhakar, K.Prasad Rao and T.S.Sampath Kumar	Development of nanosized silver-substituted hydroxyapatite for tissue engineering applications	Faenza, Italy.	Sept. 28-Oct., 2004
8.	N.Ramesh Babu, T.S.Sampath Kumar, R.Murugan and K. Prasad Rao	Mechanochemical Synthesis of Nanocrystalline Fluorinated Hydroxyapatite	Proc. of the 1 st Nano-Engineering and Nano – Science Congress	2004, 7-9 July 2004 Singapore.
9.	T.S.Sampath Kumar, Manish Dadhich, A.Siddharthan and N.Ramesh Babu	Surfactants role in microwave synthesis of Hydroxyapatite nanoparticles		Nov. 4-6, 2004
10.	C.Baby, M.S. Moni, and S.Subramanian	Towards understanding the confirmation and dynamics of biologically important oligosaccharide systems.	XXI ICMRBS	Jan. 16-21, 2005 P 189.

Distinguished Visitors to the Centre:

Sl.No	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Dr. Yudhisthir Sahoo Research Assistant Professor SUNY, Buffalo, USA.		Give a seminar talk in Chemistry Dept.
2.	Dr.Bhupinder Madan President, In-Silico, New Jersey, USA	13-14 Feb, 2005	Academic discussions

5.3.6 Other Activities:

P.T.Manoharan

Member, Standing Peer Review Committee CSIR
Honorary Professor, JNCASR, Bangalore
Member, Executive Committee of CONCERT

Dr.T.S.Sampath Kumar, chaired the "Appatite-I Session" at the 7th World Biomaterials Congress held in Sydney, Australia, during May 17-21, 2004.

Dr.T.S.Sampath Kumar, chaired the "Composite for tissue engineering" session at the 9th CCT Seminar on Materials for Tissue Engineering held in Faenza, Italy, during Sept. 28-Oct.1, 2004.

6.1 CENTRE FOR CONTINUING EDUCATION

6.1.1. Introduction:

The Centre for Continuing Education (CCE) at IIT Madras was established in June 1986 and co-ordinates the Continuing Education Programs of the Institute. The activities of the center are in-line with the IIT Mission.

- To provide knowledge-based technological services to satisfy the needs of the society and the industry
- To help in building national capabilities in science, technology, humanities, management, education and research

There are several activities in which the faculty can effectively participate and contribute to the Institute's commitment of providing a broad base of learning opportunities. The major activities are:

- Academic Programmes under the Quality Improvement Programme (QIP)
- Short Term Courses under QIP
- Curriculum Development (CD Cell)
- Early Faculty Induction Programme (EFIP)
- Continuing Education Programmes (CEP)
- Web Studio
- Educational Technology Cell
- National Programme on Technology Enhanced Learning

The details of the activities are updated regularly on the website <http://cce.iitm.ac.in>

6.1.2. Quality Improvement Programme (QIP):

The faculty development activities of AICTE funded by Ministry of Human Resources Development are geared to ensure quality, relevance, excellence and equity in Technical education by supporting activities under the QIP scheme. Deputation to the academic programmes of the Institute viz., M.Tech & Ph.D facilitates career development of the faculty of AICTE approved technical institutions in the country.

Since inception, 394 faculty members from other institutions have obtained Ph.D degrees and 472 faculty members M.Tech degrees under this programme till 2004 – 05.

Following are the data on Quality Improvement Programme for the year 2004 – 05:

Programme	Number Admitted	Number on Roll	Degrees Awarded
M.Tech	33	67	15
Ph.D	27	77	18

6.1.3. Short Term Training Programmes Under QIP :

Organization of short-term courses under QIP for faculty in engineering institutions is supported by AICTE and it opens up avenues for sharing expertise of our faculty with rich experience in new and upcoming areas.

Under this program, 10 courses for a total duration of 12 weeks were held in 2004-05 and 261 teachers of Engineering Institutions as well as a few professionals from industries / R & D organisations have participated in these programmes.

From 1970-71 to 2004-05, 216 programs have been held and 5076 teachers from various engineering colleges participated and benefited from these courses.

6.1.4. Curriculum Development Cell Activities (CDC) :

To explore interesting avenues for innovation in design and delivery of courses, activities such as Course Structuring, Preparation of Instructional and Resource materials such as Monograph, Laboratory Manual, Problem Book etc., as well as development of Computer Aided Instruction Packages, support is available under the CD Cell funded by AICTE. Curriculum Development Cell (CD Cell) caters to the needs of all Departments in the Institute. The materials developed under this activity can be made available for use by the various engineering institutes in the country. 8 such projects were sanctioned during 2004 – 05.

6.1.5. Book Writing Scheme (BWS)

This BWS scheme is designed to encourage text book writing by teachers. During the year 2004-05, 3 faculty members have come forward to write book under this scheme. Five books have been published during the year. 41 books have so far been published under this scheme.

6.1.6. Early Faculty Induction Programme (EFIP) :

The quality of technical education basically depends on the quality of teachers. Adequately qualified, highly competent and motivated faculty is becoming scarce in technical institutions all over the country. AICTE has given a high priority to attract bright young persons to teaching profession by launching the Early Faculty Induction Programme (EFIP).

Centre for Continuing Education assists AICTE in the selection process of the candidates for the scheme and also coordinates the programme. Under, EFIP – 2003, 150 candidates from 38 Host Institutions interested in teaching profession were identified. A Placement Brochure was published with the bio data of the candidates. Around 768 Placement Brochures were sent to various Engineering Institutions in the country. The response from the colleges has been encouraging. For the selected candidates a Training Programme in the Area of Pedagogy and Teaching Skill Development was conducted at IIT Madras during December 2004. 16 EFIP Candidates and 20 QIP Candidates attended the training programme.

Under EFIP – 2004 totally 935 candidates belongs to 38 identified Host Institutions applied and 396 were called for interview. The Committee has recommended 221 candidates across the country and finally 165 candidates have been selected for the EFIP – 2004 scheme.

6.1.7. Continuing Education Programme (CEP):

Several Short Term Courses are organized under Continuing Education Programme for the professionals from industry and R & D establishments on need-basis. The programmes are conducted as tailor – made programme to suit the requirements of the Industries. Long duration (1 year) certificate programmes and even 2 year User Oriented M.Tech Programme to meet the specific needs of associated industries can be organized. Such programmes will ultimately pave-way for long-term consultancy assignments with the organizations.

The new norms for apportioning of Overheads under all categories of CEP Courses were implemented with effect from 1st November 2004.

From the date of inception, i.e., between 1980 and 2004-05, 629 STCs were conducted benefitting 13628 participants. About 50 to 60 such programmes are organised every year. During the year under review, 52 Short Term Courses have been conducted and 1465 participants attended these programmes.

One of the major CEP is under National Programme on Earthquake Engineering Education (NPEEE) supported by the Ministry of Human Resource Development (MHRD) 6 courses were conducted. NPEEE aims at developing better teaching capabilities within the country in the crucial area of Earthquake Engineering. NPEEE is meant for developing capacity within the engineering and architectural institutions of the country in this subject. Also, under the title Digital Signal Processing 11 courses were conducted during the year. Two certificate programmes were conducted one for BHEL, Tiruchirapalli and another for HAL Management Training Academy Bangalore. A 14 weeks programme was conducted under Small Industries Management Assistant Programme (SIMAP). Currently 7 User Oriented Programme (UoP) M.Tech programmes are being offered.

6.1.8. Short Term Training Programmes Under ISTE :

Two programmes have been conducted with funding from ISTE during 2004 – 05. 65 participants benefited out of these courses.

6.1.9. OTHER ACTIVITIES:

IITM Courses On The Web:

The exercise of creating web-based resources for all courses is an important, nationally relevant and a very difficult exercise to undertake. Aware of this premier and responsible role, a Web Studio has been established in our Institute with requisite hardware platforms and software to facilitate creation of high quality multimedia content. The web studio has sufficient number of software / hardware – trained group of personnel. The project IIT Madras courses on the web – meant to serve the IIT faculty and student both in and outside IIT Madras is funded fully by the Institute.

IIT Madras has been managing an Intranet website under an e-learning platform. Many faculty members have started using the site for developing interactive electronic content for their teaching material. The center will provide full support in the form of man power and software assistance to ensure that this can be achieved in a relatively short time.

The Institute sanctioned the purchase of a 64 processor ultraspare 3 based SUNFIRE 15 K, the highest end server marketed by Sun Microsystems Inc for the purpose of improving the e-learning infrastructure of the Institute. The server with a memory of 128 GB and a storage space of 4 TB has been set up. The software Acado, which is licensed to IIT by Transversal E Networks, Trivandrum for two years, has been installed and the server configured to host video archives and web supplementary lectures. An 100 seater electronic calls room is being planned as addition to the web studio.

The IIT Faculty offered several new courses, which have all been ported in the web server. A workshop highlighting the facilities available for web course development was held during November 2004 for the benefit of faculty.

National Programme On Technology Enhanced Learning (NPTEL):

The concept of distance learning is becoming important. Targeting this, IIT Madras is involved in the National Programme on Technology Enhanced Learning (NPTEL) a project funded by the MHRD. The main objective is to develop web & video based material as standard academic content for science and engineering courses in order to enhance the reach and quality of technical education in the country. The first set of courses is being completed and it is contemplated to take up more courses in the next phase.

Facilities such as establishment of dedicated broad band network, link to EDUSAT, Video conferencing facility, ISDN lines etc., is underway.

The Ministry has released the second and third instalments of funding in August 2004 and Dec 2004 for NPTEL to enable the completion of the project on time.

A workshop was conducted in two parts, on 20th Nov. 2004 and 27th Nov. 2004, to get feed back on the contents being developed in IIT Madras from potential user faculty outside of IIT. More than seventy participants attended the workshop and provided valuable input and feedback.

Four video courses (out of a total of 18) have been completed and the lectures are being processed for delivery. In addition six more courses are likely to be completed by the end of April.

NPTEL PIC (Project Implementation Committee) meetings were held in IIT Roorkee and IIT Guwahati for review of the progress of the project. In addition the NPTEL NPC (National Programme Committee) meeting was also held during Nov. 2004. The project and the progress were well received by the Ministry and the first phase of launching the course contents to users is scheduled for July 2005. Several project associates are being hired for NPTEL office at IIT Roorkee and training is being given by Web Studio, IIT Madras.

Several Video accessories and hardware (such as tablet PC) were bought for recording video lectures. In addition three new associates were hired by the ETC exclusively for editing video files.

Additional Workshop for NPTEL content delivering and feed back from faculty is being scheduled for the month of June 2005.

6.1.10. Educational Technology Cell:

Educational Technology Cell was established by the Ministry of Human Resources Development during 1989 with the main objective of making available the valuable expertise and experience of the faculty in IIT Madras to the students of Engineering colleges and scientists of R&D departments / Industries through video production of programmes / lessons.

The Education Technology Cell has a fully equipped Digital Studio for producing broadcast quality video lecture series delivered by faculty as also for short features on research experiments, facilities etc.

A new studio is being set up with additional space for data manipulation and Non-linear editing on the III Floor, IC & SR.

Total hours of shooting: 297 hours

- NPTEL Lectures - 172 hrs
- Laboratory Shoots - 125 hrs
- Non-linear editing - 1250 hrs
- LCD Projection - 90 hrs

About 1060 Lectures (Each of 60 minutes duration) of Video material have been sent to various Colleges & R & D Establishments.

6.2 CENTRE FOR INDUSTRIAL CONSULTANCY AND SPONSORED RESEARCH

6.2.1 Introduction:

The Centre for Industrial Consultancy & Sponsored Research was set up in 1973 to promote interaction with industries. It facilitates active participation of the faculty in various interactive programmes organized for the benefit of the industries and the Institute. The Centre also provides administrative support for carrying out consultancy and sponsored research projects, particularly for recruitment of project staff, maintenance of accounts and purchase of equipments as well as materials.

Some of the major activities that the Centre is involved are:

- Sponsored Research programmes
- Plan Schemes
- Technology Development Mission Schemes
- Consultancy programmes: Project / research / retainer based / institutional
- Collaborative projects with foreign countries
- Industrial Associate ship Scheme
- ISRO-IITM Space Technology Cell joint projects
- IGCAR-IITM Cell joint projects
- Patenting and Technology Transfers

Dean : Prof. V. Kalyanaraman

Staff

Dr. D. Balakrishnan	Chief Techno Economic Officer
Sri R. Sundaram	Senior Techno Economic Officer
Sri V. Suresh	Senior Techno Economic Officer
Sri K. Unnikrishnan	Assistant Registrar (Project Purchase)
Sri G. Ravichandran	Assistant Registrar (F&A)

6.2.2 Sponsored Research:

The Institute took up 79 projects of value totaling to Rs. 3515.81 lakhs during 2004-2005 as given below

Sl. No.	Sponsoring Agency	No. of Projects	Sanctioned Value (Rupees lakhs)
1.	Aeronautics Research & Development Board	1	7.79
2.	Alumni Association	1	2.00
3.	Boards of Research in Nuclear Sciences	4	69.47
4.	Class NK – Nippon Kaiji Kyokai, Mumbai	1	4.50
5.	Council of Scientific and Industrial Research	1	9.06
6.	Crest Ultrasonics Corporation	1	2.25
7.	Defence Research and Development Laboratory	3	29.00
8.	Defence Research and Development Organisation	7	144.57
9.	Department of Atomic Energy	2	23.84
10.	Department of Biotechnology	1	26.45
11.	Department of Information Technology	3	154.00
12.	Department of Science & Technology	21	1417.08
13.	EMCURE Pharmaceuticals Ltd.,	1	2.84
14.	European Commission	1	9.01
15.	Honeywell Technology Solutions Ltd.,	1	2.40
16.	Indian Space Research Organisation	14	192.41
17.	Indira Gandhi Centre for Atomic Research	2	28.03
18.	Indo French Centre for the Promotion of Advance Research	1	54.32
19.	J K Tyres	1	143.00
20.	Microsoft Corporation	1	13.00
21.	MINISTRY OF HOME AFFAIRS	1	23.08
22.	Ministry of Human Resource and Development	1	12.00
23.	Ministry of Non-Conventional Energy Sources	1	23.40
24.	National Institute of Ocean Technology	1	29.82
25.	Naval Research Board	2	53.61
26.	Navy	1	4.83

27.	RCI, Hyderabad	1	9.66
28.	Swedish International Development Cooperation Agency	1	54.00
29.	The Lemelson Foundation, USA	1	793.36
30.	TRL LIMITED	1	10.01
31.	Others and additional grants		167.02
	Total	79	3515.81

This includes International Collaborative and Industry Sponsored Projects.

6.2.3 Consultancy Programmes:

452 Consultancy assignments of value totaling to Rs.839.28 lakhs, 53 Research Based Industrial Consultancy for a total value of Rs.424.36 lakhs and 390 Industrial Consultancy assignments for a total value of Rs. 380.30 were taken up during 2004-2005, apart from additional grants to the tune of Rs. 20.76 lakhs for the on-going consultancy assignments. Also 9 faculty members were retained as consultants by various industries for a total fee of Rs.13.86 lakhs.

6.2.4 New Faculty Scheme:

A new faculty member is given a seed money of upto Rs. 5.00 lakhs by IIT Madras to initiate activities in the field of his research interest and to enable the faculty to interact with organizations that sponsor R & D in the area. 38 proposals were approved for funding under the New Faculty Scheme for a total sum of Rs.183.32 lakhs.

6.2.5 Industrial Associateship Scheme:

231 Industries are members of this Scheme (Large scale 26, Medium scale 118 and Small Scale 87).

The following six Technology Appreciation Programmes were organized during the period under report:

1. Industrial Applications of Optical Techniques for Design, Diagnostics and Measurement.
2. Nanotechnology for Industries.
3. Recent Trends in Power Engineering.
4. Industrial application of CFD.
5. Cyber Laws.
6. Recent Trends on High Performance FRP Composites.

6.2.6 Other Programmes:

ISRO-IITM Space Technology Cell joint projects:

This is an on-going activity sponsored by the ISRO where research projects of interest to ISRO are being taken. 7 on-going projects totaling to a value of Rs. 106.60 lakhs were continued and 16 new projects for a value of Rs. 216.81 lakhs were taken up during the year 2004-2005.

IGCAR-IITM Cell:

Four on-going projects were continued during 2004-2005, totaling to a value of Rs. 42.41 lakhs and 2 new projects for a value of Rs. 28.03 lakhs were taken up during the year 2004 – 2005.

Technologies for Social Development:

During the year under report, IIT Madras initiated activities for transfer of technologies which are of immediate relevance to society. For this purpose, the following three projects have been taken up.

- Socially Relevant Project.
- Rural Technology Action Group (Funded by Planning Commission).
- Recognition and Mentoring Programme by Lemelson Foundation (USA).

6.2.7 Distinguished Visitors to the Centre:

The following visited the Institute during the year 2004-05:

1. Prof. P Ganguli, Shailesh J Mehta School of Management has delivered a lecture on "IPR Enabled Knowledge Incubation and Wealth Realisation" on 26th April 2004 the World Intellectual Property Day.
2. Dr. V. Krishnamurthi, Former Chairman, BHEL, SAIL & Maruti Udyog Ltd., addressed the IIT faculty and students at the Technology Day Celebrations held on 11th May 2004.

3. Dr Mukul Saxena, Vice President, Siemens, Corporate Technology visited on 29th July 2004 for exploring through collaborative research programs.
4. Prof. P.V. Indiresan addressed the IIT faculty and students at the Engineers' Day Celebrations held on 15th September 2004.
5. Dr. R. R. Sonde, Executive Director, NTPC visited IITM and made a presentation on project of interests to them for joint research with IITM on 20th November 2004.
6. Shri Vivek Harinarain, Secretary IT, Government of Tamil Nadu, Shri B. Ramalinga Raju, Chairman, Satyam Computer Services Limited and Smt. Sheila Gandhi, NASSCOM visited IIT Madras on 19th November 2004 for a Panel Discussion on "Institute – Industry Collaboration: Way to move up the value chain-imperatives for India Inc".

6.2.8 MoUs Agreements signed

29 new MoUs / Agreements have been signed by IIT Madras with the following 26 organizations / Institutions during 2004-05:

1. M/s. Murugappa Group, Chennai
2. M/s JK Tyres
3. M/s Indo French Marketing Company, Chennai 61
4. M/s Aquamall Water Solutions Limited, Hyderabad
5. M/s TATA Chemicals Ltd., Mumbai
6. M/s Emcure Pharmaceuticals Ltd., Pune
7. Nanotechnology Research and innovation Foundation, Pune 411 030
8. Bauhaus-Universitat Weimar, Weimar, Germany
9. Eureka Forbes Limited, Bangalore 560 099
10. M/s Lactochem Limited, Chennai
11. DLRL (CARS), Hyderabad
12. M/s Mahindra Intertrade Limited, Mumbai 400 001
13. M/s. Texas Instruments (India) Private Limited
14. M/s. The Lemelson Foundation, USA.
15. M/s. Institute for Steel Development & Growth, Kolkata.
16. M/s. Naval Science and Technology Laboratory, Visakhapatnam
17. M/s. Liquid Propulsion Systems Centre
18. M/s. Dredging Corporation of India Limited, Delhi
19. M/s. Columbian Chemicals Company, USA
20. M/s. TRL Ltd.
21. M/s. Nippon Kaiji Kyokai (ClassNK) Tokyo, Japan
22. M/s. Bharat Heavy Electricals Limited, Trichy
23. M/s. Satyam Computer Services Limited
24. M/s. Defence Terrain Research Laboratory (DTRL)
25. Council for Advancement of Peoples' Action and Rural Technology. (CAPART)
26. Pratt & Whitney Canada Corporation, USA (NDA)
27. Lakshmi Ring Travellers (Coimbatore) Limited, Coimbatore

6.2.9 Patents:

Details of patent applications filed during the year are given below:

Sl. No.	Title of the Invention	Inventor(s)	Department	Date of filing the application
1	A Device for Reducing Backlash in Gear Drives	Prof. M. S. Shunmugam Prof. N. Sivaprasad	MEE	5.6.2004
2	Supported Metal Catalysts and a Method of Manufacture thereof	Prof. B. Viswanathan Prof. T.K. Varadarajan Mr. S. Shanmugam, SRF	CHY	11.6.2004
3	A Multi Axial Fatigue Testing Machine	Dr. M. M. Mayuram	MEE	20.7.2004
4	Polyurethane Foam Coated with Silver Nanoparticles	Prof. T. Pradeep	CHY	6.9.2004
5.	A Process for the Monoacylation of Polois with Alkyl & Aryl B-Ketoesters	Dr. Anju Chadha	BIO	19.10.2004
6.	A Novel Diabetic Footwear for Prevention of Foot Sole Ulcers	Dr. K. M. Patil M/s. Sundaram Medical	APM	18.11.2004

7.	A Novel Diabetic Footwear for Healing of Foot Sole Ulcers	Foundation (Filed by Sundaram Medical Foundation)		
8.	A Process for the Preparation of Wear & Corrosion Resistant Coatings for Electroless Deposition on Metal Substrates	Prof. S. K. Seshadri	MET	23.12.2004

Technology Transfers:

Sl. No.	Agency	Value Rs. in Lakhs
1.	Aquamall Water Solutions Limited	3.00
2.	Emcure Pharmaceuticals Ltd.	10.00
3.	Anabond Limited	0.11
4.	Lakshmi Ring Travellers (Coimbatore Ltd.)	18.00
	Total	31.11

6.2.10 Publications:

- The quarterly publication titled IIT Madras News was continued.

6.2.11 Industrial Lectures:

The Industrial Lecture Programme for the V Semester B.Tech. students, conducted by Engineering Departments, was supported.

6.2.12 Other information:

1. The internal Audit for ISO 9000 was held on 8th April 2004.
2. A programme was organized on 19th April 2004 to identify projects of mutual interest to IIT Madras and ISRO as well as Post-graduate level projects to be taken up by our final year M.Tech & Dual Degree students under the ISRO-IITM Cell.
3. Prof. P Ganguli, Shailesh J Mehta School of Management has delivered a lecture on "IPR Enabled Knowledge Incubation and Wealth Realisation" on 26th April 2004, at the World Intellectual Property Day.
4. Presentations were made by the Engineers from Murugappa Group on 27th July 2004 in connection with sponsoring projects at IITM under the MoU recently signed.
5. Training Programme on "Communication Skill" to project staff was conducted by M/s Paradigm Shift Outsourcing Solutions (P) Ltd., Chennai on 24th & 31st July, 2004.
6. A visit by about 42 faculty members to SHAR Centre was organized on 11th September 2004 for seeing the GSLV launch facilities, prior to launch.
7. Engineers' Day Celebration was held on 15th September 2004, with Prof. P.V. Indiresan as the Chief Guest.
8. Dr. R. R. Sonde, Executive Director, NTPC visited IITM and made a presentation on project of interests to them for joint research with IITM on 20th November 2004 Prof. S. Srinivasa Murthy, Head, Mechanical Engg. co-ordinated this. They have expressed interest in funding projects in the areas of Hydrogen Energy, CFD, Bio-technology and condition monitoring.
9. A presentation was made by Coir Board on 24th September 2004 to explore collaborative research projects to help coir industry.
10. A group of faculty members from various departments of IIT Madras headed by Prof. S. Narayanan, Dean (AR) visited BHEL on 22nd November 2004 for identifying joint research projects.
11. A visit by two faculty members of Mechanical Engineering department was organized on 25th November 2004 to Coir Board, R & D Centre at Allepey to identify projects of mutual interest.
12. Organized the exhibition at PAN IIT meet at Delhi on 24th – 25th December 2004. Research Scholars representing each department also attended this exhibition.

13. Scientists from Atomic Energy Regulatory Board made a presentation on 31st January 2005 to explore areas of mutual interest for collaborative research projects.
14. Training Programme for the Project Staff was conducted on 26th February 2005.
15. International workshop on "Modeling of Tsunamis: Generation, Propagation and Impact" was held on March 31st to April 2nd 2005 with sponsorship of Tata Consultancy Services Limited.
16. Following organizations have identified a list of research areas in which they would like to have joint development project with IIT Madras and the same had been circulated to all faculty members.
 - a. Bharat Heavy Electricals Limited, Trichy
 - b. National Thermal Power Corporation, New Delhi
 - c. Atomic Energy Regulator Board, Mumbai
17. Lemelson Foundation, USA has sanctioned about Rs.8 Crores to IITM for projects under their "Lemelson Recognition and Mentoring Program for Inventors (L-RAMP)", during August 2004.
18. A project on Rural Technology Action Group (RuTAG) has been sanctioned and started functioning on 10th June 2004.

6.3 CENTRAL ELECTRONICS CENTRE

6.3.1. Introduction:

The Central Electronics Centre (CEC) was established in 1971 with the main objective of servicing and maintaining the wide variety of sophisticated electronic equipment. The need for training service engineers for maintaining the electronic equipment was felt and an 18 month training program, the first of its kind, in the country was started in the same year. Since then, conducting such Training Program has become one of the important activities of the Centre. The significant advantage, this Centre has over the other similar organizations is the mixed environment, i.e a blend of academic environment and industry – type working atmosphere.

The Centre is housed in a dust-free environment of about 500m². The infrastructural and equipment facilities have been adequately strengthened over the years by successive collaborative Indo-German Projects. The Centre has a team of qualified, experienced and talented staff members, trained in Germany in various fields of electronic instrumentation.

The Centre has continuously enlarged and diversified its activities and now it offers the following services:

- Servicing and Maintenance of Electronic Equipment
- Training Programs for Manpower Development
- Calibration of Electronic Test & Measuring Instruments
- Testing of Electronic Products
- Development of Custom built Equipment
- Consultancy Services to industries in the above areas.

In the area of Renewable Energy too, this Centre has been playing a key role by conducting several Training Programs in the area of Solar Photo Voltaics (SPV).

In the recent years, 40 programs have been conducted and more than 860 personnel were trained. The project is sponsored by IREDA (Indian Renewable Energy Development Agency), New Delhi. SPV Laboratory (indoor and outdoor) facilities have been established and Solar Photo Voltaic Park has been developed to promote the developmental activities in this area.

During the past four years, four batches of special 12 weeks Training Programs of unique in nature, have been organized to retrain the Radio Officers of Merchant Navy to become Electro-Technical Officers. The project is sponsored by AMET (Academy of Maritime Education and Training), Chennai.

This Centre has lent its expertise in the above areas to more than 220 industries and other organizations in and outside the country.

In 2001, this Centre received ISO 9001:2000 Quality Certification from RWTÜV, Germany for establishing its Quality Systems.

The Centre established Quality System for its Calibration and Testing Laboratories in accordance with ISO/IEC 17025 Guidelines. It received NABL Accreditation for both these Laboratories.

6.3.2. Activities:

Training Programmes:

Long Term CEC Training Program

XX Batch of Training Program (2 years duration) with 19 candidates commenced on 18 th October 2004. The total number of candidates in XIX and XX Batch of CEC Training Programs are thirty.

Following Laboratories have been equipped with new additional facilities:

1. Servicing Laboratory
2. Training Laboratory
3. Calibration Laboratory
4. Testing Laboratory

List of Major Equipment procured:

1. 8 ½ Digit Reference Multimeter
2. Variable Voltage Variable Frequency AC Source
3. Three Phase Power Analyser

4. High Resolution High Precision Frequency Counter
5. THD Multimeter

Some of the Important Consultancy Projects handled:

S.No.	Co-ordinator	Title of Project	Organisation	No of Assign.	Project value Rs. in Lakhs
1.	Dr.M.Kumaravel	Fault Analysis of Intelligent Battery Chargers	Ford India P. Ltd	12	2.06
2.	-do-	Circuit Analysis of Torque Wrench / Indicators	-do-	02	0.35
3	-do-	Fault Analysis of MGC Boards	Kody Tech. Ltd.	10	1.47
4	-do-	Fault Analysis of F/E Boards	-do-	07	1.10
5	-do-	Power Supply Analysis	-do-	01	0.12
6	-do-	Fault Analysis of Alco Sensors	Indian Airlines	01	0.13
7	-do-	Evaluation of UPS	LIC of India	09	0.82

Dr.M.Kumaravel has been selected as member of the World Council for Renewable Energy.

He is nominated by SESI (Solar Energy Society of India) to serve as a member of its Task Analysis Committee (TAC) for Accreditation of PV Practitioners in the Country. He attended the TAC meeting on 25.7.04.

He presented a paper on "Seawater Desalination using Renewable Energy System" during the International Conference on "Sustainable Water Resources for Auroville and bioregion" at Auroville on 14.9.04. The Conference has been organized by the Auroville Centre for Scientific Research, as endorsed by UNESCO under its HELP Basic Program.

He has been selected as Life Member of the Governing Council of Solar Energy Society of India (SESI).

He attended SESI (Solar Energy Society of India) Governing Council meeting on 20.1.2005 in Pune and delivered talk on "Quality Measures and Capacity Building in the area of Solar Photo Voltaics" in the International Congress on Renewable Energy (ICORE) on 22.1.05 in Pune.

He delivered a special lecture on "SPV Powered Desalination" during Technology and Sustainable Development Course on 16.2.05. The Course was organized by IIT Madras and EPFL.

He is nominated as a member of ISPQ Accreditation Committee by Institute of Sustainable Power (ISP), USA. He served as one of the panelists during the National Conference on "Emerging Trends in Energy and Environment" organised by Sri Sai Ram Engg College on 19.2.05.

Following staff members became Member of Solar Energy Society of India (SESI) .s

Mr.C.R.Jeevandoss, Ms.N.Karthiyayini, Ms.K.Sulochana, Ms.G.Amutha, Mr.P.Sadasivam, Mr.G.Saravanan and Mr.S.Veeraraghavan.

Ongoing Development Activities:

- (i) Solar Photo Voltaic powered Seawater Desalination ('Suryajal') Systems.
- (ii) Pedel driven generator powered energy efficient Lighting Systems for rural applications.
- (iii) Solar Photovoltaic powered Lighting Systems for various applications.

Staff Strength:

The Centre has 10 Technical and 4 Administrative staff.

S.No.	Co-ordinator	Title of Project	Organisation	No of Assign.	Project value Rs. in Lakhs
1	Dr.M.Kumaravel	Fault Analysis of Torque Wrench / Indicators	Ford India P. Ltd Chengalpattu	2	0.35
2.	-do-	Servicing of MGC Board	Kody Tech. Ltd., Chennai-41	2	0.30
3.	-do-	Design Modification for performance Improvement of Controller in Design Application	Milton Roy India P.Ltd. Chennai	1	1.57
4.	-do-	Servicing of MGC Board	Kody tech. Ltd., Chennai	2	0.29
5.	-do-	Servicing of Battery Chargers	Ford India P. Ltd. Chengalpattu	2	0.34
6.	-do-	Servicing of Battery Chargers	Ford India P. Ltd. Chengalpattu	2	0.33
7.	-do-	Testing of 5kVA UPS Systems	LIC of India, Chennai	3	0.34
8.	-do-	Servicing of MGC Board	Kody Tech. Ltd. Chennai	2	0.29
9	-do-	Testing of UPS	LIC of India	5	0.30
10	-do-	Battery Charger	Ford India Ltd. Chengalpattu	1	0.17
11	-do-	Servicing of F/E Board	Kody Tech. Ltd. Chennai	1	0.16
12	-do-	Servicing of MGC Board	Kody Tech. Ltd. Chennai	1	0.15
13	-do-	Servicing of Battery Charger PCBs, Ups	Indian Airlines	1	0.06
14	-do-	Servicing of Battery Charger PCBs, Ups	Kody Tech. Ltd.	1	0.15
15	-do-	Servicing of Battery Charger PCBs, Ups	Ford India Ltd.	1	0.17
16	-do-	Servicing of Battery charger	Ford India Ltd.	2	0.33
17	-do-	F/E Board (TMT + RCV)	Kody Tech. Ltd. Chennai	1	0.16
18	-do-	Servicing of F/E Board (TMT – RCV)	Kody Tech. Ltd.	1	0.16
19	-do-	Battery Charger	Ford India P.Ltd.	1	0.17
20	-do-	Battery Charger	Ford India P. Ltd.	1	0.16
21	-do-	MGC Board	Kody Tech. Ltd.	1	0.15
22	-do-	F/E Board (TMT + RCV)	Kody Tech. Ltd.	1	0.16
23	-do-	Power Supply	Kody Tech. Ltd.	1	0.12
24	-do-	MGC Board	Kody Tech. Ltd.	2	0.29

6.4 COMPUTER CENTRE

6.4.1. Introduction:

The Computer Centre was established in 1973 to provide Central Computing resources, facility and support to the research initiatives of the Institute. The Centre started its services in 1974 with an IBM 370 Mainframe for batch processing, and graduated to SIEMENS 7580-E interactive computing in 1985, after nearly a decade. The Siemens system was complemented with an MX500 Unix system for the local and remote terminal management. In line with technology changes, Mini Computers and Personal Computers were introduced in a modest way.

The system services were expanded to include application services starting with payroll processing, and over a period of time were extended to applications such as admissions and academic enrolment across the Institute. In 1995, the client-server environment involving IBM RS 6000 models 590 and 370, and a cluster of servers on a high-speed network replaced the Siemens system. Now in 2005, the High Performance Computing Environment in the Centre is defined by a 2x32-CPU IBM p690⁺ servers, 2x64 CPU-SUN Fire 15K servers, and an Itanium-based 2x16 CPU SGI Altix 350 servers with an aggregate of about 200 RISC/ITANIUM CPU power, and is poised for a growth to ~2000 64-bit CPU system to tackle problems in the Bio & Nano age.

Whereas this provides support to scientific computing on the campus, the administrative computing is currently being enlarged through a data centre concept, leading to an institute-wide paperless office through seamless integration of the departmental and central administration units. A high end server consisting of a 64-CPU Xeon Cluster based on HP system including 6 TB SAN storage forms the core of this implementation.

With its administrative merger with the Dept. of Computer Science & Engineering in 2004-2005 and through the concept of ICE: Integrated Computing Environment, Computer Center has made a paradigm shift by re-defining its role to provide Central Computing and Information facilities and distributed access through a very powerful and seamless networking infrastructure — whereby significant portion of the Logical Infrastructure from Cable Plant to the Directory Services are shared across the campus by one and all.

The present internet connectivity of 5x2 Mbps is being upgraded. The network of the campus today has four parts: a Central Core running at the speed of 10 Gigabits per second, and three zones – Academic, Hostel and Residential. The spread of nodes in the last count was about 2000, 4000 and 1050 respectively.

In view of the proliferation of the use of desktop PC's, the Centre runs a PC Maintenance cell to provide services through repairs and maintenance of PCs and peripheral devices in the institute, including those used in projects. The on-going administrative computerization efforts through data centre will typically include the following services:

- | | |
|-----------------------|--|
| 1. Administration | 5. Entrance Examinations for Admission (JEE, GATE) |
| 2. Finance & Accounts | 6. Hostels |
| 3. Hospital | 7. Stores & Purchase |
| 4. Engineering Unit | 8. Academic Section |

6.4.2. Details of Staff

Head

Head of the Dept. of Computer Sc.& Engg.
(since 16.8.04)

Name and Qualification	Major Area of Specialization
Senior Systems Engineers:	
Dheenadayalu R, M.Sc(Engg)	Data Centre Operations, Systems Administration, Application Software, System selection.
Jayaprakash S, Ph.D.	Software Engineering / Computer Networks
Ramesh S.K, M.S	System Administration, MIS, Data Management, Data Processing, System Programming.
Systems Officer Gr.I	
Sourirajan C.S., M.Sc.	System Administration, Programming Languages, Small computers Application Software Development
Assistant System Engineer	
Baman.Banavath B.Tech.(C.S)	System Analysis & Design, AIX A, Windows NT server Administration, INTERNET, Database Management System, Power builder, Visual Basic GUI Applications.
Venkatesan C.S., B.E.(CS),M.Tech(IT) (MBA),M.Tech(C_level),MBA	Software Engineering, Operating Systems (Unix, Windows, Sun, IBM), Database management systems, Programming Languages (C,C++, Cobol), Computer Networking, System administration, HRD Management.

Technical Officers (Systems) Gr.I	
Ravichandran V, M.Sc.	Application Programming, Database Management systems, Systems Programming, System Administration, Training industrial Personnel on Mainframes.
Vijayaraghavan C.N, M.Sc. & M. Tech. In Ind. Maths.	Computer Network and Data Centre Operations, Operating Systems, System Administration
Technical Officer (Systems)	
Sreekumar P.Y, B.Tech(C.S)	Computer Networks, Database Management Systems, Systems Administration.

ICE Project Staff

System Trainees : (2004-2005)
Selection of Systems Trainees

As a national commitment, the Center has been running 2-year Training programs for Engineering graduates, selecting about 20 trainees annually. The training is an on-the-job type, and these trainees assist the staff in the upkeep and maintenance of the systems in the Centre or in various Departments to which some are allotted.

The interviews for the selection of the 20th and 21st batch of Systems Trainees were held on 11.09.04 and 12.03.05 respectively. For the 20th batch Trainees, 115 candidates were called for test and interview, and finally 25 candidates joined on 13.10.04. For the 21st batch of Trainees, 70 were called for test/interview held on 12th March 2005. For the first time, an on-line test was conducted for the 21st batch.

Currently, Mr. C.S.Sourirajan is in-charge of the Systems Trainee program.

List of 19th batch Systems Trainees

- | | |
|-----------------------------|-----------------|
| 1. P. Amutharasan | 5. N. Visintra |
| 2. R. Ganapathy Subramanian | 6. T. Rajesh |
| 3. J. Shanmugam | 7. L. Parthiban |
| 4. M.H. Sundarlal | 8. Kamala Priya |

List of 20th batch Systems Trainees

- | | |
|--------------------------|---------------------|
| 1. P. Satheeskumar | 13. J. Rathi Prabha |
| 2. R.V. Praveena | 14. C. Gnanasundram |
| 3. P. Karthikeyan | 15. S. Geetha |
| 4. S. Shenbagadevi | 16. K. Prakash |
| 5. D. Jayalakshmi | 17. T. Vinoth |
| 6. M. Hemapriya | 18. A.K. Srinivasan |
| 7. L. Mythili | 19. K. Prakash |
| 8. Kabilan Lakshmi pathi | 20. A. Palanivelu. |
| 9. D. Sai Sateesh | 21. G. Manikandan |
| 10. T.R. Kapilesh Babu | 22. S.H. Hema |
| 11. P. Narmadha | 23. L. Kapilan |
| 12. M. Akila | 24. K. Navamani |
| 25. L. Sukanya | |

PC Maintenance Cell

In-Charge - Mr. V. Ravichandran, Technical Officer Gr.I (Systems).

Senior Technical Assistant
Selvaraju V., B.E. (ECE) -

PC Hardware and software maintenance and trouble-shooting. Microcontroller and Microprocessor based system development and BIOS programming. Training PC Cell Trainees in Hardware and OS (Windows 9X/NT/XP/2000 and Linux).

Technical Assistants
Venkata Subba Rao T.,
B.Tech. (CSE)

Maintenance, Troubleshooting and Repair of SMPS, Mother boards, Printer, Monitors and other peripheral devices, Installation, Administration and Maintenance of Windows 9X, NT, XP, 2000, Linux, Novel Netware operating systems. Training on PC Maintenance and Repair to PC Cell Trainees.

Anandkumar S., B.E.(ECE)

Maintenance and Troubleshooting of Computers and Peripherals in the Institute. Giving technical support to PC Cell Trainees that include theory and Hands-on-Sessions on computer hardware & Peripherals. Installation, Networking and system administration of (Windows 9X/ NT, XP, 2000 Servers, Linux and SUN) Operating systems.

Selection of Trainees for the PC Maintenance Cell:

PC Cell Trainee selection was done on 09.10.04 and 10 were selected.

Trainees

- | | |
|-----------------------|---------------------|
| 1. R. Vinothkumar | 6. N. Shamugavel |
| 2. K. Krishnakumar | 7. D. Vijayalakshmi |
| 3. N. Suriyanarayanan | 8. M. Ravi Kumar |
| 4. G. Ramesh Moorthy | 9. C. Shamugaraj |
| 5. S. Chinnadurai | 10. G. Aravindan |

New Facilities, Equipments Added & Teams formed:

Hardware

1. Augmentation of IBM system to 2x32 CPU p690*
2. 2x64 CPU SUN Fire 15K server
3. 2x16 CPU SGI Altix 350 server
4. ~60 CPU HP server

Software

1. NAG software with the Fortran libraries
2. Abaqus software upgraded to version 6.4 / 6.5
3. Ansys software procured and installed in HP machines
4. MSC software installed in IBM, Altix and Sun Fire 15K
5. MSDN Academic License suite, and 1500 MS Office 2003 Licenses were procured and distributed to various departments in June 2004

Equipment

- 1 no. of 80 KVA and 3 nos. of 20 KVA UPS were procured and installed.
- 5 nos. of 5.5 ton a/c were procured and installed.

System-in-charge

- | | | | |
|------------------------|---|-----------------------|------------------------|
| 1. IBM p-series Server | Prof. D.Janakiram | Dr. N.S.Narayanaswamy | |
| | Mr. S.K.Ramesh | Mr. C.S. Sourirajan | Mr. V.Ravichandran |
| 2. SUN Fire Server | Prof. D.Janakiram | Dr. V.Kamakoti, | Mr. C.N.Vijayaraghavan |
| | Mr. P.Y.Sreekumar | Mr. C.S. Venkatesan | |
| 3. SGI Altix Server | Prof. D.Janakiram | Dr. Sukhendu Das | Mr. S.K.Ramesh |
| | Mr. C.S. Sourirajan | Mr. V.Ravichandran | Ms. N. Visintra |
| | Ms. Kamala Priya | | |
| 4. HP Server | Prof. D.Janakiram | Dr. V. Kamakoti | Dr. B.Ravindran |
| | Mr. R.Deenadayalu | Mr. P.Y.Sreekumar | |
| | & Workflow Group Leaders: | | |
| | Prof.G.Srinivasan , Librarian, CMO, CSO, D.R's (Admin., Acad., S&P., F&A.,) | | |

GATE and JMET Examinations

Mr. S.K. Ramesh and Mr. V. Ravichandran assisted in the successful conduct of the GATE 2004 and JMET 2005 examinations.

JEE 2004-2005 Data Processing

Mr. Sreekumar P Y and Mr. C.S. Venkatesan assisted in the successful conduct of the JEE 2004 related computer operations that included Applications query on Web/IVR, Data Processing, All India Rank generation, and results publishing in Web/IVR.

McAfee Antivirus

Server-based McAfee Antivirus Security Suite (AVSS) software from McAfee has been installed in a server at the Computer Centre that provides automatic updating. Installation in individual machines is provided through a website at Computer Centre. Help is provided to the users who face difficulties in activating or updating this from time to time. Clean-ups and reinstallation (if required) are also done. This activity is co-ordinated by Dr. S. Jayaprakash and is executed by Mr. D. Hariharan.

Seminars / Lectures / Other activities

1. Computer Centre Staff conducted a HRD Training Programme to the Campus Children in July 2004.
2. Dr. S. Jayaprakash visited Tuticorin Port Trust on 25.10.04 to provide opinion on their IT initiative.
3. Mr. Banavath Baman and Mr. C.S. Venkatesan, Assistant Systems Engineers attended a Workshop on "Construction, Maintenance & Programming of High Performance Clusters Utilizing off the Shelf Components" held on 11.10.04 at Bangalore.
4. International Quiz, which was organized by CSI, was conducted for students visiting from Australia, Hong Kong, Sri Lanka and New Zealand for 'SEARCC Student Software Programming Contest 2004' on 19.11.04 & 20.11.04.
5. Workshop on MSC Nastran, Patran, Marc and Mentat was conducted by M/s. CSM Software, Bangalore on 24.11.04 & 26.11.04.
6. 2-days Training Programme on System Administration and on PBS pro software, with particular reference to Altix system, was conducted in January 2005.
7. Institute payroll related computerization, which called for some modifications, was attended to by Mr.S.K. Ramesh.

Memberships of Committees

1. Dr. S. Jayaprakash was invited to serve as an Expert Member, 'e-Governance Advisory Committee', Govt. of Pondicherry.
2. Dr. S. Jayaprakash was invited to serve as Inspection Committee Member and University Representative for faculty selection committee by Anna University.
3. Dr. S. Jayaprakash was nominated to serve as a Member, Technical Committee for the introduction of e-Governance based automation by University of Madras.
4. Dr. S. Jayaprakash was invited to inspect a few affiliated colleges to Anna University during June '04.
5. Dr. S. Jayaprakash was invited to serve as a Member of "Software Evaluation Committee" by ELCOT for Paperless Office software.
6. Mr. C.S. Venkatesan, Asst. Systems Engineer was enrolled as a Life Member in ISTE from 2004.

Institute Projects:

Sl.No	Title	Coordinators/staff
1.	Campus Network	Dr. S. Jayaprakash Mr.P.Y. Sreekumar Mr.C.N. Vijayaraghavan Mr. Banavath Baman Mr. D.Hariharan Mr. Sriram Bhaskar
2.	Hospital Information System, BBS	Mr. R. Dheenadayalu
3.	JEE Data Processing	Mr. P.Y. Sreekumar Ms. N. Vichintra
4.	GATE Data Processing	Mr. S.K. Ramesh Mr. V. Ravichandran
5.	M. Tech Admission	Mr. S.K. Ramesh Mr. V. Ravichandran
6.	Academic Records Maintenance System	Mr. P.Y. Sreekumar Ms. KamalaPriya
7.	Hostel Mess Management	Mr. C.S. Sourirajan Mr. V. Ravichandran
8.	Hostel Billing System	Mr. C.S. Sourirajan
9.	Teachers Evaluation (processing)	Mr. C.S. Sourirajan
10.	Teachers Evaluation (on line feedback)	Mr. P.Y. Sreekumar
11.	Anti-virus facility	Mr. D. Hariharan Mr. Sriram Bhaskar

7. CENTRAL FACILITIES

7.1 Central Workshop Facilities:

Central Workshop was established in the year 1959. Initially it consisted of shops associated with three major production processes, i.e. metal cutting, metal joining and metal forming. Later on, sections of other modern production processes were added

Presently Central Workshop of our Institute is having the following shops and sections and their activities during the period 2004- 05 are given below.

S.No	Shops	Facilities
1	Carpentry	Planing, crosscutting, turning, thickness reduction, polishing, teeth sharpening, blade sharpening and grinding
2	Fitting & Tool Room	Filing, drilling, tapping, jig boring, tool milling, engraving, marking, slotting, grinding and cutting
3	Machine Shop	Shaping, milling, turning, planing, radial drilling and tool and cutter grinding
4	Gear Shop	Spur, helical & bevel gear cutting
5	Electrical Shop	Simple wiring & winding, simple electrical circuit
6	Instrument Shop	Pressure testing facilities upto 100 kg, NC trainer lathes, milling machines
7	Welding Shop	Arc welding, gas welding, brazing, & profile cutting.
8	Foundry Shop	Oil fired furnace, cupola & sand plant
9	Smithy Shop	Hand forging, power hammer, heat treatment & hardness testing
Sections		
10	Pneumatics and Hydraulics	1. Festo training kits with valves. 2. Electromagnetic Kit 3. PLC to demonstrate Pneumatics 4. Practical demonstration like auto wheel brake system. Weight lifting equipment for demonstration from Eukon Bosche. Hydraulic Kit with valves for Students. Bosche training kit for students Demonstration.
11	Electronics	PCB, Tag board, Soldering and PLC Proofing.
12	FRP	Process material demonstration. Making of dustbin and welding hand shield.
13	Plastics	Introduction to process materials, Practical demonstration in making cycle token, key tags, caps & Folders

ISO 9001/2000 recertified in 2002 and is valid up to August 2005

Besides the above, Central Workshop also bears the responsibility of maintaining institute vehicles (Light and Heavy, 16 Nos.) and the environment friendly Battery powered electrical vans (11 Nos) running in the campus.

Central Workshop very effectively caters to the undergraduate's programme by imparting training in various shops cited above.

During the year under report 547 undergraduates (1st year B.Tech) received training under the assigned course WS101 and WS102 titled training I and II bearing two credits each as shown in the details given below.

Department	No. of students	Training received in
1. Electrical Engineering	116	i) Fitting ii) Electrical iii) Electronics iv) Carpentry v) Welding vi) Turning vii) Pneumatics & Hydraulics Plastics & FRP
2. Engineering Physics	8	
3. Mechanical Engineering	119	
4. Metallurgical & Materials Engineering	39	
5. Aerospace Engineering	32	
6. Chemical Engineering	60	
7. Naval Architecture & Ocean Engineering	28	
8. Civil Engineering	55	
9. Bio- Technology	48	
10. Computer Science	42	
Total	547	

In the 2nd year (III Semester), 110 undergraduate students of Mechanical Engineering Branch received training (ME 207 Workshop III) with two credit in Foundry and Smithy.

ME 209 Advanced Workshop Training with three credits for 3rd and 4th year students of Mechanical Engineering and other Departments was also offered as Summer-Term Course.

Central Workshop executes fabrication of test set-ups and their accessories related to PhD, PG and UG Projects. 792 Work Orders were executed during the year 2004 – 2005.

Some important Work Orders executed are given below:

- Fabrication work done for Saarang 2005 & IIT Bombay Techfest in which students from IIT Madras participated.
- Fabrication work for the Environmental & Water Resources Section of Civil Engg Department's project of 'Transport and Biotransformation of a Chromium Contaminated Ground Water'.
- Fixture to raise the speed of a Dynamo to 1500 rpm for Central Electronics Centre (CEC).
- Fabrication work for IC Engines Lab of Mechanical Engineering Department's Project, "Theoretical & Experimental Investigation of Flow through Diffuser".
- Fabrication work for students project ROBOCON 2004 (An All India Robotics competition held at Nirma Institute of Technology, Ahmedabad, and Gujarat).
- Fabrication work for Inter IIT Sports Meet.

Human Resources Development (HRD) Programme for the staff:

Fifteen staff from various shops of the Central workshop were sent for training in fields pertaining to courses conducted in the workshop. These training were offered by organizations such as

Centre for Vocational & Advanced Training (CVAT)	-----	Vanagaram, Chennai
Regional Testing Centre (RTC)	-----	Guindy, Chennai
Advanced Training Institute (ATI)	-----	Guindy, Chennai

New facilities to be added shortly:

In the year 2005-06, two more laboratory facilities (Communication Lab and Quality Control Lab) will be added as per the requirement of the revised curriculum.

7.2 Central Photographic Section:

The Central photographic Section caters to photographic needs of the Departments and Centres of the Institute. The jobs include photographic Coverage of most of the important functions such as Convocation, Conferences etc. held in the Institute. Besides this, the section renders assistance to the UG, PG Students, Research Scholars and Faculty of all the Departments/Centres for their activities including technical photography, conference poster preparation etc.

The in-house processing and printing work is confined to Black and White Photography.

After recent modernization this section provides Digital/high resolution photography for all the needs of the Institute.

The Central photographic section has undertaken 365 Departmental job orders and covered 64 functions as well during 2004-2005.

The Central photographic section has extended its service in all the above cases even during holidays, week ends and after Office hours on a regular basis.

7.3 Air-Conditioning Unit:

The A.C Unit is responsible for planning, installations, servicing, maintenance and operation of all central and packaged air conditioning plant, split and window air conditioners, water coolers and refrigerators etc.

7.4 Central Gas Supply Unit:

The Central Gas Supply Unit procures industrial gases from various manufacturers/suppliers and issues to various Departments/Laboratories of the Institute for research and practical deceases.

1. Industrial gases : Oxygen, Nitrogen, Dissolved Acetylene, Hydrogen and Carbon-di-Oxide
2. Special gases : High pure Argon, High pure Oxygen, High pure Nitrogen and Zero Air

The following are two quantity ordered and issued to various Departments during the year 2004-05:

<u>Item</u>	<u>Qty Ordered</u>	<u>Qty Consumption</u>
Industrial gases:		
Oxygen	2250 Cu.M	1624 Cu.M
Dry Nitrogen	3000 Cu.M	2506 Cu.M
Dissolved Acetylene	300 Cu.M	295 Cu.M
Standard Hydrogen	400 Cu.M	427 Cu.M
Carbon –di-Oxide	400 kgs	400 kgs
Special Gases:		
High Pure Argon Gr.I	600 Cu.M	504 Cu.M
High Pure Oxygen Gr.I	200 Cu.M	98 Cu.M
High Pure Hydrogen	200 Cu.M	196 Cu.M
High Pure Nitrogen Gr.I	1000 Cu.M	1000 Cu.M
Helium	200 Cu.M	100 Cu.M
Zero Air	350 Cu.M	315 Cu.M

7.5 Central Glass Blowing Section:

The Central glass blowing section is one of the important infrastructures facilities of the Institute since 1972. Being a central facility this section undertakes design and fabrication of sophisticated glass apparatus for research and development in various departments. This section also undertakes jobs from other educational institutions and industries.

This section has a range of modern glass working equipments largely procured from Germany as a component of the collaborative program and these include; horizontal cum vertical lathe, universal lathe forming lathe and high vacuum system. The section is also well equipped with a good number of sophisticated burners, drilling and cutting machine, grinding and polishing equipments and such other tools necessary for fashioning out a variety of glass apparatus. The section has adequate facility for quartz working and has developed high level of expertise in this area.

Following are some of the sophisticated apparatus fabricated:

Cryostat, spherical and cylindrical dewar flasks, logging probe, laser housing tube with water jacker, reactor tube, vacuum tube collector for solar energy and quartz wares.

During April 2004 to March 2005 the section undertook 362 work orders from various departments.

8. CENTRAL LIBRARY

The Central Library is well equipped with all modern facilities and rich resources in the form of CD-ROM, On-line databases, e-journals, printed and non-printed documents on Applied Science, Engineering, Technology, Humanities, Management, Social Science and other new emerging areas. The Central Library holds 3,93,996 collection, 1193 current journals catering to the needs of 6,886 members. The major activities undertaken in the Central Library during the period are given below:

8.1 Library Information Services Statistics

A. Collections

Item	2003-2004	2004-2005
Books	6,901	2,17,281
Ph./D Theses	175	3,297
Pamphlets and Reports	239	3,727
Microfilms/Fische	--	1,842
Book-Bank (General)	421	6,120
Book-Bank (Weaker Section)	523	8,011
Current Periodicals by Subscription	1,107	1,107
Current Periodicals by Exchange/Gift	89	86
Back Volumes of Periodicals	3,330	86,302
Patents & Specifications	-	20,000
Faculty Publications	1,000	1,000
German Collection	44,000	44,000
C.D	47	787
Video Cassettes	17	436
Total	57,849	3,93,996

B. Membership

Staff	222	576
Faculty	21	325
Students	532	5,285
Alumni Members	185	251
Corporate Members	12	88
Industrial Associate Members	222	250
Special Members	31	61
Project Co-ordinators	11	50
Total	1236	6,886

C. Services: Circulation

	2004-05
1. Number of Readers visited	5,790
2. Number of Books/Journals issued	9,235
3. Number of Books issued through Book Bank (General) }	
4. Number of Books issued Book Bank(Weaker Section) }	10,805
5. Consultation cards issued to users	186
6. Overdue & other charges collected	6,17,243
7. Xerox charges collected	3,95,877

D Reservation of Books

1. Registered	3,577
2. Fulfilled	2,952

E. Loans

1. Department Loan (Under issue)	-
2. Permanent Loan issued	1,554

F. Inter Library Loans

1. Borrowed from other Libraries	186
2. Loaned to other Libraries	106

G. Literature Search

1. CD-ROM search by users

H. Reprint Service

1. Reprints received from other Institutions 566p
2. Reprint supplied to other institutions 1,796p

I. Reprography Service

1. Number of Xerox copies supplied
3. Barcode-ID cards Generated 4,486

J. Binding

1. Number of Books and journals bound (internal) 7,267
2. Number of Miscellaneous publication bound (internal) 24,763
3. Cutting/Trimming (Sheets)

K. Expenditure on

1. Books Rs.1,35,55,000
2. Journals Rs.4,74,38,048

L. New Journals Added

60

8.2 ISO 9001:2000 Activities:

The Central Library actively participated in ISO activities and also maintained quality based library systems, procedures and services. Major activities are listed below:

- Internal Quality Audit Team visited Central Library on 28/04/2004.
- ISO Surveillance Audit was conducted on 20.05.2004
- Various Quality Classification Group Meetings were conducted and also classified 1178 publications
- Library staff participated in ISO 9000 Internal Quality Audit Training program conducted by RWTUV from 1/9/04 to 3/9/04

8.3 Digital Initiatives:

Realizing the importance of digital library in academic and research activities, Central Library has taken various initiatives. Some of them are listed below:

- Digital Library Committee was constituted and various meetings were held. Dean, Academic Research chaired all the meetings.
- Digital Knowledge Center with 100 user terminals was established on Level-II to provide access to full text and bibliographical online databases
- The Central Library website <http://www.cenlib.iitm.ac.in> was redesigned with various useful hyperlinks of e-resources.
- VTLs-Virtua- International Library Management Software with Digital Library interface was finalized and being implemented.
- iPortal- a web online public access catalogue facility has been made available to campus community on Intranet. Users can access books catalogue as well as journals
- Large numbers of e-journals were also subscribed.

8.4 Binding Facilities

Over the past decades, users used to face problems for not getting the publications in time as external binders used to take on an average 4 to 6 months to complete the binding. To overcome this difficulty, the Central Library installed Welbound Automatic Binding Machine with the facility to bind the books in few seconds using strong glue. This has saved the entire amount spent on binding through external binder and also saved the time of users ensuring great satisfaction among them. The details regarding work completed are given in the following table:

Month	No. of Journals/books	Amount in Rupees
April 2004	260	19,160
May 2004	260	17,420
June 2004	115	24,090
July 2004	338	22,646
August 2004	278	18,464
September 2004	291	19,218
October 2004	270	17,190
November 2004	260	17,420
December 2004	311	20,610
January 2005	265	17,170
February 2005	225	14,400
March 2005	295	19,450
	-----	-----
Total	3168	2,27,238

8.5 New Facilities/Equipments added:

- 3 WC PRO 428 Digital Copier Printer Machines from Modi Xerox installed on 26.07.2004
- Students Discussion Hall & MRC are made operational at Level.III in the month of October 2004
- HSS & Management Collections shifted from Old Library to Level-III in the month of October 2004
- Engineering back volumes 1980 onwards were shifted from basement to Level-III w.e.f. 24-02-2005
- Science Back Volumes shifted to Level – IV w.e.f. 14/03/05
- Back Volumes of Humanities, Management & Generalia were shifted to Level – II w.e.f. 24/03/05

8.6 Donation

Cheque for USD 600/- received from Dr. Sivakumar Tadikonda, an Alumnus towards the subscription of "Journal of Micro mechanics and Micro Engineering" for the year 2005 on 22/11/2004.

8.7 Distinguished Visitors to the Central Library:

Sl. No.	Name of the Visitor & Designation	Date of visit	Purpose of visit
1.	Mr. P.K. Mahapatra from Central Library, IIT Kharagpur	15-04-2004	To see the facilities and functioning of the Central Library
2.	Dr. Kailash Govil, Global Forest Resource Assessment, Food and Agriculture Organization of UN, Rome	22-04-2004	To see the facilities, functioning of the Central Library
3.	15 M.L.I.Sc Students along with Prof. K.C.Das, Head, Library & Information Science, College of Library & Information Science, SMILT, Berhampur University, Berhampur, Orissa.	19-05-2004	To see the facilities and functioning of the Central Library
4.	Dr. Jun P.Hong, Asis Pacific Library Services Executive, OCLC Asia Pacific, USA	24-05-2004	To see the facilities and functioning of the Central Library
5.	Dr. Mutharasu, Staff-in-charge, Library, Mr. A.Thirunavukkarasu, Librarian and Mr. P Nagarajan from Thiagarajar College of Engg. Madurai	27-05-2004 & 28-05-2004	To see the facilities and functioning of the Central Library
6.	Mr. B.Sutradhar, Dy. Librarian, IIT Kharagpur	26-07-2004	To see the facilities and functioning of the Central Library
7.	19 Students of M.Sc (Library and Information Science) from Madras University	01-10-2004	To see the facilities and functioning of the Central Library
9.	150 participants from National Institute of Technical Teachers' Training and Research, Chennai	05-11-2004	To see the facilities and functioning of the Central Library
10.	Mr. Rajkumar, Sr. Library & Information Officer, PGI Chandigarh & Mr.S.Pandey, Librarian, Institute of Human Behaviour & Allied Sciences, Delhi	09-12-2004	To see the facilities and functioning of the Central Library
11.	35 students from Science Camp-2004 organized by Science City, Chennai	28-12-2004	To see the facilities and functioning of the Central Library
12.	24 M.L.I.Sc. Students along with Dr. B.K. Barman, Reader, Department of Library and Information Science, Gauhati University	20-01-2005	To see the facilities and functioning of the Central Library

13.	25 Delegates from 16 Countries from NISIET, Hyderabad	17-02-2005	To see the facilities and functioning of the Central Library
14.	11 M.L.I.Sc. students, Dept. of Lib.Infor.Sci., Sambalpur University.	04-03-2005	To see the facilities and functioning of the Central Library

8.8 Staff Publications:

1. Harish Chandra, Open Access to Knowledge Resources in Science and Technology: The Role of Digital Reference Service to Facilitate Accessing Scholarly Information Proceedings of SIS 2005, Andhra University, Vishakhapatnam. January 2005 p.493-602.
2. Harish Chandra, Digital Patents Information Resources, Science City News Letter, VOL 3 - No.2, November 2004, p 3-4
3. Harish Chandra, Capacity Building in Technical Libraries, Proceedings of the National Symposium on "Capacity Building in Technical Libraries in the Present Digital Era", 5-6 November, 2004, National Institute of Technical Teachers Training and Research, Chennai, p.1-13
4. Harish Chandra, Automation Activities and Strategy at IIT Madras Central Library, Information, Communication, Library and Community Development (Festschrift in Honour of Prof. C.P. Vashishth) edited by Dr. B.Ramesh Babu and Dr. S. Gopalakrishan, Delhi, B.R.Publishing Corporation, 2004, p745-754

8.9 Staff User Meet/Training Programme/Lecture/Presentations organized:

The following Staff User Meets/Training Program/Lectures/Presentations were organized:

Sl. No.	Name of the Speaker	Topic	Date
1.	Mr. Andrew Brown, Senior Manager, ESDU, London	ESDU Database	11-08-2004
2.	Mr. Sanjay Grover, Vice President(Marketing) Informatics India Ltd.	Information Literacy Program on Web of Science	23-08-2004
3.	Mr. Mark Wheeler, Manager for Education and Technical Support for ISI-Thomson Scientific, Asia Pacific, Singapore	Information Literacy Program on Web of Science	22-11-2004
5.	Prof. Edward Proctor, South West Missouri State University, USA	1. New Developments in Search Engine 2. Identifying Scholarly Information from Web	11-01-2005 & 12-01-2005
6	Dr. P. Pichappan, Senior Reader, Department of Library & Information Science, Annamalai University	Personal Digital Information Management	13-01-2005
7	Ms. Pamela C. Sieving, National Institute of Health, USA	Issues and challenges facing American Librarians and Libraries	15-02-2005
8	Dr. V. Kasi Rao, Scientist E 1, CLRI Chennai.	Scientometric Studies	23-02-2005
9	Dr. H.K. Kaul, Director, Developing Library Network, New Delhi.	Role of Knowledge Centre in 21 st Century	07-03-2005

8.10 Short term Courses / Workshops / Seminars / Symposia / Conferences / Training/ Meeting attended by faculty in recognized Academic Institutions and public sector units:

Sl. No.	Name of the staff	Title	Institution	Period
1.	Mr. C.R Sekar Mr. K. Sethu Mr. T Natanasigamani	One day Seminar on Annual Library Connect	Elsevier India New Delhi	13-08-2004
2	Mr. P Natarajan	MALIBNET Library Professionals Get-Together	MALIBET	28-09-2004
3	Mr. T Ramakrishnan Mr. N. Murugandam	Learn Not to Burn	IISM, Chennai	10-12-2004

4	M. Koteswara Rao Mr. M. Murugan Mr. CC Tom Mr. C.R. Sekar Mr. P. Natarajan Mr. V. Bhasker Rao Mr. K. Sethu	National Workshop on Building Digital Libraries Using D-Space Software	Central Library and SALIS	16-12-2004 & 17-12-2004
5	Mr. C.R. Sekar Mr. P. Natarajan Mr. K. Sethu Mr. R. Chandran	One day Seminar on Content Creation & Management in the Digital Era	Tagore Engineering College	18-12-2004
6	M. Koteswara Rao Mr. C.R. Sekar Mr. K. Sethu	One day Seminar on Changing face of Libraries and Access to E-content	Informatics (India) Limited	21-01-2005
7	Mrs.Lalitha Rajendran	Computer Skill Development/ upgradation	IIT Madras	18,19-02-2005 & 25,26-02-2005
8	Mr. C.R. Sekar	Programme on Enhancing utilization of INDEST E-resources	IISC Bangalore	02-02-2005 & 03-02-2005

8.11 Special Lectures Delivered by Faculty in other Institution :

Sl. No.	Name of the Faculty	Topic of Lecture	Venue and Date
1.	Dr.Harish Chandra	Libraries and Banking Sector under Digital Era	Reserve Bank of India, Chennai 03-04-2004
2	Dr. Harish Chandra	Panel Discussion ACDL-2005	Amritha Vishwavidyalaya, Coimbotore 05-02-2005
3.	Dr.Harish Chandra	E-Journals: Potential and Problems	SALIS, Chennai 08-05-2004
4	Dr. Harish Chandra	Role of Libraries in Education	K.V. IIT Madras. 20-11-2004
5	Dr. Harish Chandra	Web Resources & E-Journals	Tagore Engineering College & SALIS 18-12-2004
6	Dr. Harish Chandra	Web Resources Management in Science and Technology Libraries	Kongu Engineering College, Erode, 10-1-2004
7	Dr. Harish Chandra	Panel Debate on "Common Gateway & Metasearch Engines for E-Books and E-Journals	Informatics (India) 21-01-2005
8	Dr. Harish Chandra	Uses of Digital Libraries in Higher Education	UGC Academic Staff College. Pondicherry Univ. 26-01-2005
9	Dr. Harish Chandra	Digital Libraries for Academic Excellence in S&T Sector .	Learning Resources Centre of Jaypee Institute of Information Technology, NOIDA 31-01-2005
10	Dr. Harish Chandra	Digital Library for Higher Education	Academic Staff College, S.V. University, Tirupati 07-09-2004
11	Dr. Harish Chandra	Education with Quality in Virtual Mode	Academic Staff College, Pondicherry University 02-10-2004
12	Dr. Harish Chandra	Organisation & Access of e-Resources at the Central Library of IIT Madras	Connect Seminar, Elsevier, Chennai 13-08-2004
13	Dr. Harish Chandra	ISO-9001 Application in Libraries	Academic Staff College, Osmania University, Hyderabad, 03-12-2004

14	Dr. Harish Chandra	Capacity Building in Technical Libraries	NITTTR, Chennai 05-11-2005
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8.12 Journal Editorial Board:

S.No.	Name of the Faculty	Level	Journal
1	Dr. Harish Chandra	Member, Advisory Editorial Board	OCCL Systems and Services- an International refereed Journal
2	Dr. Harish Chandra	Member, Editorial Board	Review of Information Networking- An International Refereed Journal published by Taylor and Frances, August 2004
3	Dr. Harish Chandra	Member, Editorial Board	Journal of Digital Information Management
4	Dr. Harish Chandra	Secretary- Editorial Board	Journal of Mathematical & Physical Sciences (An International Journal in existence over 30 years & published by IIT Madras),

8.13 Paper Presentation by the Staff:

Sl. No.	Name of the Staff	Title	Institution	Duration
1.	Dr. Harish Chandra	Capacity Building in Technical Libraries	NITTTR, Chennai	05-11-2004

8.14 Honours and Awards obtained:

Sl.No	Name of the Faculty	Name of Award	Awarded by	Awarded for	Date of Award
1.	Dr. Harish Chandra	Best Technology Librarian 2004	Delhi State Booksellers & Publishers' Association, New Delhi	Best Technical Library	18-09-2004

8.15 Visit Abroad:

Sl.No.	Name of the Staff	Countries visited	Date	Purpose of visit
1	Dr. Harish Chandra	Krakaw, Poland	29-05-2004 to 04-06-2004	Attended 25 th Conference of International Association of Technology University Libraries
2	Dr. Harish Chandra	Bangkok, Thailand	14-09-2004 to 17-09-2004	Attended International Conference on "Online Information and Education Conference from Access to Open Learning"

8.16 Other Activities:

1. Dr. Harish Chandra as an external examiner, conducted the Public Viva-Voce examination of Mr. S. Gopalakrishnan for PhD thesis entitled Networking of National Institute of Fashion Technology (NIFT) Resource Centers in India: A Prototype Design Based on Information Seeking Pattern by the NIFT Faculty, Department of Library and Information Science, University of Madras on 23-04-2004
2. Dr. Harish Chandra, Librarian attended Selection Committee Meeting of U.P.S.C in New Delhi on 09/06/2004.
3. Dr. Harish Chandra as an external examiner, conducted the Public Viva-Voce examination of Mrs. G. Gnana Sekari for PhD Thesis entitled Design of An Expert System for Siddha Medicine, Department of Library and Information Science, University of Madras on 11-06-2004
4. Dr. Harish Chandra, Librarian participated in the Selection Committee Meeting to select the candidate for the post of "Publication Officer" in University of Madras on 20/07/2004.
5. Dr. Harish Chandra as an external Examiner, conducted the Public Viva-Voce examination of Ms. S. Thulsi Kavitha Yadav for Ph.D. thesis entitled Decision Support System of ISO-9001: 2000 for university libraries, Department of Library and Information Science, University of Madras on 19-07-2004

6. Dr. Harish Chandra, Librarian attended the meeting of Staff Selection Committee in Amrita Viswa Vidyapeetam, Coimbatore on 07/10/2004.
7. Dr. Harish Chandra as an external examiner conducted the Public Viva-Voce examination of Mr. S.Palani for PhD Thesis entitled Expert System for Indian Pharmaceutical Drugs, Department of Library and Information Science, University of Madras on 04-10-2004.
8. Dr. Harish Chandra attended the meeting of Doctoral Committee for the PhD student, Mr. E.Kanniyappan, Department of Electronics Media and Information Science, Anna University on 24-01-2005
9. Dr. Harish Chandra, Librarian participated in the Selection Committee for the post of Deputy Librarian in Anna University on 07/02/2005.
10. Dr. Harish Chandra as an external examiner, conducted the Public Viva-Voce examination of Mr.M.Daniel Thomas Sigamani for Ph.D. Thesis entitled Information Resources Management and Utilization in Transport Corporations of TamilNadu, Department of Library and Information Science, University of Madras on 18-02-2005

8.17 Future Plan:

It is planned to provide world-class digital library facilities and services to the faculty, students and industrial associates. With this objective, the followings new information technologies will be implemented:

1. To implement RFID solutions
2. To implement Electronic Security Gate
3. To integrate Smart Card application
4. To implement Electronic Drop Box
5. To implement Auto Check System
6. To upgrade the computing facilities of Digital Knowledge Center and different Sections of the Central Library

9. STUDENTS AMENITIES AND ACTIVITIES

9.1 Hostels:

All students admitted to IIT Madras required to reside in the hostels inside the campus. There are 12 men's hostels and 1 ladies hostel with a total of 3185 single rooms, 255 double rooms and 16 triple rooms. During the period under report, there were 3388 men and 450 women students residing in the hostels.

A warden and an Assistant Warden administer each hostel. Hostel Council consisting of student secretaries and Assistant Warden assists the Warden in day-to-day functioning of the hostel. The Hostel Management is a centrally administered body and is in overall charge on the functioning of the hostels and the Central Supplies Unit. There are 165 hostel employees and are responsible to the Hostel Management through the respective Wardens of the hostels. The Chairman, Council of Wardens is the Chairman of the Hostel Management. He is assisted by the supporting staff. During the period under report, the following Wardens were in position:

Chairman, Council of Wardens and Hostel Management	Dr R Dhamodharan Professor, Dept. of Chemistry
Name of the Hostel/Unit	Warden
Alakananda	Dr. V Anantha Subramanian Associate Professor, Dept. of Ocean Engg.
Brahmaputra	Dr. M Kamaraj Assistant Professor, Dept. of Metallurgical & Materials Engg.
Cauvery	Dr. S Jayachandran Professor, Dept. of Management Studies
Central Supplies Unit	Dr. R Dhamodharan Professor, Dept. of Chemistry
Ganga	Dr. K Sethupathy Associate Professor, Dept. of Physics
Godavari	Dr. Devendra Jalihal Associate Professor, Dept. of Electrical Engg
Jamuna	Dr. G Srinivasan Professor, Dept. of Management Studies
Krishna	Dr. S Sundar Associate Professor, Dept. of Mathematics
Mandakini	Dr. C Chandrasekar Associate Professor, Dept. of Computer Science & Engg.
Narmada	Dr. V Sankaranarayanan Associate Professor, Dept. of Physics
Saraswathi	Dr. V Subramanian Assistant Professor, Dept. of Physics
Sarayu	Dr. M Thamban Nair Professor, Dept. of Mathematics
Sharavati	Dr. C Sujatha Professor, Dept. of Applied Mechanics
Tapti	Dr. M S Sivakumar Associate Professor, Dept. of Applied Mechanics

9.2 Medical Facilities:

Medical facilities are provided to the students in the well equipped Institute Hospital. Advice is given to the students on a wide range of health problems. The details of medical facilities available are given in Chapter 13 – Campus Amenities.

9.3 N.C.C:

4(TN) Air Sqn (Tech) NCC

Enrolment:

A total of 200 SD and 02 SW Air NCC cadets from IIT were enrolled during the year and the training schedule was successfully completed.

Availability Of ANOs:

Throughout the training session, the ANOs were available for the institutional training of cadets.

Cadet Attendance:

Attendance on parades has been consistently good averaging about 81%.

Introduction of State of the Art (CBT Techniques) :

CBT packages on the topics of Specilaised Training, developed by CTI, MTI, WTI, E&ITI, and ETI, Air Force were procured by this unit and are being used for imparting specialised training to engineering students from IIT Madras in the field of Engg and Metrology. These packages will be a great use to this unit for imparting training activities to NCC cadets.

Aero Modeling:

As a part of institutional training Mr Radha Kamallakaran, professional Aero modeler imparted the training to 29 selected SD Air NCC cadets from IITM of this unit from 29 Nov 2004 to 09 Dec 2004 and five cadets were selected for controlling the Remote controlled type of aero model. Others were trained in assembling the catapulte models and fabricating the Remote Controlled model respectively.

Motivation lecture by GP Capt PK Khanna:

A motivation lecture on "engineers in 'Indian Air Force' were delivered by Gp Capt PK Khanna, Commanding Officer to all SD Air NCC Cadet on 15 Aug 2004.

Range Firing/Skeet Shooting Practice:

The skeet shooting practice was conducted with 12 Bore gun for all cadets at Miniature range, IIT Madras during Feb – Mar 2005 and ten cadets were selected for undergoing practice for participating in forthcoming AIVSC – 2005. Dec 2003. All the cadets observed necessary Range safety precautions.

Social Service/ Community Development Activities:

The Social Service/ Community Development Activities like Blood Donation Camp, Vigilance Awareness Rally, Tree Plantation, Cancer and AIDS Awareness Campaign, etc were organized through out the session and Guest Lecture in the respective fields were also arranged for the cadets.

Celebration of Independence Day and Republic Day:

The Independence Day, Republic Day and NCC Day were celebrated in the campus and Guard of Honour was present to Director, IIT by Cadets from IIT Madras.

Certificate Examination:

Certificate 'B' examination for the SD/SW Air NCC Cadet of this unit under NCC Gp HQ Madras 'B' at Class Room Complex and result were submitted to the NCC GP HQ Madras 'B'. The result was satisfactory.

'B' Certificate Examination Written 0900 Hrs on 06 Mar 05
Practical 0900 Hrs on 07 Mar 05

9.4 N.S.S:

The National Service Scheme for the year was inaugurated by Dr. T Karunakaran, Vice Chancellor, Mahatma Gandhi Chitrakoot Gramdyog Viswavidhyalaya, Madhya Predesh, on the 26th of August 2004. 170 students from the 1st year B.Tech joined this co-curricular programme, while about 60 students from the other years came forward to be coordinates of the different projects to be carried out. " To provide each student with a significant context in which

he/she can arrive at a deeper understanding of social reality in India Today' (as the NSS Charter states), these projects were designed to educate first the students about the many social issues in India today: agrarian crisis, toxic industrial pollution, waste mismanagement, a steep decline in health, illiteracy, etc.

Organic Farming, Street Theatre:

Students of this group, many of whom were from urban areas, were introduced to farming-related issues through a field visit to Tanjavur, where they interacted with farmers practicing both chemical and organic farming methods. Following this, the students engaged in interesting discussions on the use of technology in agriculture. They were involved in designing an eco-farm, followed by two days of practical work on a farm in Wallajabad, where the students learnt some basic and inexpensive organic techniques,

Some committed Telugu-speaking students from this group signed up for a visit to suicide-stricken villages in Andhra Pradesh, where they would spread the message of organic farming through a street play. These students underwent training in Street Theatre and performed a street play (accompanied by an organic Farming Trainer, who demonstrated organic alternatives) in villages in Anantapur district, which has the highest incidence of farmer suicides in India. The farmers showed great interest and enthusiasm and have tried out the techniques on their farms with promising results.

Following these activities, eight students formed a study group to understand Green Revolution, while another group set out to try out some of the techniques they learnt and spread them in neighboring villages. This group had to abandon the project halfway through since protective fencing was not provided as promised by the administration.

Medicinal Plants:

Students of this group were introduced to the 'Indian System of Medicine' through a lecture. With the help of resource persons, they went around the campus and learnt to identify medicinal plants available on the campus, and the simple ways in which these plants can be used to treat some serious diseases and disorders that cannot be cured by expensive allopathic medicines. The students also made a visit to a medicinal plant farm in Vellore, where they learnt about 110 varieties of medicinal plants being cultivated by a traditional Siddha Vaidya. He also helped us come up with a plan for a garden /plant identification centre of 120 varieties near the NSS office. Help was sought from the hired workers to remove deep-rooted prosopis trees from the land, after which each student spent about 25 hours preparing the soil (clearing up the land of weeds, stones, logs of wood, plastic, leather and glass wastes buried in the soil over many years) for the planting. With assistance from a resource person, the students identified and planted about 20 varieties of medicinal plants in 8' x 10' plots. However, the deer ate up many of the varieties planted, since the area was left unfenced. The students have been continuing to water and weed the garden. They have also been researching information on these varieties to be compiled into a booklet later.

Zero Waste Management:

The students began their project by visiting the Perungudi waste-dumping ground located on the Pallikaranai marshland, and seeing the extent of pollution caused by such indiscriminate dumping. The students then visited successful ZWM projects in Vellore and learnt about the different collection, segregation and composting/recycling methods adopted in the process. The students, organized into groups carried out a survey of the waste being generated in the campus and were involved in creating awareness on the issue of waste and the need to participate in the project, in the hostel zone (through rallies and slide presentation).

A small group of committed students from this group initiated a waste audit during the Saarang, to work towards a Green Saarang in 2006. Students studied the recyclability and toxicity of the different materials brought in to the campus by the companies sponsoring the campus festival (banners, disposable cups, plates, etc.). A water kiosk set up by the SHGs reduced PET bottle waste by almost 75%. An effort was made to separate waste at source and awareness was generated to deposit wastes into bins. Students collected one side used papers used as notices; application forms and questionnaires from the different counters and bound them into notebooks for reuse.

Pollution Study:

Students were divided into two groups, Group A studying the suitability of a toxic-waste landfill in the Melakothaiyur village and Group B looking at polluting industries in the North Chennai industrial belt. Group A made a visit to Melakothaiyur and interacted with villagers, studied the Environmental Impact Assessment Report prepared for the landfill, carried out a detailed industrial mapping of the area, collected drinking water samples from the area and tested them in IIT M laboratory and prepared a report. Group B visited the North Chennai industrial belt and made an effort to understand the different industrial process employed, raw materials used, products and waste materials produced, their impacts on the communities living in the neighbourhood and clean technology alternatives available for the polluting industries. Students also visited Madras Fertilizer Ltd. (MFL), C-Text, Tamilnadu Petroproducts Ltd. (TPL) and Futura Polymers industries in North Chennai, accompanied by officials from the TN State Pollution control Board.

Some of the interested students from this group will be doing a summer project under the Manali Local Area Environmental Committee (LAEC) that has been set up by the Supreme Court Monitoring Committee to arrest industrial pollution.

Teaching:

This project is going on in IITM since the seventies. Students regularly visit five teaching centers in and around the campus, namely VSC Taramani, VSC Velachery, Institute Teaching Centre, Taramani Telugu Teaching Centre and Tulapurkara Teaching Centre. The students assisted young children in their lessons, and also played games with them. Around 230 students benefited from this project, among which 120 are from primary schools. The volunteers have introduced the following additional facilities/ activities for the children this year: drawing competitions, puzzle solving, games and a library of comic books. With donations from the Atme Charity Wing of IITM, the students distributed stationery to poor children in these centers. NSS students organised a dance-theatre workshop for the children by Ms. Mrinalini and Ms Lavanya who are professional Bharatanatyam dancers. The students also took part in a two-day workshop on 'Teaching Methodologies' by Mrs. Lakshmi Suryanarayanan, Principal, Urur Olcott Kuppam School, and her team, where they learnt about effective methods of teaching using interesting games, visuals and other tools.

Low Cost Construction:

Students attended three training sessions on low cost construction at the Sankara Building Centre, Kancheepuram. These students also contributed physical labour towards the laying of the path around the campus lake.

Lakeside:

Students from all projects took turns to lay the pathway around the lake. They cleared the path laid last year, and extended it by another 30 metres this year.

D-O-S Collection, Charity Show:

NSS in collaboration with Atma Charity Wing of IITM collected donation from residences in the beginning of every month to be distributed to orphanages and old-age homes in and around Chennai. They also collected old clothes and used stationery items for distributing to the poor. The students also assisted the ACW in organizing a fund-raiser light music show by selling tickets worth Rs. 21,000 and servicing as volunteers during the show. The money raised was used to help various orphanages and old-age homes in and around Chennai.

Sri Sarada Ashram Visit:

During the December vacation, students made a visit to Sri Sarada Ashram, Ulundurpaet in Tamil Nadu, where they learnt about various initiatives like organic farming, rain water harvesting, vermicomposting and were inspired by the sanyasin sisters' spirit of seva. Dr. Solyappan, an agriculture scientist conducted a workshop on 'Organic Farming' for the students at the Ashram.

Neighbourhood Activities:

Students also participated in neighbourhood community activities like the Save Pallikaranai Marsh Campaign and clearing of debris from the local Temple and the restored Temple Tank.

Lectures:

The following lectures were organized by students of different groups relevant to their area of work.

- Sep 03:** Slide presentation by Mr C Srinivasan, President, Exnora Green Cross, Vellore on how the compost generated in Vellore composting projects was being utilized to restore Vellore Hills.
- Sep 17:** Lecture by Ms. Anita Ratnam, Coordinator of the 'National Youth Foundation, on 'The Changing World of Youth'
- Sep 20:** Talk by Ms. Shewta Narayan on "Community Environmental Monitoring Programme"; Denny Larsin, Coordinator of Global Community Monitor, California, USA on "Low-cost environmental monitoring technologies"; Dr. Babu Rao, Chemical Engg. (IICT), Ph.D from IIT Madras on "students, s Role in Environmental and Social Justice"
- Sep 22:** Slide presentations on Indian systems of medicine by Dr. Usman Ali and Dr. Thirunarayanan.

- Oct 11: Multimedia presentation on ' Traditional Water Management Systems of India' by Mr. D K Hari, Bharat Gyan.
- Oct 20: Lecture on , the Politics of Waste' by Mr. Nityanand Jayaraman
- Nov 02: Multimedia presentation on ' Education in Ancient and pre- British India, by Mr. D K Hari, Bharat Gyan
- Jan 08: Multimedia presentation on zero Waste Management by Mr. Shibu from Thanal, Kerala.
- Jan 08: Lecture by Mr. Sangam Krishnan on ISO 14001 certification
- Feb 05: Students watched the film ' In God's Own Country', a film on endosulfan pesticide poisoning in Kerala. Ms. Usha, an agricultural scientist from Thanal, Kerala, Spoke about the health impacts of using chemical pesticides.

9.5 Gymkhana:

The Institute Gymkhana takes care of General welfare, the Sports and Cultural activities of students in particular. Sports Activities form an integral part for the overall development of personality, which prepares the students to overcome challenges in their walks of life after their graduation. Hence the students are encouraged towards participation and organization of a number of sport activities.

The following tournaments were conducted during 2004-2005 by the Institute Gymkhana:

- The Inter-Collegiate Invitation Tournament "Sportfest".
- Inter-IIT Sports Meet.
- All India Inter-Collegiate Basketball Tournament for Men (Gerhard Fischer Cup) and for women (Mrs. Kokila Rajaiah Trophy).
- IIT Sanmar Inter-Collegiate Invitation Cricket Tournament.
- Inter-Hostel Tournament - "SCHROETER TROPHY"
- Non Media Tournaments – "Dean (Students) Trophy"
- Open Bridge Tournament
- Institute Annual Open Race
- Institute Annual Cycle Race
- Institute Triathlon Race

INTER-IIT AQUATIC MEET 2004:

Inter-IIT Aquatic Meet was held from 1st – 4th October 2004 at IIT Madras. Six IITs excluding IIT Guwahati participated in the above meet in which our IIT contingent secured the second place in Swimming and won the Water Polo Cup. The overall championship in the Aquatic Meet was shared with IIT Bombay, each scoring 16 points.

INTER-IIT SPORTS MEET 2004:

The Inter-IIT Sports Meet was held at IIT Madras from 13th to 19th December 2004. The IIT Madras contingent performed very well to retain the overall championship (G.C.) with a total of 86 points. The Girls' Championship was also won by IIT Madras, which added a feather in our Cap. This was the first time IIT Madras won both the men's and the women's championships. Our boys won Gold in Athletics, Table Tennis, Volleyball, Basketball and Water Polo; Silver in Badminton, Tennis, Cricket, Swimming; Bronze in Hockey. Our Girls contingent won the coveted women championship trophy for second time since its inception. They won Gold in Athletics, Badminton and Basketball.

Special Mention:- Our ATHLETICS Team performed well and retained the ATHLETICS Championship. Volleyball, Table Tennis, Basketball and Water Polo teams won all the encounters and were placed first. Mr. Raghuv eer, Athlete from IIT Madras won the "Best Athlete Award" in the 40th Inter-IIT Sports Meet 2004.

All-India Inter-Collegiate Invitation Basketball Tournament 2005:

The tournament was conducted from 28th January to 2nd February 2005 and attracted teams from South India. The large number of spectators who attended this tournament witnessed many exciting matches wherein excellent performance was displayed by many teams. G.R. Damodaran College of Arts and Science, Coimbatore won the Gerhard Fischer cup for men's College and M.O.P Vaishnav College for Women Chennai won the Kokila Rajaiah Trophy for the Women's Colleges. This year we introduced the Prize Money through Sponsorships.

IIT Sanmar Cricket Tournament:

The most prestigious IIT Sanmar Inter-Collegiate Cricket Tournament for city Colleges Sponsored by 'Sanmar Group' was conducted from 16th February to 11th March 2005. There was a record entry from 24 city colleges competing for top Honours. A high level of competition was witnessed throughout the tournament. RKM Vivekananda College won the coveted Trophy and Gurunanak College was runner-up.

Inter-Hostel Tournaments:

The Inter-Hostel Tournaments were conducted in all the Games / events during the academic year and were contested for the Schroeter Trophy for General Championship, adhering to the inter-IIT pattern of sports events. Also the Dean's Trophy events were conducted for non-media and non- Inter IIT Sports events. Ganga Hostel won the Schroeter Trophy and the Dean's Trophy was claimed by Jamuna Hostel.

The following non-media tournaments were conducted for the students: (i) 9-a-side Tennis ball Cricket, (ii) 9-a-side Tennis ball Cricket for Freshers, (iii) 6-a-side Foot Ball, (iv) 3-a-side Basket Ball and (v) 3-a side Volley Ball. Institute open events namely, Road Race, Cycle Race, Triathlon were conducted to encourage larger participation. These events were a grand success, attracting a large number of student spectators, who witnessed and encouraged their hostel teams.

All the Gymkhana clubs like Fitness club, with newly added facilities, Badminton club, Tennis club and Swimming Pool club functioned very well during this period. More than a few thousand students, staff, faculty and Campus children benefited from these excellent facilities and coaching offered by the Institute Gymkhana. Special summer coaching camps were held for swimming and more than 250 users benefited from this camp. Many campus children learnt to swim during this camp.

The Fitness club had a registered membership of 435, the Tennis club, a membership of 67 and the Badminton club, a membership of 135. Excellent training and able guidance were provided for the students and the campus residents at the fitness club, bringing out the importance of maintaining good physique and health.

Infrastructural Activities Completed During 2004-2005:

1. 400 m Standard Track and Gallery Renovation work in stadium was done.
2. Flooring polish of multi-purpose Indoor Badminton Court.
3. Two New Volley Ball Floodlit Courts were laid newly.
4. Flood light arrangements were provided for two basketball courts.
5. Four Tennis Courts were re-laid and flood light arrangements were provided.
6. Complete renovation of Swimming Pool was done.
7. Renovation of Hockey & Foot Ball Fields, including pathways, practice field and store room.
8. Sprinkler units were provided for watering Hockey and Football fields.

Sport Fest 2004:

Sports fest was conducted for the city Colleges in selected Games during 6th October to 11th October 2004, namely Badminton, Basketball, Table Tennis, Volleyball, Football, Hockey, and Tennis. The IIT Football Team won the First place in Sports fest 2004 Tournament. Our boys played extremely well in most of the games which gave immense confidence and paved way for IIT Madras winning the overall Championship in the 40th Inter-IIT Sports meet 2004.

National Sports Organisation:

National Sports Organisation (NSO) is functioning as per the Government of India's decision for improving sports with special reference to upkeep the Fitness of students. Our Institute took necessary steps in encouraging students to participate in various Games and Sports events and in physical fitness activity as well.

This year nearly 180 First year undergraduate students were registered under this scheme. Officials / experts from various sports federation and sports development authority of Tamil Nadu were engaged for coaching our NSO students.

The noteworthy performance of sizable first year students at the various tournaments viz. Inter-IIT Sports Meet, Sports fest and All India Invitation Inter-Collegiate Basketball Tournament was partly due to the hard efforts put forth during the NSO programme.

Cultural Activities:

Music Classes: Regular music classes like flute, guitar, keyboard, drums and mouth organ were organized for the benefit of the students.

SAARANG 2005: In many ways Saarang has been a platform for students to showcase their talents to the world. This year too, Saarang lived up to its name. An example in this regard is the musical events. With enthralling performances by budding musicians fighting it out for the credit of being recognized as being the best, Saarang 2005 saw some exceptional talent, which added to the already massive reputation of the Saarang events.

The Saarang professional shows. Touted as the major attractions of Saarang, this years classical show by Ayan Ali Bangash and Aman Ali Bangash, sons of Ustad Amjad Ali Khan accompanied by Mr. Uma Shankar on Ghatam and Sandeep Das on Tabla. It turned out to be probably the biggest classical show Chennai has seen in a long time. With a crowd of around 4000, this is another feather in the cap of Saarang.

The Saarang rock shows have had the jam packed audience manage to drain themselves of every iota of strength, and have ensured that their eardrums, higher vertebra, and vocal chords suffer the consequences of their rock binge for at least a week.

Being sensitive to the Tsunami victims, IIT Madras contributing a sum of Rs. 5 lakhs towards the relief work out of the Saarang budget.

There can be no two ways about it – Saarang is simply the place to be. Turn up at IIT Madras on the 21st of January and be a part of this unbelievably colourful celebration of youth.

SHAASTRA – 2004: The Industrial Design Problem (IDP) contest, introduced for the first time this year, was a collection of ten industry-level research problems which were framed by GE Global Research's prestigious John F. Welch Technology Center in Bangalore. Four winners of the contest are all set to take up an internship at GE Global Research in the summer of 2005.

Another high point of Shaastra 2005 was the robotics contest, which was held for the first time this year. The numerous innovations incorporated in the designs, especially in the ones that won, was notable. Participants tried their hand out at making autonomous robots that could negotiate a Grand Prix style-racing course and at making robots that could fight fires.

Shaastra lived up to its promise of facilitating the celebration of technology and also delivering the fruits of this technology for to the society at large.

Open Quiz: The second edition of the TCS-IIT Madras Open Quiz 2005 was held on Saturday, March 12, 2005. The event started around 2 p.m. at the Student Activities Centre of IIT Madras. The programme was attended by about 1200 people. The number of people who participated in the Quiz preliminaries were about 1000. This written round of 40 questions had about 250 teams of maximum four people participating. This round consisted of direct as well as audio-visual questions.

Teams came from all over the city of Chennai, other parts of Tamil Nadu and from cities outside like Bangalore, Hyderabad, Delhi and Kolkata. Almost all city's colleges and schools had teams attending the quiz. There were also teams of seasoned quizzers participating. There were about 100 college teams, 35 school teams from various city schools and about 75 teams of experienced veteran quizzers.

Annual Bridge Tournament:

The Annual Bridge Tournament was conducted from 9-10, April 2005 at SAC Building. This attracted large number of students and staff teams, including professionals from outside IIT Madras.

The sports events for the academic year 2004-2005 ended with the Gymkhana Day that was celebrated on 19.04.2005. The prizes for the winners in the various inter-hostel games and sports events were distributed by the Dean (Students).

9.6 Advisor, Foreign Students and Weaker Section:

This institute has nominated one Advisor to take care of the welfare of the foreign national and weaker sections students. He periodically meets these students and counsels them for various academic and non-academic requirements. During the period under report, a few students could not do well and they were counseled. Due to this counseling, they performed very well in their subsequent semesters.

In addition, the advisor arranged for extra classes in physics and mathematics between August and October 2004 for the weaker section and foreign national student of B.Tech Programme as they expressed difficulty in understanding

during normal teaching hours. Also drawing instruments have been issued to needy first year students belonging to the weaker section.

The mentor programme introduced in the previous year was continued. In this programme each first year student belonging to weaker section is attached with a mentor (from senior students) for discussion and guidance on the academic matters. The reports are periodically reviewed and discussed with the Advisor

9.7 Guidance and Counselling Unit:

A Campus information booklet – "IIT Life – A Glance" was prepared for all the fresh students and were made available to all of them.

The first year students with their parents or guardians were received by the student counselors at the railway station and helped to settle down in their stay quickly. The counselors solved student problems by applying individual attention.

The first year B.Tech students were distributed to various student counselors and faculty counselors for individual attention. The Unit attended few emotional counseling since such problems are more during the first year.

The unit arranged, whenever possible, instruction classes by senior students to the needy first year students who wanted guidance in subjects like Mathematics, Physics and Chemistry.

9.8 Women's Forum:

The Women's Forum of IIT Madras (WFIITM) was formed to address issues related to work, welfare and development of the women of IIT Madras. The forum, since its inception in November 2002, has been making possible effort towards this direction.

The activities of the forum during the period April 2004 to March 2005 are listed below:

Faculty – Workshop/seminars-organized/attended:

Dr. Neelima Gupta, Department of Physics, organized a session on Women in Physics at the Statphys 22 Conference held at Bangalore 6th – 9th July 2004.

Dr. Prema Rajagopalan, Department of Humanities and Social Sciences, participated in a round Table entitled "Women physicists: At Home and Abroad" in the statphys 22 Conference and read her paper on Women, Science and Society".

DR. Malathy Duriasamy, Professor, Department of Humanities and Social Sciences, attended a seminar on "Women and Comprehensive Security" organized by the Centre for Security Analysis on 6th November 2004 at the Indian Bank of Management Academy for Growth and Excellence, Chennai.

The Women's Forum IIT Madras and the American Information Resource Centre, Chennai jointly organized the 'Article Alert Discussion' on issues related to empowerment of women on 18th March 2005.

Staff Training Programmes:

A 5 - week course on Communication skills was organized through the HR wing for Women Staff members of the Institute during 11.06.2004 to 09.07.2004.

A 4-day programme on 'Upgradation of Computer Programming Skills' for women technical staff of the Institute was held during the period 18.02.2005 to 26.02.2005.

Invited Lectures:

A talk on "Women's Health and Nutrition in Different stages" by DR. Varsha , Senior Consultant, Kanchi Kamakoti Child Trust Hospital, Nungambakkam, was held on 1st November 2004.

Ms Geetha Ramaseshan, Advocate, delivered a talk on "Women: Whither Empowerment?" on the occasion of the 2nd anniversary of the women's forum on November 17th 2004.

A talk on 'Reproductive Health' by DR. Uma Ram, MBBS, DGO, MRCOG, to the women students and scholars of the Institute took place on 11th March 2005.

Dr. Vijayalakshmi Ranagarajan, D.Phil (Oxon) addresses the members of the Women's Forum on March 15th 2005 with a talk: "UNGAL ARTRALAI ARIYA (To Know Your Strength)

10. STUDENTS PLACEMENT

10.1 Introduction:

Placement Office of this Institute maintains a symbiotic, vibrant and purposeful interaction with industries across the country. About 235 industries drawn both from the private and public sectors are in this office list. This year 125 companies visited our Campus for conducting interviews. These can be either hardcore engineering industries, software companies, manufacturing organizations, engineering consultancy firms, management consultancy set-ups or R and D laboratories.

Similarly, the types of jobs available to the graduates are of a wide variety – it can be a graduate engineer trainee, a management trainee, a software professional, a purely R & D job or a career involving consultancy or design.

Details of the number of students placed during the period under report are given below as against those registered during 2004 – 2005.

Branch	B.Tech	Dual	M.Tech	MBA	M.Sc.	System Trainee	M.S.	Ph.D.	Total
Aerospace	18	1	3	-	-	-	2	-	24
Applied Mechanics	-	-	10	-	-	-	16	-	26
Chemical	28	8	17	-	-	-	1	-	54
Chemistry	-	-	-	-	4	-	-	-	4
Civil	46	6	17	-	-	-	9	-	78
Com. Science	26	5	35	-	-	2	19	-	87
Electrical	62	21	58	-	-	1	12	-	154
Humanities	-	-	-	-	-	-	-	-	-
MBA/IM	-	-	-	34	-	-	3	-	37
I.Math & Sci.Com.	-	-	3	-	-	-	-	-	3
Mathematics	-	-	-	-	18	-	-	-	18
Mechanical	82	14	44	-	-	-	13	1	154
Metallurgical	23	2	6	-	-	-	3	-	34
Naval Arch.	15	1	-	-	-	-	-	-	16
Ocean	-	-	2	-	-	-	4	-	6
Physics	-	-	-	-	11	-	-	-	11
Solid State Tech.	-	-	2	-	-	-	-	-	2
Total	300	58	197	34	33	3	82	1	708

During the year 708 students / scholars were placed in various industries.

11. FINANCIAL ASSISTANCE TO STUDENTS

Financial assistance in the form of scholarships and fellowships are given to meritorious students who are pursuing engineering, technology and science education at this Institute. The details of Scholarships and Fellowships sanctioned to the students of different programmes during 2004-05 are as follows:

11.1 Assistance to B.Tech students:

Merit-cum-means scholarships of Rs.300 p.m. were sanctioned to the B.Tech. students whose parental income is less than Rs.One lakh besides the exemption from payment of tuition fees. During the period under report 240 students benefited. The year-wise details of number of students benefited are given in Table 11.1.

SC/ ST students admitted to B.Tech programme upto July 2004 were sanctioned the concession of free messing plus Rs 70/- p.m. out of pocket expenses, exemption from payment of tuition fees and hostel seat rent as per Government of India post-matric scholarship rules. As on 31.3.2005, 39 students benefited. The batch-wise details of number of students benefited also are given below:

No. of MCM and SC/ST scholarships

Batch	MCM Scholarship	SC/ST Scholarship
2004	64	15
2003	57	10
2002	69	4
2001	50	10
Total	240	39

In addition to the above, the Institute sanctioned notional prize of Rs.1000/- to 30 first B.Tech top ranking (in the JEE 2003) students whose parental income is more than Rupees One lakh.

11.2 Other Scholarships:

Scholarships were sanctioned by NCERT, GOI and State Governments to meritorious students pursuing B.Tech programme in this Institute. The batch-wise details of number of students benefited by these scholarships are given below:

No. of NCERT Scholarship obtained by B.Tech students

Batch	Total no. of Students
2004	40
2003	22
2002	41
2001	40
Total	143

No. of State Government Scholarship obtained by B.Tech students

State	Batch/Total no. of students				Total
	2004	2003	2002	2001	
Andhra Pradesh	-	197	145	112	454
Delhi	-	-	-	4	4
Karnataka	2	1	2	-	5
Kerala	3	2	-	2	7
Tamil Nadu	-	-	1	1	2
Other States	4	1	-	9	14
Total	9	201	148	128	486

11.3 M.Tech:

Students who joined M.Tech programme through GATE were awarded Half-time Teaching Assistantship (HTTA) at Rs.5000/- per month. During the period under report 233 fresh assistantships and 255 renewed assistantships were given. The discipline-wise details are given below:

No. of HTTA awarded

Sl. No.	Discipline	Fresh – 2004 batch		Renewal - 2003 batch
		I Sem.	Non-HTTA got HTTA	
1	Aerospace Engineering	6	1	3
2	Applied Mechanics	3	2	13
3	Chemical Engineering	22	6	27
4	Civil Engineering	34	13	29
5	Computer Science & Engg.	38	-	37
6	Electrical Engineering	57	16	57
8	Indl. Maths & Sc.Computing	5	1	7
9	Mechanical Engineering	46	12	55
10	Metallurgical & Mat. Engg.	12	1	13
11	Ocean Engineering	5	1	9
12	Solid State Technology	5	2	5
Total		233	55	255

M.Tech Dual Degree

Students who joined M.Tech programme under Dual Degree of 2000 batch were awarded Half-time Teaching Assistantship (HTTA) at Rs.5000/- per month based on their obtaining valid GATE score. During the period under review 71 students were awarded fresh assistantships of Rs.5000/- per month from June 2004 and 67 renewed assistantships in Jan. 2005 out of which 66 students were renewed HTTA at the rate of Rs. 5000/- p.m and 1 student at the rate of Rs. 2858/-p.m. since they obtained CGPA of less than 6.5 in July-Nov. and the remaining 4 students did not avail HTTA , as they are doing project work outside the Institute. The department-wise details are given below:

Sl. No.	Discipline	2000 batch	
		Fresh (9 th Sem.)	Renewal (10 th Sem.)
1	Aerospace Engineering	5	5
2	Chemical Engineering	9	9
3	Infrastructural Civil Engg.	10	6
4	Computer Science & Engg.	6	6
5	Electrical Engineering	19	19
6	Mechanical Engineering	14	14
7	Met. & Mat. Engineering	4	4
8	Naval Arch. & Ocean Engg.	4	4
Total		71	67

11.4 M.Sc.:

Students admitted to M.Sc programme were sanctioned Rs.300/- p.m. merit scholarship as per rule. Exemption from payment of tuition fee was also given to certain students. During the period under report 61 students benefited. The department-wise details are given below:

No. of Merit Scholarship and freeship awarded

Sl. No.	Course	Merit scholarship		Freeship (tuition fees waiver)	
		1 st Year	2 nd Year	1 st Year	2 nd Year
1.	Chemistry	7	6	2	2
2.	Mathematics	9	6	7	3
3.	Physics	6	6	4	3
Total		22	18	13	8

11.5 M.S:

The scholars admitted to MS programme through GATE are given Half-time Teaching Research Assistantship (HTRA) of Rs 5000/- p.m. for three years. During the period under report 298 scholars received this assistantship of whom 168 were fresh scholars. The department-wise details of the assistantships awarded and renewed are given below:

No. of HTRA awarded

Sl. No.	Discipline	Fresh	Renewal	Total
1	Aerospace Engineering	11	4	15
2	Applied Mechanics	7	11	18
3	Biotechnology	7	3	10
4	Chemical Engineering	6	2	8
5	Civil Engineering	16	21	37
6	Computer Sc. & Engg.	35	15	50
7	Electrical Engineering	29	19	48
8	Management Studies	3	6	9
9	Mechanical Engineering	38	21	59
10	Metallurgical & Mat. Engg.	5	10	15
11	Ocean Engineering	11	18	29
	Total	168	130	298

11.6 Ph.D:

The Scholars admitted to Ph.D. full time programme in Engineering are sanctioned Half-time Teaching / Research Assistantship (HTRA) of Rs.9500/- p.m. for first 2 years and Rs.10000/- p.m. for next 2 years. Scholars admitted to the Ph.D fulltime programme in the Science subjects through GATE or other equivalent exams are sanctioned Rs.8000/- p.m. for first 2 years and Rs.9000/- p.m. for next 2 years. During the period under report 444 students obtained assistantships of whom 219 were fresh scholars. The department-wise details of the assistantships awarded and renewed are given below:

No. of HTRA awarded

Sl. No.	Discipline	Fresh	Renewal	Total
1	Aerospace Engineering	5	2	7
2	Applied Mechanics	4	5	9
3	Biotechnology	11	7	18
4	Chemical Engineering	10	14	24
5	Chemistry	28	36	64
6	Civil Engineering	23	19	42
7	Computer Science & Engg.	13	5	18
8	Electrical Engineering	14	18	32
9	Humanities & Soc. Sciences	9	5	14
10	Management Studies	15	11	26
11	Mathematics	15	13	28
12	Mechanical Engineering	38	42	80
13	Metallurgical & Mat. Engg.	11	16	27
14	Ocean Engineering	9	6	15
15	Physics	14	26	40
	Total	219	225	444

11.7 Financial Assistance to Research Scholars/Students for presentation of papers abroad:

This Institute is encouraging the Research Scholars to present papers in international conferences for which they are given financial assistance. The financial assistance provided to M.S. & Ph.D. scholars are given under:

Upto 29.07.2004 :

Adhoc amount : Rs. 10,000/-
Registration fee : US \$ 300/-

From 30.07.2004:

Adhoc amount : Rs. 50,000/-
Registration fee : US \$ 500/-

National conference/International conference in India:

Research scholars and students of course programmes are given the following financial assistance for presentation of papers in National/International Conferences in India:

Registration fee:

National conference : Rs. 2,000/-
International conference : Rs. 3,000/-
Travel : Second class rail fare
Daily allowance : Rs.200/- per diem subject to a maximum of 10 days

12. WEAKER SECTION & FOREIGN NATIONAL STUDENTS

12.1 B.Tech programme:

As per the GOI orders 15% and 7.5% of seats are reserved for SC and ST students respectively in the B.Tech. programme. These students are admitted through the Joint Entrance Examination with a relaxation. These students have to get only 60% of the marks obtained by the last student of the general category to get qualified for admission. During counselling prior to admission, the Adviser explained to each student the requirements of different branches. This helped the students to choose a suitable branch based upon their capability and interest. When a student finds the chosen branch is tough, he is allowed to switch over to lower JEE cut-off branch at the end of his first semester.

The following are the details of number of SC/ST students admitted to B.Tech programme through JEE and Preparatory Course in July 2004:

Total Sanctioned Intake	Sanctioned Intake		No. joined through				
			Programme	JEE		Preparatory Course	
	SC	ST		SC	ST	SC	ST
B.Tech -388	58	30	B.Tech	38	6	27	8
DD - 197	28	14	Dual Degree	19	-	4	3

SC/ST students admitted against reservation are given the following benefits:

- Travelling allowance (II Class train fare/ordinary bus fare) from the place of residence to Chennai to join the B.Tech programme.
- Tuition fee waiver.
- Free lodging and messing (basic menu only) and pocket allowance of Rs.70/- p.m. provided their parents' income is Rs.1,00,000/- net per annum or less.
- A Book Bank as part of Central Library is maintained for the benefit of the SC/ST students. The students are issued 12 tickets for taking books from the Book Bank. Books are issued for a semester.
- Drawing instrument (Mini-drafter) free of cost.
- Help in getting placement. Wherever possible, industries are requested to conduct separate interviews for SC/ST students and the requirements for these students are lower than those for the general category.

12.2 Preparatory Course for admission to B.Tech programme:

A preparatory course of one academic year was initiated by the Ministry of Human Resource Development, Government of India, during the year 1983-84 exclusively for SC/ST students. Selection for this course is made from the Joint Entrance Examination list of SC/ST students who did not qualify for admission. Upon successfully completing the preparatory course at the IIT, they would be eligible to join the B.Tech programme and they will not require to write the JEE again. Following are the details of admission in July 2004:

Offer issued for PC		No. joined	
SC	ST	SC	ST
28	18	23	17

In July 2003, 45 SC and 19 ST candidates were offered admission, but 38 SC and 13 ST students only joined. Of this, all 38 SC and 13 ST students successfully completed the course and joined B.Tech programme.

12.3 M.Tech programme:

Seats are reserved for SC and ST candidates as per the Government of India orders. They are admitted through GATE by a separate merit list. Following are the details of admission in July 2004:

Offer issued		No. joined	
SC	ST	SC	ST
116	53	59	25

12.4 M.Sc programme:

Admission was made to the M.Sc. programme through entrance examinations only. 5 students were admitted in SC category. These students were given tuition fee waiver.

M.Tech and M.Sc students admitted against reservation are given the following benefits:

- Book Bank facility with 12 library tickets. Books are issued for a semester.
- Both Public Sector and Private Sector industries were requested to recruit SC and ST students. Other special steps were also taken to enhance the recruitment of this category of students.
- Scholarship is given to these students as per Govt. of India norms.

12.5 Admission of Foreign National Students and Indian National Residing Abroad:

In July 2004, 5 foreign national students joined M.Tech programme.

At the end of March 2005, 17 foreign nationals and 35 Indian nationals residing abroad were on the rolls of the Institute. The programme and country-wise details are given below:

Country	I Year	II Year	III Year	IV Year	V Year	Total
1. Foreign National Students						
B.Tech						
Guinea	-	-	-	1	-	1
Sri Lanka	-	-	-	1	-	1
Thailand	-	-	1	-	-	1
USA	-	-	-	1	-	1
M.Tech						
Ethiopia	5	8	-	-	-	13
Total	5	8	1	3	-	17
2. INRA students						
Abu Dhabi	-	-	1	-	-	1
Bahrain	-	-	3	-	-	3
Dubai	-	-	-	5	-	5
Kuwait	-	-	4	2	-	6
Kenya	-	-	1	-	-	1
Muscat	-	-	-	2	-	2
Oman	-	-	1	-	-	1
Qatar	-	-	1	-	-	1
Riyadh	-	-	-	3	-	3
Saudi Arabia	-	-	1	-	1	2
Singapore	-	-	1	-	-	1
UAE	-	-	3	-	3	6
Zambia	-	-	-	1	-	1
Total	-	-	17	14	4	35

Foreign students are also permitted to use the Book Bank. 4 Book Bank Library tickets are issued to each student. Books are issued for a semester.

In addition to the above, IIT Madras Alumni Association provides financial assistance to students under IITMAANA Travel grant program to assist 4 or 5 IITM students per year to visit USA and present their papers at nationally recognized technical conferences. The grant will cover airline ticket charges and visa fees but exclude payment of conference registration fees.

During the period under report 6 students benefited and Rs.81,241/- released for the above purpose.

13. CAMPUS AMENITIES

IIT Madras is a residential Institution. It is housing about 3044 Students and 1028 Staff members in the Campus. It provides various amenities in the Campus for students and staff.

The Engineering Unit of the Institute is responsible for construction of new buildings and the maintenance of the Campus.

13.1 Major Works:

The following are the major works completed during the year 2004-2005:

Sl. No	Name of work	Rupees in Lakhs
1.	Deepening approach canals from north side of the lake	34.00
2.	Laying weathering course and leak proof treatment for expansion joint for institute buildings	60.00
3.	Additional construction of Central Electronics Centre	80.00
4.	Construction of quarters for married research Scholars 4 blocks of 48 quarters.	144.00
5.	Improvement of students room at Brahmaputhra, Narmada, Alakananda, Tapti, and Sarswathi hostel	247.00
6.	Proposed 33/11KV sub station	253.00
7.	External painting work at E, E1, F, X, Z, MSQ, Qrs and SSQ	32.70
8.	Renovation of Swimming pool	81.30
9.	Construction of additional floor (third floor in Ganga, Jamuna & Godavari Hostels	320.00
Total		1252.00

Work in progress:

1.	Sewage Treatment Plant at IIT campus	270.00
2.	New boys hostel G+6 floors (4 Blocks)	4500.00
3.	Interior works for new Library Building	108.00
4.	Proposed construction of Creche	51.00
5.	Bose Einstein Block adjacent to VIP Guest House	180.00
6.	Management Department building at Old Library Building	310.00
7.	Construction of Mega mess-II	1150.00
8.	Bio-Tech Building	1200.00
9.	Revamping of 11 KV distribution system	585.00
10.	Proposed interior work for third floor of ME&MH Lab	46.00
11.	Proposed construction of third floor of ME&MH Lab	80.00
12.	Providing ward rope shutters in double room of nine hostels	42.00
13.	Construction of additional emergency stair- case in all hostels	53.00
14.	Providing distribution lines to 3 floor buildings in RZ	58.00
Total		8633.00

13.2 Housing Facilities:

As on 31.03.2005, there were 1040 quarters in the Campus out of which 24 D1 type quarters are being converted into 12 C1 type quarters and balance 1028 quarters are available for accommodation to the staff members. In addition to this 209 servant quarters were also in the campus.

13.3. Horticulture:

A separate horticulture unit is functioning under Engineering Unit. During the year 2004-2005, grassland was developed in front of SAC Building to facilitate grazing by blackbuck deer and another new lawning is being developed in front of Alumni building.

13.4 Telephone Facilities:

A new Telephone Exchange was commissioned by BSNL, Chennai Telephones Division in the Campus. All direct lines of this institute, which were linked from Raj Bhavan Telephone Exchange, were linked to this Exchange.

13.5 Central Supplies Unit:

It functions under the administration of a warden. This unit procures milk from Tamil Nadu Co-operative Milk producers' Federation and distributes to the student hostels. Under the provision supply scheme, the unit procures the items of major consumption from the wholesale suppliers and distributes them to the hostels, thus economizing the mess expenditure in the hostel.

13.6 Guest House:

There are two Guest House in the Campus viz. the Main Guest House and Taramani Guest House which have 7 suites and 84 rooms respectively.

13.7 Hospital:

Institute hospital serves for about 1300 employees and their 5000 dependents, students, retired staff and their spouse and about 500 project staff. In total about 14,000 persons are registered in the hospital during the year under review.

Doctors

Dr. N.A. Jayavelan	Chief Medical Officer i/c
Dr. S. Aruna	Medical Officer
Dr. C. Sridevi	Medical Officer
Dr. Mahalakshmi M. Ravi	Medical Officer
Dr. R Santhosh	Junior Medical Officer
Dr. N Porchelvi	Junior Medical Officer

Part-time Consultants

Dr. R. Ratnamala	Ophthalmologist
Dr. Jayashree Murthy	Gynaecologist
Dr. Sornam M S	Gynaecologist
Dr. Malathy	Radiologist
Dr. S.K. Rajavalli	Dentist
Dr. C. Indira	Paediatrician

SMF Specialties

Dr. V. Rajakumar	General Surgeon
Dr. Vijayakumar Menon	Cardiologist
Dr. P.V. Jayashankar	Orthopaedic Surgeon
Dr. Sudhakar Williams	Orthopaedic Surgeon
Dr. V. Sumathi	ENT Surgeon
Dr. Krishna Kanth	Dermatologist
Dr. Sarveswari	Dermatologist
Dr. Nirupasomasundaram	Diabetologist

Paramedical staff

Staff Nurse	16
Pharmacists	02
Lab. Technician	01
Male & Female Helpers	19
Office Staff	04

Outpatients Service:

Institute hospital has fully computerized O.P. card registration system for all. In 2004-05, 69,793 outpatients were treated in the hospital.

Inpatient Service:

There are 18 beds in our hospital for treating in-patients. In 2004-05, 651 patients were treated as inpatients 3 deliveries were conducted.

Our surgeons performed 60 surgeries in the year of 2004-05, which included major cases such as caesarian, hysterectomy I.O.L etc.

Emergency services:

Emergency service is available round the clock on all the days with a duty doctor and supporting staff. 3377 emergency cases were attended during non-OP hours in 2004-05. An ambulance service run by Trauma Care Consortium of is available on call round the clock.

Treatment for Non-entitled:

Non-entitled guests of a staff member/student availed emergency treatment on payment basis subjects to the institute rules. About Rs. 60000 was collected in the year of 2004-05.

Hepatitis B Vaccination Camp:

Our hospital team conducted three rounds of free Hepatitis B vaccination camps for all the students in their hostels. 5819 students were vaccinated.

In 2004-05 about 1500 new cases records were registered at hospital office.

Other Major events

1. X-ray unit with modern high frequency generator was inaugurated by our Director in April 2004.
2. A newly built ward complex with 12 single rooms was inaugurated by our IITM Chairman Dr. K. Kasthurirangan in November 2004
3. Physiotherapy unit run by Alpha Physiotherapy Centre was inaugurated by our Director in May 2005
4. Upgrading of casualty service with modern equipments.
5. Upgrading of operation theatre with state of the art equipments is being done at a cost of more than 40 lacs.

13.8 Bank:

State Bank of India IIT branch is functioning on the campus, which has provided 2 ATMs. Canara Bank branch is also functioning on the campus. ICICI Bank has provided an ATM in the Hostel Sector.

13.9 Post Office and Telecom centre:

There is a post office on the campus opposite to the State Bank of India to cater to the needs of the staff, students and residents of the campus. A 24 hours telecom centre is functioning to cater to the needs of the staff, students and residents of the campus.

13.10 Schools:

Vanavani Matriculation Higher Secondary School (VVMHSS) administered by IIT Madras Educational Trust is functioning on the campus besides a Kendriya Vidyalaya (K.V.) VVMHSS school is offering courses from LKG to XII Standards and the KV is offering courses from I standard to XII standard.

13.11 Open Air Theatre:

An Open-Air Theatre is available for screening films by the Film Club during week-ends and for use for other functions of the Institute and the Schools.

13.12 Student Activities Centre:

This building is used for indoor games of the students as well as for the conduct of important functions such as Convocation, orientation programme for freshers etc.

13.13 Cafeteria:

Two Canteens, viz. IIT Staff Canteen and Nandhiniee Restaurant are available on the campus to cater to the needs of the staff and students. Transport facilities are also available for the official work.

13.14 Crèche:

A Crèche is functioning in the campus for the benefit of staff/ working women. There were about 50 children in the Crèche during the period under report.

13.15 Transport Services:

The Institute has 5 buses and 11 eco-friendly (Battery operator) vans which provide transport facility to the staff, students and residents of the campus.

13.16 Campus News:

Campus News is published every Friday highlighting the important events of the Institute.

14. FINANCE AND ACCOUNTS

The financial year of the Institute corresponds with that of Government of India i.e., 1st April to 31st March of the following year. The Accounts of the Institute are annually audited by the Principal Accountant General (Tamil Nadu & Pondicherry), Chennai on behalf of the Comptroller & Auditor General of India.

The 67th Finance Committee of the Institute in its meeting held on 15/02/2005 recommended Non Plan Revised Estimates of Rs. 9800 lakhs (Gross) for 2004-05 and Budget Estimates of Rs. 9900 lakhs (Gross) for the year 2005-06. The Committee also recommended Plan Revised Estimate of Rs. 4450 lakhs for 2004-05 and Rs. 4600 lakhs Plan Budget Estimate for 2005-06.

The following are the Summary of Revised Estimates 2004-05 and Budget Estimates for 2005-06 as approved by the Board of Governors of the Institute in their 187th Meeting held on 15/02/2005.

(Rs. in lakhs)

Head	BE 2004-05	RE 2004-05	BE 2005-06
I. Non-Plan			
Income	2600.00	2800.00	2900.00
Grant from MHRD	7000.00	7000.00	7000.00
Total	9600.00	9800.00	9900.00
Expenditure			
Recurring	9600.00	9800.00	9900.00
Total	9600.00	9800.00	9900.00
II. Plan			
Grant from MHRD	4000.00	4000.00	4000.00
Corpus Fund Transfers		450.00	600.00
Total	4000.00	4450.00	4600.00
Expenditure			
Non-recurring	4000.00	4450.00	4600.00
Total	4000.00	4450.00	4600.00

Audit:

The Annual Accounts of the Institute for the year 2003-04 was audited by Principal Accountant General (Tamil Nadu & Pondicherry) between July and September 2004. The certified copy of Accounts and Audit Report were sent to MHRD, New Delhi for placing before Parliament during February 2005.

Summary of Plan/Non-Plan funds utilization for 2003-04 is as below:

Plan:

(Rs in Crores)

Opening Balance	8.16
Grant Sanctioned during 2003-04	20.68
Funds from other sources (MNES+Corpus)	1.33
Total available	30.17
Capital Expenses during 2003-04	
Buildings & Construction	16.57
Furniture & Fixtures	1.64
Equipments	11.96
Total Utilized	30.17
Unutilized Balance	Nil

Non –Plan:**(Rs in Crores)**

Opening Balance	Nil
Grant Sanctioned during 2003-04	68.25
Total available	68.25
Expenditure during 2003-04	
Pay & Allowances	33.10
Retirement Benefits	21.67
Library Services	3.70
Health Services	0.64
Student Scholarship	6.59
Hall Subsidy	2.99
Administrative Expenses	1.71
Departmental/Laboratory/Workshop expenses	5.03
Transport Subsidy	0.28
Student support Activities	0.15
Computer Facilities	1.64
House Keeping & Estate Maintenance	9.69
Water/Electricity Charges	7.65
Entrance Examination Expenses	2.74
Total utilized	97.58 *

Expenditure over and above the grant met from the Institute's income.

1. THE SENATE

Chairman

PROF. M.S. ANANTH

Members

- | | |
|-----------------------------------|--------------------------------|
| Prof. Achar D R G | Prof. Krishnakumar R. |
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| Prof. Anantharaman R N | Prof. Kumaraswamy S |
| Prof. Anumolu Meher Prasad | Prof. Lakshminarasimhan J |
| Prof. Ashok Kumar Mishra | Prof. Loganathan D |
| Prof. Avudainayagam A | Prof. Madhusudhana Rao M |
| Prof. Balabaskaran V | Prof. Maha Seshasayee |
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| Prof. Balakrishnan V | Prof. Mani A |
| Prof. Balasundaram Subramanian | Prof. Mani J S |
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| Prof. Bhaskar Ramamurthi | Prof. Mehta P S |
| Prof. Bhattacharyya S K | Prof. Mohan S |
| Prof. Bimalendu Guha | Prof. Muraleedharan V R |
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| Prof. Chandrakumar N | Prof. Nagarajan R |
| Prof. Chaudhary S C | Prof. Nagarajan T |
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| Prof. Chidambaram M | Prof. Narayanan S |
| Prof. Choudum S A | Prof. Narayanasamy K |
| Prof. Damodara Doss V | Prof. Narendran T T |
| Prof. Deshmukh P C | Prof. Natarajan T S |
| Prof. Devdas Menon | Prof. Neelima Madhukar Gupte |
| Prof. Dhamodharan R | Prof. Palaninathan R |
| Prof. Dharanipragada Janaki Ram | Prof. Panda T |
| Prof. Evangeline Manickam | Prof. Pandurangan C |
| Prof. Gandhi S R | Prof. Paramanand Singh |
| Prof. Ganesan N | Prof. Parthasarathy P R |
| Prof. Ganesan V | Prof. Pathak S D |
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| Prof. Ganesh L S | Prof. Pradeep T |
| Prof. Gokhale S S | Prof. Prakash Maiya M |
| Prof. Gopinath K | Prof. Prasad B V S S S |
| Prof. Govardhan M | Prof. Prasad Rao K |
| Prof. Hariharan K | Prof. Prasanna Kumar T S |
| Prof. Idichandy V G | Prof. Pushpavanam S |
| Prof. Jagadeesh Kumar V | Prof. Raamachandran J |
| Prof. Janakiraman P A | Prof. Radhakrishna Rao K |
| Prof. Jayachandran S | Prof. Radhakrishnan S |
| Prof. Jhunjhunwala A | Prof. Raghavan S |
| Prof. Job Kurian | Prof. Raghavan S V |
| Prof. Kalpakam S | Prof. Raghunathan S |
| Prof. Kalyanakrishnan R | Prof. Rajagopalan K |
| Prof. Kalyanaraman V | Prof. Rajagopal K |
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| Prof. Kamalanabhan T J | Prof. Raju Sethuraman |
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| Prof. Kesavan Nair P | Prof. Ramachandra Rao V S |
| Prof. Koshy Varghese | Prof. Ramachandraiah A |
| Prof. Kothiyal M P | Prof. Ramakrishna Mokkaapati |
| Prof. Krishnaiah K | Prof. Ramamoorthy B |

Prof. Ramamurthy K
Prof. Raman S
Prof. Ramaprabhu S
Prof. Ramasubba Reddy M
Prof. Ramesh A
Prof. Ramesh Babu N
Prof. Ramesh K
Prof. Rangan A
Prof. Rangarajan G
Prof. Ravinder David Koilpillai
Prof. Ravindra Gettu
Prof. Rengaraju V R
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Prof. Sankararaman S
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Prof. Satyanarayana K N
Prof. Seetharamamurthy D V
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Prof. Siva Ram Murthy C
Prof. Srinivasa Murthy S
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Prof. Srinivasan K
Prof. Srinivasan S
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Prof. Subramanian G
Prof. Subramanian M S
Prof. Subramanian S P

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Prof. Yegnanarayanan B
Dr Harish Chandra

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Mr Soma Sekhar B.V.
Mr Gandharv S Bakshi

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Dr. Guhan Jayaraman

Secretary:

Dr Usha Titus

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Member-Secretary

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