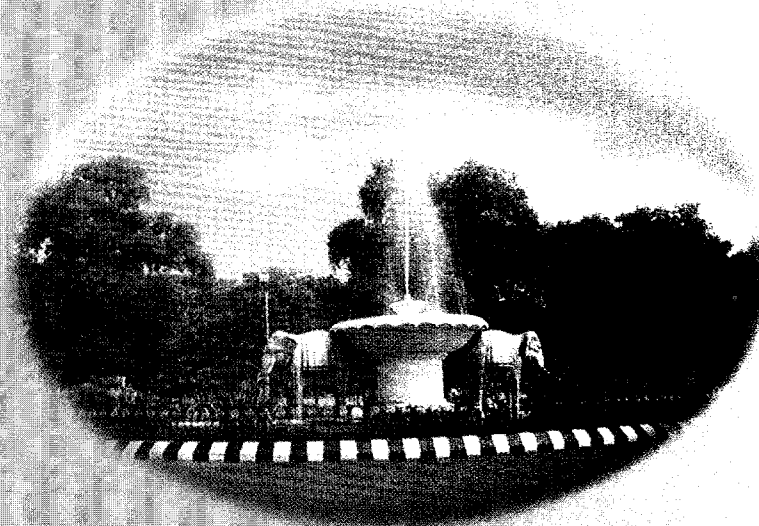


ANNUAL REPORT

2002 - 03



INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI



FORTY FOURTH ANNUAL REPORT

2002 – 2003



INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600 036



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President of India

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Secretary

Prof A Swamidurai



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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 thirteen Departments and five Research Centres. The Institute has nearly ninety well-equipped laboratories attached to the different Departments. The Institute Campus covers an area of 256 hectares of forest land and houses a community of about ten thousand 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 M.Tech. programmes and undertaking initiatives in continuing education. 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 Germany, Japan, 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 2002-03.

1.2 Our Contributions to Manpower Development :

Our 39th Convocation was held on 26th July 2002. A total of 939 degrees was awarded : 48 Ph.D., 80 M.S., 371 M.Tech., 79 M.Sc. and 361 B.Tech. These degrees cover a wide range of disciplines and specializations offered by the nine Engineering departments, three Science departments, and the department of Humanities and Social Sciences. Among the Graduands are : 17 QIP candidates (teachers from other colleges), 34 sponsored candidates (sponsored by Industry and Government Agencies). 99 Ladies, comprising 7 Ph.D., 10 M.S., 27 M.Tech., 37 M.Sc., and 18 B.Tech. students.

We have introduced user-oriented and part time PG programmes to 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 the IIT on successful completion of this one-year Programme. Forty Seven (26 SC & 21 ST) candidates were admitted to this Course in 2002.

1.3 Our Contributions In Academic Research :

IIT Madras continues to be very active in research and during the year under review. Our faculty and research scholars have published 368 research papers in the refereed International (278) and National (90) Journals and have presented 531 research papers in



International (326) and National (205) Conferences. At the risk of over simplification, I will attempt to give a flavour of the results obtained.

Transverse and longitudinal oscillatory mechanisms exhibited in the supersonic flow over a cavity have been studied experimentally and numerically. The characteristics of low density jets have been studied by laser reflection measurements and by glow discharge flow visualization. Acoustic oscillations induced by supersonic flow over cavities and their effect on fuel-air mixing have been investigated as a means of achieving mixing enhancement in scramjet engines. The injection and atomization characteristics of impinging jets of aluminized gelled kerosene fuel have been studied experimentally using optical diagnostics and simulation. Numerical study of flow of particulate suspension through wavy walled channel has shown that the Reynolds number for transition can be increased by suitable wall excitation. A typical SFRJ assisted gun launched projectile that can be fired from a 155mm gun of Bofors type has been studied. Calculations show that the range of the gun can be increased by 20 Km and the accuracy of a pseudo-vacuum trajectory can be achieved by minimal control of the engine. Two different explicit domain decomposition algorithms have been combined with an iterative solver for parallel finite element analysis of structures to develop and characterize an acoustically self-excited bluff-body combustor for spray evaporation. The flow of a viscoelastic fluid through a sudden contraction has been studied using numerical techniques.

Detailed analytical and experimental studies have been carried out on an Indian heavy vehicle to improve ride comfort by the use of a hydropneumatic suspension system in place of conventional leaf springs. A new methodology has been developed for removal of ambiguity in phase maps and phase unwrapping of models having geometric discontinuities. Classification of overlapping diseased conditions of the eye has been done by FFT Analysis of ERG and EOG and an instrument for recording of EOG has been developed. Classification of machinery faults using artificial neural network has been refined using genetic algorithm and improved signal strength by wavelet denoising. Placements of piezo-electric sensor and actuator layers have been optimised using genetic algorithm for active vibration control of composite plates and beams with possible application to aerospace structural systems. Coupled structural-acoustic finite element formulation is implemented in the active control of sound in enclosed spaces typical of automobile interiors minimizing the interior total acoustic potential energy. Optimal secondary source location is obtained using genetic algorithm and verified by limited experiments. Finding the role of hardness, thickness and sensory loss on foot pressure leading to foot sole ulcers in diabetic neuropathic subjects has helped in devising and inexpensive new instrument for foot pressure measurements.

Prevailing code-based methods of design of reinforced concrete water tank elements have been comprehensively studied and assessed, using deterministic and probabilistic procedures. Genetic Algorithm is used to develop a methodology to derive ordinates of Instantaneous Unit Hydrograph (IUH), estimate parameters of the Nash model and modify parameters of the Geomorphologic Instantaneous Unit Hydrograph (GIUH) model. Optimal pumping schemes for groundwater control in an open-cast mining area have been evolved. A software has been developed, based on an object oriented method and generic algorithms, for optimum design of prestressed concrete I and box girder bridges for railways. A numerical model for simulating flows, a methodology for estimating the infiltration and roughness parameters and a model to determine optimal operating conditions in furrow irrigation systems have been developed.

Distributed weighted automata with special reference to compression of gray level and color images and transformations on pictures using weighted finite state transducers have been studied. A methodology for knowledge acquisition, and design & installation of a CBR (Case Based Reasoning) system for knowledge management in manufacturing have



been investigated. Design and analysis of a new load balancing technique for an ISP with 2 links to the Internet has been implemented in a commercial product. An XML based public subscribe system for information dissemination has been developed and implemented using query rewriting techniques. A new XML query language for specifying user requirements in this system has also been developed. A model based nonlinear controller for a pH process has been proposed.

A novel algorithm for video object segmentation for multimedia applications, has been developed along with a fast and efficient architecture for its implementation. Improvement in performance of receiver used in a rural wireless system has been achieved by reducing bit-error rate. Scalable video coding techniques in MPEG-4 have been studied by simulation leading to tremendous flexibility in bit-rate selection. A scalable inexpensive wireless access system for small communities has been designed, built, and tested. The design of a radio transceiver for the third generation DECT standard has been carried out in a manner that is backward-compatible with an existing design for the second-generation standard. A system which uses fibre and last meters of copper to provide high speed 100 Mbps ethernet to homes and offices has been developed. A low cost ISDN exchange simulator which could be used to develop and validate an ISDN product has been developed. The problem of on-board processing of satellite data has been addressed by means of an efficient algorithm and its efficient implementation by properly partitioning the computational load between two hardware functional units, each of which is optimized for one part of the algorithm. A traffic aggregator module and its integration into the existing "Optima" fibre access network have been worked out for efficient communication between a number of remote terminals and the Manager of the network. An integer programming formulation for storage allocation and a neural network based forecasting model have been developed and tested using real-life data.

Experiments have been done on new environment friendly refrigerant HFC227, and mixtures HFC407C, HFC404A and HFC507 to study their performance in heat pump - chiller mode for simultaneous production of heat and cold. Heat and mass recovery between the reactors of the metal hydride based heating / cooling system are shown to enhance the efficiency by 50%. New life prediction methodology for the advanced sintered products under rolling / sliding operating environments has been developed. Two dimensional flow behind an axial compressor with forward swept blades has been measured for the first time in India using a single sensor miniaturized Kulite transducer through the Lab View platform.

Hydroxyapatite (HA) synthesized from farm waste like egg shells under microwave irradiation is found to have better properties than microwave processed HA using synthetic materials and commercial HA. Fatigue short crack growth behavior was studied in a nuclear grade SA 333 Grade 6 steel. Differential stress vs. crack length curves within the short crack regime have been generated for the prediction of stress levels for the material with or without different initial flaws to achieve the desired fatigue lives.

Introduction of energy dissipators on sloped seawalls has been shown to dissipate 30 to 50% of the incident wave energy resulting in more cost effective seawall design. Detached breakwaters in the seaward side of seawalls are found to significantly reduce the pressures, run-up and run-down on seawalls and thereby extend the life of existing seawalls for coastal protection. The wave forces and impact pressures for different locations of the deck levels have been investigated for safer and more optimal design of open sea mooring dolphins. Interacting surface cracks have been studied using a finite element analysis.

A new multigrid algorithm that is faster and simpler than the traditional multigrid algorithms has been developed for non-linear equations. The impingement effects of high speed,



low density, low Reynolds number freejets on surfaces have been experimentally studied using Laser Interferometric Shear Force measurement in low density flows.

Numerical and experimental studies have been carried out on ride and handling behaviour of a light passenger vehicle. Optical characterization and imaging of biological tissues by simulation and laser reflectometry has been shown to be useful in studying tissue abnormalities. Three-dimensional optical tomographic imaging of breast-equivalent phantoms has been developed to detect embedded abnormalities.

A new single-site titanium catalyst with aminodiolate ligand has been developed for a transformation and polymerization of olefins. Novel analogs of glucosyl phosphates have been designed and synthesized as potential anti-diabetic agents. Oligosaccharides of importance in plant defense mechanisms have been synthesized using glucosidases as biocatalysts. Several sugar amides have been synthesized as N-Glycoprotein linkage region models and analogs using both chemical and enzymatic methods and the interesting structural significance of the N-Glycoprotein linkage region has been established. A thermodynamic analysis of two-dimensional condensation and electron transfer reactions at electrode/electrolyte interfaces has been carried out. Synthesis, characterisation of selected mesoporous solids has been carried out. Studies on fluorescence behaviour of certain fluorophore in polymeric systems have shown that anilidonaphthylsulfonate is a sensitive fluorescent probe for understanding the structure of polyacrylamide gels and for monitoring the gel formation kinetics. Metal complex catalysts have been synthesized to trap gaseous NO molecules. Combustion synthesis, characterization and catalytic activity of some ceria based materials have demonstrated their potential use for some vapour phase chemical reactions as well as for exhaust control applications. Polystyrene brushes have been grown on nanoparticulate and planar substrates by surface-initiated living polymerization to enhance performance of DNA chips. The morphological response to stimuli of polymer brushes is illustrated and ambient temperature, surface-initiated, growth of poly(methyl methacrylate) from a covalently anchored monolayer of initiator is demonstrated. Several new cyclophanes potentially useful as molecular hosts for electron deficient molecules, with rigid molecular cavities have been synthesized and the cavity dimensions estimated by X-ray crystallography.

Current building practices in India envisage usage of lightweight structures in construction. Acoustical transmission properties of these structures such as hollow blocks, aerocon, neocrete blocks, ferrocement panels have been investigated. Practices to evolve and improve the sound insulation have been investigated for these structures by theoretical methods like statistical energy analysis and other experimental methods. A model-concept to assess and forecast sustainability of human settlements has been developed and a prototype simulation system has been implemented. An improved design basis for prestressed concrete railtrack sleepers has been developed taking into account vehicle-track interaction dynamics and reliability-based assessment of various uncertainties. In Indian BOT road projects, eight "very critical" risks and twenty seven "very critical" risk factors have been identified and an analytical framework for modeling and assessing critical risks has been developed. Through material characterization, strength and durability studies on recycled aggregate concrete with concrete and masonry demolition waste as coarse aggregate, mix proportioning guidelines have been proposed for normal and lightweight aggregate concrete.

A study of symbol objects and string objects in various types of P systems like contextual, hybrid, probabilistic P systems, P systems with active membranes and P automata has been carried out. Field programmable Gate Arrays were used for a DC resonant link based uninterruptible power supply, for current control by pulse density modulation. Novel structures and design techniques have been devised for DFT filter banks; transmit



and receive diversity have been combined with orthogonal frequency division multiplexing to improve the performance on frequency selective channels. A rotor fault detection algorithm has been developed and implemented to detect rotor faults in a cage rotor induction machine through estimation of air gap torque spectra non-invasively and online. It has been shown that using Information and Communication Technologies the carrying capacity of railways in India could be enhanced by a factor of 5 without adding new tracks and replacing trains.

Algorithms for comprehensive and incremental cell formation have been developed and tested. A classification of jobshop scheduling problems to minimize completion time variance has been proposed. Spectral regularization of singularly perturbed problems using the techniques of Lavrentiev, Tikhonov, Showalter, and Lardy are shown to be applicable to operator equations even with an unbounded operator. A new interconnection network for a multiprocessor computing system is shown to have performance superior to the popular hypercube network in many aspects.

Fuzzy control theory has been applied to minimize the pollution due to cement kiln dust. The behaviour of the ring pack alongwith the piston, during combustion in a four cylinder diesel engine has provided valuable estimates the blowby (a mark of the efficiency of sealing). Application of solid lubricants such as graphite, calcium fluoride, barium fluoride, molybdenum trioxide in grinding as a means to reduce the heat generated due to friction has been established.

The use of trimetallic transition joints is shown to improve considerably the life expectancy of power plant components.

Low temperature magnetic and electrical transport property measurements have been made on new R_nX_4 -type (R = rare earth; X = Mn, Si, Ge; n = 1, 2 or 5) inter metallic compounds by neutron diffraction studies and thermal power studies for magnetic refrigeration applications. A correlated low temperature electrical transport, pulsed NMR and Raman scattering study of single crystals and thin films of $Nd_{1-x}Sr_xMnO_3$ ($0.1 \leq x \leq 0.5$) manganites has been carried out. A laser-induced transient grating technique has been fabricated and ultrafast relaxation times were measured. The effect of the magnetic rare earth ion on the reduction of spin disorder scattering has been unequivocally demonstrated by experimental investigations on well designed systems. Magnetic Tunnel Junctions (MTJs) fabricated using novel nano-scale barriers have been shown to have promising tunnel characteristics for studies on "spintronics". Several new cyclophanes with rigid molecular cavities potentially useful as molecular hosts for electron deficient molecules have been synthesized.

1.4 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 and students in recognition of their academic achievements during the current year. Some of these are listed below:

1.5 Awards :

Dr. K. Kasturirangan, Chairman, IITM was awarded the Officer de la Legion d'honneur for his contribution to space research and management by the French Government.

Prof. M. S. Ananth, Director, IITM was awarded the R. W. Fahien Alumni Award for the year 2003 for distinguished professional contributions by the Chemical Engineering Department, University of Florida, USA.



Dr. R. I. Sujith, Assistant Professor, Aerospace Engineering was awarded the INAE Young Engineer Award 2002 for excellence in research by the Indian National Academy of Engineering. (INAE)

Dr. N. N. Murthy, Assistant Professor, Chemistry was awarded the Outstanding Invention of 2001 Award for joint work with the Johns Hopkins University, USA on design and development of novel copper complexes as anti-cancer agents by the Office of Technology Commercialization, University of Maryland, USA.

Prof. B. Viswanathan, Chemistry was awarded the Bharat Jyoti Award by the Indian International Friendship Society.

Prof. M. S. Gopinathan, Chemistry was awarded the Linus Pauling Memorial Lecture Award 2002 by the Mahatma Gandhi University.

Prof. T. S. Chandra, Chemistry was awarded the Vocational Excellence Award on being one among the 5 outstanding women achievers in TN for the year 2002 by the Rotary Club of Annanagar.

Prof. G. Sundararajan, Chemistry was awarded the Sukumar Maiti Polymer Research Award by the Maiti Polymer Research Foundation.

Dr. T. Pradeep, Associate Professor, Chemistry was awarded for excellence in science, the Young Scientist Award by the Chemical Research Society of India and the Second Prize in Chemistry for the year 2000 by B.M. Birla Science.

Prof. Nainan P Kurian, Civil Engineering was awarded the Degree of Doctor of Science (D.Sc) for his post-doctoral thesis by the University of Kerala.

Prof. Ashok Jhunjhunwala, Electricl Engineering was awarded the H. K. Florida Award for excellence in Science and Technology by the Florida Foundation, USA.

Dr. M. Thenmozhi, Mahesh Nair, Rohit, Humanities and Social Sciences, Abhishek Jain and Sumon Datta, Chemical Engineering were awarded the WTI Award for the best proposal on Draft Manufacturing Policy by the Federation of the Indian Chamber of Commerce and Industry (FICCI).

Dr. S. Ponnusamy, Associate Professor, Mathematics was awarded the CL Chandana Mathematics Award 2002 by Canadian World Mathematics Foundation.

Prof. V Ganesan, Mechanical Engineering was awarded the Life Membership Award for work done in pollution control by the National Environmental Science Academy, India.

Prof. S. Srinivasa Murthy, Mechanical Engineering was awarded the PIONEER Award for contribution to solar cooling technologies by World Renewable Energy Network.

Prof. K. Prasad Rao, Metallurgical and Materials Engineering was awarded the Keith Hartley Memorial Lecture award for contributions to the field of welding by the Indian Institute of Welding.

Prof. R.S. Sirohi & Prof. M.P.Kothiyal, Physics along with Dr. P.S. Nair, Dr. R.K. Samuel, Mr. M.V. Rao and Mr. A. Ananthan of ISRO, Bangalore were awarded the Meritorious Invention Award for their invention of an opto-electronic apparatus for static and dynamic measurement by the NRDC, New Delhi.



Prof. R. S. Sirohi, Physics was awarded the Pandit Jawaharlal Nehru National Award in the field of Engineering & Technology for the year 2000 by the Department of Science and Technology, Government of Madhya Pradesh.

Prof. P. T. Manoharan was awarded for excellence in Science, the Life-time Achievement Award by the Alpha Group of Institutions and the Govindarajulu Endowment Lecture Award by the University of Madras.

Prof. U. V. Varadaraju, MSRC was awarded the International Centre for Diffraction Data Prize for significant contribution of 12 patterns to the powder diffraction file – Release 2002.

Mr. Siddharth Savadatti, Abhishek Varma and S. Vijay Civil Engineering were awarded the Best Innovative Design in Structural Steel for the year 2001-2002 by the Institute for Steel Development and Growth (INS DAG).

Mr. B.S. Manoj, Computer Science & Engineering was awarded the ISCA Young Scientist Award by the 90th Indian Science Congress.

Mr. Anubhav Agnihotri, Rohit Morde, Vipin Pandey, Murali Kumar Nandini, N. R. Babu, Partha Sadhukhan, Adhev Tushar Ambadas, Bhavdeep Singh Virdee, Manohar Gautham, G. Manjunatha and V. Rajesh Narasimha Rao were awarded the First Prize for designing a marketing plan in the National Seminar ADPROBE 2003 by Anna University.

Mr. Siddharth Shastri, Mechanical Engineering was awarded a Bronze Medal for designing a concept vehicle for disabled people in the 33rd All India Student Design competition – 2002 by the National Design & Research Forum, The Institution of Engineers.

1.6 Fellowships :

- | | |
|--|--|
| Prof. A. R. Balakrishnan
Chemical Engineering | ▪ Indian National Academy of Engineering |
| Prof. B.S. Thandaveswara
Civil Engineering | ▪ Indian Society for Hydraulics, Pune |
| Prof. P.R. Parathasarathy
Mathematics | ▪ Institute of Mathematical Statistics, USA |
| Prof. V Ganesan
Mechanical Engineering | ▪ National Environmental Science Academy, India |
| Dr. N. Krishna Mohan
Physics | ▪ International Society for Optical Engineering, USA |
| Prof. P. T. Manoharan
RSIC | ▪ Third World Academy of Sciences
▪ World Innovation Foundation |

1.7 Chairman/Member/Adviser of Editorial Boards :

- | | |
|---|---|
| Prof. N. R. Neelakantan
Chemical Engineering | ▪ International Journal of Plastics Technology,
CIPET, Chennai
▪ Applied Science Periodical |
| Prof. A.R. Balakrishnan
Chemical Engineering | ▪ International Journal of Heat and Mass Transfer
▪ Journal of Engineering, Heat and Mass Transfer |
| Prof. T. Panda
Chemical Engineering | ▪ Indian Journal of Chemical Technology |



- Prof. T. Swaminathan
Chemical Engineering
- Prof. D V S Murthy
Chemical Engineering
- Dr. T. Pradeep
Chemistry
- Prof. B Viswanathan
Chemistry
- Prof. Nainan P Kurian
Civil Engineering
- Prof. B.S. Thandaveswara
Civil Engineering
- Dr. B.S. Murty
Civil Engineering
- Prof. B. Yegnanarayana
Computer Science & Engg.
- Prof. C. Siva Ram Murthy
Computer Science & Engg.
- Dr. S. Ponnusamy
Mathematics
- Prof. P.R. Parathasarathy
Mathematics
- Prof. S. Srinivasa Murthy
Mechanical Engineering
- Prof. S. K. Seshadri
Metallurgical & Materials Engg.
- Prof. K. Prasad Rao
Metallurgical & Materials Engg.
- Prof. C.P. Vendhan
Ocean Engineering
- Dr. T. S. Sampath Kumar
Metallurgical & Materials Engg.
- Prof. P. T. Manoharan
RSIC
- Journal of Environmental Management
- Indian Journal of Environment and Pollution.
- Oriental Journal of Chemistry
- Indian Journal of Chemistry
- Bulletin of the Catalysis society of India
- Indian Geotechnical Journal, Indian Concrete Journal, New Building Materials of Construction World Journals
- Journal of Indian Society for Hydraulics
- Journal of Indian Society for Hydraulics
- Journal IEEE Transactions on Speech and Audio Processing
- Institute of Electrical and Electronic Engineers (IEEE), USA.
- The Journal of Analysis Published by Forum D'Analystes (2001-2003)
- Journal of Indian Academy of Mathematics (2003-2005)
- Statistical Theory & Methods Abstracts
- Journal of Information & Optimization Sciences
- Journal of Applied Statistical Sciences.
- International Journal of Computer Mathematics.
- American Journal of Mathematics & Management Sciences.
- Pure & Applied Mathematics Sciences.
- Journal of Decision & Mathematics Sciences
- Assam Statistical Review Stochastic Modelling & Simulation.
- International Dictionary of Refrigeration (Airconditioning & Heat Pumps Section)
- Indian Journal of Chemical Technology
- Transactions of Metal Finishers' Association of India
- Journal of Engineering for Maritime Environment, UK
- Journal of Engineering for Maritime Environment, UK
- Trends in Biomaterials and Artificial Organs
- Indian Journal of Chemistry



1.8 Best Paper Awards :

Mr. P. Balasubramanyam
Dr. R. I. Sujith
Aerospace Engineering

Mr. J. Naresh
Dr. S. Swarnamani
Applied Mechanics

Mr. Sanjay Jayavanth
Applied Mechanics

Mr. Sasikumar
Prof. V. Ramjee
Applied Mechanics
Mr. Brijesh Kumar
Aerospace Engineering

Dr. P. S. T. Sai
Dr. Shammi Theodore
Chemical Engineering

Prof. V. Kalyanaraman
Civil Engineering

Mr. S. Pancharathnam
Dr. A. Ramachandraiah
Civil Engineering

Mr. A. V. Thomas
Dr. K. N. Satyanarayana
Dr. K. Ananthanarayanan
Civil Engineering

Mr. K. Purnanandam
Prof. K. Rajagopal
Civil Engineering
Dr. N. K. Pichumani
Ramboll Consulting Engineers

Dr. K. Rajagopal
Dr. P. L. S. Ramakanth
Civil Engineering

Mr. A. Balaji
Mr. R. Kumar
Computer Science & Engg.

Dr. Deepak Khemani
Ms. Radhika B. Selvamani
Mr. Ananda Rabi Dhar
Mr. S. M. Michael
Computer Science & Engg.

Dr. V. Kamakoti
Mr. Annamalai Muthukarruppan
Mr. S. Suresh
Computer Science & Engg.

Mr. R. Kishore Kumar
Humanities & Social Sciences

- Best Student Paper at the 8th technical session of the Madras India Regional Chapter of the Acoustical Society of America
- Best Student Paper at the 8th technical session of the Madras India Regional Chapter of the Acoustical Society of America
- Best Paper, International Congress of Biorheology
- First Prize for paper presentation, Flight 2003
- Best Paper, The Canadian Journal of Chemical Engineering 2001
- Dr. M. Ramiah Prize for best technical paper, CSIR Foundation Day
- Best Paper, 8th technical session of the Madras India Regional Chapter of Acoustical Society of America
- The Suchit Kumar Ghosh Memorial Medal, Institution of Engineers (India) Journal
- IGS-AFCONS Biennial Prize, Indian Geotechnical Conference-2000
- Best Paper, Journal of Rock Mechanics and Tunnelling Technology
- S. K. Mitra Memorial Award, Journal of Institution of Electronics and Telecommunication Engineers
- Best Application Paper, European Conference on Case Based Reasoning
- Excellent Paper Presentation, Joint 1st and 3rd International Conference on Soft Computing and Intelligent Systems
- Second Prize for best paper, Consortium of Student in Management Research, COSMAR-2002



- Prof. O. V. Krishnaiah Chetty
Dr. Eswara Reddy
Mechanical Engineering
- Prof. B. Ramamoorthy
Dr. A. S. Varadarajan
Prof. P. K. Philip
Mechanical Engineering
- Prof. M. S. Shunmugam
Mechanical Engineering
- Prof. K. Prasad Rao
Dr. G. Madhusudhan Reddy
Mr. M. Vasudevan
Metallurgical & Materials Engg.
- Dr. T. S. Sampath Kumar
Dr. Ram Kumar
Mr. Sivaramakrishnan
Mr. Madhanasundar
Metallurgical & Materials Engg.
- Prof. V. Sundar
Mr. R. Balaji
Ocean Engineering
- Dr. M. S. Ramachandra Rao
MSRC
Prof. C. V. Gokulrathnam
Metallurgical Engg.
Mr. V. Ravindranath
Mr. Abhijit Goel
Physics
- Prof. V. R. K. Murthy
Mr. E. D. V. Nagesh
Dr. V. Subramanian
Physics
- The Corps of Engineers Medal, 17th Indian Engineering Congress, Patna
- The Production Engineering Division Medal, 17th Indian Engineering Congress, Patna
- Citation of Excellence, International Journal Production Research
- a. D&H Secheron Award;
b. I. T. Mirchandani Memorial Award
c. Weldmen Award &
d. Mrs. D.M. Panthaki Award
National Welding Seminar
- First Best Technical Paper, Indian Dental Association State Level Competition
- Best Student Paper, Best Graduate Student Paper Contest 2001-2002
- Lucas-TVS Award, Fourth National Symposium of Research Scholars on Metals and Materials
- Best Paper, 12th National Seminar on Ferroelectrics and Dielectrics

1.9 Books :

- Prof. M. Chidambaram
Chemical Engineering
- Prof. N. Rajagopalan
Civil Engineering
- Dr. Arindama Singh
Mathematics
- Dr. S. Ponnusamy
Mathematics
- Computer Control Processes, Narosa Publishers, New Delhi
- Prestressed Concrete, Narosa Publishers, New Delhi
- Logics for Computer Sciences, Prentice –Hall of India.
- Foundations of Functional Analysis, Narosa Publishers, New Delhi

1.10 Patents Filed :

- Dr. Anju Chadha
Dr. K. Priya
Chemistry
- Dr. A. Subrahmanyam
Physics
- A Process for Lipase Catalysed Preparation of Alkyl and Aryl Esters of Hydrocinnamic Acid
- Scratch Resistant Coated Plastic Ophthalmic Lenses
- Electrically Conducting Coated Kapton Film



Mr. H.P. Raju
Dr. K. Narayanasamy
Dr. Y.G. Srinivasa
Mechanical Engineering

- An Extrusion Honing Composition

Dr. L. Vijayaraghavan
Mechanical Engineering

- A method of Manufacture of an Improved Grinding Wheel

1.11 Industrial Consultancy and Sponsored Research :

Industrial consultancy not only provides technological solutions towards industrial development, but also brings relevance and realism to the teaching-learning processes. Sponsored research is an important part of IITM's activities. Since its inception, 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 225 for a total value of Rs.503.6 millions including 11 international projects for a value of Rs.40.8 millions and 58 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 196.

The number of active consultancy projects during the year is 636, for a total value of Rs.66 million including 31 Research Based Industrial Consultancy projects for Rs.22.2 millions. The number of faculty members involved in these consultancy projects is 203 while 13 have been retained as Consultants in various industries at a cost of Rs.1.9 millions. The AICTE funded Industry Institute Partnership Programme has continued during 2002-2003. Two of the sub-projects on Creation of design Database for Centrifugal Pumps and Use of power tools for Restoration and Retrofitting Monuments were taken up and completed.

The ISRO-IITM Space Technology Cell renewed 17 projects and sanctioned 7 new projects during this year. Under the IGCAR-IITM Cell 2 projects were continued. Periodic monitoring and review of these projects are the major responsibilities of these Cells.

The Industrial Associateship Scheme has now 241 members facilitating continuous interaction with industry. The Centre for IC & SR organized 6 Technology Appreciation Programmes for the benefit of these Industrial Associates during the current year and several industrial lectures were held.

We have signed 28 Memoranda of Understanding with the following industries such as Bhabha Atomic Research Centre, Mumbai, Defence Research & Development Laboratory, Hyderabad, n-Logue Communications Private Limited, Chennai, Hydrocontrol, Italy, and Columbian Chemicals Company, Georgia, USA.

1.12 Continuing Education and Educational Technology Activities :

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: 5 under the Quality Improvement Programme, 30 under Continuing Education and 18 under Educational Consultancy. The CCE generated a revenue of Rs.10 millions during the year. Under the Book Writing Scheme, 5 proposals have been received. 3 books have been published.

The ET 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 900 hours of



video material is being disseminated to various colleges and R & D establishments at a subsidised rate. This year's activities also include: a 23 semester lecture based programme; 11 visual-based short programmes; 1 documentary for Gyan Darshan telecast; 6 lecture series for telecast by Gyan Darshan;

CCE organized a one year certificate course on Advanced Engineering Design for Graduate Engineers of BHEL based on the concept of a finishing school.

4.10 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 314 faculty from other institutions have obtained their Ph.D. degrees and 449 faculty from other institutions have obtained their M.Tech. degrees since its inception. Currently we have a total of 127 QIP Scholars (68 Ph.D. & 59 M.Tech. which includes 11 women in Ph.D. and 17 woman in M.Tech) in the Institute.

The All India Council for Technical Education, including the National Board of Accreditation, continues to utilize 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.

IIT Madras is the overall coordinating institute for the National Programme on Technology Enhanced Learning (NPTEL) funded by MHRD in which all IITs and IISc are participants. Over a 100 web-based courses and a 100-video-based courses for the Ekalavya channel are under preparation. Many teachers will be trained in the IITs and IISc under NPTEL. These courses will be made available at highly subsidized rates to all engineering and management institutions in India, thus enhancing the reach and quality of technical education in the country. This January, our Honorable Minister inaugurated the Ekalavya channel for reaching out to students of engineering all over the country. The video courses developed by NPTEL will be aired on this channel, 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-REC Networking. The activities proposed include joint projects, faculty and student exchange, and joint activities such as workshops, seminars, etc. The Summer Assistantship Scheme, which was initiated a few years ago, provides opportunities for summer training to top-ranking third year B.E. students of other Engineering Colleges all over the country ; 31 students participated in the programme this year.

A detailed proposal titled "Suryajal" - a mission-mode solar PV based sea water desalination technology demonstrator, which has the potential to provide a sustainable, cost-effective and integrated solution to the twin problems of acute shortage of drinking water and electric power faced by communities living along the 3000 km Indian coastline - has been prepared jointly by IIT Madras, Academic Staff College of India (ASCI), Hyderabad, Bharath Heavy Electricals Ltd. (BHEL), Ranipet and Air Cdr. Dr. R. Gopalaswami. A system concept definition and pre-feasibility study have been carried out to study the performance and cost of creating perennial supplies of fresh water from the ocean using solar PV power and the reverse osmosis process. The proposal will be submitted to several Government departments including MHRD and MNES for funding soon.



1.14 International Collaboration :

IITM has been interacting with several International Organizations for collaborative research, exchange of faculty and students, etc. So far, the total number of MoUs signed by IIT-Madras with international universities amounts to 50. Eight MoUs with other International Institutions are being processed. We have also signed 4 MoUs with International Companies and Research Laboratories for collaborative R & D. Collaborative research projects have been approved for funding by BMBF, Germany. We continue to receive support through GTZ for procurement of spares. For the second year in succession EPFL, Lausanne, Switzerland and IIT-Madras jointly organized, an International Course on "Sustainable Development: Innovative and Integrated Approaches in Emerging Countries". The participants were drawn from Switzerland, rest of Europe, India and other developing countries. During the summer, a number of faculty members from the Institute visited universities and research laboratories abroad for collaborative research, participation in conferences, visiting assignment, lectures, consultancy, etc.

1.15 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 five IITs and six 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, a student from the Rural Engineering Department of EPFL studied in IIT-Madras for one semester, beginning July 2002. Two of our M.Tech. students in Industrial Mathematics were deputed to the University of Kaiserslautern for training.

1.16 Human Resource Development :

HRD programmes have been identified and conducted to provide 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, 27 training programmes (189 programme-days) with 859 participants were conducted during the year. Special Programmes were conducted on Communication Skills, Memory Skills, Speed-Reading, Teamwork and Career Guidance for the children of faculty and staff members in different age groups.

1.17 Our Quality Initiatives :

IIT-Madras has secured ISO-9001-2000 Certification for twelve units. All these units have been audited and renewed with no non-conformance. The Central Electronics Centre is gearing itself up for NABL Certification. Continuous improvement being the hallmark of a learning organization, several 5-S Programmes have been conducted. We have also initiated Programmes on Quality Circles in twelve of our Administrative Units covering nearly the whole of our support services.

1.18 Integrated Computing Environment :

An ATM-based high-speed campus-wide network has been operational for the past four years. The network provides connectivity between the various departments, hostels and the faculty residences. The topology for the backbone has been designed taking into consideration aspects such as reliability, scalability and cost-effectiveness. All the hostels



are connected to the backbone by fibre with ten network access points in each hostel and individual rooms will have network access by December 2003.

We have established two 34 Mbps links giving rise to multiple 2 Mbps capability at the Ernet Point of Presence and the Computer Centre. We are working towards a dedicated 34 Mbps of direct internet access for IITM. We feel that it would be appropriate to have atleast 155 Mbps between IITs to annihilate distance and to provide seamless interaction between faculty and students across the IITs.

As part of our larger initiative called the Integrated Computing Environment using the state of the art scalable technology, IIT Madras is in the process of establishing a Data Centre. The Data Centre will act as the Information Registry and the source of authentication of users for the entire campus. This is to be followed by the establishment of a Digital Library and Strategic Computational facilities for ultra-high performance computing, starting from year 2004. The Strategic Computing facility extends upto a multi-function rendering capability on desktops. For a large and spread out campus such as ours, we are using wireless "Hot Spots" to provide seamless connection to computational resources and information, any where in the campus covering the residential zone, hostel zone and the academic zone.

3.7.9 Infrastructure Development :

The old Library building is being remodeled to house the CCE, the Gymkhana, and the Management division. It is expected that the Council will approve the creation of a new department of Management Studies at its next meeting. The augmentation of the Lecture Hall Complex has been completed.

Scooter and cycle sheds in various places are being provided. Power vehicles have been banned in hostel sector. A large boys hostel, Mega Mess II, the Bose Einstein Guest House, a sewage treatment plant and construction of flats for married students have been initiated.

The Institute bestows considerable attention on environmental protection and conservation. A large number of trees are planted each year to add to the greenery on Campus. Several solid waste management initiatives have been undertaken, including the evacuation of accumulated solid waste to a dumping place outside the Campus, through the agency of Chennai Environmental Services Onyx Private Limited. The campus residents are being exhorted to limit the use of plastics to a minimum. The Safety, Energy and Environment Committee advises on matters relating to these three important areas, and also oversees energy, environment and safety audits.

Several initiatives have been undertaken towards rain water harvesting, storage and water conservation. A detailed topographic survey has been undertaken. Systematic vertical electrical soundings have been conducted throughout the campus and auger holes have been drilled at specific locations in order to corroborate the results of resistivity studies. Water samples from all the working bore wells and the open wells have been collected and analyzed to determine the chemical and biological quality of the ground water. A detailed hydro-geological assessment has been made of the potential run-off due to rain fall in the campus towards recharging ground water and rain water harvesting. Based on the above, an integrated water resource development and management plan for the IIT-Madras campus has been developed and work has been initiated on the plan.



1.20 Student Co-Curricular and Extra-Curricular Activities :

As part of the Cultural activities, the Institute Gymkhana organized the annual student technical festival, *Shaastra*, during the second week of September 2002 and the cultural festival *Saarang* in the third week of January 2003. The programmes included Design Contests, Paper Presentation Contests, Entrepreneurship Contests, Video Conferences, Lectures by eminent personalities, and classical and modern musical performances. A Cell for Professional Ethics and Human Values has been set up and actively attempts to promote human values in our students.

1.21 Alumni Matters :

Our Institute has so far awarded nearly 25000 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.

The PAN IIT 50 meeting was held in two places in San Jose, USA in January 2003 and in Bangalore in February 2003. As many as 2500 alumni had gathered in San Jose and about 1200 in Bangalore. The alumni emphasized the fact that they have derived tremendous benefits from IIT and are ready to serve their Alma Mater in one capacity or the other. Since 1997, we have been honouring selected alumni for their accomplishments through the Distinguished Alumnus Awards. I am happy to announce that the Awardees for this year are:

- Dr. Dipankar Banerjee, Director, DMRL, Hyderabad
- Dr. R. Mahadevan, Director, India Pistons Ltd., Chennai
- Padmasri M. Natarajan, Chief Controller R&D (ACE), DRDO, New Delhi
- Dr. C. Mohan, IBM Fellow, USA
- Prof. George C. Verghese, Professor of Electrical Engineering, MIT, USA

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 1977 batch celebrated its Silver Reunion in Dec 2002. We are very grateful to our alumni for the generous support that they have extended, both in cash and kind, to their Alma Mater.

1.22 The Strategic Management Project :

Several major changes that have taken place, both globally and nationally, in the recent past have made it imperative for IITM to identify strategic directions for its future in order to maintain and enhance its excellence. Following the recommendations of the Synergy Committee set up by the then Union Minister for Human Resources Development, Shri Madhav Rao Scindia, the Board of Governors of IITM constituted a Strategic Planning Committee in 1996. As a consequence the Institute initiated a number of activities to build up internal capabilities for change.

The Strategic Management Project (SMP) at IIT Madras was designed as a series of coordinated interventions to bring about changes in the directions, structure, processes, interfaces and performance of the Institute. Use of external consultants, reliance on multiple sources of knowledge, design of coordinated interventions and development of a



set of shared goals are significant features of this Project. Approximately three-fourths of the inputs for the Project have come from IITM, and one-fourth from outside. The Strategic Management Plan - Vision 2010 - is a documentation of the SMP and was released formally by our Chairman, Board of Governors on 25th July 2003.

As part of the SMP, IITM has, after extensive discussions among its faculty, converged on 15 areas of interdisciplinary research on which its faculty and research scholars will concentrate in the next few years. Over 20 faculty have research interests in each of the areas and IITM hopes to make an international impact in some if not all of these areas.

1.2.3 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 very grateful to the Honourable Minister of Human Resource Development, Prof. Dr. Murli Manohar Joshi, our Chief Guest this morning for his inspiring leadership and continued and sustained support. We look forward to reaching new heights of achievement in all our endeavours with the able guidance of our Chairman, Board of Governors and the holistic vision of our Honourable Minister for Human Resources.

I would like to take this opportunity to wish each and every one of our Graduands a successful professional career full of prosperity, happiness and job satisfaction.

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 IIT Madras was founded in 1959 (IITM) and has since established itself as one of the premier academic institutions in India devoted to Science & Technology.

The seven Institutes of Technology (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras 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, 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 maintain the quality of Engineering Education. It appoints various committees to look into specific academic matters arising from time to time. Academic Research, teaching, Sponsored Research & Consultancy and Training 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.

Financial advice to the Institute is given by the Finance Committee. 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, Board of Industrial Consultancy and Sponsored Research and Library Advisory Committee are constituted by the Senate to help in the efficient administration of academic and research activities of the Institute.

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

2.2 RW TuV, Germany ISO 9001:2000 Certification:

The following sections/centres of the institute were certified ISO9001:2000 by RWTuV:

- | | |
|---------------------|---|
| 1. Academic Section | 4. Computer Centre |
| 2. Central Library | 5. Centre for Industrial Consultancy and Sponsored Research |
| 3. Central Workshop | 6. User Oriented Programmes |

These six units were certified ISO9001:1994 from March 1999 to March 2002. The certification audit was conducted in April 2002 and the certificate was received in August 2002. This certificate is valid till August 2005.

Surveillance audit was conducted by RWTuV for the following six sections/centres of the institute during July 2002 and January 2003:

- | | |
|-------------------------|-------------------------------|
| 1. Administration | 4. Security |
| 2. Finance and Accounts | 5. Engineering Unit |
| 3. Stores and Purchase | 6. Central Electronics Centre |

The above sections/centers were certified by RWTuV, Germany for ISO 9001:2000 and the certificate is valid till February 2005.

2.3 Staff Position:

As on 31.03.2003, 318 Faculty, 11 Scientific Staff, 4 Design Staff, 347 Technical Staff and 753 Administrative Staff were in position totaling 1433. During the period under report 74 staff members comprising of 1 Professor, 17 Asst. Professors and 56 other staff were appointed. 90 staff members comprising of Faculty, Officers and Staff retired from their positions. 10 Staff members took voluntary retirement. 1 faculty member and 2 staff members resigned and 9 Staff members expired. 26 faculty members and 9 staff members were on long leave.

2.3.1 Faculty / Staff appointed during the period 01.04.2002 to 31.03.2003:

Sl. No.	Name	Designation	Department	Date
1.	Vijayashree	Lab. Asst.	Mech. Engg.	03.05.2002

Sl. No.	Name	Designation	Department	Date
2	N. Mohan	LDC	S & P	09.05.2002
3	N. Geetha	LDC	Civil Engg.	09.05.2002
4	R.Ponnuswamy	LDC	Admn.II	09.05.2002
5	M.Thilakar Gandhi	LDC	Elec. Engg.	09.05.2002
6	D.Rajalekshmi	LDC	IC & SR	09.05.2002
7	M.Nattar Muthu	LDC	Academic	09.05.2002
8	Mythili Varadarajan	LDC	Admn.II	09.05.2002
9	A. Sethuraman	LDC	Academic	09.05.2002
10	C.Syam Kumar	LDC	Audit	09.05.2002
11	S. Padmini	LDC	Admn.I	09.05.2002
12	C. Pushpavalli	LDC	COMPTEC	09.05.2002
13	B.Sivaji	LDC	Hospital	09.05.2002
14	B. Nagarajan	Asst. Reg.	Academic	24.05.2002
15	K. Unnikrishnan	Asst. Reg.	Regr. Office	24.05.2002
16	G. Ravichandran	Asst. Reg.	IC & SR	24.05.2002
17	N. Subramanian	Asst. Reg.	Admn.III	24.05.2002
18	A.V. Sudarsanam	Asst. Reg.	S & P	24.05.2002
19	C.Chandrasekhar	Asst. Prof.	CSE	28.05.2002
20	Ravinder David Koilpillai	Professor	Elect. Engg.	24.06.2002
21	Anil Prabhakar	Asst. Prof.	Elect. Engg.	01.07.2002
22	P. Mahesh Mithreevan	Helper Gr. I	Chemical engg.	08.07.2002
23	K. Tamil Selvan	Helper Gr. I	Physics	10.07.2002
24	P. Velmurugan	Helper Gr. I	Admn. II	10.07.2002
25	A.M. Parameswaran	Helper Gr. I	Metl&Matls. Engg.	10.07.2002
26	S. Ravikumar	Helper Gr. I	Chemical Engg.	10.07.2002
27	B. Yashodha	Helper Gr. I	Civil Engg.	10.07.2002
28	K. Srinivasan	Helper Gr. I	PRO Office	10.07.2002
29	S. Chellapandian	Helper Gr. I	Transport Cell	10.07.2002
30	M. Manoj	Helper Gr. I	Transport Cell	10.07.2002
31	R. Manikandan	Helper Gr. I	Hospital	10.07.2002
32	J. Prakash	Helper Gr. I	Elect. Engg.	15.07.2002
33	S. Manavalan	Helper Gr. I	Recrt.	15.07.2002
34	G. Saravanan	Mechanic	CEC	16.07.2002
35	S. Veeraraghavan	Mechanic	CEC	17.07.2002
36	A. Prakash	Mechanic	Elect. Engg.	18.07.2002
37	S. Lakshmi Narayanan	Mechanic	Mech. Engg.	19.07.2002
38	R. Anburaj	Mechanic	Civil Engg.	24.07.2002
39	R. Ramesh	Mechanic	CWS	24.07.2002
40	Jeyasutha Avudai Thangam	Inst. Engr.	Elec. Engg.	25.07.2002
41	K. Venkataraman	AEE	Engg. Unit	25.07.2002
42	T.Radhakrishnan	AEE	Engg. Unit	25.07.2002
43	L. Venkataraman	AEE	Engg. Unit	25.07.2002
44	C. Ganesan	Sup. Engr.	Engg. Unit	25.07.2002
45	K. Arulanandan	Mechanic	Mech. Engg.	08.08.2002
46	C.S. Venkatesan	A S E	CC	29.08.2002
47	K. Krishnamurthy	T.O. Gr.I	Chem. Engg.	08.10.2002
48	Shantha Vijayakumar	T.O. Gr.I	Chemistry	08.10.2002
49	R. Balachandran Pillai	T.O. Gr.I	Chemistry	08.10.2002
50	R. Sappani	T.O. Gr.I	Chemistry	08.10.2002
51	R.Bakthavatsalu	T.O. Gr.I	Civil. Engg.	08.10.2002
52	T.V. Lakshmi	T.O. Gr.I	Civil. Engg.	08.10.2002
53	V. Palaniappan	T.O. Gr.I	Elec. Engg.	08.10.2002
54	S. Balakrishnan	T.O. Gr.I	Hum. & Soc. Sci.	08.10.2002
55	S. Raja Rao	T.O. Gr.I	Mech. Engg.	08.10.2002
56	A.T.Seshadri	T.O. Gr.I	Physics	08.10.2002
57	S.Sainathan	T.O. Gr.I	Physics	08.10.2002
58	M.Veerabhadra Rao	T.O. Gr.I	Physics	08.10.2002
59	T.R.Kesavan	T.O. Gr.I	Physics	30.10.2002
60	John Bosco Lourdusamy	Asst. Prof.	Hum. & Soc. Sci.	21.01.2003
61	K. Srilata	Asst. Prof.	Hum. & Soc. Sci.	08.01.2003
62	Prathap Haridoss	Asst. Prof.	Metl&Matls. Engg.	08.01.2003
63	Gummadi Sathyanarayananaidu	Asst. Prof.	Chemical. Engg.	08.01.2003
64	Manu Santhanam	Asst. Prof.	Civil Engg.	08.01.2003
65	Amlan Kumar Sengupta	Asst. Prof.	Civil Engg.	08.01.2003

Sl. No.	Name	Designation	Department	Date
66.	Tanmay Basak	Asst. Prof.	Chem. Engg.	08.01.2003
67.	N.S.Narayanaswamy	Asst.Prof.(on cont.)	Comp.Sci& Engg.	08.01.2003
68.	Venkatesh Balasubramanian	Asst. Prof.	App. Mech.	08.01.2003
69.	Y. Shanthi Pavan	Asst. Prof.	Elec. Engg.	08.01.2003
70.	Goudappa R.Dodagoudar	Asst. Prof.	Civil Engg.	06.02.2003
71.	K. Chandraraj	Asst. Prof.	Chem. Engg.	05.02.2003
72.	Mahavir Kumar Jain	Asst. Prof.	Physics	19.02.2003
73.	G. Arun Kumar	Asst. Prof.	Hum.&Soc. Sci.	21.02.2003
74.	J.M.Mallikarjunappa	Asst. Prof.	Mech. Engg.	05.03.2003

2.3.2 Faculty / Staff who have retired during the period 01.04.2002 to 31.03.2003:

Superannuation:

Sl. No.	Name	Designation	Department	Date
1.	Jesudoss.T.	Sr. Sweeper	Engg. Unit	30.04.2002
2.	Joseph S.	Supervisor(SG)	CWS	30.04.2002
3.	Munirathinam P.S.	Office Attdt. GR.I(SG)	Gen. Library	30.04.2002
4.	Manickm M.	Asst.Registrar(SS)(S&P)	S & Purchase	31.05.2002
5.	Mohanakumaran N.	Supervisor (SG)	CWS	31.05.2002
6.	Paramanandam P.	Asst. Reqr (F&A)	Accounts	31.05.2002
7.	Rajagopalan P.S.	Sr. Stenographer(SG)	C WS	31.05.2002
8.	Ranganathan K.	Sr. Mechanic (SG)	Comp. Tech. Centre	31.05.2002
9.	Somasundaram T.D.	Supervisor (SG)	Mech. Engg.	31.05.2002
10.	Venkatachari K.	Chief Store Keeper(SG)	Mett & Malls. Engg.	31.05.2002
11.	Majhi J. DR.	Professor	Physics	30.06.2002
12.	Muthukrishnaiah K. DR.	Professor	Ocean Engg.	30.06.2002
13.	Radhakrishnan V.DR.	Professor	Mech.Enng.	30.06.2002
14.	Venkateswara Rao V. DR.	Asso. Professor	Physics	30.06.2002
15.	Angamuthu K.	Sr Mech (CARPENTER)	Engg. Unit	30.06.2002
16.	Balasubramanian V.	Supervisor(SG)	Aero. Engg.	30.06.2002
17.	Chinnadurai S.	Sr. Mech.(SG)	Mech. Engg.	30.06.2002
18.	Govindaswamy S.	Sr. Lab Assistant	Trant. Cell	30.06.2002
19.	Krishnamurthy M.	Lab Tech. GR.I(SG)	Hospital	30.06.2002
20.	Latchammal	Sweeper GR.I(SG)	Engg. Unit	30.06.2002
21.	Loganathan P.	Sr. Lab Assistant	Engg. Unit	30.06.2002
22.	Paramanandam D.	Sr. Technical Asst.(SG)	Comp. Tech. Centre	30.06.2002
23.	Raju M.	Sr.Helper	Engg. Unit	30.06.2002
24.	Ramachandran N.	Superintendent	Hospital	30.06.2002
25.	Ramayyan M.	Sr. Mali (SG)	Engg. Unit	30.06.2002
26.	Sarangapani K.	Sci. Officer GR.I	Physics	30.06.2002
27.	Arun A.	Sr.Mtc. Engineer	Mech. Engg.	31.07.2002
28.	Balasundaram M.	Sr. Lab Assistant	Civil Engg.	31.07.2002
29.	Desikan C.	Sr. Mechanic (SG)(CARP)	Engg. Unit	31.07.2002
30.	Kanniappan V.	Draughtsman GR.I(SG)	Civil Engg.	31.07.2002
31.	Muthu A.	Sr. Mali (SG)	Engg. Unit	31.07.2002
32.	Subramani K.	Cook GR.I (SG)	Taramani Guest House	31.07.2002
33.	Thomas L.	Sr. Library Attendant	Gen. Library	31.07.2002
34.	Venkatraman K.	Assistant (SG)	Chem.I Engg.	31.07.2002
35.	Devassy A.V.	Sr.Helper (PUMP OPER)	Engg. Unit	31.08.2002
36.	Mohanarangan K.	Store Keeper	Engg. Unit	31.08.2002
37.	Pattabiraman B.	Supervisor (SG)	Aero Engg.	31.08.2002
38.	Ramachandran M.	Sr. Helper (PUMP OPER)	Engg. Unit	31.08.2002
39.	Ramakrishnan S.N.	Supervisor (SG)	Mech. Engg.	31.08.2002
40.	Sivadasan K.	Sr. Lab Assistant	Civil Engg.	31.08.2002
41.	Vasudevan K.	Sr. Lab Assistant	Chem. Engg.	31.08.2002
42.	Mothiram Patil K.DR.	Professor	App. Mech.	30.09.2002
43.	Chelliah S.	Supervisor (SG)	Ocean Engg.	30.09.2002
44.	Dorai V.	Plumber (SG)	Engg. Unit	30.09.2002
45.	Madurai V.	Sr. Helper	CWS	30.09.2002
46.	Mani K.	Assistant (SG)	Accts Section	30.09.2002
47.	Ramachandran K.	Sr. Helper	CWS	30.09.2002
48.	Singaram N.	Sr. Helper	Eng. Unit	30.09.2002

Sl. No.	Name	Designation	Department	Date
49.	Thanikachalam S.K.	Assistant (SG)	App.Mech.	30.09.2002
50.	Thulasilakshmi S.S.	Assistant (SG)	App. Mech.	30.09.2002
51.	Venkataraman K.	AEE	Engg. Unit	30.09.2002
52.	Nainan P. kurian DR.	Professor	Civil Engg.	31.10.2002
53.	Satyanarayana rau V. DR.	Professor	Ocean Engg.	31.10.2002
54.	Babu R.	HSG	Security Sec	31.10.2002
55.	Chandrasekharan M.	Assistant (SG)	NCC	31.10.2002
56.	Masilamani C.	Sr. Helper	Engg. Unit	31.10.2002
57.	Subramanian N.	Asst. Regr.	Admn.III	30.11.2002
58.	Palaniappan V.	Tech. Off. GR.I	Elect. Engg.	30.11.2002
59.	Mani G.	Supervisor (SG)	Computer Centre	30.11.2002
60.	Pranesh M.R. DR.	Professor	Ocean Engg.	31.12.2002
61.	U.N. Srivastava DR.	Professor	Mathematics	31.12.2002
62.	Sundaram G.M.	Jr. Mechanic	App. Mech.	31.12.2002
63.	Subramanian C.S.	Supervisor(SG)	Mech. Engg.	31.12.2002
64.	Rajan P.V.	HSG (SG)	Security Sec	31.12.2002
65.	Balasubramanian N. DR.	Professor	Chemistry	31.01.2003
66.	P.C. Majhee Sri	Asst. Professor	Elec. Engg.	31.01.2003
67.	Rajagopalan R. DR.	Professor	Hum.&Soc.Sci	31.01.2003
68.	Sobhaa rao D.	SPA (SG)	Gen.Library	31.01.2003
69.	Pichaimuthu M.	Maistry (HORT)	Engg. Unit	31.01.2003
70.	Ramachandran P.	Asst. Regr.	Acc.Section	31.01.2003
71.	Jothi Ramalingam S.	Supervisor(SG)	Mech. Engg.	31.01.2003
72.	Chandraguptan A.	Supervisor(SG)	CWS	31.01.2003
73.	Balakrishnan E.	Supervisor	App. Mech.	28.02.2003
74.	Raman R. DR.	Professor	Mech. Engg.	28.02.2003
75.	Mani L.	Supervisor (ELEC)	Engg. Unit	28.02.2003
76.	Thomas M.M.	UDC (SG)	Mech. Engg.	28.02.2003
77.	Vijayasankaran T.	Jr. Mechanic	Mech. Engg.	28.02.2003
78.	Venugopal V.	HSG	Security Sec	28.02.2003
79.	Kondiah M.	Sr. Sweeper	Engg. Unit	28.02.2003
80.	Aravindan P.K. DR.	Professor	Civil Engg.	31.03.2003
81.	Anthony Reddy M. DR.	Asst. Prof.	Elec. Engg.	31.03.2003
82.	Swaminathan S.	AEE	Engg. Unit	31.03.2003
83.	Sadasivaiah D.	Tech. Off GR.I	Elec. Engg.	31.03.2003
84.	Ganesh Babu G.	Supervisor(SG)	CWS	31.03.2003
85.	Nagappan R.	Supervisor	OEC	31.03.2003
86.	Henry Daniel P.	Jr. Mech. (SG)	App. Mech.	31.03.2003
87.	Anandan V.	Jr. Mechanic	Mech. Engg.	31.03.2003
88.	Sathya P.	Sweeper GR.I(SG)	Engg. Unit	31.03.2003
89.	Kanagasabai N.	Daftry GR.I (SG)	Admn.I	31.03.2003
90.	Adimoolam T.	Office Attdl.(SG)	Dir's Office	31.03.2003

2.3.2.1 Voluntary Retirement:

Sl. No.	Name	Designation	Department	Date
1.	Ankamma R.	Sweeper GR.I(SG)	Engg. Unit	10.07.2002
2.	Veeraraghavan V.	Secretary	Academic Sec.	15.07.2002
3.	Lakshmi A.	Secretary	Hum & Soc. Sci.	17.07.2002
4.	Karunamurthy D.	Sr. Sweeper	Engg. Unit	01.08.2002
5.	Ivans T.	Sr. Sec.Inspector(SG)	Security Sec.	02.08.2002
6.	Shanmugam P.	Sr. Mali (SG)	Engg. Unit	03.10.2002
7.	Obiah N.G.	Sr. Helper	Engg. Unit	01.11.2002
8.	Subramanian C.	UDC (SG)	Academic Sec.	01.11.2002
9.	Ramar .K. DR.	Professor	Elec. Engg.	11.12.2002
10.	Padmanabhan.G	Sr. Helper	Engg. Unit	11.03.2003

2.3.2.2 Resignation:

Sl. No.	Name	Designation	Department	Date
1.	Padmanabhan.L	Lab. Attdt.	Aero. Engg.	0209.2002
2.	German Mary V.M.A.	Lib.Attdt. Gr.II	Library	23.10.2002
3.	Dr.R.Devanathan	Assistant Professor	Mett&Matts. Engg.	06.03.2003

2.3.2.3 Expired:

Sl. No.	Name	Designation	Department	Date
1.	Murugesan, B.	Sr. Mech.(SG)(CARP.)	Engg.Unit	10.02.2002
2.	Francis, S.	Security Guard GR.I(SG)	Security	12.03.2002
3.	Velayudam, T.R.	Conductor GR.I(SG)	Transport Cell	01.04.2002
4.	Venkatesan, G.	Helper GR.II	Admn.II	17.04.2002
5.	Palaniswamy, B.	H.S.G(SG)	Security	16.07.2002
6.	Ramachandran, G.	Supervisor(SG)(Horticulture)	Engg.Unit	28.10.2002
7.	Mani, S.	Helper GR.I(SG)	Cen. Library	03.01.2003
8.	Balavenkataiah, V.	Senior Sweeper	Engg.Unit	15.01.2003
9.	Dillibabu, V.	Senior Helper	Engg.Unit	26.01.2003

2.3.2 Faculty/Officers/Staff who were on long leave:

Sl. No.	Name & Department	Duration	Nature of Leave
1.	Dr.P.Bhattacharyya, Professor, Mathematics	14.06.1999 to 30.04.2003	EOL
2.	Dr.V.S.Ramachandra Rao, Professor, Chemical Engg.	01.08.2000 to 04.08.2002	EOL
3.	Dr.R.S.Sirohi, Professor, Physics	13.12.2000 to 30.04.2005	EOL
4.	Dr.V.Sundar, Professor, Ocean Engg.	01.10.2001 to 30.09.2002	EOL
5.	Dr.B.H.L.Gowda, Professor, App. Mechanics	01.04.2001 to 31.03.2003	EOL
6.	Dr.P.Sesha Talpa Sai, Assoc.Prof. Chem. Engg.	01.06.2001 to 30.05.2003	EOL
7.	Dr.D.R.G.Achar, Professor, Metl. & Matls. Engg.	01.08.2001 to 31.07.2003	EOL
8.	Dr.S.Pushpavanam, Professor, Chemical Engg.	02.08.2001 to 28.07.2002	EOL
9.	Dr.K.A.Padmanabhan, Professor, Metl. & Matls. Engg.	28.09.2001 to 27.09.2003	EOL
10.	Dr.Sukhendu Das, Asst. Professor, Comp. Sci. & Engg.	30.11.2001 to 01.06.2003	EOL
11.	K.Nagarathnam, Off.Attdt, Admn.II	11.02.2002 to 10.01.2003	EOL & HPL
12.	Saraswathi Chandrasekaran, LDC, Accounts.	01.03.2002 to 30.09.2002	EOL on FST
13.	L.Padmanabhan, Lab.Attdt., Metl. & Matls. Engg.	01.04.2002 to 10.07.2002	EOL on FST
14.	C.Baby, Tech. Asst., RSIC	28.05.2002 TO 27.05.2003	EOL
15.	Teresa Gomes, Nurse, Institute Hospital	24.06.2002 to 29.07.2002	EL
16.	Dr.S.Ponnusamy, Assoc. Prof., Mathematics	17.08.2002 to 18.08.2003	EOL
17.	Dr.M.Sivakumar, Asst. Prof., Applied Mechanics	27.08.2002 to 20.12.2003	EOL
18.	V.Subramanian, Daftry Gr.I (SG), Academic Sec.	25.11.2002 to 24.12.2002	EL
19.	V.Ramkumar, Tech.Asst., Chemistry.	06.01.2003 to 05.07.2003	EOL
20.	G.Mathangi, UDC, Mathematics	24.01.2003 to 30.01.2003	EL
21.	P.M.Kumaraswamy, Sr.Gest.Operator, CCE	01.02.2003 to 30.06.2003	HPL
22.	Dr.P.R.Vaya. Professor, Electrical Engg.	03.02.2003 to 02.02.2005	EOL
23.	J.Rajeswari, S.T.A., Elec. Engg.	10.03.2003 to 05.12.2003	EL/HPL/EOL
24.	Dr. M.N. Sudheendra Rao, Professor, Chemistry	16.08.2001 to 15.12.2002	Sab. Leave
25.	Dr.T.S.Natarajan, Professor, Physics	27.06.2001 to 25.06.2002	Sab. Leave
26.	Dr.S.C. Chaudhary, Professor, HSS	18.07.2001 to 28.07.2002	Sab. Leave
27.	Dr. E.G. Tulapurkara, Professor / Aerospace Engg.	01.01.2002 to 30.06.2002	Sab. Leave
28.	Dr. V. Damodara Das, Professor, Physics	04.03.2002 to 27.02.2003	Sab. Leave
29.	Dr.Shankar Narasimhan, professor, Chem. Engg.	07.06.2002 to 01.08.2003	Sab.Leave
30.	Dr.Koshy Verghese, Assoc. Professor, Civil Engg.	16.05.2002 to 21.07.2003	Sab.Leave
31.	Dr.A.K.Mishra, Assoc. Professor, Chemistry	17.06.2002 to 18.04.2003	Sab. Leave
32.	Dr.G.Ranga Rao, Asst. Professor, Chemistry	30.07.2002 to 03.08.2003	Sab. Leave
33.	Dr.(Mrs.) Archita Patnaik, Assoc. Professor, Chemistry	19.08.2002 to 18.06.2003	Sab. Leave
34.	Dr.C.Pandurangan, Professor, Computer Sci. & Engg.	20.01.2003 to 19.01.2004	Sab. Leave
35.	Dr.S.K.Bhattacharyya, Professor, Ocean Engg.	30.01.2003 to 29.01.2004	Sab. Leave

2.4 Staff Welfare:

2.4.1 Human Resource Development:

As part of its 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 programmes 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 and to evolve best practices for adoption in 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. During this year, courses have been organized for faculty members, students of the institute and for the children of employees. Classes were held for employees, including special sessions for women employees, to upgrade their skills in computer. As for hardware, employees were deputed for training and skills enhancement in a variety of areas such as CNC Machining, Gear cutting and Inspection, Training in Supervision in machining, milling and shaping as well as in NDT and Advanced Evaluation of Concrete Structures. In addition to the above, fighting fire hazards and yoga/meditation have also received attention.

For children of employees in the age group 14-17 and 10-13, special programmes were conducted on communication skills, memory skills, speed-reading, team-work, career guidance etc. Programmes were also conducted for children over and below 5 years of age.

The HRD activities were initiated at the Institute in 1997 under the charge of a professor. During the period under report, 15 programmes were conducted over a period of 73 days. The total number of participants was 560.

HRD programmes Conducted

Sl. No.	Period	Title of the Training Programme	No. of Participants
1.	15-16 April 2002	Motivational Programs for dept. staff	25
2.	20-25 April 2002	Creativity through curiosity children's programs (3 Batches)	75
3.	2 nd May 2002 & 5 th May 2002	Joy of English and Fun-filled Maths	20
4.	6 th May 2002	Fire fighting training	30
5.	18 th May 2002 - 2 nd Jun, 2002	Creativity through curiosity Children's programs (5 Batches)	106
6.	27 th May 2002	Future fire fighting	30
7.	6-10 May 2002	I E Rules for Contractor, Consumers and Suppliers	2
8.	13-24 June 2002	Power system Studies	2
9.	17-21 June 2002	Energy audit and Conservation	2
10.	3-14 June 2002	Power and Telecommunication	1
11.	25-26 June 2002	Enhancing Competitiveness through Green Productivity, Hotels Buildings	4
12.	8-26 July 2002	Computer skill training program for Security staff	50
13.	5-7 August 2002	Non Destructive Testing and Evaluation of concrete structure.	3
14.	12-21 August 2002	Atma Gnana Yoga	7
15.	16-27 Sept. 2002 3-4 October 2002	Training in Computer Use	132
16.	23 rd Sept. 2002- 2 nd October 2002	Atma Gnana Yoga	8
17.	20-21 Sept. 2002	ISO Internal Audit Program	30
18.	21 st Sept. 2002	Task Force of The Ministry of HRD	15
19.	25-26 Sept. 2002	ISO 9000 for educational institutions, conducted by the Indian Institute of Quality Management.	2
20.	20 th Nov. 2002 - 31 st Dec. 2002	Special Technical Training at CVRDE	2
21.	11-13 Dec. 2002	Advanced Testing and Evaluation of Structures and Components, SERC	3
22.	22-31 Dec. 2002	Children's program, Dec '02	105
23.	13-23 Jan. 2003	Atma Gnana Yoga	7
24.	23-25 Jan. 2003	Pedagogy and Management, Civil	20
25.	24 th Mar. 2003 - 02 nd Apr. 2003	Atma Gnana Yoga	10

2.4.2 Hindi Coaching:

In accordance with the directions of the Govt. of India, Hindi classes were conducted regularly to both technical and administrative staff members to improve their knowledge in Hindi. In 2002-2003, 34 staff members were offered this course. As on 31.03.2003, 932 staff members were offered this course and 9

staff members were also offered Hindi Typewriting / Computer Training Course for a duration of 40 working days.

2.4.3 School Fee Concession:

Institute reimbursed the fees paid by staff members for their childrens' education as per Govt. of India norms. During the period under report, 66 staff members were benefitted.

2.4.4 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 2002-2003, 31 children were benefitted.

2.4.5 Advances:

During the period under report a sum of Rs. 50.59 lakhs was sanctioned for House Building Advance. Rs. 19.75 lakhs was also sanctioned towards Conveyance / PC / Festival Advance. The break-up is given below:

Sl. No.	Advance	No. of Employees	Amount sanctioned (in Rs.)
1.	House Building Advance	11	50,58,525.00
2.	Car Advance	2	3,54,936.00
3.	Two Wheeler Advance	34	7,52,123.00
4.	Personal Computer Advance	1	48,960.00
5.	Cycle Advance	7	10,500.00
6.	Festival Advance	539	8,08,500.00
Total			70,33,544.00

2.4.6 Meetings of the Authorities:

Board of Governors : 4 meetings were held on 24.05.2002, 25.07.2002, 20.12.2002 and 15.02.2003
 Senate : 4 meetings were held on 09.04.2002, 22.07.2002, 30.10.2002 and 21.02.2003
 Finance Committee : 1 meeting was held on 20.12.2002
 Buildings & Works Committee : 1 meeting was held on 16.12.2002

2.5 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
 Academic Research : Dr. S. Narayanan
 Administration : Dr. G. Subramanian
 Industrial Consultancy & Sponsored Research : Dr. S. Srinivasa Murthy (upto 02.03.2003)
 : Dr. V. Kalayanaraman (from 03.03.2003)
 Students : Dr. S.S. Gokhale

Heads of Departments:

Aerospace Engg. : Dr. S.Santhakumar
 Applied Mechanics : Dr. J.Raamachandran
 Chemical Engg. : Dr. M.Chidambaram
 Chemistry : Dr. B.Viswanathan
 Civil Engg. : Dr. M.S.Mathews
 Computer Sci.& Engg. : Dr. S.Raman
 Electrical Engg. : Dr. C.Venkateshaiah
 Humanities & Soc.Sci. : Dr. T.T. Narendran (upto 20.02.2003)
 : Dr. R.N. Anantharaman (from 21.02.2003)
 Mathematics : Dr. A. Avudainayagam (upto 01.12.2002)
 : Dr. S. Kalpakam (from 02.12.2002)
 Mechanical Engg. : Dr. V. Ganesan
 Metallurgical & Materials Engg. : Dr. K. Prasad Rao
 Ocean Engg. : Dr. K. Muthukrishnaiah (upto 31.05.2002)
 : Dr. V.G. Idichandy (from 01.06.2002)

Physics : Dr. V.R.K. Murthy (upto 02.02.2003)
Dr. A. Subrahmanyam (from 03.02.2003)

Heads of Research Centres:

Composite Technology Centre : Dr. S.K. Malhotra
Materials Sciences Research Centre : Dr. B. Viswanathan
Regional Sophisticated Instrumentation Centre : Dr. S. Sankararaman

Head of Special Facilities for interaction with Other Institutions:

Centre for Industrial Consultancy & Sponsored Research : Dr. S. Srinivasa Murthy (upto 02.03.2003)
Dr. V. Kalyanaraman (from 03.03.2003)
Centre for Continuing Education : Dr. V.G.Idichandy (upto 04.06.2002)
Dr. K.Krishnaiah (from 05.06.2002)
Central Electronics Centre : Dr. M. Kumaravel
Computer Centre
Head : Dr. R.Krishnakumar (upto 05.01.2003)
Chairman : Dr. S.Srinivasan (from 06.01.2003)
Vice-Chairman : Dr. K.Srinivasan (from 06.01.2003)
GATE
Chairman : Dr. N.Sivaprasad
Vice-Chairman : Dr. Job Kurian
JEE
Chairman : Dr. M.Govardhan
Vice-Chairman : Dr. N. Ramesh Babu / Dr.K. Ramamurthy

(ii) Central Administration:

Director : Prof. M.S. Ananth
Officer on Special Duty : Dr. A. Swamidural

Deputy Registrars:

Academic : Dr. K. Panchalan (upto 01.12.2002)
Dr. T. Suryakumar (from 02.12.2002)
Administration : Dr. T.Suryakumar(upto 01.12.2002)
Dr. K. Panchalan (from 02.12.2002)
Finance & Accounts : J. Rammohan
Stores & Purchase : A. Thirunavukkarasu
Training & Placement : A.K. Pattabiraman
Internal Audit Officer : R. Esakkimuthu

Assistant Registrars:

Stores & Purchase : S. Manickam (upto 31.05.2002)
A.V. Sudarsanam (from 07.06.2002)
Finance & Accounts : P. Paramanandam (upto 31.05.2002)
S. Mahalingam (from 10.06.2002)
P. Ramachandran (upto 31.01.2003)
Administration : U.J. Suresh (upto 17.06.2002)
N. Subramanian (from 10.06.2002 to 30.11.2002)
IC & SR : B. Ramasamy
G. Ravichandran (from 24.05.2002)
Hostels : U.J Suresh (from 18.06.2002)
Academic : M. Kuppan (upto 11.06.2002)
B. Nagarajan (from 12.06.2002)
Hospital : M. Kuppan (from 12.06.2002)
Registrar's office : K. Unnikrishnan (from 24.05.2002)
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. SP. Subramanian
Chief Medical Officer (Incharge) : Dr. N.A. Jayavelan
Air-conditioning Unit : Dr. R. Raman (upto 12.02.2003)
Dr. G. Venkatratnam (from 13.02.2003)
Central Gas Supplies Unit : Dr. R.P. Viswanath
Central Glass Blowing Section : Dr. S. Sankararaman
Central Photographic Section : Dr. D.K. Sharma (upto 24.07.2002)

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 : Dr. R.N. Anantharaman (from 21.02.2003)
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Dr. K. Krishnaiah (from 05.06.2002)
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Dr. K. Panchalan (from 02.12.2002)
Finance & Accounts : J. Rammohan
Stores & Purchase : A. Thirunavukkarasu
Training & Placement : A.K. Pattabiraman
Internal Audit Officer : R. Esakkimuthu

Assistant Registrars:

Stores & Purchase : S. Manickam (upto 31.05.2002)
A.V. Sudarsanam (from 07.06.2002)
Finance & Accounts : P. Paramanandam (upto 31.05.2002)
S. Mahalingam (from 10.06.2002)
P. Ramachandran (upto 31.01.2003)
Administration : U.J. Suresh (upto 17.06.2002)
N. Subramanian (from 10.06.2002 to 30.11.2002)
IC & SR : B. Ramasamy
G. Ravichandran (from 24.05.2002)
Hostels : U.J. Suresh (from 18.06.2002)
Academic : M. Kuppan (upto 11.06.2002)
B. Nagarajan (from 12.06.2002)
Hospital : M. Kuppan (from 12.06.2002)
Registrar's office : K. Unnikrishnan (from 24.05.2002)
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. SP. Subramanian
Chief Medical Officer (Incharge) : Dr. N.A. Jayavelan
Air-conditioning Unit : Dr. R. Raman (upto 12.02.2003)
Dr. G. Venkatratnam (from 13.02.2003)
Central Gas Supplies Unit : Dr. R.P. Viswanath
Central Glass Blowing Section : Dr. S. Sankararaman
Central Photographic Section : Dr. D.K. Sharma (upto 24.07.2002)

Central Workshop
National Service Scheme
Advisor, Sports

Advisor, Cultural
Foreign & Weaker Section Students

Vigilance
Placement & Training
Guidance & Counselling Unit

President (Alumini Association)

Management Representative for ISO 9000

Engineering Unit:

Chairman, Estate & Works Committee
Superintending Engineer
Assistant Executive Engineers

Public Health Officer

IC & SR:

Chief Techno Economic Officer
Sr. Techno Economic Officers

Dr. B. Ramamoorthy (from 25.07.2002)
: N.L.N.N. Kumar
: Dr. Susy Varughese
: Dr. B. Ramamoorthy (upto 02.01.2002)
: Dr. S. Neelamani (from 03.01.2002)
: Dr. L. Vijayaraghavan
: Dr. T.J. Kamalanabhan (upto 15.09.2002)
: Dr. S. Mohan (from 16.09.2002)
: Dr. V.G. Idichandy
: Dr. S. Narasimha Rao
: Dr. M. Govardhan (upto 14.05.2002)
: Dr. A. Mani (from 15.05.2002)
: Dr. A.R. Balakrishnan (upto 19.01.2003)
: Dr. G. Sundararajan (from 20.01.2003)
: Dr. G. Srinivasan

: Dr. C.P. Vendhan
: C. Ganesan
: S. Swaminathan (upto 31.03.2003)
: F. John De Britto
: V. Seenivasan
: K. Dharmaraj
: M. Ramachandran
: K. Viswanath
: L. Vekataraman
: T. Radhakrishnan
: V. Veerasamy

: Dr. D. Balakrishnan
: Mr. R. Sundaram /
: Mr. V. Suresh

3. ACADEMIC PROGRAMMES AND AWARD OF DEGREES

The Institute offered Ph.D. programme in 13 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 2002-03:

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, Part-time, 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 selection was made through a written test. For M.Sc. Chemistry branch, selection was made through a common test conducted jointly by IITK and IITB. 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 2002 and in Jan 2003 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 Engineering	29	7	-	13	-	2	5	56
2.	Applied Mechanics	-	-	-	33	-	11	13	57
3.	Chemical Engineering	52 34*	10 6*	-	29	-	4	14	149
4.	Chemistry	-	-	28	-	-	-	27	55
5.	Civil Engineering	45	11	-	85	-	19	26	186
6.	Computer Science & Engineering	31	7	-	66	-	21	10	135
7.	Electrical Engineering	82	31	-	81	-	29	13	236
8.	Humanities & Social Science	-	-	-	-	38	7	22	67
9.	Mathematics	-	-	30	7	-	-	13	50
10.	Mechanical Engineering	90	26	-	91	-	33	32	272
11.	Metallurgical Engineering	29	7	-	16	-	8	20	80
12.	Ocean Engineering	20	5	-	6	-	9	6	46
13.	Physics	10 ⁺	-	35	9	-	-	25	79
	Total	422	110	93	436	38	143	226	1468

* Bio-Technology; + Engineering Physics

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

Category	No.	Programme	Ph.D.	M.Tech.	M.S.	Total
Foreign Nationals	2	Q.I.P.	30	29		59
DASA (Indian Origin)	32	Sponsored		33	3	36
Scheduled Castes	126	Project		21	49	70
Scheduled Tribes	34	External Registration		18	17	35
Physically Handicapped	1					
Women Students	150	User-oriented Programme (M.Tech)				70
Defence Officers	33	Part Time Programme (M.Tech)				2

In addition to the above, 26 SC and 21 ST students joined Preparatory Course.

3.2 Students/Scholars Enrolment:

The total number of students on roll in various programmes of the Institute in the academic year 2002-03 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 Engineering	102	27	-	25	-	25	11	190
2.	Applied Mechanics	-	-	-	60	-	40	40	140
3.	Chemical Engineering	171 34*	56 6*	-	46	-	19	38	370

Central Workshop	: Dr. B. Ramamoorthy (from 25.07.2002)
National Service Scheme	: N.L.N.N. Kumar
Advisor, Sports	: Dr. Susy Varughese
	: Dr. B. Ramamoorthy (upto 02.01.2002)
	: Dr. S. Neelamani (from 03.01.2002)
Advisor, Cultural	: Dr. L. Vijayaraghavan
Foreign & Weaker Section Students	: Dr. T.J. Kamalanabhan (upto 15.09.2002)
	: Dr. S. Mohan (from 16.09.2002)
	: Dr. V.G. Idichandy
Vigilance	: Dr. S. Narasimha Rao
Placement & Training	: Dr. M. Govardhan (upto 14.05.2002)
Guidance & Counselling Unit	: Dr. A. Mani (from 15.05.2002)
	: Dr. A.R. Balakrishnan (upto 19.01.2003)
President (Alumini Association)	: Dr. G. Sundararajan (from 20.01.2003)
	: Dr. G. Srinivasan
Management Representative for ISO 9000	
Engineering Unit:	
Chairman, Estate & Works Committee	: Dr. C.P. Vendhan
Superintending Engineer	: C. Ganesan
Assistant Executive Engineers	: S. Swaminathan (upto 31.03.2003)
	: F. John De Britto
	: V. Seenivasan
	: K. Dharmaraj
	: M. Ramachandran
	: K. Viswanath
	: L. Vekataraman
	: T. Radhakrishnan
Public Health Officer	: V. Veerasamy
IC & SR:	
Chief Techno Economic Officer	: Dr. D.Balakrishnan
Sr. Techno Economic Officers	: Mr. R.Sundaram /
	: Mr. V.Suresh

3. ACADEMIC PROGRAMMES AND AWARD OF DEGREES

The Institute offered Ph.D. programme in 13 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.

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4.	Chemistry	-	-	28	-	-	-	27	55
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9.	Mathematics	-	-	30	7	-	-	13	50
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12.	Ocean Engineering	20	5	-	6	-	9	6	46
13.	Physics	10*	-	35	9	-	-	25	79
	Total	422	110	93	436	38	143	226	1468

* Bio-Technology; + Engineering Physics

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

Foreign Nationals	2	Q.I.P.	Ph.D.	30	59
			M.Tech.	29	
DASA (Indian Origin)	32	Sponsored	M.Tech.	33	36
			M.S.	3	
Scheduled Castes	126	Project	M.S.	21	70
			Ph.D.	49	
Scheduled Tribes	34	External Registration	M.S.	18	35
Physically Handicapped	1		Ph.D.	17	
Women Students	150	User-oriented Programme (M.Tech)			70
Defence Officers	33	Part Time Programme (M.Tech)			2

In addition to the above, 26 SC and 21 ST students joined Preparatory Course.

3.2 Students/Scholars Enrolment:

The total number of students on roll in various programmes of the Institute in the academic year 2002-03 are given below:

TABLE 2 - Students on roll

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1.	Aerospace Engineering	102	27	-	25	-	25	11	190
2.	Applied Mechanics	-	-	-	60	-	40	40	140
3.	Chemical Engineering	171 34*	56 6*	-	46	-	19	38	370

Sl. No.	Department	B.Tech.	Dual Degree	M.Sc.	M.Tech.	M.B.A.	M.S.	Ph.D.	Total
4.	Chemistry	-	-	47	-	-	-	109	156
5.	Civil Engineering	167	45	-	179	-	40	59	490
6.	Computer Science & Engineering	123	33	-	113	-	74	35	378
7.	Electrical Engineering	361	110	-	138	-	73	33	715
8.	Humanities & Social Sciences	-	-	-	-	79	18	41	138
9.	Mathematics	-	-	61	16	-	-	36	113
10.	Mechanical Engineering	355	93	-	193	-	61	95	797
11.	Metallurgical Engineering	102	25	-	29	-	23	43	222
12.	Ocean Engineering	79	22	-	15	-	34	24	174
13.	Physics	10 ⁺	-	64	13	-	-	61	148
Total		1504	417	172	827	79	407	625	4031

* Bio-Technology; + Engineering Physics

The above total includes the following:

Foreign Nationals	11	QIP	Ph.D.	79	127
			M.Tech.	48	
DASA (Indian origin)	80	Sponsored	M.Tech.	49	56
			M.S.	7	
Scheduled Castes	347	Project	M.S.	73	167
			Ph.D.	94	
Scheduled Tribes	89	External Registration	M.S.	27	73
			Ph.D.	46	
Women students	408	Registration Kept Alive	M.S.	30	52
			Ph.D.	22	
Defence Officers (M.Tech)	59	User-oriented Programme (M.Tech)			133
Physically Handicapped	1	Part Time Programme (M.Tech)			22

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	2002	2001	2000	1999 & others	Total
1.	Aerospace Engineering	26	26	22	28	102
2.	Bio-Technology	34	-	-	-	34
3.	Chemical Engineering	46	41	37	47	171
4.	Civil Engineering	38	45	40	44	167
5.	Computer Science & Engineering	33	30	29	31	123
6.	Electrical Engineering	80	92	93	96	361
7.	Engineering Physics	10	-	-	-	10
8.	Mechanical Engineering	87	89	74	105	355
9.	Metallurgical Engineering	25	25	24	28	102
10.	Ocean Engineering	20	21	18	20	79
Total		399	369	337	399	1504

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

Sl. No.	Branch	2002	2001	2000	1999	1998	Total
1.	Aerospace Engineering	7	6	4	6	4	27
2.	Bio-Technology	6	-	-	-	-	6
3.	Chemical Engineering	10	10	10	16	10	56
4.	Infrastructural Civil Engineering	8	9	8	10	10	45
5.	Computer Science & Engineering	7	7	6	6	7	33
6.	Micro Elec. & VLSI Design	10	11	8	9	7	45
7.	Communication Engineering	11	10	8	13	12	54
8.	Power System & Power Elec.	11	-	-	-	-	11
9.	Energy Technology	7	7	6	5	5	30
10.	Intelligent Manufacturing	9	6	5	8	4	32
11.	Product Design	9	6	5	6	5	31
12.	Metallurgical Engineering	7	5	4	5	4	25
13.	Naval Architecture & Ocean Engineering	4	6	4	4	4	22
Total		106	83	68	88	72	417

TABLE 5 - M.Sc students on roll

Sl. No.	Branch	2001	2002	Total
1.	Chemistry	26	21	47
2.	Mathematics	33	28	61
3.	Physics	30	34	64
Total		89	83	172

TABLE 6 - M.Tech students on roll

Sl. No.	Department \ Discipline \ Batch	2002	2001 & others	Total
1.	Aerospace Engineering	11	14	25
2.	Applied Mechanics:			
	AM 1 - Engineering Mechanics	7	9	16
	AM 2 - Industrial Tribology	6	5	11
	AM 3 - Maintenance Engineering & Management	5	10	15
	AM 4 - Bio-medical Engineering	14	4	18
3.	CH 1 - Chemical Engineering	23	23	46
4.	Civil Engineering:			
	CE 1 - Building Technology	12	16	28
	CE 2 - Environmental Engineering	1	8	9
	CE 3 - Geotechnical Engineering	6	7	13
	CE 4 - Hydraulic & Water Resource Engineering	5	6	11
	CE 5 - Structural Engineering	15	24	39
	CE 6 - Transportation Engineering	9	7	16
5.	CE 7 - Construction Technology & Management	19	22	41
6.	CE 8 - Computational Engineering	11	11	22
7.	CS 1 - Computer Science & Engineering	48	44	92
8.	CS 2 - Information Technology	12	7	19
9.	CS 3 - Software Engineering	1	1	2
10.	Electrical Engineering:			
	EE 1 - Communication Systems	15	15	30
	EE 2 - Energy Systems Engineering	10	14	24
	EE 3 - Micro Electronics	18	20	38
	EE 4 - Control & Instrumentation Systems	14	14	28
11.	EE 5 - Digital Signal Processing	9	9	18
12.	Mathematics:			
	Industrial Maths & Scientific Computing	7	9	16
13.	Mechanical Engineering:			
	ME 1 - Thermal Engineering	30	34	64
	ME 2 - Design	26	32	58
	ME 3 - Manufacturing Engineering	17	28	45
14.	ME 4 - Automotive Engine Technology	12	14	26
15.	MT - Metallurgical Engineering	15	14	29
16.	OE - Ocean Engineering	6	9	15
17.	Physics:			
	PH - Solid State Technology	8	5	13
Total		392	435	827

TABLE 7 - M.B.A. students on roll

Sl. No.	Branch	2001	2002	Total
1.	M.B.A	41	38	79

In addition to the above, 27 CSIR Research Associates and 47 Preparatory Course students were on the rolls.

3.3 New discipline/ stream introduced:

The following new disciplines were introduced in July 2002 with an intake noted against each:

- | | | | | | |
|----|-------------|---|----------------------------------|---|----|
| 1. | B.Tech | - | Bio-Technology | - | 45 |
| 2. | B.Tech | - | Engineering Physics | - | 12 |
| 3. | Dual Degree | - | Bio-Technology | - | 10 |
| 4. | Dual Degree | - | Power System & Power Electronics | - | 11 |

3.4 Courses Offered:

In the academic year 2002-03, 1091 courses were offered of which 537 courses in July–Nov 2002 and 554 courses in Jan–May 2003. 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 2002				No. of courses offered in Jan – May 2003			
		Core	Elect.	Lab.	Total	Core	Elect.	Lab	Total
1	Aerospace Engineering	15	8	4	27	17	6	4	27
2	Applied Mechanics	10	18	4	32	5	20	3	28
3	Chemical Engineering	13	12	2	27	15	14	3	32
4	Chemistry	14	5	5	24	15	12	3	30
5	Civil Engineering	29	30	8	67	39	35	7	81
6	Computer Science & Engineering	14	17	9	40	13	16	6	35
7	Electrical Engineering	20	33	9	62	25	28	7	60
8	Humanities & Social Science	16	38	3	57	14	41	1	56
9	Mathematics	11	22	0	33	14	18	0	32
10	Mechanical Engineering	23	39	5	67	17	56	8	81
11	Metallurgical Engineering	16	20	7	43	12	14	7	33
12	Ocean Engineering	15	11	3	29	14	15	2	31
13	Physics	14	8	4	26	10	14	3	27
14	COMPTECH	0	2	1	3	0	1	0	1
	Total	210	263	64	537	210	290	54	554

3.5 Convocation:

The 39th Convocation was held on 26.7.2002. Dr. Anji Reddy, Chairman, Dr. Reddy's Group of Companies, Hyderabad delivered the Convocation address. 939 candidates were awarded various degrees. 712 candidates received degrees in person. The department-wise details of degrees awarded are given below:

TABLE 9 – Degrees awarded

Sl.No.	Department	B.Tech.	M.Sc.	M.Tech.	M.S.	Ph.D.	Total
1.	Aerospace Engineering	27	-	8	3	-	38
2.	Applied Mechanics	-	-	20	8	2	30
3.	Chemical Engineering	46	-	30	2	5	83
4.	Chemistry	-	20	-	-	14	34
5.	Civil Engineering	45	-	67	4	4	120
6.	Computer Science Engineering	33	-	40	14	1	88
7.	Electrical Engineering	71	-	51	13	2	137
8.	Humanities & Social Sciences	-	-	20	6	3	29
9.	Mathematics	-	26	8	-	2	36
10.	Mechanical Engineering	96	-	92	20	9	217
11.	Metallurgical Engineering	24	-	16	1	2	43
12.	Ocean Engineering	19	-	13	9	3	44
13.	Physics	-	33	6	-	1	40
	Total	361	79	371	80	48	939

With this Convocation, the total number of degrees awarded so far by the Institute is 24,961, the details of which are given below:

S.No.	Programme	No.
1	Ph.D.	2353
2	M.S.	1591
3	M.Tech	8337
4	M.Sc.	1874
5	B.Tech	10541
6	B.Sc (Tech)	20
7	DIIT	245

3.6 Award of Prizes to the students:

3.6.1 Convocation Prizes:

The following (57 Prizes) are the details of Prizes awarded to the students at the 39th Convocation:

- President of India Prize .. K. Jayanth Kumar B.Tech Comp. Sci. & Engg.
- Governor's Prize .. Ajay Bharat Candade B.Tech Chem. Engg.

Other Prizes:

Sl.No.	Donor	Department	Name of student
Doctor of Philosophy – Ph.D.			
1.	Prof. C N Pillai Prize	Chemistry	S Sulthan Allavudeen
2.	Prof Langmuir Prize	Chemistry	B Rajesh
3.	Sudharshan Bhat Memorial Prize	Metallurgical Engg.	K P Dhandapani &) Sankaranarayanan K) Tie
Master of Technology – M.Tech.			
1.	Air India Prize	Aerospace Engg.	Gattu Balasubramanyam
2.	Indira Sivasailam Merit Prize	Engg. Mechanics	Venkata Suresh B
3.	Usha Kothandaraman Memorial Prize	Engg. Mechanics	Venkata Suresh B
4.	Institute Merit Prize	Industrial Tribology	J Murali Mohan
5.	Institute Merit Prize	Maint. Engg. & Mgmt.	Syed Rafi Ahmed
6.	Institute Merit Prize	Biomedical Engg.	Nizar Hussain M
7.	Dr.K.Subba Raju Memorial Prize	Chemical Engg.	Chilka Amarvir Goverdhan
8.	Valli Anantharamakrishnan Merit Prize	Civil Engg.	Sameena Riaz &) Hari Krishna Yandamuri) Tie
9.	K Devarajan Memorial Prize	Civil Engg. (Transportation Engg)	Sameena Riaz
10.	Institute Merit Prize	Computational Engg.	Rahmathulla Pariyanthadathil
11.	CMC Prize	Comp. Sc. & Engg.	Pradeep S
12.	Prof. H.N.Mahabala Endowment Prize	Comp. Sc. & Engg.	K Suchendar
13.	Siemens Prize	Electrical Engg.	Rajani K
14.	Prof. Achim Bopp Endowment Prize	Electrical Engg.	Manjula R &) Rama Kanth S) Tie)
15.	Dr. Ing Dieter Kind Prize	Electrical Engg.	Ganesh Balu Kumbhar
16.	Coka Parthasarathy Prize	Industrial Management	Shyam G
17.	K.V.Arunkumar Memorial Prize	Industrial Management	Shyam G
18.	Prof. Helmut Neunzert Endowment Prize	Industrial Mathematics & Scientific Computing	Randhir Kumar Singh
19.	Prof. B. Sengupto Prize	Mechanical Engg.	T V Vishnu Vardhan
20.	Dr. S.Vaidyanathan Memorial Prize	Mechanical Engg.	Rodrigues Mariano Francisco
21.	Prof. B.V.A.Rao Endowment Prize	Mechanical Engg.	T V Vishnu Vardhan
22.	S. Anantharamakrishnan Merit Prize	Mechanical Engg.	Kodancha Govind Krishnaraj
23.	Prof Ramamohana Rao Memorial Prize	Mechanical Engg.	Jagadale Pradip Appaso
24.	Delphi-TVS Diesel Systems Ltd. Prize	Auto. Engg. Tech.	Aghav Yogesh Vishnu
25.	Mico-Bosch Prize	Mechanical Engg.	Saleel Ismail
26.	S. Anantharamakrishnan Memorial Prize	Metallurgical Engg.	V S Ravi Kumar Tata
27.	Sudarshan Bhat Memorial Prize	Metallurgical Engg.	V S Ravi Kumar Tata
28.	American Bureau of Shipping Prize	Ocean Engg.	Sahadev Alias Pramod B Naik
29.	Institute Merit Prize	Solid State Tech.	Munish Kumar
Master of Science – M.Sc.			
1.	Dr. S R Ramadas 60th Birthday Commemoration Award	Chemistry	Iyer Karthik Srinivasan
2.	Ratna Rao Memorial Prize	Chemistry	Iyer Karthik Srinivasan
3.	Mira Paul Memorial Prize	Mathematics	Shubha Tandon
4.	Prof. Chilukury Ramasastry Memorial Prize	Physics	Meeraa J
Bachelor of Technology - B.Tech.			
1.	President of India Prize	Comp. Sc. & Engg.	K Jayanth Kumar
2.	Governor's Prize	Chemical Engg.	Ajay Bharat Candade
3.	Dr.Shanker Dayal Sharma (Former President of India) Prize	Metallurgical Engg.	Vignesh Gowrishankar
4.	Bharat Ratna M.Visveswaraya Memorial Prize	Comp. Sc. & Engg.	K Jayanth Kumar

Sl.No.	Donor	Department	Name of student
5.	HAL Prize	Aerospace Engg.	Kusumanchi S V Kamaraju
6.	B.Ravichandran Memorial Prize	Chemical Engg.	Karthik Pennadam Jayapal
7.	Reliance Heat Transfer (P) Ltd. Prize	Chemical Engg.	Karthik Pennadam Jayapal
8.	C.A. Sastry Endowment Prize	Chemical Engg.	Ajay Bharat Candade
9.	Larsen & Toubro ECC Endowment Medal	Civil Engg.	S Vijay
10.	Alumni Association Prize	Comp. Sc. & Engg.	K Jayanth Kumar
11.	B Ravichandran Memorial Prize	Comp. Sc. & Engg.	K Jayanth Kumar
12.	Motorola Prize	Comp. Sc. & Engg.	T Sandeep
13.	Siemens Prize	Electrical Engg.	Karthik Raghupathy
14.	Phillips (India) Prize	Electrical Engg.	Karthik Raghupathy
15.	Prof.Achim Bopp Endowment Prize	Electrical Engg.	Shishir Kumar Rai
16.	Banco Foundation Prize	Mechanical Engg.	Sandipan Mishra
17.	Prof. G.V.N.Rayudu Memorial Prize	Mechanical Engg.	Sandipan Mishra
18.	Sivasailam Merit Prize	Mechanical Engg.	M Chetan &) Sripathi Vangipuram Canchi)Tie
19.	Vaidy Krishnan Memorial Prize	Mechanical Engg.	Mangipudi Ravi Srinivas
20.	Dr. Dhandapani Memorial Prize	Metallurgical Engg.	Vignesh Gowrishankar
21.	American Bureau of Shipping Prize	Naval Arch. and Ocean Engg.	Harish M

3.6.2 Institute Day Prizes:

On the basis of performance during the academic year 2002-03, the following students were awarded Merit Prizes (25 Nos.) on the Institute day held on 18.04.2002:

Sl.No.	Donor	Roll No.	Name of student
I. Institute Merit Prizes:			
B.Tech. (1st and 2nd Semesters)			
1.	First Prize (Book value of Rs.1500/-)	CS00163	S Sriram
2.	Second Prize (Book value of Rs.1000/-)	CS00294	Dilip Antony Joseph
B.Tech (3rd and 4th Semesters) (Book value of Rs.1000/- for each Branch)			
3.	Aerospace Engineering	AE99037	Sridharan D
4.	Chemical Engineering	CH99095	Sreeja Gopal
5.	Civil Engineering	CE99115	Ashish Gupta
6.	Electrical Engineering	EE99252	Jay Kumar S
7.	Mechanical Engineering	ME99369	Lavanya Ravi
8.	Metallurgical Engineering	MT99460	Bhavani Shankar S
9.	Naval Architecture	NA99505	Karthick C
B.Tech (5th and 6th Semesters) (Book value of Rs.1000/- for each Branch)			
10.	Aerospace Engineering	AE98026	Vasudeva Raghavendra
11.	Chemical Engineering	CH98084	Lakshman Pemenkil
12.	Civil Engineering	CE98116	Sri Harsha Nerella V
13.	Computer Science & Engg.	CS98164	Mudhakar Srivatsa
14.	Mechanical Engineering	ME98410	Senthil Kumar E
15.	Metallurgical Engineering	MT98442	Vignesh Gowrishankar
16.	Naval Architecture	NA98468	Harish M

Sl.No.	Donor	Roll No.	Name of student
II. Donors Prizes:			
B.Tech (3rd & 4th Semesters)			
17.	Biswajit Sain Endowment Prize (Medal and book value of Rs 2000/-)	CS99212	Archana S
18.	Raghavendra Memorial Prize (Book value of Rs.1000/-)	ME99383	Pavithra Harsha
19.	Rajalakshmi Krishnamurthy English Prize (Book value of Rs.1000/-)	CH99093 Ch99095	Saritha Sathyanarayanan &) Krishna Anitha Kalyanaram) Tie
B.Tech (5th & 6th Semesters)			
20.	Dr. S. Chandrasekharan Memorial Prize (Cash prize of Rs.1000/- with a silver Medal)	ME98375	Sandipan Mishra
21.	Ramasarma V Kolluri Memorial Prize (with a Medal)	EE98241	Parvathinathan V
M.Sc (1st & 2nd Semesters)			
22.	Chilikuri Ramasastry Memorial Prize (Cash Prize of Rs.1500/-)	PH00599	Solomon Ivan J
23.	R. Padmanaban Memorial Prize (Cash Prize of Rs.1500/-)	CY00512	Navasona K
M.Tech (1st & 2nd Semesters)			
24.	Prof. N Venkatarayulu Memorial Prize (Cash prize of Rs.1000/-)	ME00795	Saleel Ismail
25.	48 th Pharmaceutical Congress Prize (with a Silver Medal)	CH00555	K Sathappan

4.1 DEPARTMENT OF AEROSPACE ENGINEERING

4.1.1. Introduction:

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

4.1.2. Academic Programmes:

New Courses Introduced:

Sl. No.	Course No.	Title
1.	AS 632	Acoustic Instabilities in Aerospace Propulsion
2.	AS 634	Combustion and Flow Diagnostics

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	26	26	22	28	-	102
Dual Degree	7	6	4	6	4	27
M.Tech.	11	14	-	-	-	25
M.S.	2	7	7	7	2	25
Ph.D.	3	1	1	3	3	11
Total	49	54	34	44	9	190

Names of Student/Scholar attended Conference / Seminar and Symposia abroad/India:

Sl. No.	Name of the Student/Scholar	Programme	Name of the Conference/ Seminar/ Symposia	Date & Venue
Conference:				
1.	P. Balasubramaniam	Dual Degree	8 th Technical Session of the Madras – India Regional chapter of the Acoustical Society of America	Sept. 29-30, 2002
Symposia:				
1.	Sajeev Thomas	Ph.D.	8 th International Symposium on Plasticity and Impact Mechanics – Implast 2003	Mar. 16-19, 2003

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)	Aircraft and missile propulsion, computational methods, simulation and optimization, computer aided instructions
Job Kurian, Ph.D., (IIT Madras)	Gas Dynamics, Combustion, Shock tube flows and measurements
Krishnan S., Ph.D., (IIT Madras)	Aerospace propulsion
Santhakumar S., Ph.D., (IIT Madras) [Head]	Aerodynamics, flight mechanics, instrumentation
Subramanian G., Ph.D., (IIT Madras)	Structural analysis, finite element and finite difference techniques, experimental moire interferometry
Tulapurkara E.G., Ph.D., (IIT Madras)	Aerodynamics, Fluid mechanics, turbulent flows
Associate Professors :	
Bhaskar K., Ph.D., (IIT Madras)	Structural mechanics, Plants & Shells, composite structures
Ramakrishna M., Ph.D., (Univ. of Texas, Arlington)	Fluid Mechanics, numerical methods, computer solutions
Sriram P., Ph.D. (Georgia Inst. of Technology)	Structural mechanics, fatigue & fracture, Parallel computing
Assistant Professors :	
Rajan S.C, M.Tech. (IIT Madras)	Aerodynamics, Theory and Computation of Vortex Dominated Flows
Sujith R.I., Ph.D. (Georgia Inst. of Technology)	Acoustics and combustion Instability Optical Flow Diagnostics
Chakravarthy., S.R. Ph.D., (Georgia Inst. of Technology)	Propulsion, Combustion & Fluid Mechanics
R. Velmurugan., Ph.D., (IIT Delhi)	Composite Structures Analysis and Design, Impact Mechanics, 3-D Composites

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

Sl. No.	Co-ordinators	Title	Period
Workshop:			
1.	Prof. E. G. Tulapurkara Chairman & Organising Committee Dr. S. R. Chakravarthy Prof. T. Sundararajan Organising Secretaries	International Workshop on Turbulent Reacting Flows	Dec. 19 & 20, 2002
Educational Consultancy Project (ECP):			
1.	Prof. S. Santhakumar & Prof. M. S. Shanmugam	HAL Management Training (Technical) Programme	July - Dec. 2002

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
Symposia:			
1.	Dr. R. Velmurugan	Symposia on Large Deformations	Sept.1, 2002 New Delhi
		Implact 2003	March 16-19, 2003 New Delhi
2.	R. I. Sujith	Nonlinear Distortion of Traveling Waves in Variable Area Ducts, National Symposium on Acoustics	October 22-24, 2002 Aligarh
		Nonlinear Distortion of Traveling Waves in Variable Area Ducts having Steady Base Flow, National Symposium on Acoustics,	October 22-24, 2002, Aligarh
		An Experimental Investigation of Jets in a Strong Acoustic Field, 41 st Aerospace Sciences Meeting and Exhibit	Jan.6-9, Reno, Nevada, USA
		Characterization of an Acoustically Self-Excited Combustor for Spray Evaporation, 41 st Aerospace Sciences Meeting and Exhibit	Jan.6-9, Reno, Nevada, USA
		National Symposium on Acoustics	October 22-24, 2002, Aligarh
		National Symposium on Acoustics	October 22-24, 2002, Aligarh
Conference:			
1.	Prof.E.G. Tulapurkara	9 th Asian Congress of Fluid Mechanics at Isfahan, Iran	May 16-19, 2002
		2 nd International and 29 th National Conference on Fluid Mechanics & Fluid Power, Roorkee	Dec. 12-14, 2002

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue & Date
1.	Prof.E.G.Tulapurkara	Experiment and Computational Investigation of Wake-Boundary Layer Interaction.	Indian Institute of Science, Bangalore 14-3-2002
2.	M. Ramakrishna	Evolution and Revolution in Aerospace Design	Vikram Sarabhai Space Centre, Thiruvananthapuram 26 th April, 2002
3.	Prof.E.G.Tulapurkara	Limitation of RANS approach	Jawaharlal Nehru Centre for Advanced Scientific Research, I.I.Sc., Bangalore 8-5-2002
4.	Prof.E.G.Tulapurkara	Experimental & Numerical Investigation of Reverse Flow	Shahnood University, Shahnood, Iran 26-5-2002
5.	Prof. G. Subramanian	Photo Elasticity – An Introduction"	Hindustan College of Engineering, Padur 07-03-2003
6.	Dr. P. Sriram	"Career Choices"	Good Earth School, Somangalam 28-08-2002
7.	Prof. G.Subramanian	"Intelligent Structures" in "FLIGHT 2003"	Madras Institute of Technology Madras 23-02-2003

Sl. No.	Name of Faculty	Topic of Lecture	Venue & Date
8.	Prof. E.G.Tulapurkara	Experimental and Computational Investigation of Reverse Flow in a Channel	Amritha Institute of Technology and Science, Coimbatore 24-02-2003
9.	Prof. E.G.Tulapurkara	Brief Overview of Computational Fluid Dynamics	Park College of Engineering, Coimbatore 24-2-2003
10.	R. I. Sujith	Nonlinear distortion of traveling waves in variable area ducts with entropy gradients	University of California at Berkeley, USA Jan.13, 2003
11.	R. I. Sujith	Nonlinear distortion of traveling waves in variable area ducts with entropy gradients	Georgia Institute of Technology, Atlanta, USA Jan.16, 2003

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of visit
1.	Job Kurian	Malaysia	20-22 May 2002	To participate and present a paper at the 6 th APISCEU, Kuala Lumpur.
2.	E.G. Tulapurkara	Iran	26 May - 1 June, 2002	To attend 9 th Asian Congress of Fluid Mechanics Conference
3.	S.R.Chakravarthy	Italy	16-20 June 2002	To attend and present a paper at the 8 th International workshop on Combustion & Propulsion: Rocket Propulsion – Present and Future
		Germany	23-24 July 2002	To visit Universitat Darmstadt and present a series of lectures on Combustion Acoustics and to interact with their research group.
4.	R. I. Sujith	U.S.A.	6-9 January 2003	To present a paper at the 41 st Aerospace Sciences Meeting and Exhibit
5.	S.R.Chakravarthy	U.S.A.	6-9 January 2003	To present a paper at the 41 st Aerospace Sciences Meeting and Exhibit

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr. R. I. Sujith	INAE Young Engineer Award 2002	Indian National Academy of Engineering (INAE)	Excellence in Research	16-12-2002

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Name of the Academy/ Professional Society	Level	Year of Admission
1.	Prof. E. G. Tulapurkara	Aeronautical Society of India	Fellow	1996

4.1.4. Design and Development Activities:

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value (Rs. in lakhs)
1.	Twin Resonator Nd-YAa laser	15.00

4.1.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Centre for Computational Fluid Dynamics at IIT, Madras	5 years	DST	6.00	E.G.Tulapurkara V.Ganesan, P.A.Asantha Narayana T.Sundararajan, M.Ramakrishna, Srinivas Jayanthi
2.	Numerical Study of Particulate Suspension Flow Through Wavy-walled Channels	3 years	CSIR	4.83	E.G. Tulapurkara R. Usha-PI
3.	Large Eddy simulations of flow in channel with built in winglet pair	2 years	ARDB	9.23	E.G.Tulapurkara & G.Biswas-IITK

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
4.	Development of a low cost PIV system	2000-2003	MHRD	10.00	R.I.Sujith S.R.Chakravarthy
5.	Laser Induced Fluorescence for Spray Diagnostics	2002-2003	ISRO	4.60	R.I.Sujith Raghuraman N. Govardhan
6.	Preparation of a status Report on Combustion Research in India	2002-2003	DRDO	2.24	R.I.Sujith S.R.Chakravarthy
7.	Nonlinear Steepening of Acoustic Waves into Shock Waves in Variable Area Ducts in the Presence of Entropy Gradients	2002-2004	ISRO	4.85	R.I.Sujith S.R.Chakravarthy
8.	A fundamental approach to combustor dynamics: Focus on flame-acoustic-vortex interactions	2001-2003	DRDO	24.98	R.I.Sujith S.R.Chakravarthy
9.	Studies on Impingement of Low Density Jets	2 years	ARDB	7.06	Job Kurian S.R. Chakravarthy

Industrial Consultancy Projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
1.	S. Santhakumar	Aerodynamic Design and Analysis of Grid Fins	DRDL, Hyderabad	14.76
2.	S. Santhakumar S.C. Rajan	Development of software for Aerodynamics of Air-breathing Missiles.	DRDL, Hyderabad	6.29
3.	S. Santhakumar	System flow and Fan curve for GE-Make Microwave Oven	GE India	0.38
		Flow Characterisation of Advantium Oven	GE India	0.26

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	E.G.Tulapurkara	Modelling of flow through annular diffuser and volute exhaust	GTRE	4.96
2.	R. Velmurugan	Preparation of JV standards for composites & other chemicals	DRDL	10.24
3.	R. Velmurugan	Characterization of non-Metallic materials for Canister	DRDL	6.04
4.	R.I.Sujith & S.R. Chakravarthy	Diagnostics of Spray Mixing in Supersonic Combustors with Wall-Mounted Cavities	DRDL	24.90
5.	S.R.Chakravarthy R.I. Sujith Job Kurian	Experimental Supersonic Cold Flow Mixing studies with strut mounted cavity and RAM Mixers	VSSC	4.62

Research Publications:

Total No. of papers published in Refereed National Journals	..	15
Total No. of papers published in Refereed International Journals	..	9
Total No. of papers presented in National Conference	..	5
Total No. of papers presented in International Conferences	..	15

In Refereed National Journals:

1. T. Setoguchi, S. Santhakumar, M. Takao, T.H. Kim and K. Kaneko, "A Performance Study of a radial turbine for Wave Energy Conversion", I. Mech E, Part A (J. of Power and Energy, Vol.216, No.A1, 2002-2, pp.15-22.
2. Tulapurkara E.G., Khoshnevis A.B., Narasimhan J.L., "Boundary layer subjected to longitudinal convex and concave curvatures and adverse pressure gradient" Journal of Aeronautical Society of India, Vol.53, pp.183-191, 2001.
3. Tulapurkara E.G., Gowda, B.H.L., Roy Choudhury R.L., BISWAS, S.P. and ELANGIVAN, M., "Wind tunnel tests on model of ship with sails" Journal of Institute of Engineers (India)- Marine Engineering Division, Vol.83, pp.1-4, July 2002.
4. Lakshmana Gowda, B.H., Tulapurkara, E.G., Kannababu, A. "Interference effects on mean velocities and turbulence intensities behind a tall body due to a short body in tandem", Indian Journal of Engineering and Material Science, Vol.9, pp.5-19, 2002.
5. J. K. Kakkasserry, Sujith, R. I. and Job Kurian "On the breakdown of Continuum and Shock formation in Low density flows", Vacuum, Vol. 65, No. 1. (2002), pp. 45-50.

6. T. M. Muruganandam, Srihari Lakshmi, A. A. Ramesh, S. R. Viswamurthy, R. I. Sujith And B. M. Sivaram "Mixing of Transversely Injected Jets into a Crossflow under Low-Density Conditions", *AIAA Journal*, Vol. 40, No. 7 (2002) pp. 1388-1394.
7. P. Bala Subrahmaniam and R. I. Sujith "Acoustic Fields In Inhomogeneous Media: Some Exact Harmonic Solutions for Variable Area Ducts and Curvilinear Geometries", *Acustica*, Vol. 88 (2002), pp. 837-841.
8. K.Bhaskar & N.Ganapathysaran, Elasticity solution for a laminated orthotropic cylindrical shell subjected to a localized longitudinal shear force, *ASME Jl. of Applied Mechanics*, 69(5), 2002, 700-703.(IF 0.651).
9. K.Bhaskar & N.Ganapathysaran, Three-dimensional analysis of a cross-ply cylindrical shell subjected to a localized circumferential shear force, *International Jl. of Pressure Vessels and Piping*, 79(7), 2002, 519-524.. (IF 0.25).
10. K.Bhaskar & G.Balasubramanyam, Accurate analysis of end-loaded laminated orthotropic cylindrical shells, *Composite Structures* 58(2), 2002, 209-216. (IF 0.556)
11. K.Bhaskar & N.Ganapathysaran, Elasticity solutions for laminated orthotropic cylindrical shells subjected to localized longitudinal and circumferential moments, *ASME Jl. of Pressure Vessel Technology*, 125(1), 2003, 26-35. (IF 0.518)
12. Chakravarthy, S. R., Price, E. W., Sigman, R. K., and Seitzman, J. M., "Plateau Burning Behavior of Ammonium Perchlorate Sandwiches and Propellants at Elevated Pressures," *Journal of Propulsion and Power*, Vol. 19, No. 1, Jan-Feb 2003, pp. 56-65.
13. Jayaprakash, N. and Chakravarthy, S. R., "Impinging Jet Atomisation of a Metallized Gelled Fuel," *Atomization and Sprays*, February 2003.
14. 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," *Journal of Aerospace Engineering*, February 2003.
15. Ramanarayanan, B., Chakravarthy, S. R., and Sujith, R. I., "Characterisation of an Acoustically Self-Excited Combustor for Spray Evaporation," *Combustion Science and Technology*, March 2003.

In Refereed International Journals:

1. T. H. Kim, T. Setoguchi, M. Takao, K. Kaneko, S. Santhakumar, "Study of Turbine with self pitch-controlled blades for Wave energy conversion", *Int. J. Theren. Sci.* 41(2002), pp.101.107.
2. T. Setoguchi, S. Santhakumar, M. Takao, T. H. Kim and K. Kaneko, "A performance study of a radial turbine for wave energy conversion", *Proc. Inst. Of Mech. Engns. (I Mech. E.), Jl. of Power and Energy*, Proc. PART A, Vol.216, Special Issue, 2002, pp.15-22.
3. T. Setoguchi, Santhakumar, M.Takao, T. H. Kim, K. Kaneko, "A modified Wells Turbine for Wave Energy Conversion" *Renewable Energy*, Vol.28, No.1, pp.79-91, 2002.
4. Chakravarthy, S. R., Price, E. W., Sigman, R. K., and Seitzman, J. M., "Plateau Burning Behavior of Ammonium Perchlorate Sandwiches and Propellants at Elevated Pressures," *Journal of Propulsion and Power*, Vol. 19, No. 1, Jan-Feb 2003, pp. 56-65.
5. K. Bhaskar, N. Ganapathysaran, "Elasticity solution for a Laminated Orthotropic Cylindrical shell subjected to a Localized Longitudinal Shear Force, *ASME, J Appl. Mech.*, Vol.69, 2002, pp.700-703.
6. K. Bhaskar, N. Ganapathysaran, "Three-dimensional analysis of a cross-ply cylindrical shell subjected to a localized circumferential shear force, *International J. Pressure Vessels & Piping*, Vol.79, 2002, pp.519-524.
7. K. Bhaskar, G. Balasubramanyam, "Accurate analysis of end - walked laminated orthotropic cylindrical shells, *Composite Structures*. Vol.58, 2002, pp.209-216.
8. N. K. Gupta and R. Velmurugan "Experiments and analysis of foam filled composites domes under axial compression", *Intl. Jl. of Composite materials*, V.36, NO.8, pp.899-914, 2002.
9. K. Bhaskar, N. Ganapathysaran, "Elasticity solutions for Laminated Orthotropic Cynderical Shells subjected to Localized Longitudinal & Circuferential Manner, *ASME, J. Pressure Vessel Technology*. Vol.125, 2003, pp.26-35.

In Proceedings of National Conferences:

1. P. Bala Subrahmaniam and R. I. SUJITH "Exact Harmonic Solutions for Acoustic Fields in Variable Area Ducts and Curvilinear Geometries", 8th Technical Session of the Madras-India Regional Chapter of the Acoustical Society of America, 29th and 30th September 2002.
2. M. Tyagi and R. I. Sujith "Nonlinear Distortion of Traveling Waves in Variable Area Ducts", *National Symposium on Acoustics*, Aligarh, October 22-24, 2002.
3. M. Tyagi and R. I. Sujith "Nonlinear Distortion of Traveling Waves In Variable Area Ducts Having Steady Base Flow", *National Symposium on Acoustics*, Aligarh, October 22-24, 2002.
4. 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," *XVI National Conference on Air-Breathing Engines and Aerospace Propulsion*, Bangalore, January 2003.
5. J. Ramaswamy Shetty, M. Subba Rao and R. Velmurugan, "Effect of stitching on inplane mechanical properties of CFRP Composites", *Proc. Of ISAMPE Conf. Trivandrum*, May 3-4, 2003, pp.185-194.

In Proceedings of International Conferences:

1. E.G.TULAPURKARA, B.H.L.GAWDA AND CHAUKAR, J.S. "Mean Velocity field around prismatic bodies – isolated and in tandem arrangement" 9th Asian Congress of Fluid Mechanics, May 27-31, 2002, Isfahan, Iran, Available on CD.
2. Tulapurkara, E.G., "Limitations of numerical simulation using RANS approach" Proc. 2nd International and 29th National Conference of Fluid Mechanics & Fluid Power, Roorkee, Dec. 12-14, 2002, pp.393-400.
3. Arun, M, Tulapurkara, E.G, Sundararajan, T And Senthil Kumar, K., "Computation of turbulent swirling flow in a conical diffuser", Proc. 2nd International and 29th National Conference of Fluid Mechanics & Fluid Power, Roorkee, Dec. 12-14, 2002, pp.401-408.
4. Senthil Kumar, K., Tulapurkara, E.G And Biswas, G., "2-D LES of flow past square cylinder", Proc. 2nd International and 29th National Conference of Fluid Mechanics & Fluid Power, Roorkee, Dec. 12-14, 2002, pp.417-421.
5. Chakravarthy, S. R., "Multi-Dimensionality of Combustion of Condensed Phase Energetic Mixtures with Fine Particles," 8th International Workshop on Combustion and Propulsion, Pozzuoli, Italy, June 2002.
6. Ramaswamy Shetty, M. Subba Rao and R. Velmurugan, "Effect of stitching on in plane mechanical properties of CFRP prepreg composites", Prof. Of SEM Annual Conf. On Experimental and Applied mechanics, Wisconsin, USA, June 10, 2002, pp.25-28.
7. N. Mohammed Sheriff, A.A. Selvam, R. Velmurugan and N. K. Gupta, "Numerical and Experimental Investigation in buckling behaviour of shallow and semi-spherical shells", Proc. Of Implast 2003, New Delhi, March, 16-19, 2003, pp.545-551.
8. R. Velmurugan, N.K. Gupta, S.S. Raimurugan and A.E.Perumal, "Experimental and theoretical studies on effect of stitching of FRP cylindrical shells under axial compression", Proc. Of Implast, 2003, New Delhi, March 16-19, 2003, pp.32-44.
9. R. Velmurugan, Sajeew Thomas and N.K.Gupta, "Impact perforation of CSM – polyester composite laminated plates by cylindro-conical projectiles", Proc. of Implast, New Delhi, March 16-19, 2003, pp.678-687.
10. R. I. Sujith "An Experimental Investigation of Jets in a Strong Acoustic Field", 41st Aerospace Sciences Meeting And Exhibit, Reno, Nevada, USA, 6-9 January 2003.
11. R. I. Sujith "An Experimental Investigation of Interaction Of Sprays With Acoustic Fields Using Piv", 41st Aerospace Sciences Meeting And Exhibit, Reno, Nevada, USA, 6-9 January 2003.
12. B. Ramanarayanan, R. I. Sujith And S. R. Chakravarthy "Characterization of an Acoustically Self-Excited Combustor for Spray Evaporation" to be presented at the 41st Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, 6-9 January 2003.
13. Jayaprakash, N. and Chakravarthy, S. R., "Impingement Atomisation of Gelled Fuels," AIAA Paper No. 2003-0316, 41st Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, January 2003.
14. Ramanarayanan, B., Sujith, R. I., and Chakravarthy, S. R., "Characterization of an Acoustically Self-Excited Combustor for Spray Evaporation," AIAA Paper No. 2003-0502, 41st Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, January 2003.
15. Chandra, B. U., Bharathraj, R., and Chakravarthy, S. R., "Fuel-Air Mixing by Cavity-Induced Acoustic Oscillations in Confined Supersonic Flows," AIAA Paper No. 2003-1206, 41st Aerospace Sciences Meeting and Exhibit, Reno, Nevada, USA, January 2003.

Distinguished Visitors to the Department:

S. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Prof. Krishna Kumar Dept. of Aerospace Engineering and Dean of Academic Affairs Indian Institute of Technology, Kanpur.	04-04-2002	Seminar Talk
2.	Dr. A. K. Verma, Head, AHTD, Vikram Sarabhai Space Centre Thiruvananthapuram – 695 022.	04-04-2002	Industry Lecture
3.	Dr. A. V. Srinivasan Adjunct Professor - Engineering & Management Rensselaer Polytechnic Institute 2001	08-04-2002	Seminar Talk
4.	Mr. T. K. Sampathkumaran Project Director (Kaveri) Gas Turbine Research Establishment, Bangalore.	19-04-2002	Industry Lecture
5.	Mr. V. Sundararajan Ex-Director, Gas Turbine Research Establishment Bangalore.	22-04-2002	Industry Lecture
6.	Dr. S. Panneerselvam Technology Director (Aerodynamics) D.R.D.L., Kanchanbagh Hyderabad.	26-04-2002	Industry Lecture

S. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
7.	Dr. Srinivasan Arunajatesan CRAFT Tech, Inc, Dublin U.S.A.	30-04-2002	Seminar Talk
8.	Mr. Shekhar Sarpotdar Research Assistant Dept. of Aerospace Engineering Indian Institute of Technology, Bombay.	04-07-2002	Seminar Talk
9.	Dr. V. Sundararajan Ex-Director & Advisor-Gas Turbine Res. Establishment Bangalore	01-10-2002	Discussion with faculty members
10.	Mr. Kirti Patel, Manager, Aerodynamics, Pratt & Whitney, Canada	14-10-2002	Discussion with faculty members
11.	Dr. V. Sundararajan Gas Turbine Research Establishment Bangalore	03-02-2003	Industry Lecture
12.	Dr. K. Kailasanath Head, Computational Combustion Division Naval Research Laboratory, U.S.A.	14-02-2003	Industry Lecture
13.	Mr. Niels Andersen Export manager of Dantec Dynamics Denmark	17-03-2003	Seminar talk with presentation

4.1.6. Other Activities:

Prof. E. G. Tulapurkara:

Principal Coordinator for Rs.3.83 crore "Centre for Computational Fluid Dynamics" set up with funding from Department of Science & Technology.

Prof. S. Santhakumar:

Member - Ballistics and Aerodynamics Panel (BAP) of Armament Research Board (ARMREB)
(This panel is now reconstituted as BCD Panel)

Member, Executive Council, Institute for Energy Studies, Anna University, Chennai

Member, Joint Policy Committee – ISRO-IIT(M) Cell

Member, Man Power Panel, ARDB

Chairman, Chennai Branch of the Aeronautical Society of India

Chief Coordinator, HAL Management (Technical) Training Program, 2002

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 faculty 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.

The **Machine Dynamics Division** is engaged in research in the area of Structural dynamics, Vibration and stress analysis using FEM Techniques, Acoustics and noise control, Tribology and Maintenance engineering and Chaotic/non-linear vibrations.

4.2.2 Academic Programmes:

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
M.Tech. -						
Engg. Mechanics	7	9	-	-	-	16
Industrial Tribology	6	5	-	-	-	11
Maint. Engg. & Mgmt.	5	10	-	-	-	15
Bio-medical Engg.	14	4	-	-	-	18
M.S.	2	7	7	7	2	25
Ph.D.	13	9	7	5	6	40
Total	47	44	14	12	8	125

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
Conferences:				
1.	Mallikarjun S. Holi	Ph.D	Presented a paper at the 28 th Annual North east BioEngg Conf. of IEE-Engineering in Medicine & Biology, Drexel Univ.	Philadelphia, USA April 20-21, 2002.
2.	Mallikarjun S. Holi	Ph.D	Presented a paper at the International Congress on Biological and Medical Engg.	Singapore Dec. 4-7, 2002.
3.	Ravichandran T.	Ph.D	Presented a paper at the International Congress on Biological and Medical Engg.	Singapore Dec. 4-7, 2002.
4.	Srinivasan R.	Ph.D	Presented a paper at the International Congress on Biological and Medical Engg.	Singapore Dec. 4-7, 2002.
5.	Sanjay Jayavanth	Ph.D	Presented a paper at the International Congress on Biological and Medical Engg.	Singapore Dec. 4-7, 2002.
6.	R. Venkateswaran	M.S.	Presented a paper at the Twenty third Annual conference of Indian Association of Biomedical Scientists.	JIPMER, Pondicherry 4-6, Oct. 2002
7.	V Jacob Thomas	Ph.D	Presented a paper at the First National Conference on Diabetic foot.	Bangalore Dec. 2002
8.	V Jacob Thomas	Ph.D.	Presented a paper at the International Conference on Wound healing, Woundcon 2003.	Chennai Feb. 2003.

S.No.	Name of the student	Programme	Name of the conference/ seminar/ symposia	Date and venue
9.	Sakey Shamu	Ph.D	Intl. Symposium on Exp. Mechanics	Taipei, Taiwan 28-30 Dec. 2002
10.	S.Sathiyarayanan	Ph.D	Intl. Symposium on Smart Sts. & Materials.	12-14 Dec. 2002. Bangalore.
11.	Naresh	MS	8 th National Convention, MIRC, ASA	29 th Sep.2002, RMK College, Kavaraipettai
12.	Balaguru	M.Tech.		
13.	Sivakumar	M.Tech.		
14.	V.R.Pramod,		Proc. Second International Conference on Vibration Engineering and Technology of Machinery	16-18 Dec., 2002 Mumbai,
15.	V.Balamurugan	Ph.D.	International Conference on Smart Materials, Structures and Systems (ISSS-SPIEC 2002)	December 12-14, 2002. I.I.Sc., Bangalore

4.2.3 Faculty and their activities:

Faculty:

Name and Qualification	Major area of specialization
Professors:	
Dr.N.Ganesan, Ph.D, IIT Madras	Vibration, Acoustics, Stress Analysis, Finite Element Techniques, Fluid-Structure Interaction.
Dr.S.Narayanan, Ph.D., IIT Kanpur	Nonlinear Dynamics, SEA, Acoustics, Smart Structures, Nonlinear Dynamics and Chaos, Acoustics and Noise Control.
Dr.S.Radhakrishnan, Ph.D., IIT Madras	Biomechanics/Rehabilitation Engg., Bio-Signal Analysis
Dr.K.M.Patil, D.Sc., Washington Univ., USA	Biomechanics/Rehabilitation Engg. On-line foot Measurements
Dr.MeghaSingh, Ph.D., Univ. of North Carolina	Lasers in medical diagnosis / Hemorheology
Dr.R.Palaninathan, Ph.D., IIT Madras	Structural Mechanics, Composite Materials, Finite Element Methods.
Dr.J.Raamachandran, Ph.D., IIT Madras [Head]	Solid Mechanics, Boundary Element Method, Plates and Shells, FEM, Biomechanics
Dr.K.Ramesh, Ph.D., IIT Madras	Solid Mechanics, Photo Mechanics, fracture Mechanics
Dr.V.Ramjee, Ph.D, IISc, Bangalore	Fluid Mechanics - Jets – WAKES
Dr.B.H.L.Gowda, Ph.D, IIT Madras	Fluid Mechanics - Flow Induced Vibrations – Wall Jets
Associate Professors:	
Dr.J.Lakshminarasimhan, Ph.D., IIT Madras	Incompressible Aerodynamics, CFD, Wind effects on structures
Dr.M.Ramasubba Reddy, Ph.D., IISc, Bangalore	Biomedical Instrumentation and Bio-signal processing.
Dr.C.Sujatha, Ph.D., IIT Madras	Vehicle Dynamics, Diagnostics, Vibration and Signal Analysis.
Dr.S.Swarnamani, Ph.D., IIT Madras	Condition Monitoring, Neural Networks, Diagnostics/Instrumentation/Active Control.
Assistant Professors:	
P.Chandramouli, Ph.D., Ohio State Univ., USA	Noise and Vibration Control, Non-linear dynamics & Fluid-Structure-Acoustic Interactions.
Dr.C.Lakshmana Rao, Ph.D, MIT, Cambridge, USA	Fracture Mechanics, Continuum Mechanics, Smart Mechanics, Natural Fiber Composites, Numerical Methods. Tribology and Wear
Dr.G.Santhanakrishnan, Ph.D., IIT Madras	Solid Mechanics, Plasticity, Smart Materials & Computations, non-linear FEA, thermo-mechanical fatigue.
Dr.M.S.Sivakumar, Ph.D., MIT, Cambridge, USA	Biomechanics, Biomedical Instrumentation, Rehabilitation Engineering, Biomaterials
Dr. Venkatesh Balasubramaniam, Ph.D, Louisiana Tech. Univ., USA	Fluid Mechanics, CFD, Turbulence Modelling, LES
Dr. S. Vengadesan, Ph.D, Kobe Univ., Japan	

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

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	Dr.C.Lakshmana Rao	Continuum Mechanics – Theory & applications	Dec. 16-20, 2002.
2.	Dr. C. Sujatha	International Conference on the Future of Engineering Education CSME – ICSEE 2003, Concordia University, Canada. (Member Advisory Committee)	Feb. 16–18, 2003

Sl. No.	Coordinator(s)	Title	Period
Seminar:			
1.	S.Narayanan (Chairman, Technical Committee)	National Seminar on Seismic Design of Nuclear Power Plants	Feb.21-22, 2003 SERC, Chennai
Workshop:			
1.	S.Narayanan (Chairman, Technical Committee)	Fourth International Workshop on Mechanics of the Engineering Sciences Group	Jan 11-15, 2003 IIT Madras

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	Institution	Period
Seminar:				
1.	Dr.S.Narayanan	National Seminar on Seismic Design of Nuclear Power Plants	SERC, Chennai	Feb. 21-22, 2003
Symposia:				
1	Dr.S.Narayanan	National Symposium on Acoustics (NSA 2002)	Aligarh Muslim University, Aligarh	Oct. 22-24, 2002
Conferences:				
1.	K.V.Muthukrishna Selvam & C.Sujatha	Dynamic analysis of twist drill using FEM	The 8 th National Annual Convention of the Madras India Regional Chapter of The Acoustical Society of America	29 th September 2002, Kavaraipettai
2.	C.D.Parmar, Manoj Gupta & C.Sujatha	Dynamic analysis of off-road vehicles	Second International Conference on Vibration Engineering and Technology of Machinery	16-18 Dec. 2002, Mumbai
3.	Dr.S.Narayanan	International Conference on Smart materials, structures and systems (ISSS-SPIE 2002)	Indian Institute of Science, Bangalore	Dec. 12-14, 2002
		Second International Conference on Vibration Engineering and Technology of Machinery (VETOMAC 2)	BARC, Mumbai	Dec. 16-18, 2002
		47th Congress of the Indian Society of Theoretical And Applied Mechanics (ISTAM)	IIT Guwahati	Dec .23-26, 2002
4.	Dr.P.Chandramouli	VETOMAC 2	BARC, Mumbai	Dec. 16-18, 2002
		NSA 2002	Aligarh Muslim University, Aligarh	Oct. 22-24, 2002

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of lecture	Venue and Date
1.	Dr.S.Radhakrishnan	Invited talk – on "Rehabilitation Engineering" at the Workshop on Medical Electronics and Medical image processing	PSNA College of Engg, Dindigul. 12.4.2002
		Invited talk – "Osteoporosis" at the QIP short-term course on 'Biomedical Engineering'	Kothamangalam Engg. College, Trichur, Kerala. 15.11.2002
		Invited talk – "Biomedical Engineering"	Sethu Institute of Technology, Kariapatti, Madurai, 8.2.2003.
2.	Dr. K.M.Patil	Invited talk – Power ratio of foot pressure distribution – an advanced parameter for early detection of diabetic foot at risk	Plastic surgeons meet at Chennai Chapter January 2003
3.	Dr. M. Ramasubba Reddy	Invited talk – on "Digital Signal Processing Techniques in Biomedical Engineering" at the Workshop on Medical Electronics and Medical image processing.	PSNA College of Engg, Dindigul. 12.4.2002

Sl. No.	Name of faculty	Topic of lecture	Venue and Date
		Invited talk – "Biomedical Instrumentation and Signal Processing" at the QIP short term course on 'Biomedical Engineering'	Kothamangalam Engg. College, Trichur, Kerala. 15.11.2002
		Invited talk – Biomedical Instrumentation, AICTE – ISTE training on recent advances in Biomedical Engineering – Theory and Practice	Bapuji Institute of Engg & Tech, Davangere 1.8.2002
4.	Dr. Venkatesh-Balasubramanian	Invited talk – Total joint replacement AICTE – ISTE training on recent advances in Biomedical Engineering – Theory and Practice, Pp 64 – 71	Bapuji Institute of Engg & Tech, Davangere 1.8.2002
		Experimental Biomechanics, Continuum Mechanics Workshop.	IIT Madras December 2002
5.	Dr. M. Ramasubba reddy	Technology Appreciation Program on "Digital Signal Processing: Theory and Applications – Biomedical Signal processing"	IC & SR IIT Madras
6.	Dr. M. Ramasubba Reddy	Short Term Course On DSP – "Biomedical Signal Processing"	Department of Electrical Engineering, IIT Madras
7.	Dr. K. Ramesh	Recent Developments in Photoelasticity and photoelastic coating analysis	CVRDE, Avadi 26.11.2002
8.	Dr.C.Lakshmana Rao	Invited lecture – Approximate Methods to Engineering Analysis – An Exposure to Finite Element Methods	Dept. of Mechanical Engg, Dr. Mahalingam College of Engg & Tech, Pollachi, 30.7.2002
		National Workshop cum Symposium on Complex Fluids, Couetter Flow of Granular Materials	Dept. of Chemical Engg, IISc Bangalore 6.12.2002
		Invited lecture – Advanced Course on Fatigue and Fracture Behaviour of Components and Structures	SERC, Chennai 13.2.2003
9.	Dr.S.Swaramani	Basics of Vibration Measuring Instruments	CVRD 27 Nov.2002
10.	Dr.C.Sujatha	Machinery Diagnostics	Advanced Training Institute, Guindy 25-9-2002
		Fundamentals of vibration	RVS Engg. College, Dindigul 27-10-2002
		Signal Analysis and Vehicle Dynamics Case Studies	CVRDE 29-11-2002
		Vibration Transducers-Short term course on Experimental Techniques in Structural Engg.	July 2002
		Single degree of freedom systems	Vibtech Engg. College, Nov.2002
11.	Dr.S.Narayanan	Fundamentals of vibration and principles of noise control; Lectures delivered at the 3-Day intensive course on Industrial Noise Control and Silent product design	Nov. 19-21, 2002 IISc., Bangalore
		Penalty function Methods in UGC Refresher course on optimization algorithms and applications	Dec 11-21, 2002 IGCAR, Kalpakkam (IIT-Madras)
		Introduction to vibration and vibration measurement; CEP course on Experimental Mechanics	Nov 25-29, 2002 CVRDE, Avadi Chennai
		Introduction to vibration, Pre-conference workshop on condition management in process industries	Dec 2-4, 2002 IGCAR, Kalpakkam
		Numeric-Analytic Methods in Nonlinear Dynamic System Analysis; Workshop on computational mathematics	7th March 2003 Anna University Chennai
12.	Dr.P.Chandramouli	CEP on FE Struc. Analysis, "FE application to dynaic vibration problems"	Sep. 16-20, 2002, CVRDE, Avadi, Chennai
		CEP on "Experimental Mechanics", Experimental Modal Analysis.	Nov. 25-29, 2002 CEP
		CEP "Computer and experimental hydrodynamics NSTL"	3-7 March, 2003

Visits abroad by faculty:

S.No.	Name of faculty	Country Visited	Date	Purpose of visit
1.	Dr.S.Radhakrishnan	USA	July - August 2002	Visited Biomedical Engg Dept of Univ. of Texas, Austin, USA and attended Intl. Workshop on "Instruments" organized by the National Instruments Co., Austin.
2.	Dr.S.Narayanan	Connecticut-USA	19.05.2002	To attend PAN IIT meet
3.	Dr.S. Narayanan	Singapore	Jan. 17-18, 2003	To attend conference of Singapore-MIT Alliance

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Mr.Mallikarjun S.Holi (Guided by Dr.S.Radhakrishnan)	Travel grant Award	IEEE-Engg. In Medicine & Biology, Conf. at Dread Univ Philadelphia, USA	Presentation of Research Paper	Apr. 20-21, 2002
2.	Dr.S.Swarnamani	Best Paper Student Award	MIRC-ASA	Best Student Paper	29 Sep.2002

4.2.4. Design and Development Activities:

Modernisation of Strength of Materials Laboratory, Experimental Stress Analysis Laboratory, Creation of Holography Laboratory.

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value (Rs. in lakhs)
1.	Iotech Daqboard and Dasy Lab. Software	0.80

4.2.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Numerical investigation of the effects of flow configuration on multiple supersonic jet interaction	2000- 2003	ARDB	2.84	Dr. V. Ramjee Dr. T. Sundararajan
2.	Costal Atmospheric Dispersion studies – Hybrid Models	1999-2003	AERB	24.40	Sr. J. Lakshminarasimhan Dr. R.Venkatesan (IGCAR)
3.	Digital photoelasticity by single shot data acquisition	Mar. 2003- Mar. 2005	ISRO-IITM cell	13.35	Prof.K.Ramesh
4.	Smart Structures for Vibration Control	2000-2002	MHRD	12.00	Dr.S.Swarnamani/ Dr.S.Narayanan/ Dr.P.Chandramouli/ Dr.N.Ganesan/ Dr.C.Sujatha

Industrial Consultancy Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr. V. Ramjee	Pitot tube Calibration	Geeco Enercon (P) Ltd.	0.10
2.	Dr. K.Ramesh	Interpretation of pressure sensitive films – Phase I	Wheels India Ltd, Chennai	0.05
		Interpretation of pressure sensitive films – Phase I	Wheels India Ltd, Chennai	0.10
		Photoelasticity coating analysis of PTO shaft diaphragm	CVRDE, Avadi Chennai	0.20
		Regionwise comparison of pressure distribution in wheels.	Wheels India Ltd, Chennai	0.40
3.	Dr.S.Swarnamani	Mechanical Endurance Test of Circuit Breaker at Site.	Alstom Ltd., Perungudi, Chennai	0.12
4.	Dr. C Sujatha/ Dr. S.Narayanan	Vibration Test on the Vacuum Circuit Breaker.	Bombardier Transportation India Ltd., Vadodara-390 013	0.31

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs.in lakhs)
5.	Dr.S.Swarnamani/ Dr.N.Ganesan	Seismic Test on 420 kV HCB.	Switchgears and Structural (India) Pvt. Ltd., Hyderabad-500055	0.61
6.	Dr.S.Swarnamani/ Dr.C.Sujatha	Seismic Test on Pantograph Isolator.		0.61
7.	Dr.C.Sujatha/ Dr.S.Narayanan	Seismic Test on 120 kV & 30 kV Surge Arresters	Oblum Electrical Industries Pvt. Ltd., Hyderabad-500 037	0.82
8.	Dr.P.Chandramouli/ Dr.S.Swarnamani	Redesign of operating mechanism in GL 312 Circuit Breaker	Alstom Ltd., E&E	1.10
9.	Dr.P.Chandramouli	Vibration Testing of Reservoir Tank.	Pentyadaewha Auto Parts Ltd., Irrungattukottai-602 105	0.28
10.	Dr.C.Sujatha/ Dr.P.Chandramouli	Seismic Test on 245 kV Bushing.	B.H.E.L., Bhopal-462 022	0.36
11.	Dr.S.Narayanan/ Dr.P.Chandramouli	Noise Abatement Study in ITC, Munger	India Tobacco Division, Munger (Bihar) - 811 202	1.14
12.	Dr.C.Sujatha/ Dr.S.Narayanan	Seismic Test on 390 kV Lightning Arrester	Jayashree Insulators, Halol (Gujarat) - 389330	0.36
13.	Dr.C.Sujatha/ Dr.N.Ganesan	Earthquake Analysis of Electrical Panel	Larsen & Toubro Ltd., Chennai-600 089	0.40
14.	Dr.P.Chandramouli/ Dr.S.Swarnamani	Seismic Test on 36 kV/15 kV O/D VCB	ABB Limited, Nasik-422 007	0.82
15.	Dr.P.Chandramouli/ Dr.C.Sujatha	Measurement of Noise Level of Chain Sprocket System.	TI Diamond Chain Ltd., Ambattur, Chennai-600 053	0.50
16.	Dr.S.Swarnamani/ Dr.N.Ganesan	Seismic Test on Outdoor 36 kV Vacuum Circuit Breaker	Crompton Greaves Ltd., Nashik-422 010	0.46
17.	Dr.S.Swarnamani/ Dr.P.Chandramouli	Vibration Test of DC Filler Reactor	Autometers Alliance Ltd., Noida-201 307	0.51
18.	Dr.C.Sujatha/ Dr.N.Ganesan	Determination of Stiffness of Rubber Pads	Alstom Ltd., Pallavaram, Chennai-600 043	0.08
		Seismic Test on 220 kV CVT.	Alstom Instrument	0.41
19.	Dr.P.Chandramouli/ Dr.S.Narayanan	Seismic Test on 220 kV CT	Transformers P.Ltd., Bangalore-562 157	0.41
20.	Dr.C.Sujatha/ Dr.S.Swarnamani	Seismic Test on 132 kV CT		0.41
21.	Dr.C.Sujatha/ Dr.V.Ramjee	Study of Vibrations of Buildings and Foundations at 106 MW Power Plant.	Madurai Power Corporation P.Ltd., Chennai-18	0.45
22.	Dr.S.Swarnamani/ Dr.N.Ganesan	Seismic Testing of 245 kV Circuit Breaker.	Crompton Greaves Ltd., Nasik-422010	0.46
23.	Dr.C.Sujatha/ Dr.S.Swarnamani	Seismic Test on 245 kV Isolator.	Elpro International Ltd., Hyderabad-500 037	0.51
		Seismic Test on 145 kV Isolator.		0.51
24.	Dr.S.Swarnamani/ Dr.N.Ganesan	Seismic Test on Outdoor 36 kV Porcelain Clad VCBs.	B.H.E.L., Bhopal-462 022	0.46
		Seismic Test on 145 kV Circuit Breaker	Crompton Greaves Ltd., Nashik-422010	0.46
25.	Dr.J.Raamachandran/ Dr.K.Gopinath	WCM Gear box & open gearing-checking of calculation	Walchand Wagon Industries Ltd. Mumbai	0.26

Journal Editorial Boards:

S.No.	Name of faculty	Chairman/Member	Journal
1.	Dr.S.Narayanan	Member	Aeronautical Society of India

Research Publications:

No. of papers published in Refereed National Journals	..	8
No. of papers published in Refereed International Journals	..	21
No. of papers presented in National Conferences	..	18
No. of papers presented in International Conferences	..	25

In Refereed National Journals:

- Mallikarjun S. Holi and S. Radhakrishnan, "Determinant factors of bone stiffness index in men and women for the assessment of osteoporosis, Journal of Medical and Life Sciences Engineering, (accepted)
- Susamma Chacko, D.Kumar and Megha Singh, "Image reconstruction of official attenuation coefficient variation in biological tissues", Indian Journal of Experimental Biology, 41, 2003, pp 26-32.
- R.Srinivasan, D.Kumar and Megha Singh, "Optical tissue-equivalent phantoms", Trends in Biomaterials and Artificial organs, 15, 2002, 42-47.
- S. Vijayakumar, T. Sundararajan, and V. Ramjee, 2002 "A Computational study of equal and unequal supersonic jets", Journal of Aeronautical Society of India, Vol.54, No.1, pp. 1 to 15.

5. Sivakumar Subramanian, S.Swarnamani, S.Balaguru, Influence of crack and delamination on vibration characteristics of composite Beams, J.Acoustical Society of India, Vol.30, 2002, No.1-2238-241.
6. Naresh J., S.Swarnamani, Improving classification accuracy of fault Diagnosis in machinery using genetic algorithm, J.Acoustical Society Of India, Vol.XXIX, No.2-4, pp.169-177, 2001.
7. S Jayashankar, S.Narayanan and C.Padmanabhan, "Acoustic Transmission Loss of Cylindrical Composite Shells", Journal of the Acoustical Society of India, 30, pp.218-221, 2002.
8. P Venugopal, S.Narayanan and S.Padmanabhan, "Secondary source location optimization in active noise control systems using genetic algorithm", Journal of the Acoustical Society of India, 80, 222-225, 2002.

In Refereed International Journals:

1. Mallikarjun S.Holi and S.Radhakrishnan, "Comparison of ultrasound and dual energy x-ray absorptiometry (DEXA) methods in estimation of low bone mass for the assessment of osteoporosis fracture risk in Indian men and women, Acta of Bioengineering and Biomechanics, Vol.4 (1), pp 396-397, 2002.
2. Mallikarjun S.Holi and S.Radhakrishnan, "Estimation of low bone mass for the assessment of fracture risk in Indian men and women using quantitative ultrasound and dual energy x-Ray absorptiometry, International Journal on Mechanics in Medicine and Biology. (accepted).
3. Patil K.M., Charanya, G., Prabhu, G.K., "Optical pedobarography for assessing neuropathic feet in diabetic patients – a review", International Journal of Lower Extremity Wounds, UK, Vol.1 (2), 2002, 93-103.
4. D. Kumar and M. Singh, "Characterization and imaging of compositional variation in tissues", Publication in IEEE Trans. on Biomedical Engineering.(Accepted)
5. D. Kumar and M Singh, "Non-invasive imaging of optical parameters of biological tissues", Publication in Medical & Biological Engineering and Computing. (Accepted)
6. Sanjay Jayavanth and Megha Singh, "Influence of an inhomogeneous magnetic field on erythrocyte aggregation mechanism – an analysis by He-Ne laser aggregometer", Journal of Magnetism and Magnetic Materials, 252 (2002), 412-414.
7. R.Srinivasan and Megha Singh, "Laser backscattering and transillumination imaging of human tissues and their equivalent phantoms. IEEE Transactions on Biomedical engineering (In Press).
8. N.S.Anand, D.Kumar, R.Srinivasan and Megha Singh, "Laser reflectance imaging of human forearms and their tissue-equivalent phantoms", Medical and Biological Engineering and Computing (In Press).
9. J.Kumar, Lakshmana Rao C. and Mehrdad Massoudi, "Coutte Flow of Granular Materials", Int. J. of Nonlinear Mechanics, 38, pp 11-20, 2003.
10. Kumar, J.S., N.Ganesan, S.Swarnamani, C.Padmanaban-Active Control of beam with magnetostrictive layer, Computers and Structures 81 (2003) pp.1375-1382.
11. Naresh J, S.Swarnamani, Raj BKN Rao – Diagnosis of rotor bearing System in noisy conditions using Artificial Neural Networks and Genetic Algorithm, International Journal of Comadem (2002), 5 (4), pp. 21-29.
12. Naresh, J., S.Swarnamani, Multidefect diagnosis of rotating Machinery using genetically evolved neural networks, Journal of Vibroengineering, Vol.4, 2002, No.1(8), pp.17-24.
13. N. Ganesan and Ravikiran Kadoli – Buckling and dynamic studies on piezothermoelastic composite cylindrical shell, Composite Structures, Vol.59(1), 2003, pp.45-60
14. Ravikiran Kadoli and N. Ganesan – Free vibrations and buckling analysis of composite cylindrical shells conveying hot fluid, Vol.60(1), 2003, pp.19-32.
15. V.Balamurugan and S.Narayanan, "Active passive hybrid damping in beams with enhanced smart constrained layer treatment", Engineering Structures 24(3), 355-363, 2002.
16. V.Balamurugan and S.Narayanan, "Finite element formulation and active vibration control study on beams using active constrained layer damping treatment (SCLD)", 249(2), 227-250, 2002.
17. A.Raghothama and S.Narayanan, "Periodic response and chaos in nonlinear systems with parametric excitation and time delay", Nonlinear Dynaics, 27(4), 341-365, 2002.
18. K.Renji, P.S.Nair and S.Narayanan, "Response of a plate to diffuse acoustic field using statistical energy analysis", J. Sound and Vibration, 254(3), 523
19. V.R.Pramod, Vivek Jaiswal, C.Sujatha and S.Ramesh, Proc. Second International Conference on Vibration Engineering Technology of Machinery, 16-18 Dec., 2002, Mumbai.
20. K V Muthukrishna Selvam and C.Sujatha, Proceedings of the 8th National Annual Convention of the Madras India Regional Chapter of the Acoustical Society of America, 29th September, 2002, Kavaraipettai, pp.103-116.
21. C.D.Parmar, Manoj Gupta and C.Sujatha, 'Dynamic analysis of off -road vehicles', to be presented at and published in the Proc. Second International Conference on Vibration Engineering and technology of Machinery, 16-18 Dec., 2002, Mumbai, India.

In Proceedings of National Conferences:

1. R. Venkateswaran, S.Radhakrishnan and Nitin S.Shetty, "Classification of night blindness disorders of Electroretinogram signal analysis", Proceedings of Twenty third annual conference of Indian Association of Biomedical Scientists, JIPMER, Pondicherry, pp 43, Oct. 4-6, 2002.

2. V.Jacob Thomas, K.M.Patil, S.Radhakrishnan, V. Balasubramanyam, V.B. Narayanamurthy and R. Parivalavan, "Optimal Therapeutic footwear in diabetic – A computer simulated analysis", First national Conference on Diabetic Foot, Bangalore, Dec. 2002.
3. Charanya, G., Patil, K.M., Murthy, V.B.N., Parivalavan, R., " Power ratio of foot pressure distribution – an advanced parameter for early detection of diabetic foot at risk " 1st Annual Conference: Diabetic Foot Society of India, Bangalore, 7 – 8, December, 2002.
4. Charanya, G., Visvanath, K., Murthy, V.B.N., Parivalavan, R., Patil, K. M., " Is reduced sole thickness a precursor of foot ulceration in diabetics? ' 1st Annual Conference: Diabetic Foot Society of India, Bangalore, 7- 8, December, 2002.
5. Patil, K. M., ' Power- pressure distribution Vs Peak foot pressure measurements in diabetic neuropathy, ' 1st Annual Conference: Diabetic Foot Society of India, Bangalore, 7- 8, December, 2002 (Invited Lecture).
6. Thomas, V.J., Patil, K.M., Radhakrishnan, S., Venkatesh, B., Murthy, V.B.N., Parivalavan, R., Optimal therapeutic footwear in diabetics – A computer simulated analysis ' 1st Annual Conference :Diabetic Foot Society of India, Bangalore, 7- 8, December, 2002 (Invited Lecture).
7. V.P.S. Naidu and M.R.S. Reddy, "Time Frequency Distribution of Heart Rate series signal by Morlet Transform Technique in Controls and Myocardial Infarcted patients", Proc. of All India seminar on Advances in Computer Medicine and Medical Electronics, Bhubaneswar, pp: 1-5, March 3, 2002.
8. J.L. Narasimhan, B.H. Lakshmana Gowda and B.R.V. Raghava Raju, "Computation of Wind Effects on Three Square Buildings in Tandem Arrangement", Proc. Of National Conference on wing Engineering (NCWE 2002), held in IIT Roorkee, in April 2002, pp. 185 – 195.
9. J.L. Narasimhan, B.H. Lakshmana Gowda and B.R.V. Raghava Raju, "Experimental Study of Wind Pressure distribution on three High-rise Prismatic Bodies in Tandem Arrangement", Proc. of National Conference on wing Engineering (NCWE 2002), held in IIT Roorkee, in April 2002, pp. 371 – 381.
10. P. Jamima, J. Lakshminarasimhan & R. Venkatesan, "A Study on Atmospheric dispersion around Kalpakkam Coastal Site Using a Non-Hydrostatic Model and Comparison with Field Data", Proc. Of XI National Symposium on Environment, June 2002, held in Rajasthan College of Engineering, Udaipur, pp. 158 – 164.
11. Sai Prasad, V. and Ramesh, K (2003) Background intensity effects on various phase shifting techniques in photelasticity, COPE (Conference on Optics and Photonics in Engineering), January 6-8, NSIT, New Delhi.
12. Naresh, J., S.Swarnamani, Diagnosis of rotating machinery using multiplayer feed forward neural networks trained with genetic algorithm, Proc. 8th National convention of MIRC-Acoustical Soc. of America, 29th Sep. 2002, p.89-102, RMK Engg. College, Kavaraipettai.
13. Balaguru, S., S.Swarnamani, Influence of delamination on eigen frequencies of composite beams, Proc. 8th National convention of MIRC-Acoustical Soc. of America, 29th Sep. 2002, pp.67-77, RMK Engg., Kavaraipettai.
14. Sivakumar Subramanian, S.Swarnamani, Use of Laplacian to detect crack in composite beams and plate, Proc. 8th National convention of MIRC-Acoustical Soc of America, 29th Sep 2002, pp.79-88, RMK Engg College, Kavaraipettai.
15. S.Jayasankar, S.Narayanan and C.Padmanabhan, "Acoustic Transmission loss of cylindrical composite shells", Paper presented at the National Symposium on Acoustic (NSA 2002), Aligarh Muslim University, Aligarh, Oct. 2002.
16. P.Venugopal, S.Narayanan and C.Padmanabhan, "Secondary source location optimization in active noise control systems using genetic algorithm", Paper presented at the National Symposium on Acoustics (NSA 2002), Aligarh Muslim University, Aligarh, Oct.2002.
17. S.Narayanan, "Isolation and Control", Paper presented at the National Seminar on Seismic Design of Nuclear Power Plants, SERC, Chennai, Feb.2003.
18. S.Narayanan, "Numeric Analytical Methods in Nonlinear Dynamical Systems", Invited paper presented at the 47th Congress of the Indian Society of Theoretical and Applied Mechanics, IIT- Gauhati, Dec. 23 – 26, 2002.

In Proceedings of International Conferences:

1. Mallikarjun S.Holi and S.Radhakrishnan, "Effect of body mass index, body composition, age and menopause on total body bone mineral density in Indian women", at the 28th Annual Northeast Bioengineering conference of the IEEE-Engineering in Medicine and Biology, Drexel University, Philadelphia, USA, pp 251-252, April 20-21, 2002. (Received Travel Grant Award).
2. Mallikarjun S.Holi, S.Radhakrishnan and N.A. Jeyavelan, "Quantitative assessment of bone mineral loss in normal subjects and in type-2 diabetes", International Congress on Biological and Medical Engineering, Singapore, (11-ICBME), pp 74, Dec. 4-7, 2002.
3. Mallikarjun S.Holi and S.Radhakrishnan, "Estimation of low bone mass for the assessment of fracture risk in Indian men and women using quantitative ultrasound and dual energy x-Ray absorptiometry", 12th International Conference on Mechanics in Medicine and Biology (ICMMB-12), Democritos University of Thrace, Greece, pp 291-295, Sept. 9-13, 2002.

4. V.Jacob Thomas, K.M.Patil, S.Radhakrishnan, V. Balasubramanyam, V.B. Narayanamurthy and R. Parivalavan, "Reduced foot sole soft tissue thickness in diabetic neuropathy foot cause plantar ulcers? A computer simulated analysis". WOUNDCON 2003, International Conference on Wound healing, Chennai, February 2003.
5. R.Venkateswaran, S.Radhakrishnan and Nitin S.Shetty, "Analysis and Quantification of Electro-oculogram in Normals and Best's dystrophy patients", Proceedings of Twenty first Southern Biomedical Engineering Conference, Biomedical Engineering : Recent Developments, Washington, USA, pp 45-46, September 28-29, 2002.
6. Patil, K.M., Shah, S. R., Charanya, G., Narayanamurthy, V.B., Parivalavan R., "Analysis and display of an advanced clinical parameter PR in diabetics and methods of prevention and healing of plantar ulcers", Proceedings of the international conference on wound healing Woundcon 2003, Feb. 2003, pp.36.
7. Jacob Thomas, V., Patil, K.M., Radhakrishnan, S., Balasubramanian, V., Narayanamurthy, V.B., Parivalavan R., " Does increase in hardness and reduced foot sole soft tissue cause plantar ulcers in diabetic neuropathy ? A computer simulated analysis", Proceedings of the international conference on wound healing Woundcon 2003, Feb. 2003, pp.49.
8. Bhavesh Parmar, Patil, K.M., Malaviya, G.N., Oommen P.K., " Power Ratio of foot pressure distribution for quantitative assessment of foot drop surgery in Hansen's disease", Proceedings of the international conference on wound healing Woundcon 2003, Feb. 2003, pp.49-50.
9. Lakshmi Sampath and M. Ramasubba Reddy, "Texture Analysis for Automated Characterization of lesions in Breast Ultrasound Scans", Proc. 21st Southern Biomedical Engineering Conference, Maryland, USA, pp:77-78, September 28-29, 2002.
10. K. Bommanna Raja, M. Ramasubba Reddy, S. Swarnamani and S. Suresh, "Analysis of Kidney disorders using Ultrasound Images by Geometric Moments", Proc. 21st Southern Biomedical Engineering Conference, Washinton D.C. and Recent Trends in Biomedical Engineering, pp:153-154, September 28-29, 2002.
11. Sagarika Chandrasekaran and M. Ramasubba Reddy, "Parameter Estimation for Pathological Voice Evaluation, Proc. 21st Southern Biomedical Engineering Conference", Washinton D.C. and Recent Trends in Biomedical Engineering, pp:165-166, September 28-29, 2002.
12. Ravichandran T and M.Ramasubba Reddy, "Estimation of Heart Rate Variability(HRV) using Instantaneous Frequency and Daubechies wavelet transform methods", Proc. of Intl. Congress on Biological and Medical Engineering, Washinton D.C. and Recent Trends in Biomedical Engineering, Singapore, pp:December 4-7, 2002.
13. N.S.Anand, R.Srinivasan, D.Kumar, J.Sanjay and Megha Singh, "Optical characterization of surface tissues of human body by multi-probe laser reflectometry", Microwave Measurement Techniques and Applications, J. Behari (Ed), Anamaya Publishers, New Delhi, 2003, 119-127.
14. R.Srinivasan and Megha Singh, "Laser reflectance imaging of human forearm and its equivalent optical phantom", 11th International conference on Biomedical engineering, Singapore, December 2002.
15. V. Ramjee, M.S. S. Sarma, T. Sundararajan and S. Sasikumar, In International Conference on Fluid Mechanics and Fluid Power 2002, "Incompressible jets from different orifices, Vol.I, pp. 191-200.
16. Ch. Sivannarayana, J.L. Narasimhan & B.H.L. Gowda, "Interference Effects on three Dimensional Bluff Bodies in side-by side Arrangement", Proc. Of 2nd International and 29th National Conference on fluid Mechanics and Fluid Power, held in IIT Roorkee, Dec. 2002, Vol.I, pp. 226 – 233.
17. Sai Prasad, V., Khode, R.K., Madhu, K.R and Ramesh, K (2002) Phase unwrapping by tiling in Digital photoelasticity, ISEM (International Symposium on Experimental Mechanics), December 28-30, Taipei, Taiwan, (CD-ROM).
18. Sathiyarayanan, S., Lakshmana Rao C. and Srinivasan M. Sivakumar, "Electro-mechanical Behaviour of Form I Uniaxially Stretched PVDF", Proceedings of the International Symposium on Experimental Mechanics, <http://isem.tcfst.org.tw>, Dec. 28-30, 2002.
19. Sakey Shamu, K.N. Singh, Lakshmana Rao C. and Devadas Menon, "Moment Capacity of Reinforced Concrete Beams using Fracture Mechanics", Proceedings of the International Symposium on Experimental Mechanics, <http://isem.tcfst.org.tw>, Dec. 28-30, 2002.
20. Sathiyarayanan, S., Srinivasan M. Sivakumar, C.Lakshmana Rao and Shankar V.N., "Electro-mechanical Creep of PVDF", Proceedings of ISSS-SPIE 2002, International Conference on Smart Materials Structures and Systems, December 12-14, 2002, IISc, Bangalore, pp 79-85.
21. D.Pareira, Shankar V.N., S. Sathiyarayanan. C.Lakshmana Rao and M.S.Sivakumar, "Vibration Control of a Cantilever Beam using Distributed PVDF Actuator", Proceedings of ISSS-SPIE 2002, International Conference on Smart Materials Structures and Systems, December 12-14, 2002, IISc, Bangalore, pp 551-557.
22. Dr J Raamachandran, "Vibration of Orthotropic plates using charge simulation method and neural network" International Conference on Boundary Element Method, June 17 – 20, 2002 at Sintra, Portugal

23. S.Narayanan, "Recent advances in active constrained layer damping treatment", Invited paper presented at the International conference on Smart Materials, Structures and Systems (ISSS-SPIE 2002), Indian Institute of Science, Bangalore, Dec.2002, Proc. pp.498-512.
24. V.Balamurugan and S.Narayanan, "Active-Passive hybrid vibration control study in plates using enhanced smart constrained layer damping (ECLD) treatment", paper presented at the International Conference on Smart Materials, Structures and Systems (ISSS-SPIE 2002), Indian Institute of Science, Bangalore, Dec. 2002, Proc. pp.521-525.
25. S.Narayanan,"Optimal active vehicle suspensions traversing rough roads", Invited paper in Second International Conference on Vibration Engineering and Technology of Machinery (VETOMAC-2), BARC, Mumbai, 2002 (Proc. in CDROM).

4.2.6 Other Activities:

Dr. K. Ramesh, Guest edited a special issue of Optics and Lasers in Engineering, Elsevier on Digital Photoelasticity, V 38 (2002).

4.3 DEPARTMENT OF CHEMICAL ENGINEERING

4.3.1. Introduction:

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

4.3.2. Academic Programmes:

New Course introduced:

Sl. No.	Course No.	Title
1	CH 641	Mathematical Methods in Chemical Engineering

New discipline introduced:

B.Tech (Biotechnology) is started with an intake of 35 students.

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech	80*	41	37	47	-	205
Dual Degree	16*	10	10	16	10	62
M.Tech	23	23	-	-	-	46
M.S	4	5	7	2	1	19
Ph.D	14	5	3	8	8	38
Total	137	84	57	73	19	370

*Including Bio-Technology

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 and Venue
Conference:				
1.	R. Srinivasan	Ph.D.	CFX Advanced Workshop	2-5 Dec.2002 Bangalore
2.	K. Pakshirajan	Ph.D.	International Conference on Water & Waste Water: Perspectives of Developing Countries (WAPDEC)	9-13 Dec.2002 IIT Delhi
3.	R.V. Krishnavenamma	M.S.	Appropriate Technologies for Industrial Pollution Control and Environmental Management	19-22 Dec 2002 S.V.University, Tirupati, AP
4.	L. Karunakumari	M.S.	Second International (29 th National Conference on Fluid Mechanics & Fluid Power (INCFMFP – 2002)	12-14 Dec.2002 IIT Roorkee
5.	K. Maheswaran	M.S.	Second International (29 th National Conference on Fluid Mechanics & Fluid Power (INCFMFP – 2002)	12-14 Dec.2002 IIT Roorkee
6.	R. Pushpalatha	Ph.D.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad
7.	P. Balasubramanian	Ph.D.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad
8.	M. Prasad Babu	Ph.D.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad
9.	S. Ratheesh	M.S.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad
10.	S.M. Gokul	M.S.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad
11.	V. Ramakrishnan	Dual Degree	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad

Sl. No.	Name of the student	Programme	Name of the Conference/Seminar/Symposia	Date and Venue
12.	P.Dinesh Sankar Reddy	M.Tech.	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec. 2002 Hyderabad
13.	D. Murugan	Ph.D.	International Conference on Plastic and Environment Opportunities and Challenges	24-25 Feb. 2003 New Delhi
14.	R.Padma Sree	Ph.D	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec. 2002 Hyderabad.
15.	D.Swathi	M.S	Indian Chemical Engineering Congress – 2002 (55 th Annual Session of Indian Institute of Engineers)	19-22 Dec.2002 Hyderabad.
Symposia:				
1.	Seema Manuja	Ph.D.	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
2.	B. Naga Kishore	M.S.	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
3.	R. Vijayabaskar	M.S.	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
4.	Ganesh Sankar Dombe	M.Tech.	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
5.	P.Dinesh Sankar Reddy	M.Tech.	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
6.	K.Jagannathan	Ph.D	National symposium on " Strategies for Sustainable planning and management of Industrial Ecology"	7-8 Mar.2003 Coimbatore
7.	R.Padma Sree	Ph.D	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay
8.	R.Padma Sree	Ph.D	Proc. Inter. Conference on Digital Modelling & Simulation (DAMS)	Jan 6-8, Coimbatore.
9.	D. Swathi	M.S	International Symposium on Process Systems Engineering and Control (ISPSEC '03)	3-4 Jan.2003 IIT Bombay

4.3.3. Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Professors:	
M.S.Ananth, Ph.D. (Florida)	Thermodynamics, Mathematical Modeling
A.R.Balakrishnan, Ph.D. (Waterloo)	Heat Transfer, Computer Aided Design
M.Chidambaram, Ph.D. (IISc) [Head]	Process Control
K.Krishnaiah, Ph.D. (IIT Madras)	Chemical Reactor Analysis and Design, Fluidization
D.V.S.Murthy, Ph.D. (IIT Madras)	Particle Technology, Environmental Engineering, mineral processing
N.R.Neelakantan, Ph.D. (Swansea)	Polymer Processing, Rheology
T.Panda, Ph.D. (IIT Delhi)	Bio-Chemical Engineering and Bio-Technology, Protoplast Fusion Technology
V.S.Ramachandra Rao, Ph.D. (IIT Madras)	Process Control, Model based Control, Artificial Neural networks.
S. Pushpavanam, Ph.D. (Florida)	Modelling and Simulation, Non-linear Dynamics, Flow Visualization
Shankar Narasimhan, Ph.D. (North Western)	Data mining, Fault Diagnosis, Process design
T.Swaminathan, Ph.D. (IIT Kanpur)	Environmental Engineering, Membrane Technology, Bio-technology
Associate Professors:	
Guhan Jayaraman, Ph.D. (RPI)	Down Stream Processing, Recombinant Protein Production Metabolic Engineering
R.Ravi, Ph.D. (Purdue University)	Statistical Thermodynamics, Process Control of Integrated Systems, Property Estimation of Liquid Metals

Name and Qualifications	Major area of specialization
P. Sessa Talpa Sai, Ph.D. (IIT Madras)	Chemical Reactor Analysis and Design, Rotary Kilns
S.Sankara Narayanan, Ph.D. (Queens Land)	Particle Technology, Mineral Process Simulation, Biomass Energy.
Assistant Professors:	
Abhijit P Deshpande, Ph.D. (Washington)	Polymers and composites processing, Rheology, Natural fiber composites, Microscopic Flow visualization
A.Kannan, Ph.D. (Mc Master Univ., Canada)	Separation Processes, Computer Aided Design
Sreenivas Jayanti, Ph.D. (Imperial College), London	Computational Fluid Dynamics, Multiphase Flow
Susy Varughese, Ph.D. (IIT Kharagpur)	Polymers and Elastomeric Materials
Tanmay Basak, Ph.D. (IISc Bangalore)	Computational Fluid Dynamics, Finite Element Analysis Microwave Assisted Transport, Molecular simulation
G. Sathyanarayana Naidu, Ph.D. (IIT Madras)	Biochemical Engineering, Phospholipids Flippases and lipid Traffic, Biodegradation of Toxic substances
Chandra Raj, Ph.D. (IIT Madras)	Genetic Engineering, Enzymology, Biofuel Production

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

Sl. No.	Co-ordinator(s)	Title	Period
Workshops:			
1	Prof D.V.S. Murthy Prof. T. Swaminathan	Second Regional Workshop of Asian Regional Research Programme on Environmental Technology	4-5 Oct 2002
2	Dr. Abhijit Deshpande	QIP Workshop on Continuum Mechanics	16-20 Dec 2002
Short Term Courses:			
1	Prof. M. Chidambaram	Computer Control of Processes	20-25 May 2002

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
Conferences:			
1	Dr. Kannan	Conference on Separation in Process Industries	14-16 Feb.2003 BHU, Varanasi
2	Dr. Guhan Jayaraman	Conference on "Education in the Knowledge Economy"	4-6 Feb 2003 Bangalore
Symposia:			
1	Dr. Abhijit Deshpande	Complex Fluids Symposium	6-7 Dec 2002 IISc Bangalore
2	Prof K. Krishnaiah	Indian Chemical Engineering Symposium CHEMCON 2003	19-22 Dec 2002
3	Prof M. Chidambaram	ISPSEC 2003	3-4 Jan 2003 IIT Bombay
Workshops:			
1	Dr. Susy Varughese	Workshop on Mechanics	11-15 Jan 2003
2	Dr. Abhijit Deshpande	International Workshop on Mechanics Engineering Science Group	11-15 Jan 2003

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of the faculty	Topic of Lecture	Venue and Date
1	Prof. T. Swaminathan	Heterogeneous Photo catalytic Degradation of Hazardous Organic Contaminants Reactor Configuration	2-5 Sep 2002 NEERI, Nagpur
2	Dr. Sreenivas Jayanthi	Computational Fluid Dynamics	7-8 Sep 2002 Bangalore
3	Dr. Abhijit Deshpande	Towards Higher Studies in IITM	30 Sep 2002 Sri Venkateshwara College of Engineering
4	Prof V.S.R. Rao	Instrumentation for Industrial Safety Regional Labour Institute	24 Oct 2002 & 3 Dec 2002
5	Prof M.Chidambaram	Inaugural Address in AICTE-ISTE sponsored Short Term Course "Modelling Simulation – An Overview"	18 Nov 2002 Pondichery Engineering College, Pondichery

Sl. No.	Name of the faculty	Topic of Lecture	Venue and Date
6	Dr. Abhijit Deshpande	Towards Higher Studies in IITM	5 Dec 2002 Vellore Institute of Technology
7	Prof. T. Swaminathan	Invited lecture	28 Feb 2003 SHAR
8	Dr. Susy Varughese	Plastic Waste Recycling	10 March 2003 CII Southern India, Chennai

Visits abroad by faculty:

Sl. No.	Name of the faculty	Country Visited	Date	Purpose of visit
1.	Prof. A.R. Balakrishnan	France	18-23 Aug 2002	12 th International Heat Transfer Conference, Grenoble, France

Honours and Awards obtained:

Best Paper Awards:

- Esterification of Ethanol with sulphuric Acid: A Kinetics study
Dr. P.S.T. Sai, Associate Professor and Dr. Shammi Theodore
The Canadian Journal of Chemical Engineering 2001
- Non Linear PI Controllers for time Delayed pH Process:
D.Swathi, V.S.R.Rao, R.Pichadrt & M.Chidambaram, Chemcon-2002, Hyderabad.
- Treatment of Hexavalent chromium from electroplating Wastewater:
K. Sahoo & D. V. S. Murthy, Chemcon 2002, Hyderabad.
- Plume Induced Liquid circulation:
S. M. Gokul, S.Pushpavanam, M. S. Ananth & P. Abhijit Deshpande, Chemcon 2002, Hyderabad.

Fellowships of Academies and Professional Societies:

Sl. No.	Name of faculty	Name of the Academy/ Professional Society	Level
1	Prof. A. R. Balakrishnan	Indian National Academy of Engineering (from 01.01.2003)	Fellow
2	Prof. T. Swaminathan	National Expert Committee on Fine Particulate Monitoring and Control, Central Pollution Control Board	Member
3	Prof. A. R. Balakrishnan	International Advisory Board, Engineering Science and Technology	Member
		International Scientific Committee, International Heat transfer Conference, 2002	Member

4.3.4. Design and Development Activities:

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

- Prof. Susy Varughese – Pencil Development from recycled paper for Raj Lubricants, Chennai.
- The Design proposed by Shri Abhishek Jain (IV Year B.Tech), Shri Sumon Datta (IV Year B.Tech) and Prof T. Swaminathan for the Health Care Without Harm's International Competition for Innovative Technologies for the Treatment of Medical Waste in Rural Areas has been selected for an Honorable Mention by the international Panel out of the 30 International

4.3.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Simulation & optimization studies on micro fines classifier	Upto Dec. 2002	CSIR	1.30	Prof S. Sankara -Narayanan
2.	Adequacy / Failure Analysis of non metallic Expansion Joints	8 months	BHEL, Trichy	4.01	Prof N.R.Neelakantan Dr. Susy Varughese
3.	Development of Methods for leak Detection and isolation in gas pipelines	2 years	GAIL	17.50	Prof.Shankar Narasimhan
4.	Flow Boiling Heat Transfer inside Narrow Tubes	3 years	ISRO-IITM	21.30	Prof.A.R.Balakrishnan

Industrial Consultancy Projects:

Sl. No.	Name of the faculty	Title	Industry	Amount (Rs. in lakhs)
1	Prof. S. Sankara Narayanan	Studies on milling of rice husk	BHEL, Trichy	6.46
2	Dr. Susy Varughese, Prof. N.R.Neelakantan and M. Balasubramanyam (COMPTEC)	Non Metallic joint Evaluation.	BHEL, Trichy	3.00
3	Dr. Abhijit Deshpande	Solution to problems of Nylon batch Polymerization	Aarthy Engineering Plastics	0.15
4	Dr. Abhijit Deshpande with Dr. Susy Varughese	Bonding solutions for Papers	Raj Lubricants	0.15

Journal Editorial Boards:

Sl. No.	Name of the faculty	Chairman / Member	Journal
1	Prof N. R. Neelakantan	Member	International Journal on Plastics Technology, CIPET, Chennai
2	Prof N. R. Neelakantan	Member	Applied Science Periodical
3	Prof. A.R. Balakrishnan	Associate Editor	IJHMT
4	Prof. A.R. Balakrishnan	Editor	JEHMT
5	Prof. T. Panda	Editorial Board Member	Indian Journal of Chemical Technology
6	Prof. T. Swaminathan	Editorial Board Member	Journal of Environmental Management
7	Prof. D.V.S Murthy	Editorial Board Member	Indian Journal of Environment and Pollution.

Research Publications:

Total No. of papers published in Refereed National Journals	..	2
Total No. of papers published in Refereed International Journals	..	11
Total No. of papers presented in National Conferences	..	10
Total No. of papers presented in International Conferences	..	14

In Refereed National Journals:

1. R.Chandrasekhar, R.Padma Sree & M.Chidambaram, Design of PI/PID controllers for unstable systems with time delay by synthesis method, Indian Chemical Engineer, 44(2002) 82-88
2. R.Padma Sree & M.Chidambaram, Set point weighted parameters of PI/PID controllers for systems with unstable pole & zero by minimizing ISE, Indian Chemical Engineer, 45(2003)3-6.

In Refereed International Journals:

1. What is the role of Thermodynamics in Protein stability? G. Sathyanarayana Gummadi (2003), Biotechnology and Bioprocess Engineering-8: 9-18
2. Tanmay Basak and K.Ganapathy Ayappa, "Role of Length Scales on Microwave Thawing Dynamics in 2D Cylinders", Int.J.Heat and Mass Transfer, 45, 4543-4559, 2002.
3. Madhuchhanda Bhattacharya, Tanmay Basak and K.Ganapathy Ayappa, "A Fixed-Grid Finite Element Based Enthalpy Formulation for Generalized Phase Change Problems: Role of Superficial Mushy Region", Int. J. Heat and Mass Transfer, 45, 4881-4898, 2002.
4. K.Srinivasan & M.Chidambaram, Modified relay feedback method for improved system identification Computers & Chem. Engg. 27(2003)727-732.
5. M.Chidambaram & R.Padma Sree, Simple method of designing PID controllers for integrating plus time delay system, Comp & Chem. Engg., 27(2003) 211-215.
6. R.Padma Sree & M.Chidambaram, Control of unstable bioreactor with dominant unstable zero Chemical & Biochemical Engg Journal Quarterly, 17(2003) 1-7
7. Boyapaty Gokul & Prof. T. Panda, Identification, molecular cloning and expression of a new esterase from Pseudomonas sp KCTC 10122BP with enantioselectivity towards racemic ketoprofen ethyl ester J MOL CATAL B-ENZYME 22 (1-2): 29-35 APR 1 2003
8. V. Venkata Dasu & Panda.T Determination of significant parameters for improved griseofulvin production in a batch bioreactor by Taguchi's method. PROCESS BIOCHEM 38 (6): 877-880 JAN 31 2003
9. S.Murthy Shekhar & Dr. Sreenivas Jayanti, Mixing of power-law fluids using anchors: Metzner-Otto concept revisited. AIChE J 49 (1): 30-40 JAN 2003
10. S.Murthy Shekhar & Dr. Sreenivas Jayanti, CFD study of power and mixing time for paddle mixing in unbaffled vessels. CHEM ENG RES DES 80 (A5): 482-498 JUL 2002

11. Sagale. AA & Pushpavanam. S. Process Design and Control. A Comparison of Control strategies for a non linear reactor – separator network sustaining an autocatalytic isothermal reaction. *Industrial Engg. Chem. Research* 41, 2005 – 2012(2002)

In Proceedings of National Conferences:

1. "Plume Induced Circulation"- S.M.Gokul, Prof S. Pushpavanam, Prof. M.S. Ananth and Dr. P. Abhijit Deshpande CHEMCON 2002, Hyderabad.
2. Simulation of Flow through Contraction – Balasubramaniam, S.Jayanthi, A.P.Deshpande National Fluid Mechanics Conference 2002, Chandigarh
3. D.Swathi, V.S.R.Rao, R.Pichardt & M.Chidambaram, Nonlinear PI controllers for time delayed pH processes Chemcon-2002, Hyderabad.
4. R.Padma Sree & M.Chidambaram, A simple method of calculating set point weighting parameter for unstable systems with a zero, Chemcon-2002, Hyderabad.
5. P.Dinesh Shankar Reddy & M.Chidambaram, Chemical vapour Deposition, Chemcon-2002, Hyderabad.
6. V.Ramakrishnan & M.Chidambaram, Estimation of Transfer function model using an Asymmetrical relay feedback method, Chemcon-2002, Hyderabad
7. Ratheesh, A. Kannan, "Revamping of Distillation columns with Structural packings", Chemcon-2002, Hyderabad
8. M. Prasad Babu & K. Krishnaiah, Continuous segregation of binary heterogeneous solids in a gas fluidized bed, Chemcon-2002, Hyderabad
9. P.Balasubramanian, S. Pushpavanam & Achim Kienle, " Concentration delay in a coupled reactor separator system", Chemcon-2002, Hyderabad
10. P. Balasubramanian, N.R. Neelakantan & N.G. Nair, "Attempts to avoid cracking of silica gels made by sol-gel process. Chemcon-2002, Hyderabad.

In Proceedings of International Conferences:

1. Experimental & CFD studies of a rotating Wheel air classifier – Karunakumari, Eswariah, Vijaykrishna, S.Jayanthi & Prof. S. Sankara Narayanan at International Conference on Fluid Mechanics and Fluid Power, IIT Roorkee, Dec 2002
2. P.D.S. Reddy & M.Pandit & M.Chidambaram, Comparison of multivariable controllers for nonminimum phase systems, Proc. Inter. Symposium on Process system Engg & Control, 3-4 Jan, 2003, pp-386-391.
3. Ganesh S. Dombé & M.Chidambaram, Multivariable system identification using relay feedback Proc. Inter. Symposium on Process system Engg & Control, 3-4 Jan, 2003, pp 265-269.
4. R.Padma Sree & M.Chidambaram, A simple & robust method of tuning PID controllers for integrating/dead time Processes, Proc. Inter. Symposium on Process system Engg & Control, 3-4 Jan, 2003, pp 229-234
5. D.Swati, V.S.R.Rao, R.Pikhardt & M.Chidambaram, Nonlinear cascade control of pH system for change over titration curve, Proc. Inter. Symposium on Process system Engg & Control, 3-4 Jan, 2003, pp 334-339
6. R.Padma Sree & M.Chidambaram, Design of controllers for unstable FOPTD systems, Proc. Inter. Conference on Digital Modelling & Simulation (DAMS) Jan 6-8, Coimbatore.
7. K.Srinivasan & M.Chidambaram, Improved relay identification method, Proc. Inter. Conference on Digital Modelling & Simulation (DAMS) Jan 6-8, Coimbatore
8. D. Murugan, T.Swaminathan & Susy Varghese, Environmental friendly processing of plastic waste, International Conference on Plastic and Environment Opportunities and Challenges, 24-25 Feb.2003, New Delhi
9. R. Vijayabaskar, Shankar Narasimhan, Sachin Patwardhan, "Fault tolerance control of a CSTR using non linear state estimation", International Symposium on Process Systems Engineering and Control (ISPSEC '03), 3-4 Jan.2003, IIT Bombay
10. B. Naga Kishore & Sreenivas Jayanthi, "Development of a CFD based model for annular gas liquid flow" International Symposium on Process Systems Engineering and Control(ISPSEC '03), 3-4 Jan.2003, IIT Bombay
11. Seema Manuja, Shankar Narasimhan, Sachin Patwardhan, "Isolation of Abrupt changes in unmeasured Disturbances using state space models identified from input output data" International Symposium on Process Systems Engineering and Control (ISPSEC '03), 3-4 Jan.2003, IIT Bombay
12. S.Maheswaran & Sreenivas Jayanthi, "Studies on Swirling turbulent Coaxial Jets", Second International (29th National Conference on Fluid Mechanics & Fluid Power (INCFMFP – 2002), 12-14 Dec.2002, IIT Roorkee
13. L. Karuna kumari, Sreenivas jayanthi, Sankar Narayanan, C. Eswariah & N. Vijay Krishna, "Expeimental And CFD of a rotating wheel air classifiers". Second International (29th National Conference on Fluid Mechanics & Fluid Power (INCFMFP – 2002), 12-14 Dec.2002, IIT Roorkee
14. K. Pakshirajan & T. Swaminathan, "Biosolpction of lead ,copper and cadmium by Phanerochaete chrysosporium – An Equilibrium kinetic study. International Conference on Water & Waste Water: Perspectives of Developing Countries (WAPDEC) 9-13 Dec.2002, IIT Delhi

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Prof. Joseph H. Hulse, Siemens Hulse IDA INC Canada	5 June 2002	Seminar
2.	Prof. Jacques Gautron, Prof. N. Ranganathan University of Francois Rabelais de tours, France	13 Aug 2002	Department Visit
3.	Dr. Ing. Madhukar Pandit, Control Systems and Signal theory University of Kaiserslautern	2-3 Sep 2002	Special Lectures
4.	TATA ELXSI	26 Sep 2002	Software Demonstration
5.	Technical Committee Madras Fertilizers Limited	28 Sep 2002	Technical Interaction
6.	Mr. K. Srinivasan FOXBORO Australia	21 Oct 2002	Seminar
7.	Dr. P. Chandrasekhar Department of Chemical Engg City College of New York	11 Nov 2002	Seminar
8.	Dr. Jorge Aunon Prof. Vijay Gopu University of Alabama, Huntsville, USA	13 Nov 2002	Technical Interaction
9.	Dr. Ann Rundell Department of Biomedical Engineering Purdue University	6 Jan 2003	Seminar
10.	Prof. V. Balakrishnan Department of Electrical Engineering Purdue University	7 Jan 2003	Seminar
11.	Dr. Mehrdad Massoudi U S Department of Energy National Energy Technology Laboratory, USA	10Dec,2002 – 30Jan,2003	Technical Interaction
12.	Dr Rajesh N Dave Director, New Jersey Centre for Engineered Particulates	7 Jan 2003	Seminar
13.	Dr. Parthasarathy Sampathkumar CUNY, New York	21 Jan 2003	Seminar
14.	Dr. P. Selavkumar University of Birmingham, U K	30 Jan 2003	Seminar
15.	Prof. Rathna Bhushan Gopaluni Department of chemical and Materials Engineering Univ. of Alberta, Canada	4 Feb 2003	Seminar
16.	Dr. Venugopal Santhanam Purdue University	11 Feb 2003	Technical Discussion
17.	Prof. Suresh Valiyaveetil Dept of Chemistry, National University of Singapore	21 Feb 2003	Seminar
18.	Prof. Dr Eng. Jochen Buechs Department of biochemistry RWTH Aachen university	24 Feb 2003	Seminar
19.	Dr. Renato Amado, Dr. Peter Bachmann Swiss Federal Institute of Technology	26 Feb 2003	Seminar

4.3.6. Other Activities:

Chapter in Book - Dr. G. Sathyanarayana Gummadi "Reconstitution and Assay of Biogenic Membrane-derived phospholipids Flippase activity in proteoliposomes"
From: Methods in Molecular Biology, Vol.228: Membrane Protein protocols: Expression, Purification and Characterization. Edited by B.S.Selinsky, Human Press Inc. NJ, 2003, pp. 271-279.

Prof. N. R. Neelakantan is a Member of the Expert Committee (Industry) at the Ministry of Environment & Forests, Delhi.

4.4 DEPARTMENT OF CHEMISTRY

4.4.1. Introduction:

The Department of Chemistry was established in 1959. In addition to offering instructions at the B.Tech and select M.Tech levels, offers 4 semester M.Sc and Ph.D programmes. The major areas of teaching at postgraduates level are: Inorganic Chemistry, Organic Chemistry Biochemistry, Physical Chemistry, Analytical Chemistry and Theoretical Chemistry. The specializations in Ph.D programme include:

Inorganic Chemistry	Analytical Chemistry
Organic Chemistry	Electrochemistry
Bioinorganic Chemistry	Heterogeneous Catalysis
Chemistry of Main Group Elements	Photochemistry
Solid State Chemistry	Polymer Chemistry
Nuclear Chemistry	Spectroscopy
Biochemistry & Biotechnology	Theoretical Chemistry
Organometallic Catalysis	Bioorganic Chemistry

4.4.2 Academic Programmes:

Students on roll:

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
M.Sc.	21	22	-	-	-	43
Int. Ph.D	-	4	-	-	-	4
Ph.D.	28	25	13	13	30	109
Total	49	51	13	13	30	156

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	J. Srividhya	Ph.D	Chemist Meet	6.12.02, IITM
2.	G. Venkataramanan	Ph.D	CRSI Annual Conference	Feb. 7-9, 2003 TIDEL Park, Chennai
3.	Arkashish Bandhyopadhyay	Ph.D		
4.	S. Vijayasaradhi	Ph.D	XVII Carbohydrate Conference	Nov. 21-22, 2002 Mysore
Seminar:				
1.	J. Srividhya	Ph.D	Dyanamical Systems in Physiology & Medicine	Sep.8-19, 2002 Italy
Symposia:				
1.	Udayanath Aich	Ph.D	6th International Symposium on Biochemical Roles of Eukaryotic Cell Surface Macromolecules	Jan. 16-18, 2003, IICB, Kolkata
2.	J. Srividhya	Ph.D	Fifth National Symposium in Chemistry Symposia on Mathematical methods & applications	Feb. 7-9, 2003, CLRI 21.12.02 IITM

4.4.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Professors:	
N. Balasubramanian, Ph.D(IITM)	Analytical & environmental chemistry
T.S. Chandra, Ph.D (IISc, B'lore)	Food Biochemistry, Biomass conversion Industrial enzymes
N. Chandrakumar, Ph.D (IITK)	Magnetic resonance imaging & spectroscopy; Chem. Physics Instrumentation
M.S. Gopinathan, Ph.D (IITK)	Quantum & Theoretical Chemistry, Molecular Spectroscopy, Nonlinear Dynamics & Chaos
K. Lalitha, Ph.D (Mysore)	Biochemistry, Hydroperoxide metabolism, Biotechnology
S. Sankararaman, Ph.D(IISc, B'lore)	Organic chemistry
M.N.Sudeendra Rao, Ph.D(IISc, B'lore)	Inorganic Chemistry
G. Sundararajan, Ph.D(USA)	Organometallic chemistry, polymer synthesis, asymmetric synthesis
S. Vancheesan, Ph.D (IITM)	Organometallics, homogeneous catalysis
U.V. Varadaraju, Ph.D	Solid State chemistry, Materials joint with MSRC science
(IISc., B'lore)- Joint with MSRC	
B.Viswanathan, Ph.D(IITM) [Head]	Surface Science, Materials Science, Catalysis, Physical Chemistry

Name and Qualifications	Major area of specialization
Associate Professors:	
Archita Patnaik, Ph.D (Varanasi)	Materials Science (Analytical/Physical chemistry)
R.Dhamodharan, Ph.D (Mass, USA)	Chemistry of Macromolecules, Polymers at Surfaces and Interfaces
D. Loganathan, Ph.D (IITB)	Synthetic Organic, Carbohydrates and Bioorganic Chemistry
A.K. Mishra, Ph.D (IITK)	Physical Photochemistry Fluorescence Spectroscopy
T. Pradeep, Ph.D, (IISc, B'lore)	Chemical Physics, Spectroscopy, Ion chemistry, Monolayers, clusters
- Joint with RSIC	
M.V. Sangaranarayanan, Ph.D (IISc, B'lore)	Modelling of Electrochemical Systems
M.S. Subramanian, Ph.D (IITM)	Analytical chemistry
T.K. Varadarajan, Ph.D (IITM)	Physical Chemistry (Catalysis, Chemical Kinetics)
Vidyasagar, Ph.D, (IISc, B'lore)	Solid state chemistry
R.P. Viswanath, Ph.D (IITM)	Physics, chemistry, catalysis
Assistant Professors:	
Anju Chadha, Ph.D (IISc, B'lore)	Bioorganic chemistry, Enzymes in organic synthesis and their mechanisms
P. Bhyrappa, Ph.D (IISc, B'lore)	Bioinorganic chemistry, Molecular recognition, Supramolecular Chemistry
S. Baskaran, Ph.D (IIT Kanpur)	Asymmetric synthesis, Natural product and organometallic chemistry
Indrapal Singh Aiden Ph.D (Pune)	Synthetic organic chemistry. Carbohydrate chemistry
K. Mangala Sunder, Ph.D (McGill)	Theoretical Chemistry, Spectroscopy, Chemical Reaction Dynamics
N.Narasimha Murthy, Ph.D (IISc, B'lore)	Bioinorganic, Inorganic spectroscopic methods
G. Ranga Rao, Ph.D (IISc, B'lore)	Heterogenous catalysis, Materials and surface science
Sanjay Kumar, Ph.D (IIT Kanpur)	Theoretical Molecular Reaction Dynamics Quantum chemistry
Emeritus Scientist:	
R. Ramaswamy (AICTE)	Physical chemistry
Emeritus Professor:	
P.T. Manoharan	Bioinorganic chemistry

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

S.No	Coordinator(s)	Title	Period
Workshop:			
1.	Prof. B. Viswanathan	Fuel Cell Science & Technology	June 17-22, 2002, IITM

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. G. Sundararajan	Organized the DST-PAC Organic Chemistry Meeting	Aug. 28-29, 2002	DST, New Delhi
Seminar:				
1.	Dr. G. Sundararajan	MACRO 2002	Dec. 8-10, 2002	IIT Kharagpur
Symposia:				
1.	Dr. D. Loganathan	XXIst International Carbohydrate Symposium	July 7-12, 2002	Cairns Convention Centre, Cairns Queensland, Australia
		Seventeenth International Symposium on Glycoconjugates	Jan. 12-16, 2003	IISc, Bangalore
Conference:				
1.	M.S.Gopinathan	Theoretical Chemistry Conference	Jan. 17-19, 2003	Calcutta
2.	D. Loganathan	XVII National Carbohydrate Conference	Nov. 21-22, 2002	CFTRI, Mysore
3.	Indrapal Singh Akdhen	International Carbohydrate Symposium	July 7-12, 2002	CAIRNS, Australia

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of faculty	Topic of lecture	Venue and Date
1.	Dr.B.Viswanathan	Alternate materials for fuel cells anodes"	7 th International Conference on the advancement of Electrochemical Science and Technology 29 th November 2002
		Catalysts Characterisation by ESCA	Indian Society of Analytical Scientists, Delhi Dec.27, 2002.
		Designing of Mesoporous Solids for Catalytic Applications	Andhra Pradesh Akademi of Sciences, Hyderabad in association with S.V.University, Tirupati. January 25, 2003
		Conducting Polymers as a Highly Dispersive and Accessible Matrices for Pt Particles –for Fuel Cell Anode Applications	Fifth Indo-German Seminar on Chemical Modification of Surfaces and Electrocatalysis at CECRI Karaikudi. January 29, 2003
		Carbon Nanaotube	Prof.C.Srinivasan Endowment Special Lecture, Madurai Kamaraj University, Madurai Feb. 26, 2003
		Electrochemistry and Life	Professor V. Thiagarajan Endowment lecture, at Vivekananda College, Madras Feb.28, 2003
2.	Dr. N.Chandrakumar	Pulse Sequences for Two-Dimensional NMR Spectroscopy – Part I; Part II.	UGC Refresher Course in Chemistry, Chemistry Department, Annamalai University November 30, 2002
3.	Dr. M.S. Gopinathan	Dynamics of Rhythms in Nature	RRL, Trivandrum Feb.28, 2003
		Oscillation in Nature	Lady Dock College, Madurai March 18, 2003
		Linus Pauling Award Lecture	M.G. University, Kottayam March 28, 2003
4.	Dr. S. Vancheesan	Organometallics & Homogeneous Catalysis	A.C College of Tech. Septem.2-4, 2002
5.	Dr. G. Sundararajan	Sukumar Maiti Polymer Award Foundation Lecture	Jadavpur University, Dec. 7, 2002
		Single-site catalysts	MOP Vaishnav College for Women, Jan 4, 2003
6.	Dr. D. Loganathan	Glycosidase Catalysed Oligosaccharide Synthesis using Glycosylasparagine Mimics and other Acceptors	Dept of Bioengineering and Biotechnology, IIT Delhi March 26, 2002
7.	Dr. M.V.Sangaranarayanan	Electrochemical experiments – some new insights	Prof.V.Thiagarajan Endowment Lecture, Vivekananda College, Madras Feb.28, 2003
		Electron transfer processes at electrode surfaces	IGCAR, Kalpakkam January 8, 2003
		Introduction to electrochemical systems	Meenakshi College for women, Madras Sept.24, 2002
		Mathematical Modelling of Electrochemical Technologies	National Conference on Industrial Mathematics, Veltech Engineering College, Avadi, Madras January 10, 2003
8.	Dr. M.S. Subramanian	Introduction to Instrumental Analytical Techniques	RSIC, IITM February 17, 2003

S.No.	Name of faculty	Topic of lecture	Venue and Date
9.	Dr. R.P. Viswanath	Auto exhaust catalysts for air pollutions controls	UGC Refresher Course in Chemistry, Chemistry Department, Annamalai University Chidambaram, on Nov.27, 2002
		Hydrogen-Energy of the fuel	Annamalai University, 28.11.2002
		Green Catalyst	
		Catalysis – I	UGC Refresher Course, Univ. of Mysore, Feb.2003
		Catalysis – II	

Visits abroad by faculty:

Sl. No.	Name of faculty	Country visited	Date	Purpose of visit
1	Dr. S.Sankararaman	USA	May-July, 2002	Conference /Visit
2	Dr.G.Sundararajan	Singapore	Dec. 1-6, 2002	Conference/ Visits
3	Dr.D. Loganathan	Australia	7-12 July 2002	To participate in the International Symposium
4	Dr.K. Vidyasagar	Germany	13 th May to 9 th July 2002	Research

Honours and Awards obtained:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date
1	Dr. M.S. Gopinathan	Linus Pauling Memorial Lecture Award-2002	M G University Kottayam	Contribution & chemical Research & Technology	Mar. 28, 2003
2	Dr. N.Chandrakumar	Prof.Rango Krishna Asundi Memorial Lecture	INSA	Outstanding contribution in the field of Spectroscopy	2002
3	Dr. T.S.Chandra	Vocational excellence award	Rotary Club of Annanagar, Madras	As one of the 5 outstanding women achieve in Tamilnadu	2002
4.	Dr. T. Pradeep	Tamil Nadu Scientist award	Chemical Research Society of India	Chemical Sciences for the year 2000	2002

4.4.4. Design and Development Activities:

New facilities added or major equipment procured through project funds:

- 400 MHZ HRNMR with Broad Band Observe & Inverse Probes, CP-MAS, variable temperature measurements, gradient shimming and auto-sampler installed in the Chemistry Department.
- Mettler DTA and TGA
- ORBITEK-D5 Orbital Destainer shaker (200rpm)
- JASCO UV-VIS 530PC –Spectro photometer
- Low temperature circulation bath
- Diaphragm pump

Patents filed:

- Catalysts and process for the esterification of glycols with methacrylic acid on solid acid catalysts – S. Shanmugam, T.K.Varadarajan, B.Viswanathan
- Organic-inorganic composite based on polyoxometalate for solar energy harnessing - S.Shanmugam, T.K. Varadarajan, B.Viswanathan
- A patent for Electroless deposition of copper on PTFE articles has been filled by Ministry of Defence , Defence Research & Dev. Organisation, New Delhi, on 2nd September 2002. V.Sundararajan, V. Sivasubramanian, B.Viswanathan, V.Ramakrishnamurthy and K.Chinnaya James Raju.

- Surface activation of carbon, US patent disclosure by Columbian Chemical Company, B.Viswanathan, V.Raghuvveer, S.Chandravathanam and M.Aulice Scibioh
- A patent (No. 187729 dated 29.10.1998) entitled, "a method of obtaining an equilibrated anomeric mixture of reducing sugars using non-aqueous media" has been granted by the Patent office, Govt. of India, to Dr.D.Loganathan, Mr.S.S.Allavudeen and B.Kuberan, Department of Chemistry, IIT Madras.
- A process for the efficient synthesis of (2S, 3R)-2-O-Benzyl-3,4-O-Isopropylidene -D-Erythritol. Patent application number:543/MAS/2002, Indrapal Singh Aidhen
- A process for the lipase catalyzed preparation of Allyl and Aryl Estres of Hydrocinnamic Acid. Patent filed: April 2002, Anju Chadha & K. Priya

4.4.5. Research and Consultancy:

Sponsored Research Projects:

S.No.	Title	Period	Funding agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Improvement of S&T infrastructure	2002-2006	IC&SR, IITM	125.25	Dr.B.Viswanathan
2.	NMR Density Matrix Simulations & Experimental Pulse Sequence Implementations of a Variety of Spin Manipulations	2002-2005	CSIR	6.57	Dr.N.Chandrakumar
3.	Cystatin C estimation and sevelamar production	2002-2004	Madras Institute of Nephrology, Vijaya Health Centre	5.00	Dr.S.Sankararaman
4.	Novel Cyclophanes with Acetylenic Bridges, Synthesis, Structure and Reactivity Studies	2002-2004	Volkswagen Stiftung, Germany	0.72	Prof.Dr. Henning Hopf, Univ. of Braunschweig, Germany and Dr. S.Sankara-raman
5.	Cyclophanes with Novel Molecular Architectures: Investigation of Host Guest Chemistry and Photochemistry	2000-2003	CSIR	10.00	Dr. S.Sankara-raman
6.	Application of Nuclear Magnetic Resonance Techniques in Synthetic, mechanistic and Structural Identifications	2001-2004	DST	107.00	Prof. K.K. Balasubramanian, S. Sankararaman, G.Sundararajan, D. Loganathan, Indrapal Singh Aidhen, M.N.S. Rao, K. Mangala Sunder
7.	Synthesis of Novel Polymers by Single-Site Catalysts	2000-2003	DST	35.00	Dr. B. Viswanathan & Dr. G.Sundararajan
8.	Chiral Organometallics for Asymmetric Synthesis	2002-2005	CSIR	15.00	Dr. G.Sundararajan
9.	Glycosyl Amidophosphates: Novel Isosteric Analogues of Glycosyl Phosphates	2000 - 2003	CSIR, New Delhi	7.90	Dr. D. Loganathan
10.	Synthesis & characterization of Group VIII B for Hydrogen Transfer reactions	2001-2004	CSIR	8.00	Dr. S.Vancheesan
11.	Surface Engineering of Functional Polymer Coatings of Controllable Thickness on Metals and Oxide Surfaces of Nanoscopic Dimension.	2001-2004	DST	8.50	Dr. R. Dhamodharan
12.	Development of Nanoscopic Materials by Photochemical and Thermal "Graft From" Processes	2001-2004	CSIR	8.60	Dr. R. Dhamodharan
13.	Positive Tone Photoresist Materials For Deep UV Image Development - Synthesis, Characterization and Performance Evaluation	2001-2003	DRDO	23.60	Dr. R. Dhamodharan

S.No.	Title	Period	Funding agency	Amount (Rs. in lakhs)	Co-ordinators
14.	Surface Engineering of Microsystems Using Functional Polymer Coatings – From Method Development to Biomedical Applications	2002-2005	VWF Germany	52.00	Dr. R. Dhamodharan Prof. Ruhe, Germany
15.	Analysis of charge transport through redox polymer electrodes	1999-2003	DST	14.20	Dr. M.V.Sangara -Narayanan
16.	Studies pertaining to the design and development of supercapacitors	2002-2005	DRDO	19.64	Dr. M.V.Sangara -Narayanan
17.	Exploitation of supported helthopoly acids as catalysts for fine chemicals production	3 years	CSIR	5.68	Dr.T.K.Varadarajan & Dr.B.Viswanathan
18.	Novel Synthesis of Functionalised resins & Extraction studies on Uranium & Thorium	2002-2005	BRNS	9.84	Dr.M.S.Subramanian
19.	Novel liquid crystalline porphyrins: Synthesis and their properties	2002-2005	DRDO	13.54	Dr. P. Bhyrappa
20.	Synthesis of Novel Dendrimers and Study of their Application as Fluorescent Molecular Sensors	2002-2005	DRDO	22.34	Dr.S.Baskaran & Dr.A.K.Mishra
21.	Anchoring Transition of Liquid Crystals on New Liquid Crystal Monolayers Bearing a Crown Ether Ring	2002-2005	DRDO	24.58	Dr.Archita Patnaik & Dr.C.Vijayan
22.	Designing valuable synthetic equivalents based on weinreb amide functionality and its applications.	2001-2004	DST	18.00	Dr.Indrapal Singh Aidhen
23.	Defunctionalisation of carbohydrates as a feed stock to manufacture of industrial chemicals	2001-2003	CSIR	22.00	Dr.Indrapal Singh Aidhen

RBIC projects:

S.No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1	Dr. G. Sundararajan	Search for New Single-Site Catalysts	Reliance Industries Ltd.	10.00
2	Dr. R. Dhamodharan	Development of Fast Curing Industrial UV Coatings	Premiere Group Holdings	3.00

Exchange programme with other Universities:

Dr. G. Sundararajan - Under the auspices of Third World Academy of Sciences Dr. Nurun Nahar, Jahangirnagar University, Dhaka, Bangla Desh visited my laboratory for two months to carry out research on estimation of rare metal ions in water.

Research Publications:

Total No. of papers published in Refereed National Journals	:	18
Total No. of papers published in Refereed International Journals	:	46
Total No. of papers presented in National Conferences	:	13
Total No. of papers presented in International conferences	:	6

In Refereed National Journals:

- S.Rani, M.Aulice Scibioh, M.Helen, B.Viswanathan and V.R.Vijayaraghavan, Studies on carbon dioxide binding to metal macrocycles using electrochemical techniques, Transactions of the SAEST, 38, 25-28 (2003).
- C.Srinivasan and B.Viswanathan, Copper containing mixed oxides for catalytic oxidation of toluene and phenol in solid liquid phase, Indian J Chemistry, 42A, 250-254 (20003).
- S.Shanmugam, B.Viswanathan and T.K.Varadarajan, Esterification of triethyleneglycol with methacrylic acid over phosphotungstic acid, Bulletin of the catalysis Society of India 1, 116-120 (2002).

4. M.Sankaran, A.Kalaiselvan, R.Ganesan, P.Venuvanalingam and B.Viswanathan, Heteroatom substituted carbon nanotubes: Can they be the activating centers for hydrogen adsorption, Bulletin of the catalysis Society of India 1, 167-171 (2002).
5. M. Aulice Scibioh, B. Viswanathan & V.R. Vijayaraghavan, Influence of pH and supporting electrolyte on electro catalytic behaviour of Ni (II) macrocyclic complex of 1,3,6,9,11,14-hexaazacyclohexadecane, Indian J. Chem., Sec.A, 41A, 472 – 477. (2002)
6. M. Aulice Scibioh, P.V. Ragini, S. Rani, V.R. Vijayaraghavan & B. Viswanathan, Reduction of CO₂ by Ni(II) macrocycle at HMDE, *Proc. Indian. Acad. Sci (Chem. Sci)* 113(4), 343-350. (2001).
7. M. Aulice Scibioh, P.V. Ragini, V.R. Vijayaraghavan & B. Viswanathan, Electrochemical reduction of CO₂ at HMDE by Ni(II) macro cyclic complex of 1,3,6,8,12,15-hexaazatricyclo[13.3.1.1] eicosane, *Bull of Electrochemistry*, 18 (2), 57-61, (2002)
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9. Ch.Subrahmanyam, B.Viswanathan, and T.K. Varadarajan, Synthesis, Characterization and Catalytic Activity of Mesoporous Trivalent Iron Substituted Aluminophosphates, 16th National and 1st Indo-German Conference on Catalysis, IICT, Hyderabad, February (2003).
10. S. Shanmugam, B.Viswanathan, and T.K. Varadarajan, Esterification by Solid Acid Catalysts-A Comparison, 16th National and 1st Indo-German Conference on Catalysis, IICT, Hyderabad, February (2003)
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In proceedings of International Conferences:

1. Dr. M.V. Sangaranarayanan - Seventh International conference on electrochemical science and technology, Madras, November (2002)

2. Ch.Subrahmanyam, B. Louis, F.Rainone, B.Viswanathan, A Renken and T.K. Varadarajan, Liquid Phase Oxidation of Ethyl benzene and Benzyl alcohol over Mesoporous Cr-AIPO, 3rd International Mesostructured Materials Symposium (IMMS 2002) Jeju, Korea, July (2002).
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Distinguished Visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date of visit	Purpose of visit
1.	Professor Yves Gnanou, University of Bordeaux, France	December 15, 2002	Seminar & Discussions
2.	Professor Takeshi Toru, Nagoya Institute of Technology, Japan	December 17-19, 2002	INSA Exchange Programme
3.	Professor Suresh Valiyaveetil, National University of Singapore	February 14, 2003	Seminar & Discussions
4.	Professor Jean-Paul Pradere, University of Nantes, France	February 15-18, 2003	Seminar & Discussions
5	Prof. Akira Oku, Head, Resource Reclamation Laboratory Kyoto University, Japan	December 12, 2002	Deliver a lecture and interact with the faculty members of the Dept
6	Prof. Jurgen Ruhe, Managing Director, IMTEK, University of Freiburg, German.	March 5, 2002	Seminar & Discussions
7	Prof Kohji Tashiro, Univ. of Osaka, Japan	November 18, 2002	Seminar & Discussions
8	Prof.Dr.Wolfgang Schmickler, University of Ulm, Germany	November 20, 2002	Seminar & Discussions

4.4.6. Other Activities:

Dr. G. Sundararajan: Coordinator for Preparatory Course 2002-2003.
President of IIT Madras Alumni Association (since Jan. 2003)

4.5 DEPARTMENT OF CIVIL ENGINEERING

4.5.1. 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., Dual Degree, 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.

4.5.2. 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 & others	Total
B.Tech	38	45	40	44	-	167
Dual degree	8	9	8	10	10	45
M.Tech. - Building Technology	12	16	-	-	-	28
Environmental Engg.	1	8	-	-	-	9
Geotechnical Engg.	6	7	-	-	-	13
Hyd. & Water Res. Engg.	5	6	-	-	-	11
Structural Engg.	15	24	-	-	-	39
Transportation Engg.	9	7	-	-	-	16
M.Tech. - Construction Technology & Management	19	22	-	-	-	41
M.Tech. - Computational Engg.	11	11	-	-	-	22
M.S.	19	4	9	6	2	40
Ph.D.	26	9	10	9	5	59
Total	169	168	67	69	17	490

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

Sl. No.	Name of the Student / Scholar	Programme	Name of the Conference/ Seminar/ Symposia	Date and Venue
Symposia:				
1.	Monto Mani	Paper presentation	The fifth symposium of the International Urban Planning and Environment Association-Creating Sustainable Urban Environment Future Forms for City living	Oxford, UK Sept. 23-26, 2002

4.5.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialization

Professors:

Dr.R.Ambalavanan, Ph.D. (IITM)

Building Technology

Dr.P.K.Aravindan, Ph.D. (IITM)

Structural Engineering.

Name and Qualifications	Major Area of Specialization
Dr. K. Elango, Ph.D. (IITM)	Hydraulic & Water Resources Engineering
Dr. S.R. Gandhi, Ph.D. (IITM)	Geotechnical Engineering
Dr. V. Kalyanaraman, Ph.D. (Cornell)	Structural Engineering
Dr. N.R. Krishnaswamy, Ph.D. (IIT Kanpur)	Geotechnical Engineering
Dr. M.S. Mathews, Ph.D. (IITM) [Head]	Building Technology
Dr. S. Mohan, Ph.D. (IISc. Bangalore)	Hydraulic & Water Resources Engineering
Dr. Nainan P. Kurian Ph.D., (IIT Madras) D.Sc. (Univ. of Kerala)	Geotechnical Engineering
Dr. S.B. Pattnaik, Ph.D. (IIT Kanpur)	Transportation Engineering
Dr. K. Rajagopal, Ph.D. (Florida)	Geotechnical Engineering
Dr. V.R. Rengaraju, Ph.D. (IISc. Bangalore)	Transportation Engineering
Dr. K. Srinivasan, Ph.D. (IITM)	Hydraulic & Water Resources Engineering
Dr. V. Thamizh Arasan Ph.D. (IITM)	Transportation Engineering
Dr. B.S. Thandaveswara, Ph.D. (IISc Bangalore)	Hydraulic & Water Resources Engineering
Associate Professors:	
Dr. A. Boominathan, Ph.D. (Moscow)	Geotechnical Engineering
Dr. Devdas Menon, Ph.D. (IITM)	Structural Engineering
Dr. Koshy Varghese, Ph.D. (Texas, Austin)	Building Technology
Dr. A. Meher Prasad, Ph.D. (RICE)	Structural Engineering
Dr. B.S. Murty, Ph.D. (Washington St)	Hydraulic & Water Resources Engineering
Dr. A. Ramachandraiah, Ph.D. (IITM)	Building Technology
Dr. K. RamaMurty, Ph.D. (IITM)	Building Technology
Dr. K.N. Satyanarayana, Ph.D. (Cornell)	Building Technology
Dr. R. Sivanandan, Ph.D. (Virginia Tech.)	Transportation Engineering
Assistant Professors:	
Dr. P. Alagusundaramoorthy Ph.D. (IITM)	Structural Engineering
Dr. Amlan Kumar Sengupta Ph.D. (Univ. of Missouri)	Structural Engineering
Dr. K. Ananthanarayanan, Ph.D. (IITM)	Building Technology
Dr. G. Appa Rao Ph.D. (I.I.Sc. Bangalore)	Structural Engineering
Dr. G.R. Dodagoudar Ph.D. (IIT Bombay)	Geotechnical Engineering
Shri K. Gopalakrishna, M.Tech. (IIT Kanpur)	Environmental Engineering
Dr. Ligy Philip (Ms.) Ph.D. (IIT Kanpur)	Environmental Engineering
Dr. Manu Santhanam Ph.D. (Purdue)	Building Technology
Dr. S.R. Satish Kumar, D.Engg. (Nagoya Univ.)	Structural Engineering
Dr. K.P. Sudheer, Ph.D.	Hydraulic & Water Resources Engineering
Scientific Officer Gr.I	
Shri M. Subbi Reddy, M.S. (IITM)	Transportation Engineering

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

Sl. No.	Co-ordinators	Title	Period
Workshops:			
1.	Dr. S. Mohan	International Post Graduate Course on "Technology and Sustainable Development", jointly organized by the Ecole Polytechnique Federale De-Lausanne, Switzerland	Jan 5–April 19, 2002
2.	Dr. R. Sivanandan	Experimental Techniques in Civil Engineering ETSE – 2002	14-21 July, 2002
3.	Dr. S.R. Satish Kumar	Experimental Techniques in Structural Engineering	15- 21 July, 2002
4.	Dr. S.R. Gandhi Dr. K.N. Satyanarayana Dr. V.S. Raju	Construction & maintenance Aspect"	19–20 Aug. 2002
5.	Dr. S. Mohan	Training Programme on "Sea water Intrusion Modeling Studies".	11–15, Nov. 2002
6.	Dr. S. Mohan	Workshop on "Sea Water Intrusion Modeling in the Coastal Aquifer Systems".	29 th Nov. 2002
7.	Dr. S. Mohan	Training Program on "Application of System Models for Planning and Management of Water Allocation"	19-23 Aug. 2002.
8.	Dr. K. RamaMurty Dr. Manu Santhanam	Mixture Proportions of Conventional and High Performance Concrete	24-25 Jan. 2003

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
Workshops:				
1.	Dr.S.B.Pattnaik	Pedestrian Safety	Surakshya and SAFE, Chennai	7 th April 2002
2.	Dr.A.Meher Prasad	Indo-German Workshop on "Earthquake Risk Management"	University of Karlsruhe, Germany	24-29 June 2002
3.	Dr.S.R.Satish Kumar	Indo-German Workshop on "Earthquake Risk Management"	University of Karlsruhe, Germany	24-29 June 2002
4.	Dr.K.N.Satyanarayana	Indo-German Workshop on "Earthquake Risk Management"	University of Karlsruhe, Germany	24-29 June 2002
5.	Dr.K.Ananthanarayanan	Training for Engineers of APGENCO, Vijayawada	Andhra Pradesh Thermal Power Station	19-21 Aug. 2002
Seminar:				
1.	Dr. R. Sivanandan	Workshop to Discuss the Findings of a Study on Pedestrian Safety in T. Nagar, Chennai	Organised by SURAKSHA Road Safety Society (NGO)	April 7, 2002
		2 nd Annual Workshop on Transportation, Land Use and the Environment: Integrated Planning in Indian Cities	Sponsored by Administrative Staff College of India and Harvard University	Dec. 2-4, 2002
2.	Dr.K.Ananthanarayanan	GIS Application in Micro Level Planning	National Institute of Rural Development Hyderabad	7-8 Aug., 2002
3.	Dr.V.Thamizh Arasan	National Seminar on Road Transportation in India: Emerging Trends and Techniques	Indian Institute of Technology, Kharagpur	Sept.12-13, 2002
		International Seminar on, The Engineer in Sustainable Social and Economic Development	Institution of Engineers, Sri Lanka, Colombo	Oct. 19-20, 2002
4.	Dr.A.Boominathan	National Seminar cum workshop on rock dredging	Tuticorin Port Trust	Jan. 10-11, 2003
5.	Dr. V.Thamizh Arasan	82 nd Annual Meeting of TRB	Transportation Research Board, Washington, D.C., USA	Jan. 12-16, 2003
6.	Dr.K.Ananthanarayanan	International Seminar on "GTS to GPS"	Survey of India, Dehradun	11-13 Feb. 2003
7.	Dr.S.B.Pattnaik	IV Seminar on Safety in Public Transport	CE Dept., College of Engg., Anna Univ., Chennai	28-29 Mar. 2003
Symposia:				
1.	Dr.A.Boominathan	Symposium on industry academia partnership on technology development	IC & SR, IIT Madras	22-23 Feb. 2003
Conference:				
1.	Dr.V.Kalyanaraman	International Conference on Smart Materials, Structures and Systems	Finite Element Study of Smart Control of Struct Buckling	Dec. 12-14 2002
2.	Dr. S.B.Pattnaik	National Conference on Urban Development, Land Use and Transport Systems",	IIT Delhi	Apr. 24-25, 2002
3.	Dr.S.Mohan	National Conference on Environmental Management & Pollution Abatement	Ministry of Environment & Forests, Govt. of India, New Delhi	July 12-13 2002
4.	Dr.A.Boominathan	Ninth International Conference on piling an deep foundations	Feep Foundation Institute, NICE (France)	June 3-5 2002
5.	Dr.A.Boominathan	Indian Rock Conference (IRC-2002)	CSMRS, New Delhi	Nov. 28-29 2002
6.	Dr.S.B.Pattnaik	International Conference on Transportation System, Status & direction	IIT Delhi	Apr. 24-26, 2002

Sl. No.	Name of Faculty	Title	Institution	Period
7.	Dr.S.B.Pattnaik	International Conference on Enng. Education (ICEE 2002)	UMIST, Manchester, UK	Aug. 18-21, 2002
8.	Dr. R. Sivanandan	82 nd Annual Meeting of Transportation Research Board (TRB)	Transportation Research Board, Washington DC, USA	Jan. 12-16, 2003
9.	Dr.K.Elango	Asia Pacific Vice-Chancellor's Conference	Pusan National University, S.Korea	Oct 22-25, 2002
10.	Sri.K.Gopalakrishna	28 th WEDC Conference	Kolkata	Nov. 19-26 2002

Special Lectures delivered by the Faculty In other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr.S.R.Gandhi	Ground Improvement Techniques	Neyveli Lignite Corporation, 29 th June 2002
2.	Dr.M.S.Mathews	Retrofit of Earthquake Damaged Monuments"	Faculty of Architecture University, Dresdon, Germany 5 th July 2002
3.	Dr.Nainan P Kurian	Shell Foundations	Inst. Of Structural Enng. Univ. of Hanover, 24 th July 2002
4.	Dr. Satish Kumar S.R.	Seismic behaviour and design of steel structures	Inst. Of Road Transport, Erode, Nov. 2002
		Corrections in cold formed Steel Structures	SERC, Chennai
		Seismic Resistant Steel Frames	Anna University, Chennai
5.	Dr. V.Thamizh Arasan	Analysis of Modal Split of Urban Travel in India	Institut fur Verkehrsplanung und Verkehrstechnik, Technische Universitat Darmstadt, Germany, 26.5.2002.
6.	Dr. V. Kalyanaraman	"Composite Structures"	Torsteel India Foundations, Bangalore, July 3, 2002
		"Proposed Modification in Draft IS: 800	L & T- ECC Division, July 16, 2002
		Catastrophic Failures of Structure in the Civil Engineering Society"	SRM Enng. College, Chennai 7 th Aug. 2002
7.	Dr.K.Ananthanarayanan	Application of Network Techniques for monitoring project implementation and construction	Short term training programme for Tamil Nadu Electricity Board engineers on PERT/CPM, 8.8.2002, Chennai
		Project Scheduling and resource Management	Computer Applications for Project Management for Teachers from Karnataka State IIT1, Taramani, Chennai 9 th Aug. 2002
8.	Dr.S.B.Pattnaik	Environmental Effects of Traffic congestion - Hyd as a case study	Brownsweig Univ. Germany 26 th Aug. 2002
9.	Dr.B.S.Thandaveswara	Construction, Planning and Designing of Common Effluent Treatment Plants	Oct 2002, Kongu Engineering College, 638052
10.	Dr.K.Elango	Interdisciplinary Academic Programs	Loyola College, 6 th Feb. 2003
11.	Dr. V. Kalyanaraman	"Smart Control of instability of thin fibre composite cylindrical shells in aerospace applications"	V.S.S.C Thiruvananthapuram, 16-17 January 2003.
		"Composite Beam Bridges"	Indian Institute of Bridge Engineers, Chennai 7.02. 2003.
12.	Dr.Manu Santhanam	Effective utilization of Fly Ash in Bricks	TNEB, 29 th March 2003
13.	Dr. V.Thamizh Arasan	Trip Characteristics of Urban Travellers: A Comparison between Developed and Developing Countries	University of Peradenia, Sri Lanka, 18.10.2002
		Indian Transport Scenario and Travel Behaviour	University of Moratuwa, Sri Lanka, 21.10.2002
		Analyzing Urban Travel Pattern under Indian Conditions	University of Tennessee, Knoxville, USA., 21.01.2003
		Urban Travel Demand Modelling	Clemson University, Clemson, USA, 22.01.2003

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
		Travel Demand Modelling: An Indian Case Study	University of Alabama, Huntsville, USA, 24.01.2003
		Modelling Methodology for Transportation Systems Planning	National Institute of Technology, Calicut, 7.2.2003
		Recent Trends in Transport Systems Planning	Regional Engineering College, Tiruchirapalli, 13.2.2003
14.	Dr. V. Kalyanaraman	"International codes of practice on the design of CFSS components and systems"& "Design of CFSS compression members"	Structural Engineering Research Centre, January 23, 2003.
		"Composite Beam Bridges"	Indian Society of Bridge Engineers, Chennai 7.02.2003
		"Smart Control of instability of thin fibre composite cylindrical shells in aerospace applications"	VSSC, Thiruvananthapuram 16-17, Jan, 2003
15.	Dr.Manu Santhanam	Effective utilization of Fly Ash in Bricks	TNEB, 29 th March 2003
16.	Dr. V.Thamizh Arasan	Trip Characteristics of Urban Travellers: A Comparison between Developed and Developing Countries	University of Peradenia, Sri Lanka, 18.10.2002.
		Indian Transport Scenario and Travel Behaviour	University of Moratuwa, Sri Lanka, 21.10.2002
		Analyzing Urban Travel Pattern under Indian Conditions	University of Tennessee, Knoxville, USA., 21.01.2003
		Urban Travel Demand Modelling	Clemson University, Clemson, USA ,, 22.01.2003
		Modelling Modal Split in Urban Travel under Indian Conditions	Georgia Institute of Technology, Atlanta, USA 23.01.2003
		Travel Demand Modelling: An Indian Case Study	University of Alabama, Huntsville, USA, 24.01.2003
		Modelling Methodology for Transportation Systems Planning	National Institute of Technology, Calicut, 7.2.2003
		Recent Trends in Transport Systems Planning	Regional Engineering College, Tiruchirapalli, 13.2.2003
17.	Dr. V. Kalyanaraman	"International codes of practice on the design of CFSS components and systems" & "Design of CFSS compression members"	Structural Engineering Research Centre, January 23, 2003.
		"Smart Control of instability of thin fibre composite cylindrical shells in aerospace applications"	V.S.S.C Thiruvananthapuram, 16-17 January 2003
18.	Sri. K.Gopalakrshna	Treatment of Textile Waste Waters	CIT, Coimbatore, 28 th Nov. 2002
19.	Dr. V. Kalyanaraman	"Composite Beam Bridges"	Indian Institute of Bridge Engineers, Chennai February 7, 2003.
20.	Dr.Manu Santhanam	Effective utilization of Fly Ash in Bricks	TNEB, 29 th March 2003
21.	Dr. V.Thamizh Arasan	Trip Characteristics of Urban Travellers: A Comparison between Developed and Developing Countries	University of Peradenia, Sri Lanka, 18.10.2002
		Indian Transport Scenario and Travel Behaviour	University of Moratuwa, Sri Lanka, 21.10.2002
		Analyzing Urban Travel Pattern under Indian Conditions	University of Tennessee, Knoxville, USA., 21.01.2003
		Urban Travel Demand Modelling	Clemson University, Clemson, USA, 22.01.2003
		Modelling Modal Split in Urban Travel under Indian Conditions	Georgia Institute of Technology, Atlanta, USA 23.01.2003
		Travel Demand Modelling: An Indian Case Study	University of Alabama, Huntsville, USA, 24.01.2003
		Modelling Methodology for Transportation Systems Planning	National Institute of Technology, Calicut, 7.2.2003
		Recent Trends in Transport Systems Planning	Regional Engineering College, Tiruchirapalli, 13.2.2003

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr.A.Meher Prasad	Germany	June 24-29, 2002	Indo-German Workshop & Visit to Industries
2.	Dr.K.N.Satyanarayana	Germany	June 24-29, 2002	Indo-German Workshop & Visit to Industries
3.	Dr.M.S.Mathews	Germany	June-July 2002	BMBF Project
4.	Dr.A.Boominathan	France	June 3 – 5, 2002	Ninth International Conference on piling and deep foundations
		Germany	June 7–14, 2002	Visit to University of Karlsruhe under DAAD program
5.	Dr.S.R.Satish Kumar	Germany & Switzerland	Jun. 25-Jul. 7, 2002	Indo-German Workshop & Invited Lectures
6.	Dr.Nainan P Kurian	Germany	May–July 2002	On Reinvitation by the Alexander Van Humboldt Foundation
8.	Dr.S.B.Pattnaik	Manchester, UK	August 17-22 2002	Paper Presentation, ICEE 2002, Manchester
9.	Dr.S.B.Pattnaik	Germany	August 25-28, 2002	Invited lectures, Brownsweig,
10.	Dr.V.Thamizh Arasan	Germany	May 1-31, 2002	To work on Research Project
		Sri Lanka	Oct 15-20, 2002	To attend Conference and to visit Universities
		USA	Jan. 11-27, 2003	To attend Conference and to visit Universities
11.	Dr.R.Sivanandan	USA	Jan.9-24, 2003	To present paper in Transportation Research Board's (TRB) Annual Meeting and visit universities
12.	Dr.K.Elango	S.Korea	Oct. 22-25, 2002	International Conference

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	Dr. Nainan P Kurian	Degree of Doctor of Science (D.Sc)	University of Kerala	Thesis entitled " Studies on Conical, Spherical and Hyperbolic Paraboloidal Shell Foundations with Special Reference to their Behaviour in the Elastic and Ultimate Stages"	Aug. 2002
2	Dr. V. Kalyanaraman	Dr. M. Ramaiah Prize in 2001-02	SERC Scientists	Best Technical Paper	26.9.2002
3	Dr.A.Ramachandraiah Ms.Satya Pancharatnam	Best Paper Award	MIRC of ASA	Best Paper	Oct. 2002
4	Dr.K.Ananthanarayanan	The Suchit Kumar Memorial medal	The Institution of Engineers (India)	Best paper published in the Journal	06.1.2003

4.5.4. Design and Development Activities:**Brief and specific details of Process/Instruments/Equipments/Software Designed and Developed:**

Dr.R.Sivanandan has devoted some effort to further develop the transportation engineering software library/lab.

Dr.S.R.Satish Kumar has developed new type of connection between Steel rectangular hollow sections.

Dr.A.Boominathan developed a borehole pick for measurement of seismic wave velocities in soil/rock strata.

Dr.Nainan P Kurian developed a Software for the Design of Deep Foundations and Retaining Structures

Dr.Manu Santhanam has developed a laboratory equipment for evaluation of self-compacting concrete

Mr.K.Gopalakrishna developed a working model of Fluidized Bed Bioreactor in the Environmental Engineering Lab.

New facilities added or major equipment procured through project funds:

Name of Equipment	Value (Rs. in lakhs)
Mechanical Oscillator (5 Ton capacity) with speed control unit and variable speed DC motor	2.30

4.5.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Seismic Retrofitting of Multistoreyed Buildings	2002-20 04	DST	30.00	Dr.Devdas Menon Dr.S.R.Satish Kumar Dr.V.Kalyanaraman & others
2.	Fracture Assessment of Secondary pipe	2003	IGCAR Kalpakkam	7.00	Dr.S.R.Satish Kumar Dr.V.Kalyanaraman
3.	Development of Software for Design of Railway Bridges	2002 -2004	RDSO	15.32	Dr.V.Kalyanaraman
4.	Preparation of Documents for Draft IS: 800 as per work order	2002-2003	INSDAG	5.30	Dr.V.Kalyanaraman Dr. S.R. Satish Kumar
5.	Smart Control of Instability of Thin Fibre Composite Cylindrical Shells in Aerospace Application	2000-2002	ISRO	9.33	Dr.V.Kalyanaraman
6.	Fracture Assessment of Secondary Sodium Pipe	2002-2003	IGCAR Kalpakkam	6.08	Dr.V.Kalyanaraman Dr. S.R. Satish Kumar
7.	Seismic Evaluation and Retrofit of Existing Multi Storey Building	2002-2004	DST	60.00	Dr.V.Kalyanaraman
8.	Study on enhancement of recharge potential in the recharge area of the Neyveli deep-seated aquifers	2002-2005	Coal S & T Ministry of Coal, Govt. of India and NLC, Neyveli.	39.18	Dr.S.Mohan Dr.A.Boominathan
9.	Development of Methodology for Enhancing Level of Safety at Traffic Signals	2001-2004	BMBF, Germany & IIT Madras	Provision for visits only	Dr.V.Tamizh Arasan Prof.Fr.Ing.Manfred Boltze, Technical University of Darmstadt, Germany
10.	Design and performance of Self-Compacting concrete	2002-2005	DST	9.77	Dr.Manu Santhanam
11.	Bioremediation of Endosulfan contaminated soils using bacterial isolates from contaminated soils	2001-2004	DST	8.70	Dr.Ligy Philip
12.	A study on the level of pollution of Chennai Coastal water due to wastewater disposal	2002 -2003	Water Resources Organisation, Public Works Department, Govt of Tamilnadu	5.60	Dr.Ligy Philip Dr.S.Neelamani
13.	Improved Risk Assessment and Management in Urban Piped Water Systems	2002-2004	Loughborough Univ., UK (DFID)	6.00	Dr.K.Elango Dr.S.Mohan
14.	Development of Leak Detection methodologies for gas pipe line networks	2002-2004	GAZL	17.50	Dr.Shankar Narasimhan Dr.B.S.Thandaveswara

Industrial Consultancy projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr. R. Sivanandan Dr. S. B. Pattnaik	A Study on Pedestrian Safety in T. Nagar Area in Chennai	SURAKSHA Road Safety Society (NGO)	2.63
2.	Dr.V.Kalyanaraman	Proof Checking of HAL Industrial Building, Koraput	CR. Narayana Rao Architects and Engineers	2.00
3.	Dr.V.Kalyanaraman	Proof Checking of Steel Superstructure for Rail bridge across Ganges at Patna	M/s. Rites Limited	2.00

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs. in lakhs)
4.	Dr.A.Boominathan	Dynamic Test of Piles for Compressor foundation in DHDT HGU Site IOCL, Panipet	L & T Panipat	5.60
5.	Dr.A.Boominathan Dr.R.Sundaravadivelu	DHC Foundation of Bio-Polymer plant, Pondicherry	Hindustan Lever Ltd.	0.90
6.	Dr.A.Boominathan Dr.S.R.Gandhi	Seismic Test at NPCL power projects site, Kudangulam	L & T	7.20
7.	Dr.A.Boominathan	Evaluation of Dynamic Pile parameters	Petrofax International Ltd.	6.40
		Evaluation of dynamic pile parameters	BHPV	6.00
		Consultancy for dynamic pile parameter of CPCL	L & T	5.60
		Pre-Post dredging survey in the Dock Basin in front of Berth - 8	Tuticorin Port Trust	2.48
		Site parameters of Reactor Buildings of Kudankulam Atomic Power Project	NPCIL	2.00
		Cross Hole Shear Wave testing, PFBR Kalpakkam	L & T	1.26
		Consultancy dynamic soil parameter for a second combined CCP project, Kuttalam	L & T	1.20
		Geotechnical Investigation work at Ooverly, Kanchipuram	PTLCNT	0.85
		Dredging the Dock Basin in front of Berth - 8	Tuticorin Port Trust	0.85
		Gas Turbine Foundation Problem at VGTPP	BHEL	0.50
8.	Dr.V.Tamizh Arasan	Derivation of job mix formula for Bituminous Mixes	S.P.Lakhmanan Engineering Contractor, Chennai	0.70
		Mix design for bearing and wearing courses of highway pavement	National Highways Department, Govt. of Tamil Nadu	0.74
		Bituminous mix design for road improvement works	Highways Department, Govt. of Tamil Nadu	0.80
9.	Dr.S.Mohan Dr.R.Kumaraswamy Dr.R.Ambalavanan Dr.Ligy Philip Dr.K.RamaMurty	Design of storm water treatment system - Neyveli Township Phase II	Neyveli Lignite Corporation Neyveli	6.00
10.	Dr.S.Mohan	Estimation of state-discharge relationship Puthan Dam using Numerical method	IHH, Poondi, PWD, G.O.Tamilnadu	1.00
		Assessment of Return flows in Periyar - Vaigai systems	Public Works Dept., Govt. of Tamilnadu	1.50
11.	Dr.S.Mohan Dr.K.RamaMurty	Design of Rainwater harvesting system for the Industry Complex	Electrosteel Corporation, Chennai	0.50
12.	Dr.Devdas Menon	Proof checking of ROB for Bangalore Salem - Madurai section of NH7	L & T Ramboll Consulting Engrs. Pvt. Ltd.	1.25
13.	Dr.Devdas Menon Dr.A.Meher Prasad	Dynamic Fatigue tests on composite sleepers	Patil Group of Industries	4.25
14.	Dr.Devdas Menon Dr.A.Meher Prasad Dr.P.K.Aravindan	Design of LNG Jetty at Dahej (Elevated loading platform and anchor bent)	Hochtief (India) Ltd	3.00
15.	Dr.Devdas Menon	Structural Design of new Light house tower	Dept of Lighthouses & Lightships	0.90
		Fatigue test on fly ash concrete sleeper	Rayalseema Concrete Sleepers Pvt. Ltd.	1.00
		Testing of Strands - HT wires	Sha Martin Industries	0.75
		Proof checking of construction of Thattekad Bridge in Kothamangalam	PWD (Roads and Bridges), Kerala	0.50
		Dynamic load test on Ismal 12/13 anchorage	Usha Martin Industries	2.50

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs. in lakhs)
16.	Dr.Devdas Menon Dr.Meher Prasad	Study of structural design of clarified water storage tank of AESK, Colombo	Larsen & Toubro Ltd Baroda	0.70
17.	Dr.Devdas Menon Dr.S.R.Gandhi	Foundation and superstructure design of radar towers on Gujarat coast	Dept. of Lighthouses & Lightships	5.13
18.	Dr.Devdas Menon Dr.S.R.Gandhi	Repair of iron ore berth	Paradip Port Trust	0.50
19.	Dr.V.R.Rengaraju Sri.M.Subi Reddy	Job mix design and advice for Bituminous Macadam and concrete. Evaluation of subgrade material etc.	Govt. & Private Organisations	3.45
20.	Dr.B.S.Murty Dr.V.S.Raju Dr.P.K.Aravindan Dr.B.S.Thandaveswara Dr.S.R.Gandhi Dr.A.Meher Prasad	Consulting Services for alternative cooling water system to run 1100 cusecs of river water and install 3 No.s of cooling towers at VTPS, Ibrahimpattam and for other works at APGENCO	APPGC	11.85
21.	Dr.Devdas Menon Dr.A.Meher Prasad	Certification for fourteen software modules of design programs	Larsen & Toubro Ecc Group	1.50
22.	Dr.B.S.Murty Dr.V.S.Raju Dr.R.Sundaravadivelu	Design and construction of Mini Hydro Elastic schemes at Peddapally, Karimnagar	APGENCO	2.00
23.	Dr.B.S.Murty Dr.V.S.Raju Dr.R.Sundaravadivelu	Consulting services for verifying the Civil design drawings for MKES	APGENCO	0.94

RBIC projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr.S.R.Satish Kumar	Fatigues Ratchetting of Straight pipes	BARC Mumbai	2.75
2.	Dr.S.Mohan	Development of Optimal Reservoir Operation Policies for Multipurpose Multi-Reservoir systems using soft com. Techniques	Institute of Water Studies, PWD, Taramani, Chennai	6.66
		Development of optimal pumping plans pressure control in existing and future mines, Neyveli	Neyveli Lignite Corporation, Neyveli	11.50
		Development of Groundwater management system model to study the variations in water quality and quantity of the different aquifer systems in Neyveli Basin and for diagnostic pumping	Neyveli Lignite Corporation, Neyveli	10.64
3.	Dr.V.S.Raju Dr.S.Mohan	Development of Optimized Dewatering Schedule for Delhi Metro	Larson & Toubro	15.00
4.	Dr.A.Boominathan & Dr.S.R.Gandhi	Geotechnical characterization of SFSF site, Kalpakkam	IGCAR / BARC	32.81
		Geotechnical characterization of PFBR site, Kalpakkam	IGCAR	30.75
5.	Dr.Ligy Philip	Water Sample Characterization	Private and Public Organisations	0.60

Journal Editorial Boards:

Sl. No.	Name of Faculty	Level	Journal
1.	Dr.Nainan P Kurian	Editorial Advisor	Indian Geotechnical Journal
2.	Dr.Nainan P Kurian	Editorial Advisor	Indian Concrete Journal
3.	Dr.Nainan P Kurian	Editorial Advisor	New Building Materials of Construction World
4.	Dr.B.S.Thandaveswara	Editorial Board	Indian Society of Hydraulics
5.	Dr.B.S.Murty	Editorial Board	Indian Society of Hydraulics

Research Publications:

Total No. of papers published in Referred National Journals	..	2
Total No. of papers published in Refereed International Journals	..	16
Total No. of papers presented in National Conferences	..	23
Total No. of papers presented in International Conferences	..	39

In Refereed National Journals:

1. Satya P and A.Ramachandraiah, "Studies on comparative acoustics characteristics of a concert hall", Journal of Acoustical Society of India, 30, 2002, pp.102-105.
2. SB Pattnaik , "Traffic Safety management along City Corridors – Chennai as a Case Study.", Indian Highways. vol. 30(5), 21-30, May 2002.

In Refereed International Journals:

1. Boominathan A, and S.Hari, "Liquefaction strength of fly ash reinforced with randomly distributed fibres", soil Dynamics and Earthquake Engineering 22 , pp.1027-1033, 2002
2. Mohan S and S.Sarasavani, "Optimal Routing of Solid Waste Transport using GIS", GIS India, Vol.11, No.2, pp.8-13, 2002
3. Mohan S, and V.Jothiprakash, "Development of an interactive software for precipitation analysis", Journal of Indian Water Resources Society, Vol.22, No.2, pp. 37-46, 2002.
4. S Srinivasan and Devdas Menon, RC rectangular column sections under biaxial eccentric compression - an improved design recommendation, Journal of Structural Engineering, SERC, Vol. 29, No. 4, January-March 2003, pp 205-211
5. Kumaran G, Devdas Menon and K.K.Nair, "Evaluation of dynamic load on rail track modeling and analysis", International Journal of Structural Stability & Dynamics, Vol.2, No.3, pp.355-374, Sept. 2002.
6. Santhanam M, N.D.Gohen and Dlek J, "Effects of Gypsum formation on the performance of cement mortars during external sulfate attack", Journal of Cement and Concrete Research. Vol. 33, No.2, 2003, pp.325-332.
7. Santhanam M, N.D.Gohen and Dlek J, "Mechanism of sulphate attach; A fresh look; Part 2 – proposed Mechanisms", Journal of Cement and Concrete Research. Vol. 33, No.2, 2003, pp.341-346.
8. Santhanam M, M.D.Coehn and J.Olek, "Modelling the effects of solution temperature and concentration during sulfate attack on cement mortars", Cement and Concrete Research Vol.32, 2002, pp.585-592.
9. Jallad K. M. Santhanam and M.D.Cohen, "Stability and Reactivity of Tharmasite at different pH levels", Journal of Cement and Concrete Research. Vol. 33, No.2, 2003, pp.433 – 437.
10. Kandasamy S & A Ramachandraiah, "Sound transmission performance of ferrocement panels using SEA", Journal of Ferrocement. 32(1), pp.59-67, 2002
11. Satish Kumar SR, B.Vijaya Raju and G.S.B.V.S.Rajaram, "Hysteric behaviour of Lightly Reinforced Concrete Exterior Beam-to column sub-assemblings", Journal of Structural Engineering, 2002, Vol.29, No.1, pp.31-37.
12. Padmini A K, K Ramamurty and M.S.Mathews, "Relative moisture movement throught recycled aggregate concrete", Magazine of concrete research, Vol.54, No.5, Oct.2002, pp.377-384.
13. Rai D C, A M Prasad and Sudhir K Jain (2002), "Bhuj, India Earthquake of January 26, 2001 – Reconnaissance Report – Hospitals and Schools", Earthquake Spectra, Supplement A to Volume 18, pp 265 – 277
14. Jaya K P and Prasad A M (2002), "Embedded foundation in layered soil under dynamic excitations", Soil Dynamics and Earthquake Engineering, - Vol. 22 pp 485 – 498.
15. Ginu Unnithan, Krishna Kumar R and Prasad A M (2003), "Applications of shell spring model for optimization of radial tyre contour using genetic algorithm", Tire Science and Technology.
16. Vairavamoorthy K and K.Elango, "Guidelines for the design and control of intermittent water distribution systems", Waterlines, International Journal, UK, Vol.21, No.1, Jul. 2002, pp.19-21.

In Proceedings of National Conferences:

1. Tamizh Arasan V and Reebu Zacharaiah Koshy, "Modelling Heterogenous Traffic Flow on Urban Roads", Proc. Of National Conference on Transportation Systems – Status and Directions, organized at Indian Institute of Delhi, April 24-26, 2002, pp.394-404.
2. Pattnaik. S B and N.Krishnakanth, " Effects of Traffic Congestion – Hyderabad city as a case study", National Conference on Transportation System" held at IIT, New Delhi, 24th 26th April 2002
3. Pattnaik S.B., "Traffic Safety Management Along City Corridors – Chennai as a Case Study", Indian Highways , May 2002, pp.21-30
4. Jothiprakash V, S.Mohan and K.Elango, "Environmental impact of percolation pond", Proceedings of the II National Seminar on Environmental Management and Pollution Abatement, Annamalai University, Chidambaram, 12th and 13th July 2002, pp.W25-W33.
5. Meher Prasad A (2002), "Earthquake Resistant Design – Issues and Lessons", SDCE – 2002, Structural Dynamics in Civil Engineering, 18-19 July 2002, IISc Bangalore.
6. Ligy Philip and M.A. Deshusses, "Sulphur Dioxide treatment from Flue gases using a Biotickling filter, 20th National Convention of IPHE on Enviromental Engineering, held in GITAM Engineering College, Visakha Patnam – 530045, during 22-24th August , 2002. (Invited paper).
7. Tamizh Arasan V and Reebby Zacharaiah Koshy, "Study of Traffic Flow characteristics using Computer Simulation", Proc. Of National Seminar on Road Transportation in India: Emerging Trends and Techniques, Indian Institute of Technology, Kanour. September 12-13, 2002, pp.5.7 – 5.18.

8. Kandasamy S and A.Ramachandraiah, "Sound transmission through ferrocement panel, with plaster board couple along a line, , Proc. of Eighth Technical Session of MIRC - Acoustical Society of America, Conference at RMK Engg. College Kavarepettai, Chennai, pp.55-60, Sept. 2002.
9. Kandaswamy S, and A.Ramachandraiah, " Sound transmission performance of aerated concrete block walls using SEA, Proc. International Conference on Acoustics held in Slovakia, Sept. 2002, pp.165-169.
10. Satya P and A.Ramachandraiah, "Computational architectural acoustics", Evaluation of acoustical parameters in concert halls, MIRC, Sept. 2002.
11. Madheswaran C.K., A.Boominathan and R.Sundaravadivelu, "Field measurement of vibration during underwater rock blasting", Proc. Of Indian Rock Conference (IRC-2002) New Delhi, Nov.28-29, 2002, pp.404-409.
12. Kurian N P and G.Srilakshmi, "Studies on underreamed piles in sand and c- ϕ soils by the finite element method", Indian Geotechnical Conference, Allahabad, Dec.2002, Vol.I, pp.569-572.
13. Kurian N P and S.J.Shah, "Continuous spring model for soil-structure interaction analysis", Indian Geotechnical Conference, Allahabad, Dec.2002, Vol.I, pp.573-576.
14. Sivanandan R and K. Sravanthi, "evaluation of One-way streets as a transportation system management (TSM) Measure – A Case Study", 2nd Annual Workshop on Transportation, Land Use and the Environment: Integrated Planning in Indian Cities, sponsored by Administrative Staff College of India and Harvard University, Hyderabad, December 2-4, 2002, (Invited) (Preliminary compilation of papers)
15. Sreejith P.K. and S.Mohan, "A combined simulation-optimization approach for Saltwater Intrusion", Proc. National Conference on Water Resources and Ocean Engineering (HYDRO 2002), IIT Bombay, Dec.16-17, 2002, pp.484-489.
16. Boominathan A and R.Ayothiraman, "Behaviour of piles in clay under lateral dynamic loads", proc. Of Indian Geotechnical Conference (IFC-2002), Allahabad, Dec.20-22 2002, Vol-I, pp.45-48.
17. Santhanam M, "Overview of Approaches for Qualifications of Damaged Concrete Structures", Pre-Conference Workshop, NDE 2002, Dec.2002.
18. Gandhi S R, and A.K.Dey, "A simple device to apply repetitive loading ", Proceedings of Indian Geotechnical Conference, Vol.I, held at Motilal Nehru National Institute of Technology, Allahabad during December 20-22, 2002, pp.11-14.
19. Gandhi S R, R.Sundaravadivelu and K.Muthukumar, "Behaviour of Single pile in sloping ground water surcharge loading", , Proceedings of Indian Geotechnical Conference, Vol.I, held at Motilal Nehru National Institute of Technology, Allahabad during December 20-22, 2002, pp.441-444
20. Gandhi S and M.G.vijaya Kumar, "Shallow Cone Penetration tests in submerged soils", Proceedings of Indian Geotechnical Conference, Vol.I, held at Motilal Nehru National Institute of Technology, Allahabad during December 20-22, 2002, pp.416- 422.
21. Sundaravadivelu, R, A.Boominathan M.R.Pranesh, and C.K.Madheswaran, "Monitoring of blast induced vibrations on berth No.8 at Tuticorin Port", Proc. Of National Seminar cum workshop on Application of advance blasting technique for rock dredging", Tuticorin Port Trust, 10-11 Jan.2003, pp.74-95.
22. Sundaravadivelu, R, A.Boominathan M.R.Pranesh, and C.K.Madheswaran, " Measurement of field vibration at berth No.8 at Tuticorin Port due to underwater rock blasting", proc. of National Seminar on Harbour Structures (NASHAR 2003) 20-21, Feb.2003.
23. Meher Prasad A, Jaya K P, Chellapandi P, Rajan Babu V and Sevaraj T, "Seismic Analysis of Control and Safety Rod Drive Mechanism", National Seminar on Seismic Design of Nuclear Power Plants, February 21-22, 2003.

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1. Boominathan A, R.Ayothiraman and J.Elango, "Lateral vibration response of full scale piles", Proc. Of Ninth International Conference on Piling and deep foundation (NICE) France, 3-5, June, 2002, pp.141-146.
2. Pattnaik S B., "Manpower Development – Industry –University Partnership", International Conference on "Engineering Education, ICEE 2002, at Manchester, UK between 18th & 22nd Aug. 2002.
3. Tamizh Arasan V and R.Rajesh, "Land-use Allocation for Optimal Intensity of Travel in urban areas", Proc. Of the International Seminar on The Engineer in Sustainable Social and Economic Development – Regional Contribution to Agenda 21, organized by the Institution of Engineers, Sri Lanka, Colombo, 19-20, October 2002, pp.216-227.
4. Kalyanaraman, V," Finite Element Study of Smart Control of Structural Buckling", Proceedings International Conference on Smart Materials, Structures and Systems held on 12-14 December 2002
5. Sathyanarayanan, S., Lakshmana Rao C. and Srinivasan M. Sivakumar, "Electro-mechanical Behavior of Form I Uniaxially Stretched PVDF", Proceedings of the International Symposium on Experimental Mechanics, <http://isem.tcfst.org.tw>, Dec. 28-30, 2002.
6. Sakey Shamu, K.N. Singh, Lakshmana Rao C. and Devadas Menon, "Moment Capacity of Reinforced Concrete Beams Using Fracture Mechanics", Proceedings of the International Symposium on Experimental Mechanics, <http://isem.tcfst.org.tw>, Dec. 28-30, 2002
7. Gopalakrishna, K, "Bioremediation of fluorides using natural Co-agulants", International Conference on Hydrology,, Hyderabad, 18-20, Dec. 2002

8. Gopalakrishna K, "Co-agulation using Ecofriendly natural coagulants, 28th WEDC Conference, Kolkata, Nov.2002
9. Sathiyarayanan, S., Srinivasan M. Sivakumar, C. Lakshmana Rao and Shankar V.N., "Electro-mechanical Creep of PVDF", Proceedings of ISSS-SPIE 2002, International Conference on Smart Materials Structures and Systems, December 12-14, 2002, IISc., Bangalore, pp. 79-85.
10. D. Pareira, Shankar V.N., S. Sathiyarayanan, C. Lakshmana Rao and S.M. Sivakumar, "Vibration Control of a Cantilever Beam using Distributed PVDF Actuator", Proceedings of ISSS-SPIE 2002, International Conference on Smart Materials Structures and Systems, December 12-14, 2002, IISc., Bangalore, pp. 551-557.
11. Jothiprakash V, and S.Mohan, "Water management under water deficit conditions", Proc. Of the International Conference on Advances in Civil Engineering, ACE-2002, IIT Kharagpur, 3-5 June, 2002, India, pp.358-362.
12. Jothiprakash V, and S.Mohan, "Irrigation planning under water deficit condition", Proceedings of the IWRA International Regional Symposium on Water for Human Survival, Vol. I, CBIP, New Delhi, 27-30 Nov. 2002, pp.I-33 to I-37.
13. Mohan S and V.Ramani Bai, "Reliability Based Conjunctive Use Optimization Model for Proc. Of International Conference on Developments in Hydrology – The current status along with a colloquium on Water Resources Management.
14. Kumaran G, Devdas Menon and K.Krishnan Nair, "Estimation of dynamic loading of railtrack sleepers", Proceedings of Second International Conference on "Advances in Structural Engineering and Mechanics", Busan, Korea, 21-23, Aug. 2002, pp.W6B 1-8.
15. Meher Prasad A, Devdas Menon and K.Krishnan Nair, "Reliability of RC slabs using stochastic load combination models – a comparative study", Proceedings of Second International Conference on "Advances in Structural Engineering and Mechanics", Busan, Korea, 21-23, Aug. 2002, pp.T1B 1-8
16. Meher Prasad A, Devdas Menon and J. Phani Ramakrishna, "Computation of failure probability of building systems due to cyclonic winds", Proceedings of Second International Conference on "Wind and Structures", Busan, Korea, 21-23, Aug. 2002, pp.127-134.
17. Meher Prasad A, K.Satyanarayana, Devdas Menon, Koshy Varghese, Paul Christopher and Batti Sri Ramakrishna, "Real-time estimate of damage due to cyclonic winds". Proceedings of Second International Conference on "Wind and Structures", Busan, Korea, 21-23, Aug. 2002, pp.135-142.
18. Kumaran G, D.Menon and K.K.Nair, "Dynamic response of Rail track sleepers to moving train loads", Prof. Of Fifth European Conference on 'Structural Dynamics', EURO DYN 2002, Munich, Sept. 2-5, 2002
19. Shamu S, K.N.Singh, C.L.Rao and Devdas Menon, "Moment Capacity of reinforced concrete beams using fracture mechanics", Proceedings of International Symposium on 'Experimental Mechanics', Taipei, Taiwan, December 28-30, 2002.
20. Kandasamy S and A.Ramachandraiah, "Experimental investigations on sound transmission on Ferro cement panels using SEA", Proceedings of 28th conference on DAGA, 2002, held in Bochum, Germany, pp.120-124, 2002.
21. Kandasamy S and A.Ramachandraiah, "Sound transmission through ferrocement panel, Proc. international Conference on Acoustics, Slovakia, Sept. 2002.
22. Manu Santhanam, Amal Raj and R.Vikramaditya, "Evaluation of hardened concrete properties by non destructive methods" CONMAT 2003, IIT Kharagpur, Jan.2003.
23. Prasada Rao D V and S.R.Satish Kumar, "Advanced Analysis of RHS Beam to Column connections", The second International Conference on Advances in Structural Engineering and Mechanics, Busan, Korea.
24. Prasada Rao D V and S.R.Satish Kumar, " Experimental evaluation of a bottled SR RHS beam to column connection with web opening", International Seminar on Industrial Structures, ISIS 2003, Coimbatore, India.
25. Satish Kumar, S.R and D.V.Prasada Rao, "Seismic Qualification of semi-rigid connections; International Seminar on Industrial Structures, ISIS 2003, Coimbatore, India, 2003.
26. Ligy Philip and Marc A Deshusses, "Complete NO_x and SO₂ Treatment in a Biotrickling filter – Bioreactor System Proceedings of the 95th Annual Conference & Exhibition on Air and Waste Management held at the Baltimore Convention Center in Baltimore, MD June 23-27, 2002.
27. Ligy Philip and Marc A Deshusses, "Biological Treatment of NO_x and SO₂ in a Biotrickling filter. Proceedings of the 95th Annual Conference & Exhibition on Air and Waste Management held at the Baltimore Convention Center in Baltimore, MD June 23-27, 2002.
28. Siriwat Jinsiriwanit, Ligy Philip and Marc A Deshusses, "Evaluation of a new Biotreatment Process Accepted for presentation in the International Conference on Biofiltration (An Air Pollution Control Technology) to be held in University of South California, Los Angeles during Oct. 30-31, 2002.
29. Ghosk, P K, Ligy Philip and M.Bandyopadhyay, "Treatment of Atrazine bearing wastewater by mixed methanogenic culture", Proceedings of the 28th WEDC Conference held in Kolkata during 18-22 Nov., 2002.
30. Meher Prasad A and Unnithan U V (2002), "Adaptive Strategies in Material and Geometric Finite Element Analysis, ACOMEN 2002 Second International Conference on Advanced Computational Methods in Engineering, Liege University, Belgium, May 21-28, 2002.
31. Lakshmanan N and Meher Prasad A, (2002) "Vulnerability Mapping of India present status", Indo-German Workshop, 24-29 June, 2002, University of Karlsruhe, Germany.

32. Ginu Unnithan, Krishna Kumar R and Meher Prasad A, (2002) "Radial Tyre Contour Optimisation using Multiobjective Genetic Algorithm in a distributed Environment", Proceedings of 4th ASMO – UK / ISSMO Conference on Engineering Design Optimisation, Newcastle, July 4-5, 88-92, 2002.
33. Prasad A M, Unnithan U V (2002) "Adaptive Nonlinear Finite Element Analysis with Spatial and Temporal Errors estimates in the Distributed Computing Environment", The Second International Conference on Advances in Structural Engineering and Mechanics, ASEM2002, 21-23 August 2002, Busan, Korea.
34. Meher Prasad A, Devdas Menon and Phani Ramakrishna J, (2002) "Computation of failure probability of building system due to cyclonic winds", The Second International Symposium on Advances in Wind and Structures, 21-23 August, 2002, pp 127-134, Busan, Korea.
35. Meher Prasad A, Satyanarayana K, Devdas Menon, Koshy Varghese, Christopher Charlesraj V P and Battu Sriramakrishna, (2002) "Real-time Estimate of Damage due to Cyclonic Wwinds", The Second International Symposium on Advances in Wind and Structures, 21-23 August 2002, pp 135-142, Busan, Korea.
36. Sivanandan, R., Dion, F., Rakha, H. and Van Aerde, M., "Effect of Variable Message Signs in Reducing Railroad Crossing Impacts," 82nd Annual Meeting of Transportation Research Board (TRB), Washington, D.C., USA, January 12-16, 2003.
37. Uma S R and Meher Prasad A, (2003) "Analytical model for beam to column joints in R/C moment resisting frames", Paper No.106, Pacific Conference on Earthquake Engineering, 13-15 February 2003, Christchurch, New Zealand.
38. Elango K, "National Link System – A Comparison", Proc. Intl. Seminar on Water Resources Development and Management in India through the Ages", Madras Univ., Chennai, March 2003, pp.137-143.
39. Seshadri S, A Rajaraman, A. Meher Prasad and A K Kaushik (2003), "Impact Dynamics and Damage Effects on Plates", IMPLAST '03, 8th International Symposium on Plasticity and Impact Mechanics, 16-18 March, 2003, pp 1053-1054, New Delhi.

Distinguished Visitors to the Department:

Sl. No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Dr. Chandra Bhat, Associate Professor and Associate Chairman for Administration and Planning, Department of Civil Engineering, University of Texas at Austin, Austin, USA	May 27, 2002	Seminar Talk
2.	Dr. Shashi Nambisan, Professor of Civil Engg. and Director of Transportation Research Center, University of Nevada, Las Vegas, USA Dr. Reg Souleyrette, Associate Professor of Civil and Constn. Engg. and Associate Director, Center for Transportation Research and Education, Iowa State University, Ames, USA	Nov. 6, 2002	Discuss potential research collaboration and seminar talks
3.	Dr. Vijay Gopu, professor and Chair, Civil and Environmental Engineering Dept. and Associate Director, University Transportation Center for Alabama, University of Alabama in Huntsville, USA	Nov. 14, 2002	Discussion and Seminar Talk
4.	Prof. Nestmann, University of Karlsruhe	Sept. 15-17, 2002	Collaboration exploration

4.5.6. Other Activities:

- Introduction of new PG course "Earthquake Geotechnical Engineering" by Dr. A. Boominathan
- Dr. A. Ramachandraiah is working as the President of Madras India Regional Chapter of Acoustical Society of America.
- Dr. S. R. Satish Kumar prepared the revised draft for IS800 Code of Practice for general construction in steel and presented it to BIS for approval and adoption.
- Under FIST programme of DST, Department of Civil Engineering has been selected for supporting the research facilities on Pseudo-Dynamic testing facilities, consisting of Suite of actuators, control systems and data acquisition systems.

4.6 DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

4.6.1. Introduction:

The Department of Computer Science and Engineering was established in 1973. It offers B.Tech, Dual Degree, M.Tech, M.Tech Part-time (UOP), M.S. and Ph.D programmes.

4.6.2. Academic Programmes:

New Courses Introduced:

Sl. No.	Course No.	Title
1	CS 643	Optical Networks
2	CS 633	Digital Systems Testing and Testable Design
3	CS 654	Distributed Systems Lab
4	CS 581	Advanced Data Structures and Algorithms Lab
5	CS 580	Advanced Data Structures and Algorithms
6	CS 565P	Principles of Management
7	CS 664	Mobile Computing

Students on Roll:

Programme	I year	II Year	III Year	IV year	V year & others	Total
B.Tech	33	30	29	31	-	123
Dual Degree	7	7	6	6	7	33
M.Tech	49	39	-	-	-	88
M.Tech – Information Technology	12	7	-	-	-	19
M.Tech – Software Engg.	1	2	-	-	-	3
M.S	21	16	26	9	2	74
Ph.D	10	7	6	6	6	35
Total	133	108	67	52	15	375

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

Sl No	Name of the Student/Scholar	Programme	Name of the Conference/Seminar/Symposia	Date & Venue
1.	Annamalai Muthukaruppan	B.Tech.	Int'l Conf. On soft Computing and In Computing and Intelligent systems, Tsukuba, Japan.	Tsukuba, Japan
			Int'l Conf. On Advanced Intelligent Systems, Tsukuba, Japan.	Tsukuba, Japan
			International Conference on High Performance Computing Asia, Bangalore, India.	Bangalore
2.	S. Suresh	B.Tech.	Int'l Conf. on Knowledge Based Computing Systems, Mumbai, India.	Mumbai
3.	S.R. Mahadeva Prasanna	Ph.D	IEEE Intl. Conf. On account of Speech & Signal Processing	10 th May. 2002 Florida, USA
4.	A. Nayeemulla Khan	Ph.D	Intl. Conf. on Neural Networks	10 th May. 2002 Hawaii, USA
5.	M V N Ashwin Kumar K Srinathan C Pandu Rangan	B.Tech Ph.D	ACISP '02	3–5 July 2002, Australia
6.	M V N Ashwin Kumar P R Goundan K Srinathan C Pandu Rangan	B.Tech B.Tech Ph.D	PODC '02	21–24 July. 2002, USA
7.	K Srinathan M V N Ashwin Kumar C Pandu Rangan	Ph.D B.Tech	ASIACRYPT '02	1–5 Aug. 2002
8.	K Srinathan P R Goundan M V N Ashwin Kumar R Nandakumar C Pandu Rangan	Ph.D B.Tech B.Tech B.Tech	COCOON '02	15–17 Aug. 2002
9.	B Prabhu K Srinathan C Pandu Rangan	M.S Ph.D	3 rd Intl. Conf. On Security in Communication Networks (SCN'02)	11–13 Sep. 2002

SI No	Name of the Student/ Scholar	Programme	Name of the Conference/ Seminar/Symposia	Date & Venue
10.	K. Srinathan N. Tharani Rajan	Ph.D M.S	INDOCRYPT	14-18 Dec. 2002 Hyderabad
11.	V. Shiv Naga Prasad P. Vinod Anvita Bajpai B.S. Venkatesh	Dual Degree M.S M.S M.S	Indian Conf. on Vision Graphics and Image Processing (ICVGIP)	16-19 Dec. 2002, Ahmedabad
12.	K Srinathan N Tharani Rajan C Pandu Rangan	Ph.D M.S	INDOCRYPT'02	16-18 Dec. 2002
13.	B Prabhu K Srinathan C Pandu Rangan	M.S Ph.D	INDOCRYPT'02	16-18 Dec. 2002
14.	T. Nagarajan ReghuRaj M. Saravanan Suryakanth V Gangashetty	Ph.D Ph.D M.S Ph.D	Intl. Conf. on Natural Language Processing (ICON) 2002	17-20 Dec. 2002, Mumbai
15.	Annamalai Muthukaruppan	B.Tech	HPC Asia 2002	17-20 Dec. 2002, Japan
16.	K. Praveen Kumar K. Sreenivasa Rao R. Syama Sundar Yadav S. Suresh	M.S Ph.D M.S B.Tech	Intl. Conf. On KBCS, 2002	17-23 Dec. 2002, Mumbai
17.	Krishna Gopal Rao ARchana Sekhar I. Karthigeyan Bheemarjuna Reddy Tamma B.S. Manoj	M.S B.Tech. M.S Ph.D Ph.D	9 th Intl. Conf. on High Performance Computing	18-21 Dec. 2002, Bangalore
18.	P.C. Karthik K. Ravichandran	M.S	Conference on Information Technology, 2002	20-26 Dec. 2002, Orissa
19.	R.M. Muthukumar A. Vijay Srinivas M.S. Rajasree Chitra Babu V.C. Srivathsan N.V. Palenkeswara Rao Maluk Mohamed M A Jithndra Kumar Reddy J. Rajesh	M.S Ph.D Ph.D Ph.D M.S M.S Ph.D M.S M.S	Software Design and Architecture (SODA 2002)	20-22 Dec. 2002, Bangalore
20.	Vadali Srinivasa Murthy	M.S	Intl. Conf. On VLSI Design (VLSI Design - 03)	4-8 Jan. 2003
21.	A Vijay Srinivas	Ph.D	Design Approaches Workshop, Satyam Computer Services Ltd.	3-6 March, 2003, Hyderabad, India
22.	V C Srivathsan	M.S	Int'l Conference on Data Engineering (ICDE 03)	5-8 March, 2003, Bangalore, India

4.6.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialization

Professors:

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

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 computing, Distributed systems, Software engineering, Real time systems, Architecture for High Performance computing, Dependable computing.
Yegnanarayana B., Ph.D (IISc)	Digital Signal Processing, Speech, Computer Vision, Neural Networks.

* Prof.C. Siva Ram Murthy has been elevated to the grade of Senior Member of IEEE, USA

Associate Professors:

Hema A Murthy Ph.D (IIT Madras)	Speech processing, Computer Graphics and pattern recognition.
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.
Sreenivasa Kumar P, Ph.D (IISc)	Graph Theory, Algorithms, Parallel Computations, Data Mining and Data Bases.

Assistant Professors:

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, Graphics, Neural Networks, Digital and Analog Systems.
Chandra Sekhar C., Ph.D (IIT Madras)	Speech recognition, Artificial Neural Networks, Computer architecture
Kamakoti V., Ph.D (IIT Madras)	Software for VLSI Design, Computational Geometry, High Performance Computing. Software Aspects of VLSI Design
Narayanaswamy N.S., Ph.D (IISc)	Software for Information Management, Algorithms & Complexity Theory.
Sudha N., Ph.D (IIT Guwahati)	VLSI Architecture for Signal Processing, Neural Network, Computer Network

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

Sl. No.	Co-ordinators	Title	Period
Workshops:			
1.	D Janaki Ram	First International Workshop on Software Design and Architecture (SoDA 02)	21-22 Dec, 2002
2.	D Janaki Ram	Design Approaches for Satyam Computer Services Ltd.	3-6 March 2003
Course:			
1.	D Janaki Ram	Advanced Orientation Programme on Software Engineering and Databases for Life Insurance Corporation of India	24 June-6 July 2002 18-30 Nov, 2002 9-21 Dec. 2002

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
1	C. Chandra Sekhar	International Joint Conference on Neural Networks, Hawaii	12-17 May 2002
		International Workshop on Pattern Recognition using Support Vector Machines, Niagara Falls, Canada	10 th Aug. 2002
		International Conference on Pattern Recognition, Quebec, Canada	11-15 Aug. 2002
		Workshop on Spoken Language Processing, Mumbai	9-11 Jan. 2003
2.	V. Kamakoti	Technology Appreciation program on "System-On-Chips - Design and Verification" - ICSR, IIT Madras.	11 th Mar. 2003
3.	D Janaki Ram	International Conference on Object Oriented Programming Languages, Systems and Applications (OOPSLA 02), USA	4-8 Nov, 2002
		International Workshop on Software Design and Architecture (SoDA 02)	20-22 Dec., 2002

Special lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	C. Chandra Sekhar	Recognition of subword units of speech using support vector machines, Stanford Research Institute.	20 th May 2002, San Jose, USA
2.	Hema A. Murthy	Overcoming Traditional Obstacles "Linux World International	14 th Aug. 2002, San Francisco
3.	T. A. Gonsalves	"Wireless and IP" in Workshop on Recent Trends in Distributed Computing	21-22, Aug. 2002 Jeyaram Engg. College, Thuraiyur
4.	T. A. Gonsalves	"Linux as a Rural Desktop"	21 Aug. 2002 Dept. of CSE, REC, Trichy
5.	C. Chandra Sekhar & B. Yegnanarayana	A constraint satisfaction model for recognition of Stop Consonant-Vowel (SCV) utterances, IEEE Transactions on Speech and Audio Processing, vol.10, no.7, pp. 472-480,	October 2002
6.	T.A. Gonsalves	AICTE-ISTE Short Term Training Programme on 3G Mobile Networks, 1/2 day tutorial on "DECT and the corDECT Wireless Local Loop"	26 Oct. 2002 Kongu Engg. College, Perundurai

Visits abroad by faculty:

Sl. No.	Name of faculty	Country visited	Date	Purpose of visit
1.	C. Pandu Rangan	Nepal	10-12 April, 2002	Visited Kathmandu University for Selection of defence candidates and to conduct viva/exam
2.	C. Chandra Sekhar	Japan	May, 2002	Post-doctoral fellowship
		U.S.A	12-21 May, 2002	Conference
3.	S. V. Raghavan	Austria	19 May 2002 – 9 June 2002	NUS, University of Ulm, Univ. of Vienna, to accept the assignment of Guest Researcher (on Professional Visit)
4.	B. Yegnanarayana	USA	12–17 May, 2002	IEEE/NNS Conference in Honolulu, Hawaii, USA to undertake Project and Univeristy visits.
5.	C.R. Muthukrishnan	France	21 May 2002– June 25 2002	Scientific Council of Indo-French Centre for the promotion of Advanced Research held at France and University of California, San Diego, USA.
6.	C. Pandu Rangan	Japan	1-30 June, 2002	To deliver a series of Lectures in Algorithms for the scientists in IBM Research Centre, Tokyo
7.	Hema A Murthy	USA	02 June 2002 – Aug 2002	International Fellow, STAR Laboratory, SRI International, 333, Revenswood Avenue, Menlo Park, CA 94025 (on leave from IIT Madras)
8.	S. V. Raghavan	California	15 June 2002 – 19 July 2002	Univ. of California, Riverside to undertake a Research Collaboration (on short visit)
9.	C. Pandu Rangan	Australia	3-7 July, 2002	To attend and present paper at the ACISP 2002 Conference
10.	C. Pandu Rangan	USA	21-24 July, 2002	To attend and present paper at PODC-2002 Conference
11.	S. Raman	USA	28–31 July 2002	Microsoft Research Faculty Summit 2002 held at Redmond, Washington, USA
12.	C. Pandu Rangan	Singapore	15-18 Aug., 2002	To present paper at 8 th int'l Computing and Combinatorial Conference
13.	C. Pandu Rangan	Malaysia, Hong Kong and Singapore	25-30 Aug., 2002	E. Learning & Digital Library – Site Visits
14.	C. Pandu Rangan	Australia	ACISP 2002 held in Richmond, Melbourne, Australia	To attend and to present paper
15.	C. Chandra Sekhar	Canada	10-15 Aug., 2002	Int'l Workshop on Pattern Recognition with support vector machines(SVM2002) held in Niagara Falls, Canada and presented a paper entitled "Recognition of Consonant-Vowel (CV) Units of Speech in a Broadcast News Corpus using Support Vector Machine(ICPR 2002)
16.	C. Pandu Rangan	USA	18-24 Aug., 2002	To attend Steering Coming Meeting of CRYPTO-2002 ASC Meeting at Los Angles

Sl. No.	Name of faculty	Country visited	Date	Purpose of visit
17.	S.V. Raghavan	Singapore	26 Aug. 2002– 1 Sept. 2002	E-learning and Digital Library reference sites in Singapore, Malaysia and Hong Kong on an invitation from M/s Sun Microsystems, Bangalore.
18.	D Janaki Ram	USA	4-8 Nov, 2002	Paper Presentation for Object Oriented Programming Systems, Languages and Applications (OOPSLA 02)
19.	C. Pandu Rangan	New Zealand	1-5 Dec., 2002	To attend and present paper at ASIACRYPT-2002
20.	C. Pandu Rangan	South Korea	3–4 Jan. 2003 (left on 20.01.03)	To accept Full-time invited Professor at Information and Communication University, Daejeon, Korea
21.	Kamala Krithivasan	Spain	25–31 Jan. 2003	Universitat Rovira I Virgili to give a series of lectures on Distributed Automata and also participated in the brainstorming session on Membrane Computing.

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	V. Kamakoti	"Excellent Presentation Award"	SCIS & ISIS, Tsukuba, Japan	Excellent paper presented by Mr. Annamalai Muthukaruppan, B.Tech. student	Sep. 2002

4.6.4. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Project Title	Coordinators	Period	Funding Agency	Amount (Rs. in lakhs)
1.	Development of Techniques for Classification of Urban Features from Remote Sensed Data for use in GIS Application : A Multi-Disciplinary Approach	Dr. B.Yegnanarayana Dr. Sukhendu Das Dr. Koshy Varghese	15.12.1997 - 31.03.2003	ISRO	6.55
2.	Information Recovery from Partial Data for Image Processing Applications	Dr.B. Yegnanarayana Dr.D. Sukhendu Das	01.12.1997 - 30.06.2004	USONR	16.00
3.	Statistical Modelling & Simulation For Estimation of Indoor Radio Propagation Characteristics and Determination of Channel Parameters And Network Architecture - Resource Management	Dr.C.R. Muthukrishnan	01.04.2000 - 31.03.2003	MHRD	8.00
4.	Emet POP	Dr.S.V. Raghavan	18.10.1999 - 17.10.2003	ERNET	31.45
5.	Web Technology - Web serving and Intelligent Retrieval of Web Data	Dr.P. Sreenivasa Kumar Deepak Khemani	01.04.2001 - 31.03.2003	MHRD	6.00
6.	Resource Management in High Performance Real-Time Systems and Networks	Dr.C. Siva Ram Murthy	14.09.2001 - 13.09.2006	DST	32.74
7.	FPGA-based Natural Language Command Interface Robot	Dr.S. Raman Dr.S. Srinivasan	06.12.2001 - 05.12.2003	DST	14.66
8.	Communication and Information Technology Research Program	HOD, CSE Dr.B. Yegnanarayana	08.04.2002 - 07.04.2007	DRDO	130.00
9.	Integrating the Computing Environment at IIT Madras	Dr. S.V.Raghavan Dr. S.Raman	11.06.2002 - 02.06.2003	IITM	5.00

Sl. No.	Project Title	Coordinators	Period	Funding Agency	Amount (Rs. in lakhs)
10.	Development of the VLSI Design Facilities and Curriculum	Dr.V.Kamakoti	03.06.2002 - 02.06.2003	Alumni Association.	17.21
11.	Advanced Network Management Systems	Dr.T.A.Gonsalves. Dr.Hema A Murthy Dr.Ashok JhunJhunWala	01.04.2002 - 31.03.2004	NMS Works Software Ltd.	24.75
12.	Operation of the IITM Web Site	Dr.R.Kalyana Krishnan	05.09.2002 - 04.09.2007	IITM	10.00
13.	A2PG for Processor Architectures and Processor Based SOC Verification	Dr.V.Kamakoti	30.01.2003 - 29.01.2004	Intel Asia Electronics Inc.	11.52
14.	Development of Software Lab	Dr.V.Kamakoti	05.03.2003 - 04.03.2004	Alumni Association	18.64
15.	Investigations for Ground Based Autonomy	Dr.Deepak Khemani Dr.P.Sreenivasa Kumar	16.05.2001 - 15.05.2003	ISRO	6.65
16.	Investigations for Onboard Autonomy of Spacecraft	Dr.Deepak Khemani Dr.P.Sreenivasa Kumar	16.05.2001 - 15.05.2003	ISRO	6.65

Industrial Consultancy Projects:

Sl. No.	Title	Co-ordinators	Period	Funding Agency	Amount (Rs. in lakhs)
1.	Cygplan Access Network Planner	Dr.Hema A Murthy Dr.Bhaskar Ramamurthi	01.04.2001 - 31.05.2003	Nilgiri Networks	1.00
2.	Speaker Verification	Dr.B.Yegnanarayana	06.03.2002 - 05.03.2004	DERL	9.50
3.	Speaker Enhancement	Dr.B.Yegnanarayana	06.03.2002 - 05.03.2004	DERL	9.50
4.	Computer Network Activity	Dr.T.A.Gonsalves Dr.Ashok JhunJhunwala	21.04.1995 - 31.12.2003	Ray Stata Trust, USA	30.00
5.	Case Based Expert System for Manufacturing & Applications	Dr.Deepak Khemani Dr.C.R.Muthukrishnan	15.07.1999 - 30.09.2003	Carborundum Universal Ltd, Chennai	13.75
6.	Development of Phonetic Engine for Speech in Indian Languages	Dr.B.Yegnanarayana Dr.C.Chandrasekhar	18.10.1999 - 17.10.2004	Intel Asia Electronics Inc.	8.69

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	D Janaki Ram	Open Application Systems Framework	Aumega Networks Ltd., UK	6.00

Retainer Consultancy:

Sl. No.	Name of Faculty	Industry	Period	Amount (Rs. in lakhs)
1.	Dr.C.R.Muthukrishnan	Andhra Bank	17.09.2001-16.03.2003	1.50
2.	Dr.T.A.Gonsalves	Usha Comm India Pvt. Ltd.	01.12.2001-30.11.2003	1.92
3.	Dr.Hema A Murthy	Usha Comm India Pvt. Ltd.	01.12.2001-30.11.2003	1.92
4.	Dr.S.V.Raghavan	Indian Overseas Bank	01.04.2002-31.03.2003	9.00

Research Publications:

Total No. of papers published in Refereed National Journals	..	1
Total No. of papers published in Refereed International Journals	..	17
Total No. of papers presented in National Conferences	..	9
Total No. of papers presented in International Conferences	..	71

In Refereed National Journals:

1. D Janaki Ram and A Vijay Srinivas, "Object Migration in CORBA", Journal of Computer Society of India, March 2002, pp. 18-27.

In Refereed International Journals:

1. N. Sreenath, P. Phanibhushan Rao, G. Mohan, and C. Siva Ram Murthy, "Design of Survivable WDM Networks for Carrying ATM Traffic", Computer Communications, vol. 25, no.5, pp. 485-500, 2002.
2. Rajendra Singh Sisodia, B. S Manoj, and C. Siva Ram Murthy, "A Preferred Link Based Routing Protocol for Wireless Adhoc Networks", Journal of Communications and Networks, vol.4, no.1, pp. 14-21, 2002.
3. Ch. Vijaya Saradhi and C Siva Ram Murthy, "Routing Differentiated Reliable Connections in WDM Optical Networks", Optical Networks, vol. 3, no.3, pp. 50-67, 2002.

4. Ch. Vijaya Saradhi and C. Siva Ram Murthy, "A Framework for Differentiated Survivable Optical Virtual Private Networks", *Photonic Network Communications*, vol. 4, no.3-4, pp. 457-487, 2002.
5. B.S. Manoj, Christo Frank, and C Siva Ram Murthy, "Performance Evaluation of Throughput Enhancement Architectures for Next Generation Wireless Systems", *ACM Mobile Computing and Communications Review*, vol. 6, no.3, 2002.
6. C. Chandra Sekhar and B. Yegnanarayana, "A constraint satisfaction model for recognition of Stop Consonant-Vowel (SCV) utterances," *IEEE Transactions on Speech and Audio Processing*, vol.10, no.7, pp.472-480, October, 2002.
7. C.Chandra Sekhar, Kazuya Takeda and Fumitada Itakura, "Recognition of subword units of speech using support vector machines," in *Recent Research Developments in Electronics and Communication*, Transworld Research Network, vol.1, pp.101-136, November, 2002.
8. R. Sriram, G. Manimaran, and C. Siva Ram Murthy, "A Note on Dependable Real-Time Communication in Multihop Networks", *Computer Communications*, vol. 25, no.17, pp. 1673-1683, 2002.
9. Mutyam Madhu and Kamala Krithivasan, *Generalized normal forms and Rewriting P Systems*, *Acta Informatica*, 38, 721-734, 2002.
10. Mutyam Madhu and Kamala Krithivasan, *A note on Hybrid P Systems*. *Grammars*, 5(3):239-244, 2002.
11. Mutyam Madhu and Kamala Krithivasan, *Improved results about the universality of P Systems*, *EATCS Bulletin*, 76, 162-168, 2002.
12. Mutyam Madhu and Kamala Krithivasan, *Contextual P Systems*, *Journal of Fundamenta Informaticae*, 49(1-3):179-189, 2002.
13. Anita Mittal, G. Manimaran and C Siva Ram Murthy, "Dynamic Real-Time Channel Establishment in Multiple Access Bus Networks", *Computer Communications*, vol. 26, no.2, pp. 113-127, 2003.
14. G. Phani Krishna, M. Jnana Pradeep, and C Siva Ram Murthy, "An Efficient Primary-Segmented Scheme for Dependable Real-time Communication in Multihop Networks", *IEEE/ACM Trans. On Networking*, vol. 11, no.1, 2003.
15. B.S Manoj, Christo Frank and C Siva Ram Murthy, "Throughput Enhanced Wireless in Local Loop (TWILL) – The Architecture, Protocols and Pricing Schemes", *ACM Mobile Computing and Communications Review*, vol. 7, no.1, 2003.
16. Mutyam Madhu and Kamala Krithivasan, *A Survey on some variants of P Systems*. In Gh. Paun, G. Rozenberg, A. Salomaa and C. Zandron, editors, *Membrane Computing. Int'l Workshop, WMC-CdeA 2002, Curtea de Arges, Romania, 2002*, Volume 2567 of *Lecture Notes in Computer Science*, Pages 360-370, 2003.
17. M. Saravanan, P.C. Reghu Raj and S. Raman "Summerization and Categorization of Text Data in High level Data Cleaning for Information Retrieval", to appear in the *Int'l Journal of Applied Artificial Intelligence*, vol.17, No:5 (2003) – Taylor & Francis Publications.

In Proceedings of National Conferences:

1. Hema A Murthy, T.A.Gonsalves, R.Enoch, G. sirisha, Valli Kannu, M. Mahesh, K. Getha, Saravan, Raghu Kishore, "A DSP Virtual Machine", *Proc.8th NCC National Conf. Communication IIT Bombay*, pp.200-204, Jan. 25-27, 2002.
2. Hema A Murthy, B. Ramamurthi, T.A. Gonsalves, K. Balamurugan, S. Augustine, Ch. Vijayalakshmi, "CygPlan—An Installation Planning Tool", *Proc. 8th NCC National Conference on Communication, IIT Bombay* pp.433-437, Jan.25-27, 2002.
3. N. Sridhar Krishna, Hema A Murthy and T. A. Gonsalves, "Text to Speech (TTS) in Indian Languages," *Proc. ICON-02, Mumbai, India*, pp.317-326.
4. T. Nagarajan and Hema A Murthy "Language Identification Using Spectral Vector Distribution Across the Languages, *Proc. ICON-02 Mumbai, India*, pp.327-335.
5. Anitha Nalluri, Bala Saraswathi A, Bharathi S, Hema A Murthy, Patricia J., Ranbir Singh S., Timothy A Gonsalves, Vidhya M.S., and Vivekanathan K., "Indian Language Support for X-Window System, *Proc. ICON-02, Mumbai, India*, pp.263-372.
6. M A Saifulla, Hema A Murthy and T A Gonsalves, "Identifying Patterns in Internet Traffic, *Proceedings ICC-2002*, pp. 859-865, Mumbai, India.
7. V Kamakshi Prasad, T Nagarajan and Hema A Murthy, "Continuous Speech Recognition Using Automatically Segmented Data at Syllabic Units," accepted for presentation at ICSP-2002, Beijing.
8. C.Chandra Sekhar, W.F.Lee, K. Takeda and F. Itakura, "Acoustic modelling of subword units using support vector machines," *Workshop on Spoken Language Processing, Mumbai*, pp.79-86, January, 2003.
9. P.C. Reghu Raj and S. Raman "Content Identification and Semantic Approximation of Text documents," in *Proc. Of the First Inter Reserch Institute Student Seminar (IRISS' 2002)*, IISc., Bangalore, India, March 28-29, 2002.

In Proceedings of International Conferences:

1. N. Sridhar Krishna, Hema A Murthy and T. A. Gonsalves, "Text to Speech (TTS) in Indian Languages," *Proc. ICON-02, Mumbai, India*, pp.317-326.

2. T. Nagarajan and Hema A Murthy "Language Identification Using Spectral Vector Distribution Across the Languages, Proc. ICON-02 Mumbai, India, pp.327-335.
3. Anitha Nalluri, Bala Saraswathi A, Bharathi S, Hema A Murthy, Patricia J., Ranbir Singh S., Timothy A Gonsalves, Vidhya M.S., and Vivekanathan K., "Indian Language Support for X-Window System, Proc. ICON-02, Mumbai, India, pp.263-372.
4. M A Saifulla, Hema A Murthy and T A Gonsalves, "Identifying Patterns in Internet Traffic, Proceedings ICC-2002, pp. 859-865, Mumbai, India.
5. V Kamakshi Prasad, T Nagarajan and Hema A Murthy, "Continuous Speech Recognition Using Automatically Segmented Data at Syllabic Units," accepted for presentation at ICSP-2002, Beijing.
6. D.Janaki Ram, and K. Chandra Sekaraiah Object Schizophrenia Problem in Modelling Is-Role-Of Inheritance In the Proceedings of the Inheritance Workshop at The 16th European Conference on Object Oriented Programming, ECOOP 2002, June 2002, University of Malaga, Spain.
7. D. Janaki Ram, and K. Chandra Sekaraiah Object Schizophrenia Problem in Object Role System Design. In the Proceedings of the 8th Int'l Conference on Object Oriented Information Systems (OOIS), 2002, Montpellier, France.
8. D. Janaki Ram, M.S. Rajasree and P. Jithendra Kumar Reddy Pattern Oriented Approach for the Design of Frameworks for Software Product Lines Proceedings of the Int'l Workshop on Product Line Engineering: PLEES'02, October 2002, Seattle, USA.
9. D. Janaki Ram, and K. Chandra Sekaraiah Type hole Model: An OSP-free Role Paradigm Conformance Model In the Proceedings of the Int'l Conference on Information Technology, CIT 2002, December 2002, Bhubaneswar, India.
10. D. Janaki Ram, K. Chandra Sekaraiah, and Arun Kumar A Security Model for Object Role Database Systems; In the Proceedings of the Int'l Conference on Information and Knowledge Engineering, IKE 2002, Las Vegas, USA.
11. D. Janaki Ram, P. Jithendra Kumar Reddy and M.S. Rajasree; An Approach to form a Pattern Oriented Design Graph by means of PPC Model Proceedings of the Int'l Workshop on Software Design and Architecture, SoDA'02, December 2002, Bangalore, India.
12. D. Janaki Ram, M.S. Rajasree and P. Jithendra Kumar Reddy Composition of Architectures from Patterns. Proceedings of the Int'l Workshop on Software Design and Architecture, SoDA'02, December 2002, Bangalore, India.
13. B.Prabhu, K.Srinathan, and C.Pandu Rangan. "Trading Players for Efficiency in Unconditional Multiparty Computation." In Proceedings of 3rd Int'l Conference on Security in Communication Networks (SCN'02), volume 2576 of Lecture Notes in Computer Science (LNCS), pages 348-359, Springer-Verlag, 2002.
14. K.Srinathan, N.Tharani Rajan and C.Pandu Rangan "Non-perfect Secret Sharing over General Access Structures. In Proceedings of Progress in Cryptology - INDOCRYPT'02, volume 2551 of Lecture Notes in Computer Science" (LNCS), pages 409-421, Springer-Verlag, 2002.
15. B.Prabhu, K.Srinathan and C.Pandu Rangan "Asynchronous Unconditionally Secure Computation: An Efficient Improvement. In Proceedings of Progress in Cryptology "INDOCRYPT'02", volume 2551 of Lecture Notes in Computer Science (LNCS), pages 93-107, Springer-Verlag, 2002.
16. K.Srinathan, M.V.N.Ashwin Kumar, and C.Pandu Rangan "Asynchronous Secure communication tolerating Mixed Adversaries." In Proceedings of Advances in Cryptology -ASIACRYPT'02, volume 2501 of Lecture Notes in Computer Science (LNCS), pages 224-242, Springer-Verlag, 2002.
17. K.Srinathan, P.R.Goundan, M.V.N.Ashwin Kumar, R.Nandakumar, and C.Pandu Rangan. "Theory of Equal-Flows in Networks. " In Proceedings of 8th Int'l Conference on Computing and Combinatorics (COCOON'02), volume 2387 of Lecture Notes in Computer Science (LNCS), pages 514-524. Springer-Verlag, 2002.
18. M.V.N.Ashwin Kumar, P.R.Goundan, K.Srinathan, and C.Pandu Rangan. "On perfectly secure communication over arbitrary networks" In Proceedings of 21st ACM Symposium on Principles of Distributed Computing (PODC'02), pages 193-202, ACM Press, 2002.
19. M.V.N.Ashwin Kumar, K.Srinathan, and C.Pandu Rangan. "Asynchronous Perfectly Secure Computation tolerating Generalized Adversaries." In Proceedings of 7th Australasian Conference on Information Security and Privacy (ACISP'02), volume 2384 of Lecture Notes in Computer Science (LNCS), pages 497-511. Springer-Verlag, 2002.
20. Mutyam Madhu, complexity issues in rewriting P Systems. Pre-proceedings of Fourth Int'l Workshop on Descriptive Complexity of Formal Systems, 2002.
21. M. Sakthi Balan Complexity issues in Binding-Blocking Automata. Pre-proceedings of Fourth Int'l Workshop on Descriptive complexity of Formal Systems, 2002.
22. S.Suresh, A.Muthukaruppan and V.Kamakoti, " A Parallel Genetic Approach to Temporal Partitioning And Synthesis for Reconfigurable Architectures ", In Proceedings of High Performance Computing Asia 2002, Bangalore, India.
23. A.Muthukaruppan, S.Suresh, Siva Nageswara Rao Borra and V.Kamakoti, " A Novel Three Phase Genetic Approach to Routing for Field Programmable Gate Arrays", In Proceedings of Simulated Evolution And Learning 2002, Singapore, pp. 870-875.

24. S.Suresh, A.Muthukaruppan, Siva Nageswara Rao Borra and V.Kamakoti, "An Artificial Neural Network Guided Parallel Genetic Approach to the Routing Problem for Field Programmable Gate Arrays", In Proceedings of Int'l Conference on Neural Information Processing 2002, Singapore, pp.2645-2650.
25. S.Suresh, A.Muthukaruppan and V.Kamakoti, " A Parallel Genetic Approach,using Artificial Neural Networks, to Temporal Partitioning and Synthesis for Reconfigurable Architectures ", In Proceedings of Int'l Conference on Soft Computing and Intelligent Systems 2002, Tsukuba, Japan.
26. A.Muthukaruppan, S.Suresh and V.Kamakoti, " A Novel Parallel Evolutionary Approach to Routing for Field Programmable Gate Arrays ", In Proceedings of Int'l Symposium on Advanced Intelligent Systems 2002, Tsukuba, Japan.
27. S.Suresh, A.Muthukaruppan and V.Kamakoti, " A Novel Approach to Temporal Partitioning and Synthesis, Using an Evolutionary Algorithm Guided by ANN, for Reconfigurable Architectures ",Accepted for presentation in Artificial and Computational Intelligence 2002, Tokyo, Japan.
28. A.Muthukaruppan, S.Suresh and V.Kamakoti, " A Novel Evolutionary Approach to Routing for Field Programmable Gate Arrays ", Accepted for presentation in Artificial and Computational Intelligence 2002, Tokyo, Japan. Singapore, pp.2645-2650.
29. A.Muthukaruppan, S.Suresh and V.Kamakoti, " A Three Phase Approach to Routing for Field Programmable Gate Arrays ", In Proceedings of Int'l Conference on Knowledge Based Computing Systems 2002 (KBCS'2002), Mumbai, India. pp. 139-148.
30. M. Madhu, V. Srinivasa Murthy and V.Kamakoti, " Dynamic Coding Technique For Low Power Data Bus ", In Proceedings of IEEE Computer Society Symposium on VLSI, (ISVLSI'2003), Tampa, Florida, USA, pp. 252-253.
31. G Ranjith, G.P. Krishna and C. Siva Ram Murthy, "A Distributed Primary-Segmented Backup Scheme for Dependable Real-Time Communication in Multihop Networks", in Proc. IEEE Int'l Workshop on Fault-Tolerant Parallel and Distributed Systems, Florida, USA, April 15-19, 2002.
32. C. Chandra Sekhar, K. Takeda and F. Itakura, "Close-class-set discrimination method for large-class-set pattern recognition using support vector machines," Int'l Joint Conference on Neural Networks, Hawaii, pp.577-582, May, 2002.
33. Subir Kumar Das, B.S. Manoj and C. Siva Ram Murthy, "A Dynamic Core Based Multicast Routing Protocol for Ad hoc Wireless Networks" in Proc. 3rd ACM Int'l Symposium on Mobile Ad Hoc Networking and Computing, Lausanne, Switzerland, June 9-11, 2002.
34. Ch. Vijaya Saradhi and C. Siva Ram Murthy, "Dynamic Establishment of Differentiated Survivable Lightpaths in WDM Mesh Networks", in Proc. Int'l Conference on Communications, Circuits and Systems, Chengdu, China, June 29 – July 1, 2002.
35. Ch. Vijaya Saradhi and C. Siva Ram Murthy, "Dynamic Establishment of Segmented Protection Paths in Single and Multi-Fiber WDM Mesh Networks", in Proc. SPIE Opticomm 2002, Boston, USA, July 29-August 2, 2002.
36. M.A. Saifulla, presented paper in 14th Int'l Conf. On Computer Communications, 11-14 August, 2002 Mumbai. pp.859-865.
37. C. Chandra Sekhar, Kazuya Takeda and Fumitada Itakura, "Recognition of Consonant-Vowel (CV) units of speech in a broadcast news corpus using support vector machines," Int'l Workshop on Pattern Recognition using Support Vector Machines, SVM2002, Niagara Falls, pp.171-185. August, 2002.
38. M. Sakthi Balan and Mutyam Madhu visited the University of Western Ontario, London, Ontario, Canada from 13-08-2002 to 10-09-2002 on the invitation of Prof. Helmut Jurgensen, University of Western Ontario for research collaboration with him and his graduate students. Participated and presented papers in the Int'l Workshop on Descriptive Complexity of Formal Systems held in the University of Western Ontario from 21-08-2002 to 24-08-2002
39. B.S. Manoj and C. Siva Ram Murthy, "Real-time Traffic Support for Adhoc Wireless Networks", in Proc. IEEE Int'l Conference on Networks, Singapore, August 27 – 30, 2002.
40. K. Jayanth Kumar, B. S Manoj and C. Siva Ram Murthy, "On the Use of Multiple Hops in Next Generation Wireless Network Architectures", in Proc. IEEE Int'l Conference on Networks, Singapore, August 27-30, 2002.
41. Weifeng Lee, C. Chandra Sekhar, Kazuya Takeda and Fumitada Itakura, "Recognition of continuous speech segments of monophone units using support vector machines," Int'l Conference on Spoken Language processing, Denver, pp. 2653-2656, September, 2002.
42. K. Jayanth Kumar, B.S. Manoj and C. Siva Ram Murthy, "MuPAC: Multi-Power Architecture for Cellular Networks", in Proc. 13th IEEE Int'l Symposium on Personal, Indoor and Mobile Radio Communication, Lisbon, Portugal, September 15-18, 2002.
43. M. Sridhar and C. Siva Ram Murthy, "An Adaptive Hierarchical Cluster Based Call Admission Algorithm to Provide QoS Support in Wireless Cellular Environments", in Proc. 13th IEEE Int'l Symposium on Personal, Indoor, and Mobile Radio Communication, Lisbon, Portugal, September 15-18, 2002.
44. Christo Frank, B.S. Manoj, and C. Siva Ram Murthy, "Throughput Enhanced Wireless in Local Loop (TWILL) – The Architecture, Protocols and Pricing Schemes", in Proc. 27th Annual IEEE Conference on Local Computer Networks (LCN '02), Florida, USA, November 6-8, 2002.

45. Subir Kumar Das, B.S. Manoj and C. Siva Ram Murthy, "Weight Based Multicast Routing Protocol for Ad hoc Wireless Networks", in Proc. IEEE GLOBECOM, Taipei, November 17-21, 2002.
46. Weifeng Lee, C. Chandra Sekhar, Kazuya Takeda and Fumitada Itakura, "Multiple regression using support vector machines for recognition of speech in a moving car environment," Int'l Conference on Neural Information Processing, Singapore, pp.904-908, November, 2002.
47. K. Jayanth Kumar, B.S. Manoj, and C. Siva Ram Murthy, "RT-MuPaC: Multi-Power Architecture for Voice Cellular Networks", in Proc. 9th Int'l Conference on High Performance Computing, Bangalore, December 18-21, 2002.
48. P C Karthik and P Sreenivasa Kumar, DTD-guided containment of XPATH expressions, Proceedings of the Fifth Int'l Conference on Information Technology, December 2002, Bhuvaneshwar (Orissa), India, pp 231-236.
49. Praveen Kumar, Radhika Selvamani, Shyama Sundar Yadavm and Sutanu Chakraborti, attended and presented paper KBCS Int'l Conference 2002, December 17 – 23, 2002
50. K Ravichandran and P Sreenivasa Kumar, A Semantic query caching system for XML queries, Proceedings of the Fifth Int'l Conference on Information Technology, December 2002, Bhuvaneshwar (Orissa), India, pp 307-310.
51. Vadali Srinivasa Murthy, P.C. Reghu Raj and S. Raman "Design of a High Speed String Matching Co processor for NLP" in Proc. Of the Sixteenth Int'l Conference on VLSI Design (VLSI-03), Jan 4-8, 2003 New Delhi, India.
52. Mutyam Madhu participated in the brainstorming session on Membrane Computing from 05-02-2003 to 11-02-2003 held in Universitat Rovira i Virgili, Spain. He held various discussions with eminent computer scientists and presented two papers.
53. Hema A Murthy and Gadde V Ramana Rao, "The Modified Group Delay Function and its Application to Phoneme Recognition," accepted for presentation at ICASSP-2003, April 6-9, 2003 Hong Kong, China.
54. T. Nagarajan and Hema A Murthy, "Group Delay based Segmentation of Spontaneous Speech into Syllable-like units," accepted for presentation at Spontaneous Speech Processing and Recognition, Tokyo, Japan, April 14-16, 2003
55. Mutyam Madhu, New Results in Rewriting P Systems, In M. Cavaliere, C. Martin-vide and Gh. Paun, editors, Brainstroming Week on Membrane Computing pages 232-240, Tarragona, Spain, 2003.
56. G. Ranjith and C. Siva Ram Murthy, "A Multiple Segmented Backups Scheme for Dependable Real-Time Communication in Multihop Networks", in Proc. 11th IEEE Int'l Workshop on Parallel and Distributed Real-Time Systems, Nice, France, April 22-23, 2003.
57. P.C. Reghu Raj and S. Raman, "Mapping documents onto concept Databases for Threshold-based Retrieval", accepted for presentation in the Int'l Conferene on Enterprise Information Systems (ICEIS-2003) April 23-26, Angers, France.
58. M.Saravanan and S. Raman, "Text Summarization: An Upcoming Tool in Text Mining", accepted for presentation in the Int'l Conferene on Enterprise Information Systems (ICEIS-2003) April 23-26, Angers, France.
59. Rajendra Singh Sisodia, I. Karthigeyan, B. S Manoj, and C. Siva Ram Murthy, "A preferred Link Based Multicast Protocol for Wireless Ad hoc Networks", accepted for presentation in Proc. IEEE Int'l Conference on Communications (ICC 2003), Anchorage, Alaska, USA, May 11-15, 2003.
60. S. Jagadeesan, B.S. Manoj, and C. Siva Ram Murthy, "Interleaved Carrier Sense Multiple Access: An Efficient MAC Protocol for Ad hoc Wireless Networks", accepted for presentation in Proc. IEEE Int'l Conference on Communications (ICC 2003), Anchorage, Alaska, USA, May 11-15, 2003.
61. Vyas Sekar, B.S. Manoj, and C. Siva Ram Murthy, "Routing for a Single Interface MCN Architecture and Pricing Schemes for Data Traffic in Multihop Cellular Networks", accepted for presentation in Proc. IEEE Int'l Conference on Communications (ICC 2003), Anchorage, Alaska, USA, May 11-15, 2003.
62. Siva Nageswara Rao Borra, S. Suresh, A.Muthukaruppan and V.Kamakoti, "A Parallel Genetic Approach to the Placement Problem for Field Programmable Gate Arrays", Accepted for presentation in Tenth Reconfigurable Array Workshop, (RAW'2003), Nice, France.
63. L. Kalyan Kumar, Amol J. Mupid, Aditya S. Ramani and V.Kamakoti, "Online Testing of Interconnect Faults in SRAM Based Reconfigurable Systems ", Accepted for presentation in Eighth IEEE European Test Workshop, (ETW'2003), The Netherlands.
64. Muthukaruppan, S.Suresh and V.Kamakoti, " A Novel Parallel Three Phase Genetic Approach to Routing for Field Programmable Gate Arrays", Accepted for presentation in Proceedings of IEEE Field Programmable Technology 2003, Hong Kong, pp.336-339, IEEE Press.
65. Cetercchi, M. Madhu, Gh. Paun and k.G. Subramanian, Array Rewriting P Systems. Proceedings of Brainstroming week on Membrane computing pages 118-132, Tarragona, Spain, 2003.
66. Vadali Srinivasa Murthy, P.C. Reghu Raj and S. Raman, "Design of a Language-Independent String Matching Unit for NLP", Accepted for presentation in the IEEE CAMP 2003 Int'l Workshop on Computer Architecture for Machine Perception, to be held in New Orleans (USA), May 12-14, 2003.
67. Rupali Sharma and S. Raman, "Phrase-based Text Representation for Managing the Web Documents", Accepted for presentation in the Int'l Conference on Information Technology: Coding & Computing (ITCC 2003), Las Vegas, Nevada, April 28-30, 2003

68. Rupali Sharma and S. Raman, "A Phrase-based Text Representation Approach for Effective Retrieval of Web Documents", Accepted for presentation in the 2003 Int'l Conference on Artificial Intelligence (IC-AI'03), Las Vegas, Nevada, June 23 – 26, 2003.
69. Rupali Sharma, P.C. Reghu Raj and S. Raman, "Augmenting Phrase-based Text Representation with Conceptual Indexing for Effective Retrieval", Accepted for presentation in the 2003 Int'l Conference on Information and Knowledge Engineering (IKE'03), Las Vegas, Nevada, June 23-26, 2003.
70. P.C. Reghu Raj and S. Raman, "Phrase Grammar-based Automatic Conceptual Tagging Sytem", accepted for presentation in the 2003 Int'l Conf. on Information and Knowledge Engineering (IKE 2003), Las Vegas, Nevada, USA, June 23-26, 2003.
71. Hema A Murthy, "Overcoming Traditional Barriers: Linux as a Rural Desktop, "Paper accepted for presentation at Linux World Conference, San Francisco, Aug'12 – Aug' 15 2003.

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit
1.	Mr. Shishpal Rawat & Mr. Rahul Goyal, Academic Relations & Community Development Officers, Intel India Pvt. Ltd.	9 th January, 2002
2.	Sudheendra Hangal, Sun Microsystems Ltd., India.	22 nd March, 2002
3.	Dr. Prosenjit Gupta, Cadence Software, USA, visited and delivered a talk on "Geometric Intersection Searching: Algorithms, Data Structures and applications"	7 th Apr. 2002
4.	FPGA Group of ST Microelectronics Pvt. Ltd, Noida (U.P) to held discussions with Dr. V. Kamakoti on research project proposals under their University Interaction Programme.	31 st May 2002
5.	Mr. Amit Samant, IT Specialist, IBM India Limited, conducted training for the Software DB2, supplied as part of MOU with IBM India Limited, Six technical staff from computer centre and seven staff and students of Computer Science & Engineering Department attend the training. This programme continued by Mr. Amit Atre, IT specialist, IBM India Limited for "IBM Websphere Studio Application & Deployment"	13-17 May 2002 & 28 May-5 Jun. 2002
6.	Shri Bhakta Bahadur Balayar, Minister of State for Science & Technology, Government of Nepal with 4 member team	27 th July 2002
7.	S. Lakshminarayanan Ph.D student Dept. of CSE, Univ. of California at Berkeley gave a talk on "Ip-Geography Mapping and its applications"	5 th Aug., 2002
8.	Prof. Jacques Gautron, President and Prof. N. Ranganathan, Director of the Universities of Francois Rabelais de Tours, France for familiarization with the work done in the areas of Languages & Image Processing.	13 th Aug., 2002
9.	The Ingenierie Sans Frontieres, an Int'l economic development mission consisting of a batch of 15 students and two faculty members visited the Dept.	28 th Aug., 2002
10.	Dr. Ahmad Salludin, Chairman of Ipoh Int'l School, run by Perak Foundation of Malaysia, accompanied by his colleagues Mr.K. Parimannan for an appreciation of the Educational Consultancy services available for their CS course program	20 th Sep., 2002
11.	Mr. Rao Remala and Mr. Mark Lewin Manager of Univ. Relations Group of Microsoft Research, USA visited and addressed the latest development in Net Technology	30 th Sep., 2002
12.	Ms. Pek Slok Ching Dy, Secretary, Ministry of Man Power, Singapore Government along with 2 Directors from an organisation "contact Singapore", to access R&D potential and for possible collaboration	10 th Oct., 2002
13.	A team from Singapore – MIT Alliance (SMA)	26 th Oct., 2002
14.	Dr. Jorje Aunon, Dean of Engg., and Prof. Vijay Gopu, Prof. & Chair Univ. of Alabama, Huntsville,	13 th Nov. 2002
15.	Mr. Naimun Assakli Mohamad, Deputy Director General, Ms. Ctsiti Hajjar Adnin, Director, Ms. Nuryante Mohd. Yazid, Assistant Director of ASEAN Dept. Malaysia visited our Department	22 nd Nov. 2002
16.	A delegation from Arizona State Univ, USA visited the Institute	9 th Dec. 2002
17.	Dr. Peter Crouci-Dean, College of Engg. & Apld. Science, Ms. Yaa-Yin Meng – Asst. Dean, Fiscal and Business Services, Dr. Subash Mahajan-Chair of Chemical & Material Engg., and Dr. Sethuraman Pachanathan-Interim, Chair of CSE from USA	9 th Dec. 2002
18.	Prof. Burhard Rauhut, Rektor, Prof. Matthais Jarke – delegation from RWTH, Aachen, from Germany	17 th Feb., 2003

4.7. DEPARTMENT OF ELECTRICAL ENGINEERING

4.7.1. 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
- Optical networks laboratory

Power Systems, Machines and Drives:

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

Control and Instrumentation Systems:

- Control and Robotics Laboratory
- Measurements and Instrumentation Laboratory

Microelectronics:

- Microelectronics Laboratory
- Amorphous Semiconductor Devices Laboratory
- Digital Systems and VLSI Laboratory

4.7.2. Academic Programmes:

B.Tech Degree in Electrical Engineering:

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

M.Tech Degree in Electrical Engineering:

Four 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)

Integrated M.Tech. Degree in Electrical 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

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, Optical Communication, Power Electronics and Power Systems. Photonics, Semiconductor Devices, Robotics and VLSI.

New Courses Introduced:

Sl.No.	Course No.	Course Name	From
1.	EE 598	Software Engineering for Electrical Engineers	January 2003
2.	EE 515	Mathematical Methods and Algorithms for Signal Processing	January 2003
3.	EE 617	Introduction to Wireless & Cellular Communications	January 2003
4.	EE 555	Micro Electro Mechanical Systems (MEMS)	January 2003

Sl.No.	Course No.	Course Name	From
5.	EE 613	Estimation Theory	January 2003
6.	EE 614	Spectral Estimation	January 2003
7.	EE 611	Digital Modulation and Coding	January 2003
8.	EE 419	Digital Communication Systems	January 2003
9.	EE 549	Image Signal Processing	January 2003
10.	EE 504	Adaptive Signal Processing	January 2003
11.	EE 512	Error Control Coding	January 2003

Students on Roll:

Sl. No.	Programme	I year	II year	III year	IV year	V year & others	Total
1.	B.Tech.	80	92	93	95	-	360
2.	Dual Degree						
	Communication Engg.	11	10	8	13	12	54
	Micro Electronics & VLSI Design	10	11	8	9	7	45
	Power System& Power Electronics	11	-	-	-	-	11
3.	M.Tech. -						
	Communication Systems	15	15	-	-	-	30
	Power System& Power Electronics	10	14	-	-	-	24
	Micro Electronics and VLSI Design	18	20	-	-	-	38
	Control & Ins. Systems	14	14	-	-	-	28
4.	M.Tech. - (UOP)	9	9	-	-	-	18
	Digital Signal Processing						
5.	M.S	29	12	14	12	6	73
6.	Ph.D.	13	8	3	3	6	33
	Total	220	205	126	132	31	714

Names of students and scholars who attended Conferences/Seminars and Symposia abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/ Seminar/ Symposia	Date and Venue
1.	N.Raghavan	Conference	Neural Network based unit commitment of Distributed Wave energy unit (DAMS)	Jan. 2003 Coimbatore.
2.	M P.Selvan V.Raghavan C.R.Anilkumar S.Ramanan	Conference	IEEE ACE 2002 Conference	20-21 Dec. 2002 Science City Kolkatta.
3.	C.R. Anilkumar	Conference	Macro 2002 conference	10 th Dec., 2002 IIT Kharagpur
4.	C.R.Anilkumar	Conference	The National Power Systems Conference Dec,2002.	IIT Kharagpur, Dec.2002.
5.	Mr Ibrahim sodha J.Harish, V.Anoop Gowri Shankar D.V.Karthi,P.C.Vijay K.H.Aparna S.Jagannathan G.Ramesh Kumar R.Budhiraja G.V.Rangaraj S.J.Rajhman S.S.Krishna M.J.Dehaghani J.Amarnath Reddy	Conference	National Communications Conference-NCC'03,	Jan. 2003, IIT Madras

4.7.3. Faculty and their activities:**Faculty:****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 Kovil Pillai, Ph.D.(Cal Tech)

Wireless communication and signal processing

V.Jagadeesh Kumar, Ph.D. (IIT Madras)

P.A. Janakiraman, Ph.D. (IIT Madras)

A. Jhunjunwala, Ph.D (Maine)

M.S.Narasimhan, Ph.D. (IIT Bombay)

K.M.M.Prabhu, Ph.D. (IIT Madras)

K.Radhakrishna Rao, Ph.D. (IIT Kanpur)

G.Sridhara Rao, Ph.D. (IIT Madras)

S.Srinivasan, Ph.D. (IIT Madras)

P.R.Vaya, Ph.D. (IIT Madras)

V.Venkata Rao, Ph.D. (Iowa)

C.Venakateshaiah, 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)

S.Karmalkar, Ph.D. (IIT Madras)

Nandita Dasgupta, Ph.D (IIT Madras)

P.Sasidhara Rao, Ph.D. (IIT Madras)

K.Giridhar, Ph.D. (California)

Harishankar Ramachandran Ph.D (California)

Assistant Professors:

Anil Prabakar Ph.D (Carnegie Mellon)

M.Antony Reddy, Ph.D. (IIT Madras)

V.Jayashankar Ph.D (Anna. Uni.)

Krishna Vasudevan, Ph.D. (IIT Madras)

M.Krishnamurthi, M.Tech (IIT Madras)

P.C.Majhee, M.Tech (IIT Madras)

G.T.Manohar, M.Tech (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 Ireland)

R.Sarathi, Ph.D. (IISc)

Y. Shanthi Pavan, D.Sc (Univ. Columbia)

Srinivas Chakravarthy Ph.D (Austin)

K.Sridharan, Ph.D (RPI, NY)

K.S. Swarup PhD (IISc)

T.G.Venkatesh, Ph.D. (IISc)

Vinita Vasudeven, Ph.D (IIT Bombay)

T.J.Vitto, Ph.D (IIT Madras)

Measurements, Instrumentation

Robotics, Control Systems, Instrumentation

Communication Networks,
Fibre optics, Surface Acoustic Wave Devices.

Antenna Engineering, Applied Electromagnetic

Signal Processing

VLSI, Analog and Digital ICs

Machines, Power Electronics,
Simulation.

Digital Design, DSP Architecture and applications, VLSI
Design.

Semiconductor Devices

Digital Signal Processing, Communications.

High Voltage Engineering,
Power Systems, EMI/EMC

Si and GaAs Devices, Technology and Simulation

Image Processing and Compression

Statistical Signal Processing

Semiconductor materials and Devices.

VLSI, Semiconductor Devices

Si and III-V Semiconductor Devices, Tech, Simulation

Electrical Machines and Power Electronics

Communication Systems and Signal Processing.

Electromagnetic Fields, Optical Networks

Electromagnetic fields, Optical Networks

Electronic Circuits

Instrumentation and Measurement, High Voltage.

Power Electronics

Power Systems

Measurements, Instrumentation

Microprocessors, control systems

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

Robotics, Graphics, Web Programming

Power systems, ANN, Distribution Automation

Computer Architecture and Networks.

CAD for VLSI, VLSI Design

Semiconductor devices, Analog Circuits.

Senior Design Engineer:

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

Semiconductor device technology

Scientific Officers:

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

Measurements, Computer System Management

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

Solid State Electronic Devices, Semiconductor Technology.

H.Renganathan, M.S(IIT Madras)

DSP.Microprocessor Systems

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

Sl. No.	Co-ordinators	Title	Period
1	Prof. S. Srinivasan	A four week Instructional Enhancement Programme on Analog and mixed signal VLSI design	17 th June 2002 – 12 th July 2002
2	Prof.C.Venkateshaiah Dr. K.S. Swarup	Seminar on Flexible AC Transmission Systems	7 th Oct. 2002
3	Prof. K.M.M. Prabhu	Digital Signal Processing: Theory, Hardware and application	21 st Nov. 2002 - 4 th Dec. 2002
4	Prof. Ashok Jhunjunwala	A workshop on "Telemedicine"	17-18 Jan. 2003
5	Prof.Ashok Jhunjunwala	National Conference on Communications 2003	31 st Jan. 2003 – 2 nd Feb. 2003
6	Dr.Enakshi Bhattacharya	Short Term Course on MEMS	2-7 Jan. 2003
7	Prof.Ashok Jhunjunwala	201Million Connections in India by 2010 – Making a Business Case	1 st Feb. 2003

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	Prf. K.N. Bhat	Seminar on Advanced inertial sensors and systems	ISRO	29 th June 2002
2	Prof.Ashok Jhunjunwala	2 nd World Engineering Congress 2002, Kuching, Malaysia	Malaysia	21-25 July 2002
3	Prof.Ashok jhunjunwala	Venture 2002: Asian forum on Venture Business, Japan	Japan	3-4 Sept. 2002
4	Dr.Enakshi Bhattacharya	Workshop on MEMS packaging, MEMSPACK 2002 held at CEERI, Pilani	Pilani	21-22 Sept. 2002
5	Prof.Ashok Jhunjunwala	Workshop on regional and rural policy and community networking, Universite Du Quebee (UQAM), Montreal, Canada	Canada	Oct. 2002
6	Prof.Ashok Jhunjunwala	ICEO-TIE conference, USA	USA	12 th Oct. 2002

Special Lectures Delivered by the faculty in other Institutions:

Sl. No	Name of the Faculty	Topic of Lecture	Venue and Date
1	Dr. Ashok Jhunjunwala	Rural communications	Chattisgarh Economic Advisory Council, New Delhi, 5 th May 2002
		Opportunities in Telecom and Networking areas, Future of Telecom	TIE Chennai chapter, Tidal Park, Chennai 8 th May 2002
		Wireless telecom to connect rural India	Institute for International Research (IIR), Maurya Sheraton Hotel, New Delhi. 9 th May 2002
		Rural communication and connectivity in India	Confederation of Indian Industry meeting., Hotel Kings court, Mysore, 19 th May 2002
		Connecting the developing world	2 nd World Engineering Congress 2002, Kuching, Malaysia, 21-25 July 2002.
		Connecting Rural India	National Seminar on Regulating Cyberspace: Implications for new media professionals, the role of Journalists in bridging the digital divide, Chennai, 1 st August, 2002.
		Wireless communication and its role in rural India	Sairam Engineering College, Chennai, 24 th Aug.02.
TeNet groups learning	Venture 2002: Asian forum on Venture Business, Osaka, Japan, 3- 4 Sept. 2002		

Sl. No	Name of the Faculty	Topic of Lecture	Venue and Date
	Dr. Ashok Jhunjunwala	Rural Connectivity	The Second International conference on IT, Communication technologies and Bioinformatics, Chennai 19 th Sept, 2002
		Telecom infra structure and rural applications	2 nd National workshop on IT applications in E-Governance, Administrative staff college of India, Hyderabad, 20 th Sept.02
		Connecting rural India using wireless	CSA Showcase 2002, IISc, Bangalore, 21 st Sept., 2002
		State of telecom in India: poised for growth	Indo-British Workshop on collaborative research in telecommunications, IIT Delhi., 24 th Sept., 2002
		Telecom R&D in India	2 nd Global telecom summit 2002, India, 27 th Sept., 2002
		Technology Development for India and Rural Connectivity	DA-IICT, Ahmedabad 5 th Oct. 2002
		Connecting Rural India	Computer Society of India, 8 th Oct. 2002
		Connecting Rural Areas of Developing nations	Workshop on regional and rural policy and community networking, Universite Du Quebec (UQAM), Montreal, Canada
		The future of community networking: Civic empowerment through broadband initiatives and wireless mixed media	global congress on community networking 2002, Montreal, Canada
		Initiatives to connecting rural India	ICEO-TIE conference at JW Marriott in Pennsylvania Avenue, USA.
		Initiatives to connecting rural India	ICEO-TIE conference at JW Marriott in Pennsylvania Avenue, USA, 12 th Oct., 2002
		University based Ventures	PAN-IIT conference, USA. 13 th Oct. 2002
		Indian Telecom and Disruptive Technologies	Media Lab Asia, MIT, Harward, USA, 14 th Oct., 2002
		TeNet groups experience of creating knowledge based ventures	National workshop, Hyderabad, 25 th Oct., 2002
		Connecting Rural India	IISc, Bangalore, 30 th Oct. 2002
		Entrepreneurship at grass roots	TieCon-2002 Conference, Bangalore, 30 th Oct., 2002
		Providing Internet and Telephony on a Commercial basis to 600,000 villages of India	Telecom Conference 2002 at Hotel Taj Man Singh, New Delhi on 18 th Nov. 2002
		Telecom Growth in India	Indian Railway Institute, Secundrabad, 19 th Nov, 2002
		Emerging Technologies and Business Innovation as India poise for growth: "National Cost Convention"	National Cost Convention – 2003, 4 th Jan. 2003
		Management of Technology to Achieve Business Competitiveness	IIT Bombay 15.01.03
		Indian Telecom – Current Status and Future Scenario	National Seminar on "India's Telecom sector – The Way Ahead", Mumbai, 29.01.03
		Rural Market opportunities and challenges	5 th CII Telecom Summit 2003, New Delhi
		Financing the rural sector-ICICI	Social Initiative Group Workshop Mumbai.
		Industry Academia partnership-Future direction	Felicitation meeting of Prof. Raju, IC & SR, IIT Madras
		Statistics and Communication revolution	National Science day organized by IIMS, Chennai
		R&D for India: creating New Telecom and IT ventures	National Center for Biological Sciences, Bangalore 16 th Feb. 2003
		Revolution through internet services and mobile telephony	IC & SR, IIT Madras 1 st Mar. 2003
	As telecom poises for growth opportunity for India	IIT Kanpur 5 th Mar. 2003	
	Internet in every village	IIT Bombay 9 th Mar. 2003	

Sl. No	Name of the Faculty	Topic of Lecture	Venue and Date
	Dr. Ashok Jhunjunwala	Business case for fixed connections in the midst of mobile type	11 th Convergence Indian Conference, New Delhi 11 th Mar. 2003
		Telecom and rural networking-The road of universal Access	Summit on Integrated infra structure development, Chennai, 20 th Mar. 2003
2.	Prof. K.N. Bhat	MEMS and Nano Technology	National Symposium on Instrumentation 27 th Nov. 2002, Coimbatore.
		Recent trends in MEMS	Research Centre Imart, Hyderabad, 5 th May. 2002
		Micro-machining and MEMS	VIT, 28 th Feb. 2003
3.	Prof. K. Radhakrishna Rao	Analog IC design	M/S Texas instruments, 14-25 th May 2002
4.	Dr.S. Krishna Vasudevan	Control Systems	CVRDE, 15-16 July 2002
5.	Dr. K.S. Swarup	Computational Intelligence in Power Systems	PSNA College, Dindugal 23 rd Aug. 2002
		Artificial Neural Networks Applications to Power Systems	Mailam Engineering College, Mailam, 7 th Sept. 2002
		Artificial Intelligence for Power System Protection	Anna University 21 st Oct. 2002
		Artificial Neural Networks and their Applications to Electrical Engineering	PSNA College of Engineering, Dindigul, 10 th Jan 2003
6.	Prof. S. Srinivasan	Hardware architectures for video compression algorithms	7 th VLSI design and development workshop held at Bangalore, 31 st Aug. 02

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr. A.N. Rajagopalan	USA	13.05.02 - 11.07.02	Professional visit
2.	Dr. S. Karmalkar	USA	13.05.02 - 10.07.02	Professional visit
3.	Prof. Ashok Jhunjunwala	Malaysia	21-25 July 2002	Conference
4.	Prof. Vaya	Malaysia	January 2003	Sabbatical
5.	Prof. S. Srinivasan	Thailand	26 th March 2003	Visiting Professor at AIT on Deputation
6.	Prof.C.Venkateshaiah	USA	24-26 Feb. 2003	Conference

Honours and Awards obtained:

Name of the Faculty	Awarded for	Awarded by	Date of award
Dr. K.S. Swarup	Senior Member	IEEE	July 2002
Prof. Ashok Jhunjunwala	Excellence in Science and Technology	H.K. Firodia	8 th Oct. 2002

4.7.4 Design and Development Activities:

- 750 KV, 80J, nano second pulse generator (KALI-80) has been donated by Bhabha Atomic Research Centre, Mumbai to the High Voltage Laboratory, IIT madras for R&D activities.
- Design and Development of MOS Integrated Piezo-resistive pressure sensors in under progress.
- Design and Development of micromachined Silicon Accelerometer has been completed. It is in the final stages of packaging.

4.7.5. Research and consultancy:

Sponsored Research Projects:

Sl. No.	Title	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1	Modernisation of electrical engineering lab in communication system	Ministry of Human Resource Development	6.00	Venkata Rao Ashok JhunJhunwala Bhaskar Ramamuthi Giridhar K Prabhu K M M Aravind R
2	Development of an automated human face recognition system	Ministry of Human Resource Development	8.00	Rajagopalan A N Srinivas Chakravarthy
3	Development of the VLSI design facilities and curriculum	Alumni Association	5.00	Srinivasan S
4	Express track: Development of a platform for electronic submission of proposals, review and reporting	Department Science and Technology	5.96	Sridharan K Ashok JhunJhunwala Gonsalaves T A
5	A peer-to-peer 802.11b based mesh network for rural Communities (phase 1)	Media Labs Asia	4.80	Ashok JhunJhunwala Giridhar K
6	Porous silicon based Bio-sensors	Department of Science & Technology	16.68	Enakshi Bhattacharya Anju Chadha
7	Setting up software radio lab	INTEL Inc, USA	115.20	Bhaskar Ramamuthi
8	Generation and characterization of water tree in insulation structure and modeling using cellular automata	Department of Science & Technology	6.96	Sarathi R
9	Pulsed laser deposition of high-k dielectric films for MOS devices	Boards of Research in Nuclear Sciences	1.18	Nandita Das Gupta Amitava Das Gupta Bhat K N
10	PLDs for access devices	Media Labs Asia	6.00	Ashok JhunJhunwala Bhaskar Ramamuthi Devindra Jalihal Gonsalaves T A
11	New architectures for image-based robotic path planning	Department of Science & Technology	12.48	Sridharan K Srinivasan S
12	Augmentation of research facilities under FIST programme	Department of Science & Technology	175.00	Prof.C.Venkateshaiah

Industrial Consultancy Projects:

Sl. No.	Name of the Faculty	Title of the Project	Industry	Amount (Rs. in lakhs)
1	C.Venkateshaiah R.Sarathi	Impulse voltage withstand study and testing of Transformers	Indo Tech Transformers Ltd	13.00
2	C.Venkateshaiah R.Sarathi	Impulse voltage withstand study and testing of voltage/current Transformers	Stardrive Busducts Pvt. Ltd, EMMESS Control Pvt. Ltd. Tamil Nadu Electricals	1.43
3	C.Venkateshaiah R.Sarathi	Lightning Impulse test on Transformer	Current Electricals Ltd. Ascott Electricals, IPL Products	0.60
4	C.Venkateshaiah R.Sarathi	Dry power frequency withstand test	BIECCO Lawrie Ltd. Bombardier transportation Products India	0.69
5	C.Venkateshaiah R.Sarathi	Calibration of High voltage test kit	System Control Engineers Aral Chemicals Ascott Electricals Elpro Engineering Raj Lubricants (Madras) Ltd.	0.40

Sl. No.	Name of the Faculty	Title of the Project	Industry	Amount (Rs. in lakhs)
6	C.Venkateshaiah R.Sarathi	Consultancy on the health of Power Transformer	Electrosteel Casting Ltd	0.14
7	M.Krishnamurthi	Scrutiny of fault level calculation and relay co-ordination settings for ACC Tikaria Cement Plant	Entech Consultancy Bureau (Madras) Pvt. Ltd.	0.16
8	P.Sasidhara Rao	For the speed torque characteristics of Motor	Larsen and Toubro Ltd	0.63
		Type tests of 7.5kw motor	Kone Elevators India Ltd	0.32
		Testing of Induction mot-or for various parameters	Fresh and Honest Café Ltd	0.26
		Testing of 6KW integral starter generator in generator mode at different speeds	Lucas -TVS	0.32
9	P.Sasidhara Rao G.Sridhara Rao	Technical study and research analysis on high frequency alternator	Combat Vecicles Research & Development Establishment	0.83
10	G.Sridhara Rao	Combined cycle power plant-breakdown analysis	Andhra Pradesh Gas Power Corporation Ltd.	1.00
11	V.Jagadeesh Kumar V.Jayashankar	Testing and calibration of Power track meters	Tamilnadu Electricals	0.08
		Testing of 11kV PT ratio error-phase angle error measurement	Current Electricals Ltd.	0.06
		Developing and electronically compensated (zeroflux) current transformer	Lamco Lightning Arrester Mfg. Co. Pvt. Ltd.	0.50
12	K.Giridhar	Transmit diversity research	Bharat Electronics Ltd.,	0.70

RBIC Projects:

Sl. No.	Title of the Project	Industry	Amount (Rs. in lakhs)	Coordinators
1	Retainer Consultancy	Integrated Soft Tech Solutions Pvt. Ltd.	0.60	K.Giridhar
2	Retainer Consultancy for Redpine Signals	Redpine Signals, Inc.	0.60	K.Giridhar
3	Improving the Detection Performance in Passive Sonar Systems	Naval Physical & Oceanographic Lab	4.95	K.M.M. Prabhu
4	Scrpit and writer independent approach for online handwriting recognition	HP Labs India	5.67	Srinivas Chakravarthy Ashok JhunJhunwla
5	Retainer Consultancy	Nestem India Designs Pvt. Ltd.	12.00	Shantihi Pavan
6	Retainer Consultancy for Redpine Signals, Inc.	Redpine Signals, Inc.- Hyderabad	0.60	Devendra Jalihal
7	Retainer Consultancy for Redpine Signals, Inc.	Redpine Signals, Inc.- Hyderabad	0.60	Bhaskar Ramamurthi
8	Retainer Consultancy for Redpine Signals, Inc.	Redpine Signals, Inc.- Hyderabad	0.60	David Kovil pillai
9	Retainer Consultancy for WLAN System	Texas Instruments	0.60	K.Giridhar

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	13
No. of papers presented in National Conferences	..	20
No. of papers presented in International Conferences	..	13

In Refereed National Journals:

1. K. Sridharan and M. Jagan Babu, NETIS: A prototype of an Internet based tourist information system for north-east India, Journal of Institution of Engineers (India) - Computer Engineering Division), Vol. 83, November 2002, pp. 57-65.

2. R. Sarathi, U.M. Rao and C. Venkateshaiah, Investigations of tracking studies in Silicon rubber under AC and DC voltages, *Bulletin of Materials Science*, pp 472-475, Nov. 2002.

In Refereed International Journals:

1. S. Karmalkar and A. Sharat Chandra, High Frequency BJT- Modeling, and Parameter Extraction from Simple Measurements on Finished Devices, *Solid State Electron.*, vol. 47, pp.131-141, January 2003.
2. R. Sarathi, C.R. Anilkumar, A.K. Mishra and S.Deepa, , Investigation in to the failure of XLPE cables due to electrical treeing –A physico chemical approach, *Polymer Testing Journal*, Elsevier Science, vol-22, No.2, pp317-322, 2003.
3. S. Karmalkar, J. Bannerjee and K. R. K. Rao, An improved procedure for bump plating of planar diodes, *J. Mater. Process. Technol.*, vol. 134, no. 2, pp. 210-213, 2003.
4. S. Karmalkar and D. Mahaveer Sathaiya, A Unified Closed-form Model of Thermionic-field and Field Emissions through a Triangular Potential Barrier, *Appl. Phys. Lett.*, vol. 82, No. 9, pp. 1431-1433, 200
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1. R. Sarathi, C.R. Anilkumar and C. Venkateshaiah, Stochastic modeling and Characterisation of Electrical Trees, IASTED Power Engineering conference, Feb. 24-26th Feb. 2003, Palm Beach, USA.
2. K.N. Bhat, Polysilicon Piezo resistive pressure sensor using Silicon-on-Insulator (SOI) approach, International Conference on Smart material, structures and systems, pp 798-807, 12th 14th Dec. 2002, IISC, Bangalore (Invited Paper)
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7. M.P. Selvan and K.S. Swarup, Network Topology Processor: An Object oriented Approach, Paper no PW-33, pp. 435-439, IEEE ACE 2002 Conference, Science City, Kolkatta, 20-21 Dec 2002.
8. C.S. Dhir and K.S. Swarup, Fuzzy Systems Approach to Optimal Power Flow by. Paper no PW-33, pp. 440-444, IEEE ACE 2002 Conference, Science City, Kolkatta, 20-21 Dec 2002.
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12. R. Sarathi, P. Krishnan, S. Ramanan, S. Jagannathan and C. Venkateshaiah, Diagnostics of Degradation condition in Outdoor Polymeric Insulation Structures Using Neural Networks, IEEE-ACE-2002 conference, 21st Dec. 2002, Calcutta, India
13. A book entitled "Materials and Process integration for MEMS" edited by Francis E.H. Tay has been published by Kluwer Academic Publishers in 2002. Chapter 7 of this book titled "Oxidation process-Optimisation for large area silicon fusion bonded devices and MEMS structures" authored by K.N. Bhat, N. Dasgupta, A. Dasgupta, P.R.S. Rao, R. Navin Kumar and Y. Chandana.

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of visit
1	Mr. Greving Warren, Vice President, HP Bangalore Mr. Mike Best, Media Lab Asia, Mumbai	6 th April 2002
2.	Hon. Howard Eugene Douglas (former Ambassador), Asia pacific wireless, USA.	8 th April 2002
3.	Mr. K. Ramachandra Reddy, CEO, Moschip, Semiconductor Tech Ltd. Hyderabad	18 th April 2002
4.	Mr. Raymonds Brinks, President, Verasity Technology, California	18 th April 2002
5.	Gary E. Herman, Director of emerging market platforms and solutions, HP, California	18 th April 2002
6.	Christoper Shockey, Inventor, Agricultural e-Markets, World e-inclusion, HP orignal	18 th April 2002
7.	Paulus Ng. Regional Sales Manager, Legerity, Hongkong Donald Beech, Product Marketing Manager, Legerity, Texas, USA. Russel J. Apfel, Chief Technology Officer, Legerity, Texas, USA.	22 nd April 2002
8.	Dr. Rajeev Sangal, Director, IIT Hyderabad	5 th June 2002
9.	Mr. Rayme Stata, Stata Labs, California, USA	15 th June 2002
10.	Prof. B.K. Chandrasekar, IT Minister, Karnataka	17 th June 2002
11.	Mr. Ram Krishnan, Akash Ganga RWH, USA	18 th June 2002
12.	Mr. Ken Keniston, MIT, USA	20 th June 2002
13.	Mr. Bimal Sareen, CEO, Media Lab Asia, Bombay.	25 th June 2002
14.	Mr.K.B.Chandrasekhar, Chairman, Anna University-K.B.Chandrasekhar Centre	6 th July 2002
15.	Mr. Ravi Mathur, IT Secretary, Jaipur	19 th July 2002
16.	Mr. Ajay Singh, Advisor, Ministry of IT and Communications, New Delhi	27 th July 2002
17.	Mr. Rajeev Ratna Shaha, Secretary, Department of Information Technology, MIT, New Delhi	29 th July 2002
18.	Dr. Ramesh Jain, MLA, Mubai	7 th Aug. 2002
19.	Mr. Mothilal, Datamatics, Mumbai (former CMD, ITI)	9 th Aug. 2002
20.	Dr. Malikarjun, Cisco Systems, Bangalore	16 th Aug. 2002
21.	Mr. Mahesh Dayaram and Shyam, Nexge Technology	19 th Aug. 2002
22.	Mr. K.S. Bajwa, DGM, IT & Mr. Sampath Director, Punjab National Bank	21 st Aug. 2002
23.	Ms. Hisaka Kodama, Consulate General of Japan, Chennai	22 nd Aug. 2002
24.	Mr.MahendraNahata, Chairman, HFCL, New Delhi	13 th Sept. 2002
25.	Dr.R.C.Sethi,Head Accelerator and Pulse Power Division, BARC, Mumbai.	30 th Sept. 2002
26.	Dr. Kalyan K. Sen, Westinghouse Electric Corporation, USA	7 th Oct. 2002
27.	Dr.K.E. Seetharam, Evaluation specialist, Asian Development Bank, Manila	24 th Oct. 2002
28.	Dr. Thomas Fuja, President of IEEE, Communication Society, USA.	28 th Oct. 2002
29.	Dr.V.P. Gulati, Director, The Institute for Development and Research in Banking Technology (IDRBT)	29 th Oct. 2002
30.	Shri Shyamal Ghosh, Administrator Universal Service Fund. Dept. of Telecommunications. Ministry of Communications and Information Technology, New Delhi	22 nd Nov. 2002
31.	Dr. S.D. Sherlekar, Vice President of TCS, Bangalore & Dr. Shyam, TCS, Bangalore.	28 th Nov. 2002
32.	Mr. Arun Bharat Ram, Director of BSNL. New Delhi	1 st Jan. 2003
33.	Mr. Narendra Sharma. CMD of MTNL. New Delhi	5 th Jan. 2003
34.	Prof. V. Ramamurthi, Secretary. DST. Govt of India	27 th Jan. 2003
35.	Ray Stata, Chairman Analog Devices, USA	26 th Feb. 2003
36.	Hon. Governor of Tamil Nadu	3 rd March 2003

4.8 DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

4.8.1. 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) in Industrial Engineering and in Industrial Management. The Industrial Engineering Programme was merged with the Industrial Management Programme in 1981. The Department has started offering MBA programme (replacing M.Tech (IM) programme) effective from the Academic Year July 2001. The Department also offers research programmes (Ph.D) in the various disciplines of Humanities and Social Sciences and in the major functional areas of Management. In addition, the Department offers a masters' level research programme (MS) in Management. The major areas of teaching and research of the Department are:

- Undergraduate courses in Humanities and Social Sciences
- M.B.A. Programme
- M.S. Programme in Production and Operations Management, Supply Chain Management, Financial Management, Business Policy/Strategic Management, Marketing Management, Organizational Behaviour, Personnel Management and Industrial Relations, Entrepreneurship, Technology Management, Project Management, Knowledge Management, Applied Decision Analysis, Systems Analysis and Modelling, Public Systems Management, Applied Economics, Applied Sociology, Business History, Business Communication, Environmental Management, Financial Engineering
- Ph.D Programme in British, American, Commonwealth Literature New Literatures in English, Linguistics, Socio-linguistics, Psycholinguistics, English Language Teaching (ELT), German Studies, Modern Indian History, Socio-Economic and Cultural Developments, Economics, Psychology, Sociology, Science and Technology Policy Studies, Environment and Natural Resources Policy, Development Studies, Production and Operations Management, Supply Chain Management, Financial Management, Business Policy/Strategic Management, Marketing Management, Organizational Behaviour, Personnel Management and Industrial Relations, Entrepreneurship, Technology Management, Project Management, Knowledge Management, Applied Decision Analysis, Systems Analysis and Modelling, Public Systems Management, Applied Economics, Applied Sociology, Business History, Business Communication, Environmental Management, Financial Engineering.

4.8.2. Academic Programmes:

New Courses Introduced:

Sl. No.	Course No.	Title
1.	HS 624	Financial Institutions Management
2.	HS 625	Information Technology Strategy in Financial Institutions
3.	HS 681	Discrete Choice Models
4.	HS 863	Literary Movements Around the Turn of the Century 2003
5.	HS 864	Culture Studies
6.	HS 865	Modern German Thought
7.	HS 866	Modern German Literature
8.	MP684	European Union Studies
9.	MP735	Object – oriented Analysis and Design
10.	MP736	Introduction to Database Systems
11.	MP741	Computational Finance
12.	MP751	Planning and Managing Retail Business
13.	MP753	Brand Management
14.	MP754	Marketing on Internet
15.	MP757	Environmental Policy and Development
16.	MP775	E-Business Strategies

Students on Roll:

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
1.	MBA	38	41	-	-	-	79
2.	M.S.	6	3	5	-	-	14
3.	Ph.D	20	12	1	1	4	38
	Total	64	56	6	1	4	131

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 and Venue
Conference:				
1.	R Kishore Kumar	M.S.	Won the Best Paper Award (II Prize) for paper entitled "Impact of Stock Index Futures on Sport Market Volatility", prize of 10,000.	19-21 Sept 02 IISc, Bangalore.
2.	K Ganesh Nagendra Kumar P Padma G Revathi Elizabeth Devasia	Ph.D	UGC sponsored National conference on "Management in Transition" Paper presented on "A study on the Linkages between occupation – Interest Mismatch & Turnover Intent." Advertising and Brand Position to – A New Perspective.	21-22 Feb. '03
3.	B Eswara Rao	Ph.D	Environmental History	7 th Dec. 2002 JNU, N Delhi
4.	S N Rajesh Raj	Ph.D	Data Processing Course for Social Scientists	16-29 Sept. '03 CSD, Hyderabad
			44 th Annual conference of the Indian Society of Labour Economics	15-17 Dec. 02 Guru Nanak Dev University Amritsar
			Productivity and Technical Efficiency: Recent Developments in Theory and Applications	6-8 Jan. '03 CDE, DSE & CDE & ICICI
Seminar:				
1.	K Ganesh	Ph.D	Presented a paper titled "An Analytic Approach for the Evaluation of Enterprise Resource Planning and Supply Chain Alternatives".	Anna Univ. Dec. 29, 2002
2.	Anubhav Agnihotri Rohit Morde, Vipin Pandey, Murali Kumar Nandini, NR Babu Partha Sadhukhan Adhev Tushar Ambadas Bhavdeep Singh Virdee Manohar Gautham G.Manjunatha V.Rajesh Narasimha Rao	MBA	Won the only Prize for Designing of Marketing Plan	Anna Univ. Mar. 28, 2003
Symposia:				
1.	M Prasanth	MBA	Brain Teasers, annual Mgmt. Festival (PRAYAG) won the IInd Prize	11.11.2002 Apollo Inst. of Hospital admn.

4.8.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialisation

Professors

R.N. Anantharaman, Ph.D (Bangalore)
[Head]

Organisational and Consumer Behaviour,
Human Resources Management, Industrial Relations

Name and Qualifications	Major Area of Specialisation
Shreesh Chaudhary, Ph.D (CIEFL Hyderabad)	Theoretical Linguistics, ELT & Need Based Courses in English
L.S.Ganesh, Ph.D (IIT Madras)	Technology Management, Project Management, Applied Systems Analysis and Decision Making
Evangeline Manickam, Ph.D (Madras)	American Literature, English, French
Malathy Duraisamy, Ph.D (Madras)	Applied Economics, Econometrics, Labour Economics, Economics of Science and Technology
V.R.Muraleedharan, Ph.D (IIT Madras)	Health Economics, Public Policy, History of Healthcare in South India
T.T.Narendran, Ph.D. (IIT Madras)	Operations Management, Decision Support Systems, Group Technology
R. Rajagopalan, Ph.D. (IIT Kanpur)	Science and Technology Policy, Computer Applications, Production Management, Group Technology
C.Rajendran, Ph.D (IIT Madras)	Production Management, Scheduling, Computer Simulation
B.Subramanian, Ph.D (Karnataka)	German Studies, Philosophy
Associate Professors:	
Elizabeth Nainan Kurian, Ph.D (IIT Madras)	American Fiction
S. Jayachandran, Ph.D (IIT Madras)	Marketing Management
T.J.Kamalanabhan, Ph.D (Madras)	Industrial Psychology, Organisational Behaviour
G. Srinivasan, Ph.D (IIT Madras)	Operations Management, Group Technology, Production Management, Operations Research
M. Thenmozhi, Ph.D (Madras)	Financial Management, International Business
Assistant Professors:	
Dr.(Mrs.) Devaki Reddy	English, Sociolinguistics, ELT
M.Durgaprasada Rao, M.B.A. (Andhra)	Management Accounting, General Management
R Madhumathi, Ph.D (Madras)	Financial Management and Accounting
S. Mohan, M.A. (Madras)	English, Science Fiction, Technical Report Writing, Business Communication
Prema Rajagopalan	Sociology of Science & Technology, Development, Women in Science & Technology
D. Veeraraghavan, Ph.D (IIT Madras)	Social and Economic History, Labour Movements
K Srilata, Ph.D	Indian writing in English, African Literature & Cultural Studies
John Bosco Lourdusamy, D.Phil (Oxon) Brahme Milind, Ph.D (JNU)	History of Science; Science Technology & Society German Studies, Comparative Literature & Modern Marathi Literature
G Arun Kumar, Ph.D (IISc)	Finance
Debashish Acharya, Ph.D	Micro Economics, Macro Economics & Monetary Economics
TTK Chair Professor:	
P Vijayaraghavan, Ph.D,(IIM)	Marketing
DAAD Visiting Faculty:	
Ms Susanne Romanowski	German
Part-time Faculty:	
Ms Pranjali Bandhu	German
Visiting Faculty:	
G Ramasubramaniam, Ph.D (MIT)	Quantitative Methods, Applications in Customer Management, Service quality, Transportation

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

Sl. No.	Co-ordinator	Title	Period
1	Dr L S Ganesh Dr T J Kamalanabhan	Teacher Development Programme	29 th May 2002
2	Dr L S Ganesh	EDP for Executives of the General Electric Group of Companies	6-7 June, 2002
3	Dr G Srinivasan	Training Programme for 1 st Silicon at Kuching, Malaysia	22-27 June, 2002
4.	Dr L S Ganesh	Training programme for M/s IGE India Ltd., Mumbai	22-23 July, 2002
5.	Dr M Thenmozhi	Debt. Markets: Operations and Practices*	15-16, Feb. 2002
6.	Dr V R Muraleedharan	Consumer Protection Act and Health Care Tamil Nadu Health System Development Project Transplantation of Human Organs Act 1994	21 st Sept. 2002 18-20 Feb. 2003 8 th March 2003

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
1	Dr M Thenmozhi	Budgeting for Municipalities	World Bank	April 2002
2	Dr R Rajagopalan	South Asian Seas Programme	UN Environment Prog., Colombo	28 th June 02-1 st July 02
3	Dr G Srinivasan	Asia-Pacific Regional forum on Policy Imperatives and Role of Institutions in implementing a Public Outreach Strategy for Intellectual Property	IIM, Kozhikode	4-6 Sept. 02
		Optimization of mail motor service		20-22 Dec. 02
		Operations Research for Development (ICORD-2002)	Anna Univ.	27-30 Dec.'02
4	Dr V R Muraleedharan	Healthcare for the Urban Poor	New Delhi	21 st July 02
		Introducing the National Health Insurance Scheme for the poor	New Delhi	22 nd Mar. 03
5	Dr S Jayachandran	3 rd National Convention for Reservation Policy	Ntl. Inst. of Public Admn. Bangalore	17-19 Sept. 02
		4 th Residential National Convention on Reservation Policy	NIPA, Mysore	9-11 Jan. 03
6	Dr L S Ganesh	Innovative Teaching & Learning Methodologies for Improving Quality in Management Education	GRD Inst. of Mgmt., Coimb.	12-13 Sept. 02
7	Dr P Vijayaraghavan	Innovative Teaching & Learning Methodologies for Improving Quality in Management Education	GRD Inst. of Management Coimbatore	14 th Sept. 02
		Business Research	PSG College of Technology Coimbatore	
8	Dr M Thenmozhi	Impact of Futures Trading and Spot Price Volatility*	NSE, Mumbai	25 th Oct. 02
		National Convention on Sexual Harassment & Gender Justice	Bangalore	22-23 Nov. 02
9	Dr Prema Rajagopalan	Teaching Business Ethics	IIM, Bangalore	23-24 May 02
		Indian Sociological Society - XXVIII	IIT Kanpur	18-20 Dec. 02
10.	Dr C Rajendran	Operations Research for Development (ICORD-2002)	Anna Univ. Chennai	27-30 Dec. 02
		An ANT colony algorithm for scheduling on a single machine to minimize the sum of weighted tardiness of jobs	CIT Coimbatore	6-8 Jan. 03
11.	Dr Devaki Reddy	Linguistic Awareness and Language Learning	BHU, Varanasi	9-10 Feb. 03

Sl. No.	Name of Faculty	Title	Institution	Period
12.	Dr John Bosco Lourdusamy	Language Education and Literacy	BHU, Varanasi	9-10 Feb. 03
		Citizenship and Governance	Participatory Research in Asia (PRIA), N.Delhi	12-14 Feb. 03
13.	Dr T J Kamalanabhan Dr S Jayachandran Dr R N Anantharaman	Management in Transition	Univ. of Madras	21-22 Feb. 03
14.	Dr D Malathy	"Cause and Consequences of Corruption in India" at the National Seminar on Inter Linkages of Bribery Market with Crime Politics and Ecological Development	SV Univ. Tirupathi	13-14 Mar. 03

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1	Dr T T Narendran	Supply Chain Management	13 th July, 2002 ICWAI, Chennai
2	Dr G Srinivasan	On the interaction between manufacturer trade deals and retails promotions in response the supply- uncertainty occurrences	20-22 Dec. 2002 Anna Univ., Chennai
3	Dr S Devaki Reddy	Communication Skills in English	30-31 Aug. 2002 Perks Matriculation School, Coimbatore
		Assessment Procedures in English	11-12 Jan. 2003 British Council, Chennai
4	Dr D Malathy	Health Economics at the on "Davidson College – MCC Seminar in India Programme	Oct. 2002 MCC, Chennai

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1	Dr V R Muraleedharan	South Africa	Sept. 30–Oct. 5, 2002	Seminar on Trust and Health Systems Development
2	Dr R Rajagopalan	UK	Aug. 4–17, 2002	In connection with IOI
		USA	Sept. 9 – Oct. 17 2002	

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	Dr T T Narendran	Citation of Excellence (Three Stars for Research Implications in the Emerald Hall of Fame)	The British Council	Research	Apr.-May 2002

Books/Monographs authored or co-authored:

Sl. No.	Name of Faculty	Title	Publisher	Author
1.	Dr. Brahme Milind	Wandern Ohne Ankunft. Franz Kafka und G.A. Kulkarni	Academic Excellence, New Delhi, 2003	Dr. Brahme Milind
2	Dr.S. Devaki Reddy	Edited the annual Bulletin of the International Development in Asia committee, Bulletin No. 15 th July, 2002	Prof. V. Saraswathi Felicitation Committee Chennai	Dr.S. Devaki Reddy

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Name of Academy/ Professional Society	Level	Year of Admission
1	Dr. C. Rajendran	Humboldt Research Foundation	Fellow	1996
2.	Dr.T.J. Kamalanabhan	Fulbright Visiting Lecturership	Lecturer	Sept. - Dec. 2002

4.8.4. Design and Development Activities:

New facilities added or major equipment procured through project funds:

- PIV Windows NT Server, PIV – 45 machines with multimedia, PIII – 10 machines with multimedia, PII–15 machines.
- Laser Printer – 3 Nos. 3-in-one colour printer – 2 Nos., Internet and intranet connectivity for all machines
- Softwares: SPSS 11.0 for Windows, Arena 6.0 Multimedia Software, Capital Online Database, Prowess.

4.8.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Future Trading and Spot Price Volatility's of NIFTY Index Futures	6 months	National Stock Exchange, Bombay	0.50	Dr M Thenmozhi
2.	Regulation of Health Care in Tamil Nadu	1 year & 2 months	London school of Hygiene and Tropical Medicine	15.00	Dr V R Muraleedharan with London school of Hygiene & Tropical Medicine
3.	Economic Analysis of HIV/AIDS prevention strategies in TN & AP	2002-2004	Wellcome Trust (UK)	35.00	Dr V R Muraleedharan With London school of Hygiene & Tropical Medicine
4.	Development of Computer Aided Instructional Module on "Financial Services"	1 year	CCE	1.30	Dr M Thenmozhi

Industrial Consultancy projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1	Dr.V.R. Muraleedharan	District Health Care Planning in Tamil Nadu	DANIDA	3.20
		Cost Effectiveness analysis of health care programmes in Tamil Nadu	WHO	7.00
2	Dr.G. Srinivasan	Demand Planning to Inventory Management	Take Solutions (P) Ltd.	1.50
		Optimization of Warehouse Storage Space		1.50
3	Dr.M. Thenmozhi	Design & Development of internal customer satisfaction index	BPCL	0.50

Exchange Programme with other Universities:

Expert Member, Admission Interviews, Management Development Institute, Gurgaon
Dr T T Narendran, Member of Madras Management Association.

Research Publications:

Total No. of papers published in Refereed National Journals	..	14
Total No. of papers published in Refereed International Journals	..	8
Total No. of papers presented in National Conferences	..	3

In Refereed National Journals:

1. K Srilata, *The other Half of the Coconut: Women Writing Self-Respect History*. New Delhi: Kali for Women, 2002
2. K Srilata, "Looking for other stories: Women's Writing, Self-Respect Movement and the Politics of Feminist Translations" in *Inter Asia Cultural Studies Routledge* Vol.3, No.3, 2002.
3. K Srilata, *Seablue Child* (Anthology of poetry) Kolkota: The Brown Critique, 2002.
4. John Bosco Lourdasamy, "Asutosh Mookerjee And "Nationalistic" Science Education in Colonial Bengal", *Contemporary India*, Vol.I, No.2, April-June2002, pp.49-66
5. John Bosco Lourdasamy, "The Morning Star of Modern Science in India: Mahindra Lal Sircar and the Indian Association for the Cultivation of Science", *Proceedings of the Indian Association for the Cultivation of Sciences*, Vol.85A, No.5, September 2002, pp.503-19.
6. M Thenmozhi, "Customer Driven Marketing Strategy for Financial Services", *Indian Journal of Business Papers*, Vol.2-3, No.4-5, 2002, pp.38-42.
7. M Thenmozhi and R Shanthi, "Opportunities and Challenges in EDI Applications in Financial Markets", *Journal of Services Research*, Vol.2, No.1, 2002, pp.107-122.
8. M Thenmozhi "Knowledge Management in Knowledge Based Industries" in *Knowledge Management*, Ratnaja Gogula (ed.) ICFAI Press, Hyderabad, 2002, pp.98-108.
9. C Rajendran, R N Anantharaman, G S Sureshchandar, "The relationship between management's perception of total quality service and customer perceptions of service quality". *Total Quality Management*, Vol.13, No.1, 69-88 (2002).
10. Sureshchandar G S, C Rajendran, and R N Anantharaman, "Determinants of customer-perceived service quality: a confirmatory factor analysis approach". *Journal of Services Marketing*, Vol.16, No.1, 9-34 (2002).
11. Sureshchandar G S, C Rajendran, and R N Anantharaman, "The relationship between service quality and customer satisfaction – a factor specific approach.", *Journal of Services Marketing*, Vol.16, No.4, 363-377 (2002).
12. Mohanasundaram K M, Natarajan K, Viswanathkumar G, Radhakrishnan P, and Rajendran C, "Scheduling rules for dynamic shops that manufacture multi-level jobs". *Computers and Industrial Engineering*, Vol.44, 119-131 (2002).
13. Pugazhendi S, Thiagarajan S, Rajendran C, and R N Anantharaman, "Performance enhancement by using non-permutation schedules in flowline-based manufacturing systems" *Computers and Industrial Engineering*, Vol.44, 133-157 (2002)
14. Mani T P, Murugan N and Rajendran C, "TQM is a must for success, but not sufficient for survival: A conceptual framework as contemplated in ancient Tamil literature in India", *Total Quality Management*, Vol.14, No.4, 395-495 (2003).

In Refereed International Journals:

1. G S Suresh Chander, C. Rajendran, R N Anantharaman and T J Kamalanabhan (2002) "Management's Perception of Total Quality Service in the banking sector of a Developing Economy – A Critical Analysis", *International Journal of Bank Marketing*, Vol.20, No.4, pp.181-196.
2. Neera Katwal and T J Kamalanabhan (2002) "Factors Influencing Sibling Cohesiveness in the Indian Families", *Pakistan Journal of Psychological Research*, Vol.17, Nos.1&2, pp.17-28.
3. D Malathy and S Sukanya, June (2002) "Distribution and Determinants of Child Morbidity in Rural T.N.", *Asian African Journal of Economics and Econometrics*, Vol.2, No.1, pp.67-90.
4. O Mahesh and G Srinivasan (2002) Incremental cell formation considering alternative machines, *International Journal of Production Research*, Vol 40, 10, pp. 3291-3310
5. Vijayender Reddy and T T Narendran, January (2003) Heuristics for Scheduling sequence-dependent set-up jobs in flow line cells, Vol.41, No.1, January, 2003.
6. Holthaus, O., and C Rajendran C., "A Study on the performance of scheduling rules in buffer-constrained dynamic flowshops", *International Journal of Production Research*, Vol.40, No.13, 3041-3052 (2002)
7. Framinan J M, Leisten R and Rajendran C, "Different initial sequences for the heuristic of Nawaz, Enscore and Ham to minimize makespan, idle time or total flowtime in the static permutation flowshop sequencing problem". *International Journal of Production Research*, Vol 41, No.1.1, 121-148 (2003)
8. Ramanan G V and Rajendran C, "Scheduling in Kanban-controlled flowshops to minimize the makespan of containers". *International Journal of Advanced Manufacturing Technology*, Vol.21, 348-354 (2003).

In Proceedings of National Conferences:

1. Prema Rajagopalan, "Women in the Profession of Sciences: An India-China Comparison in the Research Committee (RC:08) Social Stratification, Professions and Social Mobility at the XXVII All India Sociology Conference. 18-20 December 2002, IIT Kanpur

2. Srinivasan G, Gautam Kumar Raja and Aswin C, Optimization of Mail Motor service, 6th Society of Operations Management Conference, Kozhikode, December 2002.
3. M Thenmozhi and Sony Thomas, " Applications of Heteroscedastic Modeling in Finance", Proceedings of the National Seminar on Business research methods, Coimbatore, 2002. pp.17-25.

Reports:

1. V R Muraleedharan, Report on "Tamil Nadu's Health Sector: a review of its achievements and challenges" (Submitted to the Planning Commission of India, New Delhi, July 2002)
2. V R Muraleedharan, C.Sambu Prasad, G. Swaminathan, A Kavitha, G Koteswara Rao and D.Veeraraghavana, "Citizen Action, Water Pollution and Public Health: an analysis of administrative and implementation dimensions" (Foundation for Sustainable Development (India), I.I.T Madras, Submitted to Water Resources Organisation, Chennai, September 2002)
3. V R Muraleedharan, Preeti Kudesia and Maj-Lis Voss "Public-Private Cooperation for Health in India" (Invited paper prepared for the International Health Summit, Regional Symposium on The Role of Private Sector in Health Care in India" Bangalore, November 2002).
4. V R Muraleedharan, S Girija "HIV/AIDS, Youth and NGOs in Tamil Nadu: An Overview" (Foundation for Sustainable Development, IIT Madras, report prepared for UNAIDS, Geneva, January 2003)

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1	Dr M S Ananth, Director, IITM	08.05.02	Discussion with Faculty
2	Dr Jayaram K Sankaran, Associate Professor, Univ. of Auckland, New Zealand	06.08.02 – 07.08.02	Guest Lecture
3	Dr J Ganesh, ORIE, Cornell Univ.	19.08.02	Guest Lecture
4	Sri S Harikrishnan	29.10.02	Guest Lecture
5	Sri S Durairajan, AGM, RBI	30.10.02	Guest Lecture
6	Mr T Shankar, Chief Executive Officer	13.11.02	Guest Lecture
7	Mr Ravichandran, ICRA Ltd.,	19.11.02	Guest Lecture
8	Mr Sampath Kumar, Corporate Editor, The Hindu-Business Line	04.12.02	Guest Lecture
9	Mr L Sivakumar, GM, ICRA Ltd.,	05.12.02	Guest Lecture
10	Prof Dr Bernhard Irrgang, DAAD Visiting Faculty	27.01.03 03.02.03 - 04.02.03	Guest Lecture
11	Dr K Mohanasundaram	27.01.03 & 28.01.03	Guest Lecture
12	Mr G Shankar, President, Madras Consultancy Group	17.02.03	Guest Lecture
13	Dr K R Shanmugam, Associate Professor, Madras School of Economics	18.02.03	Guest Lecture
14	Mr K Ananth Krishnan, TCS	06.02.03	Guest Lecture

4.8.6. Other Activities:

1. The Small Industries Management Programme interviews were conducted on 31st May, 2002. Prof. Elango, Dean, inaugurated the programme on 10th June, 2002. Mr Leela Krishna, President, AIEMA was the chief Guest.
2. Dr Ram Gopalan formerly of IBM Corporation, New York has joined as Visiting Faculty in the Department w.e.f the forenoon of 10th July '02.
3. Dr P Vijayaraghavan – Professor, TTK Chair has joined the Department w.e.f 17.07.02.
4. Dr T T Narendran, Professor, was invited to be Judge for "The Jeffrey A Timmons Business Plan Contest 2002" held on 14th August, 2002.
5. Dr T T Narendran, Professor, attended the Subject Expert committee Meeting of MHRD at IIT Delhi during 7-8th Nov.'02.
6. Dr T T Narendran, Professor & Head Chaired a Technical Session for the International Conference on Operations Research for Development (ICORD-2000) in conjunction with XXXV Annual Convention of Operational Research Society of India(ORSI) which was held from Dec.27-30, 2002 at Anna University, Chennai.

7. Dr V R Muraleedharan was invited by the Ministry of Environmental and Forest to participate in the Curriculum Development workshop on "Infusing Environmental Issues in Management Programmes during 7th & 8th Feb.'03 at Bangalore – jointly organized by Indian Institute of Management, Ahmedabad.
8. Dr V R Muraleedharan was invited by the Government of Chattisgarh from 25th February to 1st March, 2003 in order to initiate two research projects on Health Systems Development in their State
9. IIT Madras MBAs Grab Top Honours in the Business School Even. "Managemantra" organized by the Confederation of Indian Industries along with Corporate, on 24th & 25th January'02
10. Mr Guha Athreya who was rated as the 'Best Employable Young Managerial Talent' was awarded a Cash Prize of Rs.50,000/- and a Holiday in Colombo from the Sterling group. Additionally he received letters of interest for employment from M/s Coca Cola, M/s RPG Retail (Food World), M/s Bennet & Coleman (Times Group), M/s Henkel SPIC, M/s Scope International, M/s HDFC Bank and M/s Fenner India.
11. Mr Gautam Manohar who finished as the 'Second Best' Employable Young Managerial Talent' presented him the only offer for Employment awarded at the meet. Additionally he received letters of interest for employment from M/s Coca Cola, M/s RPG Retail (Food World), M/s Bennet & Coleman (Times Group), M/s Henkel SPIC, M/s Scope International, M/s HDFC Bank and M/s Fenner India.
12. Mr M Prasanth and Mr M R Sriram were also rated amongst the Top Performers securing the Sixth and Seventh resp., Mr Prasanth received letters of interest for employment from M/s Coca Cola; M/s Bennet & Coleman (Times Group) M/s Scope International and M/s Fenner India. Mr Sriram received letter of Interest for employment from M/s Henkel SPIC, M/s Bennet & Coleman (Times Group), M/s Scope International, and M/s Fenner India.
13. Ms Preeti Chellam and Mr G S Kiran were rated amongst the Top Fifty were presented with letter of interest for employment from M/s Bennet & Coleman (Times Group) and M/s Fenner India resp.
14. Mr B Harikrishnan, MBA student took part in the TAG QUIZ-2003 on Southern Heritage programme, won the Silver star and was awarded a prize of Rs.2000/- on 11th January '03
15. Five MBA students participated the National level management festival "Manquest 2003" organized by Institute for Technology and Management, Chennai. The first prize for the event, "Launchpad" – print and performance oriented product advertising these students bagged campaign.
16. The first year MBA students have won the overall trophy in the Management Fest (National Level) held on March 15 & 16, 2003 organised by PSG Institute of Management, Coimbatore.
17. S N Rajesh Raj, Ph.D Research Scholar, Visiting Fellow to the Centre of Advanced Study in Economics, University of Mumbai from January 14th – 11th February, 03
18. Prema Rajagopalan, was a resource person for the AICTE-ISTE short term training programme on Gender Perspective in Technical Education, 11-22 Nov., 2002; at Periyar Centenary Girls' Polytechnic College, Thanjavur, T.N. Theme talk on Women in Science: How free, How Equal.

4.9 DEPARTMENT OF MATHEMATICS

4.9.1. Introduction:

The Department of Mathematics was established in 1959 along with the Institute. It offers M.Sc. programmes in Mathematics and 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:

1. Algebra and its Application
2. Applied Probability
3. Approximation Theory
4. Computational Fluid Mechanics
5. Continuum Mechanics
6. Coding Theory
7. Complex Analysis
8. Data Networks
9. Differential Equations and Ill-Posed problems
10. Fluid Mechanics applications
11. Functional Analysis
12. Fuzzy Sets and Systems
13. Graph Theory and Combinatorics
14. Inventory and Reliability
15. Mathematical logic & Applications
16. Mathematical Modelling
17. Mathematical Physics
18. Nonlinear Analysis
19. Numerical Analysis
20. Operations Research
21. Operator Theory
22. Queueing Theory
23. Statistical Quality Control
24. Stochastic Processes and their
25. Theoretical Computer Science
26. Wavelets and their applications.

4.9.2. Academic Programmes:

New Courses introduced:

Sl.No.	Course No.	Title
1.	MA 580	Mathematical Methods for Industry
2.	MA 594	Finite Element Method and Applications
3.	MA 595	Mathematical Finance

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & Others	Total
M.Sc.	28	33	-	-	-	61
M.Tech	7	9	-	-	-	16
Ph.D	11	7	5	8	5	36
Total	46	49	5	8	5	113

Names of Student/Scholar 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. Moon Kumar Chetry	International Conference	ICADS 2002	22-24 Dec., 2002 IIT Kharagpur
2.	Mr. K. Lakshmanan	International Conference	ICADS-2002	22-24 Dec., 2002 IIT Kharagpur
3.	Mr. R. Raja Durai	Conference	17 th Annual Conference of the Ramanujam Mathematical Society	10-13 Jun. 2002 BHU, Varanasi
4.	Ms. Sunanda Naik	Conference	International Conference on Special Function and their Applications	23-27 Sept. 2002 IMSC, Chennai
5.	Mr. K.V. Vijayashree	Conference	Conference on Probability Theory	13-31 May 2002 ICTP, Trieste, Italy
6.	Ms. Uma B.	Conference	2002 ASME Fluids Engineering Division Summer Meeting	14-18 July 2002 Montreal, Canada
7.	Mr. K. Paramasivam	National Conference	Recent trends in Algebra and Analysis	3-7 Mar. 2003 Aligarh Muslim University, Aligarh

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia/Workshop	Date and Venue
Seminars:				
1.	Mr. Moon Kumar Chetry	Seminar	NSAA	30 Aug. 2002 – 01 Sept. 2002 Andhra University, Visakapatnam
2.	Ms. V. Manjula	Seminar	National Seminar on Recent Advances in Fluid Mechanics	11-12 Sept. 2002 Gulbarga University, Gulbarga
3.	Mr. R. Raja Durai	Seminar	National Seminar on Discrete Maths & Applications	09-11 Jan. 2003 St.Thomas College, Kerala.
Symposia:				
1	Mr. K. Lakshmanan	Symposium	Recent Trends in Mathematics	21-22 Feb. 2003 MCC, Chennai
2.	Dr. Pravati Sahoo	Symposium	One Day Symposium on Geometric Function	02 nd Dec. 2002 Venkateswara College of Engineering, Chennai
Workshops/Symposium:				
1.	Mr. D. Sukumar	Workshop	Discrete Dynamical Systems	22 nd May 2002 – 02 nd June 2002 Hyderabad Central University, Hyderabad
		Workshop	Julia Sets	11- 21 Dec. 2002 Hyderabad Central University, Hyderabad
2	Mr. Moon Kumar Chetry	Workshop	Topological Method in Group Theory	05-27 July 2002 Institute of Math Science, Chennai
		Workshop	Geometric Group Theory	02-22 Dec. 2002 IIT Guwahati
3.	Ms. P. Vasundhra	DST-DAAD Personnel Exchange Programme	Visit	11 th July 2002- 03 rd Oct. 2002 University of Trier, Germany
4.	Ms.Sunanda Naik	DST-DAAD Personal Exchange programme	Visit	24-26 Dec. 2002 University of Trier, Germany
5.	Ms. Usha Nandini .R.	Workshop & Symposium	R.C.Bose Centenary workshop on Discrete Mathematics	15-23 Dec. 2002 ISI, Kolkotta
6.	Mr. K. Lakshmanan			
7	Ms. V. Sunitha			
8	Mr. Manoj Kumar Raut			
9	Mr. S. Vijayakumar			
10	Mr. Moon Kumar Chetry			
11	Mr. R.S.Selvaraj			
12.	Mr. R.S. Raja Durai	Workshop	2002 IEEE Information Theory Workshop	20-25 Oct. 2002 IISC Bangalore
13.	Mr. R.S. Selvaraj			
14.	Mr. D. Anil Kumar	Workshop	AMSIMT	23-24 Jun3 2002 IIT Madras, Chennai
		International Workshop	4 th International Workshop of Engg-Science group – Mechanics	11-15 Jan. 2003 IIT Madras, Chennai
15.	Mr. P. Saikrishnan	Workshop	International Workshop on Fluid Mechanics	11-16 Jan. 2003 IIT Madras, Chennai
		Workshop	Cyber Workshop on Joint meeting on Applied Mathematics II	04-07 Feb. 2003 IISC, Bangalore

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia/Workshop	Date and Venue
16.	Mr. K.V. Vijayashree	Workshop	Mathematics & Software Packages Hyp & Hyp - q	16-20 Sept. 2002 Institute of Mathematical Sciences, Chennai
17.	Mr. R. Sudesh			
18.	Ms. Sunanda Naik			
19.	Mr. R. Sudesh	UNESCO Regional Instructional Workshop	Industrial Mathematics	02 nd Dec. 2002 IIT Bombay, Mumbai
20.	Ms. Uma B.	Workshop	Discrete Dynamical Systems	24-30 May 2002 Hyderabad Central University

4.9.3. Faculty and their activities:

Faculty:

Name and Qualifications	Major Area of Specialisation
Professors:	
A. Avudainayagam, Ph.D (IIT Madras)	Fluid Mechanics, Suspension Rheology, Polar Fluids, Low Reynolds numbers flows Wavelets and applications.
P. Bhattacharyya, Ph.D (London)	Complex analysis, Theory of Splines, Lacunary Interpolation, Approximation Theory
S.A. Choudum, Ph.D (IIT Madras)	Graph Theory, Combinatorics
S. Kalpakam, Ph.D (IIT Madras) [Head]	Applied Probability and Stochastic Processes, Operations Research
S.H. Kulkarni, Ph.D (IIT Bombay)	Functional Analysis, Numerical Analysis
S.N. Majhi, Ph.D (IIT Madras)	Fluid Mechanics, Bio-Fluid Mechanics, Mathematical Modelling
P.R.Parthasarathy, Ph.D (Annamalai)	Applied probability and Stochastic Models, Mathematical Ecology, Operations Research, Statistical Inference, Communication networks
A. Rangan, Ph.D. (IIT Madras)	Probability Theory, Stochastic Processes, Operations Research, Applications to Biological Sciences, Neural Method Inventory Controls, Ecology, Reliability
U.N. Srivastava, Ph.D (IIT Madras)	Applied Mathematics, Differential Equations, Continuum Mechanics, Singular Perturbation Problems, Boundary Layer Theory, Differential Inequalities, Mathematical Ecology, Dynamical Systems.
P.V.Subrahmanyam, Ph.D (IIT Madras)	Fixed Point Theory/Analysis, Fuzzy sets, Functional Equations, Summability Theory, Mathematics Education.
R.Usha, Ph.D (IIT Madras)	Fluid Mechanics, Bio-fluid Mechanics
Associate Professors:	
S.G. Kamath, Ph.D (IIT Delhi)	Theoretical Physics, Elementary Particle Physics
S. Ponnusamy, Ph.D. (IIT Kanpur)	Complex Analysis, Function spaces, Special functions and Conformal Geometry
S. Sundar Ph.D. (IIT Madras)	Computational Fluid Dynamics, Computational Linear Algebra, Modelling and Simulation, Computer Science
M.Thamban Nair, Ph.D (IIT Bombay)	Functional Analysis, Operator Equations, Inverse and Ill-posed problems
P. Veeramani, Ph.D (IIT Bombay)	Functional Analysis
V. Vetrivel, Ph.D. (IIT Madras)	Non-smooth Analysis, Optimization Theory, Fixed Point Theory
Assistant Professors:	
Arindama Singh, Ph.D (IIT Kanpur)	Numerical Analysis, Mathematical Logic.
R. Rama, Ph.D (Anna Univ)	Theoretical Computer Science, L-Systems, Formal Languages Automata Theory, Unconventional Models of Computation.
Satyajit Roy, Ph.D. (IISc Bangalore)	Computational Fluid Dynamics, Boundary Layer Theory
Y.V.S.S. Sanyasiraju, Ph.D. (IIT Madras)	Computational Fluid Dynamics, Numerical Analysis
(Mrs.) W.B. Vasantha, Ph.D (Madras)	Algebra, Coding Theory, Fuzzy Sets and Systems, Application of Algebra

Name and Qualifications

Major Area of Specialisation

Senior Scientific Officer (Gr.I):

K. Swaminathan, Ph.D (Agra)

Fluid Dynamics, Ship Hydro-Dynamics, Systems Simulations and Development of Software for Control Systems

Research Associates:

Dr A. Swaminathan

Complex Analysis

Dr Pravati Sahoo

Complex Analysis

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

Sl. No.	Title	Date	Co-ordinator(s)
1.	UGC Refresher Course on "Optimisation: Algorithms & Applications"	11.12.02 - 21.12.02	Dr.V. Vetrivel
2.	National Symposium on "Mathematical Methods"	21.12.02	Dr. Satyajit Roy
3.	National Symposium on Applied Mathematics in Shipping Industry and Marine Technology	21.06.02 - 23.06.02	Dr. S. Sundar
4.	Technology Appreciation Programme on "Modelling and Simulations in Industrial Problems: Ocean Engineering & Chemical Process".	10-12-2002	Dr. S. Sundar 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
1.	Dr. P.R.Parthasarathy	International Conference on Special Functions and Their Applications	Institute of Mathematical Sciences, Chennai	23-27 Sept. 2002
		Indo-Italian Joint Research Programme	IISc., Bangalore	25- 27 Nov. 2002
		Workshop on Applications of Mathematics in Engineering and technology	PSNA college of Engineering and Technology, Dindigul	10 th Nov. 2002
		National Conference on Industrial Mathematics	Vel Tech Engineering College, Chennai	09 th Jan. 2003
2.	Dr.Satyajit Roy	National Symposium on "Industrial Mathematics"	Vel Tech Engineering College, Chennai	09-10 Jan. 2003
		4 th International Workshop of Engineering Science Group, IIT Madras	IIT Madras, Chennai	11-15 Jan. 2003
		Chief Guest, Mathematics Festival 2002	GSS Jain College for Women, Chennai	04 th Oct. 2002
3.	Dr.P.V.Subrahmanyam	International Conference on Analysis and Discrete Structures	IIT Kharagpur, Kharagpur	22-24 Dec. 2002
		National Conference on Fuzzy Set Theory and its Mathematical Aspects and Applications	B.H.U Varanasi	26-28 Dec. 2002
4.	Dr. S. Sundar	International Conference on Analysis and Discrete Structures	IIT Kharagpur, Kharagpur	26-28 Dec. 2002
		UNESCO Sponsored International Workshop on Industrial Mathematics	IIT Bombay, Mumbai	2-6 Dec. 2002
		Panel discussion on Impact of IT on Education	MOP Vishnav College for Woman, Chennai	22 nd Jan. 2003
5.	Dr. M.Thamban Nair	International Cyber Workshop	IISc Bangalore	3-6 Feb. 2003
6.	Dr. V.Vetrivel	International Conference on Analysis and Discrete Structures	IIT Kharagpur, Kharagpur	22-24 Dec. 2002

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Delivered at	Date
1.	Dr. A.Avudainayagam	Spectral Methods for Differential Equations	Anna university	07 th Mar. 2003
		Wavelet Bases for R^n	University of Madras, Chennai	20 th mar. 2003
2.	Dr.S.A.Choudum	Optimisation Problems in the Design of Interconnection Networks	University of Pune	21-28 Jun. 2002
3.	Dr. S. Kalpakam	Analysis of Perishable Inventory Systems Under Renewal Demands	Anna university, Chennai	27-30 Dec. 2002
4.	Dr. S.H. Kulkarni	A very simple and elementary proof of a theorem of Ingelstam	Sindhu Mahavidyalaya, Nagpur	01 st Feb. 2003
		Two lectures on Interior Point Methods	IIT Madras, Chennai	11-21 Dec. 2002
5.	Dr. P.R.Parthasarathy	Industrial Mathematics	SRM Engg. College Chennai	05 th Oct. 2002
		Queueing Models for communication	Vel SRS Multimedia Technology, Chennai	05 th Nov. 2002
		Transient Analysis of Birth and Death processes	National Institute of Technology, Warangal	07 th Nov. 2002
		Birth and Death Models	Annamalai University, Chidambaram	02 nd Dec. 2002
		Stochastic Models of communication	SRM Engineering College Chennai	11 th Mar. 2003
		Queueing Models for Industry	Vel Tech Engineering College, Chennai	09-10 Oct. 2003
6.	Dr. P.V.Subramanyam	Sizes of Sets	Theivanai Ammal College for Woman, Villupuram (Resource Person)	06 th Sept. 2002
		An-introduction to degree theory (four Lectures)	Annamalai University Chidambaram (UGC Workshop)	15-17 Jun. 2002
		Introduction to Variational Inequalities	IIT Madras, Chennai	11-21 Dec. 2002
		Further Results in Fuzzy Analysis	IIT Kharagpur, Kharagpur	22-24 Dec. 2002
		Differential Equations	Bharati Vidyalaya Senior Secondary School	27-28 July 2002
		On the evaluation of a Well known integral	IIT Madras, Chennai	08 th March 2003
7.	Dr.M.Thamban Nair	A Class of Optimal Order Yielding Regularization Methods	University of Karlsruhe Germany	13 th Jun. 2002
		Optimal Order Regularization Methods for Ill-Posed Problems	University of Mainz Germany	19 th June 2002
		Optimality of Regularization Methods for Ill-Posed Equations	University of Kaiserslautern Germany	04 th July 2002
		Compact Operator Equations	Bharathiar University Coimbatore	27-28 Sept. 2002
		Spectral Theory	University of Kerala, Thiruvananthapuram	4-5 Oct. 2002
		Spectral Theory – An Introduction	Holy Cross College, Nagarcoil	8-9 Nov. 2002
		Spectral Theory – An Introduction	Pondicherry University, Pondicherry	15-16 Nov. 2002
		On Optimal Recovery for Ill-Posed Equations	IIT Madras, Chennai	13 th Dec. 2002
		Optimality of Regularization Methods	IIT Madras, Chennai	23 rd Jan. 2003
		Order Optional Regularisation Methods for Ill-posed Equations	IISc Bangalore	03 rd Feb. 2003
		Ill-posedness of Operator Equation	Anna university Chennai	07 th Mar. 2003

Sl. No.	Name of Faculty	Topic of Lecture	Delivered at	Date
8.	Dr. Arindama Singh	Mathematical Logic (3 lectures)	Ramanujan Institute, Chennai	09-11 Feb. 2003
		Non constructibility	NIT, Warangal	19 th Feb. 2003
9.	Dr. R. Rama	Replicated Rewriting in P – systems presented in current trends in Mathematics	Madras Christian College, Tambaram, Chennai	22 nd Feb. 2003
10.	Dr. Sanyasi Raju Y.V.S.S.	Numerical Methods in Fluid Dynamics (5 lectures)	REC, Nagpur	17-19 Nov. 2002
		Introduction to Matlab (5 lectures)	IIT Madras, Chennai	13-15 Dec. 2002
		Finite Volume Method for Fluid Flows	Anna university university, Chennai	07 th Mar. 2003
		Introduction in Mathcad	Anna university university, Chennai	08 th Mar. 2003
11.	Dr. Satyajit Roy	" Non-Uniform slot Injection(suction)into water boundary layers over a cylinder and a sphere	Vel Tech Engineering and Technology, Chennai	10 th Jan. 2003
		"Non-uniform mass transfer in compressible boundary layer flows"	IIT Madras, Chennai	12 th Jan. 2003
		Non-uniform Slot Injection(Suction) into Water Boundary Layer Flows	Anna university university, Chennai	7-8 Mar. 2003
12.	Dr. V.Vetrivel	Application of Non-smooth Function in smooth Optimization	IIT Kharagpur, Kharagpur	23 rd Dec. 2002
13.	Dr. P. Veeramani	On Fuzzy Set Theory and Fuzzy Numbers	Theivanai Ammal College for Women, Villupuram	06 th Sept. 2002
		On Zorn's Lemma and its Applications	Department of Mathematics Periyar University, Salem	19 th Oct. 2002
		On Fuzzy Set Theory	Annammal College for Education for Women, Thoothukudi	09 th Nov. 2002
		Five Lectures on Fuzzy Set Theory and its Applications	Visvesvaraya National Institute of Technology (Department of Maths), Nagpur	20-22 Nov. 2002
		Four Lectures on Linear Programming	Department of Maths, IIT Madras	11-14 Dec. 2002
		On Uniform Continuity and its Applications	Sindhi College, Chennai	09 th Jan. 2003
		On the Relevance and Challenges in Learning Abstract Mathematics	Auxilium College, Vellore	07 th Feb. 2003
		On Some Results in Fixed Point Theory	Department of Mathematics, Annamalai University, Chidambaram	27 th Jan. 2003
		On Best Approximation Theory	Arignar Anna university Government Arts College, Cheyyar	01 st Mar. 2003
		On Best Proximity Pairs	Ramanujan Institute for Advanced Study in Mathematics, University of Madras	20 th Mar. 2003
14.	Dr. S.Ponnusamy	Duality Techniques and Integral Transforms	University of Wuerzburg, Germany	24 th July 2002
		New Cesàro Averaging Operations in Function Theory	Texas Tech University, Lubbock, USA	02 nd Sep.-May, 03

Sl. No.	Name of Faculty	Topic of Lecture	Delivered at	Date
15	Dr. S. Sundar	Mathematical Modelling and Importance of Scientific Computing	IIT Madras, Chennai	21-23 June 2002
		Wave Interaction with Semi Porous Cylindrical Breakwater	TU-Darmstadt, Germany	22 nd July 2002
		On Solvers for Nonlinear Large Systems	IISc, Bangalore	31 st July 2002-02 nd Aug. 2002
		Wave Forces on a Large Structure in the Presence of a Current	IIT Bombay, Mumbai	7-9 Dec. 2002
		Lattice Boltzmann Method For Complex Geometries	IIT Kharagpur, Kharagpur	21-23 Dec. 2002
		Kaniel Kinetic Scheme for Isentropic Compressible Flow	Anna university university, Chennai	7-8 Mar. 2003
		Finite Pointset Method for Free Surface and Incompressible Flow	University of Madras, Chennai	19-21 Mar. 2003
16.	Dr. R. Usha	Role of Mathematical Modeling in Industry, Engineering and Technology	Vel Tech Engineering College, Chennai	09-10 Jan. 2003
		Wave Dynamics on a Thin Film Flow Systems	Bharathiar University, Coimbatore	27 th Mar. 2003

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr.S.Kalpakam	University of Bielefeld, Germany	07-06-02 - 27-07-02	IIT-BMBF Indo-German project
2.	Dr. P.V.Subrahmanyam	Crete, Greece	01-7-2002 - 06-7-2002	Paper Presentation on the Teaching of Mathematics, at the 2 nd International Conference on the Teaching of Mathematics (ICTM2)
3.	Dr. M.Thamban Nair	Universitat Kaiserslautern, Fachbereich Mathematik, Germany	05-4-2002 - 11-7-2002	Gaest Dozenten Scheme of DAAD as visiting guest professor
4.	Dr. P.Veeramani	USA	24-6-2002 - 21-7-2002	To attend and Participate in a Conference and Visit some communities.
		University of Iowa	10-7-2002 - 16-7-2002	To discuss research work common interest with Prof.W.A.Dirk of Mathematics Department
5.	Dr.S.Ponnusamy	University of Trier, Germany	11-7-2002 - 02-8-2002	To exchange expertise with scientist in Trier, and give seminar talks under DST-DAAD- Project "Application on Special Function and Hadamard Multiplication of Power Series"
		University of Texas Tech, Lubbock, USA	August 2002 May. 2003	Visiting Associate Professor
6.	Dr. S. Sundar	University of Kaiserslautern, Germany	04-7-2002 - 26-7-2002	A brief visit to Fraunhoferr Institute for Industrial Mathematics
		TU-Darmstadt, Germany	22-7-2002 - 27-7-2002	FB Numerische Mathematik

Honours and Awards obtained:

Sl. No.	Name of the faculty	Name of the Award	Awarded by	Awarded for
1.	Dr.S.Ponnusamy	C.L. Chandana Mathematics Award	Canadian World Education Foundation 2002	Distinguished and Outstanding Contribution to Mathematics Research & Teaching in India.

Fellowships of Academies and Professional Societies:

Sl. No.	Name of the faculty	Name of the Academy / Professional Society	Level	Year of Admission
1.	Dr. Thamban Nair M.	Universitat Kaiserslautern, Fachbereich Mathematik, Germany, under the Gaest Dozenten Scheme of DAAD	Visiting Guest Professor	April-July 2002

4.9.4. Design and Development activities:

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

Sl. No.	Name of the Faculty	Process/Instruments/ Equipment/ Software Designed and Developed
1.	Dr.S.Sundar	SHOCK_NTSD(One Dimensional Shock Solver) (Software) MMDBM (Object Oriented Predictive Classifier for Data Mining) (Software)

New facilities added and Major equipment procured through project funds:

Sl. No.	Name of the Faculty	Name of Equipment	Value (Rs. in lakhs)
1	Dr.R.Rama	Pcs, Scanner, Printer	1.25
2.	Dr. Satyajit Roy	HP Laser Jet 1220 Printer	0.30

4.9.5. Research and Consultancy:

Sponsored Research Projects:

SL. No.	Title	Period	Funding Agency	Amount (Rs.in lakhs)	Co-ordinators
1.	Embeddable Properties of graphs and interconnection networks	Jan. 2002 - Jan. 2005	DST	9.77	Dr.S.A.Choudum,
2.	Mathematical Aspects of Distributed Systems and Supercell Structures	June 2002 - June 2005	DST	13.00	Dr.R.Rama, Dr. Arindama Singh, Prof. Kamala Krithivasan, CSE
3.	Inverse Problems in B- L flows	Aug. 1999 - Aug. 2002	UGC	1.95	Dr. Satyajit Roy (Principal Coordinator)
4.	Numerical Study of Particulate suspension flow through wavy walled channels	2000-2003	CSIR	4.83	Dr. R.Usha Dr. E.G.Tulapurkara, Dept. of AE
5.	Surface-tension driven gas liquid flows under microgravity condition: measurements and CFD predictions	2000-2003	ISRO	12.74	Dr. R.Usha and Sreenivas Janthi
6.	Nonsmooth Calculus and Proximal Bundle Methods	Jan. 2002 - Jan. 2005	DST	5.00	Dr.V.Vettrivel
7.	Application of Queueing Models in Production and Inventory Management	3 years	DLR	—	Prof.S.Kalpakkam Prof. K.P.Kistner, Faculty of Economics
8.	Applications of Special Functions and Hardamard Multiplication of Power Series	2002-2004	DST-DAAD	5.44	Dr. S. Ponnusamy from Indian side Prof. Wolfgang Luh, Univ. of Trier, Trier, from German side.
9.	Knowledge Discovery System for Spatial Databases and Geographic Information Systems	3 years	ISRO	10.62	Dr.S. Sundar

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. In Lakhs)
1.	Dr.Y.V.S.S. Sanyasi Raju	Determination of heat transfer coefficients for the nozzle guide value.	GTRE, Bangalore	3.20

Exchange programme with other Universities:

Sl. No.	Programme Name	Name of University	Student Name	Guide Name
1.	Sandwich Ph. D Programme in Industrial Mathematics, DAAD	AG Technomathematic, University of Kaiserslautern Germany	Mr. Samir Roy (Since April 2002) Mr. Mohan Kumar (Since August 2002)	Prof. H. Neunzert (Germany) Dr. S. Sundar (IIT Madras)
2.	Sandwich M. Tech Project, DAAD-IIT: FB Numerical Mathematik	TU-Darmstadt, Germany	Ms. Anita Kumari (May 2002 - Feb 2004)	Prof. Axel Klar (Germany) Dr. S. Sundar

Journal Editorial Boards:

Sl. No.	Name of Faculty	Level	Journal
1.	Dr. Arindama Singh	Editorial Board Member	American Priographical Institute.
2.	Prof. P.R. Parthasarathy	Regional Editor	Statistical Theory and Methods Abstracts.
		Advisory Editor	Journal of Information and Optimization Sciences.
		Associate Editor	Journal of Applied Statistical Sciences International Journal of Computer Mathematics. American Journal of Mathematics and Management Sciences. Pure and Applied Mathematika Sciences. Journal of Decision and Mathematika Sciences. Assam Statistical Review. Stochastic Modelling and Simulation.
3.	Dr. S. Ponnusamy	Managing Editor	The Journal of Analysis Published by Forum D'Analystes (2001-2003)
		Editorial Member	Journal of Indian Academy of Mathematics (2003-2005)

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	35
No. of papers presented in National Conferences	..	6
No. of papers presented in International Conferences	..	6

In Refereed National Journals:

1. M. Thamban Nair, Multiplicities of an eigenvalue: Some observations, Resonance, 7, 12, (2002), 31-41.
2. Arindama Singh, Convergence of Tikhonov Regulation for unbounded operators. The Maths Education, XXXVI (2002), 50-51.

In Refereed International Journals:

1. Avudainayagam A. Regularized Solution of the Cauchy Problem for the Laplace Equation Using Meyes Wavelets. Mathematical and Computer Modelling 36 (2002), 1151-1159.
2. Choudum S.A. (Ponnusamy, B.) Ordered Ramsey Numbers, Discrete Mathematics, 247 (2002), 79-92
3. Choudum S.A. (Sunitha, V.), Augmented Cubes, Networks 40 (2) (2002) 71-84
4. Kulkarni, S.H. (Sushma Agarwal), Spectral Isometrics of Real Commutative Banach Algebras. Real Analysis Exchange, 2002/2003
5. Parthasarathy, P.R. (Conolly, B.W. and Selvaraju, N.), Double - ended queues with impatience. Comp. Oper Res. 29 (2002), 2053-2072.
6. Parthasarathy, P.R. (Stadje, W. and Lenin, R.B.), Transient analysis of a state-dependent queueing network with finite capacity. Int. J. Camp. Math. 79 (2002), 2391-401.
7. Parthasarathy, P.R. (Vijayashree, K.V. and Lenin, R.B.), An M/M/1 driven fluid queue - continued fraction approach. Queueing Systems, 42 (2002), 189-199.
8. Parthasarathy, P.R. (Vijayashree, K.V.), Fluid queues driven by a discouraged arrivals queue. International Journal on Mathematics and Mathematical Sciences 22 (2002). 385-403.
9. Parthasarathy, P.R. Some unusual birth and death processes, Mathematical Scientist, 28 (2003), 115-131.

10. Usha, R. (Vimala, P.), Squeeze Film Dynamics using Elliptical Velocity Profile, Transactions of the ASME – Journal of Applied Mechanics, 70 (2003), 137-142.
11. Usha, R. (P.Vimala, P.) Theoretical Investigation of Unsteady Squeeze Flow in a curved Newtonian Squeeze Film. Transactions of the ASME – Journal of Tribology, 124 (2002), 865-869.
12. Usha, R. (Uma, B.), The role of induced air-shear on the development of a conducting fluid film near a rough spinning disk in the presence of a transverse magnetic field., ZAMM 82 (2002), 211-216
13. Usha, R. (Vimala, P.), Curved Squeeze Films with Inertial Effects-Energy integral Approach. Fluid Dynamics Research, 30, (2002), 139-153.
14. Thamban Nair, M. Optimal order results for a class of regularization methods using unbounded operators, Integral Equations and Operator Theory, 44 (1) (2002), 79-92.
15. Thamban Nair, M. (Rajan, M.P.), Generalised Arcangeli's discrepancy principles for a class of regularization methods for solving ill-posed problems, Journal of Inverse and Ill Posed Problems, 10 (2002) 281-294.
16. Thamban Nair, M. (Schock, E. and Tautenhahn, U.), Morozov's discrepancy principle under general source conditions, Zeitschrift fur Analysis und ihre Anwendungen, 22 (1) (2003), 199-214.
17. Veeramani, P. (Srinivasan, P.S.), some results on Best Proximity Pair Theorems, Applied General Topology, 3 (1) (2002), 25-32.
18. P.Veeramani (P.S. Srinivasan), On Best Proximity Pair Theorems and Fixed Point Theorems, Abstract and Applied Analysis, 1 2003, 33-48
19. Ponnusamy, S. (Anbudurai, M., Parvatham, R. and Singh, V.), Duality for Hadamard products applied to functions satisfying certain differential inequalities, Analysis (Munich), 22, (2002), 381-391.
20. Ponnusamy, S. (Singh V.), Criteria for univalent, starlike and convex functions, Bull. Belg.Math. Soc. 9 (2002), 511 – 531.
21. Ponnusamy, S. (Balasubrahmanian, R., Suganda Naik and Vuorinen), M.Elliott's identity and hypergeometric functions, J. Math. Anal. Appl. 271 (2002), 232-256.
22. Ponnusamy, S. (Obradovic, M., Singh, V. and Vasundhra, P.), Univalence, starlikeness and convexity applied to certain classes of rational functions, Analysis (Munich) 22 (3) (2002), 225-242.
23. Ponnusamy, S. (Martio, O., Miklyukov, V.M. and Vuorinen, M.), on some properties of quasiplanes, Results Math. 42 (1-2) (2002), 107-113.
24. Vetrivel, V.(Dutta, J.), On Approximate Minima in Vector Optimisation, Numerical Functional Analysis and Optimisation, 22 (2002), 845-859.
25. Vetrivel, V. (Dutta, J.), Mathematical Programming with a class of Non-Smooth Functions, Journal of Systems Science and Complexity, 15(1) (2002) 52-60.
26. Arindama Singh (Lal, A.K., Maloo, A. K.), Triangles with given distances from a Centre, Int. J. Math. Educ. Sci. Tech., 33(4) (2002), 615-620.
27. Arindama Singh (Sheela, S.), Landy's regularisation of a singularly perturbed elliptic PPE, J.Camp. & Appli.Maths, 151 (2003), 25-37.
28. Rama, R. (Krishna, S.N. and Lakshman, K.), On the power of P Systems with One-Sided and Erasing Contextual Rules, Fundamenta Informaticae, 49 (1-3) (2002), 167-178.
29. Rama, R. (Krishna, S.N.), On Power of Tissue P Systems working in the Minimal Mode, LNCS Proceedings of the 3rd International Conference on Unconventional Models of Computation (UMC'02), Kobe, Japan, LNCS 2509 (2002), 208-219.
30. Rama, R. (Krishna, S.M. and Lakshmanan, K.) Tissue P systems with Contextual and Rewriting Rules, Membrane Computing, LNCS 2597 (2003), 339-351,2003.
31. Satyajit Roy (Chakrabarti, A., Prabir Daripa) An inverse problem for the Helmholtz equation involving two semi-infinite fluids. Inverse Problems in Engng. 10 (2002) 203-214.
32. Satyajit Roy (Saikrishnan, P.), Steady non-similar axi-symmetric water boundary layers with variable viscosity and Prandtl number, Acta Mechanica, 157 (2002) 187-199.
33. Satyajit Roy (Takhar, H.S.), Compressible boundary layer flow over i) a Cylinder and ii) a Sphere with non-uniform slot injection (Suction), Heat and Mass Transfer, 39 (2003), 139-146.
34. Satyajit Roy (Takhar, H.S. and Nath, G.), Unsteady free convection flow over an infinite vertical porous plate due to the combined effects of thermal and mass diffusion, magnetic field and hall currents, Heat and Mass Transfer (Published Online : 25th March, 2003)
35. Sundar, S. (R. A. Panickar, R.A. and Rajendran, R.), Pattern Search in a Shoe Sole Image Database Using Eigenpatterns., Mathematical and Computer Modelling (March, 2003)

In Proceedings of National Conferences:

1. Subrahmanyam, P.V., Some observations on the convergence of sequences of fuzzy real numbers p.65-69, proceeding Fuzzy Set Theory, its Mathematical Aspects and Applications, Allied Publishers, ISBN 81 – 7764-389-4-2002.

2. Subrahmanyam, P.V. (Kennedy, F.C.), Remarks on Certain Fuzzy Equations, proceeding Fuzzy Set Theory, its Mathematical Aspects and Applications, p 129-130, Allied Publishers, ISBN 81-7764-389-4-2002.
3. Subrahmanyam, P.V., Two observations on the teaching of Calculus Math Teacher (India) 38, (2002) 143-149.
4. Sanyasi Raju, YVSS, Semi-Compact Higher Order ADI Scheme (SCHOADIS) for unsteady Stream function – Vorticity Equations at National Seminar on Recent Advances in Fluid Mechanics 11 & 12 September, 2002 held at Gulbarga University, Karnataka.
5. Satyajit Roy, Presented a paper entitled "Non-uniform mass transfer into water boundary layer flows" in the National Symposium on Industrial Mathematics" held during January 9-10, 2003, at Vel Tech Engineering College, Chennai.
6. Rama, R. (Lakshman, K.), International Contextual Grammars versus Natural Languages, to be appeared in proceedings of ICADS-2002, IIT Kharagpur, 22-24, December, 2002.

In Proceedings of International Conferences:

1. Subrahmanyam, P.V., A quasi-qualitative approach to limits, proc.II, International conference on Teaching of Undergraduate Mathematics ICTM2 crete 2002
2. Usha, R. (Uma, B.), Non-Linear stability of thin viscoelastic liquid film down a vertical wall with interfacial phase change, 2002 ASME Fluids Engineering Conference Paper No. FEDSM 2002 – 31035, CD-Rom Proceedings, July 14-18, Montreal, Canada.
3. Veeramani, P., Summer Symposium in Real Analysis XXVI at Washington and Lee University, Lexington, Virginia, USA, June 25-29, 2003, presented a talk entitled ' Best Approximation and Best Proximity Pair Theorems'.
4. Vetrivel, V., Application of Non-smooth Function in Smooth Mathematical Programming, International Conference on Analysis and Discrete Structures, held at IIT Kharagpur, during 22-24, December, 2002.
5. Satyajit Roy, Non-uniform mass transfer or wall enthalpy into compressible boundary layer flows" in the Fourth International Workshop of Engineering and Science Group on MECHANICS held during January 11-15, 2003 at IC&SR, IIT Madras, Chennai.
6. Sundar, S. (Srikanth, D. and Shanmugam, M.S.), A few Predictive Classifier and an Object Oriented Design for Improved Performance in Data Mining at the International conference on Industrial Mathematics, IIT Bombay, December 7-9, 2002.

Distinguished Visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date	Purpose of visit
1.	Delegation from the Swiss Federal Institute of Technology, Zurich as follows: Prof. Dr. Konrad Osterwalder, Rector of ETH Zurich Prof. Dr. Walter Schaufelberger, Vice Rector for International Relations Prof. Dr. Peter Bachmann, Vice Rector for Diploma Studies Prof. Dr. Renato Amado, Vice Rector for Ph.D. and Continuing Education Dr. Christoph Niedermann, Deputy to the Rector	26-02-2002	Institute Visit
2.	Shri XJJ Abraham Director, Lobo Management Consultant, Chennai	04-04-2002	Seminar talk
3.	Dr.R. Ramanujam The Institute of Mathematical Sciences, Chennai	10-04-2002	Seminar talk
4.	Prof. V. Kannan University of Hyderabad, Hyderabad	22-04-2002	Seminar talk
5.	Dr. Anima Nagar University of Hyderabad, Hyderabad	24-04-2002	Seminar talk
6.	Dr.P.S. Sreenivasan University of Hyderabad, Hyderabad	29-04-2002	Seminar talk
7.	Prof. Dr. Gerald Warnecke Institut Fuer Analysis und Numerik Otto-von-Guericke-Universitaet, Magdeburg, Germany.	08-5-2002 - 10-5-2002	Seminar talk
8.	Dr.A.C. Nayak Division of Information & Communication Science Macquarie University, Australia.	20-06-2002	Seminar talk
9.	Prof. P.Sundar Dept. of Mathematics Louisiana State University, U.S.A.	08-08-2002	Seminar talk

Sl. No.	Name of the visitor and Designation	Date	Purpose of visit
10.	Prof. Jacques Gautron President, University of Tours	13-08-2002	Had discussion with the Head and Faculty of the Department.
11.	Prof. Mahdi HEFIRI President Groupe Scolaire Residence Morocco		
12.	Prof. Narayanaswami Ranganathan Director, Laboratoire de mecanique et Rheologie University of Tours		
13.	Dr. Doble Mukesh GE, Bangalore	31-08-2002	Seminar talk
14.	Prof. Sriraman Sridharan Department of Mathematics & Comp. Sci. University of Perpignan, France.	05-09-2002	Seminar talk
15.	Prof. Walter Van Assche Katholieke Universiteit, Leuven, Belgium.	26-09-2002	Seminar talk
16.	Prof. Hema Srinivasan Department of Mathematics, University of Missouri, U.S.A.	14-11-2002	Seminar talk
17.	Prof. Muller Mcdeburgh University, Germany	21-11-2002	To discuss with faculty and M.Tech (IMSC) students, about possible exchange of students and faculty for various research programs.
18.	Dr. Helmut Neunzert Director Institute for Industrial Mathematics University of Kaiserslautern, Germany	9-12-2002 - 11-12-2002	Seminar talk/ Technology Appreciation Programme
19.	Dr.G.S.Ladde University of Texas at Arlington	26-12-2002	Seminar talk
20.	Prof. Gideon Weiss Department of Statistics, The University of Haifa, Israel	27-12-2002	Seminar talk
21.	Prof. Krishnaswami Alladi Professor of Mathematics University of Florida, Gainesville	03-01-2003	Seminar talk
22.	Prof. Dr. Klaus Dietz Director, Department of Biometry University of Tübingen, Germany	29-12-2002 - 08-01-2003	Gave extramural lecture on 8.1.03
23.	Dr. Sudarsan Tiwari Scientist Fraunhofer Institute for Industrial Mathematics University of Kaiserslautern, Germany	09-01-2003	Seminar talk
24.	Prof. Ratnasingham Shivaji W.L Giles Distinguished Professor Department of Mathematics and Statistics Mississippi State University, USA	30-01-2003	Seminar talk
25.	Prof. Xavier Viennot Research Director of CNRS, Bordeaux, France	31-01-2003	Seminar talk
26.	Prof. Dr. M.J. Beckmann Professor Emeritus Brown University, USA & TU-Munich, Germany	06-02-2003	Seminar talk
27.	Prof. M.Raghavachari Rensselaer Polytechnic Institute, U.S.A.	11-02-2003	Seminar talk
28.	Prof. T. Parthasarathy Indian Statistical Institute, New Delhi	18-03-2003	Seminar talk
29.	Dr. Klaus-Peter Kistner Faculty of Economics University of Bielefeld, Germany.	27-02-2003 - 02-04-2003	Seminar talk/ Indo-German BMBF Project jointly with Prof. S. Kalpakam.
30.	Dr. Kallol Roy Scientific Officer 'G', BARC, Mumbai	26-03-2003	Seminar talk

4.9.6. 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

National Symposium on Mathematical Methods and Applications: (NSMMA-2002)

A One day " National Symposium on Mathematical Methods and Applications" to celebrate the 114th birth anniversary (December 22) of Sri Srinivasa Ramanujan, the great Indian Mathematician was conducted on 21st December, 2002,. The day's events were inaugurated by Prof.M.S. Ananth, Director, IIT Madras, Chennai. There were three invited talks in the forenoon session by :

Prof. T.Parthasarathy (I.S.I. Delhi)
 Prof. Prabir Daripa (Texas A & M University, U.S.A.)
 Prof. B.S. Dandapat (I.S.I. Calcutta, Kolkata)

In the afternoon, four parallel paper presentation sessions were held Prof.G.Subramaniam, Dean, Administration, presided over the valedictory function. Prof.U. N. Srivastava and Prof. P.Bhattacharyya of our Department were felicitated on the occasion of their superannuation. The Head of the Department was the Chairperson and Dr.Satyajit Roy was the Secretary of the above National Symposium.

Industrial Visits:

1. SARA LEE (India) Ltd., Maraimalai Nagar

Faculty and students of M.Tech. (Industrial Mathematics & Scientific Computing) programme went for an industrial visit to SARA LEE (India) Ltd. , Maraimalai Nagar, on Monday the 22nd April, 2002 from 10.00 a.m. to 2.00 p.m. IIT group were well received by the Deputy General Manager, Sara Lee (India) Ltd. Our visit started with a technical introduction by Mr. Suresh, Vice President, Sara Lee (India) Ltd. It was then followed by spot visits to two units of the Sara Lee Ltd. (household and shoe care). The inland tour was guided by Mr. S. Ganesh, Deputy General Manager (R & D). Our whole visit was ended up with a delicious lunch.

2. Simpson & Co. Ltd.

A team comprising three faculty (Prof. A. Avudainayagam, Prof. P.R. Parthasarathy and Dr.S.Sundar) I Year M.Tech (IMSC) students and II year M.Tech. (IMSC) students (in total 17 members) visited Simpson & Co. Ltd. Sembium plant in the afternoon of 4th October, 2002. They were warmly received by Mr. M.S. Srinivasan, Personnel Department who arranged for a tour of the company.

The team also visited, both the workshops and got to know the detailed technical know how. This was nicely explained by the crew members of the respective workshops. The inside tour ended at 4.30 p.m with a meeting and a brief vote of thanks by the team to all the members of Sembium plant.

Workshop:

The Department of Mathematics organized a three day Workshop on " *Applied Mathematics in Shipping Industry and Marine Technology*" between 21st June and 23rd June, 2002. Under the Chairmanship of our Director Prof. M.S. Ananth, Mr.D.T.Joseph, Director General of Shipping, Government of India delivered the inaugural address. Dr.P.Misra, Dy. Chief Surveyor, DG Shipping was the Patron. The Co-organisers of the workshop were, Department of Mathematics, IIT Madras; Sri Venkateswara College of Engineering, Sriperumbudur; DG Shipping, Mumbai. Resource persons were drawn from IIT Madras, IIT Kharagpur, NIOT Chennai.

Apart from the lectures, there were technical study tour to Department of Ocean Engineering, IIT Madras and NIOT Chennai on 21st and 22nd June, 2002 respectively.

R. Adm.S. Mahopatra, Director, NPTC, Vishakapattanam, was the Chief Guest of the Validictory function.

FORAYS 2003 – A MATH FEST:

The Department of Mathematics celebrated FORAYS 2003 on 8th and 9th March, 2003. Prof. G. Subramanian, Dean (Administration) Inaugurated the mega fest. There are overwhelming response from around 60 science and engineering colleges around the city. Prof. P. V. Subrahmanyam, Department of Mathematics, IIT Madras gave an enlightening lecture on a well known integral. Around 20 papers were presented during the paper presentation session. Prof. K. N. Ranganathan, RKM Vivekanatha College conducted the Quiz finals. Prof. S. S. Gokhale, Dean (students) was the Chief Guest for the Valedictory function and gave away the certificate and cash prizes to all the winners. Prof. S. Kalpakam, Head of the Department, was the chairman of FORAYS 2003. Dr. S. Sundar was the Faculty Co-ordinator of FORAYS 2003.

4.10 DEPARTMENT OF MECHANICAL ENGINEERING

4.10.1. Introduction:

The Department of Mechanical Engineering established in the year 1959. The department offers Ph.D., M.S., M.Tech, Dual Degree and B.Tech. programmes. The department has excellent facilities to carry out state-of-the-art research and 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 & Airconditioning, 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.

4.10.2. Academic Programmes:

New Courses Introduced:

Sl. No.	Course No.	Title
1	ME 643	Engine system and performance
2	ME 647	Engine instrumentation and electronic management
3	ME 338	Trends in Manufacturing
4	ME 348	CNC Machining

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	87	89	74	102	-	352
Dual Degree – Energy Technology Intelligent Mfrg. Product Design	7 9 9	7 6 6	6 5 5	5 8 6	5 4 5	30 32 31
M.Tech. - Thermal Engg. Design Manufacturing Engg.	30 27 17	34 32 28	- - -	- - -	- - -	64 59 45
M.Tech (UoP) - Auto. Engine Tech.	12	14	-	-	-	26
M.S.	32	9	14	4	2	61
Ph.D.	32	19	14	17	13	95
Total	262	244	118	142	29	795

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

Sl. No.	Name of the Student/ scholar	Programme	Name of the Conference/ Seminar/ Symposia	Date and Venue
Conferences:				
1.	K. Lingadurai	Ph.D.	20 th All India Manufacturing Technology Design and Research	13–15 Dec. 2002 BITS, Mesra, Ranchi
2.	J. John Rozario Jegaraj	Ph.D.	20 th All India Manufacturing Technology Design and Research	13–15 Dec. 2002 BITS, Mesra, Ranchi
3.	Shajan Kuriakose	Ph.D.	20 th All India Manufacturing Technology Design and Research	13–15 Dec. 2002 BITS, Mesra, Ranchi
4.	Ajmal Deen Ali	Ph.D.	20 th All India Manufacturing Technology Design and Research	13–15 Dec. 2002 BITS, Mesra, Ranchi
5.	S.Devaprasad	Ph.D.	International Conference on Operations Research for Development (ICORD) 2002	27–30 Dec. 2002 Anna Univ. Chennai
7.	S.N.Kurbet	Ph.D.	National Conference on Machining and Simulation in Manufacturing	15 – 16 March 2003 Annamalai Univ.

Sl. No.	Name of the Student/ scholar	Programme	Name of the Conference/ Seminar/ Symposia	Date and Venue
8.	S.N. Kurbet	Ph.D.	Fall Technical Conference of the ICED of ASME	08-11 Sept.2002 Singapore
9.	S.N. Arul Saravana -Priyan	Ph.D.	International Conference on Advanced Manufacturing Process, ICAMP 2002	2-4 Dec.2002 Singapore
10.	L.V.Mohan	Ph.D.	17 th International Convention of Production Engineers, Recent Trends in Manufacturing of Gears and Bearings	Aug. 31 st & Sept. 1, 2002, IIT Madras,
11.	Somashekhar S.H	Ph.D	Finite Element Simulation used to Predict the behavior of some Precision Hydraulic component	Dec.12-14 2002 Roorkee
			Finite element analysis of spring Elements in two stage jet pipe Electrohydraulic servovalve. COPEN 2002	2002 Coimbatore
			The role of reverse Engineering in Design of Precision Hydraulic Components COPEN 2002.	2002 Coimbatore
			Dimensional sensitivity analysis of feedback spring through finite element simulation	Feb. 22-23, 2002. Chennai
			Optimization of parameter affecting to static recovery pressure in Electrohydraulic Servovalve SYMAX	IIT Madras
			Fluid Power Exhibition and SeminarFPES'02	29-31, Jan.2002 Bangalore
12.	Naveen V. Nair & Veeraraghavan S.	USA	QNDE Conference	July 2002
13.	Mahadev Prasad	IISc, Bangalore	International Conference on Smart Structures Materials and System ISSS – SPIE 2002	Dec. 2002
14.	Ezhil J.	SHAR, Shriharikota	5 th National Workshop on Acoustic Emission	Oct. 2002
15.	10 Students attended National Seminar	ISNT, Chennai	NDE 2002	Dec. 2002

4.10.3. Faculty and their activities:

Faculty:

Name and Qualifications

Professors:

Ajit Kumar Kolar, Ph.D.(IIT Madras)
 Balabaskaran, V., Ph.D.(IIT Madras)
 Ganesan, V., Ph.D.(IIT Madras) [Head]
 Gopinath, K., Ph.D.(IIT Madras)
 Govardhan M., Ph.D.(IIT Madras)
 Krishnaiah Chetty, O.V., Ph.D.(IIT Madras)
 Krishnakumar R., Ph.D.(IIT Madras)
 Krishnamurthy, R., Ph.D.(IIT Madras)
 Krishnan Balasubramaniam, Ph.D.
 Kumaraswamy, S., Ph.D.(IIT Madras)
 Madhusudana Rao, M., Ph.D.(IIT Madras)
 Nagalingam, B., Ph.D.(IIT Madras)
 Nagarajan, T., Ph.D.(IIT Madras)
 Narayanasamy K., Ph.D.(IIT Madras)

Major Area of Specialization

Fluidized Bed combustion
 Hydroturbomachines,CFD in Hydroturbomachines
 I.C. Engines
 Machine Design, Rolling contact fatigue and tribology, Design and development of new materials
 Thermal Turbomachines
 Conventional and Unconventional Machining, FMS, CIM, Scheduling Petrinets
 Non-linear and linear finite elements, Computer Aided Design, Simulation of Manufacturing Process, Tire Mechanics and Bio Mechanics
 Metal cutting, Grinding, Unconventional Machining Ceramics
 Non-destructive evaluation, Ultrasonics, Wave Propagation
 Hydroturbomachines – design, analysis and testing, cavitation, pumps application engineering
 Mechanical Handling, Materials Handling
 I.C. Engines
 Robotics, Pneumatics, Medical Instruments
 Precision Engg., Advanced Manufacturing methods in the field by Precision Engg. Production Metrology

Name and Qualifications

Pramod S Mehta, Ph.D. (Loguhborough, UK)
 Prasad, BVSSS., Ph.D.(IIT Kharagpur)
 Premananda Shet, U.S., Ph.D.(IIT Madras)
 Ramamoorthy B., Ph.D.(IIT Madras)
 Raman R., Ph.D., (IIT Madras)
 Ramesh Babu N., Ph.D.(IIT Madras)
 Shunmugam M S, Ph.D.,(IIT Madras)

Singaperumal M , Ph.D.(IIT Madras)
 Sivaprasad N., Ph.D.(IIT Madras)
 Srinivasa Murthy S., Ph.D.(IIT Madras)
 Srinivasa Y G., Ph.D.(IIT Madras)

Sundararajan, T., Ph.D.(Pensylvania)
 Venkateshan S P., Ph.D.(IISc Bangalore)
 Vijay R Raghavan Ph.D. (IIT Madras)

Associate Professors:

Babu V., Ph.D.(Ohio)
 Mani A., Ph.D.(IIT Madras)
 Mayuram M M., Ph.D. (IIT Madras)
 Muthuveerappan G., Ph.D.(IIT Madras)

Prakash M Maiya., Ph.D.

Raju Sethuraman, Ph.D.,(IIT Bombay)
 Ramesh A., Ph.D. (IIT Madras)
 Sarit Kumar Das, Ph.D.(Sambhalpur)

Sitaram N., Ph.D. (Pennsylvania)
 Venkatrathnam, G., Ph.D. (IIT Kharagpur)
 Vijayaraghavan L, Ph.D.(IIT Madras)

Assistant Professors:

Balaji C., Ph.D. (IIT Madras)

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

Ramalingeswara Rao D V., M.Tech. (IIT Madras)

Senior Design Engineer:

Kalandar Saheb,M.Tech. (IIT Madras)

Emeritus Professor (AICTE):

Bhaskaran, K.A., Ph.D.(IIT Madras)

Visiting Professor:

Prakash Krishnaswami, Ph.D. (University of Iowa)

Major Area of Specialization

I.C. Engines
 Turbomachines, Fluid Mechanics, Heat Transfer
 Combustion and Propulsion, Computational Fluid
 Metrology, CAI/Sensors/Mfg. Engg/ Quality control
 Precision Engineering, Mechanical Measurements
 CNC, CAM, LBM, Grinding, PLC Applications
 Metrology, BTA, Gear Machining, Grinding, EDM, Statistical
 Quality Assurance, Automation, Computer Aided
 Manufacturing Systems and Control
 Fluid Power, System simulation, Mechatronics
 CAD, FEM, Machine Design, Computer Graphics
 Thermal Engineering
 Control Active Suspension, active vibration control, Extrude
 Honing
 Dynamics and Heat Transfer
 Heat Transfer, Instrumentation
 Fluidized beds, Heat exchangers and CFD

Combustion and Propulsion
 Thermal Engineering
 Machine Design and surface engineering
 Machine Design, Vibrations

Refrigeration (sorption heating and cooling systems, Co-
 generation) Airconditioning (Desiccant and evaporative
 cooling) Ventilation and Drying
 Computational Mechanics, Fatigue and Fracture
 I.C.Engines
 Heat Exchangers, boiling heat transfer, Nuclear heat transfer
 and CFD
 Thermal Turbo machines
 Cryogenic Systems, Heat Exchangers
 Metal Cutting, CAD, Grinding, Condition Monitoring and
 Surface Technology

Fundamental Heat Transfer, Convection, Optimization of
 Heat Transfer systems
 New materials and Design, Fatigue and Fracture Mechanics,
 Contact Mechanics

Instrumentation and Control Engineering

Jigs and Fixtures, Powder Metallurgy of gears, Design for
 manufacture, Design of Mechanical Machines

Combustion and Propulsion

Automated Process Planning, Feature-Based Design, Geometric
 Modeling, Robotics, Optimization, Multibody Dynamics

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

Sl. No.	Co-ordinators	Title	Period
Seminar:			
1.	B. Ramamoorthy	"Computer Aided Inspection" at the National Seminar on Advanced Manufacturing Technology, Anna University	March 7-8, 2003
Symposia:			
1	B.Ramamoorthy	National System on Instrumentation and Measurements, St. Peters College, Chennai	Feb. 26-27, 2003
		MECAFEST 2003, National Symposium, Vandavasi	Jan. 23-24, 2003

Sl. No.	Co-ordinators	Title	Period
Workshop/Short term Course:			
1.	Prof. B.V.S.S.S. Prasad Prof. E. G. Tulapurkara	Computational Fluid Dynamics	Dec. 18-22, 2002
2.	Prof. Krishnan Balasubramaniam & Mr. G. Jothinathan	QIP Course on "Advanced Methods in Nondestructive Evaluation"	Dec. 16-20, 2002
3.	Dr. Raju Sethuraman	Continuum Mechanics: Theory and Applications	Dec. 16-20, 2002

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

Sl. No.	Name of Faculty	Title	Institution	Period
Conference:				
1.	Dr K Narayanasamy	International Conference ASPE-USA	USA	October 2002
2.	M.S. Shunmugam	"Analysis of Reference Lines Established by Standard Electrical and Gaussian Fillers", 20 th All India Manufacturing Technology Design and Research	BITS, Mesra, Ranchi	13-15 Dec. 2002
		"Multivariate Analyses of W.E.D.M. Process", 20 th All India Manufacturing Technology Design and Research	BITS, Mesra, Ranchi	13-15 Dec. 2002
3.	R.Krishna Kumar	"Dynamic Analysis of Tyre Cornering Behaviour using Explicit FE Code", XXI-South Eastern Conference on Theoretical & Applied Mechanics, University of Central Florida, USA	USA	17-21, May 2002
4.	B. Ramamoorthy	"Effect of Particle size on wear instance of Electroless Composite coated components", National Conference on Advanced Manufacturing,	NSS College, Palakkad	15-16 Jan. 2003
5.	Prof. Krishnan -Balasubramaniam	Quantitative NDE, USA	USA	July 2002
		NDE 2002, Chennai	Chennai	Dec. 2002
Training/Short Term Course:				
1.	Dr A Ramesh	Automotive Engine Technology for Engineers of Indian Oil Corporation	IIT Madras	Aug. 05, 2002

Special Lectures Delivered by the faculty in others Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr A Ramesh	Invited lecture in the Society of Automobile Engineers one day programme on Electronics	ICE lab, IIT Madras
		Invited lecture on Electronic Engine Management	CVRDE, Avadi
		Summer school	Annamalai University, MACE, Kothamangalam, Kerala.
2.	Dr K Narayanasamy	Advanced Manufacturing Methods	CVRDE, Avadi, Chennai
3.	Dr M.S.Shunmugam	Computer Integrated Manufacturing	Bapuji Institute of Engineering & Tech., Davangere, Karnataka 23 rd August 2002
4.	Dr O.V.Krishnaiah Chetty	Advanced in Electrochemical Machining.	CVRDE, Avadi 21 st February 2003
		Trends In Manufacturing	Vigyan Institute, Hyderabad 8 th March 2003
		Modeling and Simulation Conference (MOSIM)	Chidambaram 16 th March 2003
5.	Dr N.Ramesh Babu	Abrasive Water Jet Machining	AICTE-ISTE sponsored short-term training programme Kongu Engineering College Erode, 19 th Nov. 2002.

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
		Modeling and Simulation of Abrasive Water Jet Cutting	6 th Indo-Japan Seminar on Advanced Manufacturing Systems held at Mussoorie 1-6 Dec., 2002.
6.	Dr B.Ramamoorthy	Computer Aided Inspection	RVR and J.C. Engineering College, Guntur 6 th September 2002
		Advances in Inspection	NSS College of Palakkad 15 th February 2003
		Computer Aided Inspection	Anna University, Chennai 7 - 8 January 2003
7.	Dr R.Krishna Kumar	Finite Element Analysis	CVRDE, Avadi 16 th September 2002
		Finite Element Analysis	MRF, Chennai
8.	Dr L.Vijayaraghavan	Computer Integrated Manufacturing	CVRDE, Avadi 21 st February 2003

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1.	Dr V Ganesan	USA	May 6-9, 2002	To present a paper entitled, "Numerical Predictions and Experimental Investigations on Extended Expansion Engine Performance and Exhaust Emissions" (Ref No. 02SFL-172) (Session Code: SFL6) at the SAE International Fall Fuels & Lubricants Meeting & Exhibition at Reno Hilton, Reno, Nevada, USA
2.	Dr K Narayanasamy	USA	October 2002	Conference Paper presentation
3.	Dr M Singaperumal	USA	October 2002	Conference Paper presentation
4.	Dr R.Krishna Kumar	USA	19-21 May 2002	Presented a Paper at University of Central Florida, USA
5.	Dr S. Srinivasa Murthy	Spain	30-5-2002 - 30.6.2002	Professional visit to U. of Rovira I Virgili, Tarragona
6.	Dr S. Srinivasa Murthy	Germany	1-7-2002 - 20.7.2003	Indo-German joint research project with U of Stuttgart
7.	Dr Krishnan -Balasubramaniam	USA	July 2002	WFNDEC Annual meeting & QNDE Conference

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr O V Krishnaiah Chetty Dr Eswara Reddy	The Corps of Engineers Medal	The Institution of Engineers (India)	Paper entitled "Tool Requirement planning for flexible Manufacturing systems"	Seventeenth Indian Engg. Congress, Patna on 20 th December 2002
2	Dr A S Varadarajan Dr P K Philip and Dr B Ramamoorthy	The Production Engineering Division Mdeal	The Institution of Engineers (India)	Paper entitled "Influence of Cutting Fluid Composition and Delivery variables on performance in hard turning using minimal fluid in Pulsed jet form"	Seventeenth Indian Engg. Congress, Patna on 20 th December 2002
3	Dr V Ganesan	Life Membership Award	National Environmental Science Academy, India	Work done in pollution control	07.03.2003

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
4.	Dr S. Srinivasa -Murthy	PIONEER	World Renewable Energy Network	Contribution to Solar Cooling Technologies	July 2002

Books/Monographs authored or co-authored:

Sl. No.	Name(s) of Faculty	Title	Publisher	Author/Co-author
1.	Dr V Ganesan	Turbulent Reacting Flows	Proceedings of the International Workshop on Turbulent Reacting Flows, December 2002	Dr V Ganesan
2.	Dr. Raju Sethuraman	Engineering Mechanics	Prentice Hall of India	C. Lakshmana Rao J. Lakshminarasimhan M.S. Siva Kumar

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Name of the Academy/Professional Society	Level	Year of Admission
1.	Dr V Ganesan	National Environmental Science Academy, India	Fellow	2002

4.10.4. Design and Development Activities

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

1. The I.C. Engines laboratory developed a swirl meter and a procedure to estimate swirl induced by the intake port of a diesel engine using steady flow experiments.
2. The I.C. Engines laboratory developed a semiautomatic electronic fuel injection system for an automotive engine. This will enable creation of a data base for development of fully automatic fuel injection system for cars.
3. Dr.G. Venkatarathnam & Prof.S. Srinivasa Murthy developed a mixed refrigerant cryocooler. Exergy efficiencies close to the best in the world

New facilities added and Major equipment procured through project funds:

1. Eddy current dynamometer of different capacities for 70–200 HP
2. Chemiluminescence Nox analyzer
3. HC, CO, CO₂, and O₂ portable exhaust gas analyzer
4. Multigas analyzer for engine exhaust
5. Engine smoke meter
6. Pressure transducers and data acquisition system for engines.
7. Improved the basic infrastructure of the I.C. Engines laboratory for teaching and research.
8. Added three new test rigs for experiments in ICE lab.
9. Developed a swirl estimation test rig for diesel engines in ICE lab.

Sl. No.	Instrument	Value (Rs. in lakhs)
1	Helium leak detector	10.00 (approx.)
2	Gas chromatograph	10.00 (approx.)

Patents filed:

Prof.B.Ramamoorthy: 1. Improved Technique for Electroless coatings
2. Improved Technique for Electroless nickel/electroless ferromagnetic coatings.

Prof Y G Srinivasa: Application filed for Patent No.133/MAS/200
Prof K Narayanasamy: "An extrusion honing composition"
H P Raju

4.10.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1	Indigenous Development of Engine Controller	1½ years	CVRDE, Avadi	23.00	Dr.A Ramesh

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
2	Evaluation of Royal Enfield A 350 Motor cycle engine	Six months	M/s Royal Enfield Motors Ltd.	1.50	Dr.A Ramesh
3	Transient natural convection and stratification in cryogenic propellant tanks	2 years	ISRO – IITM Cell	10.46	Prof.S.Srinivasa Murthy Prof.BVSSS Prasad Dr.G.Venkatarathnam Dr.K.Ramamurthy(ISRO)
4	Development and testing of metal hydrides for environmentally friendly energy conversion (ongoing).	2 years	Department of Science & Technology - German Academic Exchange Service	3.00	Prof.S.Srinivasa Murthy Dr.M.P.Maiya
5	Development of novel metal hydride reactors for environment friendly energy conversion devices (ongoing).	3 years	Ministry of Non-Conventional Energy Sources	27.00	Prof.S.Srinivasa Murthy Prof.B.Viswanathan Dr.M.P.Maiya
6	Development and characterisation of metal hydrides for environment friendly energy use	3 years	Indo-German Collaborative Research Project	5.00	Prof.S.Srinivasa Murthy Prof.B.Viswanathan Dr.M.P.Maiya
7	Development of desiccant assisted air conditioner for low humidity applications	3½ years	Ministry of Human Resource Department	10.00	Dr.M.P.Maiya Prof.S.Srinivasa Murthy
8	Vapour compression heat pump chiller	2 years	Kirloskar McQuay Pvt.Ltd., Pune	15.00	Prof.S.Srinivasa Murthy Dr.M.P.Maiya Dr.A.R. Balakrishna
9	Development of a mixed refrigerant cyrocooler for electronic cooling	3 years	ISRO - IITM Cell	21.00	Dr.S.Srinivasa Murthy Dr.G. Venkatarathnam
10	Utilisation of ocean thermal energy for desalination	2 years	NIOT	3.50	Dr.A. Mani Dr.S. Kumaraswami
11	Computer Aided Instructional Module on Turbomachines	2 years	CCE	1.75	Dr. N.Sitaram Dr. M.Govardhan
12	Performance and Stall Margin Improvements in an Axial Flow Compressor by Means of Forward Swept Blades	2 years	ARDB	7.18	Dr. N. Sitaram Dr. M. Govardhan
13	Diffusers for Energy Efficient Centrifugal Compressors	3 years	CSIR	5.03	Dr. N.Sitaram Dr. M. Govardhan
14	Modernization and Removal of Obsolescence in TTM Lab	2 years	MHRD	1.50	Dr. N. Sitaram
15	Turbine Rotor Stator Interactions Including Effects of Film Cooling	3 years	ARDB	9.02	Dr. N. Sitaram Dr. B.V.S.S.S. Prasad
16	Performance Improvements of Centrifugal Compressors by Squealer Tips.	3 years	CSIR	5.46	Dr. N. Sitaram
17	Development of focusing nozzles for AWJ cutting	2000-2002	DST	9.57	Dr.N.Ramesh Babu Dr.O.V.Krishnaiah Chetty
18	Offline path planning of cooperative manipulators in a work cell environment	2000-2003	DST	16.52	Dr.N.Ramesh Babu Dr.Koshy Varghese
19	Machinability Characteristics of Al Alloy Reinforced with SiC particulates	2001-2002	DST	8.00	Dr.L.Vijayaraghavan Dr.R.Krishnamurthy
20	Computer Simulation of Friction Welding Process	2002-2003	DMRL	4.95	Dr.R.Krishna Kumar
21	Transient Finite Element Analysis to Determine the characteristics of a Tyre	2001-2003	JK TYRE	15.00	Dr.R.Krishna Kumar
22	Feasibility studies on unconventional cutting of nonmeter	2001-2002	BARC	5.00	Dr.N.Ramesh Babu Dr.O.V.Krishnaiah Chety Dr.V.Radharkrishnan
23	Health Monitoring of Composite Structures using Ultrasonic Guided Wave Methods.	2 years	ADA	50.82	Dr. Krishnan -Balasubramaniam

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
24	Development of an Advanced Ultrasonic NDE Methods for imaging of Tight Cracks in Thin shells	2 years	ISRO - VSSC	8.23	Dr. Krishnan -Balasubramaniam & Mr. G. Jothinathan
25	Design and Development of MOS Integrated Piezoresistive pressure sensor	2 Years	NPSM	232.10	Dr. K.N. Bhat Dr. Krishnan -Balasubramaniam, Dr. E.Bhattacharya, Dr. A.D. Gupta, Dr. N.D.Gupta Mr. P.R.S. Rao
26	Development Of NDE Techniques For Bond Interface Evaluation In Rocket Motor	2 years	ISRO - SHAR	13.26	Dr. Krishnan -Balasubramaniam
27	Smart Structural Concepts for guided Wave Evaluation of Composites with Embedded Polymer Film Transducers	3 years	ARDB	3.53	Dr. Krishnan Balasubramaniam & Dr. B.S. Prabhu
28	Development of high power ultrasonic transducer for NDE of thick concrete structures	2 years	DST	13.37	Dr. Krishnan -Balasubramaniam, Dr. G. Makandeyalu Dr. V.S. Murthy, Dr. K.V.S. Rama Rao
29	NDE Technology Development for Infrastructure Asset Management	3 years	DST	49.00	Dr. Krishnan -Balasubramaniam, Dr. D.K. Bhattacharya
30	Development of high performance vegetable oil biogas dual-fuel engine	2003-2006	MNES	17.00	Dr. A.Ramesh
31	Development of an injection system for two-stroke engines	2003-2006	MHRD	10.00	Dr. A.Ramesh

Industrial Consultancy projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1	Dr.M.P. Maiya Dr.BVSSS Prasad	Design and Calibration of Orifice Plate for Filter Test Set-up	Air Breeze(I) pvt. Ltd., Chennai	0.15
2	Dr.M.P. Maiya Dr.S. Srinivasa Murthy Dr.G.Sridhara Rao	Energy Consumption Pattern	Jumbo Bags Ltd, Ponneri, Tamilnadu	0.80

- Evaluating the Effects of Fuel Additives on the Diesel Engine Combustion
Kochi Refineries Ltd, Kochi (in progress 2002)
Consultancy Amount: Rs.2,00,000/-

RBIC projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr. B V S S S Prasad	Thermal Modelling of Chill Down of a Cryogenic Turbo Pump	LPSC, Trivandrum	0.80
		CFD Analysis of Secondary Air Systems for Kaveri Engine	GTRE	5.00
		Development of a Computer Module of the Network Analysis of Secondary Air System.	GTRE	4.80
2.	Dr. B.V.S.S.S. Prasad Dr. N. Sitaram	Conjugate Heat Transfer in the Vicinity of Compressor Discs.	GTRE	3.40
		Rotor Stator Interactions for three stages of a Compressor	GTRE	5.00
3.	Dr. Y.V.S.S.S. Raju Dr. B.V.S.S.S. Prasad	Determination of Heat Transfer Coefficient for the Nozzle Guide Vanes and Blades	GTRE	3.40
4.	Dr Y G Srinivasa Dr T Nagarajan	Development of Electric Power Steering System	Rane, TRW, Chennai	2.00

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
5	Dr S Srinivasa Murthy Dr M.P.Maiya	Performance evaluation of a thermal hydraulic engine	Deluge Inc, Arizona, USA	10.50
6	Dr S Srinivasa Murthy Dr G. Venkatarathnam	Design of Multi-stream cryogenic heat exchangers	DRDL	5.00
7	Dr. Krishnan -Balasubramaniam	Evaluation of Structural Integrity of Tubular Composite Structure using Ultrasonic NDE	ARDE	3.89
		Development of Stress Gradient Profiler for Metallic Component Using Ultrasonic Guided Wave Inversion	UTC, USA	USD 23,700/-

Retainer Consultancy:

Sl. No.	Name of Faculty	Title	Industry	Amount
1	Dr A Ramesh	RVTIFAC – Hydrogen economy technology Programme	DST	Rs.5000/- per visit per day
2	Prof B Ramamoorthy Prof.M.S.Shunmugam	Improving efficiency of plant	Godrej Agrovet, Chennai	Rs.0.50 lakhs
3	Dr.A. Mani	Performance improvement of aqua-feed plant	Godrej Agrovet Ltd, Chennai	Rs.5000/-

Exchange programme with other Universities:

- Sri Jitendra Shah, M.S. scholar went to Germany under Student Exchange Program
- 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
- DST-DAAD Exchange programme on "Quality Improvement of Abrasive Water Jet Cutting", University of Hannover, Germany. (1999-2002)
Co-ordinators: Prof. N.Ramesh Babu, IIT Madras
Prof.Dr.Ing.Hartmut Louis, Univ. of Hannover, Germany
- Indo-Japan Student Exchange Programme: IIT Madras and Osaka Prefecture University, Japan
Student Name: J.Ram Kumar
Guide: Prof.R Krishnanmurthy
- Two M Tech Students – Summer Training at Michigan State University, USA.
- One M Tech Student – Summer Training at Imperial College, UK.

Journal Editorial Boards:

Sl. No.	Name of the Faculty	Level	Journal
1	Prof S Srinivasa Murthy	Co-Chairman	International Dictionary of Refrigeration (Airconditioning & Heat Pumps Section)

Research Publications:

No. of papers published in Refereed National Journals	..	6
No. of papers published in Refereed International Journals	..	22
No. of papers presented in National Conferences	..	26
No. of papers presented in International Conferences	..	58

In Refereed National Journals:

- B Viswanathan, R.S.Achyuthalal Babu and S.Srinivasa Murthy Evaluation of Mg₂Ni alloy as negative electrode for rechargeable metal hydride batteries Bull. Catalysis Society of India, Vol.11, 2002, pp.6-14.
- K. Hariprasad Reddy, P K Nair and B Ramamoorthy, "Investigations on the influence of macro residual stresses and microstrain on the corrosion behaviour of ground carbon steel components", Indian Journal of Institution of Engineers, October 2002, Vol.82 pp.42-45.
- C Venkateswara Babu, N. Sitaram and M. Govardhan, "Experimental Investigation of Tip Clearance Effects on Flow Field in an Annular Turbine Rotor Cascade", Indian Journal of Engineering Science and Material Science, Vol. 9, pp 424 – 431, December 2002.

4. N. Sitaram and M. Govardhan, "Large Angle Calibration of Five Hole Probes", *Journal of the Aeronautical Society of India*, Vol. 54, No. 3, pp. 265 – 272, August 2002.
5. 'Experimental investigations on a LPG diesel dual fuel engine', Vol 83, pp 105-111, S. Ganesan and A. Ramesh, *The Institution of Engineers (India) Journal*, October 2002.
6. Lakshminarayana P A, Aghav Y V, Dani A D and Mehta P S, Accurate Prediction of the Rate of Heat Release in a Modern Direct Injection Diesel Engine, Proc. I Mech E, Vol.216, Part D: *Journal of Automobile Engineering*, 2002, pp 663-675

In Referred International Journals:

1. P.Muthukumar, M.P.Maiya and S.Srinivasa Murthy, Parametric studies on metal hydride based single stage hydrogen compressor *Int. J of Hydrogen Energy*, Vol.27, 2002, pp.1083-1092
2. Kevin Abraham, M.P.Maiya and S.Srinivasa Murthy, Analysis of a metal hydride cold storage module *Int. J of Hydrogen Energy*, Vol.28, No.4, 2003, pp. 419 - 427
3. U.A.Rajendra Prasad, M.P.Maiya and S.Srinivasa Murthy, Parametric studies on a heat operated metal hydride based water pumping system *Int. J of Hydrogen Energy*, Vol.28, No.4, 2003, pp. 429-436
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14. M.S.Ajmal Deen Ali, N.Ramesh babu and Koshy Varghese, "Offline Path planning of Cooperative Manipulators using Genetic Algorithm", 20th All India Manufacturing Technology, Design and Research, BITS – Mesra, Ranchi, Dec.13-15, 2002.
15. S.N.Kurbel and R.Krishnakumar, "FE modeling and simulation of piston ring coating to study interface stress", Annamalai University, Chidambaram, March 15-16, 2003.
16. S.N. Arul Saravana Priyan and L.Vijayaraghavan, "Selective – Grinding – A new on-line heat treatment process for surface hardening of HSS tools", 20th All India Manufacturing Technology, Design and Research, BITS – Mesra, Ranchi, Dec.13-15, 2002.
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3. K.Nagaraju and S. Srinivasa Murthy, Comparison of Non-Azeotropic Hydro-Fluoro-Carbon Mixtures as Working Fluids in Organic Rankine Cycle World Renewable Energy Congress -VII; Cologne, Germany, 29 June- 5 July, 2002.
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7. Y.S.Varadarajan, L.Vijayaraghavan and R.Krishnamurthy, "Machining of particulate reinforced metal matrix composite with K20 carbide tool, 6th Biennial Conference on Engineering Systems Design and Analysis, Istanbul, Turkey, July 8-11, 2002.
8. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "An effective burn prediction in grinding of high speed steel using Artificial Neural Network", 2nd World Engineering Congress, Sarawak, Malaysia, July 22-25, 2002, pp. 183-188.
9. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "Finite Element Simulation on occurrence of grinding burn", 2nd World Engineering Congress, Sarawak, Malaysia, July 22-25, 2002, pp. 171-176.
10. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "High Speed Machining of Commercial pure Aluminium with HSS Tools", 2nd International Conference on Manufacturing, Dhaka, Bangladesh, August 9 – 11, 2002, Vol.1 pp.194-199.
11. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "A comparative study on Grinding Burn in wrought and sintered HSS", SECA 2002 – Surface Engineering for Competitive Advantage, Newcastle, UK, 2-5 September 2002.
12. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "Defect Tolerancing in Grinding of High Speed Steel (ASP30), JSME/ASME International Conference on Materials and Processing 2002, Hawaii, USA, Oct. 15-18, 2002.
13. S.N. Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "Performance Evaluation of Treated Grinding wheels", International Conference on Advanced Manufacturing, Singapore, Dec.2-4, 2002.
14. K.Vijayakumar, M.M.Mayuram and R.Krishnamurthy, "Investigations into erosion wear performance of functionally graded chromium oxide –alumina titania ceramic composite deposits", International conference on advanced manufacturing processes, Singapore, Dec.2-4, 2002.
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17. O.V.Krishnaiah Chetty, "Performance Analysis of Automated Storage and Retrieval Systems using Genetic Algorithms", IEE Conference, Orlando, May 19-22, 2002.
18. J.N.V. Krishna and B.Ramamoorthy, "Surface Roughness Evaluation using Machine Vision Approach and Hurst Operator, Accepted for the 7th International Symposium Laser Metrology to be held in Novosibirsk, Russian Federation during Sept.9-13th 2002.

19. Winolin Jappes, B.Ramamoorthy and P.Kesavan Nair, "Performance of Electroless Nickel Coated Components" International Conference to be held in Dhaka, Bangladesh, August 2002, pp.487-491.
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24. Rajesh Sharma and Pramod S Mehta, Phenomenological Model for Swirl-Squish Interactions in Combustion Chamber Geometries of DI Diesel Engines, Proc. ASME Fall Technical Conference, New Orleans, Louisiana, USA, September 8-11, 2002 ,ICE Vol. 39,Paper no. ICEF2002-497, pp.193 – 200.
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27. S. Senthil and N. Sitaram, "Performance Improvement of a Centrifugal Compressor by means of Squealer Tips Flows", Proc. Of the 4th International Conference on Pumps and Fans (4th ICPF), August 26 – 29, 2002, Beijing, China.
28. S. S. Suneesh, B.V.S.S.S. Prasad and N. Sitaram, "Computational Investigation of Stator / Rotor Interaction in a Transonic Axial Flow Compressor using FLUENT", Proc. Of the 4th International Conference on Pumps and Fans (4th ICPF), August 26 – 29, 2002, Beijing, China.
29. J. M. Issac, N. Sitaram and M. Govardhan, "Performance and Static Pressure Distribution on the Diffuser Walls of a Centrifugal Compressor using Different Types of Diffusers", Proc. Of the 4th International Conference on Pumps and Fans (4th ICPF), August 26 – 29, 2002, Beijing, China.
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31. M. Govardhan, B. H. L. Gowda, J. P. Umang, "Visualisation of Endwall Flow in a Large Deflection Turbine Rotor Cascade: Effect of Streamwise Fences on Secondary Flows and Losses", 9th ACFM, Isfahan, Iran, May 27 – 31, 2002.
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39. "A study on the use of water diesel emulsions in a DI diesel engine", K.A.Subramanian and A.Ramesh, II International SAEINDIA Mobility Conference, January 10-12,2002, Chennai, India.
40. "Experimental investigations on cycle by cycle variations in a natural gas fuelled spark ignition engine", A. Ramesh, O Le Corre and Tazerour M, II International SAEINDIA Mobility Conference, January 10-12,2002, Chennai, India.
41. "Investigation on the use of water diesel emulsion in a LPG diesel dual fuel engine", S. Ganesan and A. Ramesh, II International SAEINDIA Mobility Conference, January 10-12,2002, Chennai, India.

42. "Characterisation of the LPG – Diesel Dual fuel combustion", Bilcan, Le Corre, Tazerout, S. Ganesan and Ramesh, II International SAEINDIA Mobility Conference, January 10-12,2002, Chennai, India.
43. "Complete vegetable oil fuelled dual fuel compression ignition engine", M.Senthilkumar, A. Ramesh and B. Nagalingam, II International SAEINDIA Mobility Conference, January 10-12,2002, Chennai, India.
44. "Hydrogen induction for improving the performance of a vegetable oil fuelled CI engine", M.Senthilkumar, A. Ramesh and B. Nagalingam, International Conference on Techno-commercial aspects of decentralized approach in waste to energy, March 1-3, 2002, Jaipur, India.
45. 'Operation of a Compression Ignition Engine on diesel-diethyl ether blends', K.A.Subramanian and A.Ramesh, ASME International Fall Technical Conference, New orleans, USA, September 8-11, 2002.
46. 'Description de la combustion dual-fuel dans les moteurs a combustion interne', Bilcan, Le Corre, Tazerout, A. Ramesh, National French Congress in thermal science, SFT 2002, France, Vittel 3-6 Juin, 2002.
47. Somashekhar S.H., M.Singaperumal and R. Krishnakumar, March 19-21 2002, "Design Parameters and their Optimization to Get Maximum Pressure Recovery in two stage Jet Pipe Electro hydraulic Servovalve" , 2002 SAE International Off-highway Congress, IFPE2002, Las Vegas, Nevada USA, Session No.27.6 Electrohydraulics.
48. Somashekhar.S.H , M.Singaperumal and R. Krishnakumar , "Stiffness Analysis of Feed Back Spring and Flexure Tube of Jet Pipe Electrohydraulic servovalve Using Finite Element Method" ASME Conference FEDSM'02, Paper No.FEDSM 2002-31304.
49. Somashekhar S.H. Singaperumal M. and Krishnakumar R. "Design and Optimization of parameters affecting to Static Recovery Pressure in two Stage Jet Pipe Servovalve", ASME Conference, ESDA 2002, paper /des-020.ESDA 2002.
50. M.Singaperumal ,Somashekhar S.H. and R. Krishnakumar "Finite Element and experimental Validation of Stiffness Analysis of Precision feedback Spring and Flexure Tube of Jet Pipe Electrohydraulic Servovalve", Proceedings of the Seventeenth annual Meeting. The American Society for Precision Engineering, Oct.20-25, 2002, St.Louis Missouri, Vol27, PP 415-420.
51. M.Singaperumal ,Somashekhar S.H. and R. Krishnakumar, "Finite element Analysis of Steady State Operation of Jet Pipe Electrohydraulic Flow Control Servovalve" Proceedings of the 5th JFPS International symposium on /fluid Power, Nara, Nov.12-15,2002 Vol.3Paperp No.3C41, PP 911-916.
52. M.Singaperumal ,Somashekhar S.H. and R. Krishnakumar, "Finite element simulation used to predict the behavior of some precision hydraulic component" Proceedings of the 2nd International conference on Fluid Mechanics and Fluid Power(INCFMFP-2002), Indian Institute of technology, Roorkee, Dec12-14,2002Vol.1.PP 313-319.
53. G.Satheesh Kumar, Y.G.Srinivasa, and T.Nagarajan "Active Vibration Isolation Using a Multi, Axis Robotic Platform" 10th International Congress on Sound and Vibration 7-10 July 2003, SWEDEN.
54. G.Satheesh kumar, Y.G.Srinivasa and T.Nagarajan "A Review of Stewart platform In vibration Isolation applications" [INCARF 2003] IIT Delhi. New Delhi.
55. N Govindarajan, R. Gnanamoorthy, Y. Miyashita and Y. Mutoh "Rolling And Sliding Contact Fatigue Behaviour Of Sintered Steel", Proc of International Conference on Powder Metallurgy for Automotive Components, New Delhi, January, 22-24 2002. (Appeared in Powder Metallurgy in Automotive Applications II, Eds. T R Rama Mohan, Oxford IBH Publishing Co P Ltd, p. 203- 209, 2002)
56. R. Gnanamoorthy "Fracture toughness of niobium aluminide base intermetallics in air and vacuum" Proc of International conference on advances in materials and materials processing (ICAMMP-2002), IIT Kharagpur, Feb 2002
57. R. Gnanamoorthy, N. Rajiv, K. Gopinath, Y. Miyashita and Y. Mutoh "Damage Mechanisms Under Rolling Contact Fatigue of Sintered and Hardened Steels" Proc of International conference on advances in materials and materials processing (ICAMMP-2002), IIT Kharagpur, Feb 2002
58. R. Gnanamoorthy, Bharathi Sekar, N Govindarajan, Y. Miyashita and Y. Mutoh "Influence of Processing Parameters on Rolling Contact Fatigue Behaviour of Automotive Sintered Steel", Proc of International Conference on Metals and Materials for Automobile Industry, held on Sep 13 & 14 2002, Indian Institute of Metals, New Delhi, 2002. pp.159-167

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Prof.Ranga Komanduri Regents Professor Oklahoma State University U.S.A.	11.06.2002	Guest Lecture
2.	Prof.Jacques Gautron, President Prof.N.Ranganathan, Director Universities of Francois Rabelais de Tours France	13.08.2002	Visit

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
3.	Dr Srikanth Vedantam General Electrical Global Research Niskayuna, NY 12309, USA	14.08.2002	Guest Lecture
4	Dr. Prakash Krishnaswami Professor, Mechanical Engineering Kansas State University, USA	12.09.2002	Guest Lecture
5.	Prof.Dr. Hubertus V.Puttkamer Co-Director, TFH Berlin – University of Applied Sciences, Germany	06.11.2002	Guest Lecture
6.	Dr.Srinivasan Chandrasekaran Professor Schools of Engg. Purdue University, Indiana	10.01.2003	Guest Lecture
7.	Mr Alexander Schenk Institute of Materials Science, University of Hannover, Germany	02.02.2003 - 14.02.2003	Visited under Volkswagen Funded project
8	Prof. Prakash Krishnaswamy	20.01.2003 - 19.05.2003	Visiting Faculty
9.	Dr.V.C.Venkatesh, Professor, Universiti Teknologi Malaysia, Malaysia	31.03.2003	Guest Lecture
10.	Dr. J.T. Kshirsagar General Manager, Corporate R & D M/s Kirloskar Brothers Ltd., Pune	8-11 Oct, 2002 17-20 Dec, 2002 24-27 Mar, 2003	INAE Distinguished Visiting Professor

4.10.6. Other Activities:

1. Mr.Christoph Windmeier of the University of Karlsruhe, Germany worked in R & AC Laboratory from March-May 2002 as a IIT – DAAD Exchange student.
2. Mr.Marcel Riegel of the University of Karlsruhe, Germany is working in R & ACLaboratory from January to April 2003 as a IIT – DAAD Exchange student.
3. Mr. Philip Schoenberger of the University of Stuttgart, Germany worked in R & AC Laboratory during Jan – Aug. 2002 as a IIT-DAAD exchange student.
4. Mr. Hans Peter Klein of the University of Stuttgart, Germany worked in R & AC Laboratory during November 2002 under BMFT project.

Dr. B.V.S.S.S. Prasad:

1. Secretary, GATE, 2002 – 2003.
2. Secretary, Indian Society for Heat and Mass Transfer, 1998 - date.
3. Reviewer, I MechE (U.K.).
4. Reviewer, Journal of Thermal Engineering (U.K.).
5. Reviewer, Heat and Mass Transfer – International Journal (Germany).
6. Reviewer, World Conference of Fluid Mechanics, Thermodynamics and Heat Transfer.
7. Life Member – Instrument Society of India.
8. Member, Society of Fluid Mechanics and Fluid Power.

Dr. M. Govardhan:

1. Co-ordinator, Education Technology Cell, from March 2000 to Feb. 2003.
2. Head, Guidance and Counseling, September 1999 – June 2002.
3. Vice Chairman, JEE, August 2001 to 31st July 2002.
4. Organizing Chairman, JEE, August 2002 to till date.

Dr. N. Sitaram:

1. Head, TTML, May 1, 2001 – till date.
2. Reviewer, I Mech. E (U. K.)
3. Life Member, NSFMFP & Aeronautical Society of India.
4. Senior Member, AIAA.
5. Member, Institution of Engineers (India).

Dr B Naqalinqam:

1. M.Tech AET User Oriented Programme
2. Member Project Advisor Committee for ARAI
3. Member AICTE Committee on Accrediation

Dr.A.Ramesh:

1. Serving as the Head of the Internal Combustion Engines laboratory
 2. Vice President of the Mechanical Engineering Association
 3. Advisor Co curricular activities
 4. Convener SHAASTRA the annual technical festival of the institute
 5. Vice President mechanical engineering association
 6. Convener MECHANICA the annual technical festival of mechanical engineering
 7. Member Committee for Safety, Energy and Environment of the institute.
 8. Member of the Project Advisory Committee in the Automotive Research Association of India Pune.
 9. Served as the member of an AICTE committee for accreditation
- Dr.M.S.Shunmugam, Professor served as a organizing committee member and Convenor of Technical Committee, 17th National Conventional of Production Engineers, held on Aug.31st and Sept. 1st, 2002.
 - Dr.M.S.Shunmugam, Professor nominated as an External Expert for the Critical Design Review on 14.9.2002, Research & Development Estt. (Engrs.) Dighi, Pune.
 - Dr.O.V.Krishnaiah Chetty, Professor, has been a Member of the Organizing Committee for the International Conference on Operations Research for Development [ICORD 2002] organized by Anna University.
 - Dr.O.V.Krishnaiah Chetty, Professor, nominated as a Member of the National Advisory Committee for the National Seminar on 'World Class Manufacturing' during February 2003 organized by the Department of Mechanical and Production Engineering, Amrita Institute of Technology and Science, Coimbatore
 - Dr.O.V.Krishnaiah Chetty, Professor is invited to serve as an International Advisor to the 2003 American Waterjet Conference sponsored by Waterjet Technology Association, USA. The Conference will be held during Aug. 17 – 19, 2003 at Houston, USA.
 - Dr.B.Ramamoorthy, Professor has been nominated as an Expert Member of the AICTE committee for the purpose of screening of the project proposals received by the Council under MODROB/TAPTEC/R&D schemes for the year 2002-2003.
 - Dr.B.Ramamoorthy, Professor has been nominated as an Expert Member of the AICTE committee for the scheme of Career Award for Young Teachers.
 - Dr.B.Ramamoorthy, Professor, served as a Member of Board of Academic Studies of Thyagaraja Engineering College: Madurai, PSG Technology : Coimbatore, Madras Institute of Technology, Chennai.
 - Dr.B.Ramamoorthy, Professor, reviewed Technical paper for International Journals including American Society of Manufacturing Engineering (ASME), USA and International Journal of CAD/CAM, Seoul (South Korea).
 - Dr.B.Ramamoorthy, Professor, served as an International Programme Committee member of 7th International Symposium on Laser Metrology applied to Science, Industry and Everyday life, Sept. 9-13, 2002, Novosibirsk, Russia.
 - Dr.B.Ramamoorthy, Professor, served as Ph.D. Examiner of Bharathiyar University, Bharathidasan University, University of Mysore and Andhra University.
 - Dr.B.Ramamoorthy, Professor, nominated as a Member of the Scientific Committee for the International Symposium on Measurement Technology and Intelligent Instrument, November – December 2003 to be held in Hong Kong.
 - Dr.B.Ramamoorthy, Professor, served in the selection committee of Union Public Service Commission, New Delhi.
 - Dr.B.Ramamoorthy, Professor, served as a Member, NBA and visited Colleges / Universities.
 - Dr.N.Ramesh Babu, Professor, has been invited to deliver a talk on Modelling & Simulation of Advanced Water Jet Cutting in the 6th Indo-Japan Seminar on Advanced Manufacturing Systems held at Mussoorie during December 1 – 6, 2002.
 - Dr.R.Krishna Kumar, Professor has been invited to be a member of the Technical Evaluation Committee for Technical Paper Contest, at the EDS, PLM Users Conference – 2002, held on October 21st – 22nd, 2002 at Bangalore.
 - Dr.L.Vijayaraghavan, Associate Professor, nominated as a Member, Board of Faculty of Engineering and Technology of Annamalai University, Annamalai Nagar from June 2002.
 - Dr.L.Vijayaraghavan, nominated as a member, Advisory Committee of the National Conference on Composites organized by Annamalai University, Annamalainagar to be held on March 22, 2003.
 - 14 week Training programme in Aircraft Engineering & Manufacturing Technology was organized for HAL Management Trainee. Manufacturing Engineering Section has been participated along with other departments from July to December 2002.
 - First Japanese International Exchange Scholar arrived Under Long Term Research Exchange Program to MDS.

4.11 DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

4.11.1. Introduction:

The Department of Metallurgical Engineering was established in 1959. B.Tech., Dual Degree, M.Tech., M.S. and Ph.D. programmes are being offered by the Department. The major areas of teaching and research of the Department are:

- Metal Casting
- Metal Joining
- Metal Forming
- Materials Technology

New Name:

President of India in his capacity as the Visitor of IIT Madras has approved the change of name of the Department of Metallurgical Engineering as **Department of Metallurgical & Materials Engineering** from 12th March 2003 onwards.

4.11.2. Academic Programmes:

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B Tech.	25	25	24	28	-	102
Dual Degree	7	5	4	5	4	25
M.Tech.	15	14	-	-	-	29
M.S.	8	7	6	2	-	23
Ph.D.	20	9	4	4	6	43
Total	75	60	38	39	10	222

Names of Student/Scholar attended Conferences/Seminars and Symposia abroad/India:

Sl. No.	Name of the Student/Scholar	Programme	Name of the Conference/Seminar/Symposia	Date and Venue
1.	Vamsi Krishna, B.	Ph.D.	Fourth National Symposium of Research Scholars	27-28 Sept., 2002 IIT Madras
2.	V. Anbazhagan	Ph.D.		
3.	G.D.Janaki Ram	Ph.D.		
4.	K. Srinivasa Rao	Ph.D.		
5.	K. Suresh Babu	Ph.D.		
6.	N. Ramesh Babu	Ph.D.	National Conference on Biomedical Materials	20-21 Dec., 2002, Kolkata
7.	D. Sivaramakrishna	M.S.		
8.	D.N. sreenivas	M.S.		
9.	Venkateswaran, P	M.S.		
10.	Ramakrishna Naidu, N. K.	M.S.	Light Metals and Composites for Strategic and Societal Needs (LMCSSN-2002)	22-23 Oct., 2002 Thiruvananth-apuram
11.	Venkateswaran, P	M.S.		
12.	Ramakrishna Naidu, N. K.	M.S.	Fourth National Symposium of Research Scholars	27-28 Sept., 2002, IIT Madras
13.	T. Venugopal	M.Tech.		

4.11.3. Faculty and their Development:

Faculty

Name and Qualification	Major area of specialization
Professors:	
Achar, D.R.G. Ph.D. (IIT Madras)	Welding Technology, Failure Analysis, Corrosion, Industrial Metallurgy
Gokularathnam, C.V. Ph D. (Florida)	Physical Metallurgy, X-ray Diffraction, Powder Diffraction, Powder Metallurgy, Advanced Ceramics, SEM and TEM
Kesavan Nair, P. Ph D. (IIT Madras)	Physical Metallurgy, X-ray Diffraction, Materials Science and Technology

Name and Qualification	Major area of specialization
Padmanabhan, K.A. Ph.D. (Cantab)	Metal Forming, Rolling, Sheet Metal Forming, Forging, Mechanical Metallurgy, Super-plasticity
Paramanand Singh, Ph.D. (IIT Bombay)	Powder Metallurgy, Ceramics, Composites and Materials Science
Pathak, S.D. Ph.D. (IIT Madras)	Materials Science and Technology, Mechanical Behaviour, Mechanical Metallurgy, Mechanical Testing, Fatigue, Fracture Mechanics
Prasad Rao, K. [Head] 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
Sundaresan, S. Ph.D. (IIT Madras)	Metal Joining, Welding Metallurgy, Mechanical Behaviour
Venugopal, P. Ph.D. (IIT Madras)	Metal Forming Processes, Press Tool Design, Hammers and Presses, Cold Extrusion of Materials
Associate Professor:	
Guha, B. Ph.D. (IIT Madras)	Fatigue & Fracture of Welded Joints, Appln. of FEM/CAD in the area of Welding Technology
Assistant Professors:	
Balasubramanian, M. Ph.D. (IIT Madras)	Processing and Characterization of Composite Materials, Ceramic Processing
Bhattacharya, S.S. Ph.D. (IIT Madras)	Superplasticity and High Temperature Behaviour, Metal Forming
Devanathan, R. Ph.D. (North Western Univ., USA)	Electron Microscopy, Computer Simulation of Atomic level Processes in Materials
Ganesh Sundara Raman, S. Ph.D. (IIT Madras)	Mechanical Behaviour, High Temperature Deformation, Fatigue, Fracture Mechanics, Structure – Property Correlation
Kamaraj, M. Ph. D. (IIT Madras)	Mechanical Behaviour, Creep, High Temperature Materials, Life Assessment, Surface Engineering
Prathap Haridoss Ph.D. (Univ. of Wisconsin, USA)	Fuel Cells, Rechargeable Batteries, Electrochemistry, Materials Characterization
Raghunatha Rao, B. Ph.D. (IIT Madras)	Materials Technology, Heat Treatment, Failure Analysis
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.
Uday Chakkingal Ph.D., (Rensselaer Poly Inst., USA)	Materials Processing and Characterization, Aluminium Alloys, Surface Coatings
Emeritus Professor:	
Radhakrishnan, V.M. Ph.D. (IIT Madras)	Mechanical Behaviour, Creep, High Temperature Materials, Life Assessment
Visiting Faculty:	
Nagarajan, K. V. Ph.D. (KIEV Poly Inst., Ukraine)	Material Processing of Aerospace Alloys, Joining of Titanium Alloys and Maraging Steels

Name and Qualification	Major area of specialization
Hari Kumar K.C. Ph D. (IIT Delhi)	Computational Thermochemistry, Phase Diagrams, CALPHAD
Scientific Officers:	
Annamalai, S. M.S. (IIT Madras)	Metal Forming, Forming of P/M Components & Material Testing
Jothinathan, G. M.Tech. (IIT Madras)	NDT, Metal Casting, Electro Met., Corrosion, Ceramics

Short Term Courses/Workshop/Seminars/Symposium/Conferences organized by the faculty members:

Sl. No.	Co-ordinators	Title	Institution	Period
Workshop/Courses:				
1.	Dr. K. Prasad Rao Mr. G. Jothinathan	Welding Technology & Inspection	IIT Madras	10.05.2002 & 11.05.2002
2.	Dr. K. Prasad Rao Dr. S.K. Seshadri Mr. G. Jothinathan	Non Destructive Testing with Demonstration of NDT Methods	IIT Madras	27.07.2002
3.	Dr. M. Balasubramanian	Fibre Reinforced Thermoset Plastics	IIT Madras	02.09.2002 - 07.09.2002
4.	Dr. R. Devanathan	Interpretation of Electron Diffraction Patterns	IIT Madras	07.09.2002
5.	Dr. M. Kamaraj	Industrial Surface Engineering	IIT Madras	10.12.2002 & 11.12.2002
6.	Dr. K. Prasad Rao Dr. T.S. Prasanna Kumar Mr. B. Vamsi Krishna	Near-Net-Shape Casting Process – Lost Foam Casting Current Trends	IIT Madras	26.12.2002
7.	Dr. K. Prasad Rao Mr. G. Jothinathan	Welding Technology & Inspection	IIT Madras	31.01.2003 & 01.02.2003
8.	Dr. R. Devanathan Dr. T.S. Sampath Kumar	Practical Electron Microscopy	IIT Madras	12.02.2003
9.	Dr. K. Prasad Rao Mr. G. Jothinathan Mr. B. Vamsi Krishna	Failure Analysis of Industrial Components	IIT Madras	14.03.2003
Symposia:				
1.	Dr. K. Prasad Rao Dr.S. Ganesh Sundara Raman Mr. G. Jothinathan Dr. M. Kamaraj Dr. T.S. Sampath Kumar	Fourth National Symposium of Research Scholars on Metals and Materials	IIT Madras	27.09.2002 & 28.09.2002
TAP:				
1.	Dr. S.S. Bhattacharya	Mathematical Treatment of Metal Forming for Industrialists	IIT Madras	30.01.2003
Refresher Course:				
1.	Dr. T.S. Sampath Kumar & K.V. Rama, RSIC	UGC Workshop on Analytical Instrumentation	IIT Madras	17-28 Feb., 2003

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
Conferences:				
1.	Dr. V. Sampath	Two-day course on Shape Memory Alloys	National Aerospace Lab., Bangalore	April 2-3, 2002
2.	Dr. M. Balasubramanian	Progress in Composite Materials	Mumbai	18-20 Oct., 2002
3.	Dr. M.Kamaraj	Indo-French Workshop on Thermal Spray Coatings Science and Technology	Hyderabad	25-27 Nov., 2002
4.	Dr. T.S. Sampath Kumar	X Indian Endodontic Society National Conference	Mangalore	12 th Nov. 2002
		20 th Tamil Nadu State Dental Conference	Tiruchirappalli	29 th Nov 2002 – 1 st Dec. 2002

Sl. No.	Name of Faculty	Title	Institution	Period
5.	Dr. S.K. Seshadri	Seventh International Symposium on Advances in Electrochemical Science and Technology	Chennai	27-29 Nov., 2002
6.	Dr. M. Balasubramanian	International Conference on Plastics and Environment – Opportunities & Challenges	New Delhi	24-25 Feb, 2003
Seminar:				
1.	Dr. M. Balasubramanian	Scientific Research & Industrial Development in Glass & Ceramics	Kolkata	7-9 Dec., 2002

Special Lectures delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr.P. Venugopal	Cold Extrusion of Sintered Iron Preforms	Sri Venkateswara Engg. College, Sriperumbudur Dec. 19-21, 2002
		Role of Metal Forming Machines in Metal Forming -under Advances in Metal Forming Conducted by	IGCAR and IIM (IGCAR Chapter) December 2002
		Metal Forming Techniques	Combat Vehicles Research and Development Orgn. Feb. 18-22, 2003
2.	Dr. T.S. Sampath Kumar	Functionally Smarter Bioceramics	Indian Endodontic Society Nov. 12 – 15, 2002
3.	Dr. K. Prasad Rao	Current Trends in Welding Processes and Applications	CLRK May 4, 2002
		Current Trends in Welding Processes	ISNT, Chennai June 2, 2002
4.	Dr.R. Devanathan	Applications of Accelerators in Materials Science	Madras University, Chennai Jan. 30, 2003
5.	Dr. M. Balasubramanian	Materials Characterisation Techniques	Owens coming India Ltd., Mumbai, Aug. 21, 2002
6.	Dr.T.S. Sampath Kumar	Functionally Smarter Bioceramics	XIDS National Conference 14 th Nov. 2002
		Creating Awareness for Bone Substitutes in Minor Dental Surgery	20 th TNSD Conference 1 st Dec. 2002

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of visit
1.	Dr. S. S. Bhattacharya	Germany	April–May, 2002	Indo-German DST-BMBF Exchange
2.	Dr. S. S. Bhattacharya	U.S.A.	May – July 2002	Indo-US Project
3:	Dr. R. Devanathan	Germany	05.06.2002 - 04.07.2002	Indo-German Collaboration on "Computer Simulation of Defects in Semiconductors" (Indo-German DST-BMBF Exchange for a month)

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr. K. Prasad Rao	Keith Hertley Memorial Lecture award	National Welding Seminar	Contributions to the field of welding	Jan. 23-25, 2003
2.	Dr. T.S. Sampath Kumar with Dr. Ram Kumar, Mr. Sivarama-krishnan and Mr. Madhanasundar	First Best Technical paper	Indian Dental Association T.N. State Branch	Excellence in Technical Content	Dec 1, 2002

4.11.4. Design and Development Activities:

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

* Fretting fatigue test set up (Dr. S. Ganesh Sundara Raman)

* Microwave Processing of functionally graded bioactive structure (Dr. T.S. Sampath Kumar)

4.11.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinator(s)
1	Nanomaterials and nanotechnology	2003-2006	DST	105.00	Dr.K. Prasad Rao
2	Cost Effective Weld Seam Tracking and Adaptive Control using Optical Sensors and Neural Networks	2003-2006	DST	14.50	Dr. K. Prasad Rao Dr. M. Kamaraj
3	Improvement of Mechanical Properties of 2219 N-alloy Welds	2003-2006	ISRO	14.95	Dr. K. Prasad Rao Dr. M. Kamaraj
4	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 & Dr. S.D. Pathak
5	Applicability of equal channel angular extrusion to the processing of aluminium alloys	2003-2006	DST	19.83	Dr. Uday Chakkingal Dr. P. Venugopal & Dr. S. S. Bhattacharya
6	Development of sol-gel protective coating on metals	2002-2005	UGC	3.31	Dr.M.Balasubramanian
7	Fretting Fatigue Behaviour of a Structural Steel	2002-2005	DST	7.68	Dr.S.Ganesh Sundara Raman
8	Sol gel processing of advanced ceramic fibres	2002-2005	MHRD	8.00	Dr.M.Balasubramanian & Dr.P.Alagusundaramoorthy
9	Production and Characterization of Carbon Nano-tubes	1999-2002	NBB	20.25	Dr. P. Kesavan Nair
10	Characterisation of Semiconductor Nanocrystals produced by Ion Implantation	From 1999	Inter-Univ. Consortium for DAE facilities	0.78	Dr. R. Devanathan Dr. C. Vijayan
11	Modernisation of NDT Lab.	From 2000	MHRD	15.00	Dr. S.K. Seshadri Mr. G. Jothinathan
12	Study of Crack Initiation and Propagation in Nuclear Components under LCF	2001-2004	AERB	11.39	Dr. Uday Chakkingal Dr. R. Devanathan
13	Pre- and Post-Deformation Studies on Superplastically Formed Ti-6Al-4V	2001-2003	ISRO-IITM	7.16	Dr.S.S.Bhattacharya Dr. S. Ganesh Sundara Raman
14	Improvement of Corrosion Resistance of Al alloys by Surface Modification	2001-2004	MHRD	10.50	Dr. K.Prasad Rao
15	Representation of Composite Materials in Solid Modeling for Finite Element Analysis through PATRAN	2001-2003	ISRO - IITM	10.94	Dr. T.S. Prasanna Kumar
16	Expert Systems for Welding of Aerospace Alloys	2001-2003	ISRO - IIT(M)	6.00	Dr.K. Prasad Rao Dr. M. Kamaraj
17	Design and Development of ESR spectrometer for Radiation Dosimeter	1966-2003	AERB	29.70	Prof.S.P. Venkatesan Dr. T.S.Sampath Kumar
18	Development of Advanced Ultrasonic NDE Methods for Imaging of Tight Cracks in Thin Shells	2001-2003	ISRO - IIT(M)	8.22	Dr. Krishnan Balasubramanian Mr. G. Jothinathan
19	Studies on the Superplastic Deformation Behaviour of Nanocrystalline Ceramics	2001-2003	Indo-German	-	Dr.S.S. Bhattacharya Dr. S.D. Pathak

Sl. No	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinator(s)
20	Studies on Natural Fibre Reinforced Polymer Composites	2001-2003	Indo-German	-	Dr. S.K. Malhotra Dr.M.Balasubramanian
21	Computer Simulation Study of Defects Produced by Ion Implantation in SiC	2001-2003	Indo-German	-	Dr. R. Devanathan
22	Structure and Properties of PbS Nanocrystals produced by Ion Implantation	2001-2003	DST	3.84	Dr. R. Devanathan
23	Studies on Ni-B-Si ₃ N ₄ Composite Coatings	2001-2004	CSIR	9.57	Dr. S.K.Seshadri
24	Feasibility studies on Composites waste recycling	2001-2002	DST	5.85	Dr.M.Balasubramanian Dr. P.Alagu Sundaramoorthy
25	Development of Constitutive Models of Smart Materials	2001-2003	NPSM	24.50	Dr.M.S. Sivakumar Dr. V.Sampath

Industrial Consultancy Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount Rs.	
1.	Dr. S.D. Pathak	Fatigue testing of steel tube	Tube Products India Limited	14285/-	
			-do-	14265/-	
		Testing of samples	Servall Engg. Works P. Ltd.	21850/-	
2.	Dr. K. Prasad Rao	Charactern. of Super Alloy	Kartik Steels Limited	17142/-	
		Exam. of prime quality tin plate	Directorate of Revenue Intelligence	3000/-	
			Technical Opinion	Goyal Ispat Limited	5000/-
				-do-	5000/-
				-do-	5000/-
				Kothari Impex Exports	5000/-
			Arun Vyuapar Udyog Limited	5000/-	
		Testing of samples and Technical Opinion	The Addnl. Commissioner of Customs, Tutitorin	25000/-	
		Technical Opinion	The Supdt -do-	15000/-	
		Testing of Samples and Technical Opinion	The Addnl. Commissioner of Customs, Tutitorin	3000/-	
3.	Dr. B. Raghunatha Rao	Experimental Studies	Ragas Dental College & Hospital	9000/-	
		Metallurgical Investigation of tube samples	Tube Products of India Ltd.	13000/-	
			-do-	13000/-	
		Inclusion rating for 4 samples	-do-	10000/-	
		To evaluate 5 relics by Optical Microscope	Scannray Metallurgical Services	7500/-	
		Investigation of Materials of Piles	Chief Bridge Engineer, S. Rly.	20000/-	
Metallurgical Inspection	Sabari Exim Pvt. Ltd.	30000/-			
4.	Dr. C.V.Gokularathnam	SEM Analysis	W.S. Industries India Ltd.	6000/-	
			Avinashlingam University	1000/-	
			Imjectoplast Pvt.Ltd.	3000/-	
			Dept.of Civil Engg., Anna Univ.	2000/-	
			Carbprimdi, Universal Ltd.	6000/-	
			W.S. Industries India Ltd.	9000/-	
			-do-	6000/-	
			Modern Insulators Limited	3000/-	
		Microstructure Analysis	-do-	3000/-	
		Sputter Coating of 36 samples	Tamilnadu Govt. Dental College & Hospital	7200/-	
SEM Analysis	CLRI, Chennai	1000/-			
	Bhushan Steels & Strips Ltd.	6000/-			

Sl. No.	Name of Faculty	Title	Industry	Amount Rs.
	Dr. C.V.Gokularathnam	Morphology of Samples	Shasun Chemicals & Drugs Ltd.	21000/-
		Microstructure Analysis on Porcelain Samples	Modern Insulators Ltd.	3000/-
		SEM Analysis	W.S. Industries India Ltd.	9000/-
			-do-	6000/-
			Shasun Chemicals & Drugs Ltd.	3000/-
			Ennore Foundries Ltd.	2850/-
			Membrane Technologies Ltd.	18000/-
			Delphi – TVS	2850/-
			VEL's College of Pharmacy	1000/-
		Microstructure Analysis	Modern Insulators Limited	6000/-
		SEM Analysis	Scaanray Metallurgical Services	45000/-
		SEM Analysis	Carborundum Universal Ltd.	12000/-
		SEM Microfossils	Dept.of Geology, National College	9048/-
		SEM Analysis	CLRI, Chennai	9000/-
		SEM Analysis	Amalgamations Valeo Clutch Ltd.	11000/-
		SEM Study	Ragas Dental College	10500/-
SEM Analysis	CLRI, Chennai	2000/-		
SEM Photographics	Meeankshi Ammal Dental College	5000/-		
5.	Dr. P. Kesavan Nair	Chemical Analysis	TCP Limited	10000/-
		Analysing Form B. Content by Powder XRD	Shasun Chemicals & Drugs Ltd.	102000/-
		Sample for XRD Analysis	Orchid Chemicals & Pharmaceuticals Limited	10000/-
		Analysing Form B	Shasun Chemicals & Drugs Ltd.	44200/-
		X-ray Analysis	Sri Durga Profiles	15000/-
		Stress Analysis	Sundaram Clayton Limited	12600/-
		XRD Analysis of Drug Samples	Sanmar Speciality Chemicals Ltd.	4000/-
		XRD Analysis	Shasun Chemicals and Drugs Ltd.	47600/-
		XRD Analysis	Shasun Chemicals and Drugs Ltd.	98600/-
		X-ray Diffraction Analysis	VEL's College of Pharmacy	8000/-
		X-ray Analysis	Enmas Andrits Pvt. Ltd.	10000/-
		XRD Analysis	Orchid Chemicals & Pharmaceutical Ltd.	20000/-
		Analysing form B content by Powder XRD	Shasun Chemicals & Drugs Ltd.	40800/-
		XRD Analysis of Drug Samples	Shasun Chemicals & Drugs Ltd.	44200/-
		Rane Brake Linings Ltd.	Sample for checking of asbestos	5000/-
		Phase Analysis on Nitrided Samples	Autolec Industries Limited	8000/-
		Powder X-ray Diffraction Studies	Sanmar Speciality Chemicals Ltd.	12000/-
		One boride samples	CECRI, Karaikudi	4000/-
		X-ray Analysis on a Nitrided Samples	Autolec Industries Limited	4000/-
		Testing of Stress Analysis on Worm Wheels	Madras Engg. Industries Pvt. Ltd.	15000/-
		Testing of Elastic Rail Clips	Vigilance Branch, S. Rly.	195000/-
Retained Austenite Estimation	TVS Autolec Limited	5000/-		
X-ray Analysis on one sample	Rane Brake Linings	4000/-		

Sl. No.	Name of Faculty	Title	Industry	Amount Rs.
		Stress Analysis on Springs	Stumpp, Schule and Somappa Ltd.	7830/-
		XRD Analysis	Shasun Chemicals & Drugs Ltd.	37400/-
		Qualitative XRD on Furnace Deposites	Delphi-TVS Diesel Systems Ltd.	5000/-
		X-ray Analysis on four Clopidogrel Samples	Shasun Chemicals & Drugs Ltd.	14280/-
		X-ray Analysis on Two Coffiofur Sodium Samples	Orchid Chemicals & Pharmaceuticals Ltd.	10500/-
		X-ray Analysis on a Nirtided Sample	Autolec Industries Limited	4200/-
		X-ray Analysis on Six Clay samples	Crescent Engineering College	6000/-
6.	Dr. S.K. Seshadri	Expert Opinion on Steel sea water pipe line	NIOT, Chennai	15000/-
7.	Dr. M. Kamaraj	Physical Metallurgy test	Natesan Procesion Components (P) Ltd.	30000/-
8.	Dr. S. Ganesh Sundara Raman	Metallurgical Analysis of tubes	Tube Products of India Limited	22800/-

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr. S.D.Pathak	Short Crack Growth Behaviour of SA333 Gr.6 Carbon Steel	BARC, Mumbai	4.95
2.	Dr.M. Kamaraj Dr. K. Prasad Rao	Structure-Property Correlation of Marine Propeller Materials	Univ. of Tekno Klogi MaRA, Malaysia	1.76
3.	Dr.N.R.Neelakandan Dr.M.Balasubramanian Dr.Susy Varughese	Adequacy/failure analysis of Non-Metallic Expansion Joints	BHEL, Trichy	3.21
4.	Dr.M.Balasubramanian	Development of GRP Gratings by Compression Moulding	M/s. Technocraft, Chennai	1.50

Journal Editorial Boards:

Sl. No.	Name of Faculty	Level	Journal
1.	Dr. T.S. Sampath Kumar	Associate Editor	Trends in Biomaterials & Artificial Organisations V16, No.1, July 2002

Research Publications:

No. of papers published in Refereed National Journals	..	6
No. of papers published in Refereed International Journals	..	23
No. of papers presented in National Conferences	..	36
No. of papers presented in International Conferences	..	11

In Refereed National Journals:

1. M.Vasudevan, A.K.Bhaduri, Baldev Raj and K.Prasad Rao "Bayesian Neural Network Analysis of The Compositional Variations on Ferrite Number in 316LN Austenitic Stainless Steel Welds", Trans.Indian.Inst. Metals, Vol.55, No.5, October 2002, pp 389-396.
2. V.Viswabaskaran, F.D.Gnamam and M.Balasubramanian, Study on Utilisation of Neyveli Clay for Value added Ceramics, Transactions of the Indian Ceramic Society, 61 (2002) 93-98.
3. V.Viswabaskaran, M.Balasubramanian and F.D.Gnamam, Characterisation of Aluminous Clays from Tamilnadu, Transactions of the Indian Ceramic Society, 61 (4) (2002) 176-180.
4. D.Siva Rama Krishna, C.K.Chaitanya, S.K. Seshadri & T.S.Sampath Kumar, "Fluorinated hydroxyapatite by hydrolysis under microwave I radiation", Trends. Biomat. & Artificial Organs, 16(2002) 15
5. M Palaniappa and S K Seshadri, "Corrosion studies on electroless Ni-W-P ternary alloy coatings", Trans. Metal Finish Assoc. of India, 2002, vol.11(3-4), 127-132.
6. R Narayanan and S K Seshadri, "Corrosion of high voltage anodic oxide coating on Ti-6Al-4V in physiological solutions", Trans. Metal Finish Assoc. of India, 2002, vol.11(3-4), 161-164.

In Refereed International Journals:

1. M. Vasudevan, A.K. Bhaduri, Baldev Raj, K. Prasad Rao, "Delta ferrite prediction in stainless steel welds using neural network analysis and comparison with other predictions methods", *Journal of Material Processing Technology* 6980(2003) 1-9.
2. G.M Reddy, A.A. Gokhale and K.P. Rao, "Effect of the ratio of peak and background current durations on the fusion zone microstructure of pulsed current gas tungsten arc welded Al-Li alloy". *Journal of Materials science Letters* 21, 2002, 1623-1625.
3. M. Vasudevan, M. Muruganath, A.K. Bhaduri, Baldev Raj and K. Prasad Rao, "Bayesian Neural Network Analysis of Ferrite Number in Stainless Steel Welds", *Science and Technology of Welding and Joining*, in press.
4. M. Vasudevan, A.K. Bhaduri, Baldev Raj and K. Prasad Rao, "Delta Ferrite Prediction in Stainless Steel Welds using Neural Network Analysis and Comparison with other Prediction Methods", *J Mater. Processing Technol.*, 6980, 2003, pp. 1 - 9.
5. G. M. Reddy, A. A. Gokhale and K. P. Rao, "Effect of the Ratio of Peak and Background Current Durations on the Fusion Zone Microstructure of Pulsed Current Gas Tungsten Arc Welded Al-Li Alloy", *J Mater. Sci. Lett.*, 21, 2002, pp. 1623 - 1625.
6. P. Johan Singh, D.R.G. Achar, B. Guha and Hans Nordberg: Fatigue Life Prediction Of Gas Tungsten Arc Welded AISI 304L Cruciform Joints With Different LOP Sizes' *International Journal of Fatigue* Vol.25, pp1-7, 2003
7. P. Johan Singh, D.R.G. Achar, B. Guha and Hans Nordberg: Influence Of Weld Geometry With Processes On Fatigue Crack Growth Characteristics Of AISI 304L Cruciform Joints Containing LOP Defects, 'Science & Technology of Welding and Joining', Vol.5, No.5, pp306-313, 2003.
8. P. Johan Singh, B. Guha and D.R.G. Achar: Fatigue Life Prediction Of GTA Welded AISI 304L Cruciform Joints With LOP defect using local stress approach. 'Engineering Failure Analysis' 2002 Vol.10, pp25-36, 2003
9. P. Johan Singh, B. Guha & D.R.G. Achar' Fatigue Life Improvement on AISI 304 Cruciform Joints by Cryogenic Treatment'. *Engineering Failure Analysis-2002* Vol.10, pp1-12, 2000
10. P. Johan Singh, B. Guha and D.R.G. Achar' Fatigue life prediction using two stage model for AISI 304L Cruciform joints with different fillet geometry, failing at toe. *Science and Technology of Welding and Joining*, Vol.8, No. 1, pp. 69-75, 2003
11. P. Johan Singh, B. Guha & D.R.G. Achar' Fatigue Life Prediction of AISI 304L Butt Joints with different Bead Geometry using Local Stress Approach (LSA)' *Science & Technology of Welding and Joining* (in Press), -2003
12. P. Johan Singh, B. Guha and D.R.G. Achar: Fatigue Life Prediction Of AISI 304 Butt Welded Joints Failing at the Toe with different Bead Geometry using Local Stress Approach' *Engineering Failure Analysis* (in Press), -2003
13. P. Johan Singh, B. Guha and D.R.G. Achar: 'Fatigue life prediction of Stainless Steel Welded Plate of CCT Geometry based on Lawrence's local stress approach', *Engineering failure Analysis*-(in Press), -2003
14. P. Johan Singh, B. Guha and D.R.G. Achar: 'Fatigue tests and estimation of crack initiation and propagation lives in AISI 304L butt welds with reinforcement intact', *Engineering Failure Analysis*, (in Press), -2003.
15. V. Viswabaskaran, F.D. Gnanam and M. Balasubramanian, "Mullitisation behaviour of South Indian Clays", *Ceramics International* Vol. 28, 2002, pp. 557-564.
16. W.J. Weber, W. Jiang, F. Gao and R. Devanathan, "Ion-Solid Interactions and Defects in Silicon Carbide", *Nuclear Instruments and Methods in Physics Research B*, 190(2002), 261-265.
17. K.H. Reddy, P. Kesavan Nair, B. Ramamurthy, "Investigations on the Influence of Macro Residual Stresses and Micro Strain on the Corrosion Behaviour of Ground Low Carbon Steel Components", *J. Inst. Engineers (I)*, 83, pp. 42-45, Oct. 2002.
18. R. R. R. Murugan, T.S. Sampath Kumar, and K. Panduranga Rao, "Fluorinated bovine hydroxyapatite: Preparation and characterization", *Mat. Lett.* 57(2002) 429-433
19. R. Murugan, K. Panduranga Rao, T.S. Sampath Kumar, "Microwave Synthesis of bioresorbable Carbonated Hydroxyapatite using Goniopora", *BIOCERAMICS* 15, P51
20. Sivaprasad Katakam, D. Siva Rama Krishna and T. S. Sampath Kumar, "Microwave processing of functionally graded bioactive materials", *Materials Letters* (in press)
21. Ahmed Khan, Uday Chakkingal, and P. Venugopal, Analysis of forming loads, microstructure development, and mechanical property evolution during equal channel angular extrusion of a commercial grade aluminium alloy, *J. Materials Processing Technology*, vol. 135, (2003), 59-67.
22. D. Durgalakshmi, B. Vamsi Krishna, P. Venugopal and D. R. G. Achar, "Studies on Cold Solid State Joining of Dissimilar Powder Metallurgical Preforms", *Journal of Material Processing Technology*, Vol. 132, No. 1-3 (2003), 293-304
23. Ganesh Sundara Raman, S. and Radhakrishnan, V. M., On Cyclic Stress-Strain Behaviour and Low Cycle Fatigue Life. *Materials & Design*, 23, 249-254, 2002.

In Proceedings of National Conferences:

1. M. Balasubramanian, "Study on environmental degradation of polyester resins and composites", Conference on Progress in Composite Materials, Mumbai, Oct. 18-20, 2002.
2. J. Chandradass and M. Balasubramanian, "Sol-Gel Processing of Alumina Spheres", National Seminar on Scientific Research & Industrial Development in Glass & Ceramics, 7-9, Dec, 2002.
3. Viswabaskaran, F.D. Granam and M. Balasubramanian, "Effect of MgO, TiO₂ and Y₂O₃ on Mullitisation behaviour of South India Clays, National Seminar on Scientific Research & Industrial Development in Glass & Ceramics, 7-9, Dec. 2002
4. N.Ramesh Babu, Sushant Manwatkar, K. Prasada Rao and T.S.Sampath Kumar, Bioactive Coatings on 316L Stainless Steel Implants, Proc. of the 13th Nat. Conf. of SBAOI, Kolkatta (in press)
5. Optimization of Process Parameters in Cold Solid State Joining of Dissimilar P/M Preforms, B. Vamsi Krishna, P. Venugopal and K. Prasad Rao, 4th National Symposium of Research Scholars, 27-28, Sept. 2002, IIT Madras, Chennai. (AWS International - India Chapter's Best paper award)
6. Influence of Process Parameters in Joining of Dissimilar P/M Preforms by Tungsten "Inert Gas Welding, Suresh M. V., Vamsi Krishna. B, Venugopal. P and Prasad Rao. K, National Symposium of Research Scholars, 27-28, Sept. 2002, IIT Madras, Chennai.
7. Ramakrishna Naidu, N. K. and Ganesh Sundara Raman, S., Plain Fatigue and Fretting Fatigue Behaviour of an Aluminium Alloy 6061, Fourth National Symposium of Research Scholars, IIT Madras, Chennai, September, 2002.
8. Venkateswaran, P., Ganesh Sundara Raman, S. and Pathak, S. D., Behaviour of Physically Short and Long Fatigue Cracks in a Magnesium Alloy AZ91D, Fourth National Symposium of Research Scholars, IIT Madras, Chennai, September, 2002.
9. Ganesh Sundara Raman, S. and Amol A. Gokhale Hot Tensile Deformation Behaviour of Scandium containing Al-Mg Alloys. National Conference on 'Light Metals and Composites for Strategic and Societal Needs (LMCSSN-2002)', Thiruvananthapuram, October, 2002.
10. Ramakrishna Naidu, N. K. and Ganesh Sundara Raman, S., Influence of Shot Peening on Plain Fatigue and Fretting Fatigue Behaviour of An Al-Mg-Si Alloy, *ibid*.
11. Venkateswaran, P., Ganesh Sundara Raman, S. and Pathak, S. D., Fatigue Crack Growth Studies on a Magnesium Alloy AZ91D in the Short and Long Crack Regimes, *ibid*.
12. S.R.Koteswara Rao, K.Suman Nelson, K.Prasad Rao, M.Kamaraj, K.Chenniappan and P.P.Sinha: "Development of An Expert System Module for Weld Joint Design using CLIPS and VC++", National Welding Seminar, Chennai, 7-9 January 2002.
13. K.SrinivasaRao, K.Prasad Rao, "A New Technique for Improving Corrosion Resistance Of High Copper Containing Aluminium Alloys".- 4th NSRS on Metals and Materials at IIT-Madras, Sept 27-28 2002.
14. V.P.Balaji, K. Prasad Rao, B.Guha, " Fatigue Long Crack Growth Behaviour on Magnetically arc oscillated TIG welding of AFNOR 7020 alloy", 56th Annual Technical Meeting of the Indian Institute of Metals, Badodara, Nov 14-17, 2002, A-35.
15. V.P.Balaji, K. Prasad Rao, B.Guha, " Fatigue Long Crack Growth Behaviour on Magnetically arc oscillated TIG welding of AFNOR 7020 alloy", 56th Annual Technical Meeting of the Indian Institute of Metals, Badodara, Nov 14-17, 2002, A-35.
16. K.Srinivasa Rao, K. Prasad Rao, "Application of Retrogression and Reaging Heat Treatments to 2219 Aluminum Alloy", 56th annual technical meeting of the Indian institute of metals, vadodara, Nov 14- 17, 2002, A-37.
17. G.Madhusudan Reddy, Amol A.Gokhale, K. Prasad rao, "Effect of current and arc oscillation on the microstructure, pitting corrosion and tensile behaviour of 1441 grade aluminum-lithium alloy welds, 56th Annual Technical Meeting of the Indian Institute of Metals, Badodara, Nov 14-17, 2002, A-43.
18. S.R.Kotesawara Rao, P.Nagaraju, K.Prasad Rao, M.Kamaraj, K.Chennaiappan, P.P. Sinha, "Expert system module for welding and post weld heat treatment of Ti-6Al-4V", 56th Annual Technical Meeting of the Indian Institute of Metals, Badodara, Nov 14-17, 2002, A-43.
19. K.Srinivasa Rao, K. Prasad Rao, "Corrosion protection of high copper containing aluminium alloy 2014 by surface modification", 56th Annual Technical Meeting of the Indian Institute of Metals, Badodara, Nov 14-17, 2002, A-57.
20. K.Srinivasa Rao, S.R.Koteswara Rao, K.Prasad Rao, "Effect of Pulsing and arc oscillation on improving corrosion resistance of AA2219 aluminium alloy TIG Welds".--- Proceedings of National Welding Seminar-2002, Science City, Kolkata, India, January 23-25, 2003.
21. S.R.Koteswara Rao, M.Rama Kiran, K.Prasad Rao, M.Kamaraj, K.Chenniappan, P.P.Sinha: " An Expert System for Welding of some Aluminum Alloys- Process and Parameter Selection", Proceedings of National Welding Seminar-2002, Science City, Kolkata, India, January 23-25, 2003, A-24.
22. K. K. Srinivasan, S.S.Bhattacharya and P. Venugopal, "The Development of a Bulk Superplastic Al-Si Eutectic Alloy by Equi-Channel Angular Extrusion", NMD, ATM, Nov. 2002.

23. P. Venkateswaran, S. Ganesh Sundara Raman and S.D. Pathak, "Tensile and Short Fatigue Crack Growth Behaviour of a Die-Cast Magnesium Alloy Az91D", NMD, ATM, Nov. 2002
24. K. Kumaran, R. Arjun, Uday Chakkingal and R. Devenathan, "Influence of Notches on the Low Cycle Fatigue Behaviour of SA 333 Grade 6 steel", NMD, ATM, Nov. 2002
25. H.C. Kamath, Phani Kishore and T.S. Prasanna Kumar, "Aluminium Alloy Near Net Shape Castings by Vibrating Metallic Moulds: Potential For Quality Improvement", NMD, ATM, Nov. 2002
26. V. Anbazhagan, K.G.K.Murti and S. Sundaresan, "Improvement of Toughness in Ferritic Stainless Steel Welds, Fourth National Symposium of Research Scholars (NSRS-4), 27 / 28th Sept. 2002
27. G.D. Janaki Ram, G.M. Reddy, A. Venugopal Reddy and K. Prasad Rao, "Effect of Current Pulsing on the Microstructure and High Temperature Tensile Properties of Inconel 718 GTA Welds", Fourth National Symposium of Research Scholars (NSRS-4), 27 / 28th Sept. 2002.
28. K. Krishnaveni, T.S.N., Sankaranarayanan and S.K.Seshadri, "Structural Characterisation of Ni-B Alloy Films", Fourth National Symposium of Research Scholars (NSRS-4), 27 / 28th Sept. 2002.
29. V. Ravindranath, Abhijat Goel, M.S. Ramachandra Rao and C.V.Gokularathnam, "Effect of Microstructural Modification by PBO Addition on The Electrical Resistivity of $LA_{0.7}$, $CA_{0.3}$, MNO_3 ", Fourth National Symposium of Research Scholars (NSRS-4), 27 / 28th Sept. 2002.
30. A. Satya Devi, M.S. Shivakumar and S.S. Bhattacharya, "A Review of Different Models Describing Multiaxial Low Cycle Fatigue", Fourth National Symposium of Research Scholars (NSRS-4), 27 / 28th Sept. 2002.
31. Sivaprasad Katakam, D.Siva Rama Krishna and T.S.Sampath Kumar, "Processing of Calcium Phosphate Based Functionally Graded Bioceramics Using Microwaves", 27/28th Sept.2002.
32. D.N.Sreenivas and B.Ragunatha Rao, Improved Heat Treatment of Spring Steel by New Quenching Bath", 27/28th Sept. 2002.
33. K.Suresh Babu R.Devanathan and C.Vijayan "Quantum Size Effects in Pbs Nanocrstals Synthesized by Chemical Routes " 27/28th Sept. 2002.
34. B.Vamsi Krishna, P.Venugopal and K.Prasad Rao "Optimization of Process Parameters in Cold Solid State Joining of Dissimilar P/M Preforms", 27/28th Sept. 2002.
35. T.Venugopal, K.N.Krishnan, K.Prasad Rao, "Some Studies on 7075 "Aluminum Alloy Friction Stir Welds" 27/28th Sept. 2002.
36. N.Ramesh Babu, T.R.Ramachandran, K.Balasubramaniam and S.K.Seshadri, "Grain refinement and modification of hypoeutectic Al-7%Si alloy" 4th NSRS, Chennai, 27-28 Sept 2002.

In Proceedings of International Conferences:

1. K.Srinivasa Rao, D.Ravikumar, S.R.K.R.Koteswara Rao, K.Prasad Rao, "Some Studies on pitting corrosion of AA2219 alloy and its welds."—International Welding Symposium on Emerging Trends in Welding, Hitex Exhibition Centre, Hyderabad, Feb 22-23rd, 2003.
2. K.Seshank, S.R.Koteswara Rao, Yogendra Singh and K.Prasad Rao: "Modeling of Bead Geometry in TIG Welds of Aluminum using Artificial Neural Networks", Proceedings of International Welding Symposium on Emerging Trends in Welding, Hyderabad, Feb 22-23rd, 2003.
3. M. Balasubramanian and P. Alagusundaramoorthy, "Recycling Options for the Reinforced Plastics", International Conference on Plastics and Environment – Opportunities & Channenges, New Delhi, Feb. 24-25, 2003
4. A Pavan Kumar, S. Karthik, Annamalai Muthu Karuppan and S.S. Bhattacharya, "Development of an ANN Controlled Genetic Algorithm for the Numerical Validation of a Model for Superplastic Deformation, IASTED International Conference on Applied Informatics, Innsbruck, Austria, Feb. 11-13, 2003.
5. M. Sireesha, J. Swaminathan, S. K. Albert, M. Kamaraj, and S. Sundaresan, High Temperature deformation behavior of dissimilar metal joints between modified 9Cr-1Mo steel and Alloy 800, International Conf. on Advanced Structural steels, ICASS-2002, Tsukuba, Japan, May 22-24 2002.
6. V. Sampath, A. Murugaiyan and M.S.Sivakumar, "Metallurgicval and Shape Memory Characteristics of Grain Refined Cu-Zu-Al Shape Memory Alloys", Int. Conf. on Smart Materials, Structures and Systems (ISSS-SPIE 2002), Bangalore 12-14, Dec. 2002.
7. R.Ramaswamy, R.Narayanan and S.K.Seshadri, "Oscillatory Iron/Electrolyte system and the screening of Corrosion Inhibitors", Seventh International Symposium on Advances in Electrochemical Science and Technology, Chennai, 27-29 Nov. 2002
8. M Palaniappa and S.K.Seshadri, "Corrosion studies on electroless Ni-W-P ternary alloy coatings", ASIA Interfinish 2002- International conference and Exhibition on Electroplating and Surface Finishing, New Delhi, 20-22 Nov. 2002
9. R.Narayanan and S.K.Seshadri, "Corrosion behaviour of high voltage anodic oxide coating on Ti- 6Al-4V in physiological solution", ASIA Interfinish 2002- International conference and Exhibition on Electroplating and Surface Finishing, New Delhi, 20-22 Nov. 2002

10. K.Krishnaveni, T.S.N.Sankaranarayanan and S.K.Seshadri, "Electrodeposited Ni-B alloy films: preparation and characteristics", ASIA Interfinish 2002- International conference and Exhibition on Electroplating and Surface Finishing, New Delhi, 20-22 Nov. 2002
11. Parasuraman S, M.Palaniappa and S.K.Seshadri, "Effect of pH on electroless Ni coatings", Surface Finishing, Goa., 20-22 Nov. 2002

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor & Designation	Date of Visit	Purpose of visit
1.	Dr. R. Ramaseshgan Research Engineer Kawasaki Limited Japan	09.05.2002	Interact with Faculty and deliver a lecture
2.	Dr. P.R.Harikrishna Varma Scientist in-charge Biomedical Technology Wing Sree Chitra Tirunal Institute of Medical Science & Technology, Thiruvananthapuram – 695 012	17.05.2002	
3.	Dr.M. Chakraborty Professor & Head Department of Metallurgical and Materials Engg IIT Kharagpur	04.07.2002	
4.	Prof. T.R. Anantharaman Kula Acharya (Chancellor) Ashram Atmadeep Centre for Studies and Research on India's Intellectual, Cultural and Spiritual Heritage Gurgaon – 122 002	08.07.2002	
5.	Dr. Anandh Subramaniam Regional Research Laboratory Bhopal – 462 026	23.07.2002	
6.	Prof. Dr. Ing. H.W. Hahn Thin Film Division Institute for Materials Science Darmstadt University of Technology Darmstadt, Germany	29.08.2002	
7.	Dr. Chandra P. Sharma Head, Biosurface Technology Division Biomedical Technology Wing Sree Chitra Thirunal Institute for Medical Science and Technology, Poojapura Thiruvananthapuram – 695 012	12.12.2002	
8.	Dr. T. Sundararajan National Institute for Materials, Tsukuba, Japan	06.01.2003	
9	Dr. H. Md. Roshan President Intellectual Capital Exchange, LLC 7363 N Mohawk Road, U.S.A.	08.01.2003	
10.	Dr. V. Subramaniya Sarma Leibniz Institute for Solid State and Materials Research (IFW), Helmholtz Street 20, 01069 Dresden, Germany	09.01.2003	
11.	Dr. Terence Lyons, Director Dr.Kenneth Goretta, Programme Manager, Mat. Sci. & Engg. Dr. Tae-Woo Park, Programme Manager, Math. & Computer Sci. Asian Office of Aerospace Research & Development (US &Japan)	10.02.2003	Interact with Faculty
12.	Dr. B.S. Murty Department of Metallurgical and Materials Engg. IIT Kharagpur – 721 302	17.02.2003	Interact with Faculty and deliver a lecture

Sl. No.	Name of the Visitor & Designation	Date of Visit	Purpose of visit
13.	Dr. R. Suryanarayanan Laboratoire de Physico-Chimie de l'Etat Solide Bat 414 Universite Paris-Sud 91405 Orsay, France	19.02.2003	-do-
14.	Mr. Bhanu Pant Head, Ti Alloys & Intermetallics Section MPD/MMG, VSSC/ISRO Thiruvananthapuram – 695 022	20.03.2003	Interact with Faculty and deliver a lecture
15.	Dr. M. Schaper, Professor of Materials Reliability, Technical University, Dresden, Germany	25.03.2003	Interact with Faculty

4.11.6 Other Activities:

Chapter Formation

The first local chapter (i.e. Chennai Chapter) of Society for Biomaterials and Artificial Organs – India was inaugurated on 4th Feb. 2003 by our Director, Prof.M.S. Ananth.

Dr. C.P. Sharma, Founder Chairman and Chief Guest honoured the inauguration by his presence.

Prof. S.K. Seshadri and Dr. T.S.Sampath Kumar of our Department were elected respectively as Chairman and Secretary-cum-Treasurer of the Chennai Chapter of the Society SBAOI during the AGM held on 4th Feb. 2003.

ASM Student Chapter Formation:

ASM Student Chapter Formation Function was held on 2nd Nov. 2002. Prof. Ravi Ravindran delivered a special talk.

Quiz Programme:

A quiz programme on Materials was conducted on 10th March 2003. Dr. S. Ganesh Sundra Raman & Dr. K. Prasad Rao were the Co-ordinators. This was organized by the Chennai Student chapter of ASM International, ASM International Chennai Chapter, IIM Chennai Chapter. The Department of Metallurgical Engineering and Metallurgical & Materials Students Association (METSA). UG Students from PSG College of Technology, Coimbatore, Government College of Engineering, Salem, National Institute of Technology, Warangal and IIT Madras participated in the Quiz. PSG College of Technology team won the first prize and IIT Madras team won the second prize.

Amalgam: METSA organized a one day technical fest programme Amalgam on 16 March.

METSA Lecture:

Four lectures were arranged by the METSA on different topics during 10–13 March. The experts from various departments of our institute who delivered interesting lectures were Prof. S.S. Gokhale, Prof. V. Balakrishnan, Prof. L.S. Ganesh and Dr. C. Vijayan.

Dr. P. Kesavan Nair served as an Expert on invitation from MHRD in Technical Metallurgy for Selection of Candidates for Scholarships offered by Belgian Government.

Dr. P. Kesavan Nair served as a member of NBA Accreditation Team at REC, Srinagar during 18 -21, July 2002.

Dr. S. Ganesh Sundara Raman has been invited to serve as a member of the Metal Sciences Division of Indian Institute of Metals, Kolkata.

Dr. M. Kamaraj attended a meeting on Remaining Life Assessment of Power Plant Components held on March 8, 2003 at CPRI, Bangalore.

4.12 DEPARTMENT OF OCEAN ENGINEERING

4.12.1. 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:

4.12.2. Academic programmes:

New Courses introduced:

Sl. No.	Course No.	Title
1.	OE 586	Design of Coastal Structures

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech	20	21	18	20	-	79
Dual Degree	4	6	4	4	4	22
M.Tech	6	9	-	-	-	15
M.S	9	10	11	4	-	34
Ph.D	5	5	8	4	2	24
Total	44	51	41	32	6	174

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. M.G. Muni Reddy,	Ph.D	SHOT 2002	Dec. 18-21,2002 IIT Kharagpur
2.	Mr.E.Vijayakrishna Rapaka	Ph.D	SHOT 2002	Dec. 18-21, 2002 IIT Kharagpur
3.	Mr. T. Rajesh Kannah	Ph.D	SHOT 2002	Dec. 18-21, 2002 IIT Kharagpur
4.	Mr. K. Praveen Reddy	M.S	SHOT 2002	Dec. 18-21, 2002 IIT Kharagpur
			HYDRO 2002	Dec. 16-17, 2002 IIT Bombay
Seminar:				
1.	Mr.E.Vijayakrishna Rapaka	Ph.D	NASHAR 2003	Feb. 20-22, 2003

4.12.3. 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

[Head]

J.S. Mani, Ph.D.(IIT, Madras)

Hydraulic and numerical modeling of Coastal and offshore Processes

S. Narasimha Rao, Ph.D.(IISc.)

Marine Geotechnical engineering, Seabed soil characteristics under static and dynamic loads, Foundations for coastal and offshore structures

M. R. Pranesh, Ph.D.(IISc.)

Soil-structure-fluid interaction studies, submarine pipelines, marine corrosion and control, Behaviour of materials in ocean environment, design of port structures, coastal process, marine surveying, marine

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 geotechniques
K. Rajagopalan, Ph.D.(IIT, Madras)	Computer aided analysis, Design of ship, underwater and offshore structures, Reinforced and pre-stressed concrete structures
V S. Raju, Dr.Ing.(Karlsruhe)	Marine geo-technical Engineering, Foundation design for onshore and marine structures.
V. Sundar, Ph.D.(IIT, Madras)	Wave-structure interaction, Coastal erosion and shore protection, Fluid flow problems
SP Subramanian, Ph.D.(IIT, Madras)	Geological oceanography, Engineering geology
R. Sundaravadivelu, Ph.D.(IIT, Madras)	Computer aided analysis, design and experimental studies of coastal and offshore structures
C.P. Vendhan, Ph.D. (IIT, Kanpur)	Computer aided analysis of Ocean, Civil and Aerospace structures, dynamics of floating bodies and structures

Associate Professors:

V. Anantha Subramanian, Ph.D., (IIT, Madras)	Naval Architecture, Ship model testing
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

Assistant Professor:

S. Surendran, Ph.D. (Yokohama National Univ., Japan)	Naval Architecture, Dynamics of mooring and surface towing ship model making and testing
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Short-term courses/Workshops/Seminars/Symposia/Conferences organized by the faculty members:

Sl. No.	Coordinator(s)	Title	Period
Workshop:			
1.	Prof. R. Sundaravadivelu	Short term course on "Coastal Structures"	Nov. 18-22, 2002
2.	Prof. J.S. Mani Dr. S. Surendran	Short term course on "Coastal Zone Management"	Mar. 17-19, 2003
3.	Prof. V.G. Idichandy	WAVEZ 2003 Cultural Technical Festival	Mar. 16, 2003
Seminar:			
1.	Prof. R. Sundaravadivelu	National Seminar on Harbour Structures (NASHAR - 2003)	Feb. 20-22, 2003
Symposia:			
1.	Prof. V G. Idichandy Prof. S. Narasimha Rao Prof. R. Sundaravadivelu	Symposium on "Foundations for Refinery Structures and Oil Terminals"	April 25, 2003
2.	Prof. R. Sundaravadivelu Prof. V.G. Idichandy	Symposium on "Rehabilitation of berthing structures"	Nov. 22, 2002

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
Workshops:				
1.	Prof. V.S. Raju	Two day training programme on "Geotechnical Aspects of Construction"	Andhra Pradesh Power Generation Corporation at Vijayawada Thermal Power Station	18.8.2002 - 19.8.2002
2.	V. Sundar	As member of working group workshop on Violent waves interaction with Structures.	Univ. of Glasgow, U.K.	26.4.2002

Sl. No.	Name of Faculty	Title	Institution	Period
3.	Prof. K. Ganesh Babu	'V' International Workshop on Corrosion: Zinc and Zinc based coatings Performance on Reinforcing Bars in Tropical Marine Environments"	Villahermosa, Tabasco, Mexico	05.03.2003-07.03.2003
3.	Prof.R.Sundaravadivelu	Short term Course on 'Coastal Structures'	IIT Madras	18-22 Nov., 2002
4.	Prof.R.Sundaravadivelu	IGS-FGE Workshop on Forensic Geotechnical Engg.	Hotel Savera	28 Feb. – 1 Mar. 2003
5.	Dr. S. Surendran	Coastal Zone Management	IIT Madras	17-19 Mar., 2003
Seminars:				
1.	Prof.R.Sundaravadivelu	National Seminar Cum Workshop on Rock Dredging	Tuticorin Port Trust	10-11 Jan., 2003
2.	Prof. R.Sundaravadivelu	National Seminar on Harbour Structures (NASHAR - 2003)	IIT Madras	20-21 Feb., 2003
3.	S.Neelamani	National Seminar on Harbour Structures (NASHAR – 2003)	IIT Madras	20-22 Feb., 2003
Symposia:				
1.	Prof.R.Sundaravadivelu	Symposium on 'Rehabilitation of Berthing Structures'	IIT Madras	22.11.2002
2.	Prof.R.Sundaravadivelu	Symposium on Industry – Academia partnership in Technology Development	IC & SR Building IIT Madras	22-23 Feb., 2003
3.	Prof. SK Bhattacharyya	First International ASRANet Colloquium	Glazgow University UK	08.07.2002-10.07.2002
4.	Dr. V. Anantha Subramanian	WRE Congress VII	USA	29.6.2002-05.7.2002
Conferences:				
1.	Prof. M.R. Pranesh	World Conference on Concrete Materials and Structures (WCCMS 2002)	Selangor Malaysia	14.5.2002-16.5.2002
2	V. Sundar	Presented paper in 13 th Congress of the Asia and Pacific division of IAHR & participated in the Executive committee meeting of the Asia and Pacific division IAHR	Conducted by National Univ. of Singapore, Singapore	6-8 Aug., 2002
3.	Prof. R. Sundaravadivelu	World Conference on Concrete Materials and Structures (WCCMS 2002)	Selangor Malaysia	14.5.2002-16.5.2002
		Corrosion Conference (CORCON – 2002)	Goa	28-30 Nov., 2002
5.	Dr. S. Neelamani	International Conference on "Scour of Foundations"	Texas A & M University, USA	17-20 Nov., 2002

Special Lectures Delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Prof. V.S. Raju	Towards Excellence in Geotechnical Engineering Practice in India	Indian Geotechnical Conference, Allahabad, 20-21 Dec., 2002
2.	Prof. S. Narasimha Rao	An introduction to foundation design in earth quake zone	Advanced course on seismic resistant design of structures conducted by SERC, CSIR, Chennai 9-11 January 2003
		Seismic foundation Design	SRM Engineering College Chennai, December 2002
4.	Prof. V.G. Idichandy	Strain Gauge Technology	CVRDE, Avadi 25.11.2002
5.	Prof. V. Sundar	Coastal Erosion & protection	Queens University Kingston, Canada 15 th April'02
6.	Prof. R. Sundaravadivelu	Dynamics of Marine Structures	S.R.M. Engineering College 19 th December 2002
7.	Prof. J.S. Mani	Coastal Erosion – A Global Scenario	NITK, Surathkal 6 th January, 2003
8.	S.Neelamani	Challenges in Ocean Engineering	University of Karlsruhe, Germany, 13-14 May 2002
		Wave interaction with Submarine pipelines resting on Clayey soil	University of Hamburg-Harburg, 15-16 May 2002
		Wave interaction with Plane, Serrated and Dentated Seawalls	University of Ghent, Belgium, 17-18 May 2002
		Wave Energy Dissipation Characteristics of Parabolic, Corrugated and Porous Absorbers	Universitat Politecnica de Catalunya, Barcelona, Spain, 19-21 May 2002.
		Case studies on Design of submarine pipelines and Shore Protection works	Kuwait Institute for Scientific Research, Kuwait, 1-4 July 2002.
		Case studies on Coastal Protection works in India	Texas A & M University, College Station, USA 21.11.2002.
		Wave action on Plane, Dentated and Serrated Seawalls	University of Houston, Houston, USA, 19-20 Nov. 2002
		Wave Interaction on Caissons and Seawalls in the presence of an Offshore Breakwater	University of Texas, Austin, USA, 22.11.2002
		Case Studies on Shore Protection and Submarine pipeline Design	University of Florida, Gainesville, USA, 25.11.2002.
Wave Interaction on Caissons and Seawalls in the presence of an Offshore Breakwater	Florida Atlantic University, Boca Raton, USA 27.11.2002		
Case Studies on Shore Protection Works in India	Technology Appreciation Program on "Modeling and Simulations in Industrial Problems: Ocean Engineering and Chemical Processes", IC&SR, IIT Madras, 10.12.2002		

Visits abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of visit
1.	Prof. V. Sundar	Germany	01.10.2001-30.09.2002	Visiting Professor at University of Wuppertal, Germany invited by DAAD
2.	Dr. S. Neelamani	The Netherlands Spain	09.05.2002-21.05.2002	Attended the 3 rd Humboldt Office Bearer's Meeting and University visits in Belgium
3.	Prof. R Sundaravadivelu	Singapore	17.05.2002-26.05.2002	University visit to National University of Singapore
4.	Prof. V.S. Raju	University of Karlsruhe, Germany	16.05.2002-30.06.2002	AVH Fellowship
5.	Dr. V. Anantha-Subramanian	University of Applied Sciences Bremen, USA	24.06.2002-28.06.2002	University visit
6.	Dr. S. Neelamani	Kuwait	01.07.2002-04.07.2002	Visit to Kuwait Institute of Scientific Research
7.	Prof. V.G. Idichandy	Malaysia Singapore Hongkong	26.08.2002-31.08.2002	Visited E-Learning and Digital Library sites at the invitation of M/s Sun Micro Systems.
8.	Dr. S. Neelamani	Texas A & M University, USA	21.11.2002-28.11.2002	University visit
9.	Prof. S.K. Bhattacharyya	Institute of Marine Dynamics Canada and NA Engg/and Applied Science of Memorial Univ., of New Foundland, Canada	29.01.2003-28.01.2004	Visiting Professor

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Prof. V. Sundar & Mr. R. Balaji MS Student	Best student paper	Ocean, Offshore and Arctic Engineering Division Of ASME	Paper entitled "Hydrodynamic characteristics of vertical wave screen with pipe as elements"	Nov. 2002

Books, Monographs authored or co-authored:

Sl. No.	Name of faculty	Title	Publisher
1.	Prof. R. Sundaravadivelu	A chapter on "Berthing Structures" in the Book on Harbour and Coastal Engineering	NIOT
2.	Prof. J.S. Mani	A chapter on "Littoral Drift" in the Book on Harbour and Coastal Engineering	NIOT
3.	Prof. V. Sundar	A chapter on "Beach Processes for Coastal Protection" in the Book on Harbour and Coastal Engineering	NIOT

4.12.4. Design and Development Activities

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

1. Prof. J.S. Mani : Design and development of "S-type" sea wall for beach stabilization supported by the field studies.
2. Dr.S. Neelamani: Perforated corrugated and parabolic wave absorber is developed, tested and installed in the wave basin.
3. Dr. S. Surendran: Software for the analysis and predictions of roll dynamics (Ro-Ro ship) were developed using MATLAB.

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value
1.	5 nos. of pressure sensors are procured from MHRD Funds.	Rs.3,00,000/-
2.	PCI 1710 Multi function Data aquisition card	Rs.98,800/-

Sl. No.	Name of Equipment	Value
3.	2 Channel 60 MHz mega 200m Oscilloscope	USD 1648/-
4.	6 Channel Digital Indicator Model	Rs.85,692/-
5.	HBM Cable	Euro 1775/-
6.	4 Channel 100 MHz Magazoom Oscilloscope	USD 3747/-
7.	K-live Pressure Transmitter	SS 19870/-
8.	DP 1603 Portable Pressure Calibrator	£978/-
9.	Sanyo LCD Multi media Project	Rs.95,079/-
10.	Olympus C4040 Digital Camera	Rs.58,400/-
11.	Vibration Excitor	Rs.57,000/-

4.12.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Industry	Amount (Rs. in lakhs)	Co-ordinators
1.	Behaviour of pile groups and sand pad foundations installed in soft clay	01.06.01-30.05.03	Indo German Project		Prof. K Muthukrishnaiah Prof. VG Idichandy
2.	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
3.	Modernisation of Instrumentation Laboratory	01.04.02-31.03.04	MHRD New Delhi	12.00	Prof. VG Idichandy Prof. CP Vendhan
4.	Studies on Energy Dissipating Sloped Seawalls as Shore Protection Structures	01.04.02-30.09.05	MHRD New Delhi	12.00	Dr. S. Neelamani
5.	Development of Wave Data Buoy	Six Months	NIOT, Chennai	4.01	Dr. V. Anantha Subramanian Prof. CP Vendhan
6.	A study on the level of pollution of Chennai coastal water due to waste water disposal	01.05.02-31.12.02	Water Resource Orgn., Govt. of India	5.64	Dr. S. Neelamani
7.	FIST Program	5 years	DST New Delhi	117.00	Prof. VG Idichandy
8.	Studies on Tidal Inlets along East Coast of India	03.01.03-02.01.06	Dept. of Ocean Development	45.60	Prof. J.S. Mani

Industrial Consultancy projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
1	Prof. S. Narasimha Rao	Soil Investigation for CPWD	C.P.W.D Chennai	0.54
		Analysis of LPG/PIL for Earthquake conditions	Bharat Petroleum Corp., Ltd., Chennai	0.50
		Review consultancy in foundation	M/s Geo-Marine Consultants Pvt Ltd., Chennai.	0.50
2	Prof. R Sundaravadevelu Prof. K. Anathanarayan	Topography and bathy-metry surveys at Humphry Strait, Andaman	The Andaman Lakshdweep Harbour Works Port Blair.	2.36
3	Prof. K Muthukrishnaiah Prof. R. Ambalavanan	Design of overlay to existing worn out concrete test track at HVF, Avadi	The Garrison Engineer, Chennai.	0.15
4	Prof. S. Narasimha Rao	Geo-Mech test on rock and soil samples	Mineral Exploration Corporation Ltd., Neyveli	0.40
5	Prof. K Muthukrishnaiah	Subsoil investigation and recommendations of few suitable type of foundations	The Garrison Engineer, Chennai.	0.54

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
6	Prof. V.S. Raju Prof. S. Mohan	Development of optimized dewatering scheme for Delhi main station and Charvri Bazar Station	L&T ECC Division Chennai	15.00
7	Prof. V.S. Raju Dr. B.S. Murthy Prof. R Sundaravadivelu	Design and construction of civil works for the Mini Hydro Elastic schemes at Peddapally, Karimnagar	Chief Engineer (Civil)/Hydro APGECO, Vidyut Soudha, Hyderabad	2.00
8	Prof. R Sundaravadivelu Dr. S. Neelamani	Review of design of Monitoring of Coastal Protection Structures for PWD	PWD, Madurai Region Madurai.	15.80
9	Prof. VG Idichandy	Measurement of strain in the cold water pipe of OTEC plant	N.I.O.T Chennai	0.25
10	Prof. R Sundaravadivelu Prof. SR. Gandhi	Proposal for dewater and excavation scheme for the construction of storage tank at CPLL, Chennai	URC Construction Ltd., Devi Construction Chennai	0.25
11	Prof. S. Narasimha Rao	Foundation consultancy for compound wall	M/s Garrison Engineer, Chennai	0.10
12	Prof. R. Sundaravadivelu	Bathymetry survey and numerical model studies	Mr. A.K. Mohammed WRO, PWD Madurai	16.00
13	Prof. K. Muthukrishnaiah	To assess subsoil conditions	L & T Limited ECC Division, Chennai	0.42
14	Prof. S.K. Bhattacharyya	Stress analysis of the cold water intake system	N.I.O.T Chennai	0.40
15	Prof. R. Sundaravadivelu	Bathymetry survey work in river pandapara, Bahabalpur	Gopalpur Port Project	0.28
16	Prof. Ganesh Babu	Proof checking designs and drawings of ROB	NHAI Project Implementation Unit, Srikakulam	3.00
17	Prof. S. Narasimha Rao	Foundation consultancy For road bridge	Sri N. Rama Rao Roads and Buildings, Tirupati	0.25
18	Prof. K. Muthukrishnaiah Prof. R. Ambalavanan	Checking RCC algal pond design with regard to safety features and impermeability to water	M/s ACL Chemicals Ltd, Chennai.	0.10
19	Prof. R. Sundaravadivelu	Engineering Studies the construction of FLC at Barakudu, Balugaon	Mr. S.S. Sastry M/s Gopalpur Port Project Orissa	1.20
20	Prof. K. Muthukrishnaiah	Consultancy for recommending suitable type of Foundation	Tamilnadu Police Housing Corporation Chennai.	0.29
		Suitability of finely ground siliceous materials in Sivaganga Graphite beneficiation Plan for producing hollow bricks	Tamil Nadu Minerals Ltd., Chennai.	0.10
21	Prof. R. Sundaravadivelu Prof. SR Gandhi	Review of foundation designs for bridges across river Bahuda and river Mahendra Tanaya	Navayuga Engg., Company Ltd., Chennai.	0.40
22	Prof. R. Sundaravadivelu Dr. Boominathan Prof. SP Subramanian	Dredging the Dock basin in front of Cargo Berth	Chief Engineer Tuticorin Port Trust, Tuticorin.	2.48
23	Dr. S. Surendran	Design and drawing of steel portion for passenger jetty No.2 at Kandla	Chief Engineer Kandla Port Trust Gujarat	0.25
24	Prof. S. Narasimha Rao	Preliminary Feasibility Report of Nizampatnam Port	M/s Sanghi Cements Ltd R.R. Dist., Andhra Pradesh	0.15
25	Prof. S. Narasimha Rao Prof. V. Sundar	Numerical Modelling for Fishing Harbour at Arcottuthurai	Tamil Nadu Public Works Dept., IHH Chennai.	3.00

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
26	Prof. K. Ganesh Babu	Rehabilitation Assessment for Water Tank at DGCA Complex	M/s Garrison Engineers, Chennai	0.90
		Rehabilitation Assessment for water Tank at DGCA Complex	M/s Garrison Engineer Chennai.	0.90
27	Prof. R. Sundaravadivelu Dr. S.R. Gandhi	Proof checking of design of mound pile foundation retaining wall and access tunnel for 4X1200 MT LPG bullet at Manali	M/s Simplex Concrete Piles (India) Ltd, Chennai.	0.80
28	Prof. R. Sundaravadivelu Prof. M.R. Pranesh	Construction of RO/RO jetty at Kudamkulam site	M/s Panekh Marine Agencies Pvt Ltd., Mumbai	1.50
29	Dr. S. Neelamani	Bathymetry Survey of Kudamkulam Coast	St. John Freight Systems Tuticorin	1.00
30	Prof. R. Sundaravadivelu	Design review for Madras Refineries Ltd jetty at Nagapatinam	Mr. Krishna Kumar Detnoeske Veritas, Chennai	0.40
31	Prof. R. Sundaravadivelu Dr. R. Boominathan	Pre and post dredging survey in the dock basin in front of Berth 8	Tuticorin Port Trust Tuticorin	0.85
32	Prof. R. Sundaravadivelu	Technical expertise of scrutiny of technical bids	Mr. NSG Prasad Mazagon Dock Ltd., Mumbai	0.20
33	Prof. S.K. Bhattacharyya	Mooring Buoy design and stability calculation for OTEC program	NIOT Chennai	0.40
34	Prof. R Sundaravadivelu Dr. R. Natarajan	Study of structural stability and strength of the DWC plant at IREL	Indian Rare Earth Ltd., Matikhalo	0.90
35	Prof. R. Sundaravadivelu	Revision of design and drawings for 9 th Cargo berth at Kandla Port	Kandla Port Trust Gujarat	1.00
		Computation of dredging quantity for Kalijal I	Chilika Development Authority, Bhubaneswar	11.60
36	Prof. S. Narasimha Rao	Construction of overhead Reservoir and underground sump for Quarters for 100 Officers and Majors at Nandambakkam, Chennai	M/s Garrison Engineers, Chennai	0.20
37	Prof. R. Sundaravadivelu Dr. S. Surendran Dr. S. Neelamani Prof. V. Sundar	Deepening and widening of main harbour and JN Port channel regarding examination of Navigation report	Jawaharlal Nehru Port Trust, Mumbai	0.40
38	Prof. S. Narasimha Rao	Design Aspects of Foundation in Sea-Coast	Mr. V. Gopala-krishnan Insurance Surveyor, Chennai	0.20
39	Prof. R. Sundaravadivelu Prof. S.R. Gandhi	Technical Adviser for Establishment of Solid Bulk Terminal at oil jetty No. 1, Kandla Port Trust	Kandla Port Trust Gujarat	13.00
40	Dr. V. Anantha Subramanian	Flow and Wake investigation in Lube Oil Tanker	Dubai Dry Docks Dubai	USD 4000
41	Prof. R. Sundaravadivelu	Design of sheet pile wall of Dahej	M/s Aban Construction Pvt Ltd, Chennai.	0.50
42	Prof. V.S. Raju Prof. S.R. Gandhi Prof. Thandeeswara Dr. B.S. Murthy Prof. P.K. Aravindan Dr. Meher Prasad Dr. Devadas Menon	Consultancy services on Alternative cooling water system to pump 1100 cuses of river water and install 3 Nos cooling towers at VIPs, Ibrahimpatnam and for other civil works of APGENCO	APGENCO Hyderabad	10.00
43	Prof. R Sundaravadivelu Dr. SR Gandhi	Proof check of design of deep draft Multipurpose Berth	New Mangalore Port Trust Mangalore	2.00

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
44	Prof. R Sundaravadivelu Dr. Anantha Subramanian	Excavation of channel in palur canal	Chilika Development Authority Bhubaneswar	5.14
45	Prof. S. Narasimha Rao	Deepening of Northern Arm and strengthening of existing berths	Visakhapatnam Port Trust Visakhapatnam	10.50
46	Prof. M.R. Pranesh Prof. R Sundaravadivelu	Under ground portion of Connought place station	M/s Afcons Infrastructure Ltd., Mumbai	1.50
47	Prof. R Sundaravadivelu Prof. SR Gandhi	Investigation of Intake well and procurement of satellite Imaging	Sri Kalpesh Patel NIRMA Ltd, Ahmedabad	1.00
48	Prof. R Sundaravadivelu Prof. M.R. Pranesh	Design of sheet pile cofferdam at Hazina	Afcon House, Mumbai.	1.00
49	Prof. R. Sundaravadivelu Prof. SR Gandhi	Stability calculation for deepening of Berth No. 8 & 9	M/s Murnugao Port Trust Goa	2.00
50	Prof. S. Narasimha Rao	Widening and dredging of entry channel and inner harbour with the synergy of Vijay Nirman Co.	M/s VPC Concrete & Geo Technologies Visakapatnam	0.25
		Inspection of structures of DAP Plant, Kakinada	M/s Godavari Fertilisers and Chemicals Ltd Kakinada	4.25
51	Prof. VS Raju Prof. SR Gandhi Prof. Thandeswara Rao Dr. B.S. Murthy Prof. PK Aravindan Dr. Mehr Prasad Dr. Devadas Menon	Consultancy Services on Alternative cooling system to pump 1100 cusses of river water and install 3 Nos. cooling tower at VIPS, Ibrahimpattam and for other civil works at APGENCO	M/s APGENCO Hyderabad	11.87
52	Prof. VS Raju Prof. SR Gandhi Prof. Thandeswara Rao Dr. B.S. Murthy Prof. P.K. Aravindan Dr. Mehr Prasad Dr. Devadas Menon	Consultancy services for vetting the civil Drawings for MHES M1-8-D-33 on D-83 Branch canal of SRSP at Paddapally, Karimnagar	M/s APGENCO, Hyderabad	0.93
53	Prof. V.S. Raju	Consultancy services on compaction sand below the break water, Ennore Port	Ennore Port Ltd., Chennai	1.20
54	Prof. R Sundaravadivelu Prof. SR Gandhi	Preparation of feasibility report, design, drawings, tender document for proposed 10 th (renamed as 12 th) cargo berth at Kandla Port Trust	Kandla Port Trust Gujarat	13.00
55	Prof. R. Sundaravadivelu Dr. S. Neelamani Prof. V. Sundar	Bathymetry survey and numerical model study for Periakadu Groin work	Water Resouce Organisation, PWD, Madurai	6.00
56	Prof. R. Sundaravadivelu Prof. SR Gandhi	Investigation of Intake well and procurement of satellite Imaging	Sri Kalpesh Patel NIRMA Ltd, Ahmedabad	1.00
57	Prof. R. Sundaravadivelu Prof. M.R. Pranesh	Design of sheet pile cofferdam at Hazina	Afcon House, Mumbai.	1.00
58	Prof. R. Sundaravadivelu Prof. SR Gandhi	Stability calculation for deepening of Berth No.8&9	M/s Murnugao Port Trust, Goa	2.00
59	Prof. S. Narasimha Rao	Widening and dredging of entry channel and inner harbour with the synergy of Vijay Nirmal Co.	M/s VPC Concrete & Geo Technologies, Visakapatnam	0.25
		Inspection of structures of DAP Plant, Kakinda	M/s Godavari Fertilisers and Chemicals Ltd Kakinda	4.25

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs.in lakhs)
60	Dr. S. Neelamani	Physical model studies on Stability of a Rubble Mound Breakwater Under Construction	L&T Ramboll, Chennai	3.25
		Design of a Marine Outfall System	Prof. D.V.Reddy, Florida Atlantic University, USA	USD 5600
		Design of Cofferdam for the seawater intake structure of Kudangulam Thermal Power Project	HOCHTIEF, Chennai	7.00
		Design of Scour Protection system for Talsari Fishery Jetty, Orissa	Port Department, Govt. of Orissa	0.25
		Bathymetry Survey off Bassein Port for design of salt handling systems	Good Earth Maritime Ltd, Chennai	0.50
61	Prof. S Narasimha Rao	Recommendation for foundations at Pallavaram	M/s The Garrison Engineers, Chennai	0.20
62	Prof. R Sundaravadivelu	Construction of FLC at Baluguan Dist., Khurda, Orissa	Gopalpur Port Ganjam	2.23
63	Prof. R Sundaravadivelu Dr. R. Natarajan	Construction of one shipway at Satapada for dry-docking of crawl-cal dredges and ferry craft	Chilika Development Authority, Bhubaneswar	2.00
64	Prof. V. Sundar	Hydrodynamic Performance of Geobags protected by a Rip-Rap Layes	Gareware Wall Ropes Ltd, Pune.	3.04
		Bathymetry survey, Punnakkayal	Institute of Hydraulics and Hydrology, Poondi	2.25

RBIC Projects:

Sl. No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Prof. V.G. Idichandy Prof. C.P. Vendhan Prof. S.K. Bhattacharyya	Model Testing of the proposed towed body of integrated UV survey system	NIOT Chennai 601 302	5.56
2.	Prof. VG Idichandy	Development and supply of a six component balance for MIT wind Tunnel	Madras Institute of Technology Chennai - 34	2.00

Exchange Programme with other Universities:

Student Exchange Programme with Hochschule, Bremen

The Institute has permitted the following Naval Architecture & Ocean Engineering students to carry out part of their final semester project work at Hochschule Bremen, Germany for a period of three months from 1st January 2003.

1. Mr. Akshay Jain
2. Mr. Bikash Mishra
3. Mr. C. Karthick
4. Mr. Manoj Kumar Gupta
5. Mr. Vivek Jaiswal

Journal Editorial Boards:

Sl. No.	Name of faculty	Level	Journal / Institution
1.	Prof. C.P. Vendhan	Member	Journal of Engineering for Maritime Environment, UK
2.	Prof. V.S. Raju	Chairman	Naval Research Board, Ministry of Defence, DRDO

Research Publications:

No. of papers published in Refereed National Journals	..	1
No. of papers published in Refereed International Journals	..	15
No. of papers presented in National Conferences	..	26
No. of papers presented in International Conferences	..	53

In Refereed National Journals:

1. S. Surendran, J. Venkata Ramana Reddy, Non-linear roll dynamics of a Ro-Ro ship ships technique Vol. XVIII, April 2002

In Refereed International Journals:

1. G. Rajasekaran and S. Narasimha Rao, Permeability characteristics of lime treated marine clay, *Ocean Engineering*, Volume 29, Issue 2, February 2002, Pages 113-127.
2. S.K. Bhattacharyya, S. Sreekumar and V.G. Idichandy, "Coupled dynamics of Sea Star mini tension leg platform" *Ocean Engineering*, Vol. 30, No. 6, pp. 709-737 2003.
3. Sundar, V. and Subbarao, B.V.V., "Hydrodynamic pressures and forces on quadrant front face pile supported breakwater", *Ocean Engineering JI*, Vol.29, 2002, pp 193-214.
4. Sundar, V., R.Sundaravadivelu and K.Srivedakumar, "Performance Characteristics of Moored Plain and Perforated Plate Breakwaters in Random Wave Fields" *Oceanic Engineering International JI*, Vol. 6, No.1, 2002, pp 1-20.
5. Sundar, V., Vengatesan.V. and Graw, K.U. "Sleeve forces on inclined cylinders due to long and short crested waves", *Jl of Hydraulic research, IAHR*, Issue 3, Vol. 40, 2002, pp 275-287.
6. Nearshore circulation and its effect on wave-current distribution in the vicinity of a groyne, K.Jyothi and J.S.Mani and M.R.Pranesh, Vol 29/4 *Ocean Engineering Journal* 2002
7. Neelamani, S., and Rajendran, R. (2002). "Wave interaction with L-type breakwaters". *Ocean Engineering*, Vol. 29, pp.561-589.
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2. Forensic Geotechnical Engineering by V.V.S. Rao and M.R. Pranesh, Proceedings of Foundation Design Codes and Soil Investigation in view of International Harmonization and performance Eds. Honjo Kasakabe, Matsi., Kouda and Pokhrel-Japan 11-12th April, 2002, ppNo.205 to 207
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Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of visit	Purpose of visit
1.	Delegation consisting of (1) Prof. Datuk Seri Panglima, Vice Chancellor (2) Dr. Abu Hassan Othuman and (3) Prof. Madya Sazail Yaacob, University of Malaysia	02.04.2002	Department visit
2.	Prof. P.Sambadan, Director, National Ship Design and Research Centre, Vishkapatnam	09.04.2002	Delivered a talk on "Indian Ship building Industry: A New out look for Revitalization & Globalisation"
3.	Mr. Malcolm Trigg, Director, Gantry Railing Ltd., UK	12.04.2002	Delivered a seminar talk
4.	Dr. Prahlada, Director and Dr. Paneer Selvam, Head, Aerodynamics, DRDL	14.07.2002	Review of the three ongoing projects.
5.	Dr. Ravindra Gettu, Universitat Politecnica de Catalunya, Barcelona, Spain	01.08.2002	Delivered a talk on "Use of Fiber Reinforced Polymers in the Strengthening of Structures"
6.	Mr. Charanjit Singh, Group General Manager (Marine), RITES Ltd	Sept. 2002	Proposal from RITES for Training students from Vietnam in Naval Architecture both at UG and PG Level
7.	Mrs. Pek Siok Ching, Deputy Secretary, Ministry of Non-Power Singapore	10.10.2002	Department visit
8.	Prof. H.G. Jansen of Hochschule Bremen, Germany	13.11.2002	Discussion on Students Exchange Program
9.	V ADM Raman Puri, Flag Officer Commanding-in-Chief, Eastern Naval Command	08.11.2002	Department visit
10.	Dr. Ing Torsten Schlurmann, University of Wuppertal, Germany	13.12.2002-18.12.2002	Department visit and delivered a talk on "Water waves of extreme heights tsunamis and Rogue waves"
11.	Dr. Joyis Thomas, Fugro McClelland Marine Geosciences, Inc., USA	17.12.2002	Delivered a talk on "Offshore pile installations pile driving analyser testing"
12.	Dr. Ing Werner Richwien, University of Essen, Germany	02.01.2003-20.01.2003	BMBF Sponsored Project and also delivered two talks (a) Soils and Structures under wave loads; 20 years of research on coastal structures (b) Foundations of Offshore wind mills in 30 metre water depth
13.	Dr. Aj. Thakker, Director, Wave Energy Research Team, University of Limerick, Ireland	21.01.2003	Delivered a talk on "R&D activities of Wave Energy Research Team at University of Limerick, Ireland"
14.	Prof. T.R. Mohan, Chief Engineer, F.I.MAR.E, Chennai	31.01.2003	Industrial Lecture on "Running and Maintenance of Marine Machinery"
15.	Dr. Rajat Roy Chaudhury, Joint Project Director, NIOT	02.02.2003	Delivered an Industrial Lecture on "Environmental Impact Assessment"
16.	A delegation from RWTH, Aachen, Germany consisting of 1.Prof. Burkhard Rauhut, Rektor 2.Prof. Matthias Jarke, Computer Science 3.Prof. Hans Juergen Haubrich, Electrical Power Engineering	17.02.2003	Visited the Department
17.	His Excellency Mr. P Rama Mohan Rao, Governor of Tamil Nadu	03.03.2003	Department visit

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of visit
18.	Mr. Jesper Fuchs, Head, Port & Harbour, DHI Water and Environment, Denmark	07.03.2003	Made presentation about DHI's research and development activities
19.	Cmdr. R.S. Vasan, Commander, Coast Guard (East Region)	16.03.2002	Delivered a lecture at WAVEZ 2003 – Cultural Technical Festival
20.	Mr. N.R. Krishna Kumar, Station Manager, Det Norske Veritas, Chennai	18.03.2003	Delivered an Industrial Lecture on "Role of Classification Society – DNV Experience"
21.	Mr. K. Prem Kumar, Programme Director NIOT	21.03.2003	Delivered an Industrial Lecture on "National data buoy programmes"
22.	A group of ISRO Scientists led by Mr. A. Subramoni, Project Director, Space Capsule Recovery Experiment, VSSC	March 2003	To initiate a project on Impact Dynamics in the Ocean of Space capsule.
23.	Dr. S. Kathirolu, Project Director, NIOT	26.03.2003	Delivered an Industrial Lecture on "Haldia Navigational Channel – Sedimentation Control"

4.13 DEPARTMENT OF PHYSICS

4.13.1. 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 B.Tech (Engineering Physics). 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.

4.13.2. Academic programmes:

M.Sc., M.Tech, (Solid State Technology) and Ph.D.

New discipline introduced: B.Tech Engineering Physics

Students on Roll:

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & Others	Total
1.	M.Sc	34	30	-	-	-	64
2.	M.Tech	8	5	-	-	-	13
3.	Ph.D	23	12	9	7	10	61
	Total	65	47	9	7	10	138

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
Conferences:				
1	Ramesh Chandra Mallick	Ph.D.	Metallurgical coatings and thin films	22-26, Apr 2002 San D
2	Umakant Tripathy	Ph.D.	Photonics 2002	16-18, Dec 2002 TIFR, Mumbai
Seminars:				
1	D.V. Nagesh	Ph.D.	12 th National Seminar on Ferroelectrics & Dielectrics	16-18, Dec 2002 IISc, Bangalore
2	G. Santosh Bhavan	Ph.D.		
Symposia:				
1	Kaladevi Sendhil	Ph.D.	National symposium on Instrumentation	27-29, Nov 2002 Bharathiyar Univ., Coimbatore
2	K Sathiyamoorthy	Ph.D.	National symposium on Instrumentation	27-29, Nov 2002 Bharathiyar Univ., Coimbatore
3	Anantha P.S.	Ph.D.	45 th DAE Solid State Physics Symposium	26-30, Dec 2002 Punjab University Chandigarh
4	N Rama	Ph.D.	45 th DAE Solid State Physics Symposium	26-30, Dec 2002 Punjab Univ., Chandigarh
Workshops:				
1	V. Radha Ramani	Ph.D.	IUC – Indore Lab Visit	9-24, Nov 2002 Indore
2	K Madhu	Ph.D.	Workshop on String Theory	10-24, Dec 2002 HRT, Allahabad
3	P Malar	Ph.D.	Visit Institute of Physics	20-28, Dec 2002 Bhubaneswar
4	Ramesh C.M.	Ph.D.		24 Dec 02–05 Jan 03 Bhubaneswar

4.13.3. Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Professor:	
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)	Applied optics
(Mrs) Maha Seshasayee, Ph.D (RPI, New York, USA)	Condensed matter physics, (structure studies)
J. Majhi, Ph.D (IIT, Madras)	Semiconductor physics
V. R. K. Murthy, Ph.D (IIT, Madras)	Microwaves and Dielectrics
T. S. Natarajan, Ph.D (IIT, Madras)	Conducting polymers, Instrumentation Electronics
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
K. Srinivasan, Ph.D (IIT, Madras)	Lattice Dynamics, Electro optics, Dielectrics
A. Subrahmanyam (IIT, Kharagpur) [Head]	Semiconductor Devices, photovoltaics Transparent conducting thin films
Associate Professors:	
(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
(Mrs) Neelima M. Gupte, Ph.D (SUNY, Stony Brook, USA)	Dynamical systems, Statistical Physics
S. Ramaprabhu, Ph.D (IIT, Madras)	Hydrogen Production, Hydrogen Storage in Materials and Nonomaterials
V. Sankaranarayanan, Ph.D (IIT, Madras)	Low Temperature Physics. Cryogenics, Thermal and Electrical Properties
V. Venkateswara Rao, Ph.D (IIT, Madras)	Applied optics
C. Vijayan, Ph.D (IIT, Madras)	Photonics, Nonlinear Optics
Assistant Professors:	
P. B. Bisht, Ph.D (Kumaun Univ., Nainital)	Ultrafast laser optics and spectroscopy
Govindarajan Suresh, Ph.D (Pennsylvania Univ., USA)	Theoretical Physics, Quantum Field Theory String Theory, Solitons and D-branes
S. Kasiviswanathan, Ph.D. (IIT, Madras)	Thin Films

Name and Qualifications

Major area of specialization

M.S.Ramachandra Rao Ph.D (IIT, Kharagpur)	Experimental Solid State Physics (Electronic and Management Materials - Thin films and bulk): Spintronics and Nanostructures
M.V.Satyanarayana, Ph.D (Madras Univ.)	Quantum optics
K.Sethupathi, Ph.D (Moscow State Univ., Russia)	Low temperature physics, Superconductivity and Magnetic Materials
V.Subramanian, Ph.D. (IIT, Madras)	Microwaves, Semiconductors, Ferroelectrics
P.B. Sunil Kumar, Ph.D. (IISc, Bangalore)	Soft condensed matter, Complex Fluids
(Ms) T.M.Vimala, Ph.D (IIT, Madras)	X-ray crystallography
Mahaveer Kumar Jain	Ceramics Sensors
Chief Design Engineer:	
D.K.Sharma, Ph.D (IIT, Madras)	Optical instrumentation, lens design
Senior Scientific Officer Gr.I:	
Mr.K.Sarangapani, M.Sc. (Madras Univ.)	Thermal expansion of materials

Short-term Courses/Workshops/Seminars/Symposia/Conferences organised by Faculty Members:

Sl. No.	Name of the Faculty	Title	Institution	Period
Seminar:				
1	A.Subrahmanyam	In House	IIT Madras	31.10.02
Workshop:				
1.	Dr.Suresh Govindarajan	XVIII SERC school in Theoretical High Energy Physics	DST	10.02.03-01.03.03

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

Sl. No.	Name of the Faculty	Title	Institution	Period
Workshops:				
1	Dr.G. Rangarajan	Magnetism and Magnetic Materials	Florida	11.11.02 - 15.11.02
2	Dr.M.S. Ramachandra Rao	Phase separation in colossal magnetoresistive $\text{La}_{0.6}\text{R}_{0.1}\text{Ca}_{0.3}\text{MnO}_3$ (R = Ho^{3+} (magnetic) and Y^{3+} (non-magnetic) compounds	Presented at the 47 th Annual Conference on Magnetism and Magnetic Materials (MMM-2002) to be held at Tampa, Florida, USA	11.11.02 - 15.11.02
Seminars:				
1	Dr.V. Balakrishnan	Time-dependent and stationary distributions for randomly interrupted dynamics	Symposium on Non-linear dynamics IISC Bangalore	07.08.02
2	Dr.P.C. Deshmukh	Atomic and Molecular Physics	(AISAMP-5) Japan	02.10.02 - 05.10.02
3	Dr.M.S. Ramachandra Rao	Effect of microstructural modification by PbO addition on the electrical resistivity of $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$.	Fourth national symposium of research scholars on metals and materials (NSR received the Lucas-TVS Best Paper Award S-4, 2002)	27.09.02 - 28.09.02

Sl. No.	Name of the Faculty	Title	Institution	Period
Symposia:				
1	Dr.Suresh Govindarajan	Supersymmetric Gauge Theories at XV DAE symposium	Univ. of Jammu	11.11.02 - 15.11.02
2	Dr.M.S.Ramachandra Rao	Effect of rare earth ion substitution on the magnetic and transport properties of $Pr_{0.7}RE_{0.04}Sr_{0.26}MnO_3$ (RE = Er, Tb and Ho)	Solid state physics symposium; Punjab university	26.12.02 - 30.12.02
		Substrate and lattice strain induced properties of pulsed laser deposited $La_{0.7}Sr_{0.3}MnO_3$ and $La_{0.7}Ca_{0.3}MnO_3$ thin films	Solid state physics symposium; Punjab university	26.12.02 - 30.12.02
Conferences:				
1	Dr.G. Rangarajan	Magnetism and Magnetic Materials	Florida, USA	11.11.02 - 15.11.02
2	Dr.A. Subrahmanyam	Metal Coatings and their films in San Diego	California, USA	22.04.02 - 26.04.02
3	Dr.V.Venkateswara Rao	Visual Information Processing XI, SPIE'S Aerosense 2002	Orlando, USA	01.04.02 - 05.04.02
4	Dr.S. Lakshmi Bala	Theoretical Physics	France	22.07.02 - 27.07.02
5	Dr.V.Sankaranarayanan	Low Temperature Physics	Hiroshima Japan	20.08.02 - 27.08.02
6	Dr.Neelima M Gupte	Women in Physics	Berlin	09.10.02 - 12.10.02
		Spatio-temporal physics	ICTP Trieste July 7-19, 2002	07.07.02 - 19.07.02
7	Dr.M.S.Ramachandra Rao	Magnetism and Magnetic Materials	Florida, USA	11.11.02 - 15.11.02
Training:				
1	Dr.V.R.K. Murthy	UGC's Xth-5 year Plan meeting	Hyderabad	21.10.02 - 23.10.02

Special Lectures delivered by the faculty in other institutions:

Sl. No	Name of faculty	Topic of Lecture	Venue and Date
1	Dr. M.P. Kothiyal	Optical Metrology – Invited talk	IIT Delhi January 2002
2	Dr.V.R.K. Murthy	Microwave Dielectric Resonator Devices	IISc, Bangalore December 2002
3	Dr. Suresh Govindarajan	D-branes in curved spaces	Allahabad, December 2002

Sl. No	Name of faculty	Topic of Lecture	Venue and Date
4	Dr.M.S. Ramachandra Rao	Magnetotransport studies on Ho and Y doped manganites: Physics, electronic correlations and conduction mechanism:	Walther-Meissner-Institute, Bavarian Academy of Sciences, Garching, Germany. June 17, 2002
		Recent perspectives in double perovskites	Walther-Meissner-Institute, Bavarian Academy of Sciences, Garching, Germany. July, 2002
		Phase separation in colossal magnetoresistive $La_{0.6}R_{0.1}Ca_{0.3}MnO_3$ (R = Ho ³⁺ (magnetic) and Y ³⁺ (non-magnetic) compounds	Magnetism and Magnetic Materials (MMM-2002), Tampa, Florida, USA November 13, 2002
		Magnetotransport studies on doped CMR manganites and fabrication of magnetic tunnel junctions using novel insulating barriers	National high magnetic field laboratory (NHMFL), Florida state Univ., Tallahassee, Florida, USA. November 18, 2002
		Magnetotransport studies on doped CMR manganites	Department of Physics, University of Maryland, College park, USA. November 20, 2002
		Magnetotransport studies on doped CMR manganites and fabrication of magnetic tunnel junctions using novel insulating barriers	IBM Almaden Research centre, San Jose, USA. November 22, 2002
5	Dr. Neellima M Gupte	Connectivity properties for enhancement of network capacity	Calcutta
		Dynamical and statistical behaviour of CML-s	IIT Bombay
6	Dr.Suresh Govindarajan	Geometry and N=1 Supersymmetric gauge theories	Jammu University
		Orientifolds of type IIA strings on Calabi-Yau Manifolds	PASCOS
7	Dr.S. Ramaprabhu	Hydrogen Energy Technology	Darmstadt, Germany

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1	Dr.V. Balakrishnan	Belgium	16.05.02 - 23.06.02	Professional visit
2	Dr. Maha Seshasayee	USA	13.05.02 - 13.09.02	Visit
3	Dr.P.C. Deshmukh	Japan	26.09.02 - 01.10.02	Visit Universities
		Japan	02.10.02 - 05.10.02	To give invited talk at Aisamp-5 in Nara, Japan
4	Dr.G. Rangarajan	Florida	18.11.02 - 29.11.02	Visit Universities
5	Dr.T.S. Natarajan	Taiwan	27.06.01 - 26.06.02	Visiting Scientist Position
6	Dr.A. Subrahmanyam	USA	22.04.02 - 26.04.02	Paper Presentation
		Germany	13.05.02 - 10.07.02	Professional visit
7	Dr.V.Venkateswara Rao	USA	01.04.02 - 05.04.02	Paper Presentation
8	Dr.Suresh Govindarajan	USA	13.05.02 - 14.06.02	Visiting Research Fellow
9	Dr.Prem B Bisht	Germany	10.05.02 - 11.07.02	BMBF joint Indo-German project

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
10	Dr. Neelima M Gupte	Italy	19.06.02 – 07.07.02	Visit to ICTP, Trieste; Conference
		Italy	08.07.02 – 21.07.02	
		Berlin	09.10.02 – 12.10.02	Meeting the working group of the International union of pure and Applied Physics
11	Dr. M.S. Ramachandra Rao	Germany	May-July 2002	Visit of Walther-Mesiiner-Institute, Munich, Germany as part of the Indo_BMBF collaborative project with Prof. Gross
		U.S.A.	08.11.02 – 22.11.02	Attended and presented a paper at the International conference, MMM-2002 held at Tampa, Florida, USA. Visited University of Tallahassee, Univ. of Maryland and IBM Almaden Research centre, and delivered talks.
12	Dr. V. Sankaranarayanan	Japan	20.08.02-27.08.02	Attended LT23, 23rd International Conference on Low Temperature Physics
13	Dr. S. Ramaprabhu	Germany	18.05.02-12.07.02	IITM-DAAD exchange program

Honours and Awards obtained:

Sl. No.	Name of the Faculty	Name of the Award	Awarded by	Awarded for	Date
1	Dr. V. Subramanian & Dr. V.R.K. Murthy	Best Paper Award	XII National Seminar on Ferroelectrics and Dielectrics IISc, Bangalore	Best Research Paper	16.12.02 – 18.12.02
2	Dr. M.S. Ramachandra Rao	LUCAS-TVS Best Paper Award	Fourth national symposium of research scholars on metals and materials	Best Research Paper	2002

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Name of Academy / Professional Society	Level	Year of Admission
1	Dr. V. Damodara Das	Humboldt Research Foundation	Re-invitation Fellowship	2002
2	Dr. V. Sankaranarayanan	Magnetics Society of India	Member	2002

4.13.4 . Design and Development Activities:

Designed a vacuum chamber for pulsed laser deposition (PLD) thin film growth technique. The chamber has a three target carousel, shutter for pre-ablation, heater for substrate heating up to 800 °C and a gas throttling system. The design was adopted by HHV, Pvt., Ltd., Bangalore and the chamber with the given design and specifications was fabricated by them.

Development of carbon nanotubes and nano-materials for hydrogen storage device.

Development of materials for hydrogen storage device.

Design and development of metal hydride storage device.

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

Development of experimental facility for the synthesis of carbon nanotubes by pyrolysis technique using double furnace technique

Development of experimental facility for the synthesis of carbon nanotubes by pyrolysis technique using single furnace technique using metal-hydrides as catalysts

Development of high pressure (150 bar) hydrogen adsorption experimental facility for the study of hydrogen adsorption in nanotubes

Pulsed laser deposition (PLD) thin film growth facility has been set up at MSRC. A Nd:YAG pulsed (19 ns pulse width) with frequency tripling (355 nm) is used in conjunction with a vacuum chamber (described in the above section (4.0)) is being used successfully to deposit high quality thin film of oxide electronic materials. The set up is the first of its kind in IIT Madras used to grow magnetic and electronic materials. The chamber is being used for various collaborative ventures with Physics, Electrical Engg., Metallurgical Engg. And Mechanical Engg. Departments.

New facilities added and Major equipment procured through project funds:

Sl No.	Name of Equipment	Value (Rs. in lakhs)
1	IBM P690 Computer	250.00
2	Pulsed laser deposition (PLD) thin film growth facility	18.00
3	Helium Recovery Compressor	22.00
4	Pulsed diode lasers (ps)	4.00
5	Lock-In Amplifiers	1.80
6	High pressure (150 bar) hydrogen adsorption experimental facility for the study of hydrogen adsorption in nanotubes	5.00
7	High energy ball milling, Fritsch P 5	7.00

Patents awarded:

The following patents have been granted to IIT, Madras:

Sl. No.	Title of the Invention	Inventor(s) and Department
1	A Method of Manufacture of a Giant Magnetostrictive Material	Prof. K.V.S. Rama Rao, Department of Physics Dr. Dilsha (Presently with NIOT)

Patents filed:

Two patents have been filed by Dr.A. Subrahmanyam

1. Scratch Resistance Coatings on Plastic Lenses (195/MAS/2003 dated 10.3.2003).
2. Electrically conducting coatings on Kapton Films for Electrostatic Discharge (223/MAS/2003 dated 19th March 2003).

4.13.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1	Michelson Dopples Interferometer	2000-2004	DRDO	80.00	Dr.M.P. Kothiyal
2	Spectrally resolved white light interferometer	2001-2004	BRNS	20.00	Dr.M.P. Kothiyal Dr.D.K. Sharma
3	Mixing and De-mixing in Chaotic Dynamical systems	2002-2005	BRNS	7.00	Dr. Neelima M Gupte Dr.V. Balakrishnan Dr.P.B. Sunil Kumar
4	Quantum confinement effects on the Optical properties of semiconductor nanostructures	2002-2005	DRDO	23.00	Dr.C. Vijayan Dr.P.B. Bisht Mr.R. Devanathan (Met.Engg.)
5	Studies on Silver and Copper based Oxide films for new and novel p-type Transparent conducting oxides (TCO)	2002-2004	DRDO	23.00	Dr.A. Subrahmanyam Dr.M.S. Ramachandra Rao

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
6	Computer Based Training Packages for Engineering Education – Electronics Learning Package II	2003-2004	MHRD	1.60	Dr.T.S. Natarajan
7	Photoelectrochemical Production of Hydrogen and Storage of Hydrogen in Composite Materials	2002-2004	MHRD	10.00	Dr.S. Ramaprabhu Dr.A. Subrahmanyam
8	Investigations of hydrogen storage properties of interstitially modified and polymer dispersed nanocrystalline materials	2002–2004	DRDO	11.70	Dr.S. Ramaprabhu
9	Creating/Providing Networking & Computational Facilities including Internet Facility	2002-2006	FST	19.00	HOD, Physics
10	Development of Quality Assured Process Technology for ITO coatings on Aluminized Kapton Films for Space Applications	2002-2003	ISRO	3.24	Dr.A.subrahmanyam Mr.R. Ratnakar, ISRO, Bangalore
11	Development of Electroluminescent (EL) Phosphors for Thin Film EL (TFEL) Displays	2002-2005	MHRD	12.00	Dr.M.S. Ramachandra Rao
12	Purchase of Lab Equipment	2002-2004	IITMANNNA Santa Clara USA	USD 5000	HOD, Physics
13	Development of high power ultrasonic transducer for NDE of thick concrete structures	2002-2004	DST	13.00	Prof.Krishnan Balasubramanian, (Mech.Engg.) Dr.G. Markandeyulu Dr.V.S. Murthy Prof.K.V.S. Rama Rao
14	Dynamics of Semi flexible polymers and their networks	2001-2004	CSIR	5.00	Dr.P.B. Sunil Kumar
15	I.B.M SUR Grant	from 2003	IBM New York	250.00	Dr.K Mangala Sundar Dr.Neelima M Gupte Dr.Sanjay Kumar Dr.M S Siva Kumar Dr.Srinivas Chakravarty Dr.P.B. Sunil Kumar
16	Dynamics on Small world networks	2001-2004	CSIR	7.13	Dr.Neelima M Gupte Dr.V. Balakrishnan
17	Project on Low Temperature and High magnetic Fields	2002-2005	DST	65.00	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K. Sethupathi
18	Entropic Formulation of Classical and Quantum Systems	2002-2005	DST	19.33	Dr. S.Lakshmi Bala, Dr. M.V.Satyanarayana Dr.V.Balakrishnan
19	Investigations of ultrafast response of tunnel junctions	2001–2004	DRDO	18.89	Dr.S.Kasivisawanathan, Dr.V. Damodara Das Dr.P.B.Bisht Dr. V.Subramanian

Industrial Consultancy projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs. in lacs)
1	Dr.V. Subramanian	Microwave studies of polymer materials	General Electric, Bangalore	0.18
2	Dr.S. Kasiviswanathan, Dr.V. Damodara Das	Development of window coats: Characterization thin metal films	Garewar Polyester	0.06

Retainer Consultancy:

Sl No.	Name of the Faculty	Title	Industry	Amount (Rs. in lakhs)
1	Dr.A. Subramanian	High efficiency polycrystalline Silicon Solar Cells	M/s. Maharishi Solar Technology Pvt Ltd., New Delhi	0.48
2	Dr.A. Subramanian	Advancement in Hard Coatings	M/s. Multi Arc India Ltd., Chennai	0.24

Exchange programme with other Universities:

1. Professor Helmut Wipf, Institut fur Festkorperphysik, Technische Universitat Darmstadt, D 64289, Darmstadt, Germany has visited the Department under IITM-DAAD exchange programme, during 16th February to 8th March 2003.
2. Professor Dr. Ederhard Riedle, Biomolecular Optics, Ludwig-Maximilian University, Munich, Germany has visited the Department under IIT Madras-BMBF collaborative project. He has given a series of talks on "Hydrogen in Metals: Fundamental and Applications" in the Department.

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	23
No. of papers presented in National Conferences	..	5
No. of papers presented in International Conferences	..	4

In Refereed National Journals:

1. S Angappane, K.Sethupathi and G Rangarajan, Electrical transport in $La_{1-x}Ca_xMnO_3$ thin films at low temperatures, Pramana Vol.58, Nos. 5&6 p.1079-1083 (2002)
2. R Nirmala, V. Sankaranarayanan, K.Sethupathi, A.V.Morozkin, T.Geethakumari and Y.Hariharan, Electrical transport and magnetic ordering in $R_2Ti_3Ge_4$ ($R = Dy, Ho$ and Er) compounds, Pramana Vol.58, Nos. 5&6 p.1101-1104, (2002)

In Refereed International Journals:

1. John Joseph,Dias, T.M.Vimala and V.R.K.Murthy, Structural Investigations on $Ba_xPb_{1-x}(Mg_{1/3}Nb_{2/3})O_3$ Solid Solutions Using the X-Ray Rietveld Method, Jpn.J.Appl. Phys. ,41, 3010-3014, May (2002)
2. P. Ranjith and P. B. Sunil Kumar Phys. Rev. Lett. 89,018302-.18306 June (2002)
3. Sumithra Sankararaman, Gautam I. Menon and P. B. Sunil Kumar Phys. Rev. E. 66,031914-031930 September (2002)
4. P. Ranjith and P. B. Sunil Kumar Physica A 318,220-229 February (2003)
5. K. C. Lakshmi and P. B. Sunil Kumar Phys. Rev. E. 67,011507-011516 January (2003)
6. M.S. Ramachandra Rao, V. Ravindranath, Y.Lu, J. Klien and R. Gross. , Double strain effect in doped $La_{0.7}Ca_{0.3}MnO_3$ PLD grown thin films and fabrication of high resistance tunnel junction using a novel insulating tunnel barrier, Physics D, Appl. Phys. 35, 1-4 (2002)
7. G.R. Pradhan, N. Chatterjee and N Gupte, Mode locking of spatio-temporally periodic orbits in coupled sine circle maps, Phy.Rev. E 65 046227,1-13, (2002)
8. N Gupte, Spatial intermittency in a inhomogenous coupled map lattice, International Journal of Bifurcations and Chaos, 12, 1363 (2002)

9. Sharma and N Gupte, Spatio-temporal intermittency and scaling laws in inhomogeneous coupled map lattices, *Phys.Rev.E* 036210, 1-8, (2002)
10. N. Gupte, A. Sharma and G.R. Pradhan, Dynamical and Statistical Behaviour of Coupled Map Lattices, *Physica A* 318, 85-91, (2003)
11. T.M. Janaki and N Gupte, Connectivity Strategies for the enhancement of capacity of load-bearing networks, *Phys.Rev.E* 021503, 1-6, (2003)
12. R.Nirmala, A.V.Morozkin, M.Hofmann,V.Sankaranarayanan, K.Sethupathi and Y.Yamamoto, Magnetic Properties of $\text{Er}_2\text{Mn}_3\text{Si}_5$, *Journal of Alloys and Compounds* 335, 43-47, (2002)
13. R.Nirmala, V.Sankaranarayanan, K.Sethupathi, A.V.Morozkin, Z.Chu,W.B.Yelon,S.K.Malik, Y.Yamamoto and H.Hori, Magnetic structure of $\text{Tb}_2\text{Mn}_3\text{Si}_5$, *Journal of Alloys and Compounds* 347, 9-13, (2002)
14. Nirmala, R.; Sankaranarayanan, V.; Sethupathi, K.; Morozkin, A. V., New materials for magnetic refrigerator applications, *Key Engineering Materials*, 227, 113-117 (2002).
15. S.Lakshmi Bala and M.V.Satyanarayana, Phase Estimation, Photon Cloning and the Bernoulli Map, *Physics Letters A* 298, 1-6, May (2002)
16. P. Malar, S.Kasiviswanathan, Ram Devanathan and V. Damodara Das, Fractal nature crystalline-crystalline interface in CuInSe_2 thin films. *Mat. Res Bull.* 37, pp1475-1480, (2002)
17. Muruganadham, N. Rajalakshmi, K.S. Dhathathreyan and S. Ramaprabhu, Electrochemical investigations of MmFe_2 electrodes for Ni-MH battery applications, *J. Power Sources*, 114, 352-356 (2003).
18. Shanthi, N. Mani, T.R. Kesavan and S. Ramaprabhu, Investigation of hydrogen storage properties in certain Zr based AB_2 alloys, *Int. J. Hydrogen Energy*, 27, 419 - 424 (2002).
19. Seetharam, N. Mani, T.R. Kesavan and S. Ramaprabhu, Hydrogen storage properties in $\text{Ho}_{0.1}\text{Zr}_{0.9}\text{MnFe}_{0.5}\text{Co}_{0.5}$ and $\text{Ho}_{0.1}\text{Zr}_{0.9}\text{MnFe}_{0.5}\text{Ni}_{0.5}$, *Int. J. Hydrogen Energy*, 27, 413 - 418 (2002).
20. N. Mani, T.R. Kesavan and S. Ramaprabhu, Hydrogen storage properties in $\text{ZrMnFe}_{1-x}\text{Co}_x$ alloys. *J. Applied Physics, Condensed Matter*, 14, 3939-3949 (2002).
21. N. Mani, R. Sivakumar and S. Ramaprabhu, Hydrogen storage properties in $\text{ZrMnFe}_{1-x}\text{Ni}_x$ alloys. *J. Alloys and Compounds*, 337, 148-154 (2002).
22. Vishwanath Krishna Bhat, K.N. Bhat, A. Subrahmanyam, Effect of oxide growth temperature on the electrical performance of extremely thin (~3 nm) wet oxides of silicon, *Materials Science & Engineering B*, B98, P.142-143 (2003).
23. Ullash Kumar Barik, S.Srinivasan, C.L. Nagendra, A. Subrahmanyam, Electrical and optical properties of reactive DC magnetron sputtered silver oxide thin films: role of oxygen, *Thin solid films*, Vol.429, P129-134, (2003)

In Proceedings of National Conferences:

1. M.P. Kothiyal & S. Suja Helen, White Light Interferometry for Surface Metrology, *Perspectival in Modern Optics and Optical Instrumentation*, pp.36-48.
2. N. Rama, J.B. Phillip, A. Erb, V. Sankaranarayanan, R. Gross and M.S. Ramachandra Rao, Effect of rare earth ion substitution on the magnetic and transport properties of $\text{Pr}_{0.7}\text{RE}_{0.04}\text{Sr}_{0.26}\text{MnO}_3$ (RE = Er, Tb and Ho): Solid state physics symposium; Panjab university, Dec. 26-30, 2002 (India).
3. M.S. Ramachandra Rao, Substrate and lattice strain induced properties of pulsed laser deposited $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ and $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ thin films: Solid state physics symposium; Panjab university, Dec. 26-30, 2002 (India).
4. M. M. Shaijumon and S. Ramaprabhu, Synthesis of carbon nanostructure from the decomposition of acetylene on hydrogen storage, alloy catalyst and their hydrogen adsorption studies, P 27, National Symposium on Nanostructured materials, IIT Delhi 5-6, December (2002)
5. M. Kandavel and S. Ramaprabhu, Hydrogen storage properties of Ti based AB_2 nanostructured materials, P 28, National Symposium on Nanostructured materials, IIT Delhi 5-6, December (2002)

In Proceedings of International Conferences:

1. S Angappane, K.Sethupathi and G Rangarajan, Magnetic clusters in $Nd_{1-x}Sr_xMnO_3$ ($0.3 \leq x \leq 0.5$): An ESR study" Paper presented at 47th Annual Conference on magnetism and magnetic Materials, Tampa, Florida, Nov.11-15, 2002
2. R Nirmla, V Sankaranarayanan, K Sethupathi, T Geethakumary, MC Valsakumar, Y Hariharan and AV Morozkin, Magnetism in RMn_2Al_3 (R = Sm,Tb,Dy and Ho) Compounds: Possible role of Mn, Paper presented in the International Conference on Low Temperature Physics (LT23), Hiroshima, Japan Aug.20-27th 2002
3. M. Kandavel and S. Ramaprabhu, Novel hydrogen storage Ti-based AB_2 materials, Presented in International Symposium on Recent Advances in Inorganic Materials, EM138, December 11-13, 2002, Mumbai, India (2002)
4. M. M. Shaijumon and S. Ramaprabhu, Hydrogen adsorption in carbon nanomaterials synthesised from acetylene using hydrogen storage alloy as a catalyst, Presented in International Symposium on Recent Advances in Inorganic Materials, NM101, December 11-13, 2002, Mumbai, India (2002)

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1	Dr. Srin Krishnamurthy Senior Research Physicist	07.05.02	Lecture
2	Dr. G.V. Narasimha Rao	31.07.02	Lecture
3	Prof. Anil Pradhan	14.08.02	Lecture
4	Dr. J.K. Rath, Assistant Professor	20.08.02	Lecture
5	Dr. R. Mahendiran	23.10.02	Lecture
6	Dr. S. Anantha Ramakrishna	31.10.02	Lecture
7	Dr. Kheya Sengupta, Lehrstuhl fuer Biophysik	16.12.02	Lecture
8	Prof. Meera Chandrasekhar	27.12.02	Visited the Department
9	Prof. Bimal K Sarma	07.01.03	Lecture
10	Prof. I.P. Batra, Chairman	10.01.03	Discussed the M.S/Ph.D. programme at University of Illinois, Chicago
11	Dr. Manoj Gopalakrishnan	10.01.03	Lecture
12	Dr. M. Venkatesan	17.01.03	Lecture
13	Dr. G. Venkateswara Pai	03.02.03	Lecture
14	Dr. D. Indumathi	19.02.03	Lecture
15	Prof. Helmut Wipf	05.03.03	Lecture
16	Prof. Dr.Eberhard Riedle	06.03.03	Lecture
17	Mr. R. Arun	26.03.03	Lecture
18	Prof. R.E. Amritkar	28.03.03	Lecture

4.13.6. Other Activities:

The Scientists of DMRL, Hyderabad, Faculty members of Magnetism and Magnetic Materials Laboratory and Low Temperature Laboratory, IIT Madras have discussed for collaborative proposals on development of Magnetostrictive materials and Magneto calorimetric materials.

Dr.J. Majhi, Dr.V. Venkateswara Rao, Mr.K. Sarangapani and Dr.K. Srinivasan have superannuated on June 30, 2002.

Prof. Meera Chandrasekhar, (M.Sc. student of 1970, IITM) Department of Physics, University of Missouri, USA visited the Department on 27th December 2002. She has been honoured with Distinguished Alumnus award – 2002 on 29th December 2002 by the Director, IITM.

The following research scholars have completed their Ph.D. Viva-Voce examination in the year 2002- 2003.

1. Mr.M. Pattabiraman
2. Ms.R. Nirmala
3. Mr.V. Ravindranath
4. Mr.Ramesh Kumar Sistla
5. Ms.N. Kejalakshmi

Dr. Mahaveer Kumar Jain, joined the Department on 19.2.2003 as Assistant Professor.

Dr.K. Sethupathi is appointed as Warden, Ganga Hostel w.e.f. April 2002

Dr.T.R. Kesavan has visited Japan as Visiting Researcher during 30th August 2002 - 30th October 2002.

The SPIE – The International Society for Optical Engineering, Bellingham, Washington, USA has honoured Dr.N Krishna Mohan, Technical Officer (SG) as Fellow of SPIE. This award is based on the significant research contributions in the area of Optics and Metrology. The fellow award will be presented in SPIE's Annual Technical Symposium on Optical Science, and Technology going to be held from August 3 to 8, 2003 at San Diego, California. He is the third person from India to get such a distinguished honour.

A 5 member delegation from the Swiss Federal Institute of Technology, Zurich has visited the Department on 26th February 2003.

N Gupte and S Rao, Meeting report on 'Women in Physics', R.M. Godbole, Current Science, 83, 359 (2002).

N Gupte, J Gyanchandani, S Nair and S Rao, Women in Physics, An Indian Perspective, Proceeding of the conference on Women in Physics, APS (2002).

Dr.V Sankaranarayanan delivered a lecture on Electronic and Thermal Transport Studies at Low Temperatures for the UGC Refresher Course Programme organized at Regional Sophisticated Instrumentation Centre (IIT Madras) in the month of February 2003.

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:

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 31.3.2003, the following numbers of students/scholars were with this center:

- M.Tech - 5
- M.S - 5
- Ph.D - 6

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 and Venue
Conference:				
1.	A. Thirunavukkarasu	Ph.D.	Congress of Metallurgy Professionals-COMPOSIT 2003	Jan 11-12, 2003, IIT, Kharagpur
2.	J.Ramaswamy Shetty	M.Tech	ISAMPE Conference	May 3-4, 2002 Trivandrum
3.	Sajeev Thomas	Ph.D.	Implast - 2003	March 16-19, 2003 New Delhi
Symposia:				
1.	A.Thirunavukkarasu	Ph.D	National Symposia on Nanostructured Materials	Dec 11-13, 2002 Mumbai
2.	A.Thirunavukkarasu	Ph.D	Intl. Symposia on recent Advances in Inorganic Materials	Dec 11-13, 2002 Mumbai

5.1.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Dr. P. Alagusundaramoorthy, Ph.D. (IIT, Madras)	FRP Composites for Civil Engg., FRP Chemical Plant Structures, Retrofitting and Rehabilitation of Concrete Structures.
Dr. M. Balasubramanian, Ph.D. (IIT, Madras)	Ceramics and Ceramic Composites, Polymer Composites, sol-gel process
Dr. S.K. Malhotra, Ph.D. (IIT, Madras) (Head)	Composite Materials Research, Analysis and Design of Composite Products, Quality Control of Composites
Dr. R. Velmurugan, Ph.D. (IIT, Delhi)	Composite Structures Analysis and Design, Impact Mechanics, 3-D Composites

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

Sl. No.	Coordinator(s)	Title	Period
Short-term Courses:			
1.	Dr. P. Alagusundaramoorthy	FRP Composites for repair of Concrete Structures.	July 1-5, 2002
2.	Dr P. Alagusundaramoorthy	FRP Technology	July 15-19, 2002
Workshop:			
1.	Dr M. Balasubramanian	Fibre Reinforced Thermoplastics	Sept 2-7, 2002

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

Sl. No.	Name of Faculty	Title	Period and Venue
Workshop:			
1.	Dr S.K. Malhotra	Indo-German Workshop on Polymer Science and Technology	Oct 2-4, 2002, Rajkot
Symposia:			
1.	Dr. R. Velmurugan	Symposia on Large deformations.	Sept 1, 2002, New Delhi
2.	Dr R. Velmurugan	Implast 2003	March 16-19, 2003 New Delhi
Conference:			
1.	Dr M. Balasubramanian	Intl. Conf. on Plastics and Environment	Feb 24-25, 2003 New Delhi
2.	Dr. M. Balasubramanian	Progress in Composite Materials	Oct, 18-20, 2002 Mumbai
3.	Dr. S.K. Malhotra	Intl. Conf. on Metals and Materials for Automobile Industry	Sept, 13-14, 2002 New Delhi
Seminar:			
1.	Dr M. Balasubramanian	National Seminar on Scientific Research and Industrial Development in Glass and Ceramics	Dec. 7-9, 2002 Kolkata
2.	Dr P. Alagusundaramoorthy	Intl. Seminar on Industrial Structures	Jan 8-10, 2003 Coimbatore

Special Lectures delivered by the faculty in other institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr. P. Alagusundaramoorthy	FRP Composites in Civil Engineering	Crescent Engg. College, Chennai, Aug. 29, 2002

Visits abroad by faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr S.K. Malhotra	Germany	May 5-25, 2002	IITM-BMBF Cooperation Programme

5.1.4 Design and Development Activities:

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

Dr R. Velmurugan and his students developed a data acquisition system for the Impact studies to store and measure loads and velocities.

New facilities added or major equipment procured through project funds:

Sl. No.	Equipment	Value (Rs in lakhs)
1.	FRP Crusher	1.50

5.1.5 Research and Consultancy:

Sponsored Research Projects:

Sl. 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 (Mechanical Engg.) Dr.S.K.Malhotra
2.	Feasibility study on composite waste recycling.	May 2002-March 2003	TIFAC-DST	5.85	Dr.M.Balasubramanian Dr.P.Alagusundaramoorthy
3.	Sol-gel processing of Advanced Ceramic Fibres	Apr.2002-March 2004	MHRD	8.00	Dr M.Balasubramanian Dr P.Alagusundaramoorthy
4.	Development of sol-gel protective coating on metals	Oct 2002-Sept.2005	UGC	3.30	Dr M.Balasubramanian

Industrial Consultancy Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr.P.Alagusundaramoorthy	Repair of Light Houses at Gujarat (damaged by Earthquake)	Dept. of Light Houses, Govt. of India	1.33

RBIC Projects:

Sl. No.	Name of Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr P.Alagusundaramoorthy Dr M.Balasubramanian	GRP gratings by Compression Moulding	Technocraft, Chennai	1.50
2.	Dr.R.Velmurugan	Preparation of JV standards for composites & other chemicals	DRDL, Hyderabad	10.24
3.	Dr R.Velmurugan	Characterization of non-Metallic materials for Canister	DRDL, Hyderabad	6.04

Exchange programme with other Universities:

1. Mr. Ramkumar (research scholar) has gone to Osaka Prefecture University, Japan for 18 months (Oct. 2001 to March 2003) under agreement between IIT Madras and College of Engg., Osaka Prefecture University, Japan.
2. Indo-German Collaborative Research Programme (BMBF) with Technical University, Berlin.

Research Publications:

Total No. of papers published in Refereed National Journals	..	2
Total No. of papers published in Refereed International Journals	..	4
Total No. of papers presented in National Conferences	..	2
Total No. of papers presented in International Conferences	..	5

In Refereed National Journals:

1. V. Viswabaskaran, F.D. Gnanam and M. Balasubramanian, "Study on Utilisation of Nayveli Clay for value added Ceramics", Trans. of the Indian Ceramic Soc., v-61, pp.93-98, 2002.
2. V. Viswabaskaran, M. Balasubramanian and F.D. Gnanam, "Characterization of Alumina clays from Tamil Nadu", Trans. of the Indian Ceramic Soc.,v-61, pp.176-180, 2002.

In Refereed International Journals:

1. J.Ramkumar, S.K.Malhotra and R.Krishnamurthy, "Studies on drilling of glass / epoxy laminates using Coated HSS drills" *Jl.of Materials and Manufacturing processes*, v-17, n-2, pp.213-222, 2002.
2. J.Ramkumar, S.Aravindan, S.K.Malhotra and R.Krishnamurthy, "Enhancing themetallurgical properties of WC insert (K-20) cutting tool through microwave treatment," *Materials Letters*, v-53, pp.200-204, 2002.
3. N.K.Gupta and R.Velmurugan, "Experiments and analysis of foam filled composite domes under axial compression", *Intl. Jl. of Composite Materials*, v-36, n-8, pp.899-914, 2002.
4. V.Viswabaskaran, F.D.Gnanam and M.Balasubramanian, "Mullitisation behaviour of south Indian clays," *Ceramics International*, v-28, pp.557-564, 2002.

In Proceedings of National Conferences:

1. P.Alagusundaramoorthy, "Composite Materials for Retrofilling and Rehabilitation of Berthing structures", *Proc. of National Symposium on Rehabilitation of Berthing structures*, IIT, Madras, Nov.2002, pp.80-93.
2. J.Ramaswamy Shetty, M.Subba Rao and R.Velmurugan, "Effect of stitching on in-plane mechanical properties of CFRP Composites," *Proc.of ISAMPE Conf.Trivandrum*, May 3-4, 2002, pp.185-194.

In Proceedings of International Conferences:

1. S.K.Malhotra and A.O.Siddiqui, "Natural fibre Composites for Automotive applications," *Proc. of Intl. Conf.: Metals and Materials for Automotive Industry*, New Delhi, Sept. 13-14, 2002, pp.91-95.
2. J.Ramaswamy Shetty, M.Subba Rao and R.Velmurugan, "Effect of stitching on in-plane mechanical properties of CFRP prepreg Composites" *Proc. of SEM annual Conf. on Experimental and Applied Mechanics*, Wisconsin, USA, June 10, 2002, pp.25-28.
3. N.Mohammed Sheriff, A.A.Selvam, R.Velmurugan and N.K.Gupta, "Numerical and experimental investigation in buckling behaviour of shallow and semi-spherical shells," *Proc. of Implast 2003*, New Delhi, March 16-19, 2003, pp.545-551.
4. R.Velmurugan, N K.Gupta, S.S.Raimurugan and A.E.Perumal, "Experimental and theoretical studies on effect of stitching of FRP cylindrical shells under axial Compression," *Proc.of Implast. 2003*, New Delhi, March 16-19, 2003, pp.32-44.
5. R.Velmurugan. Sanjeev Thomas and N.K.Gupta, "Impact perforation of CSM – polyester composite laminated plates by cylindro-conical projectiles" *Proc.of Implast 2003*, New Delhi, March 16-19, 2003, pp.678-687.

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 ceramic 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
- Luminescent materials
- Rare Earth based Colourants
- Thin film Multilayers/Heterostructures
- Electroluminescent (EL) thin films
- Spintronics
- Mesoporous solids

5.2.2. Academic Programmes:

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 31.3.2003, the following number of students/scholars were with this center:

- Ph.D - 6

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 and venue
1.	V.Ravindranath, Abhijit Goel, C.V.Gokulrathnam and M.S.Ramachandra Rao	Effect of addition of 5 wt. % of PbO on the microstructure and electrical transport properties of $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$	Fourth National Symposium for Research Scholars Organised by the Indian Institute of Metals and Dept. of Metallurgical Engg. IIT Madras Best Paper Award (Lucas-TVS Award)	Sept.27-28, 2002 IIT Madras
2.	N.Lakshminarasimhan, G.Vignesh and U.V.Varadaraju	Synthesis and study of Luminescence of Eu^{2+} in long afterglow $\text{Sr}_3\text{MgSi}_2\text{O}_8: \text{Eu}^{2+}, \text{Dy}^{3+}$ phosphor	Fourth National Symposium for Research Scholars Organised by the Indian Institute of Metals and Dept. of Metallurgical Engg., IIT Madras	Sept.27-28, 2002 IIT Madras
3.	N.Lakshminarasimhan and M.V.V.M.S.Kishore	Workshop on Electron Diffraction	Workshop on Electron Diffraction, Organized by the Indian Institute of Metals and Dept. of Metallurgical Engg., IIT Madras	Oct. 2002 IIT Madras, Chennai
4.	N.Lakshminarasimhan and U.V.Varadaraju	Eu^{3+} luminescence – A structural probe in $\text{BiCa}_4(\text{PO}_4)_3\text{O}$ and $\text{LaCa}_4(\text{PO}_4)_3\text{O}$	Chemists Meet, 2003, Dept. of Chemistry, IIT Madras	Dec.7-8, 2002

5.2.3 Faculty and their activities:

Faculty:

Name and Qualification	Major Areas of Specialization
Professor Prof. U.V. Varadaraju Ph.D. (IISC Bangalore)	Thermo Electric Materials, Materials for lithium ion battery, Luminescent materials, Inorganic Colourants
Asst. Professor Dr. M.S. Ramachandra Rao, Ph.D. (IIT Kharagpur)	Spintronics, Multilayers, Heterostructure thin film growth of manganites, double perovskites, PLZT ferroelectrics for sensor applications, Electroluminescent films
Senior Scientific Officer - I Dr. K.D. Chandrasekaran, Ph.D. (IIT Madras)	Oxide ceramic systems for practical applications, High temperature heating element composition.

Special Lectures delivered by the faculty in other Institutions:

S. No.	Name of Faculty	Topic of lecture	Venue and Date
1.	Prof. B. Viswanathan	Nanocrystalline perovskites as electrode materials for fuel cell applications	Symposium on Catalysis Concepts to Practice, NCL, Pune, 26-27 June 2002.
		Science and Technology of Nanomaterials-an outlook	National Symposium of Research Scholars on Metals materials, IIT Madras, Sep. 27-28, 2002
		Development of anodes for fuel cells	Special invited presentation in IndoGerman seminar, Karaikudi, Jan. 1-13,2003
		Design of meso porous solids for catalytic applications	Andhrapradesh Akademi of Sciences, Annual Sessionmn, Special Lecture, Tirupathi, 25 th Jan. 2003
		Redox properties of bis(8-hydroxyquinoline) manganese(II) encapsulated in various zeolites	National Symposium on Catalysis at IICT, Hyderabad, Feb. 2003
		Synthesis characterization and catalytic activity of mesoporous iron substituted aluminaophosphates	
		"Electron Spectroscopy" - 2 Lectures	UGC Refresher Course on Analytical Instrumentation organized by RSIC, IITMadras Feb 2003
2	Prof. U.V. Varadaraju	Rare earth based pigments	RRL, Trivandrum. July 2002
		Thermoelectric Battery Electrode and Luminescence Materials	University of Caen, University of Paris, December 2002
3.	Dr.M.S.Ramachandra Rao	Magnetotransport studies on doped CMR magnets and fabrication of magnetic tunnel junctions (MTJ) using novel insulating layers	National High Magnetic Field Lab (NHMFL), Florida State University, Tallahassee, Florida, USA, 18-11-2002. Physics Department, University of Maryland College Park, Washington, USA, 20-11-2002 IBM Almaden Research Centre, San Jose, California, USA, 22-11-2002
		Scanning Probe Microscopy – a Gateway to Micro and Nano World	UGC Refresher Course on Analytical Instrumentation organized by RSIC, IIT Madras Feb 2003
		i) Magneto-transport properties of Ho ³⁺ & Y ³⁺ doped LCMO ii)Recent perspectives on double perovskites.	Walther-Meissner Institute (WMI), Munich, Germany
		Thin Film Growth to Realize Epitaxial Films: PLD a versatile Technique	Physics Department, PG College, Osmania University, Hyderabad on March 22, 2003
4.	Dr. K.D.Chandrasekaran	"Recent Developments in Nanotechnology". Dr. K.D.Chandrasekaran and Prof. B.Viswanathan,	National Symposium on Current Trends in Material Science Organised by Department of Chemistry and Physics, Auxilium College, Vellore 632 006, 5-6 February 2003
		"High Temperature Super Conductors", Dr. K.D.Chandrasekaran and Prof. U.V.Varadaraju	Heavy Water Plant, Tuticorin, 14 th March 2003

Visits abroad by faculty:

Sl. No.	Name of faculty	Country visited	Date	Purpose of visit
1.	Prof. U.V.Varadaraju	France	Dec. 2002	To carry out research; A joint collaborative Project on Thermoelectric Materials is being initiated with the University of Caen as Visiting Professor
			Nov. 2002 Oct. 2002	ISMRA, Laboratoire CRISMT CAEN CEDEX, France as a visiting faculty to do collaborative research work with Prof. Bernard Raveau.
2.	Dr. M.S. Ramachandra Rao	Germany	May 18- July 12, 2002	Walther-Meissner Institute (WMI), Munich, Germany, under BMBF project between India and Federal Republic of Germany for a period of two months. Under Indian Institute of Technology-BMBF (Indo-German) collaborative project Carried out magneto-transport studies on thin films grown at MSRC using the PLD technique
		U.S.A.	11-15 Nov. 2002	Presented a paper on "Phase separation in the Colossal magneto resistive $\text{La}_{0.6}\text{R}_{0.1}\text{Ca}_{0.3}\text{MnO}_3$ [R = Ho^{3+} (magnetic) and Y^{3+} (non-magnetic)] compounds at the 47 th Annual Conference on Magnetism and Magnetic Materials (MMM 2002), at Tampa, Florida, U.S.A.

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Prof.U.V.Varadaraju	Significant contribution of 12 patterns to the Powder Diffraction File	International Centre for Diffraction Data	In recognition of the significant contribution of 12 patterns to the Powder Diffraction File -Release 2002	Aug 2002

5.2.4 Design and Development Activities:

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

- Two electrode Li cell has been fabricated. The cell gives 3.8 volts with a capacity of 85 mA h/g and this has been successfully tested.

New facilities added or major equipment procured through project funds:

Sl. No.	Name of Equipment	Value (Rs. in lakhs)
1.	RF Magnetron Sputtering Unit	8.00

5.2.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in Lakhs)	Co-ordinator
1.	Development of Electro-Luminescent (EL) phosphors for thin film displays	1.4.2002 - 30.9.2005	MHRD	12.00	Dr. M.S.Ramachandra Rao

Research Publications:

No. of papers published in Refereed National Journals	.. 7
No. of papers published in Refereed International Journals	.. 7
No. of papers presented in International Conferences	.. 3

In Refereed National Journals:

1. Nanocrystalline Lead Ruthenium Pyrochlore as Oxygen Reduction Electrode: Raghuvver, V., Kesav Kumar and B. Viswanathan, *Indian J. Eng. Mater. Sci.*, 9 (2002) 137-140.
2. Esterification of Triethyleneglycol with methacrylic acid over phosphotungstic acids: S. Shanmugam, B. Viswanathan and T.K. Varadarajan, *Bull. Catal. Soc. India*, 1 (2002), 116-120.
3. Vapour phase oxidation of benzyl alcohol on A_2BO_4 type perovskite related oxide: C. Srinivasan and B. Viswanathan, *Indian J. Chem.*, 41A (2002), 1349-1354.
4. Photo electrochemical reduction of nitrite ions to ammonia on CdS photocatalysts : K.T.Ranjit and B. Viswanathan, *J. Photobiol. Chem. A.*, 6129 (2002), 1-4.
5. Redox properties of copper oxinate complexes in zeolite matrices: R. Ganesan and B.Viswanathan,, *Bull. Catalysis Society of India*, 2(1/2) (2003), 1.
6. Hybriding of nitrogen containing Carbon nanotubes: M.Sankaran and B. Viswanathan, *Bull. Catalysis Society of India*, 2(1/2) (2003), 9.
7. Carbon nanomaterials – are they appropriate candidates for hydrogen storage?: B. Viswanathan, M.Sankaran and M.Sulice Scibioth, *Bull. Catalysis Society of India*, 2(1/2) (2002), 12.

In Refereed International Journals:

1. Structural and magnetic properties of $Sr_{2-x}Ca_xFeReO_6$: T. Alamelu, U.V. Varadaraju, M. Venkatesan, A.P. Douvalis and J.M.D. Coey, *J. Appl. Phys.*, 91(2002), 8909-8911.
2. Intergrain magnetoresistance in electron doped Sr_2FeMoO_6 : M.Venkatesan, C.B. Fitzgerald, U.V. Varadaraju and J.M.D. Coey, *IEEE Transactions on Magnetics*, .
3. Enhanced magnetoresistance in Sr_2FeMoO_6 by combustion synthesis: M. Venkatesan, U.V. Varadaraju, A.P. Douvalis, C.B. Fitzgerald, F.M.F. Pren and J.M.D. Coey, *Journal of Materials Chemistry (Royal Society)*, 12 (2002), 2184-2186.
4. Evidence of reduction in spin disorder by Ho^{3+} doping in LCMO: M.S.Ramachandra Rao, V. Ravindranath and R. Gross, *Phil. Mag. B.*, 38(2003) 1631-1637.
5. Can $La_{2-x}Sr_xCuO_4$ be used as anodes for methanol Fuel Cells?: Raghveer, V and B. Viswanathan , *Fuel* 81 (2002) 2191.
6. Synthesis, Characterization and Catalytic Activity of μ -oxobridged dinuclear iron 1,10 Phenanthroline complex encapsulated in MCM-41: R.Ganesan and B. Viswanathan, *J.Molecular Catalysis*, 181(2002), 99-107.
7. Mesoporous V-AlPO- New partial oxidation catalyst: Ch. Subramanyam, B. Louis, B.Viswanathan and T.K. Varadarajan, *Eusiasan ChemTech J.*, 4 (2002), 2002-222.

In Proceedings of International Conferences:

1. Liquid phase oxidation of ethyl benzene and benzyl alcohol over mesoporous CrAlPO: Ch. Subrahmanyam, B. Louis, B. Viswanathan, A. Renken and T.K. Varadarajan, 3rd International Mesosstructured Materials Symposium (IMMS 2002), July 8-11, 2002 Jeju, Korea.
2. Synthesis, Characterization and electrochemical studies of a new layered lithium nickel arsenate: M.V.V.M.S.Kishore and U.V.Varadaraju, International Conference on Recent Advances in Inorganic Materials (RAIM-2002), 11-13th Dec. 2002, IIT Bombay.
3. Luminescence and site occupancy of Eu^{3+} in apatite-related phosphate $BiCa_4(PO_4)_3O$: N.Lakshminarasimhan and U.V.Varadaraju, International Conference on Recent Advances in Inorganic Materials (RAIM-2002), 11-13th Dec. 2002, IIT Bombay.

Distinguished Visitors to the Centre:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Prof. F.J. Berry, Open University UK	Jan 2003	under INSA exchange Programme Structural Rearrangements at Nano-scale by Mechano-Chemistry
2.	Dr. R. Suryanarayanan, University of Paris, Orsay, France	February 2003	discussions with Faculty and Research Scholars
3.	Dr. Mathias Opel of Walther-Meissner Institute (WMI), Munich, Germany	January 11 to February 9, 2003	BMBF Exchange Programmes carried out Thin Film Growth of Double Perovskites (Sr_2CrWO_6) and thermo-power measurements on bulk samples. "Raman Spectroscopy on High Temperature Superconductors"
4.	Mr. Boris Phillip of Walther-Meissner Institute (WMI), Munich, Germany	January 11 to February 9, 2003	DAAD Exchange Programmes carried out Thin Film Growth of Double Perovskites (Sr_2CrWO_6) and thermo-power measurements on bulk samples. "Studies on Double Perovskites".
5.	Dr. M. Kottaisamy, Visiting Researcher, Opto-electronics R&D Centre, Kanazawa Institute of Technology, Japan	23-10-2002	"Development of oxide phosphors for flat panel display applications"

5.2.6 Other Activities:

1. NAAC Peer Committee Membership for Prof.B.Viswanathan for University of Kerala as well as Institute of Science, Mumbai.
2. PATSER Programme Evaluation Committee – Prof.B.Viswanathan at DSIR New Delhi
3. Prof. U.V.Varadaraju has been nominated as member of task group on "Collecting, Testing and Dissemination of experiments in Solid State and Materials Chemistry" under the Inorganic Chemistry Division and Committee on Chemistry Education of the IUPAC (International Union of Pure and Applied Chemistry).
4. Prof. U.V.Varadaraju has attended the NMITLI (New Millenium India Technology Leadership Initiative) project agreement signing and Technical Discussion meeting at I.I.Sc., Bangalore and made a presentation on rare earth based pigments.
5. Rechargeable lithium coin cell (CR2016) battery with LiCoO_2 as cathode and Li metal as anode made (operating at 3.9 V with a specific capacity of 135 A h/kg) in MSRC has been tested for reproducibility.
6. Prof. U.V.Varadaraju and Research Scholar Mr. M. Kishore visited M/s. Hyderabad Batteries Ltd., Hyderabad for a presentation and discussion for a possible collaboration on the production of rechargeable coin-cell batteries with the configuration CR 2016 on 28-09-02.
7. Development of Rechargeable Lithium Battery: A Battery consisting of LiCoO_2/Li operating at 3.9 V with a specific capacity of 135 A h/kg has been developed in the coin cell configuration CR 2016
8. RF sputtering unit has been installed successfully.
9. Dr. M.S. Ramachandra Rao has been nominated as Local Chaiman for Nanostructures in the forthcoming International Workshop on Physics of Semiconductor Devices (IWPSD) to be held in December 15-20, 2003.
10. Crimping tool/facility to make coin cells has been installed inside the glove box.
11. Prof. U.V. Varadaraju : Visited RRL & VSSC Trivandrum to hold discussions regarding possible collaborative projects.
12. Dr. M.S.Ramachandra Rao: Visit and Discussion: International Advanced Research Centre for New Materials (ARCI), Hyderabad, on March 24, 2003.
13. Prof. U.V.Varadaraju made a presentation in CSIR, New Delhi before a high power committee Headed by Prof. R. Narasimha, FRS, on NMITLI (New Millenium India Technology Leadership Initiative) Proposal on Environmentally Secure Rare Earth Colorants for Surface Coatings. The project proposal in principle has been approved by CSIR.
14. Battery Cycling Unit (to study Charge/Discharge behaviour of secondary batteries) has been installed.

5.3. REGIONAL SOPHISTICATED INSTRUMENTATION CENTRE

5.3.1 Introduction:

Regional Sophisticated Instrumentation Centre (RSIC) 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.

RSIC also undertakes on specific request, servicing of sophisticated instruments at other institution and also provide training for operation and maintenance.

Periodically RSIC 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:

Sl. No.	Title
1.	Special Course on EPR spectroscopy to students in Physics/Chemistry Departments Sept. - Dec. 2002

Students on roll:

This Centre enrolls the students/scholars for B.Tech, Dual Degree, M.S. and Ph.D. programmes. But they are admitted in the respective departments for award of degree. As on 31.3.2003, the following number of students/scholars were with this center:

- B.Tech - 2
- Dual Degree - 2
- M S - 1
- Ph D - 2

Names of Student/Research Officer attended Conference/seminar and symposia abroad/India:

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar	Date and venue
Conference:				
1.	N.Ramesh babu	Oral presentation	Nat. Conference on Biomedical Materials	Dec.20-21, 2002, Kolkata
Seminar:				
1.	Dr.T.K. Kundu		First Asian Symposium in Bioinorganic Chemistry	Okazaki, Japan, March 7-10, 2003.

5.3.3 Faculty and their activities:

Faculty:

Name and Qualification	Major areas of specialization
Professor:	
Prof.S.Sankararaman, Ph.D [Head]	Organic Chemistry, Photo Chemistry
Associate Professor:	
Dr.T Pradeep, Ph.D	Chemical Physics, Spectroscopy, Ion Chemistry, Monolayers, Clusters
Assistant Professor:	
T.S.Sampath Kumar, M.Sc. Ph.D	Biometaterials, Surface Sciences, Analytical Instrumentation.
Visiting Faculty:	
Emeritus Professor: P.T.Manoharan FNA, FASc, FTWAS, FWIF	Spectroscopy, Bioinorganic Chemistry
Scientific Officers:	
Dr M.S.Moni	NMR Spectroscopy
Dr.R.Murugesan	Mass Spectroscopy
Dr.Babu Varghese	X-ray crystallography

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

Sl. No.	Co-ordinators	Title	Period
Symposia:			
1.	Prof.P.T. Manoharan (Indian Organiser)	First Asian Symposium in Bioinorganic Chemistry (Responsible for taking an Indian Delegation to Okazaki. Japan)	March 7-10, 2003
2.	T.S.Sampath Kumar with Faculty of Metallurgical Engg. Dept.	4 th National Symposium of Research Scholars	Nov. 27-28,2002
Workshop:			
1.	T.S.Sampath Kumar And Ram Devanathan	Workshop on practical Electron Microscopy	Feb. 12, 2003
Refresher Course:			
1.	T.S.Sampath Kumar And K.V. Rama	UGC Workshop on Analytical Instrumentation	Feb. 17-28, 2003

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	Institution	Period
Conference:				
1	P.T.Manoharan	Subunit Heterogeneity in Reconstituted Hemoglobin, Faculty Conference	JNCASR Bangalore	January 2003
2	T.S.Sampath Kumar	X Indian Endodontic Society, National Conference	Mangalore	12 th Nov. 2002
		20 th Tamil Nadu State Dental Conference	Thiruchirapalli	Nov.29- Dec.1, 2002
Symposia:				
1	P.T.Manoharan	Three Lectures: Blue Copper Proteins, Does Nitric Oxide interact with cobalamin, Structure and function of hemoglobin	BDU (Trichy)	Dec. 2002
		Subunit Heterogeneity in Reconstituted Hemoglobin	Okazaki, Japan First Asian Symposium in Bioinorganic Chy.	Mar. 7-10, 2003
		Copper Reconstituted Hemoglobin	Okazaki, Japan Meeting on copper in Biology	Mar. 5-6, 2003
		Probing of sulfhydryl Environment in Hemoglobin using spin labels	Sendai Symposium, 2003	Mar.25-26, 2003

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of Lecture	Venue & Date
1.	S.Sankararaman	Synthesis and structure of novel cyclophanes bearing polyene and enediyne bridges	Stanford University, USA May 31, 2002.
		Synthesis of novel chiral metallocene catalysts and their application olefin polymerization	Stanford University, USA June 06, 2002
		Synthesis and structure of novel cyclophanes bearing polyene and enediyne bridges	University of Victoria, Canada June 14, 2002
		Synthesis and structure of novel cyclophanes bearing polyene and enediyne bridges	University of California, Santa Cruz, USA June 17, 2002
2.	P.T.Manoharan	Mechanism of Radical Production in Hemoglobin under Hypoxic condition	University of Lisbon June 7, 2002
		SE-EPR	University of Stuttgart June 10, 2002
		Exchange Interactions in Copper (II) system	University of Stuttgart June 11, 2002

	P.T Manoharan	Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	University of Stuttgart June 12, 2003
		ENDOR -- Principles and Applications	University of Stuttgart June 9, 2002
		Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	University of Fribourg Switzerland
		Mechanism of Radical Production in Hemoglobin under Hypoxic condition	Max Plank Institute Muelheuin, Germany June 17, 2002
		Blue Copper Proteins	BDU, Trichy, Dec. 2002
		Structure and Function of Hemoglobin	BDU, Trichy, Dec. 2002
		Does No interact with Cobalamin?	BDU, Trichy, Dec. 2002
		Submit Heterogenity Reconstituted Hemoglobin	JNCASR, Bangalore Jan. 2003
		Does No interact with Cobalamin?	University of Madras Feb 26, 2003
		Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	RRL/Trivandrum Aug. 2002
		Mechanism of Radical Production in Hemoglobin under Hypoxic condutin	Protein Design Laboratory Yokaham City University Japan, March 3, 2003
		Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	NIMS, T.Sukuba Japan March 4, 2003
		Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	Nagasaki University March 11, 2003
		Higher Education in India	Nagasaki University March 11, 2003
		Mechanism of Radical Production in Hemoglobin under Hypoxic condition	University of Fukuoka Japan March 12, 2003
		Submit Heterogenity Reconstituted Hemoglobin	Nara Institute for Advanced Sci. & Tech., Nara Japan March 15, 2003
		Submit Heterogenity Reconstituted Hemoglobin	AIST, Kansai Japan March 16, 2003
		Does NO interact with Cobalamin?	AIST Kansai Japan March 16, 2003
		Influence of Ligand Dynamics on the spectral properties of Cu(I), Cu(II) & Fe (II) Complex	Osaka City University Osaka, Japan March 24, 2003
Probing of the sulfhydryl Environment in hemoglobin by spin Label	Sendai University March 26, 2003		
3.	T.S.Sampath Kumar	Functionally Smarter Bioceramics	XIDS National Conference 14 th Nov. 2002
		Creating Awarness for Bone Subititutes in Minor Dental Surgery	20 th TNSD Conference 1 st Dec. 2002

Visit abroad by faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit
1.	S Sankaraman	Stanford University, USA	May-July 2002	Book writing
2.	P.T. Manoharan	Portugal Switzerland Germany	June 2002	To give a series of lectures in the Tribhuvan University on Inter Academy Cooperative
		Japan	March 2003	To attend three symposia and to give lectures in eight different universities
		Nepal	April 2002	To give a series of lectures in a total of 5 institutions

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr.P.T. Manoharan	Life-time Achievement award	Alpha group of Institutions	Excellence in Science	Oct. 2002
		Fellowship	Third World Academy of Sciences	Excellence in Scientific Research	Dec. 2002
		Fellowship	World Innovation Foundation	Excellence in Scientific Research	April 2002
		Govindarajulu Endowment Lecture Award	University of Madras	Excellence in Science	Jan 31, 2003
2.	Dr.T.S.Sampath Kumar with Dr.Ram Kumar, Mr.Sivaramakrishnan & Mr.Madhnasundar	First Best Technical paper	Indian Dental Association T.N. State Branch	Excellence in Technical content	Dec. 1, 2002

Books, Monographs, Journal authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/ Co-author
Books: (Journals Special Issue)				
1.	T.S.Sampath Kumar	Trends in Biomaterials & Artificial Organs V16, No1, July 2002	SBAOI, Thiruvananthapuram	Guest Editor

Fellowships of Academies and Professional Societies:

Sl. No.	Name of faculty	Name of the Academy/ Professional Society	Level	Year of Admission
1.	S.Sankararaman	Humboldt Fellowship	Fellowship	1998-1999
2.	P.T.Manoharan	Indian National Science Academy	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-

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

- Dr. T.S.Sampath Kumar - Microwave processing of functionally graded bioactive structure
- P.T. Manoharan

The following two instruments are being refurbished and brought to full life. These activities will continue for another 6 months:

- Varian E-112 X-Q band EPR spectrometers
- Canberra Mossbauer Spectrometer

New facilities added or major equipment procured through project funds:

Sl. No.	Name of the Equipment	Value (Rs. in lakhs)
1.	Rotevaparator	3.00

5.3.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1.	Novel Cyclophanes with Acetylenic Bridges. Synthesis, Structure and Reactivity Studies	1999-2002	Volkswagen Stiftung, Germany	DM 0.98	Prof. Dr. Henning Hopf University of Braunschweig, Germany
2.	Cyclophanes with Novel Molecular Architectures: Investigation of Host-Guest Chemistry and Photochemistry	2000-2003	CSIR, New Delhi	10.00	Dr. S. Sankararaman
3.	Multispectroscopic approach to Biological and Inorganic Materials	2002-2005	DST Govt of India	15.00	Prof. P. T. Manoharan and T. Pradeep
4.	Design and Development of ESR spectrometer for Radiation Dosimeter	1999-2003	AERB	29.70	Prof. S. P. Venkatesan, Dr. T. S. Sampath Kumar

RBIC projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (Rs. in lakhs)
1.	P. T. Manoharan	Analyze the nature of adulteration in petroleum (RB/0102/RSI/001/TAMDPTMA)	TNPCB	4.71

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
2.	Prof. P. T. Manoharan	Member (until 2002)	Indian Journal of Chemistry

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	8
No. of papers presented in National Conferences	..	3
No. of papers presented in International conferences	..	3

In Refereed National Journals:

1. D. Siva Rama Krishna, C.K. Chaitanya, S.K. Seshadri & T.S. Sampath Kumar, "Fluorinated hydroxyapatite by hydrolysis under microwave irradiation", Trends Biomat. & Artificial Organs, 16 (2002) 15
2. Swarnalatha Venkatesh Rao, S. Deepti, V. Pattabhi and P.T. Manoharan, Current Science, 84, 179-187 (2003)

In Refereed International Journals:

1. M. Srinivasan, S. Sankararaman, H. Hopf, B. Varghese Eur. J. Inorg. Chem., 123-131, (2002) "Synthesis of Buta-1,3-diyne Bridged Macrocycles with (Z)-1,4-Diethynyl-1,4-dimethoxycyclohexa-2,5-diene as the building block"
2. H. Hopf, S. Sankararaman, I. Dix, P.G. Jones, H.G. Alt and A. Licht Eur. J. Inorg. Chem. 123-131, (2002) "Novel Chiral Metallocenophanes Derived from [2.2.] Paracyclophane and Their Use in Olefin Polymerization"
3. R. Murugan, T.S. Sampath Kumar, and K. Panduranga Rao, "Fluorinated bovine hydroxyapatite using Goniopora, BIOCERAMICS 15, P51
4. R. Murugan, K. Panduranga Rao, T.S. Sampath Kumar Microwave Synthesis of Bioresorbable Carbonated Hydroxyapatite using Goniopora, BIOCERAMICS 15, P51
5. Sivaprasad Katakam, D. Siva Rama Krishna and T.S. Sampath Kumar, "Microwave processing of functionally graded bioactive materials", Materials Letters (in press)
6. Swarnalatha, V., G. Balakrishnan and P.T. Manoharan, Biospectroscopy 67, 156-166 (2002)
7. M. Buchs, C.A. Daul, P.T. Manoharan, C.W. Schlapfer, Int. J. Quom Chem. (2002)
8. T. K. Kundu, G. V. R. Chandramouli and P.T. Manoharan, August J. Chem (2003, in print)

In Proceedings of National Conferences:

1. N.Ramesh Babu, Sushant Manwatkar, K.Prasada Rao and T.S.Sampath Kumar, BIOACTIVE COATINGS ON 316L STAINLESS STEEL IMPLANTS, Proc. Of the 13th Nat. Conf. Of SBAOI, Kolkatta (in press)
2. Subunit Heterogeneity in Reconstituted Hemoglobin, Faculty conference, JNCASR, Bangalore Jan. 2003.
3. School-cum-symposium in Bioinorganic Chemistry, BDU (Trichy) Dec. 2002, Three Lectures: Blue Copper Proteins/Does Nitric Oxide interact with cobalamin?/Structure and function of hemoglobins

In proceedings of International Conferences:

1. Subunit Heterogeneity in reconstituted Hemoglobins, First Asian Symposium in Bioinorganic Chemistry, Okazaki, Japan (March 5-6, 2003)
2. Copper reconstituted Hemoglobin, Meeting on copper in Biology, Okazaki, Japan (March 5-6, 2003)
3. Probing of sulphhydryl environment in Hemoglobin using Spin labels, Sendai Symposium (March 25-26,2003)

Distinguished Visitors to the Centre:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Prof.Victor Klover	2002	To interact on collaborative Research and give lectures
2.	Professor Wolfgang Kaim	Dec.2002	DAAD visit

5.3.6 Other Activities:

1. P.T.Manoharan:

Chairman, Research Committee, RRL/Trivandrum
 Chairman, UGC Committee to BITS-Pilani
 Member, UGC Committees to Pune University, Pune + JNU, Delhi

2. Dr.T.S.Sampath Kumar has been elected as the Joint Secretary of the Society for Biomaterials and Artificial Organs India for the period 2002 – 2005.
3. The first local charter "Chennai Charter" of the "Society for Biomaterials and Artificial Organisms India" was inaugurated on 4th Feb, 2003 with Dr.T.S.Sampathkumar as Secretary cum Treasurer for the period 2003-2005.

5.4. CENTRE FOR SYSTEMS AND DEVICES

The Center for Systems and Devices carries out research and development work on areas of interest to Defence Research and Development Organization. The center has focused its R and D activities in the following areas:

- Applied Electromagnetics and Antenna Engineering
- Semiconductor Devices
- Signal Processing Techniques

The center has established leadership in R and D activities on the above areas over the past several years. DRDO is in a position to make full use of the expertise available in the center, which is of relevance to their programs. There is a close interaction between the DRDO Laboratories and the concerned research group in CSD on the R and D program undertaken by the center with funding from DRDO. There is frequent visit of scientists of DRDO to the concerned laboratory in CSD for this purpose. Some of the R and D activities of the center relate to programs of national importance pursued by DRDO. Further, a number of students also work in the laboratories of the centre towards their B.Tech, M.Tech, M.S. and Ph.D projects. The center receives recurring grants annually from DRDO for the up keep of CSD laboratory facilities in addition to project grants received from DRDO from time to time. During the year under review (2002-03) the following R and D activities could be highlighted:-

Development of software towards study of pattern changes of antennas mounted on a helicopter:

Eagle electronic warfare system is mounted on Advanced Light Helicopters (ALH) in Indian naval ships. This system consists of six identical broad band antennas mounted on ALH for establishing electronic support measures required by the Indian navy. In this context it was required to predict with great accuracy how the experimentally measured radiation patterns of these antennas will be modified once they are mounted on the body of ALH. A rigorous analytical study on this employing modern methods of computational electromagnetic engineering was completed and a software was developed to predict the pattern performance of the six antenna cluster mounted on ALH. This software was supplied to DRDO.

Microelectronics and MEMS Research activity:

1. GaAs surface passivation using $(\text{NH}_4)_2 \text{Si}$ chemical treatment, followed by silicon nitride deposition has been studied in detail. GaAs MIS devices have been used as test vehicle and it is shown that a Post Metallization annealing step is very effective to enhance the passivation effect. This has been attributed to the passivating effect of Hydrogen diffusing to the interface from the silicon nitride. GaAs MIS FETs fabricated with this approach for realizing the MIS gate electrode have shown drain currents which do not drift from the initial value.
2. Microelectro Mechanical devices such as accelerometers and pressure sensors have been fabricated with a Silicon on Insulator (SOI) approach. Silicon Fusion Bonding and Back etching techniques have been developed in the laboratory for preparing the SOI substrates. The SOL approach has great promises for integrating micromechanical sensors and actuators with electronics.

6.1. CENTRE FOR CONTINUING EDUCATION

6.1.1 Introduction:

The Centre for Continuing Education (CCE) at IIT, Madras was established in June 1986 by merging together the different units connected with Quality Improvement Programme (QIP), Continuing Education Programmes (CEP-STC) and Curriculum Development Cell (CDC) activities of the Institute. Since then, the activities of the centre expanded bringing into its fold, the activities of Early Faculty Induction Programme (EFIP) and Production of Computer Aided Learning Material.

6.1.2 Quality Improvement Programme (QIP):

The QIP was formulated by the All India Council for Technical Education (AICTE) with the prime objective of upgrading the expertise of the faculty members of AICTE approved degree level engineering institutions in the country through improvement of their qualifications. Since inception, 314 faculty members from other institutions have obtained Ph.D Degrees and 449 faculty members M.Tech degrees under this programme.

Following are the data on Quality Improvement Programme (QIP) for the year 2002-03:

Programme	Number Admitted	Number on Roll	Degrees Awarded
M.Tech	25	25	28
Ph.D	29	49	9

6.1.3 Short Term Training Programmes (STTP) under QIP:

Under QIP STTPs, 5 courses were held in 2002-03 and 129 teachers of Engineering Institutions as well as a few professionals from industries / R & D organisations have participated in these programmes.

From 1970-71 to 2002-03, 201 STTPs were held and 4656 teachers from various engineering colleges participated and got benefited from these courses.

6.1.4 Curriculum Development Cell Activities (CDC):

Curriculum Development Cell (CD Cell) caters to the needs of all Departments. The course materials in the form of modules are developed. On request, these materials will be sent to various engineering college.

During the year under review totally 8 CD cell projects have been approved.

6.1.5 Book Writing Scheme (BWS):

This scheme is designed to encourage text book writing by teachers. During the year 2002-03, 5 faculty members have come forward to write book under this scheme. Three books have been published during the year. 34 books have so far been published under this scheme.

6.1.6 Early Faculty Induction Programme (EFIP):

AICTE formulated the EFIP scheme to induct bright young graduates interested in teaching as a career to undergo M.Tech courses in one of the IITs. The Centre for Continuing Education assists AICTE in the selection process of the candidates for the scheme and also coordinate the programme.

6.1.7 Continuing Education Programme (CEP-STC):

Our Institute faculty members organize several Short Term Courses (STC) under Continuing Education Programme for the professionals from industry and R & D establishments on need-basis. From the date of inception, i.e., between 1980 & 2002-03, 463 STCs were conducted benefitting 9756 participants. About 25 to 30 such programmes are organised every year. During the year under review, 30 Short Term Courses have been conducted and 1007 participants attended these programmes.

6.1.8 Educational Consultancy Programmes (ECP):

Educational Consultancy Programmes (ECP) are offered to a specific industry or institution and it is a tailor-made programme to suit their requirements. The course content and the syllabus are drawn in consultation with the industry and offered either in IIT Campus or at a location suggested by the sponsors. From the date of inception i.e., from 1997-98, 72 training programmes were held and during the year under review, 18 such programmes have been taken up. From 1997-2003 1193 participants attended these courses. During the year 2002-03 there were 513 participants for the ECP course.

6.1.9 Short Term Training Programmes under ISTE:

One STTP has been conducted during 2002-03 with 31 participants benefiting out of the programme.

6.1.10 Short Term Training Programmes under UGC:

Two UGC refresher courses were conducted during 2002-03, with 73 participants.

6.1.11 Other Activities:

Web Based Courses:

Currently a little more than 3000 students of IIT M have access to Web CT in the form of individual login id and password and access many courses offered by their respective faculty members. Two initiatives were taken under this project to make software available to faculty and students. The entire suite of Macromedia Software and Math Type for typing equations (Equation Editor) have been distributed to the faculty. Several preliminary sessions have been conducted on the use of Macromedia Flash & Dreamweaver and several more are planned in the months of April / May 2003. In addition, a few students have agreed to help faculty during summer of 2003.

NPTEL:

The Ministry has officially sanctioned the project with Prof.M.S. Ananth, Director of our Institute as Chairman of the Programme Implementation Committee and Dr. K. Mangala Sunder as the Web Content Coordinator. The first instalment of funds has been released already. A workshop on "National Programme on Technology Enhanced Learning" was conducted in February 2003 with participation from all IITs, IISc and several reputed Engineering Colleges. This has been followed by another meeting of TEL Coordinators in IIT Madras and a plan of action has already been submitted to the Ministry.

The objective of NPTEL is to make high quality learning material available to students of engineering institutions across the country by exploiting information and communication technology.

6.1.12 Educational Technology Cell:

Educational Technology Cell was established by the Ministry of Human Resources Development in 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 programmes / lessons produced at ETC.

Video recording of semester lecture courses (till date – each lecture with 50 min duration)

- "Microprocessor in Automation" by Prof. Y. G. Srinivasan, Department of Mechanical Engineering. (30 lectures)
- "Data Structures and Algorithms" by Dr. C. Pandu Rangan, Department of Computer Science Engineering. (9 lecture)
- "Advanced Finite Element Analysis" by Prof. R. Krishna Kumar, Department of Mechanical Engineering. (17 lectures)
- "Quantum Chemistry and Group Theory" by Prof. K. Mangala Sunder, Department of Chemistry. (17 lectures)

Research Projects coverage:

The following Research Projects have been carried out:

- Biotechnology Research Lab - Dr. T. S. Chandra, Department of Chemistry.
- "Oscillatory Chemical reactions and mercury heat reactions" - Prof. R. Ramaswamy, Department of Chemistry.
- "Model Shooting in Wave Basin" - Prof.V.G. Idichandy, Department of Ocean Engineering.
- Fluid Mechanics Lab - Dr. B.V.S.S.Prasad.
- Ocean Engineering Labs - Prof.S.Neelamani, Dept. of Ocean Engineering.

Institute functions' coverage:

The following Institute functions have been covered:

- 39th Convocation – July 2002
- "Industry-Academia Partnership in Technical Development" Symposium for IC & SR
- EFSI Endowment Lecture – IIT Madras.

Documentaries produced:

The following documentaries have been produced :

- "Use of Power Tools in Restoration and Retrofit of monuments" – Prof. M.S. Mathews, Dept. of Civil Engineering.
- "Temple of Excellence" – Existing Documentary on IIT Madras has been updated.

Contributions to Ekalyva Satellite Channel:

- "Heat Transfer" by Prof. S.P.Venkateshan, Department of Mechanical Engineering.
- "Microprocessors and Applications" by Dr.S.Srinivasan, Department of electrical Engineering.
- "X-Ray Photo Electron Spectroscopy" by Dr.T.Pradeep, Department of Chemistry.
- "Temple of Excellence" – Documentary IIT Madras.
- "Gas and Vapour Power Plant Cycles" by Dr. Pramod S. Mehta and Prof.S.P.Venkateshan, Department of Mechanical Engineering.

Cell Upgradation:

- Full fledged web development systems
- Enhanced Multimedia and Graphics Lab for 3D Animations, Presentations and Web applications.

Sale of Educational Programmes:

- About 900 hours of video material with the ETC are being disseminated to various colleges and R&D establishments at a subsidized rate.

Web Site:

- A web site on ETC has been launched with a link from Central library IIT Madras.

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 Associateship Scheme
- ISRO-IITM Space Technology Cell joint projects
- IGCAR-IITM Cell joint projects
- Patents and Technology Transfers

Dean: Prof. S. Srinivasa Murthy (upto 2nd March 2003)
Prof. V. Kalyanaraman (from 3rd March 2003)

Staff: Dr. D. Balakrishnan, Chief Techno Economic Officer
Sri R. Sundaram, Senior Techno Economic Officer
Sri V. Suresh, Senior Techno Economic Officer
Sri B. Ramaswamy, Assistant Registrar (Project Purchase)
Sri G. Ravichandran, Assistant Registrar (F&A)

6.2.2 Sponsored Research:

A. National Projects:

91 projects of value totaling to Rs. 1839 lakhs were taken up by the Institute during 2002-2003 as given below:

Sl. No.	Sponsoring Agency	No. of Projects	Sanctioned Value (Rs. in lakhs)
1.	Alumni Association	4	43.28
2.	Aeronautics Research & Development Board	4	27.09
3.	Board of Research in Nuclear Sciences	3	28.73
4.	Department of Coal	1	39.19
5.	Council of Scientific and Industrial Research	3	24.47
6.	Defence Research and Development Organisation	9	165.93
7.	Department of Ocean Development	1	45.60
8.	Department of Science & Technology	20	699.52
9.	Gas Authority of India Limited	1	17.50
10.	Indian Institute of Technology Madras	2	10.00
11.	Institute for Steel Development & Growth	1	5.29
12.	Indian Space Research Organisation	7	89.33
13.	Madras Institute of Nephrology	1	5.25
14.	Ministry of Human Resource Development	16	184.40
15.	Ministry of Non-Conventional Energy Sources	2	24.59
16.	National Institute of Ocean Technology	1	4.01
17.	Technology Information Forecasting and Assessment Council	2	8.84
18.	University Grants Commission	1	3.31
19.	Water Resources Organisation	1	5.64
	Total	80	1453.22*

* The includes the additional funds received, due to increased value, for 8 on-going projects.

B. International Collaborative Projects	.. 6 (Value:Rs. 238.03 lakhs)
C. Industry Sponsored Projects	.. 5 (Value:Rs. 105.27 lakhs)
Total value of all projects	.. Rs.1796.52 lakhs

6.2.3 Plan Schemes:

Plan Schemes were sanctioned to this Institute by the Ministry of Human Resource Development in the following areas:

- Nationally co-ordinated project on Educational Technology for a value of Rs.10.00 lakhs.
- 15 projects under Thrust area, Modernisation and Removal of Obsolescence and Research & Development schemes for a total value of Rs.174.40 lakhs.

6.2.4 Consultancy Programmes:

605 Consultancy assignments of value totaling to Rs.418.48 lakhs, 31 Research Based Industrial Consultancy for a total value of Rs.222.88 lakhs were taken up during 2002-2003. Also 13 faculty were retained as consultants by various industries for a total fee of Rs.19.33 lakhs. Total value for all consultancy assignments during the period was Rs.660.69 lakhs.

6.2.5 New Faculty Scheme:

6 proposals were approved for funding under the New Faculty Scheme for a total sum of Rs.6.00 lakhs.

6.2.6 Industrial Associateship Scheme:

223 Industries are members of this Scheme (Large scale 24, Medium scale 108 and Small Scale 91).

The following eight Technology Appreciation Programmes were organized during the period under report:

1. Industrial Information Services
2. Supply Chain Management
3. Delivery of Manufacturing Process Through ASP Model
4. Nondestructive Evaluation
5. Digital Signal Processing: Theory and Applications
6. Modelling and Simulation in Industrial Problems: Ocean Engineering & Chemical Processes
7. Orientation towards Mathematical Treatment of Metal Forming
8. Awareness to SoC Design and Verification

6.2.7 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. 17 on-going projects totaling to a value of Rs. 164.10 lakhs were continued and 7 new projects for a value of Rs.89.33 lakhs were taken up during the year 2002-2003.

IGCAR-IITM Cell:

Two on-going projects were continued during 2002-2003.

6.2.8 Distinguished Visitors to the Centre:

The following visited the Institute during the year 2001-02:

- His Excellency the President of Singapore, Mr. S.R. Nathan
- Delegation from Northern Malaysia University College of Engineering headed by Dr. Ali Yeon b. Md. Shaff, Associate Professor & Dy. Rector/Academic
- Delegation from Asian Office of Aerospace Research and Development (US & Japan) led by Dr. Terence Lyons, Director.
- Delegation from RWTH, Aachen, Germany led by Prof. Bukhard Rauhut, Rektor.
- Delegation from the Swiss Federal Institute of Technology, Zurich, headed by Prof. Dr. Konrad Osterwalder. Rector of ETH Zurich.

MoUs Agreements signed:

28 new MoUs / Agreements have been signed by IIT Madras with the following 18 organizations / Institutions during 2002-03:

1. Life Insurance Corporation of India, Chennai
2. Department for Research Co-operation (SAREC), Swedish International Development Co-operation Agency (SIDA)
3. The Chief Engineer, Water Resource Organisation, PWD, Madurai Region (2)
4. Gas Authority of India Limited, Noida, UP
5. ISRO Inertial Systems Unit, Vattiyoorkavu, Trivandrum
6. The Chief Engineer (Civil), Tuticorin Port Trust, Tuticorin
7. Technocraft, Chennai
8. DMRL, DRDO, Hyderabad
9. CVRDE, Avadi (4)
10. NMS Works Software Limited, Chennai
11. Texas Instruments (India) Private Limited, Bangalore
12. DRDL, DRDO, Hyderabad (3)
13. GTRE, DRDO, Bangalore (3)
14. BHEL, Tiruchirapalli
15. Royal Enfield, A Unit of Eicher Limited, Chennai
16. VSSC, Thiruvananthapuram (2)
17. Hewlett Packard (India) Software Operation Ltd., Bangalore
18. CLRI, Chennai, IISc, Bangalore, IIT Kharagpur & Indian Rare Earths Ltd., Mumbai

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	Pending No.
1	A Process for Lipase Catalysed Preparation of Alkyl and Aryl Esters of Hydrocinnamic Acid	Dr. Anju Chadha Dr. K. Priya	Chemistry	02. 04. 2002	319/MAS/2002
2	Scratch Resistant Coated Plastic Ophthalmic Lenses	Dr. A. Subrahmanyam	Physics	13. 11. 2002	195/MAS/2003
3	Electrically Conducting Coated Kapton Film	Dr. A. Subrahmanyam	Physics	13. 11. 2002	
4	An Extrusion Honing Composition	Mr. H.P. Raju Dr. K. Narayanasamy Dr. Y.G. Srinivasa	Mechanical Engg.	13. 11. 2002	133/mas/2003
5.	A method of Manufacture of an Improved Grinding Wheel	Dr. L. Vijayaraghavan	Mechanical Engg.	13. 11. 2002	

6.2.10 Publications:

- The quarterly publication titled IIT Madras News was continued.
- The publication titled NEWSTECH was continued for the benefit of the Industrial Associate Members.
- A Publication on Abstracts of M.Tech. theses was brought out.
- A CD on IIT Madras has been brought out
- 30 years of IC & SR (in commemoration of 30 years) was published.

The Summer Assistantship Scheme was given to 26 numbers of 3rd year B.Tech./B.E. students of other Engineering Colleges during the year.

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. A Case Study report of Indian Institute of Technology Madras on "University and Industry Partnership Programme" was prepared with the funding from UNESCO, New Delhi.
2. A Symposium on "Industry-Academia Partnership in Technology Development" was held on 22nd and 23rd February 2003 to commemorate the 30 years of the Centre. A number of participants from Industry, educational institutions including IITs, IISc, engineering colleges participated. Former Deans and the Advisor of IC & SR also attended the Symposium.

6.2.13 Office of Alumni Affairs:

Chairman, Board of Governors of IIT Madras approved the establishment of Office of Alumni Affairs under the charge of Dean, IC & SR WITH A Professor nominated by the Director as an Adviser, on 6th July 1999.

- The Office of Alumni Affairs was established in September 2000.
- It is located at 3rd Floor, IC & SR Building
- Initial funding of this office has come from Mr. S. Gopalakrishnan, Alumnus of 1977 Batch and later from Dr. Desh Deshpande, alumnus of 1973 Batch.
- This office is now functioning with Capt. K. Subramanian, with a complement of few staff members and reports to Adviser, Prof. T. Sundararajan, Prof. of Mechanical Engineering.
- Adviser, OAA, reports to Dean, IC & SR, Prof. V. Kalyanaraman.

6.2.14 Functions of OAA:

- Create and Maintain Alumni Database
- Networking by Egroups, Newsletter, Chats
- Resource Mobilisation
- Follow-up and reporting on the Progress of Alumni Funded Projects

6.2.15 Projects completed/On-going:

- Sharavati Hostel for Lady Students
- Class Rooms Modernisation
- Office of Alumni Affairs
- Centre of Excellence in Optical Networks
- Hostel Sector Water projects
- Visit of Two Committees to CS&E Department and Electrical Engineering Department
- Infrastructure Development of VLSI Design and Curriculum in CS&E Dept.
- Endowments of Scholarships / Prizes / Awards

6.2.16 Major Projects to be undertaken:

- Infrastructural Development of Educational Technology Cell and Studio
- Technology Enhanced Learning
- Electronic Classrooms
- Digital Library
- Establishment of Named Chairs

6.3. CENTRAL ELECTRONICS CENTRE

6.3.1 Introduction:

The Central Electronics Centre (CEC) was established in 1971 within IITM 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 Programs 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 Units
- Consultancy Services to industries in the above areas.

This Centre has lent its expertise in the above areas to more than 220 industries and other organizations in and outside the country.

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.

In 2001, this Centre received ISO 9001:2000 Quality Certification from RWTÜV, Germany for establishing its Quality Systems.

The Centre is preparing itself to acquire NABL Accreditation for its newly established Quality System for Calibration and Testing Laboratories.

6.3.2 Activities:

Training Programmes:

Long Term CEC Training Programme:

XVII batch of CEC Training Program of two years duration, commenced on 15th October 2001 is ongoing. XVIII batch commenced on 22nd October 2002. The total number of candidates attending these programs are twenty four.

Following Laboratories have been equipped with new additional facilities:

- Servicing Laboratory
- Calibration Laboratory
- Training Laboratory
- Testing Laboratory

List of Major Equipments procured:

- DC Power Supplies
- Oscilloscopes
- 3 ½ and 6 ½ Digit DMMs
- Clamp on Meters
- Temperature & Humidity Recording System
- Power Analyser
- Sound Level Meter
- UPS

Some of the important Consultancy Projects completed:

Sl. No.	Co-ordinator	Title of Project	Organisation	No of Assign.	Project Value (Rs. in lakhs)
1.	Dr.M.Kumaravel	CNC M/C Modules, Drives and Monitors	Heavy Vehicles Factory, Ministry of Defence, Avadi, Chennai	1	0.18
		Charge Controllers	Ford India Ltd, Chennai	17	2.30
		Drives & Controllers	HAPP, Ministry of Defence, Trichy	1	0.35
		Ultrasonic Scanners	Kodytech Ltd Chennai	8	1.16
		Drives and Controllers	SPIC Electronics Ltd Chennai	2	0.64
		UPS	DB Power Electronics Pune	1	0.08
		Tape Loader	Super Recording Chennai	1	0.05
		Tape Loader	Sai Recording Chennai	1	0.18
		PCBs for Weaving M/C, Encoders	Virudhunagar Textiles Virudhunagar	1	0.19
		Drive Controller	Chettinadu Shipping Corporation, Chennai	1	0.14

Lecture delivered in Workshop:

Author	Topic	Name of the Workshop	Date
Dr.M.Kumaravel	Solar Photo Voltaic Systems	National Seminar on 'Solar Energy & Other Renewables' organized by TEDA & sponsored by IREDA	8 th March 2003

Ongoing Development Activities:

- Development of PV Powered energy efficient Lighting Systems of clustered LEDs type
- Development of PV Powered Reverse Osmosis System for conversion of brackish water into clean drinking water.

Design / Development Activities and Technology Transfer:

Special Power Pack for Rural Kiosk applications has been developed as per the requirements of WLL Project Group. Technology for large-scale manufacturing has been transferred to n-Logue Communications, Chennai.

Staff Strength:

The Centre has 9 Technical, 4 Administrative and 3 Project staff.

6.4. COMPUTER CENTRE

6.4.1 Introduction:

The Computer Centre was established in 1973 and provides Central Computing resources - facility and support. The Centre started with IBM 370 and changed over to SIEMENS 7580-E in 1987. The mainframe was complemented with MX500 running Unix and several microcomputers and PCs to support research and development in various areas. Applications for the Institute are also supported. The Siemens system was replaced by a client-server environment with effect from Nov.95. The present IBM RS 6000 models 590 and 370, a cluster of servers on a high-speed network, provide a distributed computing platform for research and development. The computing facility was enhanced with H.P high end server cluster and a file server under ICOSER scheme and IBM S-390, a gift from IBM. A 64 processor SGI 3800 compute server was installed in December 2001.

Computer Centre also provides Campus network connecting all the departments and Internet facility. The current Campus network is an ATM based High-speed backbone and the internet facility is provided by VSNL 64Kbps radio link. Fibre cable is used to connect buildings and enhanced UTP cable for general networking of each building. The backbone is 622 Mbps and each building is connected to the backbone by 155 Mbps ATM uplink. This network has been extended to cover the hostel sector. A dedicated 2 Mbps BSNL link for Internet connectivity besides the 64 Kbps link to VSNL has been established. Steps are being initiated to have 34 Mbps fibre link to BSNL exchange at IIT Madras for future internet access requirement.

The facilities at the Computer Centre will enable students to learn the state-of-the-art computing techniques and methodology for problem solving in analysis and design. The installation provides new opportunities for computing to students and faculty apart from rendering the Centre as one of the most modern among its peer academic institutes in the country.

The PC Maintenance cell provides services for repairs and maintenance of PCs in the institute including projects totaling to about 2000 machines. In addition Computer Centre has been serving the computerization of the following establishments of the IIT:

- | | |
|-----------------------|-------------------------------|
| 1. Administration | 6. GATE |
| 2. Finance & Accounts | 7. Joint Entrance Examination |
| 3. Hospital | 8. Hostels |
| 4. Library | 9. Stores & Purchase |
| 5. Engineering Unit | 10. Academic Section |

6.4.2 Details of Staff:

Name and Qualification	Major Areas of Specialization
Chairman: Srinivasan S, Ph.D	Digital systems, computer architecture, digital signal processing VLSI design
Vice-Chairman: Srinivasan K, Ph.D	Water resource planning and management, flood management, stochastic modelling of streamflow, regionalisation of hydrologic information, drought analysis.
Senior Systems Engineers: Dheenadayalu R, M.Sc(Engg)	Data Centre Operations, Systems Administration; Application Software; System selection.
Jayaprakash S, Ph.D. Systems, Internet, Next Generation Network (NGN).	Software Engineering, Computer Networks, Fault-tolerant Distributed
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.

Senior Systems Officers:

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. (Ind. Maths)

Computer Applications in Industry, Operating Systems, Systems Operation Administration, Networking

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)

Software Engineering, Operating Systems (Unix, Windows, Sun), Database management systems, Programming Languages (C, C++, Cobol), Computer Networking, System administration, HRD management.

Junior Systems Engineer:
Sreekumar P.Y, B.Tech(C.S)

Computer Networks, Database Management Systems, Systems Administration.

System Trainees on Roll: (2002-2003)

- | | |
|---------------------------|-----------------------|
| 1. R. Anand Kumar | 9. K.R. Praveen |
| 2. G. Angeline Ezhilarasi | 10. K.V. Sameer |
| 3. Tapan Kumar Acharya | 11. D. Rajkumar |
| 4. S.M. Devi Premila | 12. G. Gopalakrishnan |
| 5. A. Kalivani | 13. K. Venkatesan |
| 6. M.Mani | 14. O. Kamesh Babu |
| 7. P. Remya | 15. B. Manoj |
| 8. T. Balaji | |

Trainees in PC Cell:

1. B. Duke
2. V. Manikandan
3. S. Ragupathy
4. S. Revathi
5. K. Sundararajan
6. A. Vimal Antony

New Facilities / Equipment Added:**Hardware:**

The following intel based machines were procured to augment the hardware availability:

1. 2 Nos. of P4 (2.4 GHz processor, 128 MB RAM, 40 GB HDD)
2. 1 no. of xeon (1.8 GHz processor, 2 GB RAM, 72 GB HDD)
3. 1 no. of xeon (1.8 GHz processor, 512 MB, 18 GB HDD)

Software:

The following applications software have been installed:

1. Femlab
2. Femlab electromagnetic module

Equipment:

The 60 Kva UPS which was in operation for the past 17 yrs. has been replaced by 80 Kva UPS.

Phasing out of water cooled air-conditioning plant and replacing it with package units was completed. Mr.G. Mani, Supervisor (Electrical), Mr. V. Balasubramanian and Mr.V. Ganesan took active part in this.

Networking:

The ATM based backbone network connecting all the buildings has been implemented by Computer Centre. Mostly, the existing conduits laid for running the Siemens systems cables have been used for installation of the fibre optic cable. The three nodal points for the backbone are Computer Centre, Hydraulics Lab and RSIC. The ATM small switches are placed in R&AC, MES and administration building. The edge devices are placed in optimal locations in each one of the buildings, so that any next level switch can be reached within the UTP CAT5 cable length limitation of 100 meters. Buildings with large spread (BSB, HSB, Workshop Lab complex) have been provided with multiple fibre drops to enable full coverage. In each one of the buildings, the local network is implemented based on a structured design for scalability using enhanced CAT5 UTP cable. To implement the campus network, 3 ATM (622 Mbps) backbone switches, 3 ATM (155 Mbps) small switches, 25 edge devices with ATM (155 Mbps) uplink, 80 Ethernet switches, 7 kilometers UTP components are used. The network provides about 200 ports at the 100 Mbps (lab/server) level and about 1500 ports at the 10 Mbps (desktop) level.

All the hostels are connected to the backbone by fibre cable. Provision for 10 access network points in each one of the hostel have been implemented. Cable implementation for the network connectivity for rooms in all the hostels have been completed.

GATE on the Website:

Mr. SK Ramesh and Mr. V. Ravichandran, System staff of the computer centre designed, developed and are maintaining a separate website for GATE Office (gate.iitm.ac.in).

JEE 2002 Data Processing:

Mr. Sreekumar P Y and Mr. Vijayaraghavan C N are assigned to carryout JEE 2002 Computer Operations which include Applications query on Web/IVR, Data Processing, all India Rank generation, 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. Installation in individual machine is provided through a website at Computer Centre. This action is co-coordinated by Dr. S. Jayaprakash and Mr.D. Hariharan.

Additional Programme:**Short Term Courses:**

Dr. S. Jayaprakash, Senior Systems Engineer has conducted a Short Term Course on "Networking – A Practical Approach", during 16.12.2002-21.12.2002 for Tamil Nadu Electricity Board System Managers/Engineers.

Seminars / Lectures:

Dr. S. Jayaprakash delivered a lecture on "Advanced Networking" for LIC of India Engineers at the LIC Training Centre, Chennai.

Dr. S. Jayaprakash delivered a lecture on "Networking" for the students of SITE (School of Advanced Engineering and Information Technology) BHEL, Trichy.

Dr. S. Jayaprakash is handling the course on " Network Management" for the Second year MBA students, during March-April 2003, Department of Humanities and Social Sciences, IIT Madras

Member of Committees:

Dr. S. Jayaprakash has been invited to attend as Expert Member, "e-Governance Advisory Committee", Govt. of Pondichery.

Dr. S. Jayaprakash has been invited to attend as Technical Member of Technical Evaluation Committee for Networking, Tamil Nadu Electricity Board.

ISO 9001:

Mr. C.N. Vijayaraghavan assisted by Mrs. Lakshmi Venkatesan, prepared Quality Systems and Procedures Manual for the Computer Centre. Mr. C.N. Vijayaraghavan and Mrs. Lakshmi Venkatesan have been nominated by Management Representative as Internal Auditors of the Institute.

Institute Projects:

S. No.	Title	Coordinators
1.	Campus Network	Dr. S. Jayaprakash Mr.P.Y. Sreekumar
2.	Hospital Information System, BBS	Mr. R. Dheenadayalu
3.	JEE Data Processing	Mr. C.N. Vijayaraghavan Mr. P.Y. Sreekumar
4.	GATE Data Processing	Mr. S.K. Ramesh Mr. V. Ravichandran
5.	M. Tech Admission	Mr. S.K. Ramesh Mr. V. Ravichandran
6.	CARS/ARMS System Management	Mr. P.Y. Sreekumar
7.	Hostel Mess Management	Mr. C.S. Sourirajan Mr. V. Ravichandran
8.	Hostel Billing System	Mr. C.S. Sourirajan
9.	Taramani Guest House Automation System	Mr. Banavath Baman
10.	Faculty Academic Profile	Mr. Banavath Baman
11.	Teachers Evaluation (processing)	Mr. C.S. Sourirajan
12.	Teachers Evaluation (on line feedback)	Mr. P.Y. Sreekumar
13.	ISO 9001 Electronic Documentation	Mr. C.N. Vijayaraghavan Mrs. Lakshmi Venkatesan

BBS – Bulletin Board System:

Bulletin Board System for the institute, developed by Computer Centre was launched. Various Institute authorities, Heads of Departments and Centres can post items targeting specific groups in this. Mr.R. Dheenadayalu, Co-ordinated this activity.

Selection of Trainees for the PC Maintenance Cell:

Selection for VII batch of training in PC Cell was completed. Mrs. Lakshmi Venkatesan and Mr.T. Rama Rao did the data preparation work.

7. CENTRAL FACILITIES

This Institute is having the following units for central facilities and their activities during the period under report are given below:

7.1. Central Workshop:

Workshop is an educational platform where science is translated into technology. Central workshop was established to meet the above objectives from 1959 with three major production processes, i.e. Metal cutting, metal joining, metal forming with shops as given below: Apart from these shops five more shops were added (mentioned below) in the process of modernizing the workshop training in line with industry to suit industrial requirements.

Central workshop of our Institute is having the following sections and their activities during the period April 2002 – March 2003 are given below.

Sl.No	Shops	Facilities
1	Carpentry	Planing, cross cutting, turning, thickness reduction, Polishing, Teeth sharpening, Blade sharpening and grinding.
2	Fitting shop and Tool Room	Filing, Drilling, Tapping – Jig Boring, Tool milling, Engraving – Marking, Slotting, grinding and work cutting
3	Machine shop	Shaping – Milling – Turning – Planning, Radial drilling and Tool and Cutter grinding.
4	Gear shop	Spur, Helical, Bevel gear cutting.
5	Electrical shop	Simple wiring and winding, simple electric circuit.
6	Instrument shop	Pressure testing facilities upto 100Kg NC Trainer Lathes, Milling m/c
7	Welding shop	Arc Welding, Gas Welding, Soldering, Brazing and profile cutting.
8	Foundry shop	Oil fired furnace, Cupola and sand plant.
9	Smithy shop	Hand forging, power hammer, Heat Treatment and Hardness Tester

Under Modernization, New additional sections:

10	Pneumatics & Hydraulics	1. Festo training Kits with different valves. 2. Electromagnetic Kit. 3. PLC to demonstration Pneumatic. 4. Practical demonstration like auto wheel brake system. Weight lifting equipment for demonstration from Eukon Bosche. Hydraulic kit for different values for students. Bosche training kit for student's demonstration.
11	Electronics	PCB, Tag board, Soldering and PLC Proofing.
12	FRP	Material process demonstration for students. Making of dustbin and welding hand shield etc.
13	Plastics	Material process practical demonstration of cycle token, key tags, caps and folders

ISO 9001 Certificate obtained in 1999 for a period of 3 years and the new additional sections to be added are:

1	N C. Machines (advanced)Lab2	CNC Turret (six tools) and CNC engraving M/c 3D Works.
2	Quality Control Lab (To help ISO 9001 recalibration)	Calibration of lever dial gauge, Least count:0. 0002mm Plunger dial gauge: Least count:0. 0002 mm Thread plug gauge: Least count:0. 0002 mm Taper plug gauge: Least count:0. 0002 mm Plain plug gauge: Least count:0. 0002 mm Height Master: 0.002 mm Auto collimator to check the angular deviation Digital micrometer (0 –25mm): Least count 0.001 Digital Vernier (0 –200mm): Least count 0.01 Dial Vernier (0 – 200mm): Least count 0.01

The Central Workshop obtained ISO 9001/2000 re-certification in May 22 valid upto 2005. Besides the above, Central workshop also bears the responsibility of maintaining institute vehicles (20Nos) and also the environment friendly Battery powered electrical vans (11Nos) running in the campus are also being maintained by the electrical section.

The Central workshop very effectively caters to the undergraduate's programmes by imparting individual practical training in various shops cited above.

During the year under report, 499 undergraduates (1st year, B.Tech.) got training under the assigned course ME 107 and ME 108 titled workshop training I and II bearing two credits each.

For the 2nd year, 108 undergraduates students of Mechanical Engineering branch, trained in ME 207 Workshop III with two credits was offered.

ME 209 Advanced workshop training with 3 credits for 3rd and 4th year students preferably Mechanical Engineering students were also offered as Summer-Term Course.

Central workshop executes fabrication of test setups and their accessories related to Ph.D, P.G and U.G. project works. 906 work orders were received out of which 723 were executed during the year 2002-2003. Some important work orders executed are given below:

Major Works:

- Completed a major project work from Applied Mechanics (Biomedical) Department "Early detection of human breast cancer using laser transilluminants topography A3 D scanner device for getting tomogram" under the Guidance of Prof. Mega Singh.
- Completed a Fabrication work for this Research Project of "Behaviour of Caissons Subjected To Lateral Cyclic Loading" for Mr. Darga Kumar under the Guidance of Prof. Narasimha Rao, Ocean Engineering.
- Refrigeration and Air Conditioning Laboratory of Mechanical Engineering Department Project of "Nitrogen Liquification using MRC" for which wires wound over the Capillary tube with 0.055"pitch (for preparation of Heat Exchanger) Up for 20 sets.
- Fabrication work for the MOS Project work design development of shear Testing Machine under the Guidance of Dr.M.M.Rao completed.

Minor Works:

- Undertaken the project work of 4th semester-Mechanical Engineering students under the guidance of D.Chandramouli, App.Mech. such as
 - a. Sawing machine mechanism
 - b. Fork lift mechanism
 - c. Garage Door Opening mechanism
 - d. Modeling of Air-Craft landing gear
 - e. Slotted lever Quick return mechanism
 - f. Plageography (copying) mechanism
- Completed a mini project works from 4th semester students of Mechanical Engg. Dept.
 - a. King-Pin Mechanism
 - b. Aero-Dynamic Mechanism
- Completed a project work for AM-220, Elements of the Models and Test Pieces etc, in fabrication

ICSR Works:

Training Programs were Conducted in pneumatics and hydraulics lab for delegates of external companies.

Training of Central workshop staff (External):

Trained CWS staff for giving effective training to students under HRD Scheme outside in connected fields as mentioned below:

- a. Orientation program in Gear manufacturing at CVRD, Avadi.
- b. CNC engraving training program at Sunita Engg Co., Nasik.
- c. Machine shop training at Advance Training Institute, Guindy.

Training of Central workshop staff (Internal):

Trained CWS staff for giving effective training to students under HRD Scheme within the institute in connected fields as mentioned below:

- a. Conducted training Program in Fitting shop for eight newly recruited staff of CWS
- b. Two persons were deputed in fire fighting programme
- c. Two persons were deputed for motivation programme under Human Resource Development.
- d. Conducted Training Programs in Tool Room for the new recruits.
- e. Conducted Training Program in CNC Machine and NC Engraving Machine with the help of EMCO service Engineers for our staff
- f. Two of our staff were trained in CAD-CAM at MDS, CAD Laboratory.
- g. Conducted Training in other trades- Smithy and Carpentry for three new recruits.

Two of our staff were trained in ISO 9001 Training at ICSR conducted by TUV with Dr. Srinivasan's guidance.

7.2 Central Photographic Section:

The Centre caters to the various photographic needs of the Departments and Centres of the Institute as well as various sponsored and consultancy projects. The jobs include photographic coverage of most of the important functions such as convocation, conferences, etc. held in the Institute. Besides this, section renders assistance to various departments for the technical Photography. The in-house processing and printing work is confined to Black and White photography. This centre caters to the requirements of Research activities of the students / faculty.

Recently, Director has approved for modernization of the Central Photographic Section and it is planned to provide digital/high resolution photography for all the needs of the Institute. In view of this, High resolution Digital Cameras, Computers with necessary professional software, Scanner, Printer, etc. are being purchased. It is also planned to help the Institute in the preparation of student Identity Cards, printing of degree certificates, etc.

The Central Photographic Section has undertaken 227 Departmental jobs, 22 Project jobs and 37 other functions during 2002-03.

The Central Photographic Section has extended 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.

1.	Total No. of work orders received calls attended and job completed	-	303 Nos.
2.	Total No. of units received for repairs	-	133 Nos.
3.	Total No. of units delivered after repairs	-	126 Nos.
4.	Total No. of units compressors replaced	-	09 Nos.

The following new Air conditioning Units were purchased and installed at various departments:

1.	3.0 TON Split Air Conditioners	-	14 Nos.
2.	2.0 TON Split Air Conditioners	-	4 Nos.
3.	1.5 TON Split Air Conditioners	-	03 Nos.
4.	7.5 TON DUCTABLE Air Conditioners	-	02 Nos.
5.	2.0 TON Window Air Conditioners	-	05 Nos.
6.	1.5 TON Window Air Conditioners	-	96 Nos.
	TELSTAR Imported Vacuum pump 2F- 6	-	1 No.

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.

Industrial gases	: Oxygen, Nitrogen, Dissolved Acetylene and Hydrogen
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 2002-2003.

Industrial Gases:

<u>Item</u>	<u>Ordered Quantity</u>	<u>Consumption</u>
Oxygen	2250 Cu.M	1858 Cu.M
Dry Nitrogen	3450 Cu.M	3024 Cu.M
Dissolved Acetylene	300 Cu.M	165 Cu.M
Standard Hydrogen	400 Cu.M	245 Cu.M

Special Gases:

High Pure Argon Gr.I	1200 Cu.M	650 Cu.M
High Pure Nitrogen Gr.I	700 Cu.M	630 Cu.M
High Pure Oxygen Gr.I	200 Cu.M	56 Cu.M
Zero Air	350 Cu.M	308 Cu.M

7.5 Central Glass Blowing Section:

7.5.1 Introduction:

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 for the industry consultancy program.

7.5.2 Facilities available:

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.

The following glass apparatuses fabricated were:

Cryostat, spherical and cylindrical dewer flasks, lugging probe, laser housing tube with water jacker, reactor tube, jet electropolisher, double walled transfer tube, vacuum tube collector for solar energy and quartz wares.

During 2002 - 03 the section undertaken 275 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 3,70,402 collection, 980 current journals catering to the needs of 4,798 members. The major activities undertaken in the Central Library during the period are given below:

8.1 Library Information Services Statistics:

Item	2002-03	Total
a. Collections:		
Books	6,454	2,04,211
Ph.D. Theses	--	2,761
Pamphlets and Reports	10	2,318
Microfilms/Fische	----	1,842
Book-Bank (General)	445	5,393
Book-Bank (Weaker Section)	477	7,044
Current Periodicals by Subscription	66	894
Current Periodicals by Exchange/Gift	--	86
Back Volumes of Periodicals	2,485	79,934
Patents & Specifications	----	20,000
Faculty Publications	----	1,000
German collection		44,000
C D	34	506
Video Cassettes	1	413
Total	9,972	3,70,402
b. Membership:		
Staff	51	894
Retired Faculty	4	44
Students	1,314	3,504
Alumni Members	10	49
Corporate Members	7	42
Industrial Associate Members	41	220
Special Members	--	27
Project Coordinators	8	18
Total	1,435	4,798
c. Services: Circulation		
		2002-03
1. Number of Readers visited		2,50,000
2. Number of Books/Journals issued		1,30,524
3. Number of Books issued through Book Bank (General)		3,200
4. Number of Books issued Book Bank(Weaker Section)		6,200
5. Consultation cards issued to users		858
6. Overdue & other charges collected		Rs.5,29,064
7. Xerox charges collected		Rs.6,73,214
d. Reservation of Books:		
1. Registered		19,250
2. Fulfilled		19,100
e. Loans:		
1. Department Loan (Under issue)		4,840
2. Permanent Loan issued		937
f. Inter Library Loans:		
1. Borrowed from other Libraries		550
2. Loaned to other Libraries		75
g. Literature Search:		
1. CD-ROM search by users		7,000

h. Reprint Service:

1. Reprints received from other Institutions	1,500p
2. Reprint supplied to other institutions	3,150p

i. Reprography Service:

1. Number of Xerox copies supplied	9,74,727
2. Number of copies printed on Rotoprinter	1,53,600
3. Barcode-ID cards Produced	1,963

j. Binding:

1. Number of Books and journals bound (internal)	3,490
2. Number of Miscellaneous publication bound (internal)	3,000
3. Cutting/Trimming (Sheets)	50,000

k. Expenditure on:

1. Books	Rs.1,21,04,224
2. Journals	Rs.3,31,41,318

l. New Journals Added:

66

8.2 ISO 9001 activities:

The Central Library participated in ISO activities along with other units of the Institute. Some of the major activities are listed below:

1. Detailed Systems and Procedures Manual as per ISO-9001:2000 was prepared and submitted to the Management Representative (ISO-9001) for re-certification purpose.
2. ISO Certification team visited on 09-04-2002.
 - a. Shri.V. Suresh, IC&SR and Shri.C.N. Vijayaraghavan, Computer Centre conducted Internal Quality Auditing on 18-10-2002.
 - b. Mr. M. Koteteswara Rao, Deputy Librarian and Mr.C.R. Sekar, Assistant Librarian conducted Internal Quality Auditing of IC&SR and Computer Centre on 22-10-2002.
 - c. Director handed over ISO 9001:2000 re-certified certificate on 11-12-2002.
 - d. Dr. Harish Chandra, Librarian delivered lecture on Application of ISO 9001 in Libraries to the participants of the training programme on Role of Information Technology in Libraries, organised by TTTI, Chennai on 07-01-2003.
 - e. Dr. M. Kumaravelu, Head, CEC and Mr. S. Sundaravinayagam, Accountant, Accounts Section conducted Internal Quality Auditing on 25-03-2003.

8.3 Digital Initiatives:

The Central Library has been actively involved to provide access to on-line full text as well as bibliographic databases. Regarding this, various digital initiatives have been taken. Some of them are indicated below:

MHRD Consortia:

The MHRD has set up a consortia based subscription to Electronic Resources for Technical Education System in India. The Consortium is named as Indian National Digital Library in Science & Technology (INDEST). The Central Library has implemented the consortia subscription for the following electronic resources:

a. IEL Online:

The IEEE/IEE Electronic Library (IEL) provides a single source to almost a third of the world's current electrical engineering and computer science literature, granting unparalleled access to publications from the Institute of Electrical and Electronics Engineers (IEEE) and the Institution of Electrical Engineers (IEE). The resource covers more than 780,000 documents from over 12,000 publications, including journals, conference proceedings, and IEEE Standards. It provides access to more than two million full-page PDF images, including all original charts, graphs, diagrams, photographs, and illustrative materials. More than 25,000 new pages are added per month. Archival access to the full-text archives of IEEE and IEE publications is available from 1988 to the present.

b. Springer Verlag's Link

The Link provides Web-based full-text access to the scientific journals published by the Springer Verlag. It incorporates full-text of more than 450 journals, several thousand books and other serial publications. The Springer Verlag has offered full-text access to complete collection of their electronic journals (approximately 300) excluding journals in medical sciences with restrictions in number of downloads limited to maximum 2,000.

c. Applied Science & Technology Plus:

Applied Science & Technology Plus (ASTP) is a CD-ROM database (with access to the Web) that provides access to the full text of articles indexed in the H.W. Wilson's Applied Science & Technology, ASTP is offered by the UMI. It provides indices and abstracts to more than 556 key science and engineering titles, plus full-image coverage of 160 titles. All titles are indexed from 1994 forward; the database is updated monthly.

d. ABI/Inform Complete:

The ABI/Inform is a premier source of business information for more than 30 years. The database contains content from thousands of journals that help researcher track business conditions, trends, management techniques, corporate strategies, and industry-specific topics worldwide. It consists of 1800 full-text journals and 2000 journals that are indexed and abstracted. The resource is offered on Web with CD ROM backup.

e. ACM Digital Library:

The ACM Digital Library incorporates digital versions of works published by ACM since its inception. The major component of the resource is an enhanced version of the ACM Digital Library plus an extended bibliographic database, consisting initially of more than a quarter-million citations of core works in computing. These works are of all types (journals, proceedings, books, technical reports, theses, among others), and from all the major publishers in the discipline.

f. Ei Compendex Plus:

The Ei Compendex provides summaries of technical reports, journal articles, and conference papers and proceedings, Ei Compendex is the world's only fully interdisciplinary engineering indexing and abstracting service. It covers over 2,600 international engineering journals, conference proceedings and technical reports. Each year, 200,000 new abstracts are added within the broad applied engineering areas.

g. INSPEC:

The INSPEC, from the Institute of Electrical Engineers (IEE), is the world's leading database in the fields of physics, electronics and electrical engineering, computers and control, and information technology. It contains citations with abstracts of the worldwide literature in physics, electronics and electrical engineering and computer fields. Primary coverage is of journal articles and papers presented at conferences, although significant books, technical reports, and dissertations are also included in the database's 7.3 million records. Sources include more than 4,200 journals and more than 2,000 conference proceedings, books and reports.

h. MathSciNet:

The electronic version of Mathematical Abstracts is the most important component of MathSciNet. Mathematical Reviews is a reviewing journal of international mathematics literature. The MathSciNet contains signed reviews and bibliographic data from the first issue in January 1940 to the present. Journals, conference proceedings, and books of mathematical research are also covered. Items listed in the annual indexes of Mathematical Reviews, but not given an individual review, are also included.

i. J-Gate:

The J-Gate is an Internet gateway and portal set up nearly two-years ago by Informatics (India) Ltd. It offers affordable access to global electronic journal literature. It provides seamless access to journal articles through database interface of 10,000+ e-journals. Currently J-Gate offers two types of products/services, i.e. i) J-Gate Portal which offers "Directory of e-journals" including more than 9,000 journals listed with link to journal/publishers site; ii) Table of Contents (TOC) for an equal number of journals; and iii) a comprehensive searchable bibliographic database with more than 10 lakhs article records added every year.

In addition to this, we have also initiated to conduct Information Literacy Programme for the faculty, students and staff with the objective to familiarize the use of e-resources for effective and efficient use. The Central Library website (<http://www.cenlib.iitm.ac.in>) has also been modified accordingly and links have been provided to all above-mentioned databases. Librarian also visited various reference sites along with the team of faculty of the institute in Singapore, Hongkong, Malaysia regarding digital library and e-learning. A proposal received from M/s. Sun Microsystems for digital library has recently been submitted to the competent authority.

8.4 Library Publications:

- Brochures on Library Rules, Regulations, Information and Book Bank facilities were updated, printed and released for use during June 2002
- List of Core Journals subscribed for the year 2002 was prepared and circulated to Departments/Centres on 5-07-2002.

8.5 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 Rs.)
April 2002	198	13,059.00
May 2002	264	16,167.00
June 2002	284	17,318.00
July 2002	393	12,793.00
August 2002	285	19,095.00
September 2002	232	15,544.00
October 2002	148	9,916.00
November 2002	283	18,961.00
December 2002	262	15,934.00
January 2003	400	25,540.00
February 2003	363	23,655.00
March 2003	378	24,219.00
Total	3,490	2,12,201.00

8.6 New Facilities/Equipments added

- Three numbers of typewriting machines were added on 23-05-2002.
- HP 4550 DN colour printer installed at the Reprographic Section on 03-06-2002.
- 28 wall mounted air circulated fans were installed in Millennium Reading Hall on 15-10-2002.
- MAPs (India & World) were installed on 12-11-2002.
- 150 Wooden stools kept at book stacks for readers use on 29-06-2002.

8.7 Donation:

- The Central Library received issues of QUESTA volume 1-30 as a gift by Prof.N.U. Prabhu, USA through Prof. P.R. Parthasarathy, Department of Mathematics.
- Mr.R.V. Ramachandran, M. Tech. Mechanical Engineering 1969 batch and Mr. Kumar Sundaresan, B.Tech. Chemical Engineering 1988 batch have donated 21 and 12 books respectively through IIT Madras Alumni Association on 25-03-2003.
- Mr. Sivakumar Tadikonda donated US \$600 for the subscription of journal of Micromechanics & Micro engineering.

8.8 Visitors:

Sl. No.	Name of the Visitor & Designation	Date of visit	Purpose of visit
1.	Dr. C. Radhakrishnan, Director & Professor of Electrical Engineering, UGC-Academic Staff College, Jawaharlal Nehru Technological University, Hyderabad	15-04-2002	To see the facilities and functioning of the Central Library
2.	Smt. Kalpana Dasgupta, Former ILA President, Director, Central Secretariat Library, Department of Culture, Government of India and Former Librarian National Library, Calcutta and Mrs. Prabha Krishnan, Library and Information Officer, UPSC, New Delhi	01-05-2002	To see the facilities, functioning and interacting with Central Library Staff
3.	Dr. Eleonore Rahimi Laridjani, Director, Max Muller Bhavan, Chennai and Ms. Martina Barkel, Head of Information, Department of Library & Regional Librarian, South Asia	15-05-2002	To see the facilities and functioning of the Central Library

4.	35 Engineering College Librarians sponsored by Annamalai University	24-06-2002	To see the facilities and functioning of the Central Library
5.	Dr. T.N. Prakash, Co-ordinator, AIP-AR&DB, Dr. A.L. Moorthy, Head, Library, DRDL, Hyderabad, Prof. S. Parthan, IIT, Kharagpur, Dr. M.S. Sridhar, head, Library, ISRO, Bangalore, Mr. I.R.N. Gowder, Head, Library, NAL, Bangalore, Dr. S. Shankaran, Chairman, Library Committee, ADE, Bangalore and Mr. S. Kuppuswami, HAL, Bangalore	26-06-2002	To see the facilities and functioning of the Central Library
6.	25 & 47 Polytechnic Librarians from Kerala and Andhra Pradesh	11-07-2002 & 17-07-2002	To see the facilities and functioning of the Central Library
7.	Sri Ar. Sukumar, IAS, Commissioner, Department of Technical Education, Andhra Pradesh along with his team from Society for Networking for Excellence in Technical Education.	24-07-2002	To see the facilities and functioning of the Central Library
8.	30 BLISc students from Dept. of Lib. Info. Sci., Calicut University, Kerala	30-07-2002	To see the facilities and functioning of the Central Library
9.	Mr. Yi. Thomas, Training and Sales Executive, The Institution of Electrical Engineers, UK	26-09-2002	To see the facilities and functioning of the Central Library
10.	Mr. Andrew Lim, Sun Micro Systems, Singapore	30-09-2002	To see the facilities and functioning of the Central Library
11.	Mr. A.V. Badge, Librarian, Y.B. Chavan College of Engineering, Nagpur, Mr. V.P. Bharambe, Librarian, Jawaharlal Nehru Medical College, Wardha & Mrs. Pratibha P. Buche, Assistant Librarian, Yaswantra Chavan College	08-10-2002 & 09-10-2002	To see the facilities and functioning of the Central Library
12.	Nine technical personnel from Public Works Department, Government of Tamil Nadu, National Informatics Centre, Chennai, High Court, Madras and Non-technical staff from TANSI	23-10-2002	To see the facilities and functioning of the Central Library
13.	Dr. Vinodh Chachra, President of VTLS, USA	29-10-2002	To see the facilities and functioning of the Central Library
14.	27 Karnataka State Polytechnic Librarians and Lectures	31-10-2002	To see the facilities and functioning of the Central Library
15.	Prof. P.K. George, Director of Technical Education, Government of Kerala, Tiruvananthapuram & Board Member of IIT Madras	20-12-2002	To see the facilities and functioning of the Central Library
16.	Prof. S.K. Joshi, Chairman Board of Governors, IIT Roorkee	20-12-2002	To see the facilities and functioning of the Central Library
17.	Mr. R.M. Despande, Librarian In-charge, Visveswaraya National Institute of Technology, Nagpur	09-01-2003	On-site training
18.	Ms. Francis Tait, Regional Information Co-coordinator, British Council, South India and Mr. R. Venkatesavan, Manager, Library & Information Services (South India), British Council Division, British Deputy High Commission, Chennai	07-02-2003	To see the facilities, functioning and interacting with Central Library Staff
19.	16 MLISc students with one faculty members from Sambalpur University, Orissa	19-02-2003	To see the facilities and functioning of the Central Library
20.	Prof. Dr. Eng. Jochen Buechs, Department of Biochemical Engineering, RWTH Aachen University, Germany	24-02-2003	To see the facilities and functioning of the Central Library

8.9 Staff Publications:

- a. Dr. Harish Chandra, Indian Institute of Technology Madras. Meeting papers, The Regional Consultation Meeting on the preservation of Digital Heritage for Asia and the Pacific – Canberra, National Library of Australia, 4-6 November, 2002, p.29-35
- b. Dr. Harish Chandra, Resource Sharing and Networking of Engineering College Libraries, Proceedings of Second ASSIST Annual Seminar on Resource Sharing and Networking of Engineering College Libraries edited by V.G. Talwar et al, Bangalore, ASSIST, 30-12-2002, p3-17.
- c. Dr. Harish Chandra, Development and Use of Web based Information Resources with Specific Reference to E-Books: A Case Study for S&T Libraries, First International Convention on Mapping Technology on Libraries and People Ed by T.A.V. Murthy et al, Ahmedbad, INFLIBNET, 13-15 February, 2003, p.575-586.
- d. Dr. Harish Chandra, Library Automation Strategy: A Case Study of the Central Library of Indian Institute of Technology Madras, 5th Annual National MANLIBNET Convention, at Jamshedpur, XLRI, March 6-8, 2003.
- e. Dr. Harish Chandra, Doorways to Resource Sharing Among Indian Institutes of Technology Libraries for Creating 21st Century Library & Information Services under Digital Environment, IATUL Proceedings (New Series) Vol. 12, 2002, Kansas City, Missouri, USA, IATUL, June 2-6, 2002.
- f. Dr. Harish Chandra, Digital Reference Service at the Central Library of IIT Madras, 48th All India Library Conference on Electronic Information Environment and Library Services a Contemporary Paradigm, Delhi, I.I.A, 2003, p.551-563.

8.10 Books/Monographs authored or Co-authored:

Sl. No.	Name(s) of Author(s)	Title of Text Book/ Monograph	Publisher
1.	Dr.Harish Chandra	Souvenir on MALA Platinum Jubilee Celebration, Seminar on Information Professionals for the Digital Era 29-30 January 2003 with Dr. A. Amudhavalli.	Madras Library Association

8.11 Staff User Meet:

The following staff user meets were organised followed by special lectures

Sl. No.	Name of the Speaker	Topic	Date
1.	Dr. D. Chandran, Associate Professor, Department of Library and Information Science, S.V. University, Tirupathi	Information Handling in Digital Era	05-04-2002
2.	Open Discussion	Book Bank facilities	15-04-2002
3.	Mr. E. Dillip E. Williams, VTLS Software, Chennai	Software Solution for Digital Library	11-07-2002
4.	Mr. Ganesh Mahabala, Sun Micro Systems, Chennai	Sun in Digital Library Hardware solutions	11-07-2002
5.	Mr. Makarand Walker, STN/Chemical Abstracts Services	SciFinder Scholar	24-01-2003
6.	Prof. John Willinsky, Pacific Press Professor of Literacy and Technology, University of British Columbia, Vancouver, Canada	Open Access on the Literature of Science and its implication for the Developing World	06-02-2003

8.12 Short term Courses / Workshop / Seminar / Symposium / Conference / Training/ Meeting attended by faculty in recognized Academic Institutions and public sector units

Sl. No.	Name of the staff	Title	Institution	Period
1.	Dr.Harish Chandra	DELNET DataBase Pilot Project evaluation meeting	International Institute of Tamil Studies, Chennai	01-05-2002
2.	Dr.Harish Chandra	Creating an Effective Computing Environment Workshop	IIT Madras	02-05-2002
3.	Dr.Harish Chandra	Technical presentation on Disk Solution for e-learning project presented by Mr. Raymond Sion of Storage Tek, Singapore	IIT Madras	14-05-2002
4.	Dr.Harish Chandra	Selection Committee Meeting as an External Expert for the post of Librarian	Bharathidasan College of Engineering and Technology, Trichy	07-06-2002
5.	Dr.Harish Chandra	Building Committee Meeting	Developing Library Network (DELNET), New Delhi	14-06-2002
6.	Dr.Harish Chandra	Assessment Committee Meeting	Office of the Chief Secretary, Pondicherry Government, Pondicherry	10-07-2002
7.	Dr. Harish Chandra	MHRD Consortia Meeting	Ministry of Human Resources Development, New Delhi	19-07-2002
8.	Dr. Harish Chandra	Governing Body Meeting	MALIBET, Chennai	25-09-2002
9.	Dr.Harish Chandra	Pricing Models of E-journals through Consortia in India Libraries – A Round Table	Indian Institute of Astrophysics, Bangalore	28-11-2002
10.	Dr. Harish Chandra	First Meeting of the National Review Committee for INDEST (Indian Digital Library in Engineering Sci. & Technology) Consortium	Ministry of Human Resource Development, Department of Secondary & Higher Education, New Delhi	24-12-2002
11.	Dr. Harish Chandra	Symposium on Industry-Academic Partnership in Technology Development	IC&SR, IIT Madras	22-02-2003 & 23-02-2003
12.	Dr. Harish Chandra	Launch Workshop and First Annual Meeting of MHRD and National Steering Committee Meeting of INDEST Consortium	Ministry of Human Resources Development, Department of Secondary and Higher Education, New Delhi	04-03-2003 & 05-03-2003
13.	M. Koteswara Rao	Symposium on Industry-Academic Partnership in Technology Development	IC&SR IIT Madras	22-02-2003 & 23-02-2003

14.	M.Murugan	DELNET Training Programme	IIT Madras	18-09-2002 to 20-09-2002
15.	C.R. Sekar	DELNET Training Programme	IIT Madras	- do -
16.	Mrs. Lalitha Rajendran	DELNET Training Programme	IIT Madras	- do -
17.	Mr. C.C. Tom	ISO Training Programme on internal Quality Audit for ISO 9001-2000 standard	IIT Madras	20-09-2002 to 21-09-2002
18.	Mr. P. Natarajan	DELNET Meet the Member Programme	IIT Madras	21-09-2002
19.	K. Sethu	DELNET Meet the Member Programme	IIT Madras	21-09-2002
20.	M. Murugan	Symposium on Industry-Academic Partnership in Technology Development	IC&SR IIT Madras	22-02-2003 & 23-02-2003
21.	C.C. Tom	Symposium on Industry-Academic Partnership in Technology Development	IC&SR IIT Madras	22-02-2003 & 23-02-2003
22.	C.R. Sekar	Symposium on Industry-Academic Partnership in Technology Development	IC&SR IIT Madras	22-02-2003 & 23-02-2003
23.	P. Natarajan	Symposium on Industry-Academic Partnership in Technology Development	IC&SR IIT Madras	22-02-2003 & 23-02-2003

8.13 Special Lectures Delivered by Staff in other Institution:

Sl. No.	Name of the staff	Topic of Lecture	Venue and Date
1.	Dr.Harish Chandra	Role of Library and Information Science in New Millennium	Dr. MGR Engineering College, Chennai 11-04-2002
2.	Dr.Harish Chandra	Information Systems and Services to HAL Trainees	IIT Madras 01-08-2002
3.	Dr.Harish Chandra	Use of Digital Resource in IIT Madras at the Seminar on Dynamics of Knowledge Access on the Web	Hotel Mowburys Inn, Edutech, Chennai 17-08-2002
4.	Dr.Harish Chandra	The Role of Library and Information Resources in Engineering Education	Jaya Engineering College 21-09-2002
5.	Dr. Harish Chandra	Library as a Resource Centre for Research	Anna University, Chennai 17-10-2002
6.	Dr Harish Chandra	E-journals	Sri Ram Engineering College, Chennai and Society for Advancement of Library and Information Science. 26-10-2002
7.	Dr Harish Chandra	Building E-collections in S&T Libraries	TTTI, Taramani, Chennai 29-10-2002
8.	Dr. Harish Chandra	Implementation of Digital Library	Kamaraj College of Engineering & Technology, Virudhunagar 05-02-2003
9.	Dr. Harish Chandra	Digital Library and E-Learning	Kumaraguru College of Technology, Coimbatore

8.14 Journal Editorial Board:

Sl.No.	Name of the Faculty	Level	Journal
1.	Dr.Harish Chandra	Secretary Editorial Board	Journal of Mathematical and Physical Sciences
2.	Dr. Harish Chandra	Member of Editorial Advisory Board	OCLC Systems and Services (ISSN:1065-075X) an International refereed journal for information professionals, LIS educators and students, researchers and archivists world wide. Emerald is the publisher of this journal
3.	Dr. Harish Chandra	Editor	Souvenir on MALA Platinum Jubilee Celebration. 29-30, January 2003

8.15 Short-Term Courses/ Workshops/Seminars /Symposia/ Conference/Training/Meeting Organized:

Sl. No.	Co-ordinator	Title	Period
1.	Dr Harish Chandra	22 nd Aerospace Information Panel, AR&DB meeting	25-06-2002
2.	Dr. Harish Chandra	Training programme on "Emerging Technologies for Effective Management of Library Services for Library and Information Professionals In association with Delhi Library Network (DELNET), New Delhi	18-09-2002 & 19-09-2002
3.	Dr. Harish Chandra	Organised presentation on SciFinder Scholar by Mr. Makarand Waiker, Representative of STN/Chemical Abstracts Services	24-01-2003

8.16 Paper Presentation by the Staff:

Sl. No.	Name of the Staff	Title	Institution	Duration
1.	Dr. Harish Chandra	Resource Sharing & Networking of Engg. College Libraries	ASSIST, Bangalore	30-12-2002

8.17 Visits Abroad:

Sl. No.	Name of the Staff	Purpose	Countries Visited	Duration
1.	Dr. Harish Chandra	E-learning and Digital Library	Singapore, Malaysia and Hongkong	25-08-2002 to 30-08-2002
2.	Dr. Harish Chandra	UNESCO Regional Consultation meeting on the Preservation of Digital Heritage for Asia and the Pacific at National Library of Australia & also visited Libraries of University of Canberra, The Australian National University, University of Sydney, University of Technology Sydney, State Library of New South Wales, RMIT University, Victoria University of Technology, University of Melbourne, State Library of Victoria	Australia (Canberra, Melbourne, Sydney)	31-10-2002 to 09-11-2002

8.18 Future Plans:

The construction of second phase of new library building is in progress. It is proposed to organize the collections, services, and other facilities including digital library, media resources, back volumes as soon as the floors are made available for use.

9. STUDENTS AMENITIES AND ACTIVITIES

9.1 Hostels:

All students admitted to IIT Madras required residing in the hostels inside the campus. There are 12 men's hostels and 1 ladies hostel with a total of 2883 single room, 71 double room and 171 triple room accommodation. During the period under report, there were 2709 men and 335 women students reside in the hostels.

A Warden and an Assistant Warden administer each hostel. A 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 251 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. SP Subramanian
Professor, Ocean Engg. Dept

Name of the Hostel/Unit

Warden

Alakananda

Dr. Anantha Subramaniam
Associate Professor, Ocean Engineering Dept.

Brahamaputra

Dr. K.N. Satyanarayana
Associate Professor, Civil Engineering Dept.

Cauvery

Dr. T.S. Prasanna Kumar
Professor, Metallurgical Dept.

Central Supplies Unit

Dr. SP Subramanian
Professor, Ocean Engg. Dept.

Ganga

Dr. G. Sundararajan
Professor, Chemistry Dept.
(up to 24.04.2002)

Dr. K. Sethupathi
Assistant Professor, Physics Dept.
(from 25.04.2002)

Godavari

Dr. K. Ramamurthy
Associate Professor, Civil Engg Dept.

Jamuna

Dr. V. Jagadeesh Kumar
Professor, Electrical Engg. Dept.

Krishna

Dr. S. Mohan
Professor, Civil Engg. Dept.
(up to 04.02.2003)

Dr.S. Sundar
Associate Professor, Mathematics Dept.

Mandakini

Dr. Ambalavanan
Professor, Civil Engg. Dept.
(Upto 02.09.2002)

Dr. C. Chandrasekhar
Assistant Professor, Computer Science & Engg.
(from 03.09.2002)

Narmada

Dr. Prakash Maiya
Associate Professor, Mech. Engg. Dept.

Saraswathi

Dr. M. Ramasubba Reddy
Associate Professor, App. Mech. Dept.

Sarayu

Dr. Thamban Nair M
Associate Professor, Mathematics Dept.

Sharavati

Dr. Guhan Jayaraman
Associate Professor, Chemical Engg. Dept.

Tapti

Dr. A Subramanyam
Professor, Physics Dept.
(upto 02.05.2002)

Dr. R. Dhamodharan
Associate Professor, Chemistry Dept.
(from 03.05.2002)

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

The Senior Division Airwing (Tech) NCC Unit is functioning at IIT Madras since 16th September 1965. It provides NCC training exclusively to the students of the Institute. Regular Air Force officers and airmen are posted to this unit to impart training. Two Associate NCC officers and other civilian staff drawn from the Institute augment unit strength.

NCC Syllabus including drill, civil defence, weapon training, leadership course, Airmanship, Health and hygiene, history of IAF, Imparting general services, Knowledge principles of Flight, Aeromodelling and avionics and community development and adventurous activities.

Highlights of the Training for the year 2002-2003:

- a. Blood Donation Camp: Under the community development activity, the blood donation programme was organized successfully under the kind guidance of Wg Cdr. T. Mohanakrishnan AE(L), Commanding Officer, 4(TN) Air Sqr (Tech) NCC and presided over by Prof. S.S. Gokhale, The Dean of the Students, IIT Madras on 23rd November 2002 between 08.00 hrs to 12.00 hrs. Approximately 100 NCC cadets have participated voluntarily and donated the blood. Hony. Secretary of Indian Red Cross Society (Tamil Nadu Branch) has sent their appreciation to the blood donors vide their letter no. LO/BB/01, dated 27th November 2002.
- b. Vigilance Awareness week: On 31st October 2002, the birth day of Sardar Vallabhai Patel, a role model of Integrity in public life "Vigilance Awareness Week" was observed by the NCC cadets and staff from 31st October to 6th November 2002. The pledge was administered all ANOs, NCC cadets and PI staff by Wg Cdr T. Mohanakrishnan, Commanding Officer, 4(TN) Air Sqn (Tech) NCC.
- c. AIDS/Cancer Awareness: The said programme was conducted on 9th November 2002 at 10.00 hrs at IIT Madras.
- d. Small Arms Training/Guard of Honour Parade:
 - (i) On the eve of Independence day on 15th August 2002, NCC cadets had presented a Guard of Honour Parade to the Director, IIT Madras.
 - (ii) On the eve of National Level Technical Festival named "SAASTRA", all the NCC cadets of IIT have participated in a Guard of Honour Parade, which was celebrated from 4th October to 7th October 2002 at IIT Madras premises.
 - (iii) On the occasion of Republic day on 26th January 2003, NCC cadets had presented a Guard of Honour Parade to the Director, IIT Madras.
- e. Social Service Activities: Under Social service activities, an Eye donation programme was organized by IIT on 16th November from 09.30 hrs to 12.00 hrs. under the kind guidance of Commanding Officer, 4(TN) Air Sqn (Tech) NCC.
- f. Adventurous activities: Under the Adventurous activities, a cycle expedition programme was organized by Commanding Officer, 4(TN) Air Sqn (Tech) NCC from IIT Madras to Kanchipuram and back.
- g. Annual Training Camp: Annual Training Camp was conducted for NCC cadets from 20th to 31st December 2002. The camp held at Sarayu Hostel. A total of 203 cadets from IIT students have participated. Wg Cdr T. Mohanakrishnan was camp commandant.

Activities held: Besides the Airwing NCC theory classes, various lectures, demonstrations, competitions, sports were imparted by inviting experts in the respective fields, such as

<u>S.No.</u>	<u>Topic</u>	<u>Lectures given by</u>	<u>Date</u>
1.	Aeromodelling	Mr. Arun Kannan and Maj. Mukherjee	22/12/2002 & 25/12/2002
2.	War & Counter Intelligence	Sqn. Ldr. L N Kazmi of AF Stn. Tambaram	26/12/2002
3.	Fire fighting & Extinguishing Techniques	Mr. Sreenivasan Manager (Trg), Ever Life Fire Services	27/12/2002

h. Cadets Carrier Report: All the cadets who took the NCC carrier have successfully completed the training.

The NCC unit helps to build a serve of discipline, comradeship, a spirit of adventure and quality of leadership in the minds of young generation of IIT Madras.

Commanding Officer : Wg. Cdr. T. Mohankrishnan AE(L)
Associate NCC Officers : Flt Lt A. Mani and F/O S. Neelamani

9.4 N.S.S.:

The major activities that were carried out during the year 2001-02 are given below:

Teaching: Free tuition classes were held for less privileged, school-going children of Taramani, Velacheri and IIT campus. About eight such centres were operational during the last year. In addition, an informal teaching center was functional for school drop-out children from the campus.

Social Service: This group has worked in the Central Library to help in organizing the books and periodicals during the last year. NSS volunteers operated sales counters during Saarang to help organizations like WWF, CRY, etc. A summer camp was organized in Koothambakkam village for about 8 students for a week to sensitize the students to rural problems that could be solved by effective technological methods in a sustainable and environment friendly way. Sale of jute products was organized to raise funds for the Koothambakkam village women's efforts. NSS volunteers helped in conducting a health camp and two eye camps in Taramani along with the Rotary Club of Aarch City, Madras and Rotaract Club of IIT Madras. NSS volunteers also joined in efforts to collect clothes and other useful items during Diwali to be donated to the needy and helped in the campaign for a noiseless Diwali celebration.

Environment: This group has worked mostly to remove plastics and construction debris that is scattered in the campus. Nature walks, film shows and talks were held as part of orientation and sensitization to nature and environmental issues. One of the groups helped to develop a website for the flora and fauna of IIT Madras. Volunteers participated in the 'Turtle Walk'. Herbarium of plants of IITM campus was prepared. Initiated a move to take care of the dying Banyan trees of the campus. A 'Festival of Lights' was held by the NSS volunteers during Diwali. The Children's Park of IITM was cleaned of non-biodegradable waste. The campus was surveyed for effective solid waste management.

9.5 Gymkhana:

IIT Sanmar Cricket Tournament:

The most prestigious IIT-Sanmar Inter Collegiate Cricket tournament in the city for college students sponsored by "Sanmar Group", the IIT-Sanmar Cricket Tournament was conducted from 8th February to 16th March 2003 with 18 Teams participating for top honour witnessed a high level of competition.

In one of the severely contested matches, our IIT Madras team won against S.R.M. Engineering College and entered to semifinal stage.

Inter IIT Aquatic Meet:

Inter IIT Aquatic meet was held from 29th September to 1st October 2002 at IIT Delhi. Six IITs, excluding IIT Guwahati, participated in the above meet in which our Institute contingent declared as Runner up in Water Polo Championship and win the over all Championship in Swimming.

Inter IIT Sports Meet:

This year, the Inter IIT Sports meet was held at IIT Delhi from 14th to 20th December 2002 and our contingent came SECOND in overall position. Our boys won Gold in Table Tennis, Cricket, Swimming and Athletics and silver in Badminton, Basketball, Hockey and Waterpolo. Our Girls made a sincere effort in all the Sports.

Our Athletic Team performed very well and stood First with a big margin against other Teams. Cricket Team also won all the encounter and placed First. In swimming, our team won the trophy with a great margin. Our Table Tennis team won the match in splendid performance as usual.

In the overall Inter IIT, Sports meet Championship IIT-Madras scored 76 points stood overall SECOND against Delhi with 82 points stood FIRST.

All India Inter Collegiate Invitation Basket Ball Tournament:

This tournament was conducted from 8th to 13th January 2003, attracted outstation teams from all over India. The large number of spectators who attended this tournament witnessed many exciting matches. Our boys displayed an excellent performance against other teams and entered into the round robin league. G.R.Damodaran College of Arts and Science, Coimbatore won the Gerhard Fischer Cup for men college and Nirmala college for women won the Kokila Rajaiah Trophy for the women colleges.

Inter Hostel Tournament:

The Inter Hostel tournaments were conducted in all the games / events throughout the academic year and were keenly contested for the Schroeter Trophy for General Championship in Inter IIT Sports events and a separate Dean's trophy was instituted for non media and non Inter IIT Sports events. Jamuna Hostel won the Schroeter Trophy and Dean's Trophy goes to Jamuna Hostel.

A separate tournament was conducted for girls throughout this year.

Non-Media Tournaments:

The following Non-Media Tournaments were conducted for the student's 9-a-side Tennis ball Cricket, 6-a-side Hockey and 6-a-side Football. This has promoted larger number of participation and chance for every one in the hostel and as usual attracted large participants with more number of student spectators witnessed and encouraged their teams.

All Gymkhana clubs like Fitness Club with newly added facilities, Badminton Club, Tennis Club and Swimming Pool Club functioned well during the period under report.

Swimming Pool:

The Swimming Pool is functioning very well and it is maintained well with high standards. The users are highly satisfied with our well-maintained swimming pool. The newly added facility like new changing rooms, toilets and bathrooms give an attraction to our Swimming Pool.

National Sports Organisation (NSO):

NSO is functioning as per the Government of India's decision for improving Sports with special reference to keep up the fitness of students. Our Institute took necessary steps for encouraging students to participate in various games and events and in Physical Fitness activity as well.

Intensive Physical Fitness Training Programme was introduced for NSO Students and Test Battery was formulated. Standards were fixed for various levels. The main aim of Special Fitness Training is to improve the Stamina, Speed and Strength & Power of our students for the development of their body and use these resources to win the Inter IIT Sports Meet with a good edge over other IIT's.

This year nearly 250 first year undergraduate students were registered under this scheme. Officials/ Experts from various Sports Federations were engaged for coaching our students.

The noteworthy performance of sizable first year students at the various tournaments viz., Inter IIT Sports Meet, and All India Inter Collegiate Invitation Basketball Tournament due to their effort is worth special mention here.

T.N.T.A:

IIT-Madras Students team as usual ready to take part in the TNTA league Tournament. IIT. Students team won the cash prize for 3 years in succession in the TNTA (F) Division league match.

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 section students. He periodically meets these students in his designated office and counsels them for various academic and non-academic requirements. During the period under report, 4 students in the weaker section and one foreign national student 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 2002 for the weaker section and foreign national students of B.Tech programme as they expressed difficulty in understanding during normal teaching hours. Also drawing instruments have been issued to a total of about 30 students.

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 B.Tech students were distributed to various student counselors and faculty counselors for individual attention.

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.

Student problems were solved by the counselors by applying 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 the work, welfare and development of the women of IIT Madras. The forum was formally inaugurated by the Director Prof.M.S.Ananth on November 6th, 2002. Ms.Sheela Rani Chunkath, Chairperson, Tamil Nadu Pollution Control Board was the guest of honour and spoke on "Women and Gender Issues" highlighting the social dimensions of gender discrimination. The response from all sections of women of the Institute had been enthusiastic and encouraging.

Some of the activities for the period included the following:

Special Lectures:

1. On November 28, 2002, Dr.Shyamala Devaraju, M.S., D.G.O., Assistant Professor, Department of Surgery Kilpauk Medical College, delivered the lecture on "Women and Health related issues" and addressed many issues that concern women's health and well-being. Over 70 members attended the lecture.
2. Ms.Kalpana Sharma, Deputy Editor with The Hindu spoke on "should women care about war and peace?" on February 21, 2003.

Training Programme:

A training programme on "Effective Computer use and skill development" was arranged under the HRD programme, for the women administrative staff from February 17 to 21, 2003. Administrative staff numbering 40, who attended the programme in two batches (morning and afternoon sessions) in the Computer Centre, IIT Madras found it very useful in enhancing their work efficiency.

Celebration of International Women's Day:

Women's Forum, IIT Madras, celebrated the International Women's Day on Friday, March 7, 2003. The history of women's movement was outlined and some outstanding achievements of Indian women during the year were hailed during the meeting. Hon'ble Justice Smt. Prabha Sridevan, was the Chief Guest and discussed many aspects of "Women and Law". Prof.M.S.Ananth, Director, IIT Madras presided over the function.

In addition, the following documentaries with women-centered themes were specially screened for the occasion:

1. "UN-LIMITED GIRLS", a documentary (August 2002) – Digital Video, for 94 min., English and some Hindi with subtitles directed by Paromita Vohra, covering the history of feminism, not in the light of oppression or achievement, but to find what people have made of feminism in their lives. The movie was screened on March 13th 2003.
2. "SWARAAJ (The Little Republic)", is an international award winning docu-drama, in Hindi and English subtitles, directed by Anwar Jamal and Sehjo Singh. The movie was screened on 21st March, 2003. About hundred people watched the movie with rapturous attention, admiring the artistry depicting the unusual strength and courage of four little-known village women of Rajasthan fighting to get water. The movie certainly had a major impact on the spectators.

Meetings attended by members:

- 1 Dr. Neelima M. Gupte, Associate Professor, Department of Physics attended the meeting of IUPAP working group on Women in Physics, held at Berlin during October 9th to 12th, 2002.
- 2 Dr. Prema Rajagopalan gave a lecture on "Gender Perspective in Technical Education" for the participants of the short term training programme on Women in Science: How free? How equal/(sponsored by AICTE-ISTE) and conducted by the Periyar Centenary Girls Polytechnic College at Tanjavur on November 15th, 2002.
- 3 Dr. M. Thenmozhi and Prof. K. Lalitha attended the National Convention on Sexual Harassment and Gender Justice" arranged by National Institute of Public Administration at Bangalore on November 22nd and 23rd, 2002.
- 4 Prof. T. S. Chandra and Prof. K. Lalitha attended the National Fair on Women Scientists and Entrepreneurs Shaping India's Bio-future organized by MSSRF, Taramani at Chennai on January 7th and 8th 2003. Prof. Lalitha took part in the panel discussion, on "Competitive Strategies for a successful women bio-entrepreneurship" and discussed "Technology options".

Awards:

Dr. T. S. Chandra, Professor, Department of Chemistry was honoured by vocational excellence award on October 30th, 2002 by Rotary Club of Anna Nagar, Madras. She was one of the five women achievers in Tamil Nadu chosen for the award this year.

10. STUDENTS PLACEMENT

10.1 Introduction:

Placement Office of this Institute maintains a symbiotic, vibrant and purposeful interaction with industries across the country. About 200 industries drawn both from the private and public sectors are in this office list. This year 95 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 2002-2003:

Department	B.Tech	Dual Degree	M.Sc	M.Tech	M.B.A	M.S	Ph.D	Total
Aerospace Engg.	9	2	-	1	-	5	-	17
Applied Mechanics	-	-	-	4	-	10	1	15
Chemical Engg.	30	6	-	6	-	3	-	45
Chemistry	-	-	2	-	-	-	-	2
Civil Engineering	29	10	-	10	-	2	-	51
Computer Science & Engg.	23	3	-	27	-	12	-	65
Electrical Engg.	56	14	-	31	-	9	-	110
Humanities & Soc. Sci.	-	-	-	-	25	2	-	27
Mathematics	-	-	-	4	-	-	-	4
Mechanical Engg.	72	11	-	38	-	11	-	132
Metallurgical Engg.	23	4	-	-	-	2	-	29
Ocean Engg. & Naval Arch.	13	2	-	1	-	3	-	19
Physics	-	-	-	-	-	-	-	-
Total	255	52	2	122	25	59	1	516

During the year under report 516 students/scholars were placed in different industries. Besides above, 1 Systems Trainee of Computer Centre and 8 Last year's students who have been permitted to re-register were also placed.

11. FINANCIAL ASSISTANCE TO STUDENTS

Financial assistance in the form of scholarships and fellowships is 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 2002-03 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 173 students benefited. The year-wise details of number of students benefited are given in Table 10.1.

SC/ ST students admitted to B.Tech programme upto July 2002 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 31.3.2003, 51 students benefited. The year-wise details of number of students benefited also are given below:

No. of MCM and SC/ST scholarships

Batch	MCM Scholarship	SC/ST Scholarship
2002	56	5
2001	26	15
2000	28	14
1999	45	17
Total	173	51

In addition to the above, the Institute sanctioned notional prize of Rs.1000/- to the following 26 first B.Tech top ranking (in the JEE 2001) 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
2002	33
2001	39
2000	61
1999	51
Total	184

No. of State Government Scholarship obtained by B.Tech students

State	Batch / Total no. of Students			
	2002	2001	2000	1999
Andhra Pradesh	143	5	20	16
Delhi	-	-	-	-
Karnataka	-	-	-	-
Kerala	-	1	1	3
Tamil Nadu	-	-	-	3
Other States	-	10	21	14
Total	143	16	42	36

11.3.1 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 207 fresh assistantships and 230 renewed assistantships were given. The department-wise details are given below:

No. of HTTA awarded

Sl. No.	Discipline	Fresh – 2002 batch		Renewal - 2001 batch
		I Sem.	Non-HTTA got HTTA	
1	Aerospace Engineering	5	1	8
2	Applied Mechanics	6	2	9
3	Chemical Engineering	17	2	20
4	Civil Engineering	32	7	36
5	Computer Science & Engg.	34	-	26
6	Electrical Engineering	46	6	49
7	Indl. Maths & Scientific Computing	3	3	5
8	Mechanical Engineering	48	8	58
9	Metallurgical Engineering	11	2	11
10	Ocean Engineering	2	1	4
11	Solid State Technology	3	2	4
Total		207	34	230

11.3.2 M.Tech Dual Degree :

Students who joined M.Tech programme under Dual Degree of 1998 batch were awarded Half-time Teaching Assistantship (HTTA) at Rs.5000/- per month based on their obtaining valid GATE score. During the period under report 62 students were awarded fresh assistantships of Rs.5000/- per month in July 2002 and 61 renewed assistantships in Jan. 2003, out of which 55 students were renewed HTTA at the rate of Rs.5000/- p.m. and 5 students at the rate of Rs.2858/- p.m. since they obtained CGPA of less than 6.5 in July-Nov. 2002 semester. The department-wise details are given below:

Sl.No	Discipline	1998 batch	
		Fresh (9 th Sem.)	Renewal (10 th Sem.)
1	Aerospace Engineering	3	3
2	Chemical Engineering	10	10
3	Infrastructural Civil Engineering	9	9
4	Computer Science & Engg.	7	6
5	Electrical Engineering	16	16
6	Mechanical Engineering	9	9
7	Metallurgical Engineering	4	4
8	Naval Arch. & Ocean Engineering	4	4
Total		62	61

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 56 students benefitted. 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	5	6	2	3
2.	Mathematics	8	6	4	3
3.	Physics	6	6	4	3
Total		19	18	10	9

11.5 M.S:

The scholars admitted to MS programme through GATE are given Half-time Teaching Research Assistantship (HTRA) of Rs 5,000/- p.m. for three years. During the period under report 200 scholars received this assistantship of whom 68 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	2	13	15
2	Applied Mechanics	4	15	19
3	Chemical Engineering	-	11	11
4	Civil Engineering	11	11	22
5	Computer Science & Engg.	6	21	27
6	Electrical Engineering	15	20	35
7	Humanities & Soc. Sciences	3	4	7
8	Mechanical Engineering	15	11	26
9	Metallurgical Engineering	6	11	17
10	Ocean Engineering	6	15	21
	Total	68	132	200

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 6,000/- per month. Scholars admitted to the Ph.D fulltime programme in the Science subjects through GATE or other equivalent exams are sanctioned Rs 5,000/- p.m. During the period under report 271 students obtained assistantships of whom 78 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	3	2	5
2	Applied Mechanics	3	7	10
3	Chemical Engineering	6	11	17
4	Chemistry	6	37	43
5	Civil Engineering	10	17	27
6	Computer Science & Engg.	5	7	12
7	Electrical Engineering	5	13	18
8	Humanities & Social sciences	4	11	15
9	Mathematics	4	16	20
10	Mechanical Engineering	16	28	44
11	Metallurgical Engineering	9	11	20
12	Ocean Engineering	-	7	7
13	Physics	7	26	33
	Total	78	193	271

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 the following financial assistance.

Adhoc amount	:	Rs. 10,000/-
Registration fee	:	US \$ 300

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 conference in India:

Registration fee:

National conference	:	Rs. 2,000/-
International conference	:	Rs. 3,000/-
Travel	:	Second class rail fare
Daily allowance	:	Rs. 120/- per day irrespective of the city 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 2002:

Total Sanctioned Intake	Sanctioned Intake		No. joined through			
			JEE		Preparatory Course	
	SC	ST	SC	ST	SC	ST
487	83	41	31	7	11	5

SC/ST students admitted against reservation are given the following benefits:

- Traveling 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 2002:

Offer issued for PC		No. joined	
SC	ST	SC	ST
34	22	26	21

In July 2001, 37 SC and 7 ST candidates were offered admission, but 25 SC and 6 ST students only joined. Of this, only 20 SC and 6 ST students successfully completed the course but only 11 SC and 6 ST students 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 2002:

Offer issued		No. joined	
SC	ST	SC	ST
44	22	44	22

12.4 M.Sc programme:

Admission was made to the M.Sc. programme through entrance examinations only. 2 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 2002, 18 students (Indian National-17, Sri Lanka-1) joined B.Tech programme under DASA (Direct Admissions of Students Abroad) scheme.

At the end of March 2003, 11 foreign nationals and 80 Indian nationals residing abroad were on the rolls of the Institute. The programme and country-wise details are given in the following page:

Country	I Year	II Year	III Year	IV Year	V Year	Total
B.Tech						
1. Foreign National Students						
USA	-	2	1	3	-	6
Thailand	-	1	-	-	-	1
Papua New Guinea	-	1	-	-	-	1
Sri Lanka	1	-	-	-	-	1
2. INRA Students						
Arabian Gulf	-	-	-	1	-	1
Abu Dhabi	-	1	-	-	-	1
Bahrain	3	1	-	4	1	9
Dubai	-	5	-	-	-	5
Hong Kong	-	-	-	-	-	-
Indonesia	-	1	-	1	-	2
Kuwait	4	2	2	2	1	11
Kenya	1	-	-	-	-	1
Muscat	-	2	-	-	-	2
Oman	1	-	2	3	-	6
Papua New Guinea	-	1	-	-	-	1
Qatar	1	-	-	1	-	2
Saudi Arabia	1	3	1	2	-	7
Singapore	1	-	-	-	-	1
Sri Lanka	1	-	-	-	-	1
Thailand	-	1	-	-	-	1
UAE	5	-	9	8	1	23
USA	-	1	1	3	-	5
Zambia	-	1	-	-	-	1
Total	18	19	15	25	3	80

Foreign National Students/Scholars

Country	M.Tech		Ph.D.						
	I Year	II Year	Total	I Year	II Year	III Year	IV Year	V Year	Total
Bangladesh	-	-	-	-	-	-	-	-	-
Nepal	1	-	1	-	-	-	-	-	-
Iran	-	-	-	-	-	1	-	-	1
Total	1	-	1	-	-	1	-	-	1

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.

13. CAMPUS AMENITIES

IIT Madras is a residential Institution. It is housing about 3044 Students and 992 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 2002-03:

Sl. No.	Name of the work	Amount (Rupees in lakhs)
1.	Additional Construction of Lecturer Hall Complex	135.00
2.	Construction of Second floor over Computer Center	148.20
3.	Extension of Gas Dynamics Lab at Aerospace Engg. Dept.	41.00
4.	Extension of GATE / JEE office at NCC building	25.00
5.	Additional Stair Case and Toilets for MSB	31.50
6.	Construction of Very Large Dinning Hall (Ladies)	281.00
7.	Providing R.C. Drainage outfall pipe from IITM to canal	44.13
8.	Improvement IIT Senate Hall	30.00
9.	Over Head Tank of 3 Lakhs liter capacity	30.00
10.	Construction of Bath House at Swimming Pool	29.00
11.	Construction of Security Shelter	5.60
12.	Providing chain link fencing at C-1,C-32, B-1 and B-22 quaters	16.60
13.	Construction of RCC ramp to old Library Building	6.10
14.	Modification of Kitchen at Nandhinee Canteen	5.80
15.	Const. of 1 st floor over R & AC Lab	30.00
16.	Renovation of Kitchen and Dining hall at Guest House	10.00
17.	Construction of Electrical Substation near Computer Center	9.74
18.	Renovation of toilets in warden quarters	15.16
19.	Construction of OH tank of 3 lakhs litre in Residential Zone	30.00
20.	Renovation of toilets in D-30, 31, 32	24.00
21.	Providing weld-mesh shutters for windows in residential zone	150.00
22.	Improvement of IIT M Senate Hall	30.00
23.	Construction of OH tank of 3 lakhs litre in Hostel Zone	30.00
24.	Extension of electrical substation at pump house area	4.80

Work In progress:

1.	Const. of additional rooms & toilets for Krishna & Cauvery Hostel	351.40
2.	Replacing sewer line from Brahmaputra Hostel to sewage pond	25.50
3.	Modification of toilet at Institute area	82.00
4.	Modification of toilet at Hostel area	286.00
5.	Renovation of toilet at Workshop zone	135.00
6.	Renovation of toilet at Residential Zone	160.00
7.	Construction of 1 st , 2 nd & 3 rd floor over New Library Building	724.00
8.	Providing scooter/cycle shed in various places	109.00
9.	Construction of underground sump for hostel zone	44.00
10.	Extension of Canara Bank	14.48
11.	Construction of 2 nd floor for CCE at TGH	23.68
12.	Construction of Additional class rooms for Civil & CSE	22.42
13.	2 nd floor at Chemical Kinetic and catalysis lab	26.11
14.	Construction of two substations	18.28

13.2 Housing Facilities:

As on 31.03.2003, there were 992 quarters in the Campus. In addition to this 140 servant quarters were also in the campus.

13.3 Horticulture:

A separate horticulture unit is functioning under Engineering Unit. During the year 2002-2003, this unit developed garden around new wings, besides planting of trees and saplings and maintaining nursery at various places of campus.

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 six suites and 76 rooms respectively.

13.7 Hospital:

Institute hospital serves for about 1500 employees, 7400 dependents, 3900 students and about 500 project staff. In total about 13,000 persons are registered in the hospital.

Doctors:

Dr. N.A.Jayavelan, MBBS, (MD)	Chief Medical Officer i/c
Dr. S.Arana, MBBS	Medical Officer
Dr. C.Sridevi, MD, DCH, M.Sc.	Medical Officer
Dr. Mahalakshmi M.Ravi, MBBS	Medical Officer
Dr. D.Vindhya, MBBS	Junior Medical Officer
Dr. K.Sundarrajan, MBBS	Junior Medical Officer (upto 28.10.02)
Dr.R.Mala, MBBS	Junior Medical Officer (upto 13.01.03)

Part-time Consultants:

Dr.S.Kameswaran, MS, Ph.D. FRCS(ED), FRCS(GL), FRCS(DLO),D.Sc.	ENT Surgeon
Dr.S.Devaji Rao, MS,MNAMS, FICS	General Surgeon
Dr.S.Rathnamala, MBBS, DO	Ophthalmologist
Dr.R.Rajkumar, MD, DPM	Psychiatrist
Dr.Jayashree Murthy, MBBS DNB (O&G)	Gynaecologist

Paramedical Staff:

Staff Nurses	8
Pharmacists	3
Lab. Technician	1
Male & Female Helpers	10
Others	7

Out-patient service:

Institute hospital has fully computerized O.P. card registration system for all the staff/students and others. In 2002-03, 52,765 out-patients were treated in the hospital.

In-patient service:

Hospital 35 beds for treating in-patients. In 2002-03, 488 patients were treated as in-patients.

Emergency service:

Emergency service is available round the clock on all the days with a duty doctor and supporting staff. 3424 emergency cases were attended during non OP hours in 2002-03. An ambulance service is available on call.

Clinical Laboratory service:

A well equipped clinical laboratory with a qualified Laboratory Technician is available. 16,681 clinical laboratory tests and 6280 biochemical tests (blood sugar and urea) were done in 2002-03. A modern computerized ECG recorder facility is available round the clock. 806 ECGs were recorded during 2002-03.

Operation Theatre:

A well quipped operation theatre with sophisticated operating microscopes, instruments for IOL surgery, Pulse oximeter, cardiac monitor, etc. along with regular equipments is available. In 2002-03 66 major and 49 minor surgeries, 12 ENT, 18 eye surgeries and 30 gynaec operations including 2 hysterectomies and 2 caesarians were done at the hospital.

Public Health Programme:

Under the preventive healthcare four Hepatitis- B vaccination programmes were held in 2002-03. Around 300 children were immunized under regular immunization programme.

Public health education programmes were held on diabetes and bronchial asthma. Bone Mineral Density check-up camps were conducted thrice and above 400 persons were screened and followed up. The data collected at these camps were analysed by the students of our Biomedical Engineering and a second SCIENTIFIC paper was presented in an International Conference held at Singapore in January, 2003 with C.M.O. i/c as co-author.

Under Diabetes screening project with Diabetic Research Centre, Royapuram, Chennai, about 60 abnormal persons were screened every 3 months as follow up of the previous year project.

World Health Day was celebrated at the hospital on 7.4.2002. Walking rally, BMD, Dental Screening, Eye testing for children, free X-ray screening, Cholesterol testing, diabetes screening, Ultrasound Scan, Cancer screening for women, health education lectures, etc. were organized on 5th, 6th and 7th April, 2002. IIT Hospital had received a certificate of appreciation from the W.H.O. at Geneva.

4 CME programmes were conducted and eminent medical professionals such as Prof. Sam G.P.Moses, Prof. C.V.Krishnaswamy, Dr.Raj Mani from Southampton, U.K. and others gave lectures in the above programmes.

Computerisation:

The hospital software which was developed during 1989-91 had been upgraded by rewriting it using new software by the Computer Centre. Registration module was completed and implemented which now stores all photos of students, staff and their dependants. We have printed new hospital case records with photos. Other modules are under development.

Treatment for Non-entitled:

Non-entitled guests of a staff member/student when accompanied by the staff member/student or his authorized dependent, can avail emergency treatment on payment basis subject to the Institute rules. About Rs. 20,000/-were collected in the year 2002-03.

Stores and Dispensary:

A medical cum surgical stores manned by a qualified pharmacist is available. All activities, enquiry, comparative statement, indenting, issues, etc. are computerized. It had dealt with the purchase worth more than Rs.14.18 lakhs. in 2002-03.

All the drugs purchased at the hospital are decided by the hospital drug committee. To ensure that the drugs are of superior quality, quotations were called for from recognized drug companies only.

Hospital Office:

Apart from dealing with the administration of the hospital, this office processes medical reimbursement claims. Medical claims were scrutinized, processed and passed on for payment to the tune of Rs.53.13 lakhs in the year 2002-03. Registration of new hospital case records and updating is taken care at this office. In 2002-03 about 1000 new case records were registered or updated.

13.8 Bank:

State Bank of India IIT branch is functioning on the campus. Canara Bank branch is also functioning on the campus.

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 Employees' Educational Society 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 Creeche:

A Creeche is functioning in the campus for the benefit of staff/ working women. There were about 50 children in the Creeche during the period under report.

13.15 Transport Services:

The Institute has 5 buses, which provide transport facility to the staff, students and residents of the campus.

13.16 Campus News:

A 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 Controller & Auditor General of India.

The 65th Finance Committee of the Institute in its meeting held on 20.12.2002 recommended Non Plan Revised Estimates of Rs.8900 Lakhs (Gross) for 2002-03 and Budget Estimates of Rs.9220 Lakhs (Gross) for the year 2003-04. The committee also recommended Plan Revised Estimate of Rs.3200 Lakhs for 2002-03 and Rs.4100 Lakhs Plan Budget Estimate for 2003-04.

The following are the summary of Revised Estimates for 2002-03 and Budget Estimates for 2003-04 approved by the Board of Governors of the Institute in their 179th Meeting held on 20.12.2002.

(Rs. in lakhs)

Head	BE 2002-03	RE 2002-03	BE 2003-04
I. Non-Plan			
Income	1800.00	2000.00	2020.00
Grant demanded from MHRD	7300.00	6900.00	7200.00
Total	9100.00	8900.00	9220.00
Expenditure:			
Recurring	9100.00	8900.00	9220.00
Total	9100.00	8900.00	9220.00
II. Plan:			
Grant demanded from MHRD	3594.00	3600.00	5532.00
Total	3594.00	3600.00	5532.00
Expenditure:			
Non-Recurring	3594.00	3600.00	5532.00
Total	3594.00	3600.00	5532.00

Audit:

The Annual Accounts of the Institute for the year 2001-02 was audited by Accountant General (Tamil Nadu & Pondicherry) between May 2002 – July 2002. The certified copy of Accounts and Audit Report were sent to MHRD, New Delhi for placing before Parliament during December 2002.

Summary of Audited Receipts and Payments Account of the Institute for the year 2001-02 is given below:

A summary of the Receipts & Payment Account for the year ended 31st March 2002 is as below:

(Rs. in lakhs)

Sl.No.	Item	Amount
I. Receipts:		
1.	Opening Balance	10650.52
2.	Grant from G.O.I. during 2001-02	11750.00
3.	Receipts from Students – Tuition Fees	830.48
4.	Entrance Examination Fees	350.51
5.	Other Fees from students	165.49
6.	Interest on Term Deposits	406.86
7.	Recovery towards Licence Fees, etc.	107.10
8.	Receipts towards Provident Fund	256.47
9.	Receipts in r/o Projects/CSIR schemes, etc.	5712.79
10.	Advances	89.14
11.	Collections to be transferred to Other Accounts	606.28
12.	Corpus Fund Receipts	2603.83
13.	Other Receipts	290.84
	Total Receipts	33820.31
II. Payments:		
1.	Buildings and Construction Works	665.93
2.	Works against Infrastructure Development Grant	487.71
3.	Pur. of Equipment, Tools, Furnitures & Fixtures	1548.19
4.	Library Books	56.59
5.	Journals and Periodicals	288.79
6.	Pay & Allow. Teaching & Non-Teaching staff, etc.	1895.05
7.	Scholarship Payment	360.91
8.	Library : Pay & Allowances & Other Expenses	70.06
9.	Research Centres : Pay & Allow. & Other Exp.	171.33
10.	Hostel Subsidy	239.33
11.	N.C.C./N.S.S./N.S.O/Sports & Gymkhana	28.77
12.	Central Administration : Pay & Allow., etc.	1035.12
13.	Works & Main.: Pay & Allow. & Other Estate Exps	1095.68
14.	Workshop	64.32
15.	Hospital	105.10
16.	Security, Police & Fire Fighting	97.83
17.	Contribution to P.F.	1532.94
18.	Previous year expenses	368.71
19.	Payments towards projects, CSIR schemes, etc.	5190.38
20.	Advances to staff	104.55
21.	Deposit Amount Refunded/Transfer	375.50
22.	Surplus Income transferred to Corpus Fund	1500.00
23.	Other Miscellaneous Payments	16.13
24.	Closing Balance	16521.39
	Total Payments	33820.31

1. THE SENATE

Chairman
PROF. M.S. ANANTH

Members

Prof Ajit Kumar Kolar	Prof P Kesavan Nair
Prof R Ambalavanan	Prof M P Kothiyal
Prof R N Anantharaman	Prof Krishnan Balasubramanian
Prof P K Aravindan	Prof K Krishnaiah
Prof Ashok Jhunjhunwala	Prof O V Krishnaiah Chetty
Prof A Avudainayagam	Prof R Krishnakumar
Prof V Balabaskaran	Prof R Krishnamurthy
Prof A R Balakrishnan	Prof N R Krishnaswamy
Prof V Balakrishnan	Prof S H Kulkarni
Prof N Balasubramanian	Prof S Kumaraswamy
Prof Balasundaram Subramanian	Prof B H Lakshmana Gowda
Prof Bhaskar Ramamurthy	Prof K (Mrs) Lalitha
Prof P Bhattacharya	Prof M Madhusudhana Rao
Prof S K Bhattacharyya	Prof (Mrs) Mahasheshasayee
Prof N Chandra Kumar	Prof (Mrs) Malathy Duraisamy
Prof T S (Mrs) Chandra	Prof J S Mani
Prof M Chidambaram	Prof M S Mathews
Prof S A Choudum	Prof Megha Singh
Prof V Damodara Das	Prof S Mohan
Prof P C Deshmukh	Prof K M Muraleedhara Prabhu
Prof K Elango	Prof V R Muraleedharan
Prof (Mrs)Evangeline Manickam	Prof C R Muthukrishnan
Prof S R Gandhi	Prof B Nagalingam
Prof N Ganesan	Prof T Nagarajan
Prof V Ganesan	Prof Nainan P Kurian
Prof L S Ganesh	Prof S Narasimha Rao
Prof K Ganesh Babu	Prof M S Narasimhan
Prof S S Gokhale	Prof K Narayana Bhat
Prof C V Gokularathnam	Prof S Narayanan
Prof T A Gonsalves	Prof K Narayanasamy
Prof D R Gopalakrishna Achar	Prof T T Narendran
Prof K Gopinath	Prof T S Natarajan
Prof M S Gopinathan	Prof N R Neelakantan
Prof M Govardhan	Prof R Palaninathan
Prof K Hariharan	Prof T Panda
Prof V G Idichandy	Prof C Pandu Rangan
Prof V Jagadeesh Kumar	Prof P R Parthasarathy
Prof P A Janakiraman	Prof S D Pathak
Prof Job Kurian	Prof K M Patil
Prof S (Mrs) Kalpakam	Prof Paramanand Singh
Prof R Kalyana Krishnan	Prof S B Pattnaik
Prof V Kalyanaraman	Prof Pramod S Mehta
Prof (Mrs) Kamala Krithivasan	Prof M R Pranesh
Prof K Prasada Rao	Prof G Sridhara Rao
Prof BVSSS Prasad	Prof Y G Srinivasa

Prof T S Prasanna Kumar
 Prof U S Premananda Shet
 Prof S Pushpavanam
 Prof J Raamachandran
 Prof K Radhakrishna Rao
 Prof S Radhakrishnan
 Prof S Raghavan
 Prof S V Raghavan
 Prof K Rajagopal
 Prof K Rajagopalan
 Prof R Rajagopalan
 Prof C Rajendran
 Prof V S Raju
 Prof S Raman
 Prof K V S Rama Rao
 Prof V S Ramachandra Rao
 Prof V Ramakrishnamurthy
 Prof R Raman
 Prof K Ramar
 Prof B Ramamoorthy
 Prof K Ramesh
 Prof N Ramesh Babu
 Prof V Ramjee
 Prof A Rangan
 Prof G Rangarajan
 Prof Ravinder David Koil Pillai
 Prof V R Rengaraju
 Prof S Sankararaman
 Prof S Santhakumar
 Prof D V Seetharamamurthy
 Prof S K Seshadri
 Prof Shankar Narasimhan
 Prof Shreesh Chaudhary
 Prof M S Shunmugam
 Prof M Singaperumal
 Prof R S Sirohi
 Prof N Sivaprasad
 Prof C Siva Ram Murthy

Prof S Srinivasan
 Prof K Srinivasan
 Prof S Srinivasa Murthy
 Prof U N Srinivastava
 Prof A Subrahmanyam
 Prof P V Subrahmanyam
 Prof G Subramanian
 Prof S P Subramanian
 Prof V Sundar
 Prof T Sundararajan
 Prof G Sundararajan
 Prof R Sundaravadivelu
 Prof M N Sudeendra Rao
 Prof T Swaminathan
 Prof V Thamizh Arasan
 Prof B S Thandaveswara
 Prof E G Tulapurkara
 Prof R Usha
 Prof S Vancheesan
 Prof U V Varadaraju
 Prof P R Vaya
 Prof C P Vendhan
 Prof V Venkat Rao
 Prof C Venkateshaiah
 Prof S P Venkateshan
 Prof P Venugopal
 Prof Vijay R Raghavan
 Prof B Viswanathan
 Prof B Yegnanarayana
 Dr Harish Chandra

Student Representatives:

Sri Akilesh Pareek
 Sri Jeedipalli Hari Krishna
 Sri B Prabakara Rao

Invitees:

Dr T Suryakumar, Dy. Registrar (Acad.)

Secretary:

Prof A Swamidurai

2. BOARD OF ACADEMIC COURSES

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Prof S S Gokhale, Dean (Students)

Prof M S Ananth, Previous Dean (Academic Courses)

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Dr A Mani, Head, Guidance & Counselling Unit, ME

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Prof Job Kurian, Aerospace Engineering

Prof K Ramesh, Applied Mechanics

Prof D V S Murthy, Chemical Engineering

Prof A K Mishra, Chemistry

Dr A Boominathan, Civil Engineering

Dr P Sreenivasa Kumar, Computer Science & Engineering

Dr R Aravind, Electrical Engineering

Dr G Srinivasan, Humanities & Social Sciences

Dr M Thamban Nair, Mathematics

Prof N Sivaprasad, Mechanical Engineering

Dr R Devanathan, Metallurgical Engineering

Dr V Anantha Subramanian, Ocean Engineering

Dr M V Satyanarayana, Physics

Student Members Ex-officio:

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Sri Akilesh Pareek, Students General Secretary

Secretary Ex-officio

Dr T Suryakumar, Deputy Registrar (Acad)

3. BOARD OF ACADEMIC RESEARCH

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Dr A Mani, Head, Guidance & Counselling Unit, ME

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Dr Jayanti Srinivas, Chemical Engineering

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Prof S Mohan, Civil Engineering

Prof Kamala Krithivasan, Computer Science & Engineering

Dr Vinita Vasudevan, Electrical Engineering

Prof V R Muraleedharan, Humanities & Social Sciences

Dr P Veeramani, Mathematics

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Prof T S Sampath Kumar, Metallurgical Engineering

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Dr V Sankaranarayanan, Physics

Dr S K Malhotra, Comptec

Prof B Viswanathan, MSRC

Student Members Ex-officio:

Sri B Prabakara Rao, Research Affairs Secretary

Sri Akilesh Pareek, Students General Secretary

Secretary Ex-officio:

Dr T Suryakumar, Deputy Registrar (Acad)

4. BOARD OF STUDENTS

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Prof S Narayanan, Dean (Academic Research)

Prof K Elango, Dean (Academic Courses)

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Dr Babu Viswanathan, Mechanical Engineering (Director's nominee)

Dr S Neelamani, Advisor (Sports), Mechanical Engineering

Dr L Vijayaraghavan, Advisor (Cultural), Mechanical Engineering

Dr T J Kamalanaban, Advisor, Foreign & Weaker Section students, HS

Prof S P Subramanian, Chairman, Council of Wardens

Dr A Mani, Head, Guidance & Counselling Unit, ME

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Sri Akilesh Pareek, Students General Secretary

Sri B Prabakara Rao, Research Affairs Secretary

Sri Jeedipalli Hari Krishna, Academic Affairs Secretary

Sri A V K Satish, Hostel Affairs Secretary

Sri C Aditya, Cultural Affairs Secretary (Lit.)

Sri M Chetan Anand, Cultural Affairs Secretary (Arts)

Sri M PAVANESWARA REDDY, Sports Secretary

Sri Lakshman Pernenkil, Speaker, SAC

Sri G Apurva, Student Member, SAC

Sri S Guru Prasad, Student Member, SAC

Secretary Ex-officio:

Dr T Suryakumar, Deputy Registrar (Academic)

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Members:

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Dr Job Kurian, Aerospace Engineering

Dr P Chandramouli, Applied Mechanics

Dr Sreenivas Jayanti, Chemical Engineering

Dr G Sundararajan, Chemistry

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Dr A Boominathan, Civil Engineering

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