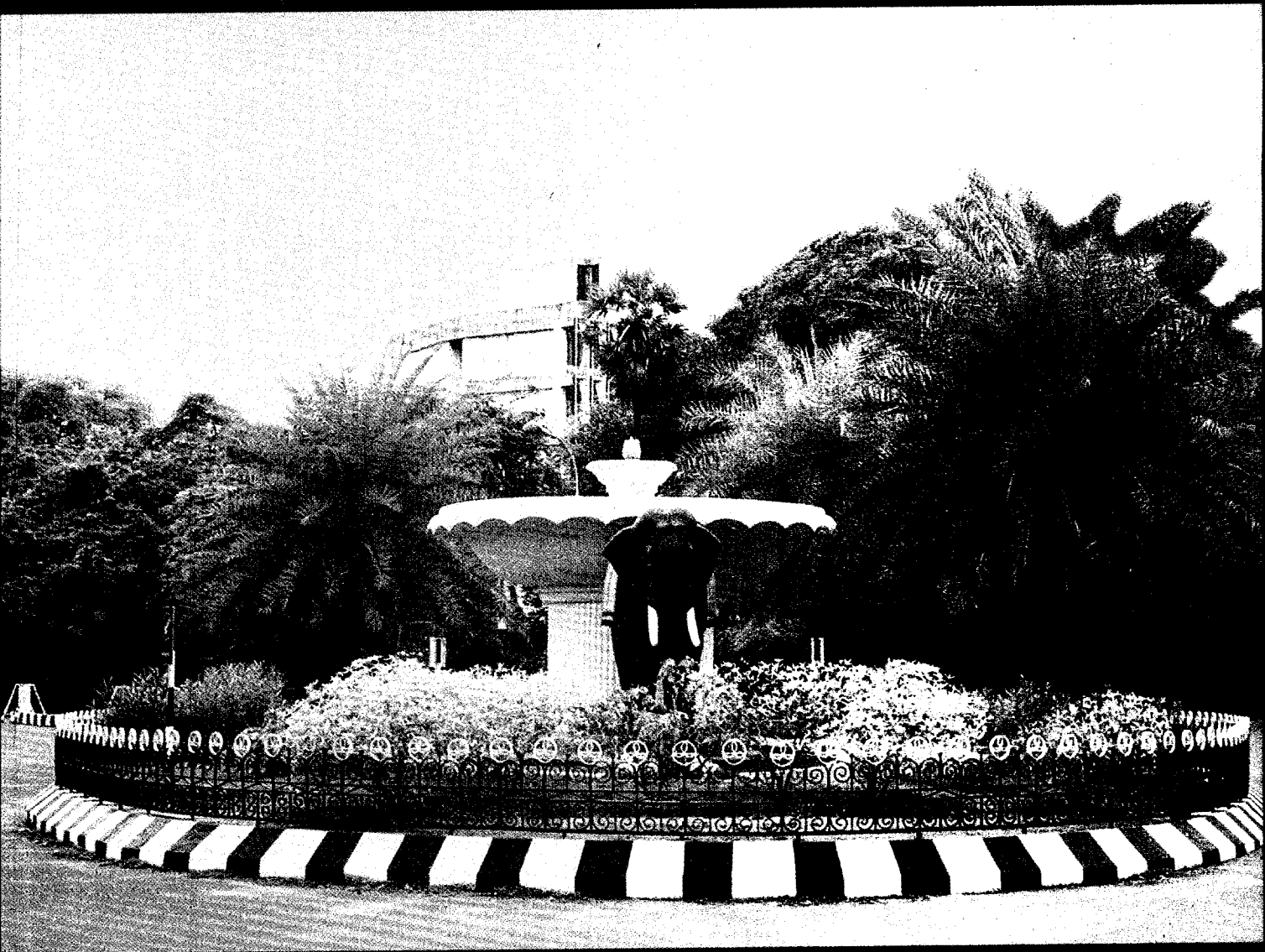


Annual Report 2001 - 2002



**Indian Institute of Technology Madras
Chennai**



FORTY THIRD ANNUAL REPORT 2001 – 2002



**INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600 036**



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Anna University, Sardar Patel Road
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New Delhi

Dr V Maitreya (upto 30.03.2002)
T-36/A, 1st Avenue
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Prof R Kalyanakrishnan (from 01.01.2002)
Dept. of Computer Science & Engg.

Prof G Subramanian (from 01.01.2002)
Dept. of Aerospace Engineering

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 2001 – 02.

1.2 Our Contributions to Manpower Development :

Our 38th Convocation was held on 27th July 2001. A total of 998 degrees was awarded: 54 Ph.D., 88 M.S., 390 M.Tech., 94 M.Sc. and 372 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 : 24 QIP candidates (teachers from other colleges), 24 sponsored candidates (sponsored by Industry and Government Agencies). One hundred and twelve ladies, comprising 10 Ph.D., 13 M.S., 30 M.Tech., 41 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. Two new interdisciplinary B.Tech/Dual degree programmes are being introduced this academic year: Biotechnology to be taught jointly by the departments of Chemical Engineering and Chemistry and Engineering Physics by Physics and Electrical Engineering. As many as 47 new courses were introduced in the academic year 2001-02.

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. Thirty one (25 SC & 6 ST) candidates were admitted to this Course in 2001.



1.3 Our Contributions in Academic Research :

IIT Madras continues to be very active in research and during the year under review, 48 Ph.D theses and 80 Master's theses have been completed. Our faculty and research scholars have published 405 research papers in the refereed International (330) and National (75) Journals and have presented 403 research papers in the International (221) and National (182) Conferences. At the risk of over simplification I will attempt to give a flavour of the results obtained.

Masters research in IITM relates to diverse areas such as properties of materials in the context of various applications in engineering, design of equipment, low cost products or components, environmental issues, control, analysis of structures, computer science, manufacturing, heat transfer and business studies, simulation and analysis.

Laminated composites have been found to respond well to localized loading; SS316L(N) is well-suited for fast breeder reactor components; addition of metakaolin or non-absorptive EPS aggregates containing fly ash can produce concretes with high durability and corrosion resistance; selective densification of powder metallurgy components offers a low cost method for increasing strength and surface endurance.

Vibration analysis of liquid filled containers including response to earth quake loading suggests that the optimal shape for such containers is cylindrical. High performance nozzle designs in propulsion systems can result from the appropriate use of multiple free jets of unequal diameters. Analysis of the effect of flame stabilizers has suggested improvements in the design of turbine combustors. Improved design of aircraft after-burners has been arrived at through modeling and simulation. The rate based method of distillation column design has been shown to be preferable to the equilibrium method when heat and mass resistances are large; reliability and central safety factors in the design of stiffened plate structures have been established for different loading conditions, thickness and geometry; a tool to translate multiple source documents conforming to different document type definitions into a single target document has been proposed and implemented; efficient algorithms have been developed for connection establishment in wavelength division multiplexing networks with dynamic traffic demand; an object oriented framework for automatic network control has been designed and implemented; the vertical dynamic response of heavy vehicles to different types of terrain, load and speed conditions has been studied; architectures and scheduling algorithms have been developed for minimizing power consumption in situations where picture quality can be compromised.

Low cost flexible remote access switches, specialised mesa structured photo detectors, a HDSL modem for use in remote bridges, a portable power supply for welding applications and an internet port for use in multiwall sets in the corDECT WLL, a line testing module with remote management, orderwire and maintenance module for fibre access network have all been designed and fabricated. Mesh and geo-synthetic fibre reinforcement are found to increase liquefaction resistance of fly ash.

Bentonite fly ash is a suitable liner material for waste containment to prevent contamination of ground water. Significant reduction in Nox levels can be achieved by use of water-diesel emulsion in stationary applications and water injection in mobile applications. A successful technique has been developed for fault diagnosis of rolling element bearing through vibration monitoring. Fracture mechanics has been used to predict fatigue life of C10 steel; the effect of polluting compounds on the mechanical properties of soils has been studied.

A non-linear PI Controller has been developed for the difficult problem of pH control in the process industry. Electronically controlled magneto-rheological seat suspension system



for cost effective improvement in driver control and robust control strategies for superior ride comfort have been developed. Novel methods of monitoring tyre pressure using vertical body acceleration signals has been developed; a novel method of using acid rain as the contaminant in the study of tracking and erosion of outdoor polymeric insulation structures has been developed.

Hydrodynamic characteristics of moorings of floating plain and perforated breakwater models in regular and random waves have been studied. A novel method of estimating deflections in flexible piles has been developed. The stability against floatation of submarine pipelines resting on clayey soil has been investigated in detail. Fluid-structure interaction problems in exterior acoustics have been studied using the FE technique; thermal stratification in typical cryogenic liquid storage tanks for launch vehicles has been predicted quantitatively using a commercial code.

Theoretical studies include the development of a probabilistic grammar system for use in sequential and parallel computing, a behavioural learning model for intrusion detection in computing environments using genetic algorithms, process-centric off-line and data-centric on-line approaches for capturing causality in a mobile environment and source and system features for speaker recognition.

In the area of manufacturing and machining, application of group technology to cellular manufacturing, effect of process parameters in abrasive water jet machining and the effect of control wheel stiffness on the quality of ground parts have been addressed. Genetic algorithms have been used for scheduling and analysis and for the machine-integrated performance of automated storage and retrieval systems.

Combined conduction-radiation interaction in a radioactively participation medium as well as holistic optimisation of convective radiative fin systems have been studied. Forced convection heat transfer and pressure drop across rod bundles have been studied experimentally.

Business studies include market versus learning orientation of Indian companies, long run exchange rate determination and organizational climate vis-à-vis performance appraisals as effective human resource systems in organization.

Flow inside a rocket motor with small protrusions has been studied using the vortex element method; an adaptive mesh-generation code has been developed to study flow and heat transfer during solidification; theoretical explanations have been worked out for the transient phenomena observed in liquid propulsion rockets during the operation of the electrical igniter.

The block helical interleaving scheme is shown to be an optimal for cell loss recovery; a multiple input multiple output wireless scheme has been developed to enhance the bandwidth efficiency; a transaction model with data-centric concurrency control mechanism has been developed for the current web system; the performance of a text-dependent speaker identification system can be improved by the combined use of duration and pitch in a hierarchical manner; an approach has been developed to select a suitable design from a set of alternative designs and to estimate the size of the selected design; an improved channel access scheme has been devised to increase the number of simultaneous internet calls supported in the corDECT WLL system; the fractal dimension of real traffic in networks is established and used in the prediction of buffer size at the ATM switches.

Ph.D. research of the current year has addressed several issues such as development of new processes in the manufacturing and the chemical industry, control strategies,



medical diagnosis, safety and environment, markets, design improvements in performance of equipment and analysis.

Independent as well as collective volume flexibility has been shown to deal effectively with optimum load scheduling in flexible manufacturing system; Geocell reinforced sand beds have been developed to increase load bearing capacity and reduce settlements of foundation; Two phase system for extractive fermentation has been developed for use in bio-tech industries to provide high productivity and product concentration; supported chromia catalysts prepared by impregnation have been shown to enhance benzene selectivity.

Many new process have been developed: Lithium perchlorate mediated synthetic transformations in diethyl-ether; syntheses based on EL cyclodehydration reaction using mass spectrometer; novel synthesis of polystyrene based photoresist materials; solid-phase synthesis of oligosaccharides; synthesis of novel clusters using a cluster mass spectrometer; production of low cost riboflavin by *E. Ashbyii* for aqua and hatchery industry.

Metal nanoparticles over various supports can be used as efficient electrode material for methanol fuel cells; a new class of perbrominated porphyrins and their metal complexes have been synthesized and their properties studied; the utility of unsaturated sugar for the synthesis of optically active furo[2,3-b] benzofuran ring framework has been explored; rheological and thermo-mechanical properties of self flow castable refractories have been measured.

Fault-Tolerant control strategies with improved performance for linear multivariable systems and optimal non-linear control for bio-reactors with input multiplicity have been developed. A novel approach has been developed for optimisation and control of semi-batch processes using artificial neural networks starting with data driven modelling and control.

Electron paramagnetic resonance imaging studies for detecting tumours and monitoring radiation therapy and a study of the structure and dynamics in reconstituted and hybrid hemoglobins have potential medical applications.

Finite element analysis of dynamic behaviour of railway coaches suggests means to improve speed, safety and comfort of rail transport; assessment methods of hydrological changes due to land-use modifications have been developed using an integrated model coupling GIS and conventional hydrological models; finite element procedures for solving open field diffraction-radiation problems have been developed.

A study of market efficiency of the Indian stock market in the 90s is expected to help in formulating policies and enhancing efficiency of the money and FOREX markets. A mathematical study on best proximity pair theorems has potential applications to game theory. The financial performance of firms in the manufacturing sector is shown to be less sensitive to the variability of use of human resource practices than those in the service sector; salient HRM practices in the software industry in India and their effect on organisational performance have been identified.

Computational intelligent techniques in power system security analysis have been evolved to solve the optimal power flow problem in large power systems. Many studies have resulted in improved new design: dynamics of polymer flow in spiral molds, efficient and cost effective solution for video compression using well-partitioned algorithms; improved thermal design for electronic components mounted on a single PCB; and development of a new three-component multi-stage perforated ball velocity meter suitable for use underwater.



A test rig has been designed and developed for labyrinth seal testing for leakage and the theory for plain-centred seals has been extended to deal with large eccentricities; a methodology for design and evaluation of small waterplane area twin hull vessels has been developed; indigenously developed dielectric resonators have been used in fabricating oscillators and filters and shown to be comparable in performance to imported ones.

Other studies have led to performance improvement of equipment: reduction of fluctuations on rotors due to shock wave interaction effects, lower pressure loss and greater integrity of tubes in tubular heaters; natural convection inside enclosures filled with plain or porous medium; core tube heat transfer in circulating fluidised beds with special reference to vertical tubes; fundamental studies on multi-mode heat transfer in geometries related to cooling of electronic equipment.

A hybrid method has been developed, combining the efficiency of spline finite strip method with the flexibility of FEM to deal with static and instability analyses of large structures with irregularities; the performance of the combustor of an aero gas engine has been quantified; mild steel and micro concrete panels subjected to simulated near-field blast pressure loads have been experimentally investigated; the spin dynamics of small homonuclear dipolar coupled spin systems that undergo magic angle spinning has been evaluated; genetic algorithms have been used to optimise the performance of projects modelled as Petri nets.

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. R. Ambalavanan
Civil Engineering | a. <i>Asia Pacific Heritage Outstanding Project Award</i> by Culture Heritage Conservation |
| Prof. Ashok Jhunjhunwala,
Electrical Engineering | b. <i>Padma Shri Award</i> for distinguished service in the field of Science, Engineering & Telecommunications by Government of India |
| ” | c. <i>Silicon India Leadership Award</i> for “Academic of the year 2001” |
| Prof. N. Chandrakumar
Chemistry | d. <i>Professor Rango Kirshna Asundi Memorial Lecture</i> by the Indian National Science Academy |
| Prof. S.C. Choudhury
Humanities & Social Sciences | e. <i>Charles Wallace Trust Award</i> by the British Council |
| Prof. K.A. Padmanabhan
Metallurgical Engineering | f. <i>Research Award</i> for Outstanding Research, by the Institute of Nano-Technology, Germany. |
| Dr. T. Pradeep
Chemistry | g. <i>Tamil Nadu Scientist Award</i> |



1.6 Fellowships :

- | | |
|---|--|
| Dr. Archita Patnaik and
Dr. A.K. Mishra
Chemistry | • <i>Japan Society for Promotion of Sciences</i> |
| Prof. A.R. Balakrishnan
Chemical Engineering | • <i>Tamil Nadu Academy of Sciences</i> |
| Prof. N. Ganesan
Applied Mechanics
and
Prof. C. Siva Ram Murthy
Computer Science and
Engineering | • <i>Indian National Academy of Engineering</i> |
| Dr. V. Vetrivel
Mathematics | • <i>Forum D'Analystes</i> |
| Dr. L. Vijayaraghavan and
Prof. B. Ramamoorthy
Mechanical Engineering | • <i>Institution of Engineers</i> |

1.7 Membership of the Editorial Boards :

- | | |
|--|---|
| Prof. A.R. Balakrishnan
Chemical Engineering | • International Journal of Heat and Mass Transfer.
• International Communications in Heat and Mass Transfer.
• Journal of Energy, Heat and Mass Transfer. |
| Prof. V. Kalyanaraman
Civil Engineering | • Journal of Constructional Steel Research |
| Prof. Megha Singh
Applied Mechanics | • International Journal of Bioengineering. |
| Dr. B.S. Murthy and
Prof. B.S. Thandaveswara
Civil Engineering | • ISH Journal of Hydraulic Engineering |
| Prof. Nainan P. Kurian
Civil Engineering | • Indian Geotechnical Journal |
| Prof. C. Pandu Rangan
Computer Science and
Engineering | • Journal of Universal Computer Science |



Prof. P.R. Parthasarathy
Mathematics

Dr. S. Ponnusamy
Mathematics

Dr. T. Pradeep
Chemistry

Prof. K. Prasad Rao
Metallurgical Engineering

Prof. S.V. Raghavan
Computer Science and
Engineering

Prof. K. Ramesh
Applied Mechanics

Dr. T.S. Sampath Kumar
Metallurgical Engineering

Prof. S.K. Seshadri
Metallurgical Engineering

Prof. G. Subramanian
Aerospace Engineering

Prof. P.V. Subramanyam
Mathematics

Prof. T. Swaminathan
Chemical Engineering

Prof. B. Viswanathan
Chemistry

- Statistical Theory and Methods Abstracts
- Journal of Information and Optimization Sciences
- Journal Applied Statistical Science
- International Journal of Computer Mathematics
- American Journal of Mathematika Management Sciences
- Pure and Applied Mathematika Sciences
- Journal of Decision & Mathematical Sciences
- Assam Statistical Review
- Computing Surveys, ACM
- Mathematics Newsletter
- Journal of Analysis
- Asian Journal of Spectroscopy.
- Review of Metallurgical and Materials Transactions A.
- Computer Communication
- International Journal of Strain.
- Trends in Biomaterials and Artificial Organs.
- Indian Journal of Chemical Technology
- Transactions of Metal Finishers' Association of India
- Journal of Mathematical and Physical Science.
- Journal of Analysis
- Journal of Indian Association for Environmental Management
- Bulletin of the Catalysis Society of India.
- Indian Journal of Chemistry Sec. A.



1.8 Best Paper / Thesis / Book Awards :

- Prof. M. Chidambaram and
Ms. R. Padma Sree
Chemical Engineering
- Prof. N. Ganesan,
Dr. P. Chandramouli and
Mr. Y.V. Sivaprasad,
Applied Mechanics
- Prof. Krishnan
Balasubramaniam
Mechanical Engineering
- Prof. Megha Singh,
Mr. R. Srinivasan and
Mr. D. Kumar,
Applied Mechanics
- Dr. Nainan P. Kurian
Civil Engineering
- Prof. K.M. Patil,
Ms. G. Charanya and
Dr. G. K. Prabhu,
Applied Mechanics
- Dr. S. Ponnusamy
Mathematics
- Prof. K. Prasad Rao and
Dr. K. Angamuthu
Metallurgical Engineering
- Prof. S. Radhakrishnan,
Prof. K. M. Pail and
Mr. Jacob Thomas
Applied Mechanics
- Dr. K. Ramamurthy,
Dr. K. N. Sathyanarayana
and
Prof. V. Kalyanaraman,
Civil Engineering
- Prof. M. S. Shunmugam,
Mr. S. V. Bhaskara Reddy,
Mechanical Engineering
and
Prof. T. T. Narendran,
Humanities and Social
Sciences
- *Best Paper Award*, International Conference on Quality, Reliability and Control 2001.
 - *C.V. Raman Award*, for the Best Paper in Acoustical Society.
 - *Best Paper Award*, NDE 2001, Annual Conference Organised by the Indian Society for Non-Destructive Testing Mumbai.
 - *Bajpai-Saha Award*, for the Best Paper in the 12th National Conference of the Society for Biomaterials and Artificial Organs.
 - "Design of Foundation Systems Principles and Practices" *ACCE(I) Nagai Award*
 - *Best Paper Award*, International Conference on Biomedical Engineering, Bio-Vision 2001.
 - "Foundations of Complex Analysis". *Best Selling Author, Silver Jubilee Award* for the period 1987-2002
 - *Best Paper I.T. Mirchandani Award*, National Welding Seminar 2001.
 - *2nd Best Paper Award*, International Conference on Biomedical Engineering, 2001
 - *IBC Medal for Best Paper Award*, 6th Annual Convention of Indian Building Congress, 2000.
 - *Citation of Excellence* for Paper, International Journal of Production Research



Prof. C. Siva Ram Murthy,
Mr. B.S. Manoj, and
Mr.R.Ananthapadmanabha
Computer Science and
Engineering

Dr. R.I. Sujith and
Dr. S.R. Chakravarthy
Aerospace Engineering

Prof. T. Swaminathan and
Mr. Pakshirajan
Chemical Engineering

Prof. T. Swaminathan and
Mr. Pakshirajan
Chemical Engineering

Prof. T. Swaminathan and
Mr. M. Radhakrishnan
Chemical Engineering

- *1st Prize*, The First CS-Research Scholars' Meet, 2002
- *Best Paper Award*, XVII National Conference on IC Engines and Combustion, 2001.
- *Best Paper Award*, International Conference on Industrial Pollution and Control Technologies 2001.
- *2nd Best Paper Award*, Technical Session, Chemical Engineering Congress - CHEMCON 2001.
- *2nd Best Paper Award*, Poster Session, Chemical Engineering Congress - CHEMCON 2001

1.9 Books :

Prof. M. Chidambaram
Chemical Engineering

- "Computer Control of Processes", Narosa Publishing House, India, CRC Press, USA, Alpha Science International Ltd., UK.
- "Nonlinear Process Control", Coal Industries Publishing House, China, Translated into Chinese.

Dr. A. Ramachandraiah,
Dr. Mudavalli and Dr. P. K.
Raju
Civil Engineering

- "Some Significant Aspects of Bio Acoustic Application on Bore and Spins", Auburn University, U.S.A.

Dr. M. V.
Sangaranarayanan and
Prof. C. Kalidas
Chemistry

- "Non-equilibrium Thermodynamics – Principles and Applications" Macmillan India Ltd.

Prof. C. Siva Ram Murthy
and
Dr. G. Mohan
Computer Science and
Engineering

- "WDM Optical Networks: Concepts, Design, and Algorithms", Prentice Hall, PTR, USA, 2002.

Dr. M. Thamban Nair
Mathematics

- "Fundamental Analysis : A First Course" , Prentice – Hall of India, New Delhi.

Prof. B. Viswanathan
Chemistry

- "Catalysis Principles and Applications", Narosa Publishing House



1.10 Patents :

- | | |
|---|--|
| Dr. Anju Chadha,
Chemistry | • "A Process of Lipase Catalysed Presentation of Alkyl and Aryl Ethers of Hydrocinnamic Acid". |
| Dr. Indrapal Singh Aiden,
Chemistry | • An Efficient Synthesis of (2S,3R)-2-O-Benzyl-3,4-di-O-Isopropylidene-D-Erithritol: Potentially valuable C4-Chiral Building Block". |
| Prof. R. Krishnamurthy
Mechanical Engineering | • "Articles of Glazed Ceramic Composites".
• "Performance Enhancement of Carbide Cutting Tools".
• "Post Sintered WC Cutting Tools and a Method of Manufacture Thereof". |
| Prof. V. R. K. Murthy,
Physics and
Prof. B. Viswanathan,
Chemistry | • "Process for Development of Dielectric Resonators for Microwave Applications".
• "Electroless Deposition of Copper on PTFE Substrates for Microwave Devices". |

1.11 Other Distinctions :

- | | |
|---|--|
| Dr. T. Pradeep
Chemistry | • Materials Research Society of India Medal |
| Prof. M.R. Pranesh
Ocean Engineering | • Institutional Medal (donated by Col. G.N. Baj Pal).
• Medal of Marine Engineering Division. |
| Prof. B. Viswanathan
Chemistry | • Medal of Chemical Research Society of India. |

1.12 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 1973, we have maintained a steady and sustained growth in our interaction with industry and other agencies, both in terms of the number and value of sponsored research and consultancy projects. The number of active sponsored projects during the year is 89 for a total value of Rs 186 millions including 4 international projects for a value of Rs. 9.6 millions and 10 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 120.

The number of active consultancy projects during the year is 737, for a total value of Rs.71 million including 40 Research Based Industrial Consultancy projects for Rs 31.5 millions. The number of faculty members involved in these consultancy projects is 188 while 27 have been retained as Consultants in various industries at a cost of Rs. 2.2 millions.



The AICTE funded Industry Institute Partnership Programme has continued during 2001-2002. 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 and several Technology Appreciation Programmes and Industrial Lectures were held.

The ISRO-IITM Space Technology Cell renewed 5 projects and sanctioned 16 new projects during this year. Under the IGCAR-IITM Cell 4 projects were continued and 3 new projects have been sanctioned. Periodic monitoring and review of these projects are the major responsibilities of these Cells.

The Industrial Associateship Scheme has now 217 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.

We have signed 18 Memoranda of Understanding with 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.

The Centre for IC & SR publishes Quarterly Reports of the activities of the Institute in an attractive format under the banner of *IIT-Madras News*, in addition to the release of regular Newsletters. A CD has been prepared highlighting the several facilities and activities of the Institute. Touch-screen kiosks have been installed at strategic locations to enable visitors, and faculty, staff and students, to access information directly.

1.13 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: 6 under the Quality Improvement Programme, 23 under Continuing Education and 16 under Educational Consultancy. The CCE generated a revenue of Rs 5 millions during the year.

The Centre encourages other activities such as preparation of computer aided instructional packages and production of technical video programmes. During the year under review, a major thrust has been given to development of web based course materials and nearly 100 courses of the Institute are in different stages of development. A Web Studio has started functioning mainly to web-enable many courses. A course deployment platform, called WebCT, is being used for course design and management. Under the Book Writing Scheme, 2 proposals have been received. One book has been published.

45 class rooms of the Institute have been modernised with LCD Projectors and computer systems with all necessary softwares. Network connection has also been given in the class room. The ambience of the class rooms have also been improved considerably.

The Educational Technology Cell's studio equipment has been upgraded from Analog to Digital, serving the needs of many research projects and multimedia CD ROM projects. Conversion of the available material in tape format to CD ROM format is in progress. About 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 one semester



lecture based programme; two visual-based short programmes; a documentary for Gyan Darshan telecast; a lecture series for telecast by Gyan Darshan;

1.14 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.Tech. Under the QIP 305 faculty from other institutions have obtained their Ph.D. degrees and 421 faculty from other institutions have obtained their M.Tech. degrees since its inception. Currently we have a total of 71 QIP Scholars (43 Ph.D. & 28 M.Tech. which includes 7 women in Ph.D. and 1 woman in M.Tech) in the Institute.

The All India Council for Technical Education, including the National Board of Accreditation, has been utilizing the expertise of our faculty members in several of their Committees and activities. Many of our faculty members are also on the Governing Councils of several S & T institutions in the country.

A Technology Enhanced Learning (TEL) project involving all the IITs and IIMs co-ordinated by IITM is expected to be funded by MHRD in the near future. A Virtual Centre for TEL has been established through an MoU involving IITs, IIMs in India and CMU in the US. VCTEL partners in India will jointly put 300 courses on the Web in the next 3 years. 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.

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 ; 21 students participated in the programme this year.

1.15 New Programmes :

During the IX Plan, the Institute has introduced six new User-Oriented M.Tech. programmes and an Integrated Ph.D. programme in Chemistry. The Institute has also initiated new programmes in the areas of Sustainable Development, Micro-Electro Mechanical Systems, and Non-Destructive Evaluation, while programmes in New Materials, High-Speed Networking, Wireless Technology Energy and Environment, Smart Materials, and Double-Degree programmes (Engineering and Management) are on the anvil.

1.16 International Collaboration :

IITM has been interacting with several International Organizations for collaborative research, exchange of faculty and students, etc. During the year, we have signed MoUs with the following five international universities: TECHNION – Israel Institute of Technology, Israel; Texas A&M University, Texas; TIBCO Software Inc., USA; University of Technology, Mauritius; and the Mauritius Research Council, Mauritius;



With these, the total number of MoUs signed by IIT-Madras with international universities amounts to 48. An MoU with the General Motors Corporation U.S.A is being processed. We have also signed 15 MoUs with International Companies and Research Laboratories for collaborative R & D. Collaborative research projects have been approved for funding by BMBF, Germany. Support through GTZ for procurement of spares continued during the year.

A Joint Project entitled "Sustainable Access in Rural India (SARI) has been undertaken jointly by MIT Media Lab., USA, the TeNet Group, IIT-Madras, Centre for International Development, Harvard University, and I-Gyan Foundation. It aims to provide low cost connectivity in the villages.

This year 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.

1.17 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 17 M. Tech. students and 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, one student from the Rural Engineering Department of EPFL studied in IIT-Madras for one semester, beginning July 2001. One of our M.Tech. students in Industrial Mathematics was deputed to the University of Kaiserslautern for training.

1.18 Career Development and Welfare Schemes for the Employees :

A Professor-in-charge for HRD has been identified to plan and implement programmes for providing opportunities to our technical and administrative staff to update and upgrade their knowledge and skills, in order to enable them to perform their work more effectively. Under this scheme, 30 training programmes (138 programme-days) with 832 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.

1.19 Our Quality Initiatives :

We are setting up Visiting Committees for the various Departments of our Institute, on the lines of the Best Practices obtaining at leading institutions world-wide. The Visiting Committees for Chemistry, Civil Engineering and Metallurgical Engineering have completed the visits and have provided us valuable reports this year.

IIT-Madras was the first Higher Technological Institution to have secured ISO-9001 Certification for six units in 1999. Six more units have now secured ISO-9001 Certification. 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.

1.20 Infrastructure Development :

An ATM-based high-speed campus-wide network has been operational for the past three 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. The following additions to the networking and computing capabilities have been made during the year:

- All the hostels are connected to the backbone by fibre with ten network access points in each hostel. Providing network connectivity to individual rooms in the hostels is under progress.
- Establishment of 34 Mbps link from Computer Centre to BSNL RSU exchange at our Campus is in progress.
- A powerful parallel processor machine, SG/ 3800 has been installed at the Computer Centre with a complete suite of Engineering Software. This 64 processor machine is the fastest available today in this country and its utilisation has already reached 95%. Necessary training courses on systems administration and use of multiprocessor software have been conducted.
- Chat sites for exchange of ideas on topics of interests to the faculty and staff have been launched.

The Sharavati hostel for girls, completed last year, has more capacity than required as of now. The old girls hostel Sarayu has been modified and converted to a boys' hostel. A Large Dining Facility has been constructed close to these two hostels to cater to 600 students at a time. A new Office of Hostel Management has been constructed and inaugurated in February 2002.

A Multimedia Language Laboratory, a gift from the DAAD, is operational since April 2001 in the Humanities and Social Sciences Department. The German language learning software is intended to encourage self-study, particularly by students leaving for Germany under the DAAD Sandwich Programme.

The old Library building is being remodeled to house the CCE including a 100-seat electronic class-room, the Gymkhana, and the Heritage Centre. The augmentation of the Lecture Hall Complex has been completed. A new building to house a telephone exchange on campus has been completed and the Exchange inaugurated in February this year. Over a 150 additional rooms have been added in the hostels and all toilets renovated. Two Reverse Osmosis water purification plants have been completed for supply of drinking water to all the hostels. These last two projects have been alumni-funded projects.

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. Powered vehicles have been banned in the hostel sector and a fleet of 10 electric vans have been



purchased from BHEL, Bhopal to help transport students from the hostel to the Institute sectors. 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 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.

1.21 Student Co-Curricular and Extra-Curricular Activities :

As part of the Cultural activities, the Institute Gymkhana organized the *Bharath Utsav* in the third week of September 2001 and *Saarang* in the third week of January 2002. The annual Student Technical Festival, *Shaastra*, was held during February 27th to March 3rd, 2002. The programmes included Design Contests, Paper Presentation Contests, Entrepreneurship Contests, Video Conferences and Lectures by eminent personalities. A Cell for Professional Ethics and Human Values has been set up in order to promote these characteristics in our students.

1.22 Alumni Matters :

Our Institute has so far awarded a little less than 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.

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:

Mr. B. S. Sudhir Chandra, 1964 B.Tech. (Civil)

Mr. K. V. Rangaswamy, 1965 B.Tech. (Civil)

Dr. Gursharan Singh Sidhu, 1967 B.Tech (Mech.)

Dr. Meera Chandrapal, 1970 M.Sc. (Physics).

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 will celebrate its Silver Reunion this year.

1.23 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 - our Vision 2010 - is a documentation of the SMP and includes, apart from an Introduction, eight chapters: Environmental Context; Vision, Mission and Goals; Educational Processes; Human Resources; Physical Resources; Governance; Building Relationships; and Financial Resources.

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 five years. Over 25 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.

1.24 Acknowledgements :

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 Ministry of Human Resource Development, Government of India, for its continued and sustained support. We look forward to reaching new heights of achievement in all our endeavours with the able guidance of our Board of Governors headed by our dynamic and visionary Chairman.

* * * * *

2. ADMINISTRATION

2.1 General:

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

The Senate decides the academic policies of the Institute. It approves and controls curricula, courses, examinations and declaration of results. It appoints various committees to look into specific academic matters arising from time to time. The teaching, training and research activities of various departments at the Institute are constantly under review to improve both facilities and standards. The Director of the Institute is the Chairman of the Senate. Members of the Senate are listed in the Appendix. 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 construction activities.

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

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

2.2. ISO 9001 Certification:

During 2001-02 RWTuV, Germany conferred ISO9001:2000 Certification to this Institute valid up to February 2005 to six of its administrative support service units listed in the following:

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

The existing ISO 9001:1994 certificate for the following six units expired by the end of March 2002:

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

These six units are preparing for ISO 9001:2000 certificate and the audit is expected to take place in April 2002.

Quality Circles have been established in the following areas in the institute during 2001-02:

- | | |
|--------------------------------|---------------------------|
| 1. Security Section | 4. Industrial Consultancy |
| 2. Stores and Purchase Section | & Sponsored Research |
| 3. Academic Section | 5. Computer Centre |

The circles have identified problems in their workplace, analyzed them and made presentations to the Management, which was chaired by the Director. The heads of concerned sections/centers have implemented some of the suggestions of the Quality Circles resulting in better work practices.

Central Electronics Centre is preparing itself for NABL accreditation.

2.3 Staff Position:

As on 31.03.2002, 318 Faculty members comprising 161 Professors, 77 Associate Professors and 80 Assistant Professors, 12 Scientific Staff, 4 Design Staff, 358 Technical Staff and 844 Administrative Staff were in position. During the period under report 1 Professor, 3 Assoc. Professors, 6 Asst. Professors, 6 visiting faculty and 54 other staff were appointed. 81 Faculty, Officers and Staff retired from their positions, 15 Staff members took voluntary retirement, 4 resigned, 1 dismissed and 8 expired.

2.3.1 Faculty / Staff appointed during the period 01.04.2001 to 31.03.2002:

S.No	Name	Designation	Department	Date
1.	Dr. V. Jayashankar	Asst. Professor	Elec. Engg.	09.04.2001
2.	Dr. P.R. Vaya	Professor	Elec. Engg.	16.04.2001
3.	Dr. A. Ramesh	Assoc. Professor	Mech. Engg.	30.04.2001
4.	Dr. S. Karmalkar	Assoc. Professor	Elec. Engg.	03.05.2001
5.	Dr. C.S. Ramalingam	Asst. Professor	Elec. Engg.	09.05.2001
6.	Dr. K. Sridharan	Asst. Professor	Elec. Engg.	04.06.2001
7.	Dr. M.K. Ramasubramaniam	Visiting Faculty	Aerospace Engg.	11.06.2001
8.	Dr. V. Kamakoti	Asst. Professor	Comp. Sci.& Engg.	02.07.2001
9.	Vijayadevan	Driver Gr.II	Transport cell	02.07.2001
10.	Santhosh Kumar V.K.	Driver Gr.II	Transport cell	05.07.2001
11.	Dr. A.N. Rajagopalan	Asst. Professor	Elec. Engg.	26.07.2001
12.	Jayaseeli S	Consultant Nurse	Hospital	10.08.2001
13.	Vivekanandan S	Helper Gr.I	Engg. Unit	30.08.2001
14.	Gunaseelan R	Helper Gr.II	Admn.III	30.08.2001
15.	Shashikala K	Helper Gr.I	Recruitment	03.09.2001
16.	Nandakumar A	Helper Gr.II	Fin. & Accts.	03.09.2001
17.	Vijayakumar S	Helper Gr.II	Dean (AR)	03.09.2001
18.	Ms. Susanne Romanowski	Visiting Faculty- DAAD	H.S.S.	26.09.2001
19.	Dr. Ragurama N. Govardhan	Visiting Faculty	Aerospace Engg.	27.09.2001
20.	Dr. Manu Santhanam	Visiting Faculty	Civil Engg.	01.10.2001
21.	Arjunan N.	UDC	Civil Engg.	15.10.2001
22.	Asokan P.	UDC	Admn.I	15.10.2001
23.	Balaji V.S.	UDC	Academic	15.10.2001
24.	Balakrishnan M.	UDC	Chemistry	15.10.2001
25.	Balakumar R.	UDC	Recruitment	15.10.2001
26.	Ezhilarasi D.	UDC	Accounts	15.10.2001

27.	Fathima S.M.	UDC	Elec.Engg.	15.10.2001
28.	Ganesan A.	UDC	R.S.I.C.	15.10.2001
29.	Gopalan S.	UDC	GATE Office	15.10.2001
30.	Hemalatha Harlharan	UDC	H.S.S.	15.10.2001
31.	Jayasankaran V.	UDC	Engg.Unit	15.10.2001
32.	Kalyanaraman K.	UDC	O.E.C.	15.10.2001
33.	Malarvizhi Alice J.E.	UDC	Admn.II	15.10.2001
34.	Mathangi G.	UDC	Mathematics	15.10.2001
35.	Nirmala S.	UDC	Admn.II	15.10.2001
36.	Prabakar G.	UDC	Regr's Office.	15.10.2001
37.	Ragu Rajan P.N.	UDC	Security Sec.	15.10.2001
38.	Rajendran K.	UDC	Mech.Engg.	15.10.2001
39.	Raman K.	UDC	Recruitment	15.10.2001
40.	Regina P.	UDC	Admn.III	15.10.2001
41.	Revathy S.	UDC	Director's Off.	15.10.2001
42.	Sarasavalli S.T.	UDC	Chem.Engg.	15.10.2001
43.	Saraswathi M.	UDC	H.S.S.	15.10.2001
44.	Sathyanarayanan M.	UDC	Guest House	15.10.2001
45.	Seshagiri M.V.R.	UDC	Admn.III	15.10.2001
46.	Sitalakshmi V.	UDC	Mech.Engg.	15.10.2001
47.	Sreedevi B.	UDC	Admn.I	15.10.2001
48.	Srithar M.	UDC	Aero.Engg.	15.10.2001
49.	Sundari B.	UDC	Aero. Engg.	15.10.2001
50.	Vatsala Devi A.	UDC	Accounts	15.10.2001
51.	Venkatesan D.	UDC	DR(Admn.) Off.	15.10.2001
52.	Vijaya Banu G.	UDC	Accounts	15.10.2001
53.	Vijayakumari P.A.	UDC	Stores & Purchase	15.10.2001
54.	C.R. Jeevandoss	Instrumen. Engr.	CEC	31.10.2001
55.	Janaki Devi M	Assistant	Mech. Engg.	07.11.2001
56.	Jayachandran D	Assistant	Chemical Engg.	07.11.2001
57.	Jaya N	Nurse	Hospital	07.11.2001
58.	Dr. Harishankar Ramachandran	Assoc. Professor	Elec. Engg.	12.11.2001
59.	Arul P	Assistant	Admn.II	21.11.2001
60.	Dr. Pratap Haridoss	Visiting Faculty	Metl. Engineering	26.11.2001
61.	Dr.(Ms.) D. Vindhya	Jr. Med.Officer	Instt. Hospital	27.11.2001
62.	Ravi D	Assistant	Admn.I	05.12.2001
63.	Dr.(Ms.) S. Uma Maheswari	Jr. Med.Officer	Instt. Hospital	14.12.2001
64.	Muralidharan .R	Assistant	Fin. & Accts.	19.12.2001
65.	Sriram .S	Assistant	Academic	02.01.2002
66.	Santhi B	Nurse	Hospital	05.01.2002
67.	M. Samuel Watson	Helper Gr.II	Civil	21.01.2002
68.	Dr. R. Manivasakan	Asst. Professor	Elec. Engg.	01.03.2002
69.	Beena M.V.	L.D.C.	Admn.II	08.03.2002
70.	Dr. Venkatesh Balasubramanian	Visiting Faculty	Applied Mechanics	20.03.2002

2.3.2. Faculty / Staff who have retired during the period 01.04.2001 to 31.03.2002:

Superannuation:

S.No	Name	Designation	Department	Date
1	Dr. K.N. Gopalan	Asst. Professor	Mechanical Engg	30.04.2001
2	Dr. Y. Nagendra	Asst. Professor	Mathematics	30.04.2001
3	Balakrishnan,N.	Driver (SG)	Transport Cell	30.04.2001
4	Gnanaprakasam,M.	H.Sec.Guard (SG)	Security Section	30.04.2001
5	Sambandam,D.	H.Sec.Guard (SG)	Security Section	30.04.2001
6	Dr. N. Rajagopalan	Professor	Civil Engg.	30.04.2001
7	Dr. N.G. Nair	Chief Design Engg.	C.T.C.	31.05.2001
8	Dr. P.K. Philip	Professor	Mech. Engg	31.05.2001
9	Dr. T.A. Prasada Rao	Professor	Physics	31.05.2001
10	Rojadevi,P.K.	Receptst Gr.I (SG)	Central Library	31.05.2001
11	Raphale, J.	Sr.Lab.Asst.	Chemical Engg.	31.05.2001
12	Chandran,G.	Sr.Mech.(SG)(Carpr)	Engg.Unit	31.05.2001
13	Janakiraman,A.	Supdt.	C.C.W.	31.05.2001
14	Natarajan,K.	Supervisor (SG)	Mech. Engg.	31.05.2001
15	Raghunathan,K.	Asst.(Sg)(Cpfg)	Hospital	30.06.2001
16	Pichuraman,S.	Chief D' Man	Civil Engg.	30.06.2001
17	Ramu, C.	Office Attendant	Ocean Engg.	30.06.2001
18	Dr. V. Ramachandran	Professor	Physics	30.06.2001
19	Joshua, S.	Sr.Helper	Aerpspace Engg.	30.06.2001
20	Krishnamurthy,S.	Sr.Mech.(SG)(Carp)	Metallurgical Engg.	30.06.2001
21	Kannan, S.	Sr.Mech.(SG)(Wire)	Engg.Unit.	30.06.2001
22	Rajalakshmi, S.	Sr.Nur.Sister (SG)	Instt. Hospital	30.06.2001
23	Kothandan, K.G.	Supervisor	Central Workshop	30.06.2001
24	Gajapathy,S.	Supervisor (SG)	Central Workshop	30.06.2001
25	Rani, M.	Sweeper	Central Library	30.06.2001
26	Thiruvikraman Nair, A.M.	Technical Asst.	Mechanical Engg.	30.06.2001
27	Henry, E.	Accountant (SG)	Accounts	31.07.2001
28	Deivasigamani,T.	D'man Gr.I (SG)	Chemical Engg.	31.07.2001
29	Pattu,S.	Driver (SG)	Transport Cell	31.07.2001
30	Duraiswamy,M.	Lift Operator (SG)	Engg. Unit.	31.07.2001
31	Sambasivam,M.	Sr.Mech.(SG)(Carp)	Central Workshop	31.07.2001
32	Ignatious Raj, C.A.	Supervisor (SG)	Central Workshop	31.07.2001
33	Ranganathan,M.	Chief D'man	Mechanical Engg.	31.08.2001
34	Deenadayalan,R.	D'man Gr.I (SG)	Chemical Engg.	31.08.2001
35	Velu,R.	Sr. Helper	Engineering Unit.	31.08.2001
36	Govinda Pillai,K.R.	Sr.Lab Asst.	Ocean Engg.	31.08.2001
37	Kasturirangan,S.P.	Sr.Pharmacist (SG)	Institute Hospital	31.08.2001

38	Dr. G. Sreenivasa Murthy	Assoc. Professor	Physics	30.09.2001
39	Ramachandran,D.	H.S.G. (SG)	Security	30.09.2001
40	Ranga Reddy,K.	Office Attdt.(SG)	CEC	30.09.2001
41	Dr. K.K. Balasubramanian	Professor	Aerospace Engg.	30.09.2001
42	Dr. K. A. Bhaskaran	Professor	Mechanical Engg.	30.09.2001
43	Dr. P. Sankaran	Professor	Electrical Engg.	30.09.2001
44	Dr. A. Venkatesh	Professor	Mechanical Engg.	30.09.2001
45	Shaik Mohamed	Sr.Mechanic	Civil Engg.	30.09.2001
46	Ganapathia Pillai,B.	Supr.(SG) (Cpfg)	Chemistry	30.09.2001
47	Dr. H. Achyutha	Professor	Civil Engg.	31.10.2001
48	Dr. K. Srinivasan	Professor	Physics	31.10.2001
49	Ramachandran,G.	Sr.Helper	Gymkhana	31.10.2001
50	Prasad,E.D.	Sr.Mech.(SG)(Plum)	Engineering Unit.	31.10.2001
51	Balasubramanian, S.	Sr.Tech.Asst.	Electrical Engg.	31.10.2001
52	Seshadri,S.	Assistant (SG)	Engineering Unit.	30.11.2001
53	Thiruvengadathan,K.	Assistant (SG)	Accounts	30.11.2001
54	Dr. S. Sundaresan	Professor	Metallurgical Engg.	30.11.2001
55	Ramalingam,R.	Sr.Helper	Institute Hospital	30.11.2001
56	Antoni Doss,S.	Supervisor (SG)	Chemistry	30.11.2001
57	Jothi,K.N.	Tech. Officer (SG)	Electrical Engg.	30.11.2001
58	Sigamani,P.	Sr.Mech.(SG)(Carp)	Civil Engg.	31.12.2001
59	Jayaraman,K.	Sr.Mechanic	Mechanical Engg.	31.12.2001
60	Ramadoss,A.	St.Attdt.Gr.I (SG)	Chemical Engg.	31.12.2001
61	Prabhakaran,N.	Supervisor	Civil Engg.	31.12.2001
62	Ramarathinam,K.	Assistant (SG)	Gymkhana	31.01.2002
63	Rangamani,T.K.	Assistant(SG)	Academic Section	31.01.2002
64	Dr. S.N. Majhi	Professor	Mathematics	31.01.2002
65	Dr. B. Srinivasa Prabhu	Professor	Applied Mechanics	31.01.2002
66	Dr. C.S. Venkatachalam	Professor	Chemistry	31.01.2002
67	Balasubramanian,R.	Secretary	Engineering Unit.	31.01.2002
68	Senthamarai,K.G.	Sr.Lab Assistant	Electrical Engg.	31.01.2002
69	Sosamma Abraham	Sr.Nursing Sister	Institute Hospital	31.01.2002
70	Krishnamurthy,M.K.	Superintendent	Accounts Section	31.01.2002
71	Seshadri, N.C.	Assistant(SG)	Admn. II Section	28.02.2002
72	George Mathew	Supervisor (SG)	Mechanical Engg.	28.02.2002
73	Ramachandran, T.R.	Supervisor (SG)	A.C. Unit	28.02.2002
74	Nallaperumal Pillai, G.	Supervisor(SG)	Aerospace Engg.	28.02.2002
75	Dr. C. Dattareyan,	Associate Professor	Electrical Engg.	31.03.2002
76	Ramachandran P.	H.S.G.(SG)	Security Section	31.03.2002

77	Vinayagam,N.	H.S.G.(SG)	Security Section	31.03.2002
78	Thomas, G.	Scientific Officer Gr.I	Applied Mechanics	31.03.2002
79	Prabalam, M.P.	Store Atttd.Gr.I (SG)	CEC	31.03.2002
80	Ganesan. E.	Supervisor	C.W.S.	31.03.2002
81	Rajasekaran, R.	Supervisor (SG)	Electrical Engg.	31.03.2002

2.3.2.1 Voluntary Retirement:

Sl.No	Name	Designation	Department	Date
1.	Jeyaseeli, S.	Sr. Nursing Sister(SG)	Institute Hospital	02.07.2001
2.	Marimuthu, A.	Driver Gr.I	Transport Cell	02.07.2001
3.	Palanisamy. G.	Sci. Officer Gr.I	RSIC	17.08.2001
4.	Thiagarajan, R.	Sr.Mech.(SG) (Painter)	Engg. Unit	01.09.2001
5.	Mohanakrishnan, R.	Supervisor	Civil Engg.	03.09.2001
6.	Sankaralingam. C.	Daftry Gr.I.	Hospital	05.10.2001
7.	Dr.Aswathanarayana, P.A.	Professor	Applied Mechanics	01.11.2001
8.	Prof. Natarajan, R.	Director		12.11.2001
9.	Dr. Sarma, L.V.L.N.	Professor	Hum. & Social Sciences	01.12.2001
10.	Dr. Eswaran, C.	Professor	Electrical Engg.	02.01.2002
11.	James, M.	Sr. Sweeper	Engg. Unit	02.01.2002
12.	Dr.Chalapathy Rao, M.V.	Professor	Electrical Engg.	12.01.2002
13.	Dr. M. Mylrajan	Sci. Offr. Gr.II	RSIC	21.01.2002
14.	Panchapakesan, K.	Office Attendant (SG)	NCC	01.02.2002
15.	Dr. Krishnan, S.	Professor	Aerospace Engg.	26.02.2002

2.3.2.2 Resignation:

Sl.No.	Name	Designation	Department	Date
1.	Dr. R. Sundar	Asst. Professor	Computer Science & Engg.	23.02.1999 (deemed to have been relieved on resignation)
2.	V. Sundararajan	Tech. Assistant (Editor)	ETC	14.2.2001
3.	Dr. Sachin C. Patwardhan	Associate Professor	Chemical Engg.	14.12.2001
4.	V. Balakrishnamaraju	Tech. Assistant (Cameraman)	ETC	9.2.2002

2.3.2.3 Dismissal:

Sl. No.	Name	Designation	Department	Date
1.	Ramadoss K	Assistant	Mech. Engg.	15.06.2001

2.3.2.4 Expired:

S.No.	Name	Designation	Department	Date
1	Ramanathan, V.	Sr. Helper	Engg. Unit	01.07.2001
2	Prasada Rao, P.S.D.	Attendant Gr.I(SG)	CWS	11.08.2001

3	Shanmugam, K.	Wireman Gr.I(SG)	Engg. Unit	02.11.2001
4	Anthony, C.	Junior Mechanic	Mechanical Engg.	11.12.2001
5	Eakambaram, S.	Sr.Sweeper	Engg. Unit	14.12.2001
6	Malakondaiah, D.	Sr. Helper	Civil Engg.	30.12.2001
7.	Abdul Khaleel	Gestetner Operator Gr.I. (SG)	Admn.II	01.03.2002
8.	Francis.S.	Security Guard. Gr. I (SG)	Security	12.03.2002

2.3.3. Faculty / Officers / Staff who were on long leave:

Sl. No.	Name & Department	Duration	Nature of Leave
1.	Nagarathnam K Office Attendant Admn.II	11.2.2002-9.8.2002	EL & HPL
2.	Dr. K.V.S. Rama Rao, Professor, Physics	04.09.2000 to 30.11.2001	EL + EOL
3.	Dr.A. Ramesh, Asst. Professor, Mech.Engineering	27.05.2000 to 29.04.2001	EL / HPL/EOL
4.	Dr. G.Venkatathnam, Assoc. Professor, Mech. Engg.	03.10.2000 to 29.08.2001	EL/HPL/EOL
5.	Sri. P. Nagarajan, Helper Gr.I	18.07.2000 to 26.02.2002	EOL
6.	Dr. T.A. Gonsalves, Professor, Comp.Science & Engg.	02.08.1999 to 31.07.2001	EOL
7.	Dr. R.I.Sujith, Asst. Professor	03.10.2000 to 02.12.2001	EL/HPL/EOL
8.	Dr.P. Sambandam, Asst.Professor Ocean Engineering	25.03.1996 to 24.03.2001	EOL
9.	Sri. Prabhakar Rao, Tech. Officer Elec. Engineering	06.09.1999 to 05.09.2001	EOL
10.	Dr. V.S. Ramachandra Rao Professor, Chemical Engg.	01.08.2000 to 31.07.2002	EOL
11.	Dr. P. Sankaran, Professor Elec. Engg.	01.12.2000 to 31.08.2001	EOL
12.	Dr. P.R. Vaya, Chief Sci. Officer Elec. Engg.	20.09.2000 to 12.04.2001	EOL
13.	Dr. K.K. Balasubramanian, Professor, Chemistry	02.01.2001 to 20.09.2001	EOL
14.	Dr. S. Sundaresan, Professor, Metl. Engg.	05.03.2001 to 22.11.2001	EOL
15.	Dr. Sarit Kumar Das, Asst. Professor, Mech. Engg.	25.10.2000 to 21.10.2001	EOL
16.	Dr. L.V.L.N. Sarma, Professor, Hum. & Soc. Sci.	23.11.2000 to 21.11.2001	EOL
17.	Dr. Sachin Patwardhan, Assoc. Professor, Chem. Engg.	04.12.2000 to 14.11.2001	EOL
18.	Dr. C. Chandrasekhar, Lecturer, CSE	29.05.2000 to 28.05.2002	EOL
19.	Sri. P.V. Manivannan, Sr. Tech. Asst, Mech. Engg.	24.08.2000 to 23.08.2002	EOL
20.	Dr. K.A. Padmanabhan, Professor, Metl. Engineering	28.09.2001 to 27.09.2002	EOL
21.	Dr. M.M. Mayuram, Asst Professor Mech. Engineering	11.10.2000 to 10.10.2002	EOL
22.	Dr. P. Bhattacharyya, Professor, Maths	14.06.1999 to 30.04.2003	EOL
23.	Dr. R.S. Sirohi, Professor, Physics	13.12.2000 to 30.04.2005	EOL
24.	Dr. B.H.L. Gowda, Professor Applied Mechanics	02.04.2001 to 01.04.2003	EOL
25.	Dr. P. Sesha Talpa Sai Assoc. Professor, Chem. Engg.	01.06.2002 to 01.06.2003	EOL
26.	Dr. P.A. Aswatha Narayana Professor, Applied Mechanics	06.06.2001 to 29.10.2001	EOL
27.	Dr. D.R.G. Achar, Professor Metallurgical Engineering	01.08.2001 to 31.07.2002	EOL

28.	Dr. S. Pushpavanam, Professor Chemical Engg.	02.08.2001 to 01.08.2002	EOL
29.	Dr. Ligy Philip, Asst. Professor Civil Engineering	16.06.2001 to 13.12.2001	EOL
30.	Dr. V. Sundar, Professor Ocean Engineering	01.10.2001 to 30.09.2002	EOL
31.	Dr. Sukhendu Das, Asst. Professor Computer Sci. & Engg.	30.11.2001 to 01.06.2003	EOL
32.	Padmanabhan L Lab Attndt., Met. Engg.	10.9.2001 to 09.09.2002	EOL
33.	Saraswathi Chandrasekaran LDC, Accounts	14.2.2001-30.09.2002	EOL
34.	(Ms.) Saroja Subramanian Sr. Prof. Asst., Library	20.08.2001 to 15.02.2002	EOL
35.	C. Baby Technical Assistant, RSIC	28.05.2001 to 27.05.2002	EOL
36.	Dorathy Samuel Technical Assistant, Chemistry	01.08.2001 to 31.07.2003	EOL
37.	Balasubramanian C. Chief. D'man (SG), Metl. Engg.	10.09.2001 to 08.03.2002	HPL
38.	Dr. V. Ramjee, Professor, App.Mech	02.06.2000 to 31.05.2001	Sab. Leave
39.	Dr. T.S. Natarajan, Professor, Physics	27.06.2001 to 26.06.2002	Sab. Leave
40.	Dr. S.C. Chaudhary Professor, HSS	18.07.2001 to 17.07.2002	Sab. Leave
41.	Dr. M.N. Sudheendra Rao Professor, Chemistry	16.08.2001 to 15.06.2002	Sab. Leave
42.	Dr. V. Damodara Das Professor, Physics	04.03.2002 to 03.03.2003	Sab. Leave
43.	Dr. E.G. Tulapurkara Professor / Aerospace Engg.	01.01.2002 to 30.06.2002	Sab. Leave
44.	Dr. G.Rangarajan, Professor, Physics	17.07.2000 to 29.06.2001	Sab.Leave
45.	Dr. M.Ramakrishna, Assoc. Professor, Aerospace Engg.	29.11.2000 to 28.11.2001	Sab.Leave
46.	Dr. V. Balakrishnan, Professor Physics	11.10.2000 to 25.12.2001	Sab.Leave + EL
47.	Dr. S. Karmalkar, Asst. Professor Elec. Engg.	03.01.2000 to 02.05.2001	Sab. Leave / EL

2.3.4 Completion of Tenure:

The following faculty members have been relieved on completion of tenure of appointment:

Sl. No.	Name	Designation	Department	Date of completion
1.	Dr. V.M. Radhakrishnan	Professor Emeritus	Metallurgical Engg.	30.11.2001
2.	Dr. K.V. Gopalakrishnan	Henry Ford Chair Professor	Mechanical Engg.	21.12.2001

2.4 Staff Welfare:

2.4.1 Human Resource Development:

As part of human resource development activities, the Institute plans and implements programmes 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 programmes aim to enhance the pride and satisfaction they feel in their work. The overall feeling of happiness created by these programmes also overflow into their home lives and contribute a sense of well-being for the entire families.

While the major thrust of the HRD activities at the Institute aims at 'Skill Enhancement' of the B, C and D groups of employees, considerable importance is given also to 'Attitudinal Management' of the employees so as to heighten their spirit and work ethics. As part of the

same effort, the Institute addresses the special needs of working women of the Institute, housewives and children of employees. The caring attitude of the Institute, not merely towards the employees, but also towards their families, has been well established by these programmes. The ready and enthusiastic participation by the employees in these programmes is an indication of the great degree of goodwill that exists on campus.

The HRD activities were initiated at the Institute in 1997 under the charge of a professor. 27 programmes were conducted over a period of 189 days during the period under report. The total number of participants was 886. Taking all the programmes conducted so far from its inception, a total of 91 programmes have been held, involving participation by 2689 persons totally.

The details of the HRD programmes conducted from April 2001 to March 2002 are listed below:

TRAINING PROGRAMMES CONDUCTED

Sl. No.	Date / Duration	Programme Objective	No. of participants
1.	07.04.2001	Management Training	1
2.	16.04.2001 to 17.04.2001	First Aid for Security Staff	28
3.	01.05.2001 to 25.05.2001	AutoCAD 2000 for Draughtsmen	24
4.	11.05.2001 to 12.05.2001	Home Management for Women Employees.	29
5.	14.05.2001 to 15.05.2001	Service with Pride - for Security Staff.	24
6.	24.05.2001 to 25.05.2001	Discover Yourself - for Children of Employees.	23
7.	24.05.2001 to 25.05.2001	Lead to Achieve - for Children of Employees.	25
8.	26.05.2001	Memory Skills - for Children of Employees.	48
9.	27.05.2001 to 28.05.2001	Leadership Camp - for Children of Employees.	27
10.	11.06.2001 to 22.06.2001	Yoga & Meditation.	11
11.	11.06.2001 to 18.06.2001	Technical Training.	6
12.	12.06.2001 to 25.06.2001	Yoga & Meditation.	22
13.	14.07.2001	ISO9000 - Introduction	54
14.	23.07.2001 to 01.08.2001	Yoga & Meditation	25
15.	03.09.2001 to 12.09.2001	Yoga & Meditation	25
16.	29.09.2001 to 23.11.2001	Computer Training for Employees	205
17.	17.11.2001 to 19.11.2001	Leadership for Senior functionaries	30
18.	10.12.2001 to 19.12.2001	Yoga & Meditation	9
19.	15.12.2001 to 16.12.2001	Rainwater Harvesting	2
20.	24.12.2001	The Young Adult - for Children of Employees.	94
21.	18.02.2002 to 27.02.2002	Yoga & Meditation	23
22.	23.02.2002	Negotiation - Legal Aspects	2
23.	25.02.2002	Review of Faculty Improvement	25
24.	05.03.2002 to 08.03.2002	Motivational Program for Staff of Central Admn.	52
25.	14.03.2002 to 15.03.2002	"Serve with Pride" - for Security Personnel.	22
26.	21.03.2002 to 23.03.2002	"Serve with Pride" - for Security Personnel.	25
27.	26.03.2002 to 27.03.2002	"Serve with Pride" - for Security Personnel.	25

2.4.2 Computer Allowance:

To encourage the use of modern computing facilities, IIT employees are granted Special Allowance of Rs.40/- p.m. for using Personal Computers.

2.4.3 Hindi Coaching:

In accordance with the directions of the Govt. of India, Hindi classes are conducted regularly to both technical and administrative staff members to improve their knowledge in Hindi. As on 31.03.2002, 898 staff members were offered this course. In 2001-2002, 16 staff members were offered this course. As on 31.03.2002 6 staff members also were offered Hindi Typewriting / Computer Training Course for a duration of 40 working days.

2.4.4 School Fee Concession:

Institute reimburses the fees paid by staff members for their children's education as per Govt. of India norms. During the period under report 95 staff members benefitted.

2.4.5 Transport Facilities to Children of the Staff:

Institute allows concessional fare to the children of the staff members to attend schools on the Campus. In the year 2001-2002, 42 children benefitted.

2.4.6 Advances:

During the period of report a sum of Rs. 47,43,425/- was sanctioned as House Building Advance and an amount of Rs. 14,35,948/- was sanctioned towards Conveyance Advance / PC Advance. The break-up is given below:

S.No.	Advance	No. of Employees
1.	House Building Advance	12
2.	Car Advance	1
3.	Two Wheeler Advance	51
4.	Personal Computer Advance	5

2.4.7. Employees' Welfare Scheme:

Employees' Welfare Scheme is implemented in this Institute from 1976. It helps the employee's family in the event of untimely demise. In the year 01.04.2001 to 31.03.2002, 3 families benefitted from this scheme.

2.4.8 Meetings of the Authorities:

Board of Governors	3 meetings were held on 26.07.2001, 31.10.2001 and 07.02.2002.
Finance Committee	2 meetings were held on 19.06.2001 and 07.02.2002.
Buildings & Works Committee	1 meeting was held on 01.02.2002

The names of the faculty members and officers in the academic and general administration are as follows:

(i) Academic Administration

DIRECTOR

Dr. R. Natarajan (upto 11.11.2001)

Dr. C.R. Muthukrishnan (Director i/c - from 12.11.2001 to 23.12.2001)

Dr. M.S. Ananth (w.e.f. 24.12.2001)

DEPUTY DIRECTOR

Dr. C.R. Muthukrishnan (upto 11.11.2001)

Deans:

Academic Courses

Dr. M.S. Ananth(upto 30.04.2001)

Academic Research

Dr. K. Elango (from 01.06.2001)

Administration

Dr. S. Narayanan

Industrial Consultancy & Sponsored Research

Dr. G. Subramanian

Students

Dr. S. Srinivasa Murthy

Dr. S.S. Gokhale

Heads of Departments:

Aerospace Engg.
Applied Mechanics
Chemical Engg.
Chemistry
Civil Engg.

Computer Sci.& Engg.

Electrical Engg.

Humanities & Soc.Sci.

Mathematics
Mechanical Engg.
Metallurgical Engg.

Ocean Engg.
Physics

Dr. S.Santhakumar
Dr. J.Raamachandran
Dr. M.Chidambaram
Dr. B.Viswanathan
Dr. V. Kalyanaraman (upto 9.08.2001)
Dr. M.S.Mathews (from 10.08.2001)
Dr. C.Pandu Rangan (upto 16.08.2001)
Dr. S.Raman (from 17.08.2001)
Dr. A.Jhunjunwala (upto 05.8.2001)
Dr. C.Venkatasessaiah (from 6.8.2001)
Dr. T.T.Narendran
Dr. A.Avudainayagam
Dr. V.Ganesan
Dr. S.K. Seshadri (upto 19.07.2001)
Dr. K.Prasad Rao (from 20.07.2001)
Dr. K.Muthukrishnaiah
Dr. V.R.K.Murthy

Heads of Research Centres:

Composite Technology Centre

Materials Sciences Research Centre

Regional Sophisticated Instrumentation Centre

Dr. N.G. Nair (upto 30.04.2001)
Dr. S.K.Malhotra (from 01.05.2001)
Dr. K. Gopinath (upto 10.04.2001)
Dr. B. Viswanathan (from 11.04.2001)
Dr. S.P. Venkateshan (upto 31.08.2001)
Dr. S. Sankararaman (from 01.09.2001)

Head of Special Facilities for interaction with Other Institutions:

Centre for Industrial Consultancy & Sponsored Research
Centre for Continuing Education
Central Electronics Centre
Computer Centre

Dr. S. Srinivasa Murthy
Dr. V.G. Idichandy
Dr. M. Kumaravel
Dr. R. Krishnakumar

(ii) Central Administration

Director

Prof. R Natarajan (upto 11.11.2001)
Prof. C.R. Muthukrishnan
(Director-in-Charge) upto 23.12.2001
Prof. M.S. Ananth (w.e.f. 24.12.2001)

Registrar

Dr. A. Swamidurai

Deputy Registrars:

Academic
Administration
Finance & Accounts
Stores & Purchase
Training & Placement

K. Panchalan
T. Suryakumar
J. Rammohan
A. Thirunavukkarasu
A.K. Pattabiraman

Internal Audit Officer

R. Esakkimuthu

Assistant Registrars:

Stores & Purchase
IC & SR
Finance & Accounts
IC & SR
Administration
Academic

M. Manickam
S. Mahalingam
P. Paramanandam
B. Ramasamy
U.J Suresh
M. Kuppan

Chief Security Officer
Security Officer (SS)
Secretary (SG) to Director

K. Rajendran
G. Selvamani
G. Natarajan

Heads of Central Services, Facilities and Sections:

Central Library	Harish Chandra
Chairman, Council of Wardens	SP. Subramanian
Chief Medical Officer (Incharge)	N.A. Jayavelan
Air-conditioning Unit	R, Ramam
Central Gas Supplies Unit	N. Balasubramanian upto 26.03.2002
	R.P. Viswanath from 27.03.2002
Central Glass Blowing Section	S. Sankararaman
Central Photographic Section	D.K. Sharma
Central Workshop	N.L.N.N. Kumar
National Service Scheme	Susy Varughese
Advisor, Sports	B. Ramamoorthy (upto 02.01.2002)
	S. Neelamani (from 03.01.2002)
Advisor, Cultural	M.N. Sudheendra Rao (upto 19.07.2001)
	L. Vijayaraghavan (from 20.07.2001)
Foreign & Weaker Section Students	T.J. Kamalanabhan
Vigilance	V.G. Idichandy
Placement & Training	A.R. Balakrishnan (upto 15.08.2001)
	S. Narasimha Rao (w.e.f. 16.08.2001)
Guidance & Counselling Unit	M. Govardhan

Engineering Unit:

Chairman , Estate & Works Committee	V.R. Rengaraju (upto 17.04.2001)
	C.P. Vendhan (w.e.f 18.04.2001)
Co-Chairman, Estate & Works Committee	C. Venkateshshalah (upto 10.8.2001)
Executive Engineer	C. Ganesan
Assistant Executive Engineers	S. Swaminathan
	F. John De Britto
	V. Seenivasan
	K. Dharmaraj
	M. Ramachandran
	K. Viswanath
	V. Veerasamy
Public Health Officer	

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 31 streams/ specialisations, M.Sc. programme in 3 disciplines, B.Tech programme in 8 disciplines, Dual degree (B.tech and M.Tech) programme in 11 disciplines and M.B.A. programme besides a preparatory course for SC/ST students during the year under report.

3.1 Admissions 2001-02

Candidates for admission to B.Tech. 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 interview/test. For M.Sc. programme selection was made through a written 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 2001 and in Jan 2002 are given below:

TABLE 1 – Fresh Admission

Sl. No.	Department	B.Tech.	Dual Degree	M.Sc.	M.Tech	M.B.A.	M.S.	Ph.D	Total
1.	Aerospace Engg.	26	6	-	15	-	7	2	56
2.	Applied Mechanics	-	-	-	32	-	9	9	50
3.	Chemical Engg.	41	10	-	24	-	5	7	87
4.	Chemistry	-	-	26*	-	-	-	27	53
5.	Civil Engineering	45	9	-	91	-	4	8	157
6.	Computer Science & Engg.	30	7	-	50	-	18	7	112
7.	Electrical Engg.	95	19	-	81	-	12	9	216
8.	Humanities & Soc. Sci.	-	-	-	-	41	3	12	56
9.	Mathematics	-	-	33	9	-	-	7	49
10.	Mechanical Engg.	84	19	-	109	-	10	19	241
11.	Metallurgical Engg.	28	5	-	15	-	9	9	56
12.	Ocean Engg.	21	6	-	9	-	11	5	52
13.	Physics	-	-	30	7	-	-	13	50
	Total	370	81	89	442	41	88	134	1245

* Includes four students who joined integrated Ph.D. programme

Total no. of students (1245) admitted during the year includes the following :

Foreign Nationals	2	Q.I.P.	Ph.D.	15	
			M.Tech.	27	42
DASA (Indian Origin)	17	Sponsored	M.Tech.	33	
			M.S.	4	37
Scheduled Castes	88	Project	M.S.	13	
			Ph.D.	26	39
Scheduled Tribes	22	External Registration	M.S.	8	
			Ph.D.	13	21
Women Students	96	User-oriented Programme (M.Tech)			68
Defence Officers	25				

In addition to the above, 25 SC and 6 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 2001-02 are given below:

TABLE 2 - Students on roll

Sl. No.	Department	B.Tech.	Dual Degree	M.Sc.	M.Tech.	M.B.A.	M.S.	Ph.D.	Total
1.	Aerospace Engg.	102	20		22	-	26	9	179
2.	Applied Mechanics	-	-		49	-	36	31	116
3.	Chemical Engineering	175	42		52	-	18	34	321
4.	Chemistry	-	-	51	-	-	-	103	154
5.	Civil Engineering	175	37		169	-	27	38	446
6.	Computer Science & Engineering	123	27		84	-	69	26	329
7.	Electrical Engineering	359	73		131	-	57	24	644
8.	Humanities & Social Sci.	-	-		20	41	17	23	101
9.	Mathematics	-	-	60	17	-	-	27	104
10.	Mechanical Engg.	365	62		200	-	50	76	753
11.	Metallurgical Engg	105	19		30	-	18	27	199
12.	Ocean Engineering	79	20		22	-	34	22	177
13.	Physics	-	-	64	13	-	-	38	115
Total		1483	300	175	809	41	352	478	3638

The above total of 3638 includes the following:

Foreign Nationals	14	QIP Scholars	Ph.D. 27	65
			M.Tech. 38	
DASA (Indian origin)	114	Sponsored:	M.Tech. 67	73
			M.S. 6	
Scheduled Castes	361	Project Staff	M.S. 54	108
			Ph.D. 54	
Scheduled Tribes	94	External Registration	M.S. 10	39
			Ph.D. 29	
Women students	358	Registration Kept Alive	M.S. 13	38
			Ph.D. 25	
Defence Officers	49	User-oriented Programme (M.Tech.)		94

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 \ Batch	2001	2000	1999	1998	Total
1.	Aerospace Engineering	26	21	27	28	102
2.	Chemical Engineering	41	37	49	48	175
3.	Civil Engineering	45	40	43	47	175
4.	Computer Science & Engineering	30	29	31	33	123
5.	Electrical Engineering	95	95	84	85	359
6.	Mechanical Engineering	84	81	95	105	365
7.	Metallurgical Engineering	28	25	28	24	105
8.	Ocean Engineering	21	19	19	20	79
Total		370	347	376	390	1483

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

Sl. No.	Branch \ Batch	1998	1999	2000	2001	Total
1.	Aerospace Engineering	4	6	4	6	20
2.	Chemical Engineering	10	12	10	10	42
3.	Infrastructure Civil Engineering	10	9	9	9	37
4.	Computer Science	7	6	7	7	27
5.	Micro Electronics & VLSI Design	9	10	9	10	38
6.	Communication Systems	10	9	7	9	35

7.	Energy Technology	4	7	4	7	22
8.	Intelligent Manufacturing	4	6	3	6	19
9.	Product Design	6	6	3	6	21
10.	Metallurgy & Materials Engineering	4	5	5	5	19
11.	Ocean Engineering & Naval Architecture	4	5	5	6	20
Total		72	81	66	81	300

TABLE 5 - M.Sc students on roll

Sl. No.	Discipline \ Batch	2000	2001	Total
1.	Chemistry	25	26	51
2.	Mathematics	27	33	60
3.	Physics	34	30	64
Total		86	89	175

TABLE 6 - M.Tech students on roll

Sl. No.	Department \ Discipline \ Batch	2000	2001	Total
1.	Aerospace Engineering	10	12	22
2.	Applied Mechanics: AM 1 - Engg. Mechanics AM 2 - Industrial Tribology AM 3 - Maintenance Engineering & Management AM 4 - Bio-medical Engg.	5 4 5 6	9 6 10 4	14 10 15 10
3.	CH 1 - Chemical Engineering	29	23	52
4.	Civil Engineering: CE 1 - Building Technology CE 2 - Environmental Engg. CE 3 - Geotechnical Engg. CE 4 - Hydraulic & Water Resource Engg. CE 5 - Structural Engg. CE 6 - Transportation Engg. CE 7 - Construction Technology & Mgmt CE 8 - Computational Engg.	14 7 8 6 25 7 - 10	14 7 6 19 7 6 22 11	28 14 14 25 32 13 22 21
5.	CS 1 - Computer Science & Engineering CS 2 - Information Technology CS 3 - Software Engineering	36 - -	39 7 2	75 7 2
6.	Electrical Engineering: EE 1 - Communication Systems EE 2 - Energy Systems Engg. EE 3 - Micro Electronics EE 4 - Control & Instrumentation Systems EE 5 - Digital Signal Processing	14 12 12 13 -	20 14 22 15 9	34 26 34 28 9
7.	Humanities & Social Sciences Engg. IM 1 - Industrial Management	20	-	20
8.	Mathematics: Industrial Mathematics & Scientific Computing	8	9	17
9.	Mechanical Engineering: ME 1 - Thermal Engg ME 2 - Design ME 3 - Manufacturing Engg. ME 4 - Automotive Engine Technology (UoP)	29 30 21 11	35 32 28 14	64 62 49 25
10.	MT Metallurgical Engineering:	16	14	30
11.	OE - 1 Ocean Engineering	13	9	22
12.	Physics: PH I - Solid State Technology	6	7	13
Total		377	432	809

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

Sl. No.	Discipline \ Batch	2000	2001	Total
1.	M.B.A.	-	41	41

In addition to the above, 7 CSIR Research Associates and 31 Preparatory Course students were on the rolls.

3.3 New discipline/ stream introduced:

The following new disciplines were introduced in July 2001 with an intake noted against each:

1. M.Tech – Software Engineering (Part-time) - 10
2. M.Tech – Information Technology (Part-time) - 10
3. M.Tech – Digital Signal Processing - 10
4. M.B.A. – (Regular – 50 and Sponsored & NRI – 10) - 60

3.4 Courses Offered:

In the academic year 2001-02, 970 courses were offered of which 482 courses in July – Nov 2001 and 488 courses in Jan – May 2002. 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 2001				No. of courses offered in Jan – May 2002			
		Core	Elect.	Lab	Total	Core	Elect	Lab	Total
1	Aerospace Engineering	16	5	6	27	10	10	1	21
2	Applied Mechanics	16	11	4	31	14	9	4	27
3	Chemical Engineering	16	11	2	29	17	12	2	31
4	Chemistry	29	4	-	33	15	13	1	29
5	Civil Engineering	40	21	5	66	39	18	7	64
6	Computer Science & Engg.	14	9	6	29	13	9	3	25
7	Electrical Engineering	27	13	9	49	12	31	5	48
8	Humanities & Social Sciences	14	18	-	32	14	26	1	41
9	Mathematics	23	8	1	32	16	13	1	30
10	Mechanical Engineering	50	8	2	60	53	17	5	75
11	Metallurgical Engineering	12	18	6	36	14	13	7	34
12	Ocean Engineering	21	5	2	28	13	16	2	31
13	Physics	18	5	3	26	8	16	4	28
14	COMPTECH	1	2	1	4	1	2	1	4
	Total	297	138	47	482	239	205	44	488

3.5 Convocation

The 38th Convocation was held on 27.7.2001. Mr Azim H Premji Chairman, Wipro Corporation, Bangalore delivered the Convocation address. 998 candidates were awarded various degrees. 783 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	23	-	11	6	-	40
2.	Applied Mechanics	-	-	20	11	5	36
3.	Chemical Engineering	49	-	37	8	2	96
4.	Chemistry	-	25	-	-	13	38
5.	Civil Engineering	42	-	85	12	5	144
6.	Computer Science Engineering	32	-	29	14	1	76
7.	Electrical Engineering	92	-	50	12	-	154
8.	Humanities & Social Sciences	-	-	25	2	3	30
9.	Mathematics	-	35	8	-	4	47

10.	Mechanical Engineering	89	-	97	13	12	211
11.	Metallurgical Engineering	27	-	15	1	3	46
12.	Ocean Engineering Centre	18	-	6	9	3	36
13.	Physics	-	34	7	-	3	44
	Total	372	94	390	88	54	998

With this Convocation, the total number of degrees awarded so far by the Institute is 24,022, the details of which are given below:

S.No.	Programme	No.
1	Ph.D.	2305
2	M.S.	1511
3	M.Tech	7966
4	M.Sc.	1795
5	B.Tech	10180
6	B.Sc (Tech)	20
7	DIIT	245

3.6 Award of Prizes to the students:

3.6.1 Convocation Prizes:

The following are the details of Prizes awarded to the students at the 38th Convocation for their best academic records:

- President of India Prize .. K L Karthik B.Tech. Comp. Sc. & Engg.
- Governor's Prize .. Shriram Santhanam B.Tech. Mech Engg.

□ Other Prizes

Sl.No.	Donor	Department	Name of student
Doctor of Philosophy – Ph.D.			
1.	Prof. C N Pillai Prize	Chemistry	B Sobhana Babu
2.	Prof Langmuir Prize	Chemistry	N Pappayee
3.	Prof Werner Prize	Chemistry	N Gayathri
4.	Sudharshan Bhat Memorial Prize	Metallurgical Engg.	Annedi Achuta Reddy
Master of Technology – M.Tech.			
1.	Air India Prize	Aerospace Engg	Vijay Kumar Garg
2.	Indira Sivasallam Merit Prize	Indl. Tribology	Hari Prasad Redrouth
3.	Institute Merit Prize	Engg. Mechanics	Veena Shivram Bhoje
4.	Institute Merit Prize	Biomedical Engg.	C Satyasri Vijayalakshmi
5.	Dr.K.Subba Raju Memorial Prize	Chemical Engg	Parameswaran T
6.	Mico-Bosch Prize	Chemical Engg.	Sreenivas Yelneedi
7.	Valli Anantharamkrishnan Merit Prize	Civil Engg.	Bedekar Vivek Sharad
8.	K Devarajan Memorial Prize	Civil Engg. (Trans. Engg.)	Neeraj Kumar Jain
9.	CMC Prize	Computer Science & Engg.	Ratheesh K
10.	Prof.H.N.Mahabala Endowment Prize	Computer Science & Engg.	Mala Ramaswami
11.	Siemens Prize	Electrical Engg.	T Srinivas
12.	Prof. Achim Bopp Endowment Prize	Electrical Engg.	Vijaya Chamundeeswari V Sunil C.
13.	Coka Parthasarathy Prize	Industrial Management	Simon K John
14.	K.V.Arunkumar Memorial Prize	Industrial Management	Simon K John
15.	Prof. B. Sengupto Prize	Mechanical Engg.	Vikas Tomar
16.	Dr.S.Vaidyanathan Memorial Prize	Mechanical Engg.	Marathe Jayant Anil
17.	Prof BVA Rao Endowment Prize	Mechanical Engg	Vikas Tomar
18.	S. Anantharamkrishnan Merit Prize	Mechanical Engg.	Satish Kumar B Tambe Dhananjay Tulshiram
19.	Prof Ramamohana Rao Memorial Prize	Mechanical Engg.	Tambe Dhananjay Tulshiram
20.	S. Anantharamkrishnan Memorial Prize	Metallurgical Engg.	Sudi Reddy Bhaskar Reddy
21.	Sudarshan Bhat Memorial Prize	Metallurgical Engg.	Kantesh Balani Sudi Reddy Bhaskar Reddy Kantesh Balani

Sl.No.	Donor	Department	Name of student
22.	American Bureau of Shipping Prize	Ocean Engg.	Gani Guruling Ramachandrappa E Anulekha Manjari
23.	Institute Merit Prize	Solid State Technology	Venkataramanan S
24.	Prof Helmut Neunzert Endowment Prize	Ind. Maths & Scientific Computing	Senthilkumar R
25.	Institute Merit Prize	Auto. Engine Tech.	Hemant Bidaiah I
26.	Institute Merit Prize	Cons. Tech. & Mgmt	
Master of Science – M.Sc.			
1.	Dr S R Ramadas 60th Birthday Commemoration Award	Chemistry	Vasumathi D
2.	Ratna Rao Memorial Prize	Chemistry	Vasumathi D
3.	Mira Paul Memorial Prize	Mathematics	Nirmala N V
4.	Prof.Chilukury Ramasastry Memorial Prize	Physics	Sripad R
Bachelor of Technology – B.Tech.			
1.	President of India Prize	Computer Sci & Engg.	K L Karthik
2.	Governor's Prize	Metallurgical Engg.	Shriram Santhanam
3.	Dr.Shanker Dayal Sharma Former President of India Prize	Naval Arch.	Nitin Chandra
4.	Bharat Ratna M.Visveswaraya Memorial Prize	Computer Sci. & Engg.	K L Karthik
5.	HAL Prize	Aerospace Engg.	S R Viswamurthy
6.	B.Ravichandran Memorial Prize	Chemical Engg.	K Shivakumar
7.	Reliance Heat Transfer (P) Ltd. Prize	Chemical Engg.	K Shivakumar
8.	Larsen & Toubro ECC Endowment Medal	Civil Engg	Jayaram R
9.	Alumni Association Prize	Computer Sci & Engg.	K L Karthik
10.	B Ravichandran Memorial Prize	Computer Sci & Engg	K L Karthik
11.	Philips (India) Prize	Electrical Engg.	Murtaza Abbasali Zafar
12.	Siemen's Prize	Electrical Engg.	Murtaza Abbasali Zafer
13.	Prof.Achim Bopp Endowment Prize	Electrical Engg.	Nethrapal M S
14.	Banco Foundation Prize	Mechanical Engg.	V Ramnath
15.	G.V.N.Rayudu Memorial Prize	Mechanical Engg.	V Ramnath
16.	Sivasailam Merit Prize	Mechanical Engg.	Srigiriraju Venkata Srikanth
18.	Vaidy Krishnan Memorial Prize	Mechanical Engg.	Shriram Santhanam
19.	Dr.Dhandapani Prize	Metallurgical Engg.	Harsh Anand Verma
20.	American Bureau of Shipping Prize	Naval Architecture	Harini G

3.6.2 Institute Day Prizes:

On the basis of performance during the academic year 2001-02, the following students were awarded Merit Prizes on the Institute day held on 10.4.2001:

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.1,500/-)	CS 99210	Vyas Sekar
2.	Second Prize (Book value of Rs.1,000/-)	CS 99305	V Vidhyashankar
B.Tech (3rd and 4th Semesters) (Book value of Rs.1000/- for each Branch)			
3.	Aerospace Engineering	AE 98015	Kusumanchi S V Kamaraju
4.	Chemical Engineering	CH 98084	Lakshman Pernenkil
5.	Civil Engineering	CE 98150	Siddharth Savadatti
6.	Electrical Engineering	EE 98271	Siddharth Ray
7.	Mechanical Engineering	ME 98375	Sandipan Mishra
8.	Metallurgical Engineering	MT 98442	Vignesh Gowrishankar
9.	Naval Architecture	NA 98473	Sabyasachi Mohanty

Sl.No.	Donor	Department	Name of student
B.Tech (5th and 6th Semesters) (Book value of Rs.1,000/- for each Branch)			
10.	Aerospace Engineering	AE 97028 tie AE 97008	Viswamurthy S R Karthik Palaniappan
11.	Chemical Engineering	CH 97143	Shivakumar
12.	Civil Engineering	CE 97054	Jayram R
13.	Comp. Science & Engg.	CS 97179	Karthik K L
14.	Mechanical Engineering	ME 97329	Dhanushkodi Durai M
15.	Metallurgical Engineering	MT 97453	Uttam S
16.	Naval Architecture	NA 97477	Harini G
II. Donors Prizes:			
B.Tech (3rd & 4th Semesters)			
17.	Biswajit Sain Endowment Prize (Medal of 2" dia and book value of Rs 2000/-)	CS 98158	M V N Ashwin Kumar
18.	Raghavendra Memorial Prize (Book value of Rs.1,000/-)	ME98375	Sandipan Mishra
19.	Rajalakshmi Krishnamurthy English Prize (Book value of Rs.1,000/-)	CH 98070	Shairali Shiva Rao
B.Tech (5th & 6th Semesters)			
20.	Dr. S. Chandrasekharan Memorial Prize (Cash prize of Rs.1000/- with a silver medal)	ME97367	Ramnath B
21.	Ramasarma V Kolluri Memorial Prize (Silver Medal)	EE97353	Murtaza Abbasali Zafer
M.Sc (1st & 2nd Semesters)			
22.	Chilikuri Ramasastry Memorial Prize (Cash Prize of Rs.1,500/-)	PH99675	Sripad R
M.Tech (1st & 2nd Semesters)			
23.	Prof. N Venkatarayulu Memorial Prize (Cash prize of Rs.1000/-)	ME99853	Achuth M

4.1 DEPARTMENT OF AEROSPACE ENGINEERING

4.1.1. Introduction:

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

4.1.2. Academic Programmes:

New Courses Introduced:

Sl. No.	Course No.	Title
1.	AS 532	Mechatronics Design
4.	AS 632	Acoustic Instabilities in Aerospace Propulsion
3.	AS 633	Aero-acoustics
2.	AS 634	Combustion and Optical Flow Diagnostics

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & above	Total
B.Tech.	28	27	21	26	-	102
Dual Degree	4	6	4	6	-	20
M.Tech.	10	12	-	-	-	22
M.S.	7	7	9	3	-	26
Ph.D.	2	1	3	2	1	9
Total	51	53	37	37	1	179

4.1.3. Faculty and their activities:

Faculty:

Sl. No.	Name and Qualification	Major Area of Specialization
1.	Gokhale S. S., Ph.D. (Univ. of Illinois, USA)	Aircraft and missile propulsion, computational methods, simulation and optimization, computer aided instructions
2.	Job Kurian, Ph.D. (IIT Madras)	Gas Dynamics, Combustion, Shock tube flows and measurements
3.	Krishnan S., Ph.D. (IIT Madras)	Aerospace propulsion
4.	Santhakumar S., Ph.D. (IIT Madras) [Head]	Aerodynamics, flight mechanics, instrumentation
5.	Subramanian G., Ph.D. (IIT Madras)	Structural analysis, finite element and finite difference techniques, experimental moire interferometry
6.	Tulapurkara E.G., Ph.D. (IIT Madras)	Aerodynamics, Fluid mechanics, turbulent flows
7.	Varadan T.K., Ph.D. (IIT Madras)	Structural mechanics, composite
8.	Bhaskar K., Ph.D. (IIT Madras)	Structural mechanics, Plants & Shells, composite structures
9.	Gowda R.M.S., Ph.D. (IIT Madras)	Thermal stress analysis, structural mechanics
10.	Ramakrishna M., Ph.D. (Univ. of Texas, Arlington)	Fluid Mechanics, numerical methods, computer solutions
11.	Sriram P., Ph.D. (Georgia Institute of Technology)	Structural mechanics, fatigue & fracture, Parallel computing
12.	Rajan S.C., M.Tech. (IIT Madras)	Aerodynamics, Theory and Computation of Vortex Dominated Flows
13.	Sujith R.I., Ph.D. (Georgia Institute of Technology)	Combustion Instability, Fluid Mechanics, Optical flow diagnostics
14.	Chakravarthy., S.R. Ph.D.(Georgia Institute of Tech.)	Propulsion, Combustion & Fluid Mechanics
15.	R. Velmurugan., Ph.D. (IIT Delhi)	Composite Materials, Finite Element Analysis, Impact Mechanics

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

S. No.	Co-ordinators	Title	Period
Conference:			
1.	Dr. R. Velmurugan Dr. S. K. Malhotra CTC Dr. P. A. S. Murthy CTC Dr. M. Balasubramanian CTC	International Conference and Exhibition on reinforced Plastics	February 7-9, 2002
Workshop:			
1.	Prof. E.G. Tulapurkara & Prof. B.V.S.S.S. Prasad - ME	Computation of Internal Flows	June 11-16-2001
2.	Prof. E.G. Tulapurkara & Prof. B.V.S.S.S. Prasad - ME7	Basics of Computational Fluid Dynamics	Dec. 18-22-2001
3.	Dr. R. Velmurugan	Design and Manufacture of FRP Bodies and Components for Land Transport application.	Aug. 20-25, 2001
4.	Dr. S. R. Chakravarthy Prof. T. Sundararajan - ME	International Workshop on Modern Advances in Combustion	Aug. - Sep. 2001

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

Sl. No.	Name of faculty	Title	Period
Workshop:			
1.	Prof. E. G. Tulapurkara	Computation of flow in an enclosure, IIT Kharagpur	Dec. 5-7, 2001
		Wake boundary layer interaction - Experimental and computational studies, IIT Kharagpur	Dec. 5-7, 2001
		Visualisation of flow past 2-D bluff bodies on a Base Plate", Punjab Engg. College, Chandigarh	Dec. 13-15, 2001
Symposia:			
1.	Prof. Job Kurian	XV International Symposium on Air Breathing Engines (ISABE), Bangalore	Sep.2-7-2001
2.	Dr. S. R. Chakravarthy	XV International Symposium on Air Breathing Engines (ISABE), Bangalore	Sep.2-7-2001
Conference:			
1.	Dr. S. R. Chakravarthy	XVII National Conference on IC Engine and Combustion, Surathkal	Dec. 18-20-2001

Special Lectures Delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue & Date
1.	Dr. M. Ramakrishna	Introduction to CFD	Texas
2.	Dr. R. I. Sujith	Investigation of mixing of oxygen and Iodine in chemical oxygen iodine lasers using planer laser induced fluorences	Technical University of Darmstadt October 2001
		Sound propogation in Inhomegeneous media	Technical University of Munich, November 23, 2001
3.	Dr.S.R.Chakravarthy	Solid Propellant Combustion Instability and Acoustics	DRDL, Hyderabad November 16, 2001
4.	Prof. Job Kurian	Laser based diagnostics of Thermo-Fluid Dynamics Phenomena	I.I.Sc., Bangalore Oct. 2001

Visits Abroad by Faculty :

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of visit
1.	R.I. Sujith	Germany	Oct. 2000 to Nov. 2001	Alexander Von Humboldt Fellowship
		The Netherlands	May 2001	To attend AIAA Aero. Acoustics Conference
		Switzerland	April 2001	Visit to EPFL, Lausanne
		Italy	Nov. 2001	Visit to INSEAN, Rome

2.	M. Ramakrishna	Czech Republic and Texas, U.S.A.	18-12-2000 to 6-12-2001	To accept the assignment of Visiting Faculty
3.	Job Kurian	Germany	07-06-2001 to 18-07-2001	To visit Shock Wave Laboratory, University of Aachen, Germany

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Award for	Date
1.	Dr. R. I. Sujith	Best Paper award in Combustion	XVII National Conference on IC Engines and Combustion, 2001	Being the best paper	Dec. 2001
2.	Dr. S. R. Chakravarthy	Best Paper Award	Combustion Institute (Indian Section)	Best paper in Combustion NCICEC, Surathkal	Dec. 20, 2001

4.1.4. Design and Development Activities:

Digital image processing software for solid propellant burning rate determination.
Liquid rocket static test stand

New facilities added or major equipment procured through project funds:

High power frequency quadrupled vol. YAG Laser.
Inter-line transfer digital (CD) camera.
Piezo-electric acoustic pressure transducers - 4 Nos.
Nd-YAG laser, Interline transfer CCD Camera

4.1.5. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (In lakhs)	Co-ordinators
1.	Establishment of Centre for Computational Fluid Dynamics	1998-2001	DST	373.00	E.G. Tulapurkara M.Ramakrishna P.A.Asathanarayana T.Sundararajan Srinivas Jayanthi
2.	Manufacture of New Particle Aluminium Powder on a High Energy Rocket Propellant.	2000-2002	MHRD	6.00	S.R.Chakravarthy R. Sarathi, EE C.Venkateshaiah, EE
3.	Numerical study of particulate suspension flow through wavy walled channel	2000-2003	CSIR	9.50	E. G. Tulapurkara R. Usha (Maths)
4.	Development of a low cost Planar Image Velocimetry (PIV) system	2000-2003	MHRD	19.62	R.I.Sujith SR.Chakravarthy
5.	Cavity Induced Acoustic Oscillations and their Effect on Mixing in Supersonic Flows	2000-2002	ARDB	7.00	
6.	Studies on Oscillatory Combustion Response in Fuel/Air Mixtures	2000-2002	ARDB	7.60	
7.	Augmentation of Rarefied Gas Dynamics facility		ADRB	9.80	
8.	Formulation of Ammonium Perchlorate Propellants Trends	2001-2003	ARMREB	9.00	Job Kurian
9.	A Fundamental approach combustor Dynamics: Focus on Flame-Acoustic-Vortex interactions	2001-2002	DRDO	24.98	
10.	Experimental & Theoretical Investigation for Determination of Gc for Composites	1997-2002	ISRO	6.88	P.Sriram
11.	Laser Induced Fluorescence for spray diagnostics	2002-2003	ISRO	4.60	R.I. Sujith R.N.Govardhan

Industrial Consultancy:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1.	P. Sriram	RT Linux Driver Development	BHEL, Ranipet	0.19
2.	S. Santhakumar/ S.C. Rajan	Development of Software for Aerodynamics of Air-breathing Missiles	DRDL	6.29
3.	S. Santhakumar	Flow Characterisation of Adventium Oven	GE India Technology Centre Pvt. Ltd., Bangalore	0.25

RBIC:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1.	R. Velmurugan	Development of power pack for Arjun Tank	CVRDE	14.82
2.	R. Velmurugan	Preparation of PJ-10 standards for composites and other applications	DRDL	9.75
3.	Job Kurian	Design of Intake and Combustor of Scramjet Engine	DRDL	5.00
4.	Job Kurian	Comparative Study of Supersonic Combustors	DRDL	23.59

Journal Editorial Boards:

S.No	Name of the Faculty	Level	Journal
1	Prof. G. Subramanian	Editor	Journal of Mathematical and Physical Science

Research Publications:

No. of papers published in Refereed National Journals	..	7
No. of papers published in International Journals	..	12
No. of papers presented in National Conference	..	6
No. of papers presented in International Conferences	..	6

In Refereed National Journals:

1. T. K. Varadan & K. Bhaskar, "Elasticity solutions for Cross-ply Plates under Localized Surface Moments" J. Aero. Soc. of India, Vol.53, pp.154-159, 2001.
2. T. Sekar, R. Velmurugan, M. S. Palanichamy, "Actually Loaded seated Morten-filled steel tubes", J. of the Institute of Engineers (I), pp. 81-84, August 2001.
3. R. Velmurugan, T. Sekar, S. Vijayakumar, B. Krishnan, "Experimental Investigation on the collapse behaviour of metallic tubes with related concrete", 28(c), pp.39-42, 2001.
4. H. Maeda, S. Santhakumar, T. Setoguchi, M. Takao and K. Kaneko, "Performance of Impulse Turbine with Self-Pitch-Controlled Guide Vanes for Wave Power Conversion (Effect of Guide Vane Support Geometry)", JI. of Institution of Engineers (India), Part MC, Vol. 82, April 2001, pp. 24 - 29.
5. S. Hari and J. Kurian, "Effectiveness of Secondary Tabs for Supersonic Mixing", Experiments inn Fluids, Vol.31, No.3 (2001), pp.302-308.
6. S. Hari and J. Kurian, "Mixing Augmentation inn Supersonic Flows", J. of Thermal Sciences, Vol.10, No.4 (2001), pp.325-330
7. Jose K. Kakkassery, R. I. Sujith and Job Kurian, "On the breakdown of Continuum and Shock Formation in Low Desity Flows", Vacuum, Vol.65, No.1 (2002), pp.45-50.

In Refereed International Journals:

1. K. Bhaskar & T. K. Varadan, "The contradicting Assumptions of Zero Transverse Normal stress and swain in Twin Plate Theory: A Justification, ASME, JI. Applied Mechanics, Vol.68, 00.660-662, 2001.
2. J.K. Kakkassery, R.I.Sujith and Job Kurian "On the breakdown of Continuum and Shock formationin Low density flows", Vacuum, Vol.65, No.1, 2002, pp.45-50.

3. R.I.Sujith, R.Ramesh, S. Pradeep, S. Sriram and T.M.Muruganandam, "Mixing of High Speed Coaxial Jets", *Experiments in Fluids*, Vol.30, pp.339-345, 2001.
4. P. Bala Subrahmanyam, R.I.Sujith and T.Lieuwen, "A Family of Exact Transient Solutions for Acoustic Wave Propagation in Inhomogeneous, Non-Uniform Area Ducts", *Journal of Sound and Vibration*, Vol.240, No.4, pp.705-715, 2001.
5. P. Balasubrahmanyam and R.I.Sujith, "A Family of Exact Solutions for Axisymmetric Vibrations of Solid Circular and Annular Membranes with Continuously Varying Density", *Journal of Sound and Vibration*, Vol.248, No.2, pp.371-378, 2001.
6. R.I.Sujith, "Exact Solutions for modeling sound propagation through a combustion zone", *Journal of Acoustical Society of America*, Vol.110(4), pp.1839-1844, October 2001.
7. T. Setoguchi, S. Santhakumar, M. Takao, T.H. Kim "Effect of Guide Vane Shape on the Performance of a Wells Turbine", *Renewable Energy*, Vol. 23 (2001), pp. 1-15.
8. T. Setoguchi, S. Santhakumar, H. Maeda, M. Takao, K. Kaneko, "A Review of Impulse Turbines for Wave Energy Conversion", *Renewable Energy*, Vol. 23 (2001), pp. 261-292.
9. S. R. Chakravarthy, E. W. Price, R. K. Sigamani, and J.M. Freeman, "Anomalous Deflection Behaviour of Ammonium Perchlorate at Elevated Pressures", *Jl. of Propulsion and Power*, Vo.18, No.1, January, 2002, pp.205-208.
10. 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. Theran. Sci.* 41(2002), pp.101.107.
11. K. M. Habeeb and Job Kurian, "Cavity Assisted Mixing Enhancement of Supersonic Streams", Paper No.ISABE 2001-1189, Prof. of the XVth Int. Symp. on Airbreathing Engines, Bangalore, Sep. 2001.
12. S. Hari and J. Kurian, "Ramp Nozzle for Supersonic Mixing and Combustion", Paper No.ISABE 2001-1020, Proc. of the XVth Int. Symp. on Airbreathing Engines, Bangalore, Sep.2001.

In Proceedings of National Conferences:

1. R. Govardhan & C.H.K. Williamson, "Response and Vortex formation modes of an elastically-mounted cylinder in a current". NRB Seminar 2002, Marine Hydrodynamics, Naval Science and Technology Laboratory, Vishakapatnam, 1-2, February, 2002.
2. S. R. Chakravarthy, "Solid Propellant Combustion Instability and Acoustics", Proceedings of workshop on Combustion in Aerospace Propulsion Systems, The combustion Institute (Indian Section), Hyderabad, Nov. 2001.
3. S. Rajesh, S. R. Chakravarthy, and R. I. Sujith, "Vortex Combustion in an Acoustically Excited Dump Combustor", Proceedings of XVII National Conference on IC Engines and Combustion, Surathkal, Dec. 2001, pp.507-515.
4. Prabhu Ramachandran, Mayavi: A flow visualization tool for CFD data visualisation 4th Annual CFD Symposium, 2001, August, AeSI.
5. Prabhu Ramachandran, M. Ramakrishna, S.C. Rajan, "Particle based flow solvers for incompressible flows in two-dimensional impulsively started flow past a cylinder", *Jl. of the Aero. Soc. of India*, May, 2001, Volume.53 Number 2, pp.102-110.
6. L. Krishnan, M. Ramakrishna, S.C. Rajan, "Analysis of Supersonic flow over two-dimensional Rectangular cavity", Proceedings of National Workshop on CFD, Dec.2001, IIT Kharagpur, India

In Proceedings of International Conferences:

1. M. A. Muthumanickam, R. Velmurugan, N. G. Nair, "Experimental Investigation of Ceramite Encapsulated multicomponent Composite System for ballistic application", 189-195, ICERP, Feb. 2002 at IIT Madras.
2. M. Balasubramanian, R. Velmurugan, K. Senthilkumar and S. Nanjundas, "Mechanical Properties of Glass-toughened Epoxy Composites", 209-216, ICERP, Feb.2002 of IIT Madras.

Industrial Consultancy:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1.	P. Sriram	RT Linux Driver Development	BHEL, Ranipet	0.19
2.	S. Santhakumar/ S.C. Rajan	Development of Software for Aerodynamics of Air-breathing Missiles	DRDL	6.29
3.	S. Santhakumar	Flow Characterisation of Adventium Oven	GE India Technology Centre Pvt. Ltd., Bangalore	0.25

RBIC:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1.	R. Velmurugan	Development of power pack for Arjun Tank	CVRDE	14.82
2.	R. Velmurugan	Preparation of PJ-10 standards for composites and other applications	DRDL	9.75
3.	Job Kurian	Design of Intake and Combustor of Scramjet Engine	DRDL	5.00
4.	Job Kurian	Comparative Study of Supersonic Combustors	DRDL	23.59

Journal Editorial Boards:

S.No	Name of the Faculty	Level	Journal
1	Prof. G. Subramanian	Editor	Journal of Mathematical and Physical Science

Research Publications:

No. of papers published in Refereed National Journals	..	7
No. of papers published in International Journals	..	12
No. of papers presented in National Conference	..	6
No. of papers presented in International Conferences	..	6

In Refereed National Journals:

1. T. K. Varadan & K. Bhaskar, "Elasticity solutions for Cross-ply Plates under Localized Surface Moments" J. Aero. Soc. of India, Vol.53, pp.154-159, 2001.
2. T. Sekar, R. Velmurugan, M. S. Palanichamy, "Actually Loaded seated Morten-filled steel tubes", J. of the Institute of Engineers (I), pp. 81-84, August 2001.
3. R. Velmurugan, T. Sekar, S. Vijayakumar, B. Krishnan, "Experimental Invesigation on the collaapse behaviour of metallic tubes with related concrete", 28(c), pp.39-42, 2001.
4. H. Maeda, S. Santhakumar, T. Setoguchi, M. Takao and K. Kaneko, "Performance of Impulse Turbine with Self-Pitch-Controlled Guide Vanes for Wave Power Conversion (Effect of Guide Vane Support Geometry)", Jl. of Institution of Engineers (India), Part MC, Vol. 82 , April 2001, pp. 24 - 29.
5. S. Hari and J. Kurian, "Effectiveness of Secondary Tabs for Supersonic Mixing", Experiments inn Fluids, Vol.31, No.3 (2001), pp.302-308.
6. S. Hari and J. Kurian, "Mixing Augmentation inn Supersonic Flows", J. of Thermal Sciences, Vol.10, No.4 (2001), pp.325-330
7. Jose K. Kakkassery, R. I. Sujith and Job Kurian, "On the breakdown of Continuum and Shock Formation in Low Desity Flows", Vacuum, Vol.65, No.1 (2002), pp.45-50.

In Refereed International Journals:

1. K. Bhaskar & T. K. Varadan, "The contradicting Assumptions of Zero Transverse Normal stress and swain in Twin Plate Theory: A Justification, ASME, Jl. Applied Mechanics, Vol.68, 00.660-662, 2001.
2. J.K. Kakkassery, R.I.Sujith and Job Kurian "On the breakdown of Continuum and Shock formationin Low density flows", Vacuum, Vol.65, No.1, 2002, pp.45-50.

3. R.I.Sujith, R.Ramesh, S. Pradeep, S. Sriram and T.M.Muruganandam, "Mixing of High Speed Coaxial Jets", *Experiments in Fluids*, Vol.30, pp.339-345, 2001.
4. P. Bala Subrahmanyam, R.I.Sujith and T.Lieuwen, "A Family of Exact Transient Solutions for Acoustic Wave Propagation in Inhomogeneous, Non-Uniform Area Ducts", *Journal of Sound and Vibration*, Vol.240, No.4, pp.705-715, 2001.
5. P. Balasubrahmanyam and R.I.Sujith, "A Family of Exact Solutions for Axisymmetric Vibrations of Solid Circular and Annular Membranes with Continuously Varying Density", *Journal of Sound and Vibration*, Vol.248, No.2, pp.371-378, 2001.
6. R.I.Sujith, "Exact Solutions for modeling sound propagation through a combustion zone", *Journal of Acoustical Society of America*, Vol.110(4), pp.1839-1844, October 2001.
7. T. Setoguchi, S. Santhakumar, M. Takao, T.H. Kim "Effect of Guide Vane Shape on the Performance of a Wells Turbine", *Renewable Energy*, Vol. 23 (2001) , pp. 1-15.
8. T. Setoguchi, S. Santhakumar, H. Maeda, M. Takao, K. Kaneko, "A Review of Impulse Turbines for Wave Energy Conversion", *Renewable Energy*, Vol. 23 (2001), pp. 261-292.
9. S. R. Chakravarthy, E. W. Price, R. K. Sigamani, and J.M. Freeman, "Anomalous Deflection Behaviour of Ammonium Perchlorate at Elevated Pressures", *Jl. of Propulsion and Power*, Vol.18, No.1, January, 2002, pp.205-208.
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2. S. R. Chakravarthy, "Solid Propellant Combustion Instability and Acoustics", Proceedings of workshop on Combustion in Aerospace Propulsion Systems, The combustion Institute (Indian Section), Hyderabad, Nov. 2001.
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4. Prabhu Ramachandran, Mayavi: A free tool for CFD data visualisation 4th Annual CFD Symposium, 2001, August, AeSI.
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2. M. Balasubramanian, R. Velmurugan, K. Senthilkumar and S. Nanjundas, "Mechanical Properties of Glass-toughened Epoxy Composites", 209-216, ICERP, Feb.2002 of IIT Madras.

3. P. Bala subrahmanyam, R. I. Sujith and T. Lieuwen, AIAA, "Aerospace Sciences Meeting and Exhibit,, Jan. 8-11, Reno. NY, USA, "Propogation of Sound in Inhomogeneous Media: Exact, Transient Solutions in Cartesian and Curvilinear Geometries", 2001.
4. B. Karthik, B.V.R. Kowsik, N. Venkateswarlu, R.I.Sujith and S.R.Chakravarthy, "AIAA Paper 2001-1105, 38th AIAA Aerosapce Sciences Meeting and Exhibit, January 8-11, Reno, NY, USA, "Acoustics Field in a Duct Resulting from Vortex Shedding from Multiple Restrictors", 2001.
5. Arvind Kumar, S.R. Wishwamurthy, Srihari Lakshmi, A.A.Ramesh, S.R. Chakravarthy and R.I.Sujith, AIAA Paper 2001-0647 38th AIAA Aerospace Sciences Meeting and Exhibit, January 8-11, Reno, NY, USA, "Mixing of Oxygen and Iodine in a Subsonic Coil", 2001.
6. B. Karthik, S.R.Chakravarthy and R.I.Sujith, AIAA paper 2001-2182 To be presented at the 7th AIAA/CEAS Aeroacoustics Conference, 28-30, May 2001 Maastricht,. The Netherland, "The Effect of Orifice Thicknes on the Vortex -Acoustic Interaction in a Duct", 2001.

Distinguished Visitors to the Department:

S. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Mr. S. Ramakrishnan, Scientist, Vikram Sarabhai Space Centre, Thiruvananthapuram - 695 022.	24-04-2001	Special Lectures
2.	Sri. Kumar M. Bobba Graduate Aeronautical Laboratories, California Institute of Technology, Pasadona, U.S.A.	21-08.2001	Seminar Talk
3.	Dr. Kidambi Sreenivas Assistant Research Professor Engg. Research Centre for Computational Simulation and Design (SimCenter) Mississippi State University, Starkville, Mississippi, U.S.A.	04-01-2002	Seminar Talk
4.	Dr. Sivakumar Santhanakrishnan Research Associate, Mid-Infrared Sensing Diagnostics and Control Consortium School of Mechanical Engineering Purdue University, West Lafayette, Indiana, U.S.A.	04-01-2002	Seminar Talk
5.	Dr. S. Panneerselvam, Scientist 'G', Technology Director, Aerodynamics, DRDL, Hyderabad - 500 058.	04-01-2002	Discussion with faculty members
6.	Sri. S. Vengadesan, Research Scholar, Kobe University, Japan	25-07-2001	Seminar Talk
7.	Sri. Shankara Subramaniam, General Manager (MPMC/RO), SHAR Centre, Sriharikota.	01-03-2002	Industry Lecture

4.1.6. Other Activities:

Prof. S. Santhakumar - **Chairman**, IIT Madras Campus Educational Society
Member, BCD Panel, Armament Research Board
Member, Research & Development
 Crescent Engineering College, Seethakathi Estate, Chennai-600 048.
Chairman, The Aeronautical Society of India, Channal Branch

Prof. E. G. Tulapurkara - **Principal Co-ordinator**,
 Centre for Computational Fluid Dynamics, IIT Madras.

4.2. DEPARTMENT OF APPLIED MECHANICS

4.2.1. Introduction:

The Department of **Applied Mechanics** was established in 1959 and it offers M.Tech, M.S. and Ph.D., 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 and application of Image processing techniques.

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:

New discipline introduced:

Minor stream in 'Computational Solid Mechanics'

Minor stream in 'Biomedical Engineering' for UG program was started.

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & above	Total
M.Tech. -						
Engg. Mechanics	5	9	-	-	-	14
Industrial Tribology	4	6	-	-	-	10
Maint. Engg. & Mgmt.	5	10	-	-	-	15
Bio-medical Engg.	6	4	-	-	-	10
M.S.	9	13	10	2	2	36
Ph.D.	9	7	5	4	6	31
Total	47	40	15	6	8	116

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.	S.Mahesh	Ph.D.	NSA 2001	October 2001
2.	K.Jayaraj	Ph.D.	NSA 2001	Vellore
3.	J.Naresh	M.S.	NSA 2001	Vellore
4.	D.Kumar	Ph.D.	European conference on Biomedical optics	17-22, June, 2001 Munich, Germany

5.	Sanjay Jayavanth	Ph.D.	Magnetic materials	July 2001, Bremen, Germany
6.	Jacob Thomas	Ph.D.	Intl. Conf. on BME, Biovision 2001	IISc, Bangalore 21-24, 2001
7.	G.Charanya	M.S.	-do-	-do-
8.	S.Mallikarjun S.Holi	Ph.D.	-do-	-do-
9.	Judith Justin	M.Tech.	INTEND 2001	June 22-25, 2001

4.2.3. Faculty and their activities:

Faculty:

Name and Qualifications	Major area of specialization
Dr.B.S.Prabhu , Ph.D., IIT Madras	Tribology, Rotor Dynamics and maintenance engineering
Dr.N.Ganesan, Ph.D., IIT Madras	Vibration, Acoustics, Stress Analysis, Finite Element Techniques, Fluid-Structure Interaction.
Dr.S.Narayanan, Ph.D., IIT Kanpur	Random Vibration, Acoustics, Smart Structures, Passive and Active, Vibration and Noise Control
Dr.S.Swarnamani, Ph.D., IIT Madras	Condition Monitoring; Neural Networks.
Dr.C.Sujatha, Ph.D., IIT Madras	Vehicle Dynamics, Diagnostics; Vibration.
Dr.G.Santhanakrishnan, Ph.D., IIT Madras	Tribology and Wear.
P.Chandramouli, Ph.D., Ohio State Univ., USA	Noise and Vibration Control, Non-linear dynamics & Fluid-Structure-Acoustic Interactions.
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. Megha Singh, Ph.D., Univ. of North Carolina	Lasers in medical diagnosis / Hemorheology
Dr.M. Ramasubba Reddy, Ph.D., IISc, Bangalore	Biomedical Instrumentation and Bio-signal processing.
Dr. R.Palaninathan, Ph.D., IIT Madras	Structural Mechanics, Composite Materials, Finite Element Methods.
Dr.J. Raamachandran, Ph.D. [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.C. Lakshmana Rao, Ph.D, MIT, Cambridge, USA	Fracture Mechanics, Continuum Mechanics, Smart Mechanics
Dr.M.S. Sivakumar, Ph.D., MIT, Cambridge, USA	Solid Mechanics, Plasticity, Smart Materials & Computations, non-linear FEA, thermo-mechanical fatigue.
Dr.J. Lakshminarasimhan , Ph.D., IIT Madras	Incompressible Aerodynamics, CFD, Wind effects on structures
Dr. V. Ramjee, Ph.D, IISc Bangalore	Fluid Mechanics - Jets - WAKES

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

S.No.	Co-ordinator(s)	Title	Period
Workshop:			
1.	Dr.C.Lakshmana Rao	Natural Fiber Composite	18.01.2002

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
Workshop:				
1.	Prof.Palaninathan	Intl. Conference on Structural Mech. in Reactor Tech.	SMIRT 16	Aug. 12 - 17 2001
2.	Dr.M.S.Siva Kumar	Symposium on Mathematical methods & Applns	IIT Madras Chennai	Dec.22 2001
		2 nd International Conference on Theoretical Appl. Computational & Exptl. Mechanics ICCE 2001	ICTACEM 2001 India Bangalore	Dec.27-30 2001 July 2001
Symposia:				
1.	Dr. P.Chandramouli Dr. S.Narayanan	Indo-US Symposium on Noise & Vibration	Dec.10-12, 2001	Ohio State University
Conference:				
1.	Dr. P.Chandramouli Dr. S.Narayanan Dr. S.Swarnamani	NSA 2001	Oct. 2001	Vellore Inst. Of Technology, Vellore

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of faculty	Topic of lecture	Venue and Date
1.	M.R.S.Reddy	Biomedical Signal Analysis	PSNA College, Dindigul 19.4.2002
2.	S.Radhakrishnan	Spl. Lecture on Rehabilitation Engg.	-do-
3.	K.M.Patil	Current status of diabetic foot research in India	Plastic Surgeons, Apollo Hospital, Chennai 7.4.2002.
		Current status of diabetic foot research in India	Medical doctors, Sundaram Medical Foundation, 6.4.2002
4.	Dr.R.Palaninathan	Metal Matrix Composites	Univ. Western Ontario, Canada Aug 26, 2001
		-do-	West virginia, Univ. of Tech. U.S.A. Aug. 30, 2001
		-do-	J.J.College of Engg. Trichy, March 1, 2001
5.	Dr.S.Narayanan	Chaos in nonlinear systems	Vellore Institute of Technology, 28 th May, 2001 - 09 th June, 2001
		Maps, Lyapunov exponents and Fractals-Numerical methods in Nonlinear vibration Analysis	Research Center Imarat, Hyderabad 500 069 5-9 March, 2002
		Finite element Modelling and Active Vibration Control with Piezoelements	Purdue University 19 th December, 2001
		Vibro-Acoustic Response Prediction of space craft equipment Panels using Statistical Energy Analysis	University of Maryland, College Park, Department of Mechanical Engineering 20 th December, 2001

Visits abroad by faculty:

S.No.	Name of faculty	Country visited	Date	Purpose of visit
1.	Dr.P.Chandramouli Dr.S.Narayanan	USA	Dec.10-12, 2001	Indo-US Symposium
2.	Dr.P. Chandramouli	USA	Dec.13-18, 2001	Project meeting @ Boeing
3.	Dr.R.Palaninathan	U.S.A. Canada	Aug.12-Sep.9 2001 Aug. 26 - 28 2001	Attended Conf. Lectured at Univ.
4.	Dr.V. Ramjee	USA	Jan 2001 to April 30, 2001	Sabbatical Leave

Honours and Awards obtained:

S.No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr.N.Ganesan	Sir CV Raman Award	Acoustical Soc. of India	Best paper (1999) in Jour. ASI	Oct. 2001
2.	P.Chandramouli	Sir CV Raman Award	Acoustical Soc. of India	Best paper (1999) in Jour. ASI	Oct. 2001
3.	Dr. Megha Singh with Ph.D scholars	Bajpai-Saha Award	12 th National Conf. of the Society for Biomaterials and Artificial Organs, India	Best Paper	28-29, Nov. 2001
4.	K.M.Patil with Ph.D scholars	Award under PG/ Doctoral students	Int. Conference on BME, Blovisions 2001, IISc	Best Paper	21-24, Dec. 2001

Books, Monographs authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/co-author
(i) Books:				
1.	Dr.V. Ramjee	FLUID MECHANICS and its applications	Scitech Publication	Single Author

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Level	Year of Admission
1.	Dr.N.Ganesan	Fellow (INAE)	2002

4.2.4.Design and Development Activities:

Flow Visualization facility developed – Digital Phot Mech. Lab developed

New facilities added or major equipment procured through project funds:

Sonic anemometer
Hand held Data Acquisition system

30 m tall Met. Tower
On line Data Logger

4.2.5. Research and Consultancy:**Sponsored Research Projects:**

S. No.	Title	Period	Funding agency	Amount (in lakhs)	Co-ordinators
1.	SEA of Launch Veh. Struc.	5/01-5/03	ISRO	22.00	Prof.S.Narayanan/ Dr.S.Swarnamani
2.	FSI of Sodium Pipelines	4/01-3/03	IGCAR	4.60	Prof.N.Ganesan
3.	Scattering....	9/99-8/02	NRB	20.00	Prof.S.Narayanan/ Dr.S.Swarnamani/ Dr.C.Sujatha
4.	Development of Adv. Phase-unwrapping algorithms in Photomechanics	May 2001 to May 2003	ISRO-ISTM Cell	7.56	Dr.K.Ramesh
5.	Constitutive modelling of smart materials	2001 – 2003	NPSM	25.00	Dr.M.S.Sivakumar
6.	High Performance Adaptive Finite Element Analysis of Composite Plates	1999-2002	ARDB-IIT	10.00	Dr.M.S.Sivakumar
7.	Coastal Atmospheric Dispersion studies. Hybrid Models.	1999-2002	AERB Sponsored	24.40	Dr.P.A.Asawatha Narayana Dr.J.Lakshminarasimhan
8.	Numerical investigation of the effects of the effects of flow configuration on multiple supersonic jet interaction.	2000 -2002 to be extended by one year.	ARDB	2.84	Dr.V. Ramjee Dr.T. Sundarajan

9.	Active Noise Control		MHRD	12.00	
10.	Semiactive Suspension for Tanks		CVRDE	12.50	

Industrial Consultancy projects:

S.No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Dr.P.Chandramouli/ Dr.A.Meher Prasad, CE/ Dr.Devdas Menon, CE	Vibration reduction of cooling tower frame	TCP	0.85
2.	Dr.P.Chandramouli/ Prof.P.K.Aravindan, CE/ Dr.A.Meher Prasad, CE	Vibration testing of oil platform	Cochin Port Trust	2.00
3.	Dr.J.Lakshminarasimhan	Calibration of Vanetype	ETA Engineering Ltd	0.10
4.	Dr.C.Sujatha	Vibration test of Light Weight Damping Material	M/s Anabond Ltd., Chennai 600 096	0.25
5.	Dr.S.Swarnamani Dr.C.Sujatha Dr.P.Chandramouli	Seismic test on 216 kV LA	M/s Alstom Instrument Transformers P.Ltd., Bangalore-562 157	0.35
6.	Dr.S.Swarnamani Dr.P.Chandramouli Dr.S.Narayanan	Seismic test on 220 kV Double Break Isolators	M/s G.R.Power Switchgear Ltd., Hyderabad-500 055	0.45
7.	Dr.C.Sujatha Dr.P.Chandramouli Dr.S.Swarnamani	Seismic test on 132 kV Double Break Isolator	-do-	0.45
8.	Dr.P.Chandramouli Dr.S.Swarnamani Dr.C.Sujatha	Seismic test on 66 kV Double Break Isolators	-do-	0.45
9.	Dr.S.Swarnamani Dr.S.Narayanan Dr.P.Chandramouli	Vibration testing of V.C.B.	M/s Autometers Alliance Ltd., Noida- 201 307	0.50
10.	Dr.C.Sujatha Dr.S.Swarnamani Dr.S.Narayanan	Seismic test on 245 kV Circuit Breakers	M/s Asea Brown Boveri Ltd., Vadodara-390 013	0.35
11.	Dr.S.Swarnamani Dr.P.Chandramouli Dr.C.Sujatha	Seismic test on 400 kV Circuit Breaker	-do-	0.35
12.	Dr.S.Narayanan Dr.C.Sujatha Dr.P.Chandramouli	Seismic test on 72.5 kV Circuit Breaker	-do-	0.35
13.	Dr.C.Sujatha	Calibration of FFT Vibration Analyser	M/s Prumatech Services P.Ltd., Chennai 600 034	0.05
14.	Dr.P.Chandramouli	Noise Reduction of MAXIBRATOR	M/s Carborundum Universal Ltd., Ranipet- 632 403	0.20
15.	Dr.B.S.Prabhu	Analysis of Initial Seizure Load	M/s Chemoleums Ltd., Chennai- 600 044	0.04
16.	Dr.C.Sujatha Dr.P.Chandramouli Dr.S.Narayanan	Seismic test on 390 kV Arrester	M/s Oblum Electrical Industries Ltd., Hyderabad-500 037	0.35
17.	Dr.P.Chandramouli	Vibration test for Diesel Fuel Filter Lancer and Electronic (FACET) Fuel Pump	M/s Pentadaewha Auto Parts Ltd., Irungattukottai -602 105	0.20
18.	Dr.P.Chandramouli Dr.S.Swarnamani	Sesimic test on 216 kV, 10 KA Lightning Arrester	M/s LAMCO Lightning Arrester Mfg. Co.Pvt.Ltd., Hyderabad- 500 018	0.35

19.	Dr.C.Sujatha Dr.N.Ganesan Dr.P.Chandramouli Dr.S.Narayanan	Seismic test on 145 kV and 245 kV Isolator	M/s International ELPRO Ltd., Hyderabad-500 037	1.02
20.	Dr.P.Chandramouli	Noise Reduction Test on Bullet Motorcycle	M/s Royal Enfield Motors, Chennai-600 019	0.50
21.	Dr.P.Chandramouli Dr.N.Ganesan	Design drawings for Hydraulic shaker	M/s Universal Radiators Ltd., Coimbatore-641 043	0.75
22.	Dr.C.Sujatha	Testing of mesh sheet	M/s Annabond Ltd., Chennai-600 096	0.025
23.	Dr.S.Swarnamani Dr.N.Ganesan	Seismic withstand test on 245 kV CT	M/s Transformers & Electricals Kerala Ltd., Angamally South P.O.-683 523	0.41
24.	Dr.C.Sujatha	Vibration measurement test and analysis on cylinder engines	M/s SAME Greaves Tractors Ltd., Ranipet-632 403	0.30
25.	Dr.S.Swarnamani Dr.N.Ganesan	Seismic test on 400 kV CB and 66 kV DB isolator	M/s GR Power Switchgear Ltd., Hyderabad-500 055	1.02
26.	Dr.C.Sujatha Dr.P.Chandramouli	Seismic test on 72.5 kV and 145 kV SF6 Gas Circuit Breaker	M/s Siemens Ltd., Aurangabad-413 316	0.70
27.	Dr.C.Sujatha Dr.N.Ganesan	Seismic vibration test on 120 kV, 10KA Lightning Arrester	M/s LAMCO Ltd., Hyderabad-500 018	0.35
28.	Dr.C.Sujatha Dr.N.Ganesan	Seismic vibration test on 36 kV, 10 KA Lightning Arrester	-do-	0.40
29.	Dr.C.Sujatha Dr.P.Chandramouli Dr.S.Swarnamani	Seismic withstand test on 420 kV CB and 145 kV SF6 CB	M/s Alstom Ltd., Chennai 600 096	1.26
30.	Dr.C.Sujatha Dr.N.Ganesan	Vibration and shock test on choke and transformer	M/s Autometers Alliance Ltd., Noida -201 307	0.50
31.	Dr.S.Swarnamani Dr.P.Chandramouli	Seismic test on 390 kV and 216 kV Surge Arrester	M/s International ELPRO Ltd., Mumbai-400 021	1.33
32.	Dr.S.Swarnamani Dr.P.Chandramouli	Vibration test on 34U Rack	M/s Electronics Corporation of India Ltd., Hyderabad-500 062	0.51
33.	Dr.P.Chandramouli Dr.S.Narayanan	Seismic test on 145/245 kV Gas Circuit Breakers	M/s Crompton Greaves Ltd., Nashik-422 010	0.82
34.	Dr.S.Narayanan Dr.P.Chandramouli	Seismic test on 66 kV Spring Breaker	-do-	0.41
35.	Dr.S.Swarnamani	Belt Noise	M/s Fenner (India) Ltd., Chennai-35	0.05
36.	Dr.S.Swarnamani Dr.N.Ganesan	Vibration and Shock test of AC & DC and Battery Charger Transformer	M/s Autometers Ltd., Noida-201 307	1.53
37.	Dr.C.Sujatha Dr.S.Narayanan	Vibration and Shock test on single Interrupter Traction	M/s Biecco Larie Ltd., Kolkatta-700 088	0.57

RBIC projects:

S.No.	Name of faculty	Title	Industry	Amount (in lakhs)
1.	P.Chandramouli	Efficient solution of rotor-stator rub interaction problems	Boeing, USA	USD 14,000

Journal Editorial Boards:

S.No.	Name of faculty	Chairman/member	Journal
1.	Dr.K.Ramesh	Member	Strain
2.	Dr. Mega Singh	Member	Intl. Journal of Bio engg. by World Scientific Pub., Singapore

Research Publications:

No. of papers published in Refereed National Journals	..	14
No. of papers published in Refereed International Journals	..	24
No. of papers presented in National Conferences	..	7
No. of papers presented in International conferences	..	19

In Refereed National Journals:

1. Y.V.Siva Prasad, N.Ganesan and C.Padmanabhan, 2001, "Acoustic Transmission Loss of Refrigeration Compressor Shells", Journal of Acoustical Society of India, Vol.XXIX, No.2-4, pp.235-243.
2. S.Mahesh and C.Pamanabhan, 2001, "Noise radiation from twisted Plates", Journal of Acoustical Society of India, Vol.XXIX, No.2-4, pp.206-214.
3. K.Jayaraj, N.Ganesan and C.Padmanabhan, 2001, "Acoustic radiation from pipes conveying pulsatile fluid flow", Journal of Acoustical Society of India, Vol.XXIX, No.2-4, pp.102-111.
4. J.Naresh and S.Swarnamani, 2001, "Improving the Classification Accuracy of Fault Diagnosis in Machinery using Genetic Algorithm" Journal of Acoustical Society of India, Vol.XXIX, No.2-4, pp.169-177.
5. U.S.P.Shet, G.Sai Prasad, P.Bhaskar Reddy and S.Swarnamani, "Pulsating Premixed Laminar Flames issuing from Rectangular Burner Ports", Journal of Acoustical Society of India, Vol.XXIX, No.2-4, pp.178-189.
6. Sanjay Jayavanth and Megha Singh, Changes in erythrocyte aggregation and deformability during human aging, Curr. Sci. 82, 2002, 191-196.
7. D.Thomas, C.Lakshmana Rao and Srinivasan M.Sivakumar, Finite Element Analysis and Verification of Vibrational Modes of an Underwater Acoustic Projector:, J.Acous, Soc. India, Vol29, 2001 pp.73-80
8. Boundary layer subjected to longitudinal convex and concave curvatures and adverse pressure gradient"- E.G. Tulapurkara, A.B. Khoshnevis and J.L. Narasimhan, JI. of Aero Soc. Of India, Vol.53, No.2, 2001, pp. 183 to 191.
9. "Wake boundary layer interaction subjert to convex and concave curvatures and adverse pressure gradient" - E.G. Tulapurkara, A.B. Khoshnevis, J.L. Narasimhan, Experiments in Fluids, Vol.31 (2001), pp. 697 - 707.
10. "A Computational study of equal and unequal supersonic jets" - S. Vijayakumar, T. Sundararajan and V. Ramjee - J. Aero.Society of India, V - 54, No.1, Feb 2002 pp 1-15.
11. "Active vibration control study on piezolaminated smart beams using finite element method" - V. Balamurugan and S. Narayanan - Defence Science Journal, 51(2), 103-114, 2001.
12. K. Renji, P.S. Nair and S. Narayanan, "Response prediction of equipment panels of spacecrafts using statistical energy analysis", Proceedings of National Symposium on Acoustics (NSA-2001), Vellore Institute of Technology, October 18-20, 2001, Journal of the Acoustic Society of India, 29, 385-400, 2001.
13. V. Balamurugan and S. Narayanan, "Study of distributed thermopiezo electric sensors/actuators in smart structures and their application in active vibration control", Proceedings of National Symposium on Acoustics (NSA-2001), Vellore Institute of Technology, October 18-20, 2001, Journal of the Acoustic Society of India, 29, 413-420, 2001.
14. S. Narayanan, "Chaos in nonlinear acoustics", Proceedings of National Symposium on Acoustics (NSA-2001), Vellore Institute of Technology, October 18-20, 2001, Journal of the Acoustic Society of India, 29, 439-457, 2001.

In Refereed International Journals:

1. Prabhu, K.G. Patil, K.M. and Srinivasan S., "A new method of analysis of standing foot pressure images for detection of the plantar ulcers in early-stage diabetic neuropathy", Frontiers of Medical and Biological Engineering, Vol.11, No.1, 2001.

2. Prabhu, K.G., Patil, K.M., Srinivasan, S., Narayanamurthy, V.B., and Parivalavan, R., "Diabetic feet at different levels of neuropathy : An artificial neural network model for foot classification", *Journal of Mathematical Modelling and Scientific Computing*, Vol. 13 (1-2), 2001, 79-89.
3. Prabhu, K.G., Patil, K.M., and Srinivasan, S., "Diabetic feet at risk : a new method of analysis of walking foot pressure images at different levels of neuropathy for early detection of plantar ulcers", *Journal of Medical & Biological Engineering & Computing*, Vol.39, 2001, 288 - 293.
4. Prabhu, K.G., Agarwal, D., Patil, K.M., and Srinivasan, S., "Parameters for analysis of walking foot pressures at different levels of diabetic neuropathy and detection of plantar ulcers at early stage" *Innov. Tech. Biol. Med.*, Vol.22, 2001, 159 - 169.
5. S.Ramakrishnan, R. Degenhardt, K.Vietzke, R. Grebe, M.Singh and H.Schmid-Schonbein, "Influence of immunoglobulin G and immunoglobulin A on erythrocyte aggregation : a comparative study. *Innov. Tech. Biol. Med.* 22, 2001, 241-246.
6. Kumar V, Radhakrishnan S, Reddy R, "An efficient algorithm for extraction of somatosensory evoked potentials in scoliosis by frequency coefficients averaging", *Jl. Mathematics Modelling and Scientific Computing*, Vol.13 (1-2), pp 152-159, 2001.
7. S.Kishor, C.Sujatha and C.Padmanabhan, 2001, "Dynamic Response, Response of Heavy Vehicle using Condensation Technique", *Heavy Vehicle Systems, International Journal of Vehicle Design*, Vol.8, (3/4), pp. 301-315.
8. C.Saravanan, N.Ganesan, V.Ramamurti, "Semianalytical finite element analysis of active constrained layer damping in cylindrical shells of revolution" *Computers and Structures*, Vol.79(2001), pp.1131-1145.
9. Experiments on Inner Vessel Buckling, *Int. J. of Experimental Mechanics*, Vol., June 2001 pp - Dr.R.Palaninathan
10. D.K.Tannakar and K.Ramesh, "Simulation of error in Digital Photoelasticity by Jones Calculus", *Strain*, (2001), 37(2), pp105-112
11. Mehrdad Massoudi and Lakshmana Rao C, "A Non-linear Constitutive Relation for Flowing Granular Materials", *Int. of Applied Mechanics and Engineering*, Vol.6, No.2, pp.457-471 2001
12. Mehrdad and Lakshmana Rao, C, "Vertical Flow of a Multiphase Mixture in a Channel, *Mathematical Problems in Engineering*, Vol.6, pp.505-526 2001.
13. Muralikrishna J, .Lakshmana Rao C, "Permeability and Bleeding of Asphalt Concrete using Mixture Therapy, *International Journal of Engg. Science*, Vol.39, pp 611-627, 2001.
14. G.Vinayak, S.K.Mangal and K.,Ramesh, "Reasons for Ambiguity in Retardation Calculations in Phase-shifting Technique", *Strain*(2001), 37(2), pp.53-54.
15. A study on the design and behavior of smart antenna" *journal of smart Materials and Structures*, 10(4), 2001 (Saravanan U and V,Kalyanaraman, Dr.M.S..Sivakumar)
16. "Non-Resonant Response using Statistical Energy Analysis" - K. Renji, P.S. Nair and S. Narayanan - *Journal of Sound and Vibration*, 241(2), 253-270, 2001.
17. "Active Vibration control of smart shells using distributed piezoelectric sensors and actuators" - V.Balamurugan and S. Narayanan - *Smart Materials and Structures*, 10(2), 173-180, 2002.
18. "Controlling chaotic motions in a two dimensional airfoil using time delayed feedback" - M. Ramesh and S. Narayanan - *Journal of Sound and Vibration*, 239(5), 1037-1049, 2001.
19. "Computational visualization of the process of vortex shedding behind bluff bodies" - B.H.L. Gowda and S. Narayanan - *Journal of Flow Visualisation & Image Processing*, 8, 141-147, 2001.
20. Chaos control of Bonhoffer - Van der Pol oscillator using neural networks" - M. Ramesh and S. Narayanan - *Chaos, Solitons and Fractals*, 12(13), 2395-2405, 2001.
21. "Shell finite element for smart piezoelectric composite plate/shell structures and its application to study shape and vibration control" - V. Balamurugan and S. Narayanan - *Journal of Finite element in Analysis and Design*, 37, 713-738, 2001

22. "Active passive hybrid damping in beams with enhanced smart constrained layer treatment" - - V. Balamurugan and S. Narayanan - Engineering structures, 24(3), 355-363, 2002.
23. "Finite element formulation and active vibration control study on beams using active constrained layer damping treatment (SCLD)" - V. Balamurugan and S. Narayanan - Journal of Sound and Vibration, 249(2), 227-250, 2002.
24. "Periodic Response and Chaos in nonlinear systems with time delay" - A. Raghothama and S. Narayanan - Nonlinear Dynamics, An International Journal of Nonlinear Dynamics and Chaos in Engineering Systems, 27(4), 341-365, Mar 2002.

In Proceedings of National Conferences:

1. R.Srinivasan., D. Kumar., and Singh, M., "Optical tissue-equivalent phantoms for medical imaging". Proc. National Conference on Biomedical Materials, Chennai, 2001, p.24
2. Mallikarjun S.H, Radhakrishnan S and Jayavelan N.A, "Quantitative Ultrasound for the Assessment of Osteoporosis - Millenium Conference- 2001" Organised by Indian Society of Biomechanics, March 17-18, 2001, Berhampur, Orissa.
3. T.Soundara Pandian, S. Radhakrishnan and Judith Justin, "Assisted Gait in Paraplegics. Using functional electrical stimulation technique - at the National Conference on Information Technology Enablers for persons with disabilities (INTEND 2001) June 22-25, 2001, Anna University.
4. Mallikarjun S.Holi and S.Radhakrishnan, "Frequency analysis of tibial bone fracture healing under Ilizarn external fixadr model, at the National Conderence , INTEND 2001, June 22-25, 2001, pp 279, Anna Univ.
5. A.Munaiah, K.R.Madhu, and K.Ramesh "Handling of non-rectangular boundaries in Digital Photoelasticity," SECTAS 2002, 1st, 2nd March 2002, Dayalburg, Agra,
6. J. Kumar, and C.Lakshmana Rao, "Comparison of Fixed=point iteration and Newton Raphson Method in Couette. Flow of Granular Materials. Proceedingsa of National Symposium on Mathematical Methods and Applications, Dept. of Mathematics, IIT, Madras, India, December 2001
7. Lakshmana Rao C, and Shakey Shamu, "Fracture of High Strength Concrete", Proceedings of the onference on "Trends in Pre-stressed concretes, Dept. of Civil Engg. IIT Madras, June 2001

In proceedings of International Conferences:

1. Kumar D. and Singh, M. "Detection of optical Inhomogeneity by Monte Carlo Simulation : In: Proc. Europ. Conf. Med. Optics, Munich, 2001 "Diagnostic Optical Spectroscopy in Biomedicine", Vol.4432, 2001, pp 65-74.
2. Mallikarjun S.H, Radhakrishnan S, "Quantitative assessment of osteoporosis in men and women using heel ultrasonometer, "Proc. Of the International Conference on BME, Jan.2001.
3. Charanya G., Patil K.M., Prabhu G.K., Narayanamurthy V.B and Parivalavan, R., "Diabetic Feet at Risk of Plantar Ulcers : A new method of analysis of standing foot pressure images for different foot sole tissue properties", Proceedings of the Intl. Conf. on Biomedical Engineering, Biovision 2001, Dec. 21-24, 2001, pp 219 - 222.
4. Ramamurthy N.V., and Patil K.M., "Human body vibration response minimization by relaxation seat suspension system for an armored fighting vehicle", Proceedings of the Intl. Conf. on Biomedical Engineering, Biovision 2001, Dec. 21-24, 2001, pp 97-100.
5. Patil K.M., Jacob Thomas, V., and Radhakrishnan S., "Three dimensional stress analysis for the mechanics of plantar ulcers in diabetic neuropathy" Proceedings of the Intl. Conf. on Biomedical Engineering, Biovision 2001, Dec. 21-24, 2001, pp 117-120.
6. Rohit Chandra, V.B. Krishnakumar Raja, T. Jayakumar, S.Radhakrishnan and G.Thomas, "Invitro comparison of various plating techniques used in mandibular angle fractures - a three dimensional study at the 5th Intl. Symp. On Computer Methods in Biomechanics & BME, Rome, Oct. 31-Nov.3, 2001.
7. K.Mothiram Patil, V. Jacob Thomas and S.Radhakrishnan, "Three dimensional stress analysis for the mechanics of plantar ulcers in Diabetic neuropathy" In Proc. of Intl. Conf. on BME, Dec. 21-24, Biovision 2001, IISc, Bangalore, pp 117-120.

8. Mallikarjun S. Holl and S.Radhakrishnan, "Determinants of bone mineral density changes in men & women in Estimation of Osteoporosis", in Proc. Of Intl. Conf. on BME, Biovision 2001, 197-200.
9. K.Jayaraj, N.Ganesan and C.Padmanabhan, 2002", Model Reduction for Parametric Instability Analysis of Shells Conveying Fluid", Proceedings Indo-US Symposium on Vibration and Noise, Ohio State University, Ohio State University, Columbus, Ohio, USA, December 2001, Paper U014.
10. J.Kumar, N.Ganesan, S.Swarnamani and C.Padmanabhan, 2001, "Active Control of Shell with Magnetostrictive Layer", Proceedings Indo-US Symposium on Vibration and Noise, Ohio State University, Columbus, Ohio, USA, December 2001, Paper UO23.
11. Dr.R.Palaninathan - Studies on Inner Vessel Models, SMIRT 16, USA Aug.2001
12. Investigations on Stability of Cylindrical Shells under Axial Compression, SMIRT 16, USA, AUG 2001
13. Buckling studies on Axially Compressed Cylindrical Shells, 2nd Int. Conf. On Theoretical, Applied, Computational and Experimental Mechanics, IIT, Kharagpur, Dec. 27-30, 2001) DR.R.Palaninathan)
14. Continuum Modeling of Plasticity for engineering materials with length scale effects", presented at the Symposium on Mathematical methods and applications, Dec. 22 201, IIT, Madras, Chennai, (Dr.M.S.Sivakumar with Dr,K.R.Rajagopal and A. Srinivasa)
15. Studies on thermal striping limits, in proceedings of the 2nd International Conference on Theoretical Applied Computational and Experimental Mechanics(ICTACEM 2001), India, Dec. 27 - 30 2001, pp 91- 97 (Dr.M.S.Sivakumar with G.Muralidharan K.Yeshpal and P.Chellapandi
16. Continuum modelling of size effects in engineering materials, in proceedings of the ICCE 2001 July 2001, Bangalore India (Dr.M.S.Sivakumar, with A.Srinivasa and K.R.Rajagopal)
17. J. Raamachandran , "Vibration of orthotropic plates using charge simulation method" Proc. International Conf. On Vibration Problems in Elasticity, March 2001.
18. K. Renji, P.S. Nair and S. Narayanan, "Statistical energy analysis (SEA) response prediction of spacecraft equipment panels", presented at the India-USA Symposium on Emerging trends in Noise and Vibration Engineering Columbus, Ohio State University, Dec. 10-12, 2001-proceedings in CD ROM.
19. S. Narayanan and V. Balamurugan, "Finite element modeling of piezolaminated smart structures for active vibration control with distributed sensors and actuators", presented at the India-USA Symposium on Emerging trends in Noise and Vibration Engineering Columbus, Ohio State University, Dec. 10-12, 2001-proceedings in CD ROM.

4.2.6. Other Activities:

1. K.Ramesh, Member, International Advisory Committee of Int. Conf. On "Advances in experimental Mechanics", 27-29, August 2002.
2. Dr. V. Ramjee, 2 CD's released - ETC
Flow Visualisation and its importance
WIND TUNNEL and Model Testing

4.3 DEPARTMENT OF CHEMICAL ENGINEERING

4.3.1. Introduction:

The Department of Chemical Engineering was established in 1959. It offers B.Tech, Dual Degree, M.Tech, M.S. and Ph.D. programmes. The department is organized into seven research groups with supporting laboratory facilities viz., 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 courses introduced:

.No.	Course No.	Title
1	CH 312	Mineral Process Simulation (SSN)

Students on roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	48	49	37	41	-	175
Dual Degree	10	12	10	10	-	42
M.Tech.	23	29	-	-	-	52
M.S.	5	7	3	3	-	18
Ph.D.	7	4	8	6	9	34
Total	93	101	58	60	9	321

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

S.No.	Name of the student	Programme	Name of the conference/ seminar/symposia	Date and venue
Conference:				
1.	S.Murthy Shekar	Ph.D.	16 th National ISHMT Conference	Jan.2002 Kokatta
2.	S.Balasubramanian	M.S.	28 th National Conference on Fluid Mechanics & Fluid Power	Dec.2001 Chandigar
3.	M.Radhakrishnan	Ph.D.	International Conference on Industrial Pollution and Control Technologies (ICIPACT) 2001	7-10 Dec.2001
4.	K.Pakshirajan	Ph.D.	International Conference on Industrial Pollution and Control Technologies (ICIPACT) 2001	7-10 Dec.2001
5.	Eldon R Rene	Ph.D.	International Conference on Industrial Pollution and Control Technologies (ICIPACT) 2001	7-10 Dec.2001
6.	K.Praveena	M.Tech.	International Conference on Industrial Pollution and Control Technologies (ICIPACT) 2001	7-10 Dec.2001
7.	M.Radhakrishnan	Ph.D.	Indian Chemical Engineering Congress (CHEMCON 2001)	19-22 Dec.2001
8.	K.Pakshirajan	Ph.D.	Indian Chemical Engineering Congress (CHEMCON 2001)	19-22 Dec.2001
9.	R.Padma Sree	Ph.D.	National System Conference (NSC 2001), Colmbatore	13-15 Dec.2001

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]	Non-linear Control, Periodic Operation of Reactors
K.Krishnaiah, Ph.D. (IIT Madras)	Chemical Reactor Analysis and Design, Fluidization
D.V.S.Murthy, Ph.D. (IIT Madras)	Particle Technology, Environmental Engineering
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)	Internal Model Control, Adaptive Control
S. Pushpavanam, Ph.D. (Florida)	Modelling and Simulation, Non-linear Dynamics
Shankar Narasimhan, Ph.D. (North Western)	Computer Aided 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)	Thermodynamics, Applied Statistical Mechanics, Nonlinear Analysis
P. Sessa Talpa Sal, Ph.D. (IIT Madras)	Chemical Reactor Analysis and Design, Rotary Kilns
S.Sankara Narayanan, Ph.D. (Queensland)	Particle Technology, Mineral Process Simulation
Assistant Professors:	
Abhijit P Deshpande, Ph.D. (Washington)	Polymers and Polymeric Materials
A.Kannan, Ph.D. (Mc Master University, 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

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

S.No.	Co-ordinator(s)	Title	Period
Workshop:			
1.	Dr.Sreenivas Jayanti	Technology Appreciation Programme on CFD Applications for Process Industries	July 31, 2001 IIT Madras
2.	Dr.C.L.Rao, Dr.S.K.Malhotra, Dr.A.P.Deshpande	Workshop on Natural Fiber Composites	January 18, 2002
3.	Dr.Susy Varughese, Dr.S.K.Malhotra, Dr.A.P. Deshpande	Emulsion Polymers & Polymerization (at Raman Bruds Ltd., Mysore)	3 days, July-Sep. 2001.
4.	Prof.D.V.S.Murthy	Methodology Workshop of Asian Research Programme on Environmental Technology, Institute Technology, Bandung, Indonesia	27-28 Dec.2001
5.	Prof.D.V.S.Murthy, R.Saravanne, Prof.K.Krishnaiah	Studies on start-up of an anaerobic fluidized bed reactor for sago wastewater treatment	19-22 Dec. CHEMCON 2001

6.	Prof.K.Krishnaiah	TAP on "Analysis & Design of Air Pollution Control Equipments	21 st September 2001
7.	Dr.Sreeniva Jayanti	TAP on "CFD for Process Industry Applications	31 st July 2001
Short Term Course:			
1.	Dr.T.Swaminathan	Environmental Engineering	May 2001

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
Conference:			
1.	Prof.D.V.S.Murthy, Prof.K.Krishnaiah	Studies on start-up of an anaerobic fluidized bed reactor for sago waste water treatment	19-22 Dec. 2001
Workshop:			
1.	Prof.D.V.S.Murthy	Methodology Workshop of Asian Regional Research Programme on Environmental Technology – Institute Technology Bandung, Indonesia	27-28 Dec., 2001

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of the faculty	Topic of Lecture	Venue and Date
1.	Prof.T. Swaminathan	Biomedical Waste Water Management	Kongu Engineering College, Erode, October 2001
2.	Prof.M.Chidambaram	Trends in Fuzzy Logic Control	National Conference on Applications of Neural Networks and Fuzzy Systems, Annamalai University, 23-24 February 2002
3.	Prof.K.Krishnaiah	Heat and Mass Transfer in Chemical Reactors: Basic Issues	Fifth ISHMAT-ASME Heat and Mass Transfer and Sixteenth National Heat and Mass Transfer Conference, Kolkata, 3 rd January 2002
4.	Prof.M.Chidambaram	Key Note Address – Control of Unstable Systems	International Conference on Quality, Reliability & Control, ICQRC-2001, December 26-28, 2001 organized by IETE Mumbai
5.	Prof.Shankar Narasimhan	Data Reconciliation and its Application	Hypotech (Ind.) Ltd., Mumbai, 18 th October 2001
6.	Dr.Abhijit P Deshpande	Educational Consultancy Lecture	Raman Boards I.td., along with Dr.Susy Varughese on 16 th August and along with Dr.S.K.Malhothra on 25 th August 2001
7.	Prof.M.Chidambaram	Recent Trends in Process Control	Department of Instrumentation & Control Engineering, Sri Sai Ram Engineering College, Chennai, 30 th August 2001
8.	Prof.Shankar Narasimhan	Energy Minimization in Pulp and Paper Industries Through Better Design of Heat Exchanger Networks	Tribeni Tissues (a unit of ITC), Calcutta, 21 st July 2001
9.	Prof.M.Chidambaram	Computer Control of Processes	Department of Chemical Engineering, Arunai Engineering College, Thiruvannamalai, 30 th July 2001 (College has ISO 9002)
10.	Prof.T.Swaminathan	Bopal Gas Tragedy and Environmental Appraisal	25 th National Seminar on Environmental Compliance & Enforcement organized by Pollution Control Board, Tamil Nadu
11.	Prof.M.Chidambaram	Trends in Process Control, Control of Desalination Plant	Department of Chemical Engineering, REC, Warrangal, 19 th June 2001
	Prof.M.Chidambaram	Nonlinear Control of a pH Process	R&D Centre, BHEL, Hyderabad, 22 nd June 2001

Visits abroad by faculty:

S.No.	Name of the faculty	Country visited	Date	Purpose of visit
1.	Prof.D.V.S.Murthy	Bandung, Indonesia	27-28 Dec. 2001	Methodology Workshop of Asian Regional Research Programme on Environmental Technology
2.	Prof.T.Swaminathan	Bandung, Indonesia	26-28 Dec. 2001	For attending methodology workshop of SIDA Project
		Bangkok, Thailand	18-21 March 2002	Annual Review Workshop of SIDA Project

Honours and Awards obtained:

S.No.	Name of faculty	Name of Award	Awarded for	Date
1.	Prof.D.V.S.Murthy	Mr.Y.Srenivas Bagged Mico Bash Prize for 2000	Studies in Nitrification of wastewater in an upflow biofilter - M.Tech. project guided	
2.	Prof.M.Chidambaram Mrs.R.Padma Sree	Int. Conf. on Quality, Reliability & Control (ICQRC), Mumbai	Best Paper	26,28 Dec 2001
3.	Mr.K.Pakshi Rajan Prof.T.Swaminathan	Int. Conf. on Industrial Pollution & Control Tech. (ICIPACT 2001), Hyderabad	Best Paper	7-10 Dec 2001
		CHEMCON 2001 Chennai	Best Paper	19-22 Dec 2001
4.	M.Radhakrishnan Prof.T.Swaminathan	CHEMCON 2001 Chennai	Best Paper	19-22 Dec 2001

Books, Monographs authored or co-authored:

S.No.	Name of faculty	Title	Publisher
Books			
1.	Prof.M.Chidambaram	Computer Control of Processes	Narosa Publishing House (in India), CRC Press (in U.S.A.) & Alpha Science International Ltd. (in U.K.) 2002
		Nonlinear Process Control Translated in Chinese by Prof.Jiao Liucheng (Vice Chancellor of Jiaozuo Institute of Technology) & Mr.Song Yun Zhung, Lecturer, Dept.of Elec.Engg., Jiaozuo Institute of Technology, Peoples Republic of China	Coal Industries Publishing House, China 2002

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Level	Year of Admission
1.	Prof.A.R.Balakrishnan	Member (ISTE)	1996
		Fellow (TNAS)	1996

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

- Dr.S.Sankaranarayanan - Evaluation of best size reduction system for bio-mass fuels is in progress.
- Dr.A.Kannan - Object Oriented Model Development of Extraction Distillation Process and its software Implementation.

New facilities added or major equipment procured through project funds:

- Dr.Abhijit P Deshpande - Particle Image Velocimetry - ordered.

Dr.A.Kannan - Gas Chromatograph, York Schiebed Extraction Column, Steam Distillation, Natural Convection, Batch Extraction, Cooling Tower, Solid Dissolution, Vapor Diffusion.

Prof.T.Swaminathan - Total organic carbon analysis through MHRD Resource Project.

4.3.5. Research and Consultancy:

Sponsored Research Projects:

S.No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1	Process Intensification in Reactors	July 2001 - July 2006	DST	98.00	Prof.S.Pushpavanam
2	Monitoring and Control of VOC's for improved air quality in Chennai City	2001-till date	Swedish Intl. Development Agency	38.00	Prof.D.V.S.Murthy
3	SIDA Project on particulate monitoring and control of VOC's for improved air quality in Chennai city	2001-2004	SIDA, Sweden	35.00	Prof.D.V.S.Murthy, Prof.T.Swaminathan
4	Boiling and two-phase flow studies of cryogenic fluids	Feb.1999 - Mar.2002	ISRO	22.82	Prof.A.R.Balakrishnan Dr.Jayanti Sreenivas
5	Advanced control and intelligent monitoring of a pilot scale distillation column using a control network	Jan.2001 - Jan.2004	DST	15.97	Prof.Shankar Narasimhan Dr.Sachin C Patwardan
6	Surface Tension Driven Gas Liquid Flows	Aug.2000 - July 2003	ISRO	15.00	Dr. Jayanti Srinivas, Dr. R. Usha
7	Universal Viscometric Functions	1998-2002	DST	15.00	Dr.A.P.Deshpande Prof..M.S.Ananth
8	Influence of sea waves induced oscillations on the forced convective heat transfer in a barge-mounted heat exchanger	Sept.1997 -Mar.2002	DAE	14.20	Prof.A.R.Balakrishnan Dr.S.Jayanti Sreenivas
9	Azeotropic Distillation	3 Years	MHRD	12.00	Dr.R.Ravi, Dr.A.Kannan
10	Azeotropic Distillation	3 Years	MHRD	12.00	Dr.A.Kannan
11	Reactive Distillation	3 Years	MHRD	10.00	Dr.A.Kannan, Prof.N.Balakrishnan
12	Heterogerm photocatalytic degradation of hazardous organic contaminants	2000-2003	MHRD	10.00	Prof.T.Swaminathan Dr.A.Kannan
13	MODROBS	2 Years	MHRD	7.50	Prof.AR.Balakrishnan
14	Multiphase Slurry Transport	Mar.2002 - Mar.2004	ISRO	7.40	Dr.Jayanti Sreenivas Dr.T.Sundararajan Dr.S.R.Chakravarthy
15	Optimization of Chemical Reactor	3 Years	IIT Madras	5.00	Dr.A.Kannan
16	Flow mapping of turbulent bed contactor for enhanced range of operation	May 2000 - Nov.2003	MHRD	5.00	Prof.K.Krishnaiah Dr.P.Sesha Talpa Sai
17	Simulation of Microfines Pneumatic Classifier	3 Years	CSIR	3.70	Dr.S.Sankara Narayanan
18	Object Oriented Modelling & Simulation	3 Years	AICTE	3.00	Dr.A.Kannan
19	Downstream process development for purification of recombinant streptokinase from e coli cultures	Nov.2001 - Nov.2002	Shantha Bio-tech Pvt.Ltd.	2.25	Dr.Guhan Jayaraman

Industrial Consultancy Projects:

S.No.	Name of the faculty	Title	Industry	Amount (in lakhs)
1.	S.Sankara Narayanan	Studies on co-milling of coal & Petcoke	BHEL	3.995 (completed)
2.	D.V.S.Murthy	Oil-Water Separation plant design	Heavy Vehicles	0.18

RBIC Projects:

S.No.	Name of the faculty	Title	Industry	Amount (in lakhs)
1.	Prof.T.Swaminathan	Physical, chemical and microbiological evaluation of effluent treatment system through solar evaporation	SNAP Natural and Alginate products aid, Ranipet	1.50

Retainer Consultancy:

S.No.	Name of the faculty	Title	Industry	Amount (in lakhs)
1.	Sreenivas Jayanti	CFD Applications	BHEL, Trichy	1.0

Journal Editorial Boards:

S.No.	Name of the faculty	Chairman / Member	Journal
1.	Prof.T.Swaminathan	Member	Journal of Indian Association for Environmental Management
2.	Prof.A.R.Balakrishnan	Member	Int. Journal of Heat & Mass Transfer
		Member	Int. Comm. in Heat & Mass Transfer
		Chairman	Journal of Energy, Heat and Mass Transfer

Research Publications:

No. of papers published in Refereed National Journals	..	5
No. of papers published in Refereed International Journals	..	11
No. of papers presented in National Conference	..	8
No. of papers presented in International Conference	..	12

In Refereed National Journals:

1. Removal of colour from wastewater using *Trametes Versicolor* S.V.Srinivasan and D.V.S.Murthy, *Jl.Ind.Assn.Env.Mgt.*, Vol.27, pp.260-264.
2. Studies in nitrification of synthetic fertilizer wastewater in an upflow biofilter. S.Chandravathanam & D.V.S.Murthy, *Indian Journal of Chemical Technology*, Vol.8, January 2001, pp.62-67.
3. Closed loop identification by optimization method for tuning PID Controllers - S.Pramod & M.Chidambaram - *Indian Chemical Engineer*, 90-94, V43, 2001.
4. Design of PI/PID Controllers for systems with a zero - S.N.Jyothi, S.Arvind & M.Chidambaram - *Indian Chemical Engineer*, 288-293, 43, 2001.
5. Control of nonlinear unstable systems with input multiplicities - M.Chidambaram & S.N.Jyothi, *Indian Chemical Engineers*, 43 (2001) 89-90.

In Refereed International Journals:

1. Hydrodynamics of jet mining in vessels - S.Jayanti, *Chem.Eng.Sci.*, 56, 193-210 (2001)
2. Effects of tube diameter on flooding - M.Vijayan, S.Jayanti, A.R.Balakrishnan, *Int.J.Multiphase Flows*, 27, 797-816 (2001)
3. Experimental study of air-water counter current annular flow under post-flooding conditions - M.Vijayan, S.Jayanti, A.R.Balakrishnan, *Int.J.Multiphase Flows*, 28, 51-67 (2002)

4. Flow development in vertical annular flow - A.Wolf, S.Jayanti, G-F Hewitt, Chem.Engg.Sci, 56, 3221-3235(2001)
5. Performance evaluation of the common effluent treatment plant for tanneries at Pammal - Pallavaram Tamilnadu (India), P. Shanmugasundaram and D.V.S. Murthy, Bioprocess Engineering, Vol 23, No5, Nov 2000, pp431-434.
6. Bioaugmentation and Anaerobic Treatment of Pharmaceutical Effluent in Fluidized Bed Reactor; R Saravanane and D.V.S.Murthy and K.Krishnaiah, J.Environ.Sci.Health, A36(5), 779-791 (2001)
7. Calculation of self-diffusion co-efficient in liquid metals based on hard sphere diameters estimated from viscosity data, C.Jayaram, R.Ravi and R.P.Chhabra, Chemical Physics Letters, 341 (2001), 179
8. Undergraduate process control - clarification of some concepts, R.Ravi, Chemical Engg.Education, Spring 2001, 98
9. The optimal use of entropy and enthalpy, M.S.Ananth, R.Ravi, J.Science Education, 6 (2001), 167.
10. PID Controller tuning for unstable systems by optimization methods, Chemical Engineering Commun., V185, 2001, 91-113, M.K. Jhunjhunwala and M.Chidambaram.
11. Non-linear feed forward control of bioreactors with input multiplicities - S.N.Jyothi & M.Chidambaram - Bioprocess and Biosystems Engineers, 24 (2001) 123-129.

In Proceedings of National Conferences:

1. Investigation of post-flooding conditions in counter current gas-liquid flow - S.Jayanti, N.M.Ratheesh, V.Shringi, Paper No.889, 4th Int.Conf.on Multiphase Flow, May 2001, New Orleans, USA.
2. Investigation of the convergence behaviour of viscoelastic flow through a sudden contraction - S.Balsubramanian, S.Jayanti & A.Deshpande, Prof.28th Nat.Conf.on Fluid Mechanics and Fluid Power, pp.67-74, 2001 Dec., Chandigarh.
3. Assessment of combustion calculation methodology incorporated in CFD codes - A.Ganesh Babu & S.Jayanti, Paper HMT 2002, CO71, pp.634-639, Proc.Heat and Mass Transfer 2002, Jan.2002, Kolkatta.
4. Mining of viscous ventorian and non-ventorian fluids using anchor blade impellers - S.Murthy Shekhar & S.Jayanti, Paper HMT-2002-CO76, pp.663-668, Proc.Heat and Mass Transfer 2002, Jan.2002, Kolkatta.
5. Solid waste management in IIT Madras- Indo- Swiss workshop, Feb 2000, Department of Chemistry, IIT Madras,
6. Current status and future challenges in biomass utilization - D.V.S.Murthy - ENFUSE - Golden jubilee seminar, Chennai, 16-17 June 2000
7. Studies on start-up of an anaerobic fluidized bed reactor for sago wastewater treatment - R.Saravanane, K.Krishnaiah, D.V.S.Murthy - 19-22 December Chemcon 2001
8. Set Point weighted PI/PID Controllers for systems with a zero - R.Padma Sree and M.Chidambaram - Proceedings of 20th National System Conference (NSC 2001), Coimbatore - (Ed) G.Gurusamy, S.Subharani & R.Neelaveni, 133-137, Allied Publishers, New Delhi.

In Proceedings of International Conferences:

1. Treatment of hexavalent chromium from electroplating wastewater-A.K.Sahoo and D.V.S.Murthy, Paper accepted at the International conference on "Oxidation and reduction technologies for in-situ remediation of soil and groundwater, June 26th- 29th, 2001, Niagara (Canada)
2. Set Pointed Weighted PID Controllers - M.N.Srinivas and M.Chidambaram - International Conference on Quality, Reliability & Control, (Ed) A.K.Verma, Dec.27-28, 2001, Mumbai, pp.C22-1 to C22-6.
3. Identification of Unstable Transfer Function Model with a Zero - R.Padma Sree and M.Chidambaram - International Conference on Quality, Reliability & Control, (Ed) A.K.Verma, Dec.27-28, 2001, Mumbai - pp 21-1 to 21-4.

4. Nonlinear PI Controller for buffered acid base system, A.Arvind Kumar, M.Chidambaram, V.S.R.Rao and R.Pickhardt – Proc.Int.Conf.on Control, Instrumentation & Information Communication, Kolkata, Dec.13-15, 2001, pp.351-354 (Ed.) A.K.Datta, A.Deb & S.Sengupta.
5. Set Pointed Weighted PI/PID Controllers for systems with positive zero – R. Padma Sree, M.N.Srinivas and M.Chidambaram – 3rd International Conference on Trends in Industrial Measurements & Automation, Aug. 17-19, 2001, pp.5.7 to 5.17
6. A single method of tuning PID Controller for stable and unstable systems – M.Chidambaram R. Padma Sree and M.N.Srinivas – 3rd International Conference on Trends in Industrial Measurements & Automation, Aug. 17-19, 2001, pp.5.1 to 5.6
7. Model based PI Controller for pH Process – D.Swati, V.S.R.Rao, R.Pickhardt and M.Chidambaram – Proc.CHEMCON 2001, Chennai – Dec. 19-21, 2001, Paper TSM-168.
8. Closed loop identification of transfer function model- R.Padma Sree and M.Chidambaram – CHEMCON 2001.
9. Just how good is bubbly flow prediction in CFD codes? – S.Jayanti, V.M.Ratheesh, V.shringi, Paper No.889, 4th Int.Conf.on Multiphase Flow, May 2001, New Orleans, USA.
10. Motion of long bubbles in liquid-liquid flow – S.Jayanti, V.Murali, T.M.Nirmal, Paper 887, 4th Int.Conf.on Multiphase Flow, May 2001, New Orleans, USA.
11. Studies in NK granulation – D.V.S. Murthy and A.P. Rao-Proceedings of International Symposium on Particulate Science and technology, Madras (India), December, 1982, pp.235-241.
12. Studies in Pelletization of Phosphogypsum – D.V.S. Murthy and R. Pathiusman – Accepted at the 4th International symposium in Agglomeration, Toronto (Canada), 1985, pp.367-372.

Distinguished Visitors to the Department:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Dr.Krishna Venkataswamy, Sr.Manager, R&D, GAF Materials Corporation, wayne, NJ, USA	6 th Sept., 2001	Seminar Talk
2.	Mr.S.Saravana Priyan, Department of Chemical Engineering, University of California	27 th Dec., 2001	Seminar Talk
3.	Mr.Kaveri R Sowant, Centre for Catalytic Science and Technology, Department of Chemical Engineering, University of Delaware	18 th Dec., 2001	Seminar Talk
4.	Mr.Darrell Reeve, Australia	14 th Dec., 2001	Seminar Talk
5.	Dr.A.Bhaskar, Senior Research Chemical Engineer, Eastman Chemical Company, USA	11 th Dec., 2001	Seminar Talk
6.	Dr.R.Ravichandran, Director, Madras Institute of Nephrology, Vijaya Health Centre; Chief Nephrologist, Malar Hospital; Visiting Professor, Sri Ramachandra Medical College, Chennai and Tokyo Womens Medical College, Japan	16 th Nov., 2001	Seminar Talk
7.	Dr.P.Kanguane, Industrial Bio-Technology (B.Tech.), Bio-Informatics (Ph.D.), Scientist_BioInformatics, S*BIO PTE LTD, Science Park II, The Alpha #3-18, Singapore	9 th Nov., 2001	Special Lecture
8.	Prof.Sirish Shah, Chemical Engg.Department, University of Alberta, Edmonton, Canada	14 th Feb., 2002	Seminar Talk

5.3.6 Other Activities:

Dr.A.Kannan - Introduced various techniques on analytical measurements to the undergraduate students such as u v spectroscopy, gas chromatography, pH and conductivity vibrations. Also exposed students to interfacing with computers a typical experiment.

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.	22	22	-	-	-	44
Integrated Ph.D.	3	4	-	-	-	7
Ph.D.	28	14	15	10	36	103
Total	53	40	15	10	46	154

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	Tincy Lis Thomas	Ph.D	Third Asian Photochemical Conference	Jan6-11, 2002 BARC, Mumbai
2	J. Shobini	Ph.D	-do-	-do-
3	B.Bhaskar	Ph.D	National Bioorganic Symposium	Nov.6-7, 2001 Amritsar
Seminar:				
1	Rashmi	On materials science	Annual Seminar on Mat.Science, Max Planck Instt. School on NMR	Aug-Oct, 2001 Austria/ Germany
2	R.Sahoo	polymer synthesis NMR/ Σ SR		
3	Alok D.Bokare	DAE solid state physics symposium	44 th solid state physic symposium	26-31, Dec.2001 BARC, Mumbai
Symposia:				
1	T. Kannan	Ph.D	Discussion Meeting on Structural Biology and Symposium on Biophysics	Jan.21-23, 2002 University of Madras -do-
2	T. Lakshma- nan	Ph.D	-do-	-do-
3	Tincy Lis Thomas	Ph.D	Fourth National Symposium in chemistry	Feb.1-3, 2002 NCL, Pune

4	Ch.Subraman- nayan	Ph.D	CATSYMP-15 & IPCAT-2 National workshop on Catalysis	Jan.23-25, 2001 NCL, Pune Mar.8-10, 2002 Guwahati, Assam
5	K.K.V.Pre-neeth	Ph.D	Modern trends in inorganic chemistry	Dec.12-14, 2001
6	S.Vijayasa Radhi	Ph.D	XVI Carbohydrate Confe-rence	Dec.6-7, Tiruvan Thapuram
7	V.Selvamuru Gan	Ph.D	-do-	-do-
8	Braja Gopal Mishra	Ph.D	4 th National Symposium in chemistry	Feb.1-3, 2002 NCL, Pune
9	T.J.Dhillip Kumar	Ph.D	Quantum physics & information processing	Feb.18-27, 2002 TIFR, Mumbai
10	P.S. Hegde	Ph.D	International Conference on New Horijons in Biochemistry	April 18-21, 2001 Trivand-rum
11	Ms.G.Akila	Ph.D	-do-	-do-
12	Ms.S.Vijaya- lakshmi	Ph.D	-do-	-do-

4.4.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major area of specialization

Professors:

- | | |
|--|---|
| 1. N. Balasubramanian, Ph.D(IITM) | Analytical & environmental chemistry |
| 2. T.S. Chandra, Ph.D (IISc,B'lore) | Food Biochemistry, Biomass conversion Industrial enzymes |
| 3. N. Chandrakumar | Magnetic resonance imaging & spectroscopy; Chem. Physics; Instrumentation |
| 4. M.S. Gopinathan, Ph.D (IITK) | Quantum & Theoretical Chemistry, Molecular Spectroscopy, Nonlinear Dynamics & Chaos |
| 5. K. Lalitha, Ph.D (Mysore) | Biochemistry, Hydroperoxide metabolism ,Biotechnology |
| 6. S. Sankararaman, Ph.D (IISc,B'lore) | Organic chemistry |
| 7. M.N.Sudeendra Rao, Ph.D (IISc,B'lore) | Inorganic Chemistry |
| 8. G. Sundararajan, Ph.D (USA) | Organometallic chemistry, polymer synthesis, asymmetric synthesis |
| 9. S. Vancheesan, Ph.D (IITM) | Organometallics, homogeneous catalysis |
| 10. U.V. Varadaraju, Ph.D (IISc,B'lore)
Joint with MSRC | Solid State chemistry, Materials joint with MSRC science |
| 11. C.S.Venkatachalam, Ph.D(IITM) | Electrochemistry |
| 12. B.Viswanathan, Ph.D (IITM) [Head] | Surface Science, Materials Science, Catalysis, Physical Chemistry |

Associate Professors:

- | | |
|--------------------------------------|--|
| 13. Archita Patnaik, Ph.D (Varanasi) | Materials Science(Analytical/Physical chemistry) |
| 14. R.Dhamodharan, Ph.D (Mass,USA) | Macromolecular chemistry |

15. D. Loganathan, Ph.D (IITB) Bio-organic Chemistry, Carbohydrate Chemistry and Glycobiology
16. A.K. Mishra, Ph.D (IITK) Physical Photochemistry
Fluorescence Spectroscopy
17. T. Pradeep, Ph.D, (IISc, B'lore)
Joint with RSIC Chemical Physics, Spectroscopy, Ion chemistry, Monolayers, clusters
18. M.V. Sangaranarayanan, Ph.D
(IISc, B'lore) Electrochemistry
19. M.S. Subramanian, Ph.D (IITM) Analytical chemistry
20. T.K. Varadarajan, Ph.D (IITM) Physical Chemistry (Catalysis, Chemical Kinetics)
21. Vidyasagar, Ph.D (IISc, B'lore) Solid state chemistry
22. R.P. Viswanath, Ph.D (IITM) Physics, chemistry, catalysis

Assistant Professors:

23. Anju Chadha, Ph.D (IISc.B'lore) Bioorganic chemistry, Enzymes in organic synthesis and their mechanisms
24. P. Bhyrappa, Ph.D (IISc. B'lore) Bioinorganic chemistry
25. S. Baskaran, Ph.D (IIT Kanpur) Asymmetric synthesis, Natural product and organometallic chemistry
26. Indrapal Singh Aiden. Ph.D (Pune) Synthetic organic chemistry. Carbohydrate chemistry
27. K. Mangala Sunder, Ph.D (McGill) Theoretical Chemistry, Spectroscopy, Chemical Reaction Dynamics
28. N.Narasimha Murthy, Ph.D (IISc.B'lore) Bioinorganic, Inorganic spectroscopic methods
29. G. Ranga Rao, Ph.D (IISc.B'lore) Heterogenous catalysis, Materials and surface science
30. Sanjay Kumar, Ph.D (IIT Kanpur) Theoretical Molecular Reaction Dynamics Quantum chemistry

Emeritus Scientist:

1. R. Ramaswamy (AICTE) Physical chemistry

Emeritus Professor:

2. P.T. Manoharan Bioinorganic chemistry

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

S.No.	Coordinator(s)	Title	Period
Conference:			
1	Dr.B.Viswanathan	DST Workshop for M.Sc students - Surface chemistry and Catalysis	Dec.3-13, 2001
Workshop:			
1	Dr.B.Viswa-nathan	GMW / DST PAC	Feb.14-16, 2002
2	R.P. Viswanath	UNESCO Regional Training Programme in Environmental chemistry for SAARC Univ.Teachers	Dec.7 to 21, 2001
3	M.S.Subrama-nian		

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	T.S. Chandra	Workshop on rural energy policy and planning by MNES	Jan29 & 30, 2002	Bangalore
2	K. Lalitha	Techniques on cell and tissue culture for plant propagation	May 21 to 25, 2001	
3	G.Sundararajan	UGC Workshop	15.10.2001	
4	D.Loganathan	DST Winter School on Surface Science and Catalysis	05.12.2001	Dept Chemistry, IIT Madras
		Refresher Course in Organic Chemistry	03.12.2002	Dept Org Chem., Univ. Madras
Seminar:				
1	Archita Patnaik	Electron Transport in a-CH systems	29-30, Mar.2001	Utkal Univ
2	K. Vidyasagar	Hydro(solvo) thermal synthesis and applications	Jan 24-25, 2002	Tirunelveli
Symposia:				
1	T.S.Chandra	Cornell Univ.-Sathguru sponsored Intern.confrence on Biotechnology	Jan.3-6, 2002	Chennai
2	N.Chandra Kumar	Symposium on Biomedical Magnetic resonance	Jan 20-24, 2002	
3	R.Dhamodharan		Feb.1-3, 2002	Chemical Re.Society of India, Pune
4	D. Loganathan	Symposium on Current Perspectives in Organic Chemistry	Jan 24 & 25, 2002	IACS, Kolkata
5	K. Vidyasagar	Solid state and Materials chemistry	Dec,4-7, 2001	Bangalore
		Modern trends in Inorganic chemistry	Dec.12-14, 2001	Calcutta
Conference:				
1	B.Viswanathan	ACS Conference-ACS annual meeting	Aug.26 to Sept.2, 2001	Chicago
		Second International Chemical Conference	Dec.18-20, 2001	Singapore
2	T.S.Chandra	Annual Conference of the Soc.Biological Chemistry	Dec.2001	Hydrabad
3	N.Chandra-kumar	12 th Annual Conference – Indian Council of chemists	Dec.22-24, 2001	
4	Archita Patnaik	In molecule reactions in Fullerenes	15 th Annual conf. 22-23, Dec.2001	Orissa Cheml Society, Bhubanes-war
5	T. Pradeep	International seminar on solid state and materials chemistry	Dec.4-7, 2001	IISc., Bangalore
		4 th National symposium in chemistry	Feb.1-3, 2002	NCL, Pune
		Annual symposium of the materials research society of India	Feb.9-11, 2002	DMRL, Hyderabad
		IUPAC workshop on advanced materials II	Feb.13-16, 2002	JNCASR, Bangalore

6	Anju Chadha	International Conference on Stabilisation of Enzymes and Biosensors	Nov.26-28, 2001	VHS, Chennai
		Indo-japan Workshop on New Advanced Materials in Molecular Electronics	Dec.10-12, 2001	NPL, New Delhi

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of faculty	Topic of lecture	Venue and Date
1	N.Balasubramanian	Analytical methods for Air pollutants 2 lectures	4.10.2001 St.Josephs College, Trichy
2	N.Chandrakumar	Spins in chemistry biology & materials science Novel Experiments for invivo NMR imaging & spectroscopy	Mysore Univ. Dec.22, 2001 Sanjay Gandhi PG Instt, Medical Sciences, Lucknow, Jan.22, 2002
3.	Archita Patnaik	Molecular self organization an approach to molecular electronics	Ethiraj College Nov.26, 2001
4.	R. Dhamodharan	Phthorestst materials via polymer modification formulation, testing under deep UV	IISc., Bangalore June 23, 2001
5.	T. Pradeep	Nanoclusters Ice Chemistry Chemistry of molecular surfaces from monolayers to icc Structure and properties of monolayers on planar and cluster surfaces Clusters from molecules to materials From molecules to materials Materials and monolayers Structure and dynamics of monolayers	Pondicherry Engg.College, May 25, 2001 -do- Refresher course Raman Research Institute Aug.3, 2001 IISc., Bangalore De.7, 2001 SDNB Vaishnav College for women, Chennai Dec.10, 2001 NCL Pune Feb.3, 2002 DMRL, Hyderabad, Feb.9, 2002 JNCASR, Banga-lore, Feb.15, 2002
6.	M.V.Sangara-narayanan	Introduction to Electrochemical systems	Meenakshi College, Madras
7	Anju Chadha	Alternate Fuels, Focus on Non-edible oils and their esters Recent Trends in Organic chemistry Workshop on Catalysis	ONGC Chennai, Feb.18, 2002 AC Tech., Madras Univ.. Chennai Nov.28 & 30, 2001 IITM, Chennai, Dec.4-5, 2001
8	S.Baskaran	Asymmetric aldol reactions Modern synthetic transformation	Univ. of Madras, 27.11.2001 Univ.of Madras, 5.12.2001
9	Indrapal Singh	An introduction to Growing Importance of carbohydrates at the Interface of Chemistry & Biology—Part I -do-	Univ. of Madras, Nov.24, 2001 Univ. of Madras, Nov.28, 2001.
10	N.N. Murthy	Metal ions in biology	Pune Univ. Dec.13-16,2001
11	Sanjay Kumar	Metastable multiply charged ions	Pondicherry Uni-versity

Visits abroad by faculty:

S.No.	Name of faculty	Country visited	Date	Purpose of visit
1	Dr. B.Viswanathan	USA Singapore	Aug.20 to Sep.2, 2001 Dec.17-20, 2001	Conference
2	Dr.N.Chandrakumar	France	May-July, 2001	Visiting research Professor, INSERM, UJF, Grenoble
3	S.Sankararaman	Germany	May-July 2001	Collaborative research under Volkswagen Foundation project
4	G. Sundararajan	Sri Lanka USA	June 16-22, 2001 Aug.4-Sep.2, 2001	Conference + Visits
5	R.Dhamodharan	Austria	Sep.2001	To deliver a in-visited lecture at the 4 th Austrian National Polymer Meeting
6	D. Loganathan	USA	May 8 -July 10, 2001	Collaborative Research
7	M.V.Sangara-narayanan	USA	Sept.2-7, 2001	International Conference in Electrochemis-try
8	K. Vidyasagar	Germany	1-6-2001 to 28.8.2001	Research
9	Anju Chadha	Prague	Sep.10-21, 2001	Inspect and evaluate technology some Biotech
10	Indrapal Singh AIdhen	USA	May 14 to July 11, 2001	Academic Research work
11	N.N.Murthy	USA	May15-July15,2001	Collobrative research work
12	Sanjay Kumar	Germany	10.6.2001 to 9.7.2001	Under DST-DAAD collobrative research project

Honours and Awards obtained:

S.No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date
1	Dr.T.S.Chandra	Ariviyal Tamil Mamani Award Certificate of Honour for cause of educational excellence despite disability	Uratha Sindanal Tamil Assoc. Sathyalok Trust	Scientific achievements Excellen-ce in education despite physical handicap	April 24, 2001 Oct.2001
2	Dr.B.Viswanathan	CRS Medal	Chemical Research Society of India	For outstan-ding work	Feb.2002
3	Dr.T. Pradeep	MRSI Medal Tamilnadu Scientists Award(TANSA)	Material Research Society of India Tamilnadu Council for Science and Technology	Research -do-	Feb.9, 2002 Feb.28, 2002

Books, Monographs authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/co-author
Books:				
1	B.Viswanathan	Catalysis Principles and Applications	Narosa Publication	Mr.Sivasankar & A.V.Ramasamy
2	T. Pradeep	Catalysis: Principles and Applications	Narosa, New Delhi	Author of a chapter

3	M.V.Sangaranarayanan	Non-equilibrium thermodynamics – Principles & Applications	Macmillan India Ltd	C. Kalidas
4	Anju Chadha	Catalysis Principles and Applications	Narosa Publishing House	B.Viswanathan, S.Sivasankar & A.V. Ramaswamy
Monographs:				
5	R.P.Viswanath	Proceedings of training programme	UNESCO/	
6	M.S.Subramanian	Environmental chemistry	Dept. of chy	

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Level	Year of Admission
1	Anju Chadha	Life Member, Chemical Research Society of India – Humboldt Fellowship	2001
2	Dr.T.S.Chandra	Secretary of the Assoc. of Micro- biologists of India, Chennai Unit	
3	Dr.Archita Patnaik	Japan Society for promotion of sciences - Long Term	2002

4.4.4. Design and Development Activities:

New facilities added or major equipment procured through project funds:

Anju Chadha - Synthetic Organic chemistry and Biotransformations – with Laminar Flow. Shakers, Centrifuge, Rotovap with vacuum controller etc. and an HPLC with PDA and RI detectors to do Chiral analyses and any other HPLC analysis housed in a renovated room

Dr. S. Baskaran project One ultra-low temperature bath was poured through the DST

Patents filed:

- Dr. A K Mishra and Digambara Patra, A Fluorometric device for in situ Estimation of Adulterants in Liquid Petroleum Products, Patent (Indian) applied, May 2001.
- K.Priya & Anju Chadha : Lipase catalysed preparation of alkyl and aryl esters of Hydrocinnamic acid.
- Dr. S. Baskaran : One (USA, filed on Dec.21,2001) Novel heterocyclic compounds having antibacterial activity: process for their preparation and pharmaceutical composition containing them.

4.4.5 Research and Consultancy:

1. Anju Chadha – With TCL, Ranipet, TN since March 2001

Sponsored Research Projects :

S.No.	Title	Period	Funding agency	Amount (in lakhs)	Co-ordinators
1	Pressmud as biofertilizer for improving soil fertilizer and crop productivity	2001-2004	Indo-Swiss collaboration in Biotechnology with DBT	30.48	Dr.T.S.Chandra
2	Computer mediated instructional modules for concepts in applied Biotechnology	2000-2002	CCE.IITM	1.0	Dr.K.Lalitha

3	Novel cyclophanes with acetylenic bridges synthesis structure and reactivity studies	1999-2002	Volkswagen stiftung, Germany	DM 94,500	Dr.S.Sankararaman & Mr.H.Hopf (Germany)
4	Cyclophanes with novel molecular architecture and photochromism	2001-2004	CSIR New Delhi	10.63	Dr.Sankararaman
4	Application of nuclear magnetic resonance techniques in synthetic, mechanistic and structural identifications	2001-2003	DST	107.00	Dr.G.Sundararajan, K.K.Balasubramanian, S.Sankararaman, D.Loganathan, Indrapal Singh Aiden, MNS.Rao, K.Mangala Sunder
5	Synthesis of novel polymers by single site catalysts	2000 2002	DST	35.00	Dr.G.Sundaraajan, Dr.B.Viswanathan
6	Chiral organometallics for asymmetric synthesis	2002-2004	CSIR	15.00	Dr.G.Sundararajan
7	Synthesis and characterization... H-transfer reactions	2001-2003	CSIR	8.00	Dr.S.Vancheesan
8	Development of 25 watt liquid fuel direct methanol fuel cell (DMFC) stack	2000-2002	MNES	30.22	Dr.B.Viswanathan, IITM & Dr.K.S. Dhathathreyan, Spic Sci.Founda-tion
	Dev. of Novel metal hydride reactions	2002-2003	MNES		Dr.B.Viswanathan, IITM & Prof. S.Srinivasa Murthy, IITM
	Dev. of catalyst for production of Di-isopropylether as oxygenates	1999-2003	CPCL (MRL)	4.40	Dr.B.Viswanathan
9	Chemical modification in Fullerenes upon revil implantation	2002-2003	IUC-DAEF	2.69	Dr.Archita Patnaik
10	Anchoring and anchoring transitions ... on CB monolayers	2002-2005	CSIR	6.88	
11	Positive tone photoresist materials for deep UV image development synthesis, characterization and evaluation of lithographic performance	2001-2003	DRDO	23.60	Dr.R. Dhamodharan
12	Development of nanoscopic materials by Photo chemical and thermal graft from Processes	2002-2004	CSIR	8.60	Dr.R.Dhamodharan
13	Surface engineering of functional polymer coatings of controllable thickness on metals and oxide surfaces of nanoscopic dimension	2002-2004	DST	8.50	Dr.R. Dhamodharan

14	Glycosyl Amidophosphates: Novel Isosteric Analogues of Glycosyl Phosphates	2000-2002	CSIR	7.90	Dr. D.Loganathan
15	Monolayers on metal clusters	1999-2002	CSIR	6.63	Dr. T.Pradeep
16	Structure of monolayers assembled clusters superlattices	2000-2003	IUC	3.00	-do-
17	Nanocomposites as light sensors	2001-2003			
		1997-2002	ISRO	7.50	-do-
18	Tandem mass spectrometry and ion/surface collisions	2002-2005	DST	58.60	-do-
19	Nanoscope optical limiters		MIT	23.50	-do-
20	Analysis of charge transport...	1999-2002	DST	12.39	Dr.M.V.Sangaranarayanan
21	Analysis of transient electrochemical techniques	1998-2002	CSIR	6.88	Dr.M.V.Sangaranarayan
22	Novel synthesis of functionalised resins and extraction studies on the separation of uranium and thorium at trace levels	2001-2003	BRNS	9.80	Dr.M.S.Subramanian
23	Synthesis and structural characterization of novel microporous metal phosphates and phosphonates	1999-2002	BRNS	8.38	Dr.K.Vidyasagar
24	Biocatalytic preparation of optically pure α -Hydroxy acid esters: A Novel Deracemisation reaction	2000-2003	DST	16.90	Dr.Anju Chadha
25	Biocatalytic preparation of β -hydroxy esters	2001-2004	CSIR	6.00	
26	Towards an alternative fuel: biocatalytic conversion of natural glycerides to higher value products	2001-2003	MNES	22.70	
27	Nanoporous porphyrinic solids; design synthesis and their properties	1999-2002	DST	16.43	Dr.P.Bhyrappa
28	Molecular recognition and shape-selective ligation to metalloporphyrins	1999-2001			
		2002-2005	CSIR	8.38	-do-
29	Novel liquid crystalline porphyrins synthesis and their properties		DRDO	13.54	-do-
30	Epoxy....Natural products	2000-2003	DST	12.60	Dr.S.Baskaran
	Novel C2-symmetric.....Asymmetric transformations	2001-2004	CSIR	9.40	-do-

31	Designing valuable synthetic equivalents based on Weinreb amide Functionality and its applications	2001-2004	DST	18.00	Dr. Indrapal Singh Aidhen
32	Defunctionalisation of carbohydrates as a feed stock to manufacture of industrial chemicals	2001-2002	CSIR	22.00	-do-
33	Dynamics of proton scattering from simple molecules: A quantum mechanical study	2001-2004	DST	5.40	Dr. Sanjay Kumar
34	Study of formation of negative ions in the poly atomic molecules	2001-2003	DST-DAAD	5.20	Dr. S.V.K. Kumar, TIFR, Dr. Sanjay Kumar, IIT, Dr. S.D. Peyser-Rimhoff, Germany

Industrial Consultancy projects:

S.No.	Name of faculty	Title	Industry	Amount (in lakhs)
1	Dr. R. Dhamodharan	Development of Fast UV cure coatings	Premiere Group Holdings Ltd	3.00
2	-do-	To test PET specimens	Excise dept.	0.25
3	-do-	To quantitate styrene monomer in a shipment	Comtec Ltd Chennai	0.20
4	Dr. D. Loganathan	Lyophilization of Collagen-based wound care product	Eucare Pharmaceuticals Pvt Ltd, Chennai-83	0.16
5	T. Pradeep	Quantitative analysis of hydrogen samples	M/s Cetex Petrochemicals, KEC Intl., Chennai-68	0.06

RBIC projects

S.No.	Name of faculty	Title	Industry	Amount (in lakhs)
1	Dr. G. Sundararajan	Search for New Single-site catalysts	Reliance Industries Ltd.	10.00
2	Dr. B. Viswanathan	Development of anode materials	Columbian Chemical Co., Georgia.	\$ 33,000
3	T. Pradeep	Oxidation of CO on palladium clusters	DRDE 99-2001	4.91

Retainer Consultancy:

S.No.	Name of faculty	Title	Industry	Amount (in lakhs)
1	Dr. B. Viswanathan		International Spic Science Foundation	0.95
2	Dr. R. Dhamodharan & Dr. N. Balasubramania	Development of New Chemical Tags/Markers	M/s Tionale Impex Pvt Ltd	0.60

Exchange programme with other Universities:

Dr. G. Sundararajan:

Under the auspices of Third World Academy of Sciences Dr. Adel Harfoush, Department of Atomic Energy Commission, Damascus, Syria visited my laboratory to carry out research on olefin metathesis under photolytic conditions for a period of four months.

Dr. Archita Patnaik

Prof. Olga Vinogradova, Max-Planck Institute for polymer Science, Mainz, Germany

Dr. Sanjay Kumar

Funded by DST-DAAD , University of Bonn, Germany Institute of Physical and Theoretical Chemistry

Journal Editorial Boards:

S.No.	Name of faculty	Chairman/Member	Journal
1	Dr. K. Lalitha	Invited as editor	Journal Agri.Food-chem Biol.Trace.Elem. Res.
2	Dr.B.Viswanathan	Member Chief Editor	Indian J. Chemistry Sec.A Bulletin of Catalysis Society of India

Research Publications:

Total No. of papers published in Refereed National Journals	.. 13
Total No. of papers published in Refereed International Journals	.. 62
Total No. of papers presented in National Conference	.. 9
Total No. of papers presented in International conferences	.. 3

In Refereed National Journals:

1. N. Gayatri & N. Balasubramanian, Spectrophotometric determination of nitrite by the formation of bisazodye, Indian Journal of Chemistry, Vol.40 A, 656-658, June 2001
2. P.Killickiran, S.Sankararaman and H.Hopf, Synthesis and Photchemistry of 2,2-Di-tert-butyl-6-(4,4-di-tert-butylbuta 1,3-dienyl)-2H-pyran, Ind.J.Chem.Sec.B., 40B, 781-785, 2001
3. V.Raghuveer and B.Viswanathan, Perovskites as alternate anode materials for direct methanol fuel cells, Indian J Chemistry, 40A, 30 (2001).
4. B.Louis, B.Viswanathan, I.Nouranove and A.Renken, Partial oxidation of benzene catalysed by Heteropoly compounds, Indian J Chem., 40A, 837, 2001.
5. M.Aulice Scibioh, P.V.Rajan, V.R.Vijayaraghavan and B.Viswanathan , Reduction of CO₂ by nichel(II) macro cycle catalyst at HMDE, *Proc.Indian Acad.Sci.* 113, 343, 2001.
6. M Aulice Scibioh, B.Viswanathan and U R Vijayaraghavan, Influence of Soivent on the electrocatalytic behaviour of nickel (II) macrocyclic complex of 1,3,6,9,11,14 - Hexazacyclohexadecane towards the reduction of CO₂ at HMDE, *Bull.Electrochem.* 17, 397, 2001.
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11. S. Shanmugam, B.Viswanathan and T.K. Varadarajan, Esterification using solid acid catalysts, *Bull.catal.soc.India* 1, 1-5, 2002.
12. G.Ranga Rao, H.Nozyoe, Preparation of Sm-Ru bimetallic alloy films on Ru(0001) by vapour-deposition and annealing, *Bull.rater.Sci.*24, 583-586, 2001
13. G. Ranga Rao and H.R.Sahu, XRD and UV-VIS diffuse reflectance Ce-analysis of CeO₂-ZrO₂ solid solutions synthesized by combustion method, *Proc.Indian.Acad.Sci.(Chem.Sciences)*, 113, 651-658, 2001.

In Refereed International Journals:

1. K. Geetha & N. Balasubramanian, Spectrophotometric determination of Nitrite using Phenosafrinine, *Chem Anal (Warsaw)* 46, 579-588 (2001)
2. N. Gayathri & N. Balasubramanian, Spectrophotometric determination of sulphurdioxide in air using Thymolblue, *Journal of AOAC International* Vol.84, No.4,1065-1069, 2001
3. N. Gayathri & N. Balasubramanian, Determination of formaldehyde in effluents of Electroless plating baths, *Metal Finishing* vol.99, No/11, 33-36, 2001.
4. K. Geetha, & N. Balasubramanian, Determination of cyanide by an Indirect spectrophotometric method using Formaldehyde and 3 methyl-2-benzouriozolinone Hydrozone, *Analytical Letters*, 34 (14) 2507-2519, 2001.
5. A M J Hudson, Wkockenberger, M.Heidenreich, N. Chandrakumar, R. Kimmich, ^1H detected ^{13}C ECHO planar imaging, *J.Magn.Reson (^2) & R.W, Bowteu*, 2001
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10. K. Dhanalakshmi & G.Sundararajan, Conjugated polymers with ferrocenes as pendants or as end-groups, *J.Organometal.Chem.*645, 27-32, (2002)
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In Proceedings of National Conferences:

1. V.Raghuveer and B.Viswanathan, Pt/WO₃xTiO₂ as a possible alternate for DMFC anode, presented in catalysis symposium – 15 (CATSYMPO – 15), NCL Pune in Jan 23-25, 2001.
2. B.Rajesh and B.Viswanathan, Pt supported on conducting polymer as possible anodes for DMFC applications, CATSYMPO 15, NCL, Pune, presented in Jan 23-25, 2001.
3. Dr. K. Vidyasagar, Structural diversity of Novel tellurites in A/M/Te/O(A-alkalimetal, Ti, NH₄, M=Mo, W) systems, in SSCU silver jubilee International Symposium on "Solid state and materials chemistry" held during December 4-7, 2001 in Indian Institute of Science, Bangalore
4. Dr. K. Vidyasagar, Structural diversity of Novel tellurites in A/M/Te/O(A-alkalimetal, Ti, NH₄, M=Mo, W) systems, in the International Symposium on "Modern Trends in Inorganic chemistry" held during December 12-14, 2001 in Indian Association for the cultivation of Science, Kolkata.
5. R.P. Viswanath, Green cat. For air pollution control /proceedings UNESCO training programme in Environmental chemistry, IIT Madras, pp.127-131, Dec.2001.
6. P. Sasikumar, R.P. Viswanath, N. Balasubramanian and K.V. Gopalakrishnan, Testing of new catalyst for automobile exhaust treatment, Proc.XVII Natl.Conf. on IC Engines & combustion, Dec.2001.
7. B. Baskar & Anju Chadha, Quantitative Biocatalytic conversion of Racemic 2-Hydroxy acids and esters into one Enantiomer: A Novel Deracemisation Reaction, presented at the National Bioorganic Symposium 7, Amritsar, November6-7, 2001
8. P.Bhyrappa and Praneeth K.K.V., A new type of octaesser porphyrins and its metal complexes, synthesis and their properties, MTIC ix December 12-14, 2001.
9. S.Kumar and D.Mathur, Recent advances of atomic and molecular physics, (Phoenix.Pub.New Delhi) edited by R.Srivastava, P.178, 2001

In proceedings of International Conferences:

1. S. Vancheesan, Bidentate N₂donor complexes as catalysts for H-transfer reactions, Singapore International Chemical Conference II, P.209, Dec.18-2001
2. R. Dhamodharan, J.M. Nasrullah and S. Raja, Synthesis of Novel Functional-Polymers by the Chemical Modification of Polystyrene and the demonstration of selected applications, In the proceedings of the 5th Austrian Polymer meeting, held at Leoben, Austria, pp.75-90, between Sep.12-14, 2001.
3. I Basu, R. Reddy. E.Bhattacharya and Anju Chadha, Porous silicon based Biosensors: Estimation of Triglycerides, presented at the Indo-Japan Workshop on New Advanced Materials in Molecular Electronics, NPL, N.Delhi. Dec.10-12, 2001.

Distinguished Visitors to the Department:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1	Prof.Jagadese Vittal National Univ. of Singapore	Dec.26, 2002	Seminar + Discussion
2	Subhas Sikdar Environmental protection Agency, Cincinnati, Ohio	Dec.18, 2001	Seminar
3	Prof. R. V. Venkateswaran	Sep.06,2001	To deliver a Lecture
4	Prof. Danny L.Yeager Dept. of Chemistry, Texas, USA	Dec. 29, 2001 – Jan. 01, 2002	Seminar & Discussion
5	Dr. S. Althorpe INSA Royal Society	Feb.14-16, 2002	Discussion
6	Dr. B. Nestmann DST-DAAD	Feb.17-Mar.10, 2002	Collaborative Research Project

4.4.6 Other Activities:

- Dr. N. Chandrakumar: Member, CSIR-HRDG Research Committee for Chemical Science & Technology
Member, DST-Chemical Sciences Committee for Fast Tract Proposals
Member, Indian Academy of Sciences, Bangalore
Member, IUPAC National Committee
- Dr. Anju Chadha Collaboration with SPIC Science Foundation, Biotech Division for some bio-transformation Reactions

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

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

4.5.2. 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.

New Courses Introduced:

Sl.No.	Course No.	Title
1	CE403	Infrastructure Planning and Management
2	CE467	Case Studies in Structural Engineering

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech	47	43	40	45	-	175
Dual degree	9	9	9	10	-	37
M.Tech. -						
Building Technology	14	14	-	-	-	28
Environmental Engg.	7	7	-	-	-	14
Geotechnical Engg.	8	6	-	-	-	14
Hyd. & Water Res. Engg.	6	19	-	-	-	25
Structural Engg.	25	7	-	-	-	32
Transportation Engg.	7	6	-	-	-	13
M.Tech. -						
Construction Technology & Management	-	22	-	-	-	22
M.Tech. -						
Computational Engg.	10	11	-	-	-	21
M.S.	4	9	6	7	1	27
Ph.D.	8	10	10	2	8	38
Total	145	163	65	64	9	446

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

Sl. No.	Name of the student/scholar	Programme	Name of the Conf./ Seminar/ Symposium	Date and Venue
1.	Ms. Usha	MS	All India Seminar on Modern Trends in Steel Structures	
2.	S.Sambasiva Rao	MS	National Conference on Modern Trends in Steel Structures	7 - 8 Feb. 2002, Nagpur
3.	Ms. G.Srlakshmi	MS	Indian Geotechnical Conference - 2001	Dec. 2001, Indore

4.5.3. Faculty and their activities:

Faculty:

Name and Qualifications	Major Area of Specialization
Professors:	
Dr.H.Achyutha, Ph.D. (IITM)	Structural Engineering
Dr.R.Ambalavanan, Ph.D. (IITM)	Building Technology
Dr.P.K.Aravindan, Ph.D. (IITM)	Structural Engineering.
Dr. K. Elango, Ph.D. (IITM)	Hydraulic 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 Engineering
Dr.Nainan P Kurian, Ph.D. (IITM)	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 Engineering
Dr.V.Thamizh Arasan Ph.D. (IITM)	Transportation Engineering
Dr.B.S.Thandaveswara, Ph.D. (IISc Bangalore)	Hydraulic 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.Murthy, Ph.D. (Washington St)	Hydraulic Engineering
Dr.A.Ramachandraiah, Ph.D. (IITM)	Building Technology
Dr.K.Ramamurthy, Ph.D. (IITM)	Building Technology
Dr.K.N.Satyanarayana, Ph.D. (Cornell)	Building Technology

Dr.R.Sivanandan, Ph.D. (Virginia Tech.)	Transportation Engineering
Dr.Alagusundaramoorthy Ph.D.(IITM)	Structural Engineering
Dr.K.Ananthanarayanan, Ph.D. (IITM)	Building Technology
Shri.K.Gopalakrishna, M.Tech. (IIT Kanpur)	Environmental Engineering
Dr.Ligy Philip (Ms.) Ph.D. (IIT Kanpur)	Environmental Engineering
Dr.S.R.Satish Kumar, D.Engg. (Nagoya Univ.)	Structural 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.K.Ramamurthy Dr.K.Ananthanarayanan	Research Methodology to the new MS/Ph.D. scholars	Every Friday
Symposia:			
1.	Dr.S.R.Gandhi	Management of Ashponds	25-26 June 2001
2.	Dr.Devdas Menon Dr.R.Satish Kumar	Trends in Prestressed Concrete 2001	1-2 June 2001
3.	Dr.S.Mohan Dr.Koshy Varghese	Geographic Information Systems and Their Applications in Environmental Engineering(QIP - AICTE Programme)	4-9 June 2001
4.	Dr.S.Mohan	Training Programme on: "Rainfall Runoff Modelling" for PWD Engineers, Govt. of TamilNadu	26-29 June 2001
		Training Programme on : "Geographic Information Systems" TNPCC Engineers	6-7 Sept. 2001
5.	Dr.K.N.Satyanarayana	Project Management Training for Texas Instruments Engineers	May - Dec. 2001
		Project Management Training for General Electric (India)	Dec. 2001
6.	Dr.S.Mohan	Workshop on "Rainwater Harvesting"	15-16 Dec. 2001
7.	Dr.P.Alagsundaramoorthy Dr.M.Balasubramanian Dr.S.K.Malhotra Dr.R.Velmurugan	International Conference and Exhibition on Reinforced Plastics" in collaboration with FRP Institute, Chennai	7 - 9 Feb. 2002
8.	Dr.D.Balakrishnan Dr.M.S.Mathews Dr.K.N.Satyanarayana	Use of Power Tools in Restoration & Retrofit of Monuments	8- 9 March 2002

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

Sl. No.	Name of Faculty	Title	Institution	Period
Workshops:				
1.	Dr.K.Rajagopal	1 st National Workshop on Centrifuge Modelling	IIT Bombay	26-27 March 2002
2.	Dr.V.Kalyanaraman	An Overview on Steel Composite Structures	SAIL Bangalore	24 th Jan. 2002
Seminars:				
1.	Dr.V.Kalyanaraman	Aerospace Structures at Kodihalli, Bangalore	Bangalore	8-9 Feb. 2002
2.	Dr.V.Kalyanaraman	All India Seminar on Modern Trends in Steel Structures	Nagpur	8-9 Feb. 2002
3.	Dr.Satish Kumar	All India Seminar on Modern Trends in Steel Structures	Nagpur	8-9 Feb. 2002

Symposia:			
1.	Dr.K.N.Satyanarayana	Identification of Critical Risks in Indian Road Projects through Build, Operate and Transfer (BOT) Procurement Approach".	Trinidad 14-17 Jan. 2002
Conference:			
1.	Dr.P.Alagusundaramoorthy	National Symposium on New Materials and New Technologies in Bridge Engineering	24-25 Jan. 2002
		International Conference and Exhibition on Reinforced Plastics	7-9 Feb. 2002

Special Lectures Delivered by the Faculty in other Institutions:

S.No	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr.S.Mohan	Keynote Address	CBIT, Hyderabad, 5 th April 2001
2.	Dr.S.R.Gandhi	Lecture on Liquefaction Analysis & Remedial Measures	M.S.University, Baroda, 27-28 April 2001
3.	Dr.S.Mohan	Keynote Address	CBIT Hyderabad, 5 th April 2001
4.	Dr.V.Kalyanaraman	Multi-storeyed buildings - I, Steel Bridges-I, Steel Bridges-II	Calcutta 21-23 June, 2001
		Structural Steel Design for University Faculty	Calcutta, 14 th July, 2001
5.	Dr.S.R.Satish Kumar	Structural Steel Design for University Faculty	Calcutta, 14 th July, 2001
		Earthquake Resistant Construction - Introduction, Zoning, Codal Provisions and Design Options (Do's & Don'ts)	HUDCO, Chennai 25 th July, 2001
		Earthquake Resistant Construction - Technology Options (Do's & Don'ts)	HUDCO, Chennai 25 th July, 2001
6.	Dr.S.Gandhi	In-house Training programme on Orientation to Power Plant Techniques	9 th Sept. 2001
7.	Dr.K.Rajagopal	Controlled Yielding to Reduce Lateral Earth Pressures on Rigid Retaining Walls	Department of Civil Engineering, IIT Kanpur, 29 th Nov. 2001
		Model Testing and Analysis of Geocell supported embankments on soft clays	Department of Civil Engineering, IIT Kanpur, 29 th Nov. 2001
8.	Dr.Devdas Menon	Structural Reliability	Institute of Technology, Coimbatore, 26 th Nov. 2001
9.	Dr.B.S.Thandaveswara	Project Management of Common Effluent Treatment Plants - A field experience	Kongu Engineering College, Nov. 2001
10.	Dr.K.Ramamurthy	Passive Architecture and Energy Efficient Buildings	14 th Dec. 2001
11.	Dr.K.Rajagopal	Experimental and numerical Modeling of Geocell supported Embankments	Indian Geotechnical society, Kakinada 26 th Dec. 2001
12.	Dr.S.R.Gandhi	Pile Foundation & Ground Improvement	JNTU, Kakinada 26 th Dec. 2001
13.	Dr.K.Ramamurthy	Alternative Building Materials Chaired the Session	IISc. Bangalore 16-18 Jan. 2002
		Accelerated Masonry Construction with Interlocking Blocks	IISc. Bangalore 16 th January 2002
14.	Dr.K.Ananthanarayanan	PERT/CPM in Project Management	Thermal Training Institute, Tamilnadu Electricity Board, Ennore 29 th Jan. 2002

15.	Dr.V.Kalyanaraman	R & D Opportunities in Steel Structures	Anna University, Chennai, 3 rd Jan. 2002
16.	Dr.R.Sivanandan	Area Paper on Intelligent Transportation Systems (ITS)	62 nd Annual Session of Indian Roads Congress (IRC) held in Cochin, 8-11 Jan. 2002
17.	Dr.Devdas Menon	Frontiers of Technology in Structural Engineering	REC Calicut, 16 th Feb. 2002
18.	Dr.M.S.Mathews	Heritage Building in Seismic Zones	Government of Pondicherry, 21 Feb. 2002
19.	Dr.K.Ramamurthy	Vertical Transportation in Multistoreyed Buildings	INSTRUCT, Bangalore, 1st March 2002
20.	Dr.S.R.Gandhi	Ground Improvement Methods	Crescent Engineering College, 30 th March 2002
21.	Dr.B.S.Thandaveswara	Modern Trends in Water Resources Development and Environmental Management"	Key note address on 7 th March 2002, Vellore Institute of Technology, Vellore
22.	Dr.P.Alagusundaramoorthy	Fibre Reinforced Composites	SRM College of Engineering, Chennai, 7 th March 2002

Visits Abroad by Faculty:

Sl.No	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr.Devdas Menon Dr.S.R.Gandhi	Newport Beach, California	17.6.2001 to 29.6.2001	For paper presentation
2.	Dr.Devdas Menon Dr.S.R.Gandhi	University of California, San Diego	17.6.2001 to 29.6.2001	For paper presentation
3.	Dr.Nainan P Kurian	Turkey	Aug. 2001	To attend the XV International Conference on Soil Mechanics & Geo-technical engineering
4.	Dr.A.Ramachandraiah	Alabama, USA	17.5.2001 to 9.11.2001	To carry out joint research in the Auburn University, Alabama
5.	Dr.R.sivanandan	Australia	10.4.2001 to 11.4.2001	To attend a Workshop o GIS in Planning for Public Transport"
6.	Dr.M.S.Mathews	Germany	19.5.2001 to 11.7.2001	DAAD Short Term Invitation Programme
7.	Dr.R.Sivanandan	USA	19.5.2001 to 11.7.2001	For accepting the Research Fellowship at Virginia Tech. Transportation Institute, Virginia Tech. Blackburg, Virginia
8.	Dr.K.Srinivasan	Kentucky, USA	14.5.2001 to 11.7.2001	Visiting Professor

Honours and Awards obtained:

Sl.No	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr.Nainan P Kurian	ACCE(I) Nagadi Award for the best publication in Civil Engineering	Association of Consulting Civil Engineers (India)	Book "Design of Foundation Systems' Principles and Practices".	15 th June 2001
2.	Dr.K.Ramamurthy	IBC Medal for best paper	Indian Building Congress	Paper titled," Civil Engineering Education, Research and Development, Need for Wider Industry-Institute Interaction", 6 th annual convention of IBC, April 20-23, 2000	2001

3.	Dr.V.Kalyanaraman	Most outstanding Bridge National Award Competition 2001	Indian Institution of Bridge Engineers		
4.	Dr.R.Ambalavanan	Asia-Pacific Heritage Outstanding Project award	Culture Heritage Conservation	The Project Hotel de Orient Francis	Feb. 2002
5.	Dr.S.R.Gandhi	Best Paper award	IGS, Delhi	Best Paper	20 th Dec. 2001

Books / Monographs authored or co-authored:

Sl.No	Name(s) of Author(s)	Title of Text Book/ Monograph	Publisher
1.	A.Ramachandraiah Dr.Mudavallli Dr.P.K.Raju	Some Significant Aspects of Bio Acoustic Application on Bore and Spins	Prepared at AUBURN UNIVERSITY (U.S.A.)
2.	S.R.Gandhi, V.S.Raju and Vimal Kumar (Editors)	Management of Ashponds	Narosa Publishing House
3.	Devdas Menon (Editor)	'Trends in Prestressed Concrete'	Allied Publishers
4.	Dr.P.Alagusundaramoorth (Editor) & Rajaram Nagappa	Advances in Reinforced Plastics	Allied Publishers

Fellowships of Academies and Professional Societies:

S.No	Name of Faculty	Name of the Academy/ Professional Society	Level	Year of Admission
1.	Dr.B.S.Thandaveswara	Institution of Engineers, Calcutta	F/102972/6/11 O/CE	1994
		The Indian Association for Hydrologists, Roorkee	FM 119/1994	1994
2.	Dr.S.R.Gandhi	Indian Geotechnical Society (New Delhi)	Lif e Fellow	1997
3.	Dr.A.Ramachandraiah	Acoustical Society of India	Fellow	
4.	Shri.K.Gopalakrishna	Institution of Environmental Engineers New Delhi	Fellow	1998
5.	Dr.A.Ramachandraiah	Acoustical Society of America	Associate Member	

4.5.4 Design and Development Activities:

Brief and specific details of Process/Instruments/Equipments/Software Designed and Developed:

Computer Aided Design of Prestressed Concrete Railway Bridges", by Dr.V.Kalyanaraman

Dr.Nainan P Kurian developed a software for the geotechnical design of footing backfilled rafts and compensated rafts in c, ϕ , c- ϕ and layered soils

Dr.K.Rajagopal designed and developed special grips for tension testing of high strength and stiff geogrids.

Dr.K.Rajagopal designed and developed laboratory setup for determination of the strength between the facing blocks and reinforcement layers.

Dr.K.Srinivasan developed a Web course on "Water Resources Engineering".

New facilities added or major equipment procured through project funds:

Name of Equipment	Value in Rs.
HBM Amplifier System	3,06,320
Hydraulic Actuator	1,08,780
Horizontal Laminar Flow Bench Incubator	1,02,060
Electric Water Level Gauge.	1,46,600
Digital Load Indicator	21,500

Oscilloscope	1,81,865
DMA, DSC, TGDTA & DEM, TGDSC	49.03
Linear Table Diamond Wheel Cutting Machine	0.75
Table Top Mini Spray Dryer	4.75

4.5.5. Research and Consultancy:

Sponsored Research Projects:

Sl.No	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Structural Design of Reactor Vault for PFBR	2001-2002	IGCAR, Kalpakkam	9.90	Dr.P.K.Aravindan Dr.Devadas Menon Dr.A.Meher Prasad
2.	Intermittent Water Supply System: Design and Control	1997-2000	Department for International Development, South Bank, UK,	33.00	Dr.K.Elango
3.	Fuzzy Logic procedure for maintenance of irrigation and drainage	1998-2000 (Completion phase)	European Commission	71.00	Dr.K.Elango Dr.S.Mohan
4.					
5.	Bioremediation of Endosulphan Contaminated soils using bacterial isolates from contaminated soils	Three years from the date of receipt of the project funds	DST	8.70	Dr.Ligy Philip
6.	Infrastructure for Decision Support Systems for Cyclone Disaster Mitigation	1999-2001	MHRD, Government of India	12.00	Dr.K.N.Satya-narayana Dr.Koshy Varghese Dr.L.S.Ganesh Dr.C.Rajendran
7.	Study of Salt Water Intrusion in and Evolution of Strategies for Salt water Movement Control: Comparison between two cases in Italy (Sardinia) and in India (Tamilnadu)	19-7-01 to 18-10-02	Hydro Control Italy	4.13	Dr.S.Mohan
8.	Development of a Methodology for Enhancing Level of Safety at Traffic Signal	2001-2004	BMBF, Germany & IIT Madras	Provision for visits only	Dr.V.Thamizh Arasan Prof.Dr.Ing. Manfred Boltze, (Technical University of Darmstadt, Germany)
9.	A Knowledge based computing system for integrated engineering of steel railway bridges	1998-2001	DST	33.75	Dr.V.Kalyanaraman
10.	Smart control of instability	1998-2001	ISRO	9.33	Dr.V.Kalyanaraman
11.	Fly ash densification	1997-01	DST, Kothagudem	10.00	Dr. S.R. Gandhi
12.	Development of techniques for classification of urban features from remote sensed data for use in GIS applications	1997-2000	ISRO	7.50	Dr.Koshy Varghese Dr.B.Yegna-narayana Dr.Sukendu Das
13.	Infrastructure for Decision Support Systems for cyclone disaster mitigation	1999-2001	MHRD	12.00	Dr.K.N.Satya-narayana Dr.A.Meher Prasad Dr.L.S.Ganesh Dr.C.Rajendran Dr.Koshy Varghese

14.	Investigation of Genetic Algorithm based off-line path-planning for Cooperative Cranes in a construction work-cell environment	2000-2003	DST	12.00	Dr.Koshy Varghese Dr.Ramesh Babu
15.	Free Surface Flows	On going	CCE IIT	1.60	Dr.B.S.Thandaveswara
16.	Modernisation of Traffic Engineering Laboratory	1999-2000	MHRD (MODROBS Scheme)	5.00	Dr.R.Sivanandan
17.	Preparation of teaching resource material on Design of Steel Structures	1999-2001	INSDAG	33.56	Dr.V.Kalyanaraman Dr.S.R.Satish Kumar

Industrial Consultancy:

Sl.No.	Name of the Faculty	Title	Industry	Amount (in Lakhs)
1	Dr.P.K.Aravindaan Dr.Devdas Menon	Design of LNG Jetty at Dahej (Elevated loading platform and anchor bent)	Hochtief (India Ltd.	3.00
2	Dr.P.K.Aravindaan Dr.Devdas Menon	Rehabilitation and rectification of concrete structures in distress	Hindustan Petroleum Corporation	4.00
3	Dr.P.K.Aravindan Dr.S.R.Gandhi	Rehabilitation of Varrisors in LPG Bottling Plant	IOCL	12.00
4	Dr.P.K.Aravindan Dr.Chandramouli Dr.Devdas Menon Dr.A.Meher Prasad	Assessment of damages to berthing structures	Kochi Port Trust	3.50
5	Dr.P.K.Aravindan Dr.S.R.Gandhi	Construction of bridges and roadas for Vypeen bridge project under GEDA services	Cochin Port Trust	5.00
6	Dr.P.K.Aravindan Dr.Alagusundaramoorthy	Testing and Evaluation of GFRP fabric for strengthening concrete structures	FORSEC Chemicals	3.00
7	Dr.H.Achyutha	Relaxation Tests on prestressing wires & strands	Steel Industry	2.64
		Neoprene Bearings Acceptance Tests	Bearings' Manufacturers	1.77
		Calibration of Proving Rings	Sleeper Manufacturers	0.24
8	Dr.Achyutha Dr.Devadas enon	Strength Assessment of a Factory Building	Brittania India	0.10
9	Dr.R.Ambalavanan	Investigation on Ht Strand Samples	Gammon India Ltd.	0.09
		Concrete Mix design	Imma International Ltd.	0.30
		Concrete Mix design	National Highways - Tamil Nadu	0.40
		Investigation on concrete admixtures	MC-Baucgenue (India) Private Ltd.	1.00
		Non-destructive testing of foundation	Hariharan Foundation Pvt. Ltd.	0.20
		Concrete mix design	Bridge & Roof Co., (India) Ltd.	0.30
		Valuation of pile foundation	G.R.Thanga Maligai	0.10
		Investigation on A.C.roofing sheets	Bharat Petroleum Corporation Ltd.	0.08
		Non destructive testijg of Precase Quay Deck elements at Chennai Port	Acons Infrastructure Ltd.	0.25
Advice on manufacture and testing of concrete hollow, solid and paver blocks	Sri.Rajendran Concrete Blocks	0.25		

		Evaluation of floor hardner "INDFLOR"	Prodorite Snticorrosives Ltd	0.35
		Investigation on lightweight (Aerocon) Panels and blocks	Hyderabad Industries Ltd.	0.50
		Investigations on plywoods and decorated laminated sheets	Metropolitan Transport Corporation (Chennai) Ltd	0.15
		Investigation of structural stability of building	Panchathan Record Inn	0.25
		Experts opinion for noise/vibration level	High Court	0.05
		Concrete mix design	Garrison Engineer	0.20
		Investigations on reinforcing steel	Larsen & Toubro Limited	0.21
		Investigation on hollow / solid concrete blocks	Sri.Rajendran concrete Blocks	0.25
		Investigation on prestressing strands	Tata SSL Limited	0.25
		Design of Canopy structures for retail outlets	Indian Oil Corporation Ltd.	1.50
10	Dr.K.Elango	Flood Hydrology of Cheyyur Thermal Plant Site	NTPC, NIOT	2.00
11	Dr.S.R.Gandhi Dr.V.S.Raju	Foundation Design for Konaseema Power Plant	L & T Baroda	0.85
12	Dr.S.R.Gandhi	Raising of Ashdyke at NALCO	M.N.Dastur	6.40
13	Dr.S.R.Gandhi Dr.Devadas Menon	Inspection of Damage to Lighthouse in Gujarat	Lighthouse Dept.	0.95
14	Dr.S.R.Gandhi	Soild Investigation for various lighthouses in Chennai District	Lighthouse Dept.	3.60
		Design of Ashdyke at TNEB, Tuticorin	TNEB, Chennai	0.80
		Design of Barrier Blocks for underwater ranges	DRDO, Goa	1.00
		Fly ash for mine stowing at Manuguru	TIFAC	0.40
15	Dr.S.R.Gandhi Dr.R.Sundaravdivelu	Foundation for storage tank at Adani Port	M/s.Kvaener Cementation Ltd.,	0.80
16	Dr.S.R.Gandhi Dr.Devadas Menon	Pile Foundation for 70M heavy microwave tower in TE building compond at Perundudi Chennai	Telecom Civil Division	0.75
17	Dr.S.R.Gandhi Dr.R.Sundaravdivelu	Design of Barrier Blocks for underwater ranges	Navy at Portblair	2.00
18	Dr.A.Boominathan Dr.S.R.Gandhi Dr.N.R.Krishnaswamy	Dynamc lateral load test on piles at IOCL, Guwahati Refinary, Assam	M/s. Kaverner Cementation India Ltd, Calcutta	2.00
19	Dr.K.Rajagopal Dr.N.R.Krishnaswamy	Testing the Suitability of Geotextiles for use of Simhadri Power Plant	M/s. Bharat Heavy Electricals Limited, Chennai	0.95
20	Dr.A.Boominathan Dr.S.R.Gandhi Dr.N.R.Krishnaswamy	Evaluation of Dynamic Pile Parameters for IOCL - Barauni	M/s. Samsung Engg. Co. Ltd., IOCL, Barauni, Bihar	2.80
21	Dr.A.Boominathan Dr.S.R.Gandhi Dr.N.R.Krishnaswamy	Dynamic Pile Load Test at IOCL - Digboi	M/s. Larsen & Toubro Limited, Baroda	5.30
22	Dr.K.Rajagopal Dr.N.R.Krishnaswamy	Determiation of Characteristics of Coir Geotextiles	M/s. Central Coir Research Institute, Kerala	0.25
23	Dr.A.Boominathan Dr.S.R.Gandhi Dr.N.R.Krishnaswamy	In-situ Dynamic Pile Tests at IOCL - Barauni	M/s. Larsen & Toubro Limited, Chennai	2.70

24	Dr.A.Boominathan Dr.S.R.Gandhi Dr.N.R.Krishnaswamy	Dynamic Pile Testing at Guwahati Refinery SRU and U/O Unit	M/s. SiirTEC NIGI S.p.A.New Delhi	9.00
25	Dr.N.R.Krishnaswamy	Checking the Design and Drawings of Reinforced Earthwalls (Phase I)	M/s.Bharat Geosystems Private Limited Chennai - 41	0.50
26	Dr. S.Mohan Dr.R.Ambalavanan Dr.D.V.S.Murthy Dr.K.Ramamurthy Dr.S.Kumaraswamy	Design of Storm Water Treatment for Neyveli Lignite Corporation	NLC Ltd., Neyveli	6.50
27	Dr.S.Mohan	Advice on Return Flow Study on Periyar Main Canal	PWD, Govt. of Tamilnadu	0.28
28	Dr.S.Mohan Dr.K.Ramamurthy	Design of Rain Water Harvesting System	Electro Steel Castings Ltd., Neyveli	0.25
29	Dr.S.Mohan	Ground Water Samples Analysis and Advice on Water Samples Collection	NLC Ltd., Neyveli	1.80
		Development of Training Modules for GIS Application in Environmental Engineering	Tamilnadu Pollution Control Board, Chennai	2.50
30	Dr.S.B.Pattnaik Dr.R.Sivanandan	A study on Pedestrian Safety in T.Nagar area in Chennai	SURAKSHA Road Safety Society (NGO)	2625
31	Dr.K.Rajagopal Dr.N.R.Krishnaswamy Dr.S.Narasimha Rao	Slope Stability Analysis for Mine III Project	NLC Ltd, Neyveli	1.50
32	Dr.K.Rajagopal	Consultancy services for the construction of a reinforced earth system	AFCONS Infrastructure Ltdf., Chennai	0.35
		Technical Assistance for the construction of Landfill at Hindustan Zinc Ltd., Visakhapatnam	Gareware Wall Ropes Ltd., Pune	1.75
		Evaluation of the quality of a geogrid product	ARD polypack Ltd., Panchkula	0.15
		Recommendation of Geotextile Properties for construction of National Highway between Renigunta and Tirupati	R & B Division AP Government	0.85
33	Dr.V.Thamizh Arasan Dr.R.Sivanandan	Study of Railway Level Crossing Accidents	Southern Railway, Chennai	2.40
34	Dr.V.Thamizh Arasan	Geometric & Structural Design of Road Systems and Parking Facility for International Airport	M/s. HOCHTIEF India Pvt. Ltd., Chennai	2.00
		Design of Land Access Facilities and Preparation of BOA of Airport	M/s. HOCHTIEF India Pvt. Ltd., Chennai	2.00
		Bituminous Mix Design for Resurfacing of City Roads	Corporation of Chennai	0.50
		Mix design for SDBC work for surface course of BT Pavement	National Highways Department	0.50
		Derivation of Job Mix Formula for bituminous mixes for the road work in city area	Corporation of Chennai	0.60
		Mix design for resurfacing of BT roads with SDBC	Corporation of Chennai	0.50
		Design of Bituminous Mix for Resurfacing of Existing BT roads	Corporation of Chennai	0.50
		Mix design for Bituminous Road Surfacing Works	Corporation of Chennai	0.50
35	Dr.A.Boominathan	Site Parameters of Reactor Building of Kudankulam Atomic Power Project	Department of Atomic Energy	2.00

36	Dr.A.Boominathan Dr.R.Ambalavanan	Checking of 36.0 m tower foundation / sub-design	Das Lagerway Wind Turbines, Chennai	0.30
37	Dr.A.Boominathan Dr.S.R.Gandhi	Geotechnical Investigation at Vemagiri	Vax Consultants, Chennai	3.50
		Evaluation of ground parameters	BHPV Vizag	6.00
38	Dr.A.Boominathan	Geotechnical Investigation work at Oovery, Kancheepuram	PTLCN Trust, Chennai	0.85
		Crosshole shear wave logging at AES Kelanitissa, Colombo, Sri Lanka	L & T -ECC Chennai	1.25
38	Dr.Devdas Menon Dr.H.Achyutha	Structural Audit of terminal building at Chennai domestic airport	Airport Authority of India	1.60
39	Dr.Devdas Menon Dr.V.Kalyanaraman	Seismic upgrading of buildings at Bhavnagar	Carborundum Universal Ltd.,	0.30
40	Dr.P.K.Aravindaan Dr.Devdas Menon	Design of bridge across Pamba river at Thakazhi	Kerala Globe Construction Ltd.,	6.00
41	Dr.V.Kalyanaraman	Design of Cable-supported Pipe Bridge at Cochin	L & T Ramboll	0.60
42	Dr.B.S.Murty Dr.V.S.Raju	VTPS - Investigations on the condition of the cooling water canal	APGENCO	1.00
43	Dr.B.S.Murty Dr.V.S.Raju	Prakasm Barrage at Vijayawada: Investigations for assessment of the condition of the barrage and recommendations for maintenance	APGENCO	2.50
		Options for cooling water supply to VTPS	APGENCO	1.50
44	Sr.K.Gopalakrishna Dr.R.Ambalavanan	STP for NLC Neyveli	NLC, Neyveli	0.95
45	Sri.K.Gopalakrishna	Technical opinion on Cascade aerators	L & T Baroda	0.10
46	Sri.K.Gopalakrishna Dr.Ligy Philip	Examination of Bore Well Water, Bangalore	C.C.Construction, Chennai	0.20

RBIC:

Sl. No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	Dr.K.Rajagopal	Studies on the connection strength between geogrid and Pre-fabricated facing blocks	Garware Wall Ropes Ltd., Pune	2.47
2.	Dr. S.R. Gandhi	Development of in-situ test device and calibration.	Defence Research Development Organisation, Pune.	3.50
3.	Dr.K.Rajagopal	Studies on the connection strength between geogrid and pre-fabricated blocks	Garware Wall Ropes Ltd., Pune	2.50
4.	Dr.A.Boominathan Dr.S.R.Gandhi	Geotechnical Characterisation of PFBR site	IGCAR, Kalpakkam	3.075
5.	Dr.A.Boominathan Dr.S.R.Gandhi	Geotechnical Characterisation of spendt fuel storage facility site, Kalpakkam	IGCAR Kalpakkam	3.281
6.	Dr.K.N.Satyanarayana Dr.Koshy Varghese Dr.L.S.Ganesh Dr.S.K.Ramesh	Development of Software for Decision Support System required in the preparation of ICMAM plans for Goa and Gulf of Kutch - Department of Ocean Development	Dept. of Ocean Development	16.86
7.	Dr.K.N.Satyanarayana Dr.A.Meher Prasad Dr.L.S.Ganesh Dr.C.Rajendran Dr.Koshy Varghese Dr.Devdas Menon	Andhra Pradesh Hazard Mitigation and Emergency Cyclone Recovery Project	Government of Andhra Pradesh WL/Delft Hydraulics	11.05
8.	Dr.S.Mohan	Long duration of artificial recharge by injection wells in Neyveli	NLC Ltd.	6.50
		Water quality analysis and modelling in Neyveli	NLC Ltd.	17.00

		Geographic Information based regional micro level hydrological model for assessment of ground water recharge	NLC Ltd.	6.50
		Studies on rainfall - runoff relations in large /medium reservoirs and in selected tanks / tank chains	IWS, PWD	6.78
		Application of System Models for planning and management of water allocation	Krishnan Associates, Chennai	8.10
		Development of Optimal pumping plan for ground water pressure control for the existing and future mines at Neyveli and a comprehensive Regional Ground Water Simulation Model for Neyveli Basin	NLC Ltd.	11.50
		Modelling of the sea water intrusion in coastal aquifers	IWS, PWD, Chennai	1.24
9.	Dr.A.Meher Prasad Dr.S.R.Satishkumar	Structural and mechanised design of 6.4 m antenna ground station	NRSA. ISRO	2.90
10.	Dr.Devdas Menon Dr.A.Meher Prasad Dr.P.K.Aravindan	Structural Design of Reactor Vault for PFBR	IGCAR	9.95
11.	Dr.Satish Kumar	Fatigue Racketting in Straight Pipes	BARC (Bombay)	2.75

Retainer Consultancy:

S.No.	Name of the Faculty	Title	Industry	Amount (in Rs)
1.	Dr. S.R. Gandhi	For L&T ECC	L&T ECC	50,000/-
2.	Dr. S.R. Gandhi	For Fichtner Consulting Engineers	Fichtner Consulting Engineers	10,000/-

Journal Editorial Boards:

Sl.No	Name of Faculty	Level	Journal
1	Dr.B.S.Murthy	Editorial Board	ISH Journal of Hydraulic Engineering
2	Dr.B.S.Thandaveswara	Editorial Board	ISH Journal of Hydraulic Engineering
3.	Dr.V.Kalyanaraman	Editorial Board	Journal of Constructional Steel Research
4.	Dr.Nainan P Kurian	Editorial Board	Indian Geotechnical Journal

Research Publications:

No. of papers published in Referred National Journals	..	11
No. of papers published in International Journals	..	17
No. of papers presented in National Conference	..	32
No. of papers presented in International Conference	..	33

In Refereed National Journals:

1. Madhavi Latha G, Sujit Kumar Dash, K.Rajagopal and N.R.Krishnaswamy, "Finite Element Analysis of Strip Footing Supporting on Geocell Reinforced Sand Beds", Indian Geotechnical Journal, October 2001.
2. Rajagopal K and P.L.S.Ramakanth, "Finite Elements Study of the Subsidence in Longwall Coal Mines", JI., of Rock Mechanics and Tunnelling Technology, Vol.7, No.2, 93-111, 2001.
3. Thomas A V., K.N.Satyanarayana and K.Ananthanarayanan, "Management of Privatized Infrastructural Development in India; Key Issues", Civil Engineering Division, Journal of the Institution of Engineers (India), Vol.82, June 2001, pp.52-56.
4. Archana Gouthaman and Devdas Menon, "Increased cover specifications in IS 456: 200 - Crack-width implications in RC slabs", Indian Concrete Journal, Vol.75, No.9, Sept. 2001, pp.581-586.
5. Alagusundaramoorthy P, "FRP Compopsites for Civil Infra-Structure Applications, FRP Today, Vol.1(2001), pp.17-20.
6. Ramesh, K.V.S.S.N.S., Koshy Varghese and T.Sridharan, "Planning Construction Operations using Discrete event Simulation" Journal of Indian Institution of Engineers (Civil Engineering), December 2001.

7. Satya Pancharatnam & A.Ramachandraiah, "The Acoustics of Ragha Sudha Hall", Journal of Acoustical Society of India, Vol.29, pp.328-332, 2001.
8. Satya pancharatnam & A.Ramachandraiah, "Designing for performances – A comparative study", Journal of Acoustical Society of India, vol.29, pp.375-383, 2001.
9. Kandaswamy S, and A.Ramachandraiah, "Evaluation of Pr.En.12354 part 142 for Journal of Acoustical Society of India, pp.163-167, Vol.29, 2001.
10. Ramamurthy, K and .B.Anand, "Influence of construction method on the behaviour of interlocking block masonry", Journal of the Institution of Engineers(India), Civil Engineering Division, Vol.81, February 2001, pp.167-173.
11. Kurian N P. and N.G.Manoj Kumar, "A new continuous Winkler model for soil structure interaction", Journal of Structural Engineering, Jan. 2001, Vol.27, pp.269-276.

In Refereed International Journals:

1. Saravanan U, Srinivasan, M.Sivakumar and V.Kalyanaraman, "A study on the design and behaviour of smart antenna", Journal Smart Materials and Structures, pp.580-598., 2001
2. Prasad Rao, N., V.Kalyanaraman, "Non-linear behaviour of lattice panel of angle towers", Journal of Constructional Steel Research 57, pp. 1337-1357 , 2001.
3. Ramamurthy, K and K.B.Anand, "Classification of water permeation studies on masonry", Masonry International – The journal of British Masonry Society, Vol.14, No.3, 2001, pp.74-79.
4. Anand, K.B., and K.Ramamurthy, "Influence of construction method on water permeation of interlocking block masonry", ASCE Journal of Architectural Engineering Division, Vol.7, No.2, June 2001, pp. 52-56.
5. Padmini A.K., K.Ramamurthy and M.S.Mathews, "Behavior of concrete with low-strength bricks as lightweight coarse aggregate", Magazine of Concrete Research, Vol.53, No.6, Dec.2001, pp.367-375.
6. Dash, S.K., N.R.Krishnaswamy and K.Rajagopal, "Bearing capacity of Strip footings supported on geocell-reinforced sand", Journal of Geotextiles and Geomembranes, " ELSEVIER Publications, Vol.19, 2001, pp.235-256.
7. Dash, S.K., N.R.Krishnaswamy and K.Rajagopal, "Strip footing on geocell reinforced sand beds with additional planar reinforcement", Journal of Geotextiles and Geomembranes, ELSEVIER Publications, Vol.19, 2001, pp.529-538.
8. Iyer K.C., K.N.Satyanarayana and L.S.Ganesh, "Effects of Construction Contract Clauses on Occurrence of Disputes in India", Asia Pacific Building and Construction Management Journal , Vol.6, 2001, pp.13-24.
9. Mohapatra P K, S.Murty Bhallamudi and V.Easwaran, "Numerical study of flows with multiple free surfaces", International Journal for Numerical Methods in Fluids, Vol.36, pp. 165-184, 2001.
10. Ligy Philip and C.Venkobachar, "Insight into the Mechanism of Bio absorption of Cu(II) by B.Polymaxa, International Journal of Environment and Pollution, Vol.15, No.4, pp.448-460, 2001
11. Ghosh P K, Ligy Philip and M.Bamdyopadhyay, "Anaerobic Treatment of Atrazine bearing Wastewaters", Journal of Environmental Science and Health Part B, 36(3) 301-316.
12. Prabhu R.N., and Ligy Philip, "Development and Performance Evaluation of a Portable Filter for Arsenic Removal", International Journal of Water, Vol.2, No.1, pp.1-10, 2001.
13. Srinivas V V and K.Srinivasan, "A Hybrid Stochastic Model for Multiseason Streamflow Simulation" – Water Resources Research, 37(10), pp.2537-2549, 2001.
14. Srinivas V V and K.Srinivasan, "Post Blackening Approach for Modeling Periodic Streamflows", JI. Of Hydrology, Vol.241, pp.221-269, Elsevier Publications.
15. Thomas, M, K.Nsatyanarayana and Koshy Varghese, "A SWOT Analysis of the Indian Construction Industry" presented Symposium on Structural Engineering & Construction, National University of Singapore, December 2001.

16. Santhanam, M., Cohen, M.D. and Olek, "Sulphate Attack Research: whither now", Cement and Concrete Research, Vol.31, pp.845-851, 2001
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1. Hari K, K.Sree Harsha, H.Achyutha, V.Paramasivam, P.C.Koteswara Rao and S.Sivathanu Pillai, "Formulation of Consistive Laws for Prestressed Concrete in Tension", National Conference on Trends in Prestressed Concrete, June 182, 2001, pp.316.
2. Achyutha H, Praveen Parashar, N.P.Rajamane and C.V.Gokulratnam, "Comparison of Strength and Durability Properties of Concretes with and without Fly Ash having similar 28 day compressive strengths", Ibid, pp. 67-74.
3. Achyutha H, Praveen Parashar, N.P.Rajamane and C.V.Gokulratnam, "Influence of Silica Fume on Strength and Durability of Concretes of Different Water-Binder Ratios", Ibid, pp.75-82.
4. Ambalavanan R, "Use of blended cements for corrosion protection," Seminar on trends in corrosion protection of and steel rebars and concrete structures, Chennai, Sept, 2001, pp.43-50.
5. Jothiprakash V., S.Mohan and K.Elango, "Percolation Ponds - A rain water harvesting structure for sustainable drinking water supply", Proc. Of the *International Workshop on Environmental and Energy- 2001, Periyar Maniammai College of Technology for Women, Vallam, 1st to 3rd Nov. 2001, pp 3.
6. Jothiprakash V., K.Elango and S.Mohan, "Percolation Ponds - A source for sustainable drinking water supply in rural areas", Proc. Of the National Workshop on Water Resources and Water Quality Management for sustainable Drinking Water Supply, TWAD Board, Tamil Nadu, 16th to 17th Nov. 2001. Chennai, India, pp.85-90.
7. Jothiprakash V., S.Mohan and K.Elango, " Rainwater harvesting through percolation pond", Proceedings of the Workshop on Rainwater Harvesting, Indian Institute of Technology, Madras, 15th to 16th Dec. 2001, Chennai, India, pp.84-90.
8. Jothiprakash V, S.Mohan and K.Elango, "Rain Water Harvesting through percolations ponds", Proc. Of Workshop on Rain Water Harvesting, 15 - 16 Dec., 2001, IIT Madras, Chennai, pp.84-93.
9. Kalyanaraman V and Rony Raj Mathew, "Computer Aided Design of Prestressed Concrete Railway Bridges", Proceeding of National Conference on Trends in Prestressed Concrete, pp.167-178, IIT Madras, June 1-2, 2001
10. Kalyanaraman V, M.A.Rajeev and Rony Raj Mathew, "Object-oriented Modelling for the design of Railway Bridge Systems" Recent Developments in Structural Engineering, Proc. Of the Structural Engineering Convention, held from 29-31 October, Indian Institute of Technology, Roorkee, pp.593-604, 2001.
11. Mohan S, "Surface and Ground Water Management" Issues and Options", Proc. National Workshop on Management of Water Resources and Environmental Problems, Dec. 2001, pp.39-49 (Invited Paper)
12. Mathews M S, "Restoration of Earthquake Damage Monuments in Gujarat", International Seminar on Conservation of Stone Objects, Chennai, De. 2001.
13. Mathews M S, Somayahi, S.Ambedkar, "Effects of Fly Ash on strength and durability of Hydraulic Structures with various cement and concrete", 7th CNNLET/ACI International Conference on Flyash, Silica Fune, Chennai, July 2001
14. Mathews M S., Kasturba, "Study of stone weathering in National Art Gallery, Chennai, Strategies for conservation", International Conference on Stone Weathering and Atmospheric Pollution (SWAPNET 2001) 7-11 May 2001
15. Kurian N P, and V.M.Jayakrishna Devaki, "Analysis of the geotechnical performance of shell foundations", Proc. Indian Geotechnical Conference, Indore, Dec. 2001, Vol.I, pp.83-86.
16. Kurian N P, and G.Srilakshmi, "Studies of underreamed piles by the finite element method", Proc. of Indian Geotechnical Conference, Indore, Dec. 2001, Vol.I, pp.135-138.

17. Dash, S.K., K.Rajagopal and N.R.Krishnaswamy, "Influence of Additional Planar Reinforcement on the Behaviour of Geocell Mattress", Proceedings of Indian Geotechnical Conference, "The New Millennium Conference", Indore(M.P.)India, Dec.14-16, 2001.
18. Sivanandan R., "Need for Freeways in Chennai", Seminar on Status of Urban Infrastructure in Chennai, Anna University Chennai July 25, 2001, pp.52-53.
19. Keynote paper on "Passive Architecture and Energy Efficiency", In the Seminar on "One day seminar on Energy Efficiency" Organised by Anna University, IREDA, and Tamil Nadu Energy Development Agency, on 14th December 2001, Venue: Anna University
20. Madhavi Latha G, K.Rajagopal and N.R.Krishnaswamy, "Experimental and Numerical Modelling of Geocell Supported Embankments", Proc. Of Seminar on Ground Reinforcement and Amelioration Techniques, December 2001, IGS Kakinada, 19-38.
21. Thamizh Arasan V and G.V.Kiran Babu, "Cost-Benefit Analysis for Urban Grade - separated Intersection: A Case Study", Proceedings of the National Seminar on Modern Trends in Construction and Maintenance of Roads, Flyovers and Bridges, Bhubaneswa, 24-25 Nov. 2001, pp.II-117 -126.
22. Thamizh Arasan V and C.V.Saikumar, "Traffic Segregation on Urban Arterials: A Case Study (Abstract)", Highway Research Record No. 28, IRC Highway Research Board, 2001, pp.165-166.
23. Boominathan A, K. Dharavath and R. Ayothiraman, "An experimental study on the dynamic lateral response of single piles in cohesionless soil", Indian Geotechnical Conference (IGC-2001), Indore, Vol.1, pp.73-75.
24. Boominathan A, T.Apparao, and Ch.Ramana, A shaking table study on liquefaction of saturated fly ash during earthquakes, Indian Geotechnical Conference (IGC-2001), Indore, Vol.1, 327-329.
25. Boominathan A and S.Hari, "Liquefaction of fly ash", National Conference on Utilisation of Fly ash in the new millennium", Invited Paper, pp.36-41.
26. Kumaran G, Devdas Menon and N.Rajagopalan, "Optimal design of PSC railtract sleepers as per RDSO specifications", in proceedings of Conference on 'Trends in Prestressed Concrete', IIT Madras, Allied Publishers Ltd. June 2001, pp.101-108.
27. Kumaran G, Devdas Menon and K.Krishnan Nair, "Probabilistic assessment of safety of presatressed concrete railtrack sleepers", in Proceedings of Conference on 'Trends in Prestressed Concrete', IIT Madras, Allied Publishers Ltd. June 2001, pp.109-120.
28. Rajagopalan N and Devdas Menon, "Behaviour of segmentally erected composite decks", in proceedings of Conference on 'Trends in Prestressed Concrete', IIT Madras, Allied Publishers Ltd. June 2001, pp.243-252.
29. Alagusundaramoorthy P, R.Veera Sudarsana Reddy and B.Sivagurunathan, "Experimental Study on Ferrocement Columns, Proc. National Workshop on Advances in Structural Engineering, Tirupati, India, Dec.2001, pp.131-135.
30. Satish Kumar S.R and IAS Reddy, "Design of Stainless Steel Tubular Members", In National Conference on Modern Trends in Steel Structures, ACCE & IEI, Nagpur, 7-8, Feb. 2002.
31. Sambasiva Rao, S and S.R.Satish Kumar, "Design of Eccentrically Loaded Single Angle Struts", in National Conference on Modern Trends in Steel Structures, ACCE & IEI, Nagpur, 7-8 Feb. 2002.
32. Alagusundaramoorthy P, "Fiber Reinforced Polymer Composite Bridges", Proc. National Symposium on New Materials & New Technologies on Bridge Engineering, Madras, Jan. 2002, XI - X15.

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1. Sundaravadivelu R, M.R.Pranesh, R.Ambalavanan et.al., Rehabilitation of berthing structures by under-water grouting systems", International Conference in Ocean Engineering - 2001, December 2001, Chennai, pp.639-644.
2. Krishnan Nair, Devdas Menon and S.R.Gandhi, "Slope Stability of Embankments - a reliability study", Proc. Of Eighth International Conference on Structural Safety and Reliability, New Port Beach California, June 2001, Balkema
3. Devdas Menon, Krishnasn Nair and S.R.Gandhi, "Reliability analysis of excavation slopes in clayey soils", in proceedings of ASCE/ASME/SES Joint Conference on Mechanics of Materials", Symposium on Development in Geo-mechanics", San Diego, California, June 2001.

4. Sundaravadivelu R, S.R.Gandhi, K.Muthukumaran and Ashok Pitamber Trivedi, "Effect of Mudslides on Pile due to Dredging in Open Type Berthing Structures", in proceedings of "The Inaugural International Conference on Port and Maritime R & D and Technology", Singapore, 2001.
5. Ramachandraiah A., G.Maheswari, "Application of ANN for transmission loss characteristics" Paper presented at 143 meeting of Acoustical Society of America at Chicago U.S.
6. Swamy, S.K., and A.Ramachandraiah, VIII International Conference on Sound and Vibration, Hong Kong, China, July 2001, pp.375-383.
7. Kalyanaraman V and R.Satish Kumar, "Structural Steel for Earthquake Resistant Design". International Conference on Civil Engineering, Indian Institute of Science Bangalore, pp.279, 293. July 2001.
8. Sivanandan, R and K.Durga Rani, "Evaluation of Advanced Traffic Management Systems (ATMS), Applications for an Urban Highway Corridor in India", Technical Papers of International Seminar on sustainable Development in Road Transport, pp.1-469-483. Vol.I, organized by Indian Roads Congress (IRC) in association with Permanent International Association of Roads Congresses (PIARC), New Delhi, November 8-10, 2001
9. Rajagopal K, G.Madhavi Latha and N.R.Krishnaswamy, "Finite Element Analysis of Embankments Supported on Geocell Layer", Proceedings of the International Conference on Computer Methods and Advances in Geomechanics, Desai et.al (eds) 2001, Balkema, Rotterdam, ISBN 90 5809 183 X, 2001, pp.1251-1254.
10. Krishnaswamy N R, K.Rajagopal and Sujit Kumar Dash, "Comparison of Geocell, Planar Geogrid and Randomly Reinforced Earth Slabs, Proceedings of the International Conference on Civil Engineering, Theme: Ground Engineering" ground improvement Golden Jubilee Conference of the Department of Civil Engineering, Indian Institute of Science, Bangalore 12 held in July 2001.
11. Rajagopal K, and G.V.Ramesh, "Studies on the Behaviour of Soil Nailed Retaining Walls", Proceedings of International Conference on Civil Engineering, Bangalore, July 23-25, 2001, Vol.1, pp.943-950.
12. Thamizh Arasan V and Reebu Zachariah Koshy, "Energy Efficient Transportation Problems and Prospects", Proc. of International Seminar on Sustainable Development in Road Transport, New Delhi, 8-10, Nov. 2001, Vol. I, pp.513-529.
13. Mohan S, V.S.V.Ramkumar, "Modelling of Flood Plains using an Integrated Model of Remote Sensing and GIS", International Conference of Sustainable Development, April 2001, Visakapatnam, India.
14. Mohan S and R.Sankar, "Modelling a Coastal Aquifer System: A Case Study", International Conference of Sustainable Development, April, 2001, Visakapatnam, India
15. Mohan S and V.Jothiprakash, "Systems approach for conjunctive use of surface and ground water for irrigation - A Case Study", International Confernece on Civil Engineering, July 2001, Bangalore, India.
16. Mohan S, "Ground water modeling : Issues and Requirements", Proc. of International Workshop on Modelling in Hydrogeology, November, 2001, Anna University, Chennai, India, Allied Publishers, pp.3-16.
17. Kurian N P, "Fiber-reinforced backfills for retaining structures", Proc. XV International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul, Turkey, Aug. 2001, Vol.2, pp.1185-1188.
18. Thomas A V., K.N.Satyanarayana and Koshy Varghese, "An Analysis of Opportunities and Challenges for the Construction Industry in India", accepted for oral presentation in the Eighth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC - 8), Singapore, December 5-7, 2001.
19. Gopalakrishna K and S.Bharathidasan, "Performance Studies on Coconut Fibre Plith Based Absorbants for the removal of Zinc from Industrial Effluents", International Workshop on Environment and Energy, held in Thanjavur from 1-3, Nov. 2001.
20. Boominathan A, and S.Hari, "The use of geosynthetic mesh and fiber elements to improve liquefaction resistance of fly ash", Proc. of International Conference on civil Engineering, (ICCE-2001), Bangalore Vol.II, pp.794-800.
21. Boominathan A, J.Elango and R.Ayothiraman, "Lateral dynamic response of full scale single piles in clay", Proceedings of the Eighth East Asia-Pacific Conference on Structural Engineering & Construction (EASEC-B), Singapore, paper No.1526.

22. Boominathan A and S.Hari, "Liquefaction strength of fly ash reinforced with randomly distributed fibres", 10th International Conference on Solid Dynamics and Earthquake Engineering, Philadelphia, USA, Oct. 7-10I, 2001, p.6.
23. Devdas Menon, "Reliability analysis of RC Chimneys subject to along-wind loading", in Proceedings of Eighth International Conference on "Structural Safety and Reliability", Newport Beach, California, June 2001, Balkema.
24. Krishnan Nair K, A.Meher Prasad and Devdas menon, "Reliability analysis of moment resisting RC portal frames - a load combination study", in proceedings of First M.I.T. Conference on 'Computational Fluid and Solid Mechanics', Massachusetts Institute of Technology, Cambridge, June 2001, Elsevier Science Publishers.
25. Krishnan Nair K, A.Meher Prasad and Devdas menon, "Stochastic load combination studies for RC Buildings - a review", in proceedings of International Conference 'Civil Engineering', Indian Institute of Science, Bangalore, July 2001.
26. Sundar V, K.Ananthanarayanan and K.A.Roopsekar, "PROTECTION MEASURES NORTH OF MADRAS HARBOUR", International Conference in Ocean Engineering, pp.481-486, Dec. 11-14, 2001 held at Chennai.
27. Gopalakrishna K, "Performance studies on Cocoonut Fibre pith based absorbents for the removal of Zinc from Indian Wastes", paper presented in International Workshop on Environment & Energy, Vallam, Thankavur, Nov. 2001.
28. Rampair S, N.Mustapha, Ligy Philip and C.Venkobachar, "Design fabrication and Performance Evaluation of a Bench Scale UASB Reactor. WEFTEC Latin America 2001, Conference held in Puerto Rico during 11-14 No.v 2001.
29. Prashant Mukherjee and Ligy Philip, "COB Ore Removal of Arsenic from Water Environment International Conference on Advances in Civil Engineering held in Indian Institute of Technology, Kharagpur,, India, during 3-5 Jan., 2002.
30. Lalan Sanjay Lakshmi Chant and Ligy Philip, "Performance Evaluation of a Biofilter for the control of sulphurdioxide", International Conference on Advances in Civil Engineering held in Indian Institute of Technology, Kharagpur, India during 3-5 Jan, 2002.
31. Ghosh,P.K., Ligy Philip and M.Bandyopadhyay, "Effects of Atrazine on Methonogenic Activity of Anaerobic Mixed Microbial Culture", International Conference on Advances in Civil Engineering held in Indian Institute of Technology, Kharagpur, India during 3-5 Jan, 2002.
32. Alagusundaramoorthy P, I.E.Harik, and C.Cchoo, "Strengthening of Concrete Beams using CFRP Sheets and Fabrics, International Conference on Reinforced Plastics, IIT Madras, India, pp.139-147, Feb. 2002.
33. Madhav. M R. and S.R.Gandai, " Fly ash beds and their reclamation", in proceedings of International Workshop on light weight geo materials, organized by the Japanese Geotechnical Society, Tokyo (2002).

Distinguished Visitors to the Department:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Prof. Mahen Mahendran (QUT)	22 nd Jan. 2002	Gave Seminars
2.	Prof. Pavol Zavorsky , Associate Professor, Dept. of Electrical Engineering, Nagoka University of Technology, Japan	1 st Feb. 2002	Gave a talk about the students research opportunities available at various places in Japan
3.	Director IIT Madras	6 th & 11 th Feb. 2002	Visit of the Laboratories
4.	Prof.D.J.Victor, Retd. Prof. & Head, Department of Civil Engineering	15 th Feb. 2002	Gave a lecture on "Lessons from Bridge Failures"

4.5.6. Other Activities:

Dr.Nainan P Kurian coordinated on International Seminar on " Innovation and Restructuring in Industries and Institutions", organised by the Technical University of Berlin in collaboration with IIT Madras, in December 2000, at IIT Madras.

Dr.Nainan P Kurian served as Editorial Advisor to the Indian Concrete Journal, Mumbai

Dr Nainan P Kurian served as Reviewer of Research Reports for the CSIR New Delhi.

Dr.B.S.Thandaveswara served as GATE Chairman

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.S. and Ph.D. programmes.

4.6.2. Academic Programmes:

New Courses Introduced

Sl. No.	Course No.	Title
1	CS609	Technology Enhanced Learning & Teaching: Theory & Practice
2	CS632 P (Part-time Programme)	Software Architecture Theory and Practice
3	CS633	Digital Systems Testing and Testable Design
4	CS643	Optical Networks
5	CS647	Network Management Systems
6	CS652 (Regular)	Software Architecture Theory and Practice
7	CS665	Software Project Management

New discipline introduced :

M.Tech (Part-time) programme, in UOP mode, offering Information Technology stream & Software Engineering stream, introduced from July 2001, for participants from industries.

Students on Roll :

Programme	I Year	II Year	III Year	IV Year	V Year	Total
B.Tech	33	31	29	30	-	123
Dual Degree	7	7	6	7	-	27
M.Tech	36	39	-	-	-	75
M.Tech - Information Tech.	-	7	-	-	-	7
M.Tech. - Software Engg.	-	2	-	-	-	2
M.S.	17	26	15	10	1	69
Ph.D	7	6	6	6	1	26
Total	100	118	56	53	2	329

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

Sl. No	Name of the Student / Scholar	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
1.	Mr.P.C.Reghu Raj,	Ph.D (QIP)	Inter Research Institute Student Seminar in Computer Science 2002 (IRISS'02)	Bangalore
2.	Mr.B.S.Manoj	Ph.D (Infosys)	Inter Research Institute Student Seminar in Computer Science 2002 (IRISS'02)	Bangalore
3.	Mr.A.Nayeemulla Khan	Ph.D (Regular)	Inter Research Institute Student Seminar in Computer Science 2002 (IRISS'02)	Bangalore
4.	Mr.P.C.Reghu Raj	Ph.D (QIP)	International Conference on Industrial Mathematics (ICIM-2001)	12 - 14, August 2001, IIT Madras

5.	Mr.M.Sakthi Balan	Ph.D (Infosys)	Seventh International Conference on DNA Based Computers	10 – 13, June 2001, University of South Florida, Tampa, Florida, USA
6.	Mr.B.S.Manoj	Ph.D (Infosys)	IEEE International Conference on Computer Communication and Networks 2001	15 – 17, October 2001, USA
7.	Mr.T.Nagarjan	Ph.D (Reg)	Sixth Biennial Conference on Signal Processing and Communications(SPCOM '01)	17 – 18, June 2001, IISc, Bangalore
8.	Mr.Mohamed Abdul Karim Sadiq	Ph.D (Reg)	International Symposium on Artificial Intelligence	17 – 21, December, 2001, Kolhapur
9.	Mr.S.R.Mahadeva Prasanna	Ph.D (Reg)	Signal Processing and Communication (SPCOM '01)	14 – 19, August, 2001, Bangalore
10.	Mr.N.Sreenath	Ph.D (QIP)	9 th IEEE International conference on Networks (ICON 2001)	8 – 14, October 2001, Thailand

4.6.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialisation

PROFESSORS:

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

Computer Networks, Distributed Systems, Operating Systems, Performance Evaluation.

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, Cryptanalysis.

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

Research and development related to computer network and Protocols with emphasis on OSI and multimedia systems, Cryptography.

Raman S., Ph.D (IIT Madras) **[Head]**

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.

Yegnannarayana B., Ph.D (IISc)

Digital Signal Processing, Speech and Vision,
Voice Input/Output Systems, Neural Networks.

ASSOCIATE PROFESSORS:

Hema A Murthy Ph.D (IIT Madras)

Speech processing, Computer Graphics and
pattern recognition.

Janaki Ram D, Ph.D (IIT Delhi)

Distributed computing, Distributed Systems,
Software Engineering, Object Oriented
Systems, Database and CAD/CAM

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, Neural Networks,
Digital Systems.

Kamakoti V., Ph.D (IIT Madras)

Software for VLSI Design, Computational
Geometry, High Performance Computing.

VISITING FACULTY:

Narayanaswamy N.S., Ph.D (IISc)

Software for Information Management, Algorithms
& Complexity Theory.

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

S.No.	Co-ordinators	Title	Period
	Conference:		
1	C.Pandu Rangan V.Kamakoti	Second International Conference on Cryptology (INDOCRYPT 2001)	Dec 16-20, 2001
	Workshop:		
1	C. Pandu Rangan	Data Structures and Algorithms at Indian Institute of Information Technology and Management, Kerala	May 21-25, 2001

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

S.No.	Name of Faculty	Title	Period
	Workshop:		
1	S.V.Raghavan	Asian Bankers Forum, Singapore	28 th Feb., 2002 - 02 nd Mar., 2002
2	C. Pandu Rangan	MIT - SINGAPORE Alliance	3 days, at Singapore January 2001
	Conference:		
1	Kamala Krithivasan	SCI 2001 Florida USA	22-25 July, 2001

Special lectures delivered by the faculty in other Institutions:

S.No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	S.V.Raghavan	Cyber Crime	Police Training College, 18.03.2002, 19.03.2002
2.	S.V.Raghavan	Wireless Application Protocol	Anna University
3.	C.Pandu Rangan	Keynote Address on the occasion of inauguration of ACM students chapter	Janaki Ammal College, Coimbatore, Jul 4,2001

S.No.	Name of Faculty	Topic of Lecture	Venue and Date
4.	C.Pandu Rangan	Public Key Cryptosystems and Digital Signature	National Workshop on Coding Theory and Cryptography, at Cochin University of Science and Technology, Sep 5 - 8, 2001
5.	Kamala Krithivasan	Theory of Computation	CSI Machas value addition programme. Nov. 26 - Dec 1, 2001.
6.	S. Raman	Inauguration of Auditorium & Talk on "Data & Knowledge"	SKP Engg. College, Tiruvannamalai Dec 1, 2001
7.	S. Raman	Talk on "Content-based Search" TAP Program on "Industrial Information Services"	IC&SR, IIT Madras Feb 22, 2002

Visits abroad by faculty:

S.No.	Name of faculty	Country visited	Date	Purpose of visit
1.	S.V.Raghavan	Singapore	28-02-2002 - 02.03.2002	To attend Asian Bankers Forum Conference
2.	B.Yegnanarayana	USA	07.05.2001 - 11.05.2001	To attend and present paper at ICASSP - 2001
		USA	14.05.2001 - 16.05.2001	To present a paper at NIST Speaker Evaluation Workshop
		USA	16.05.2001 - 12.06.2001	Project review and discussions
3.	C.R.Muthukrishnan	France	14.05.2001 - 18.05.2001	To attend IFCPAR meeting
4.	Kamala Krithivasan	USA	21.07.2001 - 18.08.2001	To attend SCZ 2001 in Florida visited Binghampton, Syracuse, Albany, MIT Universities.
5.	C.Pandu Rangan	USA	01.07.2001- 27.07.2001	To participate in Microsoft Research Faculty Summit 2001

Books, Monographs authored or co-authored:

S.No.	Name(s) of Author(s)	Title of Text Book / Monograph	Publisher	Author / Co-author
1.	Prof.C.Siva Ram Murthy & Dr.G.Manimaran	Resource Management in Real-time Systems and Networks	MIT Press, USA, 2001.	
2.	Prof.C. Siva Ram Murthy and Dr.G. Mohan	WDM Optical Networks: Concepts, Design, and Algorithms	Prentice Hall, USA, 2002	
3.	Prof. C. Pandu Rangan	(Ed) Proceedings of Indocrypt 2001. Published as LNCS 1741 by Springer Verlag	Springer Verlag	co-authors C.Ding, Hong Kong University

Fellowships of Academies and Professional Societies:

Prof.C.Siva Ram Murthy has been elected as a Fellow of Indian National Academy of Engineering (FNAE).

Prof.C.Pandu Rangan is nominated by the Tamil Nadu State Government, as a Member of the Re-constitution of the Society of the Tamil Nadu Science and Technology for a period of 2 years.

4.6.4 Design & Development Activities:

Universal Learning Space
Flexible Floating Data Bases

New facilities added or major equipment procured through project funds:

Ernet Point of Presence; Fiber with 2MB x 16 capability

Setting up of the Digital and VLSI Software Laboratory.

Purchase of SUN Spare Server and Mentor Graphics Front end and Backend tools.

New state-of-art Departmental Computing Facilities have been set up, for relocating the Software, Hardware, VLSI, Workstation Labs and the Dept. Library.

4.6.4. Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	ERNET POP	2001 - 2003	MCIT	128 Kbps BW + Expenses	S.V.Raghavan
2.	Resource Management in High-Performance Real-Time Systems and Networks	2001-2006	Dept. of Science and Technology	32.74	C.Siva Ram Murthy
3.	FPGA-based Natural Language Command Interface for Robots	2001 - 2003	DST	14.66	S.Raman & S.Srinivasan, Elec. Engg.
4.	Web Technology	2 Years	MHRD	6.00	Dr. P.Sreenivasa Kumar Dr. Deepak Khemani
5.	Ground Based Autonomy	2 Years	ISRO	7.50	Dr. P. Sreenivasa Kumar Dr. Deepak Khemani
6.	On Board Autonomy	2 Years	ISRO	7.50	Dr. P. Sreenivasa Kumar Dr. Deepak Khemani
7.	Application of Formal Languages in computing environments	1999 - 2001	DST	9.16	Dr. Kamala Krithivasan
8.	Adaptive error control for ATM Network	3 years	DST	21.60	Prof. C. Pandu Rangan, Dr. S. V. Raghavan, Dr. Kamala Krithivasan

Industrial Consultancy:

S.No.	Name of Faculty	Title	Industry	Amount (in Lakhs)
1.	V. Kamakoti		A Theory India LLC.	3.00
2.	C. Pandu Rangan	Web Based Leasing	CBSI	3.50

Retainer Consultancy:

S.No.	Name of Faculty	Title	Industry	Amount (in Lakhs)
1.	S.V.Raghavan	IT Strategy and Securing Policy	IOB Bank	9.0
		IT Strategy and Business Prices Reengineering	TNSC Bank	12.0

Journal Editorial Boards:

S. No.	Name of the Faculty	Chairman/Member	Journal
1.	S.V.Raghavan	Editorial Board	Computer Communication
2.	D.Janaki Ram	Editorial Board	Proceedings of 4 th National Conference on Object Oriented Technology NCOOT-2001
3.	Prof. C. Pandu Rangan	Jc, of Universal Computer Science,	Member

Research Publications:

No. of papers published in Refereed International Journals	..	12
No. of papers presented in National Conferences	..	3
No. of papers presented in International Conferences	..	17

In Refereed International Journals:

1. S.J. Kowshik, S. Babu, G. Manimaran, and C. Siva Ram Murthy, "A Distributed Real-time MAC Protocol for WDM-based LANs", *Computer Communications*, vol. 24, no. 7-8, pp. 654-666, 2001.
2. N. Sreenath, G. Mohan and C. Siva Ram Murthy, "Virtual Source Based Multicast Routing in WDM Optical Networks", *Photonic Network Communications*, vol. 3, no. 3, pp. 217-230, 2001.
3. N. Sreenath, B.H. Gurucharan, G. Mohan, and C. Siva Ram Murthy, "A Two-Stage Approach for Virtual Topology Reconfiguration of WDM Optical Networks", *Optical Networks Magazine*, vol. 2, no. 3, pp. 58-71, 2001.
4. G. Mohan and C. Siva Ram Murthy, "Routing Dependable Connections in WDM Optical Networks", *Computer Communications*, vol. 24, no. 13, pp. 1225-1241, 2001.
5. Samphel Norden, G. Manimaran, and C. Siva Ram Murthy, "Dynamic Planning Based Protocols for Real-time Communication in LAN and Switched LAN Environments", *Computer Communications*, vol. 24, no. 13, pp. 1256-1271, 2001.
6. G. Mohan, C. Siva Ram Murthy, and Arun Somani, "Efficient Algorithms for Routing Dependable Connections in WDM Optical Networks", *IEEE/ACM Trans. on networking*, vol. 9, no. 5, pp. 533-566, 2001.
7. 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.
8. Mutyam Madhu and kamala Krithivasan, Contextual P Systems, *Journal of Fundamenta Informatics*, 49(1-3), 179-189, 2002.
9. K. Sharda and kamala Krithivasan, Fuzzy \dot{U} -automata, *Information Sciences*, 138, 257-281, 2001.
10. Muthyam Madhu and Kamala Krithivasan, P Systems with Dynamic Membrane Polarization, *Romanian J. of Information Science and Technology*, 4(1), 135-154, 2001.
11. Vanam Srilakshmi and Kamala Krithivasan, Minimum area polygons with two reflex angles enclosing k points, *Intern. J. Computer Math.*, Vol.77, pp.507-522, 2001.
12. K. Arthi and Kamala Krithivasan, Probabilistic Parallel Communicating Grammar Systems, *Intern. J. Computer Math.*, 2002, Vol. 79(1), pp.1-26, 2001.

In Proceedings of National Conferences:

1. Nayeemulla Khan and B. Yegnanarayana, "Developing a Speech Recognition System for Tamil for Small Restricted Tasks", presented at National Conference on Communications, Kanpur, Jan, 2001.
2. S. R. Mahadeva Prasanna, Suryakanth V. Gangashetty and B. Yegnanarayana, "Significance of Vowel Onset Point for Speech Analysis", presented at Signal Processing and Communications Conference, IISc Bangalore, July, 2001.
3. P.C. Reghu Raj and S. Raman "Content Identification and Semantic Approximation of Text Documents", presented in the First Inter-Research Institute Student Seminar (IRISS' 2002), IISc Bangalore, India March 28-29, 2002.

In Proceedings of International Conferences:

1. N. Sreenath, N. Krishna Mohan Reddy, G. Mohan, and C. Siva Ram Murthy, "Virtual Source Based Multicast Routing in WDM Networks with Sparse Light Splitting", in Proc. IEEE Workshop on High Performance Switching and Routing, Dallas, USA, May 29-31, 2001.
2. Ch. Vijaya Saradhi and C. Siva Ram Murthy, "Routing Differentiated Reliable Connections in Single and Multi-Fiber WDM Optical Networks", in Proc. Opticomm 2001, Denver, USA, August 20-24, pp. 24-35, 2001.
3. R. Ananthapadmanabha, B.S. Manoj, and C. Siva Ram Murthy, "Multi-hop Cellular Networks: Architecture and Routing Protocols", in Proc. 12th IEEE International Symposium on Personal, Indoor, and Mobile Radio Communication, San Diego, USA, September 30-October 3, 2001.

4. B.S. Manoj, R. Ananthapadmanabha, and C. Siva Ram Murthy, "Link Life Based Routing Protocol for Ad Hoc Wireless Networks", in Proc. 10th IEEE International Conference on Computer Communications and Networks, Arizona, USA, October 15-17, pp. 573-576, 2001.
5. Mutyam Madhu, Kamala Krithivasan Improved results about the university of P systems, EATCS Bulletin, 76 (Feb.2002), 162-168.
6. Mutyam Madhu and Kamala Krithivasan, contextual P systems, Pre-Proceedings of Workshop on Membrane Computing, Curteade Arges, Romania, August, 2001, Technical Report 17/01 of Research Group on Mathematical Linguistics, Rovira I Virgili University, Tarragona, Spain, 2001, 169-180.
7. Y. Sivasubramanyam and Kamala Krithivasan, Image Representation using Distributed Weighted Finite Automata, 8th International Workshop on combinatorial Image Analysis (IWCIA 2001), Philadelphia, August, 2001.
http://www.elsevier.nl/gej-ng/31/29/23/86/27/35/46010.Pdf
8. K. Arthi, Kamala Krithivasan and Erze'bet Csuha'j-Varju', On the Number of Rules in Components of Cooperating Distributed Grammar Systems with Probabilities, proceedings of DCAGRS, July 2001, Vienna.
9. K. Srinathan, C. Pandu Rangan and V. Kamakoti "Toward Optimal Player weights in Secure Distributed Protocols", appeared in Programme of International conference on Cryptology, (INDOCRYPT 2001), December 2001.
10. Suryakanth V. Gangashetty and S. R. Mahadeva Prasanna "Significance of Vowel Onset Point for Speech Recognition using Neural Network Models", presented at Fifth International Conference on Cognitive and Neural Systems held at Boston university, Boston (USA) from May 29-June 1, 2001.
11. S. P. Kishore, B. Yegnanarayana and Suryakanth V. Gangashetty, "Online Text-Independent Speaker Verification System using Autoassociative Neural Network Models", presented at International Joint Conference on Neural Networks held at Washington DC, from July 14-19, 2001.
12. Suryakanth V. Ganagashetty and B. Yegnanarayana, "Neural Network Models for Recognition of Consonant-Vowel (CⁿV) Utterances", presented at International Joint Conference on Neural Networks held at Washington DC, from July 14-19, 2001.
13. D. Devaraj and B. Yegnanarayana, "Performance of Neural Network based Contingency Selection with Reduced Input Features", Intelligent System Application to Power Systems Conference, Hungary, June 2001.
14. B. Yegnanarayana, K. Sharat Reddy and S. P. Kishore, "Source and System Features for Speaker Recognition using AANN Models", presented at International Conference on Acoustics, Speech and Signal Processing, Saltlake City, May, 2001.
15. Vadali Srinivasa Murthy and S. Raman "Word Matching Algorithm in Information Processing", presented In International Conference on Control Instrumentation and Information Communication (CIIC-2001), Kolkata, December 12-15,2001.
16. P.C. Raghu Raj and S. Raman "An Algorithm for NLP-based Document Classification for Effective Web Search", presented in International Conference on Industrial Mathematics (ICIM 2001), IIT Madras, India, August 12-14, 2001.
17. S. Sankaran and S. Raman "A feature-based probabilistic algorithm for text classification", presented in International Conference on Industrial Mathematics (ICIM 2001), IIT Madras, India August 12-14, 2001.

Distinguished Visitors to the Department:

S.No.	Name of the Visitor and Designation	Date of Visit
1.	A delegation from the Institute for Information Industry, Taipei, Taiwan	23 rd June 2001
2.	Prof.Thomas Ottman from University of Freiburg, Germany	23-24 Aug. 2001
3.	A delegation from Brazil	25 th August 2001
4.	A delegation comprising of the Vice-Chancellor, Deputy Vice Chancellor and Deans of the Universiti Teknologi Malaysia	27 th August 2001
5.	Dr.John Keen, Atheors Komuniciations, USA	28 th August 2001
6.	A delegation from Singapore Ministry of Commerce headed by Mr.Richard Tan	
7.	Dr.Rajmohan Rajaram, Assistant Professor, North Eastern University, USA	12 th Sept. 2001
8.	Mr.V.Narayanan, Consultant, Centre of the International Co-operation for Computerization, Singapore	21 st Sept. 2001

S.No.	Name of the Visitor and Designation	Date of Visit
9.	A team from Nepal, consisting of Vice-chancellors and Administrators of 4 Universities, and a UGC Member-Secretary	2 nd November 2001
10.	Kent Ridge Digital Labs (KRDL), team led by Dr.Desai Narasimhulu, NUS, Singapore	26 th October 2001
11.	Mr.A.Ramamurthy, Managing Director, Life Insurance Corporation, Mumbai	2 nd November 2001
12.	Mr.Urabe Koichiro and Mr.Suzuki Shinya, Japanese Ministry representatives along with Mr.V.Narayanan of CICC (Center of the International Co-operation for Computerization), Singapore	14 th Dec. 2001
13.	Mr.Shishpal Rawat of Intel, USA	9 th January, 2002
14.	Mr.S.Shankar, President, American Megatrends, Atlanta Georgia, USA	21 st January, 2002
15.	Mr.Tomohide Uchida, Economic Adviser, Embassy of Japan, Bangladesh	23 rd January, 2002
16.	Dr.Ravi Ravikumar, Dr.Mukesh Doble and Ms.Parina from GE India, Bangalore	24 th January, 2002
17.	Led by Ms.Ulrike Flach, a delegation of Parliamentarians from Federal Republic of Germany	5 th February, 2002
18.	23 participants from 17 countries participating in the "Overseas Training Course" on Computer Application and Education & Management" held by TTTI, Taramani	6 th February, 2002
19.	Mr. Suzuki of Nagaoka University, Japan, for discussion on his Web Page survey	19 th March 2002

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

Circuits and Instrumentation:

- Digital Systems and VLSI Laboratory
- Measurements and Instrumentation Laboratory

Power Systems, Machines and Drives:

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

Microelectronics:

- Microelectronics Laboratory
- Amorphous Semiconductor Devices 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
2. Energy Systems
3. Microelectronics
4. Control and Instrumentation

Integrated M.Tech. Degree

Five year integrated M.Tech. Programme is offered in two streams:

1. Communication Systems
2. Microelectronics

Five year Integrated M.Tech programme in Power Systems and Power Electronics will be offered with effect from August 2002.

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

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

New Courses Introduced:

Sl. No.	Course No.	Title
1	EE 507	Instrumentation Engineering
2	EE 503	Introduction to Digital Signal Processing
3	EE 592	High Voltage Technology
4	EE 599	Digital simulation of power systems
5	EE 598	Distributed Power Systems

6	EE 593	Power quality and reliability
7	EE 687	Knowledge based system in power engineering

Students on Roll

Sl. No.	Programme	I year	II year	III year	IV year	V year	Total
1.	B.Tech.	85	84	95	95	-	359
2.	Dual Degree - Micro Elec. & VLSI Design Comm. Systems	9 10	10 9	9 7	10 9	- -	38 35
3.	M.Tech. - Comm. Systems Energy Systems Engg. Micro Electronics Control & Ins. Systems	14 12 12 13	20 14 22 15	- - - -	- - - -	- - - -	34 26 34 28
4.	M.Tech. - Digital Signal Processing	-	9	-	-	-	9
5.	M.S	12	16	14	11	4	57
6.	Ph.D.	9	3	3	2	7	24
	Total	176	202	128	127	11	644

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
Conference:				
1.	P.Uma Maheswara Rao	Paper Presentation	IPEC-2001	17-19 May 2001, Singapore.
2.	P.Uma Maheswara Rao	Paper Presentation	ISH-2001	21 st August 2001 Bangalore.
3.	P.Uma Maheswara Rao	Paper Presentation	National Frontiers	21 st Feb 2001 IIT Kharagpur.
4.	Paravathi Rani	Paper Presentation	Prastuti-2002	Jan 2002, BHU.
5.	R.Manjula	Paper Presentation	Prastuti-2002	Jan 2002, BHU.
6.	N.Hulemma	Paper Presentation	Prastuti-2002	Jan 2002, BHU.
7.	Siddharth Ray	Paper Presentation	IEEE ACE	Nov 2001, New Delhi.
8.	Vineeth Jain	Paper Presentation	IEEE ACE	Nov 2001, New Delhi.
9.	Rakshe Tejas	Paper Presentation	IEEE ACE	Nov 2001, New Delhi
10.	K.Basu	Paper Presentation	Stabilisation of enzymes and bio sensors	Nov 2001 Chennai.
Seminar:				
1.	Mr.Roy Paily	Paper Presentation	Workshop on physics of semiconductor devices.	Dec 2001.
2.	Mr.Guru Prasad Katti	Paper Presentation	Workshop on physics of semiconductor devices.	Dec 2001.

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)

Semiconductor Fabrication

M.V.Chalapathi Rao Ph.D (IITM)	Control Theory
C. Eswaran Ph.D(IITM)	Networks, Digital Filters, Microprocessors
V.Jagadeesh Kumar,Ph.D.(IIT Madras)	Measurements, Instrumentation
P.A.Janakiraman,Ph.D.(IIT Madras)	Robotics, Control Systems, Instrumentation
A. Jhunjhunwala, Ph.D (Maine)	Communication Networks, Fibre optics, Surface Acoustic Wave Devices.
M.S.Narasimhan,Ph.D.(IIT Bombay)	Antenna Engineering, Applied Electromagnetics
K.M.M.Prabhu,Ph.D.(IIT Madras)	Signal Processing
K.Radhakrishna Rao, Ph.D.(IIT Kanpur)	VLSI, Analog and Digital ICs
K.Ramar,Ph.D.(IIT Madras)	Power Systems, Computer Applications
P. Sankaran Ph.D(IITM)	Networks, Magnetic Materials
G.Sridhara Rao,Ph.D.(IIT Madras)	Machines, Power Electronics, Simulation.
S.Srinivasan,Ph.D.(IIT Madras)	Digital Design, DSP Architecture and applications VLSI Design.
P.R.Vaya,Ph.D.(IIT Madras)	Semiconductor Devices
V.Venkata Rao,Ph.D.(Iowa)	Digital Signal Processing, Communications.
C.Venakataseshaiah,Ph.D.(IIT Madras) [Head]	High Voltage Engineering, Power Systems.
Associate Professors:	
Amitava Dasgupta,Ph.D.(IIT Kharagpur)	Si and GaAs Devices ,Technology and Simulation
R.Aravind,Ph.D.(California)	Image Processing and Compression
C.Dattatreyan,Ph.D.(Sheffield)	Microwaves
Devendra jallhal,Ph.D.(Duke)	Statistical Signal Processing
Enakshi Bhattacharya,Ph.D.(TIFR Bombay)	Semiconductor materia! and Devices.
S.Karmalkar,Ph.D. (IIT Madras)	VLSI, Semiconductor Devices
Nandita Dasgupta,Ph.D (IIT Madras)	Si and III-V Semiconductor Devices, Tech, Simulation
P.Sasidhara Rao,Ph.D.(IIT Madras)	Electrical Machines.
K.Giridhar,Ph.D.(California)	Communication and Signal Processing.
Hari Ramachandran Ph.D (California)	Electromagnetic Fields, Optical Networks
Assistant Professors:	
M.Antony Reddy,Ph.D.(IIT Madras)	Electronic Circuits

V.Jayashankar Ph.D (Anna. Uni.) Krishna Vasudevan, Ph.D.(IIT Madras)	Instrumentation and Measurement, High Voltage. Power Electronics
M.Krishnamurthi, M.Tech (IIT Madras)	Power Systems
P.C.Majhee, M.Tech (IIT Madras)	Measurements, Instrumentation
G.T.Manohar, M.Tech (IIT Madras)	Microprocessors, control systems
C.Mathiazhagan, Ph.D (Univ. California)	RF, Analog Circuits for Telematics.
R. Manivasakam Ph.D (IIT Bombay)	Communication Networks.
A.N. Rajagopalan Ph.D (IITB)	Image Processing and Computer Vision
C. S. Ramalingam Ph.D (URI)	Digital Signal Processing and Speech Recognition and Speech Coding
R.Sarathi, Ph.D.(IISc)	High voltage Engineering
Srinivas Chakravarthy Ph.D (Austin)	Neural Networks, Handwritten script Characterisation
K.Sridharan, Ph.D (RPI, NY)	Robotics, Graphics, Web Programming
K.S. Swarup PhD (IISc)	Power systems, ANN, Distribution Automation
T.G.Venkatesh, Ph.D.(IISc)	Computer Architecture and Networks.
Vinita Vasudeven, Ph.D (IIT Bombay)	CAD for VLSI, VLSI Design
T.J.Vitto, Ph.D (IIT Madras)	Semiconductors.
Senior Design Engineer:	
P.Ramaseshagiri Rao, M.S(IIT Madras)	Semiconductor Fabrication
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. Ashok Jhunjunwala	Introduction to Optical Networking	14-15 Aug. 2001
2	Prof. Ashok Jhunjunwala Dr. Aravind	"IP/Optical Internetworking Standards: Examining the Progress Being Made by Standards Groups" for Centre for Intelligent Optical Networks.	30 th Aug. 2001
3	Prof. V. Jagadeesh kumar	National Symposium on Systems	Oct. 2001
4	Dr. R.Sarathi Prof.C.Venkateshaiah	Recent trends in High Voltage Testing Techniques	12 th & 18 th Dec. 2001
5	Prof. Ashok Jhunjunwala Prof. K.M.M. Prabhu	Digital Signal Processing and Applications	3-15 Dec. 2001
6	Prof. Ashok Jhunjunwala	Workshop on Multi-Media over IP Networks, TeNet Group & Real Chip,	20 th Dec. 2001
7	Prof. Ashok Jhunjunwala	Indo-UK workshop on "The changing world of Telecommunications"	10 th Jan 2002
8	Prof. K.M.M. Prabhu	Digital Signal processors and applications	16 th Jan-23 rd March 2002

9	Prof. K.M.M. Prabhu	Digital Signal processors and applications	21 st February - 8 th March 2002
10	Prof. Ashok Jhunjunwala	Technology Symposium of HP-IITM R&D Lab for Technologies for Developing market at IITM	28 th Feb. 2002

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

Sl. No.	Name of Faculty	Title	Institution	Period
1	Dr. T.G. Venkatesh	Suns 2001 Java conference	San Francisco, USA	June 4-8,2001
2	Dr. Amitava Dasgupta	The International MEMS workshop	National university of Singapore	July 4-6, 2001
3	Dr. Nandita Dasgupta	The International MEMS workshop	National university of Singapore	July 4-6, 2001
4	Dr. K.N. Bhat	The International MEMS workshop	National university of Singapore	July 4-6, 2001
5	Mr. P.R.S. Rao	The International MEMS workshop	National university of Singapore	July 4-6, 2001
6	Dr. Nandita Dasgupta	Meeting on pulsed Laser Deposition	Indore	26 th Nov 2001
7	Dr. R. Sarathi	12 th International Symposium on High Voltages	IISC, Bangalore	21-26 Aug. 2001
8	Dr. C.Venkateshiah	12 th International Symposium on High Voltages	IISC, Bangalore	21-26 Aug. 2001
9	Dr. V.Jagadeeshkumar	Seminar on Instrumentation Engineering	Hyderabad	14-16 July 2001
10	Dr. P.R. Vaya	Int. Conf. On Broad band optical fibre communication	North Maharashtra University, Jalgaon	Dec. 2001
11	Dr. K.N. Bhat	Eleventh Int. Workshop on the Physics of Semi-conductor Devices	New Delhi	Dec.2001
12	Dr. K.N. Bhat	Workshop for Microtron Users	Mangalore	Oct. 2001
13	Dr. K.N. Bhat	Indo-Japan Workshop on MEMS	IISC, Bangalore	March 2002
14	Dr. Krishna Vasudevan	Consys conference	Hyderabad	Feb. 2002
15	Dr. Enakshi Bhattacharya	Workshop on Physics of semiconductor devices	New Delhi	Dec 2001
16	Dr. Enakshi Bhattacharya	SPIE Int conf. On MEMS	Adelaide, Australia	Dec. 2001
17	Dr. Giridhar	National Conference on Communications	Mumbai	Jan 2002
18	Dr. B. Ramamurthi	National Conference on Communications	Mumbai	Jan 2002
19	Dr. Ashok Jhunjunwala	National Conference on Communications	Mumbai	Jan 2002
20	Dr. R. Aravind	National Conference on Communications	Mumbai	Jan 2002
21	Dr. D. Jalihal	National Conference on Communications	Mumbai	Jan 2002
22	Dr. S. Chakravarthi	National Conference on Communications	Mumbai	Jan 2002
23	Dr.P.A.Janakiraman	Prastuti-2002,	BHU, India	Jan 2002

Special Lectures Delivered by the faculty in other Institutions:

Sl. No.	Name of faculty	Topic of lecture	Venue and Date
1.	Prof. Ashok Jhunjunwala	Presentation on Enabling Small Towns and Rural Areas of India through Telecom and Internet at Workshop on "Role of Information & Communications in Technology in Rural Development".	Ministry of IT, New Delhi, April 19, 2001
		Delivered a special Lecture on " Trends in communication Technology ".	Ahmedabad management Association May 12, 2001
		Talk on "Connecting Rural India with Telecom and Internet", in National Workshop on Strategies for applying ICT for Rural Development by Tamilnadu Veterinary & Animal Science University.	Tamilnadu Veterinary & Animal Science University, May 17, 2001
		Invited Lecture on "Making Telecom and Internet Revolution Work for us", National Symposium on Satellite Communication.	Bangalore, May 25, 2001
		Talk on "Connecting Rural India with Telecom and Internet" Conference on Achieving Connectivity for the Rural Poor in India.	VIIT, Baramati, Pune, June 3, 2001
		Talk on "Internet Infrastructure in Small Towns & rural areas", E-Commerce Summer Course.	IIT Bombay June 5, 2001
		Invited talk at CII Seminar on Advanced Communication Technologies - Optical Fibre Communications	Chennai 5 th July 2001,
		Lecture delivered in the Conference on Digital Infrastructures: Megaflops and Microwonders.	Dublin, Ireland 17-19 July, 2001
		Lecture on Information Communication Technology at E-Governance.	IIIT, Allahabad July 28, 2001
		Lecture on "IT for Masses" for IAS Professional Course.	Lal Bahadur Shastri National Academy of Administration, Mussorie, July 30, 2001
		Talk on "Mobile & Fixed Wireless Access" at Connect 2001 International Conference on IT, Communication Technologies and Bioinformatics.	Chennai, 13-14 th Sep'2001,
		Talk on "Change Management and Process Reengineering" E-Governance Summit, E-Governance in the Information age.	Napoleon Hall, Le Meridien, New Delhi, Sept. 21, 2001
		Talk at Sheel Memorial Award Lecture at The National Academy of Sciences on "Making the Telecom and IT Revolution Work for Us".	University of Pune, Pune, October 5, 2001
		Talk on "Connecting rural India using CorDect Will" at Announcing IIR's 6 th International INDIA Telecommunications, Summit 2001, 10,11 & 12 October 2001.	Grant Hyatt Hotel, New Delhi, India, Oct. 11, 2001
		Keynote Talk on "Strategy for Telecom expansion in India" at CONNECT 01' - TeleWise The IIFT Group on Telecom.	Oct. 27, 2001
Invited talk on " Connecting Rural India" SIDBI Program and GIFT School of e-Commerce & e-Governance.	IIT Delhi, Nov, 2, 2001		
Invited talk on "Convergence: Issues and Opportunities in the Indian Telecom Sector" on 2 nd November 2001, at India Habitat Centre, New Delhi organised by center for Telecom Policy.	IITM Ahmedabad, Nov. 2, 2001		

		Invited talk on "Connecting Rural Areas of Developing Nations - A case of India" at World Bank, USA on 12 th Nov'01 as a part of Infodev series of Lectures.	Nov. 12, 2001.
		Invited talk on "ILP-SPONSORED IT CONFERENCE" at Media Lab (MIT) USA on 14 th November 2001.	Nov. 14, 2001.
		Panel Discussion participation on "US-INDIA STARTUPS AND INVESTMENTS: The Success Factors" - Siliconindia Annual Conference And Leadership Awards 2001 at California on 16 & 17, 2001.	Nov. 17, 2001
		Invited talk on "IP Broad Band Network" at Computer Society of India, CSI 2001-Annual Convention, .	Science City, Calcutta on Nov. 22, 2001
		Invited talk on "Infrastructure Development for Rural Telecom" at the Seminar on Increasing Poor Communities' Access to IT and Telecommunications in India by USAID .	Nov. 29, 2001
		Talk on "Bringing Telecom Revolution to India's villages" at NIAS, Indian Institute of Science.	Bangalore, Dec. 7, 2001
		Keynote Note Address on "Trends in Wireless Communication" at National Conference on Mobile Computing.	CSI Hyderabad, Dec. 11, 2001.
		Talk on "Urban-Rural Connectivity" at Hi-Tech pune conferece, Pune, 13 th & 14 th December, 01	Dec. 13, 2001
		Talk on "Theme papers on Globalization and Resistance-A Perspective on ICT" at All India People's Science Congress, Chennai, 19 th -22 nd , December 2001.	Dec. 21, 2001
		Talk on "Theme papers on Globalization and Resistance-A Perspective on ICT" at All India People's Science Congress, Chennai, 19 th -22 nd , Dec. 2001.	Dec. 21, 2001
		Plenary Lecture on "Telecom and Internet Connectivity for India" in the Plenary Session VII entitled "Indian Excellence in Global Competitiveness in Information Technology" .	89 th Indian Science Congress, Lucknow, Jan. 6, 2002
		Talk on "Strengthening Gyandoot and moving ahead", Workshop on Development and Implementation of IT based Methodologies for Rural Science Education .	IIIT Hyderabad, Hyderabad Jan. 11, 2002.
		Invited talk on "Asia Pacific Meeting on Bridging the Digital Divide and Preparation for World Telecommunication Development Conference - 02".	Le-Meridien Hotel , Feb. 13, 2002
		Keynote Note Address on "ACCESS TECHNOLOGY" at SUPERCOMM Asia 2002 conference.	Pragati Maidan, Delhi, Feb. 21, 2002
		Talk on "The Communications Revolution in India", J.N. Tata Auditorium in IISc.	Bangalore, Feb. 25, 2002
2.	Dr. K.S.Swarup	Lecture on Computational intelligence in power systems in the ZETA 2002 conference organised.	VIT, Vellore Feb. 28, 2002
3.	Prof. Ashok Jhunjunwala	Talk on "IT & India", Indo - US Science and Technology Forum.	Grand Hyatt, Vasant Kunj, New Delhi. March 19, 2002
4.	Dr. K.S.Swarup	Lecture on Harmonic power flow studies in the one day seminar on Industrial power harmonics, organised by Sameer-CEM.	Chennai, Mar. 21, 2002
5.	Prof. V. Jagadeeshkumar	Lecture in the one day seminar on Industrial power harmonics, organised by Sameer-CEM.	Chennai, Mar. 21, 2002
6.	Dr. K.Vasudevan	Lecture in the one day seminar on Industrial power harmonics, organised by Sameer-CEM.	Chennai, Mar. 21, 2002
7.	Prof. Ashok Jhunjunwala	Talk on "Rural Communication: Challenges and Opportunities", 8 th Annual Conference PTC India Foundation, 22-23 March 2002, India Habitat Centre.	New Delhi, Mar. 22, 2002

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1	Dr. Amitava Dasgupta	Singapore	July 2001	Paper presentation
2	Dr. Nandita Dasgupta	Singapore	July 2001	Paper presentation
3	Dr. K.N. Bhat	Singapore	July 2001	Paper presentation
4	Dr T.G. Venkatesh	San Francisco, USA	May 2001	Paper presentation
5	Mr. P.R.S. Rao	Singapore	July 2001	Paper presentation
6	Dr.V. Jagadeesh Kumar	Portugal	Sept 2001	Paper presentation
7	Dr. Ennakshi Bhattacharya	USA	2001	Sabaatical
8	Dr. Ashok Jhunjunwala	Ireland	July 2001	Paper presentation
		USA	Nov, 2001	Paper presentation

Honours and Awards obtained:

Name of the Faculty	Awarded for	Awarded by	Date of award
Prof. Ashok Jhunjunwala	Dr. P. Sheel Memorial Lecture Award for the year 2001	National Academy of Sciences	Oct.2001
	Silicon India Leadership Award for "Academic of the year" 2001	Silicon India, USA	17 th Nov. 2001
	Padma Shri Award for distinguished service in the field of Science, Engineering and Telecommunications	Govt. of India	27 th March 2002

4.7.4. Design and Development Activities:

- The Inauguration of the "HP-IITM Lab for Technologies for Developing Markets" held on Thursday February 28th 2002, Dept. of Electrical Engineering, IIT Madras
- The Inauguration of the "Analog Device India - IITM DSP Learning Centre", held on 28th March, 2002, Department of Electrical Engineering, IIT Madras.

4.7.5. Research and consultancy:**Sponsored Research Projects:**

Sl. No.	Title of the Project	Sponsoring Agency	Amount (Rs in Lakhs)	Co-ordinators
1.	Breakdown studies of SF ₆ gas insulation	MHRD	8.00	Dr. R. Sarathi Prof. C. Venkateshaiah
2.	ADI-IITM DSO Learning Centre	Analog Devices (I) Pvt Ltd, USA	117.50	Prof. Ashok Jhunjunwala
3.	Networking	Cognizant Technology Solutions	0.60	Prof. Ashok Jhunjunwala
4.	Communication Systems	MHRD	12.00	Dr. Giridhar Dr. D. Jalihal
5.	HP Lab for technology for developing markets	M/s. Hewlett-Packard Company.	48.27	Prof. Ashok Jhunjunwala
6.	Development of reliable Seismic micro accelerometer	RCI Hyderabad	4.95	Prof. K.N. Bhat Dr. Amitava Dasgupta Dr. Nandita Dasgupta Mr.P.R.S. Rao
7.	Development of silicon PIN photo diodes for detecting He-Ne laser signal	ELOIRA, Hyderabad	5.70	Prof. K.N. Bhat Dr. Amitava Dasgupta Dr. Nandita Dasgupta Mr.P.R.S. Rao

8.	Study of striction in Microelectro-mechanical systems	DRDO	20.42	Prof. K.N. Bhat Dr. Amitava Dsgupta Dr. Nanditadasgupta Dr. Enakshi Bhattacharya Mr. P.R.S. Rao
9.	Design and development of MOS integrated piezo resistive pressure sensors	National programme on smart materials	232.10	Prof. K.N.Bhat Dr. Amitava Dasgupta Dr. Nandita dasgupta Dr. Enakshi Bhattacharya Mr. P.R.S. Rao
10.	Design and implementation of Multi FPGA reconfigurable processor for image compression applications	MHRD	6.00	Prof. S. Srinivasan Mr. H. Renganathan Dr. Vinita Vasudevan Prof. K.R.K. Rao
11.	Development of HDL cores for FPGA implementation of demodulators for satellite data	ISRO-IITM space technology cell	4.62	Prof. S. Srinivasan Mr. H. Renganathan
12.	Upgradation of Teaching Methodologies	MHRD	5.00	Prof.P.A. Janakiraman
13.	Development of Machine Vision algorithms for industrial Applications	India Technology, Chennai	8.80	Dr. A.N.Rajagopalan
14.	Adopting Machine vision algorithm	India Technology Chennai	1.20	Dr.A.N. Rajagopalan
15.	Computer aided modelling of semiconductor devices	DST	8.00	Dr. S. Karmalkar

Industrial Consultancy projects:

Sl. No.	Title	Industry	Amount (Rs. in Lakhs)	Name of the Faculty
1.	Ventureast - TeNeT Fund	Ventureast fund Advisors India Ltd., Hyderabad.	2.40	Prof. AshokJhunjunwala
2.	Impulse voltage Testing of Transformers	Indo-Tech Transformers, Chennai	4.75	Prof. C. Venkateseshaih
3.	Impulse Voltage Testing of Transformers	Andrew-Yule &Co., Chennai	5.17	Prof. C. Venkateseshaih
4.	Testing of current transformers and Potential transformers	Current Electricals & Elpro Industries	1.10	Prof. C. Venkateseshaih

RBIC:

Title	Industry	Amount (Rs.in Lakhs)	Co-ordinators
™Cygplan Access Network Planner	Nilgiri Networks Pvt. Ltd.,	1.00	Prof. Ashok Jhunjunwala
Minnow - Linux Based IP Servers	Nilgiri Networks Pvt. Ltd.,	3.50	Prof. Ashok Jhunjunwala
Development of Special electronic circuits for sensors and signal conditioners	DRDL	4.27	Prof. V. Jagadeesh kumar
USHA Communication development center at Calcutta	Usha Martin, Chennai	0.96	Prof. Ashok Jhunjunwala

Research Publications:

No. of papers published in National Journals	..	1
No. of papers published in International Journals	..	27
No. of papers presented in National Conferences	..	18
No. of papers presented in International Conferences	..	50

In Refereed National Journals:

1. R.Sarathi and U.M. Rao, Investigations of surface modifications in EPDM rubber due to tracking under AC and DC Voltages, Bull. of Materials Science Vol.24, No.6,pp101-107, 2001.

In Refereed International Journals:

1. K.Sridharan and S.S.Keerthi, Computation Of A Penetration Measure Between 3 D Convex Polyhedral Objects For Collision Detection, Journal Of Robotic Systems, John Wiley,Vol.18,Issue 11,Nov 2001, Pp 623 -631.
2. P.R.Vaya,M.Ganesh Madhan and N.Gunasekhran, Simulation Study Of Thermal Effects In Bistable User Diodes Microwave & Optical Tech,Vol 3,31,233-237(2001).
3. P.R.Vaya,M.Ganesh Madhan And N.Gunasekharan,Carrier Dynamics Of Quantum Well Bistable Laser's. Fiber And Integarated Optics, Vol 5,20,525-534(2001).
4. P.R.Vaya,M.Ganesh Madhan And N.Gunasekharan, An Unified Approach To Study The Thermal Dynamics In Multi-Longitudinal Mode Semicond Lasers,Fibre & Integrated Optics, Vol 2, 20, 159-169(2001)
5. Amitava Dasgupta,Kishore Kuna V.S.R,Naveen Kumar Vangala And Nandita Dasgupta, Effect of Etc Mask And Etching Solution On Inp Micromachining To Form V-Grooves,JI.Of The Electrochem.Soc,Vol 148,No 4,C322-326, April 2001.
6. Amitava Dasgupta, Nandita Dasgupta,Roy Paily Pijush Bhattacharya,Pankaj Misra,Tapas Ganguli,Lalit M.Kulkeraja, A.K.Balamurugan,S.Rajagopalan And A.K.Tyagi, Pulsed Laser Depostion Of Tio₂ For Mos Gate Dielectric",App.Surf.Sc,Vol 187,No 3-4,Pp 300-307,2002.
7. Amitava Dasgupta, Nandita Dasgupta,E.Anulekha Manjari, A.Subrahmanyam, Electrical Characterization Of Metal-Insulator-Semiconductor Capacitors With Xerogel As Dielectric,App.Phys.Lett.Vol.80,No.10,2002.
8. S.Ramachandran And S.Srinivasan,A Fast FPGA-based Mpeg 2 Image Encode With A Novel Automatic Quality Control Scheme,Elsevier,Microprocessor And Microsystems ,Vol25,Pp 449-457(2002).
9. K.G.Prabhu,K.M.Patil And S.Srinivasan, Diabeetic Feet At Risk A New Method Of Analysis Of Walking Fast Pressure Images At Different Levels Of Neuropathy For Early Detuction Of Plantan Ulcers, Medical And Biological Engineering And Computing Vol 39,Pp 288-293, 2001.
10. Gopalakrishna Prabhu,Deepak Agarwal,K.G.Patil And S.Srinivasan,Parameters For Analysis Of Walking Fast Pressure At Different Levels Of Diabetic Neuropathy And Detection Of Plantan Uclers At Early Stages,Innovation And Technology In Biology And Medicine, Vol 22,Pp 159-69,(2001).
11. S.Karmalkar, IEEE Electron Device Lett Vol 22,Pp 373-375, August 2001.
12. S.Karmalkar, IEEE Trans Electron Devices ,Vol 48, Pp 1515-1521, August 2001.
13. S.Karmalkar, Solid State Electornics,Vol 45, Pp 1645-1652, September 2001.
14. Nandita Dasgupta,Kishore Kuna V.S.R,Naveen Kumar Vangala And Amitava Dasgupta Effect Of Etc Mask And Etching Solution On Inp Micromachining To Form V-Grooves,JI.Of The Electrochem.Soc,Vol 148,No 4,C322-326, April 2001.
15. Nandita Dasgupta, Amitava Dasgupta,Roy Paily Pijush Bhattacharya,Pankaj Misra,Tapas Ganguli,Lalit M.Kulkeraja, A.K.Balamurugan,S.Rajagopalan And A.K.Tyagi, Pulsed Laser Depostion Of Tio₂ For Mos Gate Dielectric",App.Surf.Sc,Vol 187,No 3-4,Pp 300-307,2002.
16. Nandita Dasgupta, Amitava Dasgupta,E.Anulekha Manjari, A.Subrahmanyam, Electrical Characterization Of Metal-Insulator-Semiconductor Capacitors With Xerogel As Dielectric,App.Phys.Lett.Vol.80,No.10,2002.
17. A.N.Rajagopalan And R.Chellappa,"Higher Order Statistics Based Detection Of Vehicles In Still Images"Journal Of Optical Society Of America ,Vol 18,No12,Pp.3037-3048 December 2001.
18. R. Sarathi, U.M. Rao and C. Venkateshaiah, Investigations of Surface modifications in ethylene propylene diene monomer (EPDM) rubber due to tracking, Polymer Testing, Vol-21, No.4,pp 463-471,2002.
19. R.Sarathi, Investigations of Surface degradation of HDPE material due to tracking using Physico-Chemical Analysis, Journal of Applied Polymer Science, Vol.83, pp 2843-2849,2002.
20. K.M.M. Prabhu and J. Giridhar, Detection performance of an adaptive MTD with WVD as a doppler processor, European J. of Signal processing, Vol-81, pp 693-698, 2001.
21. N. Vijayakumar and K.M.M. Prabhu, Two dimensional FIR compaction filter design, IEE Proc. Vision, Imag and Signal Processing, Vol-148, No. 3, pp 173-181, June 2001.
22. K.N. Dharani Kumar, K.M.M. Prabhu and P.C.W. Sommena, A 6.7 KBPS vector sum excited linear prediction on TMS 320C54X DSP, Microprocessor and micro systems Journal Vol-26, pp 27-38, Feb. 2002.
23. K.Remashan and K.N.Bhat , "Stable Gallium Arsenide MIS Capacitors and MIS Field Effect Transistors by (NH₄)₂S_x treatment and hydrogenation using plasma deposited silicon nitride gate insulator" IEEE Transactions on Electron Devices(USA) , Vol49, No3 , pp 343-353, March 2002

24. K.Remashan and K.N.Bhat , " Combined effect of $(NH_4)_2S_x$ treatment and post-metallization annealing with plasma-enhanced chemical vapour deposition silicon nitride gate dielectric on the GaAs metal-insulator-semiconductor characteristics and the photoluminescence characteristics of GaAs substrates" Semiconductor Science and Technology(UK) Vol17. pp1-6, 2002
25. Robert B.Darling , Adi A.Scheidemann, K.N. Bhat, T.C.Chen , "Micromachined Faraday Cup Array using Deep Reactive Ion Etching" , Sensors and Actuators A (USA) Vol 95 , pp.84-93, January2002
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4. K.Sridharan,Shijian,N.Sudha and T.Srikanthan, Efficient Computation Of A Similarity Measure For Chinese Character Recognition, Proceedings Of Third Icics,Oct 2001.
5. P.R.Vaya,J.Zlo,X.Wang,F.Choa,Semiconductor Qn Structures For Hide Band Optical Amplification, Proc.Int Conf.On Broad Band Optical Fiber Comm.Tech(Dbdfct- 2001),Nmu,India243-248(2001)
6. V. Jayashankar A Microprocessor Based Unit For The Measurment Of Errors Of Instrument Transformers,Seminar-Instrumentaion Engineering Instrution Of Engineers, Hyderabad, 14-16 July2001, Pp.1.18-1.21.
7. Dr.P.A.Janakiraman And A.Muthuramalingam Reduction In Effective Simulation Time-Dc Series Link Resmance Based Converter And Applications Evolutionary Computing For Computer And Power Systems Conference,India Pp.226-233(2000).
8. V.S.Chakaravarty & B.Kampulla,"The Shape Of Hardwritten Characters" National Conference Document Analysis & Character Recognition- Ncdar Mandhya,2001.
9. R.Sarathi and K.Naveen, Fractal analysis of fractures in insulation structure-Modelling using Cellular Automata, Proceedings of the National Conference on RAMP-2001, pp577-583, Sept.2001.
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15. K.N.Bhat , "Effects of Radiation on MEMS having SOS/MOS structures" Workshop for Microtron Users" October 24-25,2001,Mangalore University. Mangalore(INVITED TALK)
16. K.N.Bhat, "MEMS research activity at IIT Madras" Indo-Japan Workshop on MEMS, March 11,2002 , IISc , Bangalore (INVITED TALK)
17. K.N.Bhat, "MEMS ,pressure sensors and accelerometers" one day tutorial on 21,March 2001 as a part of Continuing Education Program (CEP) course offered to DRDO labs on "MEMS and their applications " organized by Centre for Airborne systems (CABS) , Defence R&D Organisation, Bangalore, March 18 -22, 2002 (INVITED TUTORIAL)

18. K.N.Bhat "Unit Structures and Technologies for Physical MEMS" in the one day Tutorial on "MEMS: Technology, Design, CAD and Applications" organized by the Joint Asia South Pacific Design Automation Conference and International Conference on VLSI Design in the 15th International Conference on VLSI Design, January 7-11, 2002, Bangalore.

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1. R.Sarathi, Aneez Ahmed and C. Venkateshaiah, Study of Breakdown Characteristics of Mixed Transformer Oil Under Different Voltage Profiles, TRAFOTECH-2002, Mumbai..
2. R.sarathi, U.M. Rao and C. Venkateshaiah, Investigations of tracking studies in Silicon rubber under AC and DC voltages, Frontiers, Feb.2002, Kharagpur.
3. P.R.Vaya,M.Ganesh Madhan And P.Kannan,Simulation Of Trunable Dbr Laser Diode Proc.Dae-Brns Nat.Symposium,Cat-Indore,41-42(2001).
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5. K Sridharan,Shijian,N.Sudha and T.Srikanthan, Efficient Computation Of A Similarity Measure For Chinese Character Recognition, Proceedings Of Third Icics,Oct 2001.
6. P.R.Vaya,J.Zio,X.Wang,F.Choa,Semiconductor Qn Structures For Hide Band Optical Amplification, Proc.Int Conf.On Broad Band Optical Fiber Comm.Tech(Odbdct-2001),Nmu,India243-248(2001)
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10. V.S.Chakaravarty,R.Sarathi,R.Vasanthan.M.A.Khan,C.Venkateseshiah,"Investigation Of Tracking Phenomena In Ploymeric Material",International Conference On High Voltage 2001,August 21st, Bangalore,India.
11. V.S.Chakaravarty, S.Ray. V.Jain. Rakshetajas, S.Ravichandran, R.Sarathi,"Diagnosis Of Faults In Transformer Winding Using Naval Networks" Proceedings Ieee Ace 2001,Iit Delhi,November 24th 2001.
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14. Krishna Vasudevan V.V.Thomas And V.Jagadeesh Kumar,Use Of Air Gap Torque For Squirrelcage Motor Fault Identification,Ieee Int.Conf. On Power Electronics And Drive Systems (Peds'01),Bali,Indonesia October 2001.
15. Krishna Vasudevan V.V.Thomas And V.Jagadeesh Kumar,Air Gap Torque Estimation For Condition Monitoring Of Induction Machine, Int.Conf.On Energy,Automation And Information Technology (Eait-2001) Iit Karagpur,December 2001.
16. Krishna Vasudevan V.V.Thomas And V.Jagadeesh Kumar,Dsp Based Airgap Torque Estimator For Detection Of Cage Motor Faults,Int.Conf.On Control,Instrumentation And Information Communcation (Ciic-2001),Kolkata,December-2001.
17. A.N.Rajagopalan And R.K.Singh,Background Learning For Roburt Face Recognition,Ieee Int.Conf On Pattern Recognition,Qucbcc,Canada,August 2002.
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47. K.N.Bhat, N.Lakshmi and A.dasGupta, "SOI Technology, Devices and Characterization", Proceedings of the Eleventh International Workshop on the Physics of Semiconductor Devices (IWPSD) Vol.1 , pp 576-583, Dec 11-15, 2001, Delhi, Edited by Vikram Kumar and P.K.Basu, Allied Publishers 2001 (INVITED TALK)
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49. K.S. Swarup and Simi. P. Valsan, A Novel Approach for solving unit commitment and economic dispatch using Neural networks, ISAP-2001, Budapest, Hungary
50. K.S. Swarup and B. Satish, An integrated approach to short term load forecasting, ISAP-2001, Budapest, Hungary

Distinguished Visitors to the Department:

Sl. No.	Name of the visitor and designation	Date of visit
1	Mr.T.V.Ramachandran, Director, Cellular operators Association of India, New Delhi.	April 5, 2001
2.	Mr.Lakshmi nayak, MIT USA.	April 13,2001
3.	Mr.Azim Premji, Chairman, Mr.G.Monicka Raj, Wipro Technologies, Bangalore.	April 24,2001
4.	Mr.Madhavan Nambiar, Chairman, TIDCO	April 25,2001
5.	Ray Stata, Analog Devices, USA	May 1&2,2001
6.	Shri Lalit Mathur, Financial Advisor, Ministry of Rural Development, New Delhi.	May 7,2001
7.	Prof. V. Ajarapu, Iowa State university, USA	May 17, 2001
8.	Mr.Gary Warren, Ms.Gita Gopal, Hewlett Packard, Bangalore.	May 23,2001
9.	Shri D.P.S.Seth,CMD, BSNL,New Delhi.	May 31,2001
10.	Dr.Vijay Raghavan, Advisor, PSA to GOI Dr.Vidyasagar, Exec.Vice-President,TCS Dr.V.P.Gulati,Director,IRDBT, Hyderabad.	June 4,2001
11.	Mr.Anil Goje, Director, VIIT,Baramati.	June 15,2001
12.	Mr.Sharad joshi, Chairman, Task force on Agriculture, New Delhi. Dr.Vinay Dharmadhikari, Snr, Director,MIT, New Delhi.	June 17,2001
13.	Mr.Mike Best, MIT Media Lab, USA.	June 19,2001
14.	Mr.Albert A Thbault, USA, Ambassador (Acting) Mr.Bernard Alter, Consul, US Consulate. Mr.Anjana Chatterjee, Economics,US consulate.	June 25,2001
15.	Dr.Das Gupta, Space Applications Centre, ISRO, Bangalore.	July 6,2001
16.	Mr.Somnath Maity, V.K.Gupta, BSNL,New Delhi.	July 10,2001
17.	Mr.Dharam Vir,Commissioner & IT Secretary, Chandigarh.	July 31, 2001
18.	Prof. Rein ford Brebe, Dean, Bio-Medical Instrumentation, Univerisity of campagne, France.	August 12, 2001
19.	Prof. R.S. Gorur. Arizona state University, USA.	August 17, 2001
20.	Mr.Rajeev Chawla, IAS, Rural Development, Karnataka	September 1,2001
21.	Mr.Ray Stata- Chairman, Analog Devices, USA.	September 29,2001
22.	Mr.K.B.P.Nambiyar, Ex secretary, Department of Electronics, Chairman, Namtech Pvt.Ltd. Bangalore.	October 17,2001
23.	Mr.N.S.Ramachandran, Director, Tata Tele services Ltd. Hyderabad.	October 22,2001

24.	Prof. Prabha Kundur, CEO, Power Labs, Canada.	November 9, 2001
25.	Mr.Masour Izadnia, Mr.Niraj Kumar & Sagar Pushpala, Directors of Maxim, California.	December 6,2001
26.	Mr.P.S.Raj Kumar and Mr.Bhupenshah, Directors of Realchip, Chennai.	December 12,2001
27.	Honorable Finance Minister Shri Yashwanth singha, Minister of Rural Development. Shri Venkiah Naidu Shri Lalit Mathur DC, IT Secretary of TN.	December 16,2001
28.	Mr.Srinath sastri, HP Bangalore.	December 19,2001
29.	Shri Vinod Dham, Chairman, President, CEO of Silicon Spice Inc. Silicon Valley.	December 21,2001
30.	Dr.Devyani Mani, United Nations Centre for Regional Development, Japan.	December 26,2001
31.	Ms.Radhikalal, UNDP, New york, USA.	December 26, 2001
32.	Mr.Kanwal Rekhi, USA, Venture fund.	January 6,2002
33.	Mr.Bijay Chatterjee, Director, Systems Research, National Semiconductor, USA.	January 8,2002
34.	Prof. M.A. Pai, University of Illinois, USA.	January 10, 2002
35.	Prof. S.S.Venkata, University of Iowa, USA.	January 11, 2002
36.	Mr.Greving Warren, Hewlett Packard, USA	January 16,2002
37.	Mr.Muneesh Chawla, Sr. VP of IL&FS Venture Corporation Ltd, Bangalore.	January 22,2002
38.	Mr.Ramayah, Vice President, Kirloskar, Pune.	January 30,2002
39.	Parliamentarians from Federal Republic of Germany.	February 5,2002
40.	H.N.Sinor, Chairman of ICICI.	February 6,2002
41.	Parasuram.R, IAS, Secretary, Government of Madhyapradesh.	February 8,2002
42.	Shri K.N.Singh, Advisor (operations), TCHQ,Department of Telecom, Delhi.	February 12,2002
43.	Mr.Brian Rosborough, MIT & Mr.Sandy, Director, MIT,USA.	February 12,2002
44.	Dr.Gerald W.Brock, The GeorgeWashington University, Washington.	February 20,2002
45.	Mr.Colin Maclay, Harward University & Mr.Mike Best, MIT USA.	February 22,2002
46.	Mr. Arun Seth, BT (World wide) Ltd. Delhi	March 1, 2002
47.	Mr. Sanjay nayak, CEO, Dr. Kumar Sivarajan, CTO, Tejas Networks, Bangalore	March 12, 2002
48.	Mr. Y.S. Choudhury, HTL Mr. V. Mitra, president Mr. P.R. Bansal,GeneralManager Mr. Naseem ahmed, CEO of HFCL, Delhi.	March 20, 2002
49.	Mr. Ray stata,Chairman Mr. Sam Fuller and Jerry Mcguire, Analog Devices,USA.	March 28, 2002

4.8 DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

4.8.1 Introduction:

The Department of Humanities and Social Sciences was started in 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 an MBA programme replacing the M.Tech (IM) programme from the Academic year 2001-02. 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:

S.No.	Course No.	Title
1	HS 416	Literature and Values
2	HS 447	Nomistics - The Study of Human Values
3	HS 448	Values, Technology, Science and Society
4	HS 449	Language, Culture and Society
5	HS 438	Contemporary India: Sociological Perspective
6	HS 623	Project Finance
7	HS 712	Financial Modelling and Analysis
8	HS 713	Technology and Colonialism
9	HS 714	Environmental Policy and Development

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & above	Total
M.Tech	-	20	-	-	-	20
M.B.A.	41	-	-	-	-	41
M.S.	3	7	5	2	-	17
Ph.D.	11	2	4	2	4	23
Total	55	29	9	4	4	101

4.8.3 Faculty and their activities:**Faculty:****Name and Qualifications****Major Area of Specialisation****Professors:**

R.N. Anantharaman, Ph.D (Bangalore)	Organisational and Consumer Behaviour, Human Resources Management, Industrial Relations
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) [Head]	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

DAAD Visiting Faculty:

R.G. Koeckritz (till 31st May 2002) German, Communication Strategies

Ms Susanne Romanowski German

Part-time Faculty:

Dr. K.Srilata English

Dr. Aysha Iqbal English

Short-term Courses/Workshops/Seminars/Symposia/Conferences organized:

S.No.	Co-ordinator	Title	Period
1	Dr.V.R.Muraleedharan	1-day meeting on "Reforming TN Health Sector" at IIT Madras	April 26, 2001
		A meeting at IIT Madras with Swedish International Development Authority (India Office) to develop a strategy for their role In Indian Health Care Sector for the period 2002-2007	28- 29 Mar 2001
		3-day Research Workshop from Multi Country Study on "Regulation of Health Care System in Developing Countries - Funded by the London School of Hygiene and Tropical Medicines, University of London	4-6 April 2002
2	Dr.G.Srinivasan	Small Industries Management Programme (SIMAP) in collaboration with SIDBI and AIEMA	11 th June - 15 th September 2001
3	Dr.T.J. Kamalanbhan	"Performance Appraisal and Development Systems for faculty members in Management Institutions and Industries	July 2- 13 2001
4	Dr.B.Subramanian	Goethe Society of India Congress at Jaipur	19-21 March 2002

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

S.No.	Name of Faculty	Title	Institution	Period
1	Dr.V.R.Muraleedharan	Conference on "The Future of States Health Systems in India	World Bank, Hyderabad	16-17 April 2001
		The role of the Rockefeller in Malaria Control in South India" at the International Conference on "Imperialism and Medicine in South Asia: A Socio-Political Perspective 1800-1980	Univ. of Cambridge, UK	15-16 Jun 2001
		A Vision for India's Health System" organised by the GOI and the World Bank	New Delhi	10-12 Jun 2001
		Research Workshop on "Towards Equitable Financing Strategies for Health Care"	Institute of Development Studies, Sussex, UK	24-26 Sep.2001
		"Payment Methods and Competitive Strategies among Small Private Hospitals in Urban India" at the 3 rd International Conference of the International Health Economics Association	York, UK	22-26, Jul, 2001

		National Consultation Workshop on "A Vision for India's Health System" Organised jointly by the World Bank and the Ministry of Health and Family Welfare	New Delhi	15-16 Nov2001
2	Dr.E.Manickam	The skyscraper as Image and Symbol: A Reading of Three Poems by Carl Sandburg, Indian Association for American Studies Annual Conference	Annamalai Univ.	12-14, Dec 2001
3	Dr.B.Subramanian	International Conference on "Globalisation and Identity" German - Indo Colloquium on "India at the Beginning of the 21 st Century" XII International Conference of German Teachers	Fu Jen Catholic Univ, Taipei,Taiwan Bonn, Germany Lucerne, Switzerland	5 th -11 th -6 May 2001 14-25 May2001 30.7.01 to 4.8.01
4	Dr.S.C.Chaudhary	3 rd International Annual IATEFL Conference	Brighton, UK	17-20 Apr 2001
5	Dr.D.Malathy	"Gender Differential in Health and Health Care in TamilNadu" in the International Conference on "Development Paradigm: Social Transformation and Gender Performance in Asia Education of the Disadvantage Group in a DPEP District, Tamil Nadu	University of Madras	27-29 Aug. 2001 21 st Jan., 2002
6	Dr.Prema Rajagopalan	National Workshop on "Applied Philosophy and Professional Ethics"	Univ. of Roorkee	18-20 Nov2001
7	Dr.M.Thenmozhi	"Implication of WTO on the Indian Banking Sector" at the Association of Indian Management Schools Convention on "WTO & Competitiveness: Challenges for Indian Business and Management Education	Vishakha- patnam	25-27, Aug. 2001
8	Mr. S.Mohan	First ACME/IFMR Conference on "Shaping Managers for the Future" Teaching Managerial Comm. Skills through Science Fiction		Sept. 2001

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of Faculty	Topic of Lecture	Venue and Date
1	Dr.S.C.Chaudhary	Business English	Univ. of Roorkee, 26-29, July
		Linguistics and Language Learning	Madras University, 22.02.2001
		ESP Material	Annamalai University, 11.02.2001
		ELT in 2001	BHU, Varanasi, June 2001
2	Dr.Evangeline Manickam	Contemporary Literature from the Sub-continent - India, Pakistan, Bangladesh, Sri Lanka	UGC Refresher Course Stella Maris College, 15 th February 2001
3	Dr.B.Subramanian	Load Chandos & Affes	UGC Refresher Course Stella Maris College, February 19, 2001
4	DR.S.Devaki Reddy	English as a Global Language	7 th August 2001 SSV Jain College
		Linguistics and Language Teaching	20.11.2001 Univ. of Madras
5	Mr.S.Mohan	Using Audio for Teaching a Short Story	Lang.Lab, IITMs, 17/11/2001(for Teachers of English, Univ. of Madras
		Communication Skills	RBI Staff College (for Officers of RBI) 20.12.2001
		Teaching communication through Case Studies	University of Madras (for Teachers of Commerce, Univ. of Madras) 15/02/2002

Visits Abroad by Faculty:

S.No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1	Dr.Prema Rajagopalan	China	15.12.2001- 13.01.2002	Research on "Women in the Profession of Science Integration or Exclusion" under the Indo-China Cultural Exchange Programme
2	Dr.V.R.Muraleedharan	Stockholm,Sweden UK Sussex, UK York, UK	23-25 Jan. 02 15-16 June 01 24-26 Sep.2001 22-26 July, 01	Research Meeting To attend International Conference at Univ. of Cambridge To attend a Workshop on "Towards Equitable Financing Strategies for Health care at the Institute of Development Studies, Sussex To attend 3 rd International conference of the International Health Economics Association
3	Dr.B.Subramanian	Taipei, Taiwan Bonn, Germany Lucerne, Switzerland	5-11, May 01 14-25, May 01 30.7.2001- 04.08.2001	International Conference on "Globalisation and Identity" German-Indo Colloquium on "India at the Beginning of the 21st Century XII International Conference of German Teachers
4	Dr.C.Rajendran	University Passau, Germany	18/6/2001 - 16/8/2001	AvH Fellowship
5	Dr.S.C.Chaudhary	UK	April-May 2001	Conference/Research

Honours and Awards obtained:

S.No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	S.C. Chaudhary	Charles Wallace Trust Award	The British Council	Research	April-May 2001

Books/Monographs authored or co-authored:

S.No.	Name(s) of Author(s)	Title of Text Book / Monograph	Publisher
1	Dr.B.Subramanian	Year Book of the Goethe Society of India 1999-2000	German Book Centre, Madras
2	Dr.S.C.Chaudhary	Book-Chapter - Language Education in Multilingual India Monograph - Editor - Teaching English in Non-native Contexts	UNESCO, New Delhi Prof.V.Saraswathi Felicitation Committee
3	Dr.S.Devaki Reddy	Co-Editor of a Volume of essays - Teaching English Non-Native Contexts An Effective Syllabus for Teaching English (Chapter) in Teaching English In Non-Native Contexts	Prof.V.Saraswathi Felicitation Committee -do-

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

A Multimedia Language Laboratory, a gift from the DAAD is operational since April 2001 in the Department. It has a file server with six nodes besides other computer peripherals. German language learning software is intended to encourage self-study, particularly by our students leaving for Germany on the DAAD Sandwich Programme. The

Department shall soon provide access to German language learning materials and documentation on Germany through the file server to the campus network.

The Lab was formally inaugurated on 26th March 2002 by Mr. Ulf Hanel, Consulate General of FRG, Chennai. Prof. Stassen, former Director, DAAD, New Delhi and the Director, Max Muller Bhavan were also present at the function.

4.8.5 Research and Consultancy:

Sponsored Research Projects:

S.No.	Title	Period	Funding Agency	Amount (in lakhs)	Coordinators
1	Analysis of the cost-effectiveness of youth Intervention for the prevention of HIV Transmission in Asia: Phase I - The Conceptual Framework	8 months	UNAID	2.00	Dr.V.R. Muraleedharan & Prof Lilani Kumaranayake, London School of Hygiene and Tropical Medicine (UK) is the Collaborator
	Regulation in Healthcare: A study of implementation of Consumer Protection Act 1986 and Human Organ Transplantation Act, 1994 in Tamil Nadu	One year	DFID (UK)	15.00	Prof. Anne Mills, London School of Hygiene and Tropical Medicines is the Collaborator
2	English for Global Communication	Feb-Oct. 2001	IC & SR	1.00	Dr.S.Devaki Reddy
3	Schooling of SC/ST children in a DPEP District in T.N.	Aug.2001	State District Primary Education Program office	0.57	Dr.D.Malathy

Industrial Consultancy:

S.No.	Name of Faculty	Title	Industry	Amount (in Lakhs)
1	Dr.V.R.Muraleedharan	Economic Analysis of Resource Requirements for Scaling up HIV Interventions at state level	Welcome Trust	6.50
		District Health Care Planning in Tamil Nadu	DANIDA	3.20
		Dynamics & Structure of Private Health Care Provision in Madhya Pradesh	TARU Leading Edge Pvt. Ltd. New Delhi	0.50
		Cost Effectiveness analysis of health care programmes in Tarnil Nadu	WHO	7.00
2	Dr.G.Srinivasan	Demand Planning to Inventory Management	TAKE SOLUTIONS (P) Ltd.	1.50
		Optimization of Warehouse Storage Space	-do-	1.50

Research Publications:

No. of papers published in Refereed National Journals	..	8
No. of papers published in Refereed International Journals:	..	8
No. of papers presented in National Conferences	..	6
No. of papers presented in International Conferences	..	4

In Refereed National Journals:

1. T.J.Kamalanabhan "Personality Inventory For Selection of Potential Entrepreneurs: An Evaluation, Management & Change, Institute for Integrated Learning in Management, Volume 5, Number 1, June 2001, pp.1-20.
2. T.J. Kamalanabhan and Amar Taap Manshor, "Occupational Preferences among Students in India and Malaysia: A Cross-Cultural Study. Journal of Social Sciences, Volume 5, Number 3, July 2001, pp.181-186
3. Shoba Albert, Rajeswari K and Anantharaman, R.N.A., "Measuring potential for emotional competence: development of a scale, Management & Change, Vol.6, No.1, 30-34, 2001
4. A.K.Paul & R.N. Anantharaman, "In search of Missing link in HRM Performance Paradigm, Indian Journal of Industrial Relations, Vol.37, No.2, 257-63, 2001.
5. A.K.Paul & R.N.Anantharaman, "Impact of HRM practices on competence of software professionals in India, Management & Change, Vol.6, No.1, pp 30-334, 2002
6. L.V.L.N. Sarma, M. Thenmozhi, Preeti, S.K., "The Impact of Macrofinance Variables on Nontraditional debt financing", ICFAI Journal of Applied Finance, Vol.8, No.1, pp 35-54, Jan.2002.
7. M.Thenmozhi, "Knowledge Management in Knowledge Based Industries" in "knowledge Management" (ed.) Ratnaja Gogula, ICFAI Press, pp 98-108, 2002.
8. M.Thenmozhi & R.Kishore Kumar, "Implications of WTO on the Indian Banking Sector, in "WTO & Competitiveness: Challenges for Indian Business & Management Education, Excel Books, pp.328-339, 2001.

In Refereed International Journals:

1. S.Devaki Reddy, Language Through Literature; An Experiment in Genre-based Teaching in the English Teacher – An International Journal, Vol.4, No.2, April 2001
2. Rajendran C, and Ziegler, H, "A Performance analysis of dispatching rules and a heuristic in static flowshops with missing operations of jobs", European Journal of Operations Research, Vol.131, 622-634, 2001
3. Gowrishankar K, Rajendran C, and Srinivasan G, "Flow shop scheduling algorithms for minimising the completion time variance and the sum of squares of completion time deviations from a common due date", European Journal of Operations Research, Vol.132, 643-665 (2001).
4. Sureshchandar G.S., Rajendran, C and Anantharaman R.N., "A holistic model for total quality service", International Journal of Service Industry Management, Vol.12, No.4, 378-412 (2001).
5. Sureshchandar G.S., Chandrasekharan Rajendran & T.J. Kamalanabhan, "Customer Perceptions of service quality: A critique, Journal of Quality Management, Volume 10, No.1, 2001, pp.111-124
6. Sureshchandar G.S., Rajendran, C., and Anantharaman R.N., "A Conceptual Model for Total Quality Management in service organisations", Total Quality Management, Vol.12, No.3, 343-363 (2001).
7. Sureshchandar G.S., Rajendran, C., and Anantharaman R.N., Determinants of Customer perceived service quality: a confirmatory factor analysis approach, Journal of Service Marketing, Vol.1, No.1, pp.9-32, 2002
8. M.Thenmozhi, "Testing Chaos & Nonlinearity in BSE Sensex Time Series, South Asian Journal of Management, Vol.7, No.3&4, pp.12-24.

In Proceedings of National Conferences:

1. G Srinivasan and Binoy Bose – Presented in the Fifth Operations Management Conference held in Mumbai – December 22-23, 2001
2. G Srinivasan, V Balachandran and M Ravi Pratap Constrained Shortest Path problem in Convoy Scheduling – Algorithms and Application. Presented in the Fifth Operations Management Conference held in Mumbai – December 22-23, 2001
3. O. Mahesh and G. Srinivasan, Algorithms for incremental cell formation problems, Proceedings of Symposium on Manufacturing Excellence IIT Madras January 2002, pp. 183-184.

4. A.S.Ramasastri, L.V.L.N.Sarma and D.Malathy, "Market Efficiency in the Indian Stock, forex and call Money Markets, Proceedings of the Convention on Development, Madras Institute of Development Studies, 16-18, November 2001.
5. M.Thenmozhi, "Knowledge Management in Knowledge Based Enterprises", in National Seminar on "Management Practices in Knowledge Based Enterprises", Proceedings, NISIET, 2001
6. M.Thenmozhi, "Critical Success Factors in Private Sector Participation in road sector Projects in National Seminar on "Funding Options for Long gestation Projects", Proceedings, p.1-10, 2001.

In Proceedings of International Conferences:

1. G Srinivasan and Nikhil Kashyab Balaraman New Simulated Annealing based algorithms for sequencing jobs in a flowshop for different objectives, 1st International Conference on Logistics and Supply Chain Management, Coimbatore, August 6-8 2001.
2. G Srinivasan, B Balabhaskar and V Karthik Minimizing squared deviation of completion times about a common due date – algorithms and heuristics. 1st International Conference on Logistics and Supply Chain Management, Coimbatore, August 6-8 2001.
3. P.Duraisamy and D.Malathy, "Nash Bargaining Approach to Household Behaviour: Theory and Evidence, International Conference on "Development, Paradigm's Social Transformation and Gender Performance in Asia, The Indian Economic Journal, Vol.48, No.4, 2001.
4. M.Thenmozhi & Kishore Kumar, "Predictability of BSE returns using Neural Networks, International Conference on Industrial Mathematics, Proceedings, IIT Madras, 2001.

Distinguished Visitors to the Department:

S.No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1	Mr. Wilson Jebaraj, Area Manager, Blue Star	24.4.2001	Guest Lecturer
2	Mr.Arulmani, Chief Marketing Officer (South) Cholamandal Investment and Finance	24.4.2001	Guest Lecture
3	Dr.Sunderesh S Heragu, Associate Professor , Department of Decision Sciences and Engineering Systems, Rensselaer Polytechnic Institute	21.8.2001	Guest Lecture
4	Dr.S.Narayanan, Associate Professor Wright State University, USA	30.8.2001	Guest Lecture
5	Dr.Raghavan Parthasarathy and Professor Carl Ullman, City University of New York	12.9.2001	Guest Lecture
6	Prof. Allison Mackinnon, Director, Hawke Institute of South Australia	20.9.2001	Discussion with faculty members for possible Exchange programme
7	Prof.H.Jansen & Prof.B.Dembach, University Hochschule, Bremen	05.11.2001	For discussion
8	Mr. M. Ramakrishnan, Deputy General Manager (Personnel), Tube Products of India Ltd., Avadi, Chennai	18.1.2002	Guest Lecture
9	Prof. A.V.Muthukrishnan, Hong Kong University of Science and Technology	04.2.2002	Seminar Talk
10	Prof.S.K. Mohandas, Anna Institute of Management, Chennai	19.2.2002	Guest Lecture
11	Sri Srinivasa Raghavan, Joint Managing Director, Sundaram Finance Ltd.	20.2.2002	Seminar Talk
12	Mr. Ansana Anand, Lecturer, Classical Dance, Ponnambalam Dance Academy, Bangalore	21.2.2002	Seminar Talk
13	Shri A.P. Gandhi, President, Hyundai Motors	2.3.2002	Guest Lecture
14	3-member delegation from the Chinese Academy of Social Sciences, Beijing	21.3.2002	Discussion with faculty and students to explore the possibility of collaborative research programmes with HSS dept.
15	Prof.Dr.Klaus-Peter Kistner, Professor of Management and Operations Research, Univ. of Bielefeld, Germany	20.3.2002	Guest Lecture
16	Prof.Dr.Bernhard Irrgang, ZIT, TU-Dresden, Institut fur Philosophie, Dresden	20-28 Mar. 2002	Guest Lectures

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
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 applications
25. Theoretical Computer Science
26. Wavelets and their applications

4.9.2 New Courses introduced:

Sl.No.	Course No.	Title
1.	MA 576	Discrete Mathematics
2.	MA 579	Computer Modelling & Simulation
3.	MA 592	Object Orientation in Scientific Computing
4.	MA 593	Database Management System & File Organisation

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
M.Sc.	27	33	-	-	-	60
M.Tech	8	9	-	-	-	17
Ph.D	7	5	7	4	4	27
Total	42	47	7	4	4	104

Number of Scholarship / Fellowship holders:

Programme	Institute Scholarship	Others	Total
M.Sc.	18	-	18
M.Tech.	12	-	12
Ph.D.	17	-	17
Total	47	-	47

4.9.3. Faculty and their activities:

Faculty:

Name and Qualifications

Major Area of Specialisation

Professors:

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

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
(Mrs.) S.Kalpakam, Ph.D (IIT Madras)	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
(Mrs.) 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, Linear Operator Equations
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.
(Mrs.) R. Rama, Ph.D (Anna Univ)	Theoretical Computer Science, L-Systems, Formal Languages Automata Theory
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
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 / Seminar / Symposia/ Conferences organised by faculty members:

Sl. No.	Title	Date	Co-ordinator(s)
1.	One day Seminar on the Teaching of Calculus sponsored by AMTI held at IIT Madras.	10-11-2001	Dr. P.V.Subrahmanyam
2.	"National Symposium on Mathematical Methods and Applications".	22-12-2001	Dr. S.H. Kulkarni Dr.S.Sundar

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.Arindama Singh	Workshop in Cognisive Sciences	Central University, Hyderabad	Feb. 2002
		International Conference on Current Trends in Differential Equations and Dynamic Systems	I.I.T. Kanpur	Dec. 2001
2.	Dr.Kulkarni S.H.	International Workshop on Linear Algebra, Numerical Functional Analysis and Wavelet Analysis	Cochin University of Science and Technology, Cochin.	6.8-2001 to 15-8-2001
		International Conference on Industrial Mathematics	IIT Madras	12-8-2001 to 14-8-2001
		International Conference and Instructional Workshop on Wavelets and their Applications.	Anna University, Chennai.	4-1-2002 to 8-1-2002
		International Workshop on Banach Algebras, Operators and Harmonic Analysis.	Sardar Patel University, Vallabh-Vidyanagar, Gujarat.	8-1-2002 to 16-1-2002
4.	Dr.Ponnusamy S.	International Conference CMFT'2001 (Computational Methods and Function Theory).	Aveiro, Portugal.	June 2001
		Refresher course on "Complex Analysis".	Academic Staff College, University of Madras.	Nov.-Dec. 2001
5.	Dr. (Mrs.) Rama R.	DNA - 7	University of South Florida, Tampa, Florida, U.S.A.	June 10-13, 2001
6.	Dr.Satyajit Roy	Workshop on "Mathematical Models and applications".	B.I.T. , Mesra, Ranchi.	22-12-2001
3.	Dr.Subrahmanyam P.V.	State Level Conference in "Research and Teaching of Mathematics	Stella Maris College, Chennai (Golden Jubilee Celebrations).	31-1-2001 to 1-2-2001
7.	Dr.Sundar S.	National Workshop on "Applicable Mathematics: Past & Present".	IIT Kharagpur	23-3-2001 to 25-3-2001
8.	Dr.Thamban Nair M.	International Workshop on "Linear Algebra, Numerical Functional Analysis and Wavelet Analysis"	Cochin University of Science & Technology	Aug. 6-15, 2001

Special Lectures delivered by the faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Delivered at	Date
1.	Dr.Arindama Singh	Linear Algebra	MTTS - 2001, Pondichery University	May 2001
		Invited Lectures in ICCTDEDS	IIT Kanpur	December 2001
		Invited Lecture In WCS	Central University, Hyderabad	February, 2002.
2.	Dr.Choudum S.A.	"Design of Interconnection Networks".	Karnataka University, Dharisar.	28.2.2002 to 2.3.2002

3.	Dr.Kulkarni S.H.	"Finite dimensional approximations of operator equations"	Cochin University of Science and Technology, Cochin.	6-8-2001 to 15-8-2001
		"Quaternion Banach algebras".	Sardar Patel University, Vallabh-Vidyanagar, Gujarat.	8-1-2002 to 16-1-2002
		" Singular Values of Operators".	Academic Staff College, University of Kerala, Thiruananthapuram.	22 nd & 23 rd Nov. 2001
		"Singularities of an analytic function".	The Ramanujan Institute of Advanced Studies in Mathematics, University of Madras, Chennai.	Dec. 2001
4.	Dr.Parthasarathy P.R.	"Queueing models for industry", Summer course on Mathematical Models of Industrial Problems.	Vellore Engineering College.	29-5-2001
		"Industrial Mathematics", Inaugural address.	Periyar Maniammai College of Technology.	22-2-2002
		"Industrial Mathematics Education".	SRM College of Engineering.	01-3-2002
5.	Dr.Ponnusamy S.	"Geometric properties of Hypergeometric functions and associated operators".	CMF' 2001 conference Portugal	June 2001
		"Boundedness of Generalized Cesaro' Operators on certain function spaces".	University of Trier, Germany.	July 2001
	Dr.Ponnusamy S.	"Elliott's identity and hypergeometric Functions".	University of Kassel, Germany.	June 2001
		"Certain questions on Operators concerning hypergeometric series".	University of Wuerzburg, Germany.	July 2001
		"Elliott's identity and hypergeometric Functions".	Dept. of Mathematics, University of Helsinki, Finland.	April-May 2001.
6.	Dr.Sanyasiraju Y.V.S.S.	" Solvers in CFD" in CFD workshop organized by Prof.E.G.Tulapurkara.	IIT Madras, Chennai.	June 2001
		" Advanced Mathematics".	Pratasha Engineering College, Chennai.	Nov. 2001
7.	Dr.Satyajit Roy	" Numerical Solutions of Symmetrical Boundary Layer Flows".	B.I.T. Mesra, Ranchi.	22-12-2001
		Computer Society of India.	Raipur Chapter.	April 2001
		National Seminar on New Trends in Mathematics.	Nagpur University.	March 2002.
8.	Dr.Subrahmanyam P.V.	"Fuzzy summability" and "Random contractions".	Fern University, Hagen, Germany.	Aug. 2001
		Tauberian Theorems	Trier University, Germany.	Aug. 2001
		Functional Equations and Invariant curves.	Stella Maris College, Chennai (at the Golden Jubilee Celebrations).	1-2-2002
		" Teaching Differential Equations to undergraduate students".	Kochi	Dec. 2001
9.	Dr.Thamban Nair M.	"Approximation Spectral Sets and Spectral Sub spaces".	Cochin University and Science Technology, Cochin University.	6-8-2001 to 15-8-2001
10.	Dr.Vetrivel V.	Given series of four Lectures entitled "Basics of Complex analysis".	Ramanujan Institute, University of Madras.	Nov. 2001

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country Visited	Date	Purpose of Visit
1.	Dr.Avudainayagam A.	Society for Photo Optical Instrumentation Engineering at Sandiago, U.S.A.	29-7-2001 to 3-8-2001	Attended and presented a paper at the International Congress on "Wavelets and Applications".
2.	Dr.Parthasarathy P.R.	The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy.	4-6-2001 to 4-7-2001	Visited in the capacity as a Senior Associate of ICTP.
3.	Dr.Ponnusamy S.	University of Kaiserslautern, Germany. University of Helsinki, Finland	May-June 2001 April-May 2001	Visited in the capacity as Visiting Fellow to accept Scholarship Programme under Professional Visit. Visiting Fellow
4.	Dr.(Mrs.) Rama R.	University of South Florida, Tampa, Florida, U.S.A.	10.6.2001 to 13.6.2001	To attend and present a paper.
5.	Dr.Subrahmanyam P.V.	University of Hagen, Germany.	August - September, 2001	As a Guest Professor.
6.	Dr.Sundar S.	AG Technomathematik Universitaet Kaiserslautern, Germany.	May 14 - July 11, 2001	Visited in the capacity as Visiting Fellow under Professional visit.
7.	Dr.Swaminathan K.	San Jose Convention Centre, San Jose, USA.	20-1-2002 to 25-1-2002	Attended the IS&T/SPIE's 14 th Annual Symposium: Electronic Imaging 2002: Science Technology - Image Processing: Algorithms and Systems, and presented a paper titled "Simulation studies for the construction of a straight line in 3-D from two arbitrary perspective views using epipolar line method".
8.	Dr.Veeramani P.	Technion - Israel Institute of Technology.	13-6-2001 to 19-6-2001 13-6-2001 to 1-07-2001	Attended and delivered a talk on "Fixed Point Theory and applications". Also visited the Technion-Israel Inst. of Tech. and University of Haifa, Haifa, Israel.

Honours and Awards obtained:

Sl. No.	Name of the faculty	Honours / Awards
1.	Dr Parthasarathy P.R.	Senior Associateship of The Abdus Salam International centre for Theoretical physics, Trieste, Italy from 2000.
2.	Dr. Ponnusamy S.	Best selling author, Silver Jubilee Award for the book "Foundations of Complex Analysis" for the period 1987 - 2002.

Fellowships of Academies and Professional Societies:

Sl. No.	Name of the faculty	Name of the Academy / Professional Society	Level	Year of Admission
1.	Dr. Kulkarni S.H.	American Mathematical Society.	Member	--
2.	Dr. (Mrs.) Rama R.	Member of European Association for Theoretical Computer Science	Annual Member	Renewed every year
3.	Dr. Sanyasiraju Y.V.S.S.	Aeronautical Society of India	Life Member	--
4.	Dr. Thamban Nair M.	Indian Mathematical Society Ramanujan Mathematical Society	Life Member	--
		American Mathematical Society	Annual Member	Renewed every year

Books / Monographs authored or co-authored:

Sl. No.	Name (s) of Author(s)	Title of Text Book/ Monograph	Publisher
1.	Dr.Ponnusamy S.	"Foundations of Functional Analysis".	Narosa Publishing House, India, 2002. 457 pp.
2.	Dr.Thamban Nair M.	A text book: "Functional Analysis : A First Course "	Prentice Hall of India New Delhi

4.9.4 Design and Development activities:

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

Name of faculty	Nature of development activities	Brief details
Dr. Sundar S.	Software Design	SHOCK_NTSD
Dr.Sanyasiraju Y.V.S.S.	A CD under preparation	CD on Numerical Analysis.

4.9.5 Research and Consultancy:

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinatos
1.	On-line tutoring titled " Educational Consultancy : Intellexon Education Systems (P) Ltd. Chennai.	2001-2002	Intellexon Pvt.Ltd., Adyar	5.25	Dr.Choudum S. A. Dr.(Mrs.) Usha R.

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (Rs.in lakhs)	Co-ordinators
1.	"Embeddable Props of graphs and interconnection network.	January 2002 to January 2005	DST	9.77	Dr. Choudum S. A.
2.	"Applications of Queueing models In Production & Inventory management "	3 years	BMBF project under Indo-German Collaborative Research programme	--	Prof. (Mrs.) S. Kalpakam Prof. K.P.Kistner University of Bielefeld Germany.
3.	Applications of Ramanujan's Theory in Geometric Function Theory	July 1999 to July 2002	NBHM	7.56	Dr.S. Ponnusamy

4.	Role of Special functions in Function theory & Fraction spaces	Nov.2000 to Oct. 2003	DST	16.50	Dr.S. Ponnusamy
5.	"Studies in Contextual Grammers".	3 years	NBHM	3.50	Dr. (Mrs.) Rama R.
6.	"Determination of Heat Transfer coefficients for the nozzle guide vanes".	1 year	RBIC, GTRE, Bangalore	3.40	Dr. Sanyasiraju Y.V.S.S.
7.	Inverse Problems in Boundary Layer Flows	6-08-1999 to 5-08-2002	UGC	1.95	Dr. Satyajit Roy
8.	"Surface-Lemim driven gas-liquid flows under microgravity conditions: measurements & CFD predictions".	2000-2003	ISRO	12.74	Dr.(Mrs.) Usha R., Dr.Sreenivas Jayanthi (CH)
9.	Sponsored project titled " Numerical Study of particulate suspension flow through wavy walled channel and its stability characteristics "	1999-2002	CSIR	4.83	Dr.(Mrs.) Usha R., Dr. Tulapurkara E.G. (AE)
10.	Sponsored project titled "Nonsmooth Analysis and Proximal Bundle Methods".	3 years (from 2-1-2002)	DST	5.05	Dr. Vetrivel V.

Journal Editorial Boards:

S.No.	Name of Faculty	Level	Journal
	Dr. Parthasarathy P.R.	Regional Editor	Statistical Theory and Methods Abstracts
		Advisory Editor	J.Infor.Opt.Sci.
		Associate Editor	J.Appl.Stat.Sci., International Journal of Computer Mathematics.
	Dr. Parthasarathy P.R.	Associate Editor	Amer.J.Math.Mgt.Sci. Pure and Apl.Math:Sci. Journal of Decision and Mathematika Sciences. Assam Statistical Review. Reviewer Advisory Board, Computing Surveys, ACM.
		Member	American Mathematical Society. European Mathematical Society. Institute of Mathematical Statistics. Bernoulli Society. Operation research Society of India. Indian Statistical Association.
2.	Dr. Ponnusamy S.	Editorial Board	Mathematics Newsletter (sponsored by NBHM).
		Managing Editor	The Journal of Analysis (Published by Forum D'Analystes).
3.	Dr. Subrahmanyam P.V.	Editorial Member	J. Analysis
4.	Dr. Vetrivel V.	Fellow	Forum D'Analystes.

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	40
No. of papers presented in International Conferences	..	2

In Refereed National Journals:

1. Veeramani P. (Sadiq Basha S. & Pai D.V.), Best Proximity pair theorems, Indian J. Pure appl. Math., 1237-1246, 32 (8) , (2001).
2. Vetrivel V. (Dutta J.), Motzkin Type Alternative Theorem and Set Valued Optimization, Journal of Analysis, 137-147, 9 (2001).

In Refereed International Journals:

1. Avudainayagam A. (Vani C.), Data-dependent Hacer like transforms for compression, SPJE Proceedings, 4478, Aug. (2001).
2. Choudum S.A. (Priya N.), Tenacity – Maximum Graphs, JCMCC, 37 (2001).
3. Choudum S.A. (Priya N.), Tough – Maximum Graphs, Avs. Comb. 167-172, 61, (2001).
4. Kalpakam S. (Shanthi S.), A perishable inventory system with modified (S-I-S) policy and arbitrary processing times". Computers & Operations Research, Vol. 28, 453 – 471, (2001).
5. Kamath S.G., A planar Runge-Lenz vector, J.Math. Phys., 318, 43 (2002).
6. Kulkarni S.H. (Balasubramanian R. and Radha R.), Non-invertibility of certain almost Mathieu operators, Proc. Amer. Math. Sec., 2017-2018, 129(7) , 2001.
7. Kulkarni S.H. (Sushama Agrawal), Spectral representation of a quaternionic Hilbert space, Mathematics Today, 19, 2001.
8. Kulkarni S.H. Bishop theorem, Encyclopedia of Mathematics, Supplement III, 2001.
9. Parthasarathy P.R. (Selvaraju N. and Lenin R.B.), The numerical solution of a birth-death process arising in multimedia synchronization., Math.Comp.Modell, 887-901, 34 (2001).
10. Parthasarathy P.R. (Selvaraju N.), Exact transient solution of a state-dependent queue in discrete time, Oper.Res. Lett., 243-248, 28 (2001).
11. Parthasarathy P.R. (Selvaraju N.), Transient analysis of a queue where potential customers are discouraged by queue length, Mathematical Problems in Engineering , 433-454, 7 (2001).
12. Parthasarathy P.R. (Dharmaraja S.), Transient solution of a single link with finite capacity supporting multiple streams, Performance Evaluation, 1-14, 43 (2001).
13. Ponnusamy S.,(Balasubramanian R. & Vuorinen V.), on hypergeometric functions and function spaces, J.Computational and Applied Maths., 299-322, 139 (2) (2002).
14. Ponnusamy S.,(Nezhmetdinov I.), on the class of univalent functions starlike with respect to N-symmetric points, Hokkaido Mathematical Journal, 61-77, 31 (2002).
15. Ponnusamy S.,(Obradovic M.), New criteria and distortion theorems for univalent functions, Complex Variables: Theory and Appl., 173-191, 43 (2001).
16. Ponnusamy S.,(Vuorinen M.), Univalence and convexity properties for Gaussian Hypergeometric functions, Rocky Mountain J.Math., 327-353, 31(1), (2001).
17. Rama R. (Kamala Krithivasan and Krishna S.N.), P systems with Picture Objects, Acta Cybernetica, Vo.15, 53-74, (2001).
18. Rama R. (Krishna S.N. and Lakshmanan K.), Hybrid P systems, Romanian Journal of Information Science and Technology, Vol.4, No.1-2, 111-123, (2001).

19. Rama R. (Krishna S.N.), Insertion – Deletion P systems, Pre-Proceedings of DNA 7, Tampa, USF, 350-359, (2001).
20. Rama R.(Krishna S.N.), P Systems with replicated rewriting, Journal of Automata, Languages and Combinatorics, Vol.6, 3, 345-350, (2001).
21. Satyajit Roy (Sathyakrishna M., Nath .), Unsteady two-dimensional and axisymmetric MHD boundary layer flows, Acta Mechanica, 67-78, Vol. 150, (2001).
22. Satyajit Roy, Non-uniform Mass Transfer of wall enthalpy into a compressible flow over yawed cylinder, Int. J. Heat and Mass Transfer, 3017-3024, Vol.44, (2001).
23. Sundar S. (Bhagavan B.K. & Prasad S.), Newton-Preconditioned Krylov Subspace Solvers for System of Nonlinear Equations: A Numerical Experiment, Applied Mathematics Letters, 195-200, Vol. 14, (2001).
24. Sundar S. (Mueller P., Reuther B. & Vyas O.P.), Testbed Realization of Poission Characteristics in ATM QoS Mechanism, Broadband Networking in the New Millennium, Eds, The ATM Forum, Tata-McGraw Hill, 165-169, (2001).
25. Thamban Nair M. (Rajan M.P.), Arcangeli's type discrepancy principles for a class of regularization methods using a modified projection scheme, Abstract and Applied Analysis, 339-356, 6 (6) (2001).
26. Thamban Nair M. (Rajan M.P.), Arcangelis' discrepancy principle for a modified projection scheme for ill-posed problems, Numer.Funct. Anal. And Optim., 773-787, 22 (1 & 2) (2001).
27. Thamban Nair M. (Rajan M.P.), On improving accuracy for Arcangeli's method for solving ill-posed equations , Integral Equations and Operator Theory, 496-501, 39 (2001).
28. Thamban Nair M., Optimal order results for a class of regularization methods using unbounded operators, Integral Equations and Operator Theory, 44 (1) (2002).
29. Thamban Nair M., An interative procedure for solving Riccati equation, $A_2 R - RA_1 = A_3 + RA_4 R$, Studia Mathematica Studia Mathematica, 15-26, 147 (1) (2001).
30. Usha R.(Gotz T.), Spinning of a liquid film flow on a rotating disk in the presence of a magnetic field – a numerical solution, Acta Mechanica, 137-151, Vol. 147 , (2001).
31. Usha R.(Ravindran R.), Numerical study of film cooling on a rotating disk, International Journal of Nonlinear Mechanics, 147-154, Vol.36, (2001).
32. Usha R.(Uma B.), Role of Induced airshear on the development of a conducting fluid film over a rough spinning disk in the presence of a transverse magnetic field, ZAMM, 211-216, Vol. 82, (2002).
33. Usha R.(Vimala P.), Curved Squeeze Films with Inertial Effects – Energy Integral Approach, Fluid Dynamics Research, 139-153, Vol.30, No.3 (2002).
34. Usha R.(Vimala P.), Ineritla effects in a curved Non-Newtonian Squeeze Film, Trans ASME-J.Applied Mechanics, 944-948, Vol. 68, (2001).
35. Usha R.(Vimala P.), Theoretical Investigation of unsteady squeeze flow in curved Newtonian squeeze film, Trans. ASME – J. Tribology, (in press), (2002).
36. Usha R., Flow of a thin liquid film over a rough rotating disk in the presence of transverse magnetic field, ZAMP, 793-809,,Vol. 52 (2001).
37. Veeramani P. (Srinivasan P.), Best Proximity pair Theorems for a Family of sets, Proc.Int.Conf.on Analysis and its Applications, December 2000, Proc. Was brought out by Allied publishers India, 197-207, October, (2001).
38. Veeramani P., Best Approximation in Fuzzy Metric Spaces, The journal of Fuzzy Mathematics, 75-80, Vol. 9, No. 1, (2001).
39. Vetrivel V. (Dutta J.), Mathematical Programming with a class of Non-smooth Functions, Journal of Systems Science and Complexity, 15, 52-60, (2002).
40. Vetrivel V. (Dutta J.), On Approximate Minima in Vector Optimization, Numerical Functional Analysis and Optimization, 845-859, 22 (2001).

In Proceedings of International Conferences:

1. Swaminathan K.(Das S. and Balasubramanian R.), Simulation studies for the construction of a straight line in 3D from two arbitrary perspective views using epipolar line method, SPIE, Vol.4667, 2002.
2. Veeramani P. (Srinivasan P.), An Extension of Browder Fixed Point Theorem and Applications, Nonlinear Analysis Forum, 267-273, 6(1), (2001).

Distinguished visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date	Purpose of visit
1.	Prof. James H. Matis Texas A & M. University U.S.A.	4.4.2001	Special Seminar
2.	Mr. Ramaswamy Variankaval University of Illinois Urbana - Champaign	12.4.2001	Special Seminar
3.	Dr. L. Jones Tarcus Doss Dept. of Mathematical and Computer Sciences Colorado School of Mines Colorado.	26.4.2001	Special Seminar
4.	Prof. Z. Govindarajulu University of Kentucky, U.S.A.	19.7.2001	Special Seminar
5.	Prof. John Ball Mathematical Institute Oxford University	20.8.2001	Special Seminar
6.	Prof. K.R. Rajgopal Texax A.M. University	28.8.2001	Special Seminar
7.	Dr.G.P. Youvaraj Dept. of Mathematics Emporia State University Kansas, U.S.A.	30.8.2001	Special Seminar
8.	Dr.C.R. Subramanian Math.Science,Taramani Chennai - 600 113.	6.9.2001	Special Seminar
9.	Dr.K.R. Nagarajan Visiting Professor at Chennai Mathematical Inst. (Retired Professor from Madurai Kamaraj Univ.)	13.9.2001	Special Seminar
10.	Dr.V. Balaji Chennai Mathematical Institute T.Nagar, Chennai - 600 017.	20-9-2001	Special Seminar
11.	Prof. C. Pandurangan Dept. of Computer Science & Engg. IIT Madras, Chennai - 600 036.	1.11.2001	Special Seminar
12.	Dr. P. Sreenivasa Kumar Dept. of Computer Science & Engg. IIT Madras, Chennai - 600 036.	8-11-2001	Special Seminar
13.	Dr.V. Sundarapandian Dept. of Mathematics IIT Kanpur.	12-11-2001	Special Seminar

14.	Prof. R. Anantharaman Clark Atlanta University Atlanta GA, U.S.A.	12-11-2001	Special Seminar
15.	Prof.R. Anantharaman Clark Atlanta University Atlanta GA, U.S.A.	15-11-2001	Special Seminar
16.	Prof.R. Anantharaman Clark Atlanta University Atlanta GA, U.S.A.	20-11-2001	Special Seminar
17.	Prof. Mahendra G. Nadkarni Dept. of Mathematics University of Mumbai (Currently Visiting Professor at the Institute of Mathematical Sciences).	29-11-2001	Special Seminar
18.	Prof.T. Amarnath Central University of Hyderabad.	6-12-2001	Special Seminar
19.	Prof.R. Katz California State University LA, U.S.A.	19-12-2001	Special Seminar
20.	Prof. Krishnaswami Alladi Dept. of Mathematics University of Florida, Gainesville FOLLOWING 32611, U.S.A.	29-12-2001	Special Seminar
21.	Dr. Surya Ramana Harish - Chandra Research Institute Chhatnag Road, Jhusi Allahabad - 211 019.	3-1-2002	Special Seminar
22.	Dr. Francesco Pappalardi Dipartimento di Matematica Universita degli studi Roma TRE Largo S.L. Murialdo, 1, I-00146, Rome, Italy.	7-1-2002	Special Seminar
23.	Dr.R.O. Wells International University of Bremen	9-1-2002	Special Seminar
24.	Dr.D. Vanchinathan Chennai Mathematical Institute 92, G.N. Chetty Road T.Nagar, Chennai - 600 017.	31-1-2002	Special Seminar
25.	Prof. Jarosz Dept. of Mathematics Southern Illinois University U.S.A.	7-2-2002	Special Seminar
26.	Dr. Kamal Lodoya Institute of Mathematical Sciences Taramani Chennai - 600 113.	14-2-2002	Special Seminar
27.	Dr. Mukesh D. GE India, Bangalore.	25-2-2002	Special Seminar
28.	Prof. Stephan Ruscheweyh Mathematisches Institut Universitaet Wuerzburg Germany	28-2-2002	Special Seminar

29.	Prof. Dr.Klaus-Peter Kistner University of Bielefeld Germany	14-3-2002	Special Seminar
30.	Prof. Krishnan Balasubramanian Dept. of Mechanical Engineering IIT Madras	21-3-2002	Special Seminar
31.	Dr. Padmanabhan Seshaiyer Texas Tech. University, Lubbock	26-3-2002	Special Seminar

4.9.6 Other Activities:

Sl. No.	Name of the Faculty	Any other information
1.	Dr. Kulkarni S.H.	Reviewer for Mathematical Reviews. Coordinator FORAYS 2002.
2.	Dr. Subrahmanyam P.V	Reviewer for national and International journals.
3.	Dr.Parthasarathy P.R.	Coordinator for Technology Appreciation Programme (TAP) in "Industrial Statistics" held on 11-04-2001. About 40 industries participated. Coordinator for the Gifted Youth Programme of Bharatiya Vidya Bhavan from 23-04-2001 to 12-05-2001. Reviewed for Zenbtralblatt fur Mathematik and ACM Computing Reviews. Refereed projects from DST / CSIR. Refereed Indian and foreign journals.
4.	Dr.Sundar S.	Member, Board of Computer Science and Information Technology, Pt. Ravishankar University, Raipur (CG). Selection Committee Expert, Thiagarajar Engineering College, Madurai, 2001. Supervisor in Sandwich Ph.D. Programme in Industrial Mathematics at Universitaet Kaiserslautern, Germany.
5.	Dr.S. Ponnusamy	Advisory Member of : Thevanai College for Women, Villupuram. Periyar EVR College, Tiruchinapalli. Refereed for SIAM J.of Mathematical Analyses, J.of Computational and Applied Mathematics, Bulletin of Malasian Mathematical Society and several other journals in India. Evaluated applications for DST and CSIR Research Projects.

Visit Of Foreign Students And Faculty:

A study group of 20 students and 2 faculty from Vrije University, Amsterdam, The Netherlands visited the department from 29-11-2001 to 1-12-2001 and had interactions with our faculty and students.

Visiting Faculty:

1. Dr.Youvaraj, Emporia State University, Emporia, KS-66901, U.S.A., has joined the Department of Mathematics on Sabbatical leave with effect from 23rd July, 2001 for a period of One year. He is jointly working with Dr.S.Ponnusamy, Associate Professor of our Department in the DST Project on "Role of Special Function..... Spaces".
2. Prof. R. Anantharaman, Dept. of Mathematics, Clarke University, USA, has visited the department from 27th October, 2001 to 21st November, 2001. He gave a series of lectures and had discussions with Prof.P.V. Subrahmanyam.

3. Prof.J.S.Misra, Department of Mathematics, IIT Kharagpur, visited the department from 30th January, 2002 to 31st January, 2002. He met the faculty of the department and had interactions with them.
4. Professor K.P. Kistner, University of Bielefeld, Germany, has visited the department of Mathematics under the BMBF project (jointly with Professor (Mrs.) S. Kalpakam from 20th February, 2002 to 25th March, 2002.

Director's Visit to department:

Prof.M.S. Ananth, Director of IIT Madras visited the department on 23rd January, 2002 at 3.00 p.m. and discussed academic and administrative matters with the faculty.

Series of Lectures:

Dr. G.P. Youvaraj, Department of Mathematics, Emporia State University, Kansas, U.S.A. is giving a series of lectures on "Hardy Spaces" for a period of two semesters on Mondays and Fridays between 3.00 p.m. and 4.30 p.m. with effect from 27th August, 2001

Video Show:

A video show was shown in the department on 22nd November, 2001 at 3.00 p.m. The topic of the show was "The Proof" (on Fermat's Last Theorem). The explanation was given by Dr.S. Ponnusamy.

TV Programme by faculty:

Dr. S. Ponnusamy, Associate Professor of our department gave 2 live TV program in the PODIGAI channel on 22nd and 24th January, 2002, on the opportunities for the students of Mathematics.

PROGRAMME FOR GIFTED YOUTH:

The Gifted Youth Programme for Bharathiya Vidya Bhavan Students was inaugurated on 20th April, 2001 at IC & SR Building, IIT Madras. Prof.P.R. Parthasarathy was the Coordinator. Dr. M.Thamban Nair and Dr. Arindama Singh gave lectures in the programme.

Prof. James H.Matis, Dept. of Statistics, Texas, A & M University gave a lecture titled "Some Sampling Designs - An Activity" on 24th April, 2001 to the students who attended the Programme for Gifted Youth (PGY 2001).

International Conference on Industrial mathematics (ICIM 2001):

The International Conference on Industrial Mathematics (ICIM-2001) was organised between August 12-14, 2001 at our Department. About 200 delegates attended the conference. There were about 10 paper presentation sessions in which 70 papers were presented.

The conference was inaugurated by the Eminent Industrialist Mr.M.M.Murugappan, Director Technology, Murugappa Group. Our Director Prof.R.Natarajan presided over the function. The Key note address was given by Dr.Deshpande, AB & DB Centre for Excellence, Computational Fluid Dynamics, I.I.Sc. Bangalore.

There were about five plenary talks given by eminent scientists including Prof.P.N.Shivakumar from Canada. There were ten half an hour talks given by scientists

from academic institutions and industry. There was also a flute concert given by Mrs. Sikkil Mala Chandrasekhar. The Valedictory function was chaired by the Professors S. Narayanan, Dean (Academic Research) and R. Balasubramanian, Director, Institute of Mathematical Sciences.

Prof. S.N. Majhi and Prof. P.R. Parthasarathy were the Organising Secretaries of the International Conference. Vote of thanks was given Prof.A. Avudainayagam, Head of the Department.

FORAYS 2002 – A MATH FEST:

The department of Mathematics celebrated FORAYS 2002 on 23rd and 24th of February. The Director Prof.M.S. Ananth inaugurated the mega fest.

There was overwhelming response from around 35 Science and Engineering colleges around the city. 21 papers were presented during the paper presentation session.

Dr.K. Ranganathan, Professor of RKM Vivekananda College conducted the Quiz. Dr. Balasubramanian, Director of Institute of Mathematical Sciences, Taramani gave an enlightening lecture on Cryptography. Dr. Shri Bala, Director of Ramanujan Institute for Advanced Study in Mathematics presided over the Valedictory Function. Prof.A.Avudainayagam, Head of the department gave away the certificates and cash prizes to all the winners. Prof. S.H. Kulkarni was the faculty coordinator of FORAYS 2002.

Joint Workshop:

The Department of Mathematics along with Dept. of Chemical Engineering organised a Joint Workshop on "Control Engineering" with the University of Kaiserslautern Germany & IIT, Madras on 13th and 14th June, 2001 at IC &SR Hall

Prof. S.Narayanan, Dean (AR) gave the Welcome address, followed by a Presidential address by Prof. R. Natarajan, Director, IIT Madras. Shri.K.S.Narayanaswamy of Shramir Consultancy Pvt.Ltd. was the Chief Guest. A brief, about the Workshop, was given by Prof. Madhukar Pandit, University of Kaiserslautern, Germany. Prof. A. Avudainayagam, Head, Dept. of Mathematics gave the Vote of Thanks.

Workshop:

The following two students attended the workshop on "Recent Advances in Operator Theory and Operator Algebras", at the Indian Institute of Sciences, Bangalore from 24.12.2001 to 4.1.2002:

Mr. R. Balaji
Mr.D. Sukumar

Summer School:

Ms. K.V. Vijayashree is a research scholar in the department of Mathematics has been selected to participate in the summer school on "Operations Research & It's Applications" at Indian Statistical Institute, Bangalore between 18/06/2001 and 07/07/2001.

Winter School:

The following four Ph.D. research scholars have been selected to participate in WG 2.3/UNU-IIST School on Formal Software Engineering the winter school at Pune between 3.1.2002 and 10.1.2002:

Ms. V. Sunitha
Mr. M.A. Shalu
Mr. K. Lakshmanan
Mr. Manoj Kumar Raut

Release of II Volume of Proceedings of Conference:

The second volume of the proceedings of the "One Day Conference on Analysis and its Teachings" was released by Prof.S.K. Srinivasan, in the function on 26th July, 2001 at the department Seminar Hall.

Param Users Meet:

Prof. A. Avudainayagam, Head of the Department of Mathematics, along with Prof.Krishnakumar, Head, Computer Centre, attended the Param Users meet arranged by CDAC (Centre for development in Advanced Computing) Pune on 5th and 6th July, 2001.

**National Symposium on Mathematical Methods and Applications:
(NSMMA – 2001)**

The department organised a " National Symposium on Mathematical Methods and Applications" on 22nd December, 2001, the day of the 113th birth anniversary of Sri Srinivasa Ramanujan, the great Indian Mathematician. The day's events were inaugurated by Prof. C.R. Muthukrishnan, Director in-charge, IIT Madras, Chennai.

This was followed by three invited key note addresses in the forenoon by:

Prof. Phoolan Prasad (IISc. Bangalore),

Prof. Mythily Ramaswamy (TIFR, Bangalore) and

Prof. H.N. Mhaskar (State University, California, U.S.A.).

In the afternoon, parallel paper presentation sessions (3 sessions) were held.

Prof. K. Elango, Dean, Academic Courses, presided over the valedictory function. Prof.S.N. Majhi of our Department was felicitated on the occasion of his superannuating.

4.10 DEPARTMENT OF MECHANICAL ENGINEERING

4.10.1 Introduction:

The Department of Mechanical Engineering was established in the year 1959. The department offers B.Tech., Dual Degree, M.Tech, M.S. and Ph.D. 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.

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

4.10.2 Academic Programmes:

New Courses Introduced:

S.No.	Course No.	Title
1	AT 506	Vibration, noise and finite element analysis of engines
2	AT 516	CFD Analysis of IC Engines
3	ME 628	Design and Optimization of Energy Systems
4	ME 638	Design of Turbomachinery
5	ME 639	Microhydropower
6	ME 659	Renewable Energy Technology
7	ME 669	Energy Engineering Laboratory
8	ME 724	Modelling and Simulation in Manufacturing
9	ME 725	Rapid Response Manufacturing

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	105	95	81	84	-	365
Dual Degree - Energy Technology	4	7	4	7	-	22
Intelligent Manufacturing	4	6	3	6	-	19
Product Design	6	6	3	6	-	21
M.Tech. - Thermal Engg.	29	35	-	-	-	64
Design	30	32	-	-	-	62
Manufacturing Engg.	21	28	-	-	-	49
M.Tech - Automotive Engine Tech.	11	14	-	-	-	25
M.S.	9	16	13	10	2	50
Ph.D.	19	14	20	9	14	76
Total	238	253	124	122	16	753

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

Sl. No.	Name of the Student/ scholar	Prog.	Name of the Conf/ Seminar/ Symposia	Date and Venue
Conferences:				
1	Mahadev Prasad	M.S.	Workshop on Computed Tomography held at IIT Kanpur	Dec. 2001
2	N Govindarajan	M.S.	International Conference and ATM on Mechanical Alloying	Feb. 2001

3	Rajesh Sharma	M.S.	International Conference on Industrial Mathematics	Aug. 2001 IIT Madras
4	M. Senthil Kumar	Ph.D.	XVII National Conference on IC Engines & Combustion	18-20, Dec. 2001 KREC, Suratkhal
5	M. Senthil Kumar	Ph.D.	2 nd SAE INDIA Mobility Conference	10-12, Jan. 2002 IIT Madras
6	K.A.Subramanian	Ph.D.	2 nd SAE INDIA Mobility Conference	10-12, Jan. 2002 IIT Madras
7	P. Basu	Ph.D.	2 nd SAE INDIA Mobility Conference	10-12, Jan. 2002 IIT Madras
8	S.Ganesan	M.S.	2 nd SAE INDIA Mobility Conference	10-12, Jan. 2002 IIT Madras
9	Rajesh Sharma	M.S.	2 nd SAE INDIA Mobility Conference	10-12, Jan. 2002 IIT Madras
10	R Renukumar	M.S.	Management of Biomass based power generation and biomass utilization technologies	20-22, Dec .2000 Anna University, Chennai
11	Reby Roy,K.E.	Ph.D.	16 th National & 5 th ISHMT/ASME Heat & Mass Transfer Conference	January 3-5, 2002, Kolkota, India
12	P.Muthukumar	Ph.D.	16 th National & 5 th ISHMT/ASME Heat & Mass Transfer Conference	January 3-5, 2002, Kolkota, India
13	S.Pugazhenth	Ph.D.	2 nd Asian Symposium on Industrial Automation & Robotics (ASIAR).	17 & 18 May 2001, Bangkok, Thailand.
			Joint workshop on Control Engineering by University of Kaiserslautern, Germany and IIT Madras.	13 & 14 June 2001,IIT Madras.
			International Conference on Theoretical, Applied Computational and Experimental Mechanics ICTACEM	27-30 Dec.2001 IIT Kharagpur
14	H.P.Raju	Ph.D	COPEN 2002	11 & 12 Jan.2002 Coimbatore
			SYMAX	7 & 8 Jan.2002 IIT Madras
15	G.Satheesh Kumar	Ph.D	Joint workshop on Control Engineering by University of Kaiserslautern, Germany, IIT Madras.	13,14 June 2001
16	Somashekhar S.H	Ph.D	International Conference on Fluid Power.	May-30, June 1 2001, Sweden
			SAE International Off-highway Congress IFPE 2002	19-21March 2002, USA
			ASME Conference FEDSM'02	July 15 2002, Canada
			2 nd National Conf. Precision Engg.COPEN 2002.	11 &12 Jan. 2002 Coimbatore
			First National Conf. on CAD/CAE	22-23 Feb2002, Chennai.
			National Symposium on Systems	2 nd sept.2001 IIT Madras
			SYMAX	7 & 8 Jan 2002 IIT Madras
			Workshop on Control Engineering	13-14 June 2001 IIT Madras
			Fluid Power Exhibition and SeminarFPES'02	29-31 Jan.2002 Bangalore
17	N.Rajesh	Ph.D.	International Conference on Shot Peening & Blast Cleaning, ICSP - 2	Sep. 17 - 19, 2001 Mantana Azad College of Technology, Bhopal.
			Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore

18	J.T.Winowlin Jappes	Ph.D.	Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
19	B.S.K.Reddy	M.S.	National Conference on Recent Advances in Material Processing, RAMP - 2001	Sep.7- 8, 2001 Annamalai University, Annamalai Nagar
			Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
20	S.N.Kurbet	Ph.D.	2 nd International SAE India Mobility Conference	Jan. 10 - 12, 2002 IIT Madras
21	Apurbba KR Sharma	Ph.D.	Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
			National Conference on Recent Advances in Materials Processing, RAMP - 2001	Sep.7- 8, 2001 Annamalai University, Annamalai Nagar
22	K.Vijayakumar	Ph.D.	Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
			National Conference on Recent Advances in Materials Processing, RAMP - 2001	Sep.7- 8, 2001 Annamalai University, Annamalai Nagar
23	S.N.Arul Saravana Priyah	Ph.D.	Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
			National Conference on Recent Advances in Materials Processing, RAMP - 2001	Sep.7- 8, 2001 Annamalai University, Annamalai Nagar
			Sensors for Industry Conference SICON' 01 IEEE & IEA	Rosemount USA Nov.2001
24	Y.S.Varadarajan	Ph.D.	National Conference on Recent Advances in Materials Processing, RAMP - 2001	Sep.7- 8, 2001 Annamalai University, Annamalai Nagar
42	Shaji.S.	Ph.D.	Second National Conference on Precision Engineering, COPEN 2002	Jan. 11 - 12, 2002, PSG College of Technology, Coimbatore
Symposia:				
1	N.Rajesh	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
2	K.Lingadurai	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
3	M.S.Ajmal Deen Ali	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
4	S.Devaprasad	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
5	Apurbba KR Sharma	Ph.D.	National Symposium on Acoustics (NSA-2001)	Oct. 18 - 20, 2001, Vellore Institute of Technology (VIT) Vellore

			Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
6	K.Vijayakumar	Ph.D.	National Symposium on Acoustics (NSA-2001)	Oct. 18 - 20, 2001, Vellore Institute of Technology (VIT) Vellore
7	S.N.Arul Saravana Priyan	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras
			National Symposium on Acoustics (NSA-2001)	Oct. 18 - 20, 2001, Vellore Institute of Technology (VIT) Vellore
8	Y.S.Varadarajan	Ph.D.	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002, IIT Madras

4.10.3 Faculty and their activities:

Faculty:

Name and Qualifications	Major Area of Specialization(only 3 areas)
Professors:	
Ajit Kumar Kolar, Ph.D., IIT Madras	Fluidized Bed combustion
Balabaskaran, V., Ph.D., IIT Madras	Hydroturbomachines, CFD in Hydroturbomachines
Bhaskaran, K.A., Ph.D., IIT Madras	Combustion and Propulsion
Ganesan, V., Ph.D., IIT Madras [Head]	I.C. Engines
Gopinath, K., Ph.D., IIT Madras	Machine Design, Rolling contact fatigue and tribology, Design and development of new materials
Govardhan M., Ph.D., IIT Madras	Thermal Turbomachines
Krishnaiah Chetty, O.V., Ph.D., IIT Madras	Conventional and Unconventional Machining, FMS, CIM, Scheduling Petrinets
Krishnakumar R., Ph.D., IIT Madras	Non-linear and linear finite elements, CAD, Fracture Mechanics
Krishnamurthy, R., Ph.D., IIT Madras	Metal cutting, Grinding, Unconventional Machining Ceramics
Krishnan Balasubramaniam, Ph.D.	Non-destructive evaluation, Ultrasonics, Wave Propagation
Kumaraswamy, S., Ph.D., IIT Madras	Hydroturbomachines - design, analysis and testing, cavitation, pumps application engineering
Madhusudana Rao, M., Ph.D., IIT Madras	Mechanical Handling, Materials Handling
Nagalingam, B., Ph.D., IIT Madras	I.C. Engines
Nagarajan, T., Ph.D., IIT Madras	Robotics, Pneumatics, Medical Instruments
Narayanasamy K., Ph.D., IIT Madras	Precision Engg., Advanced Manufacturing methods in the field by Precision Engg. Production Metrology
Pramod S Mehta, Ph.D., Loguhborough, UK	I.C. Engines
Prasad, BVSSS., Ph.D., IIT Kharagpur	Turbomachines, Fluid Mechanics, Heat Transfer
Premananda Shet, U.S., Ph.D., IIT Madras	Combustion and Propulsion, Computational Fluid
Radhakrishnan, V., Ph.D., IIT Madras	Metrology, Automation, Grinding, CIM
Ramamoorthy B., Ph.D., IIT Madras	Metrology, CAI/Sensors/Mfg. Engg/ Quality control
Raman R., Ph.D., IIT Madras	Precision Engineering, Mechanical Measurements
Ramesh Babu N., Ph.D., IIT Madras	CNC, CAM, LBM, Grinding, PLC Applications
Shunmugam M S, Ph.D., IIT Madras	Metrology, BTA, Gear Machining, Grinding, EDM, Statistical Quality Assurance, Automation, Computer Aided Manufacturing Systems and Control
Singaperumal M., Ph.D., IIT Madras	Fluid Power, System simulation, Mechatronics

Sivaprasad N., Ph.D., IIT Madras
 Srinivasa Murthy S., Ph.D., IIT Madras
 Srinivasa Y G., Ph.D., IIT Madras
 Sundararajan, T., Ph.D., Pennsylvania
 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

Senior Maintenance Engineer:

Arun A., B.E., Madras University

Henry Ford Chair Professor:

Gopalakrishnan K V., Ph.D., IIT Madras

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

Refrigeration and Airconditioning

I.C. Engines

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

Sl. No.	Co-ordinators	Title	Period
Conference:			
1	Dr.R.Gnanamoorthy	International Conference on Powder metallurgically processed automotive components, New Delhi	January 2002
		International Conference on advanced materials and processes, IIT Kanpur, India	February 2002
3	Dr V Ganesan	2 nd SAE India International Mobility Conference	10-12 January 2002 IIT Madras

Seminar:			
1	Dr. B.V.S.S.S. Prasad Dr. E. G. Tulapurkara	Short term course on "Computations of Internal Flows"	June 11 - 16, 2001
		Short term course on "Computational Fluid Dynamics"	December 18 - 22, 2001
Symposia:			
1	Dr A Ramesh	MECHANICAL 2002	February 23, 2002
		SHAASTRA 2002	February 27 & 28 March 1 & 2, 2002
3	Dr.K.Narayanasamy	DST Sponsored 2 nd SERC School on Precision Engg.	Dec.4-13 2001
4	Dr.M.Singaperumal	DST Sponsored 2 nd SERC School on Precision Engg.	Dec.4-13 2001
5	Dr.K.Narayanasamy Co- Chairman	Organizing Committee to the Symposium on Manufacturing Excellence (SYMAX)	Jan 7 & 8 2002.
6	Prof.M.S.Shunmugam Prof.O.V.Krishnaiah Chetty Prof.N.Ramesh Babu	Symposium on Manufacturing Excellence (SYMAX)	Jan. 7 - 8, 2002
Workshop:			
1	Dr.Krishnan Balasubramaniam and Mr.G.Jothinathan	ASNT level III Preparatory Course	October 13 to November 2, 2001
2	Dr.S. Kumaraswamy	Usage of Databook for design of centrifugal pumps	21 st Dec. 2001
3	Dr.S. Kumaraswamy	Usage of Databook for design of centrifugal pumps for College teachers	30 th Mar.2002
4	Dr T Sundararajan Dr S R Chakravarthy	International Workshop on Modern Advances in Combustion	August 31 - Sept. 1, 2001
5	Prof. S.Srinivasa Murthy, Prof. B. Vishwanathan and Dr.M.P.Maiya	Engineering Applications of Metal Hydrides	31 st Dec. 2001

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
Workshop:				
1	Dr Pramod S Mehta	International Workshop on Modern advances in combustion	IIT Madras	August 2001
Symposia:				
1	Dr. BVSSS Prasad	4 th Annual CFD Symposium	AeSI Auditorium, Bangalaoe	August 10-11, 2001
2	Dr. M. Govardhan	15 th Int. Symposium on Air Breathing Engines	India National Organizing committee, Bangalore.	Sept. 2-7,2001
3	Dr. N. Sitaram	NI Day India 2001	NI India, Bangalore	Oct. 12, 2001
4	Dr Pramod S Mehta	Fifth International Symposium on Diagnostics and Modelling of combustion in internal engines (COMODIA 2001)	Nagoya, Japan	July 2001
Conference:				
1	Dr Krishnan Balasubramaniam	Quantitative NDE	USA	July 2000
2	Dr Krishnan Balasubramaniam	NDE 2001		December 2000

3	Dr. Pramod S Mehta	International Conference on Industrial Mathematics,	IIT Madras	August 2001
4	Dr. V. Ganesan	2 nd International SAE India Mobility Conference	IIT Madras	Jan.10-12,2002
5	Dr. B. Nagalingam	2 nd International SAE India Mobility Conference	IIT Madras	Jan.10-12,2002
6	Dr. Pramod S Mehta	2 nd International SAE India Mobility Conference	IIT Madras	Jan.10-12,2002
7	Dr. A.Ramesh	2 nd International SAE India Mobility Conference	IIT Madras	Jan.10-12,2002
8	Dr. Pramod S Mehta	Seventeenth National Conference on IC Engines and Combustion	Surathkal	December 18-20, 2001
9	Dr.Sarit Kumar Das	Leontiev Seminar	St.Pt.burg, Russia	May 20-25, 2001
10	Dr.Sarit Kumar Das	Compact Hx Conference	Davos, Switzerland	July 1-6, 2002
11	Dr.Sarit Kumar Das	New Refrigerants	Paderborn, Germany	Oct. 6-9, 2001
12	Dr.Sarit Kumar Das	National Heat Transer Conference	Kolkata	Jan. 3-5, 2002
13	Dr.A.Mani	ISES 2001 Solar World Congress		25-30 Nov. 2001
14	Dr. M.P. Maiya	2 nd IHPCC, Paris		5-8 Sept. 2001
15	Dr. M.P. Maiya	CLIMA 2000, Napoly		5-8 Sept. 2001
16	Prof.N.Ramesh Babu	"A study on residual stresses induced on 6063-T6 aluminium alloy with water jet peening" : COPEN - 2002 Coimbatore	Coimbatore	Jan. 11-12, 2002
17	Prof.R.Krishnamurthy	"Functional evaluation of Plasma deposited alumina - titania ceramic composite protective coatings": COPEN - 2002, Coimbatore.	Coimbatore	Jan. 11-12, 2002
18	Dr.L.Vijayaraghavan	"On-line Detection of Grinding Burn by Integrated sensing" - Rosemount, USA	Rosemount, USA	Nov. 5, 2001
19	Dr.L.Vijayaraghavan	"Performance Evaluation of multi coated carbide inserts with restricted contact rake face and PCBN in machining MMC" - Indianapolis, USA	Indianapolis, USA	Nov. 6-8, 2001

Special Lectures Delivered by the faculty in others Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr.Krishnan Balasubramaniam	NDT of Cryogenic hardware and Composite materials as applied to Space programme	Sriharikota, 25th August 2001.
		Automation in NDE	CAIR, Bangalore 8th Dec 2001
		Surface Assessment	Sri Venkateswara Engg. College, 6 th Dec 2001
		Signal Analysis in NDE	Vellamal Engg. College, 26 th Feb 2002
		Design in Engineering	Vellamal Engg. College, 12 th March 2002
2.	Dr.R Gnanamoorthy	Rolling Contact Fatigue studies of Sintered Steels	Nagaoka University, Japan, June 2001
		Fatigue and Fracture in Sintered steels	Institute for Materials Research Tohoku University, Japan, June 2001

		Contact Fatigue in Sintered Steels	Mitsubishi Materials Cor, Niigata, Japan, June 2001
		Failure analysis and testing in bearing materials	NTN Bearings Kawasaki, Japan, July 2001
		Contact Fatigue of Coated materials	Advanced Laser research Center, Nagaoka, Japan July 2001
3.	Dr.K.Gopinath	Surface treatments and coatings to enhance the wear and contact fatigue properties	SVCE, winter school on Surface treatment., Nov. 2001
		Advances in Gear Engg. Inaugural lecture	HVF, Winter school on Gear Engg., Dec. 2001
4.	Dr.S. Kumaraswamy	Centrifugal pumps - Basics Introduction to the design of centrifugal pumps , Contents of the databook Example of design , Effect of change of designed dimensions on pump performance	22 nd and 23 rd Feb. 2002 at Unnati Pumps, Ahmedabad
5.	Dr A Ramesh	Electronic Control of Diesel Engines	CVRDE, November 2001
6.	Dr V Ganesan	Keynote address in the 2 nd International SAE India Mobility Conference	IIT Madras, January 10-12, 2002
7.	Dr.S.P.Venkateshan	Numerical Heat Transfer	DRDO, Trivandrum, 17 th September 2001
8.	Dr.Ajit Kumar Kolar	Energy Scenario in India	Sai Ram Engineering College, Chennai, 19.12.2001
		Overview of Thermal Science and Engineering	Velammal College of Engineering, Chennai, 8.3.2002
9.	Dr. Sarit Kumar Das	Heat Transfer in Porus Structures	University BW, Hamburg, August 2001
		Heat Transfer I Nano Fluids	Univ, Lund, Sweden September 12, 2001
		Heat Transfer Nano Fluids	Univ. of Karlsruhe, Germany October 5, 2001
10.	Prof.B.Ramamoorthy	"MEMS" applications in Manufacturing	P.S.G.College of Technology, National Conference on MEMS Jan.2001
		Errors in Inspection	Bannari Amman College of Engineering, Erode July 2001
		Machine vision application in inspection	Venkateswara Engineering College, Chennai July 2001
11.	Prof.B.Ramamoorthy	Computer Aided Inspection	Pondicherry Engineering College, Pondicherry Dec.2001
		Recent Trends in dimensional and roughness measurements	SERC School at IIT Madras Dec.2001

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1.	Dr Krishnan Balasubramaniam	USA	July 2001	WFNDEC Annual Meeting and QNDE Conference
2.	Dr R Gnanamoorthy	Japan	June-July 2001	Technical Discussion
3.	Dr.A.Ramesh	France	June 2000 – Apr 2001	Post-doctoral fellowship

4.	Dr.Pramod S Mehta	Japan	July 2001	Attending Fifth International Symposium on Diagnostics and Modeling of Combustion in Internal Combustion Engines (COMODIA 2001)
5.	Dr S P Venkateshan	Greece	Sep.24-28, 2001	Conference
6.	Dr.Sarit Kumar Das	Germany, Russia, Switzerland, Sweden	2000-2001	AV Humboldt Fellowship and conferences
7.	Dr.V.Babu	U.S.A.	Dec. 6-31, 2001	Delivery of software to Boeing, USA as part of RBIC project
8.	Dr.G.Venkatarathnam	Germany	Sep. 2000-Aug. 2001	Guest Professor
9.	Dr.M.P.Maiya	Germany	Sep. 2001	Indo-German Project
10.	Prof.N.Ramesh Babu	Germany	12 Oct - 2 Nov.2001	DST-DAAD Joint research project
11.	Dr.L.Vijayaraghavan	USA	2-27 Nov. 2001	Presenting Paper

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr.Krishnan Balasubramaniam	National Instruments Best Paper Award	National Instruments	Paper Submission	Nov 2001
		Best Paper Award	ISNT, Mumbai	Paper Submission	Dec 2001
2.	Dr.R.Gnanamoorthy	AICTE Best Young Teacher Award	AICTE	Teaching and Research activities	2001
3.	Dr.S.Kumaraswamy	International scientist of the year 2001	International Biographic centre, Cambridge	Achievements and leadership in the international scientific community	2001
4.	Dr. V Ganesan	Automobile Engineer of the Year - 2001	Institution of Automobile Engineers	Best Automobile Engineer	Nov 2001
		Distinguished standing and has been conferred with an honorary appointment	The Research Board of Advisors of The American Biographical Institute, USA	Distinguished standing	2001

Books/Monographs authored or co-authored

Sl. No.	Name(s) of Faculty	Title	Publisher	Author/Co-author
Books:				
1	Dr.S. Kumaraswamy	Databook for design of centrifugal pumps (Available in print and CD versions)	I.C. & S.R., I.I.T., Madras	Dr.S. Kumaraswamy

Fellowships of Academies and Professional Societies

Name of Faculty	Name of the Academy/ Professional Society	Level	Year of Admission
Dr Sarit Kumar Das	Humboldt Research Foundation	Research Fellowship	2000
Dr.L.Vijayaraghavan	The Institution of Engineers, India	Fellow	2001
Prof.B.Ramamoorthy	Fellow, The Institution of Engineers, India	Fellow	2001

4.10.4. Design and Development Activities

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

Design and Development of Fretting Fatigue Test Machine

- One of unique test facility available in India as on date. The machine is capable of simulating many fretting fatigue conditions present aerospace, automobile and bio engineering applications. The machine structure, instrumentation and controls system are fabricated and many research works were carried out.
- Design and Development of a Rolling / Sliding Contact Fatigue Test Machine
- Data acquisition system for IC engine research

Dr.K.Gopinath:

- Design Development of Reciprocating Wear testing machine for evaluating dental composites.
- Design and development of rolling contact fatigue testing machine
- Design and development of load cells.
- Design and development of Gear test rig.

Dr Vijay R Raghavan:

- Apparatus for testing and evaluation of finned air coolers
- Web-based virtual experiment on Heat Exchangers

Design And Development Of Extrude Honing Machine With A New Abrasive Carrier Medium - H.P. Raju, Dr. K. Narayanasamy and Dr.Y. G. Srinivasa

- An Extrude Honing machine has been designed and fabricated for finish machining of intricate, difficult to reach, inaccessible internal passages at Precision Engineering and Instrumentation Laboratory of Department of Mechanical Engineering, Indian Institute of Technology Madras.
- A new abrasive carrier medium has been developed. Trials carried out using this facility is yielding encouraging and consistent results. Areas of applications includes I.C.Engines, aero space, biomedical. A patent proposal titled "Development of Medium for Extrude Honing" has been submitted to Department of Mechanical Engineering, Indian Institute of Technology Madras.

Prof.R.Krishnamurthy:

- A new approach in post-processing of plasma sprayed coating through microwave treatment
- Design and development of Integrated Sensor Unit

New facilities added and Major equipment procured through project funds:

- Development of sophisticated Rolling Contact Fatigue Test Machine developed through MHRD Project
- Flame ionization detector based hydrocarbon analyzer for I.C. engine emission measurement

Prof.Ajit Kumar Kolar:

- Pressurised Bio-mass Gasification Facility
- Scale-downn Unit of a CFB Boiler

Dr Sarit Kumar Das:

- Sodium filled nuclear set up under installation

Patents awarded:

- Prof.R.Krishnamurthy : Articles of Glazed ceramic composites
Performance Enhancement of Carbide Cutting Tools
- Patent awarded to : Prof.KrishnanBalasubramaniam,J.P.Singh,
V.V.Shah.D.Costeq
Mississippi State University
- Title : "Apparatus and method for High Temperature
Viscosity and Temperature Measurements"
- Patent No. : 6,296,385
- Issue date : 2nd October 2001.
- Patent given by : U.S. Patent office

Patents Filed:

- Dr.M.P.Maiya – Dual Space Split Airconditioner – Application No.542/MAS/2001
- Dr.L.Vijayaraghavan: : Multisensory Unit for On-line Monitoring of Grinding Burn (Applied for Indian patent)
- : Performance enhancement of Aluminum Grinding Wheels through Microwave Treatment

4.10.5. Research and Consultancy:**Sponsored Research Projects:**

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1	New Sintered Bearings – Performance improvements	Three Years	MHRD	6.00	Dr R Gnanamoorthy
2	AICTE Career Award Project	Three Years	AICTE	3.00	R Gnanamoorthy (PI)
3	Health Monitoring of Composite Structures using Ultrasonic Guided Wave Methods.	Three Years	ADA	50.82	Prof. Krishnan Balasubramaniam
4	Development of an Advanced Ultrasonic NDE Methods for imaging of Tight Cracks in Thin shells	Two Years	ISRO - VSSC	8.23	Prof. Krishnan Balasubramaniam & Mr. G. Jothinathan
5	Design and Development of MOS Integrated Piezoresistive pressure sensor	Two Years	NPSM	232.10	Prof. K.N. Bhat , Prof. Krishnan Balasubramaniam, Dr. E.Bhattacharya, Dr.A.D. Gupta, Dr. N.D.Gupta. Mr.P.R.S. Rao
6	Development Of NDE Techniques For Bond Interface Evaluation In Rocket Motor	Two years	ISRO - SHAR	13.26	Prof. Krishnan Balasubramaniam
7	Processing and Performance Studies on Composite Gears	Three Years	DST	12.43	Dr.R Gnanamoorthy (PI) Dr S K Malhotra
8	Repair Technology for Underwater vessels	Three Years	NRB	22.00	Dr.K Gopinath Dr.R Gnanamoorthy Dr.S Natarajan Dr S K Malhotra
9	Design and analysis of hybrid vessels	Two Years	ISRO	4.00	Dr.N Siva Prasad Dr.R Gnanamoorthy
10	Under water repair technology for vessels	Four years	NRB	22.00	Dr.K.Gopinath Dr.R.Gnanamoorthy Dr.S.Natarajan Dr.S.K.Malhotra
11	Modernization of Contact Fatigue Laboratory	Three years	MHRD	15.00	Dr.K.Gopinath Dr.R.Gnanamoorthy
12	Report of Setting National Centre for Bearing, Seal, Gear and Transmission Element Research.	Two years	AICTE	0.50	Dr.K.Gopinath Dr.B.S.Prabhu
13	Development of back-up software for the effective learning of Vortex Element Methods	Two years (From Oct. 1998)- extended up to Feb 2002	Curriculum Development Cell, supported by AICTE	2.16	Dr. V. Balabaskaran
14	Utilisation of ocean thermal energy for desalination of brackish water	18 mon. (July 2001 to Jan. 2003)	NIOT	3.46	Dr.A. Mani and Dr.S. Kumaraswamy

15	Institute-Industry partnership programme project on design databook for centrifugal pumps	Seven mon. (Sep. 2001 to Mar. 2002)	AICTE	0.90	Dr.S. Kumaraswamy
16	Numerical and Experimental Investigations of Local Blockages in LMFBF Fuel Sub Assembly	1999 - 2002	BRNS, DAE	24.79	Dr. B.V.S.S.S. Prasad Prof. B.H.L. Gowda
17	Studies on Stratification of Cryogenic Liquid Propellants	1999 -2001	ISRO-IITM (LPSC, Trivandrum)	7.27	Dr. B.V.S.S.S. Prasad Dr. S. Srinivas-amurthy Dr. G. Venkataratnam
18	Transient Natural Convection and Stratification In Cryogenic Propellant Tanks	2002 - 2004	ISRO-IITM	10.47	Dr. B.V.S.S.S. Prasad Dr. S. Srinivasamurthy Dr. G. Venkataratnam
19	Advanced Biomass Gasification	2000 -2003	MNES	61.53	Prof. A. K. Kolar Dr. B.V.S.S.S. Prasad
20	Development of Propulsion Integrated System Software for Launch Vehicles	1998 -2001	ISRO	9.76	Dr. K.A.Bhaskaran Dr. T. Sundararajan Dr. S. Kumaraswamy Dr. M. Govardhan
21	Computer Aided Instructional Modules on Turbomachines	1998 -2001	AICTE	1.77	Dr. N.Sitaram Dr. M.Govardhan
22	Tip Clearance Flows and Loss Reduction in Turbine Nozzle and Rotor Cascades (Project is approved)	Three years	DST	6.83	Dr. M.Govardhan Prof. B.H.L. Gowda
23	Energy Efficient Cross Flow Fans	2000 - 2002	MHRD	10.00	Dr. M.Govardhan Dr. N. Sitaram
24	Tip Clearance Flows and Loss Reduction in Turbine Nozzle and Rotor Cascades	Three years	DST	5.53	Prof. B.H.L. Gowda Dr. M. Govardhan
25	Performance and Stall Margin Improvements in an Axial Flow Compressor by Means of Forward Swept Blades	2000 - 2002	ARDB	7.18	Dr. M.Govardhan Dr. N. Sitaram
26	Diffusers for Energy Efficient Centrifugal Compressors	2001 - 2004	CSIR	5.03	Dr. N.Sitaram Dr. M.Govardhan
27	Unstructured Grid Generation techniques for Turbomachinery Applications Using PARAM	2001 - 2003	CDAC	1.50	Dr. N.Sitaram Dr. B.V.S.S.S. Prasad
28	Modelling of Iso-thermal and Reacting Flows in Afterburners	1998-2001	ARDB	4.34	Dr.V.Ganesan
29	Application of Numerical prediction of flows through swirlers	2000-2003	ARDB	9.99	Dr.V.Ganesan
30	Characterization of Swirling Fluidized Bed Hydrodynamics	2001-2003	BMBF Germany	3.60	Dr Vijay R Raghavan
31	Development of a general purpose code for determination of Radiant heat flux in Solid rocket motors.	1998-2002	ISRO	8.14	Dr.S.P.Venkateshan & Dr.C. Balaji
32	Theoretical and Experimental...	1996-2002	IGCAR	35.00	Dr.S.K. Das Dr.S.P. Venkateshan Dr.B.V.S.S.S. Prasad Usha

33	Thermal Striping	2000-2002	IGCAR	6.00	S.K. Das T. Sundarajan
34	Heat Transfer in IHX	2001-2002	IGCAR	7.00	T. Sundararajan S.K. Das
35	Development of a generalized radiative.. Satellites.	Two years	ISRO-IIT Cell	10.00	S.P. Venkateshan C. Balaji
36	Advanced Technology for Combustion & Biomass	Upto June, 2002	SIDA	66.00	Ajit Kumar Kolar
37	Advanced Biomass Gasification	Upto Nov. 2002	MNES	61.00	Ajit Kumar Kolar
38	Modelling of the Combustion Process in Liquid Rocket Engines	Feb. 1999-Jan. 2002	ISRO-IITM Cell	6.61	Dr K A Bhaskaran & Dr T Sundararajan
39	Development of a Propulsion integrated system software for launch vehicle	April 1998 till date	ISRO	9.76	Dr K A Bhaskaran & Dr T Sundararajan Dr M Govardhan Dr S Kumaraswamy
40	Thermal Hydraulic Investigation of Thermal striping in the hot and cold pools of LMFBR	April 1999 - till date	IGCAR	6.12	Dr T Sundararajan, Dr S K Das, Dr C Balaji
41	Thermal Hydraulic Investigation of IHX	April 2001 - till date	IGCAR	6.62	Dr T Sundararajan Dr S K Das Dr BVSSS Prasad
42	Transient Natural convection and stratification in cryogenic propellant tanks	Two years	ISRO	104.65	Prof.S.Srinivasamurthy, Prof.BVSSS Prasad Dr.G.Venkatathnam Dr.K.Ramamurthy(ISRO)
43	Development and Testing of Metal Hydrides for Environmentally friendly Energy Conversion (ongoing).	Two Years	Dept. of Science & Tech.- German Academic Exchange Service	3.00	Prof.S.Srinivasamurthy, M.P.Maiya
44	Development of Novel Metal Hydride Reactors for Environment Friendly Energy Conversion Devices (ongoing).	Three Years	Ministry of Non-Conventional Energy Sources	27.00	Prof.S.Srinivasamurthy, Prof.B.Viswanathan M.P.Maiya
45	Development and Characterisation of Metal Hydrides for Environment friendly Energy Use	Three Years	Indo-German Collaborative Research Project	5.00	Prof.S.Srinivasamurthy, Prof.B.Viswanathan M.P.Maiya
46	Development of Desiccant Assisted Air Conditioner for Low Humidity Applications	Three & half years	Min of Human Resource Dept.	10.00	M.P.Maiya Prof.S.Srinivasa- murthy,
47	Development of focusing nozzles for AWJ cutting	2000 - 2002	DST	9.00	Dr.N.Ramesh Babu Dr.O.V.Krishnaiah Chetty
48	Offline path planning of cooperative manipulators in a work cell environment	2000-2003	DST	16.50	Dr.N.Ramesh Babu Dr.Koshy Varghese
49	Machinability Characteristics of Al Alloy Reinforced with SIC Particulates	2001-2002	DST	8.00	Dr.L.Vijayaraghavan Dr.R.Krishnamurthy

Industrial Consultancy:

Sl. No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1	Dr.Krishnan Balasubramaniam	Ultrasonic Testing of HDPE stubends	SIV Industries	0.31

2	K.Gopinath G.Muthuveerappan R.Gnanamoorthy	Reverse Engg of Wind Mill	TTG Industries	1.20
3	K. Gopinath	Gear Box failure analysis	New India Assurance Co.	0.05
4	Dr. V. Balabaskaran	Prototype testing of a self-priming pump	M/ Southern Agro Industries, Chennai	0.12 (Completed)
5	Dr.S. Kumaraswamy	Consultancy services for design of strom water treatment plant - phase II for strom water from mine II to TPS II for use in circulating water system	M/s Neyveli Lignite Corporation Ltd., Neyveli	6.50
6	Dr.S. Kumaraswamy	Product design	M/s NDF Engineering, Coimbatore	0.60
7	Dr.S. Kumaraswamy	Checking design calculations	M/s Titanium Tantalum products ltd., Chennai	0.15 (Completed)
8	Dr.S. Kumaraswamy	Testing of process pumps	M/s Kirloskar Brothers Ltd., Kirloskarwadi	1.50
9	Dr. M. Govardhan	Design, Fabrication and Calibration of 'Five Hole Probes	B.H.E.L. Hyderabad	0.68
10	Dr. M. Govardhan	Design, Fabrication and Calibration of 'Five Hole and Cylindrical Probes	B.H.E.L. Hyderabad	0.96
11	Dr.A.Ramesh	Measurement of emi-ssions and air flow rate of a small gene-rator	M/s.Greaves Ltd Chennai	0.20
12	Dr.V.Ganesan & Dr.A.Ramesh	Trial test for Agni Oil	M/s.United One Pvt. Ltd Chennai	1.12
13	Dr.A.Ramesh	Testing of Electronic Fuel pumps	M/s.Sonic Fuel Components Maraimalainagar	0.85
14	Dr.Pramod S Mehta	Testing of Diesel Additives	M/s. Kochi Re-fineries Ltd, Cochi	0.40
15	Dr.A.Ramesh	Performance test for Small size ignition Engine for M/s. Southern Agro Engines (P) Ltd., Chennai	Bureau of Indian Standards, Chennai	0.20
16	Dr.Vijay R. Raghavan	RLA and performance of cooling towers	Neyveli Lignite Corporation	1.60
17	Dr. Sarit Kumar Das	Analysis of Fuel Cell	SPIC	0.96
18	M.P.Maiya Prof.S.Srinivasa Murthy	Concentration of Effluents for Environmental Protection	Coca-Cola India Ltd.	0.80

RBIC:

Sl. No.	Name of the Investigator/ Co-Investigator	Title	Industry	Amount (in lakhs)
1.	Dr Krishnan Balasubramaniam	Evaluation of Structural Integrity of Tubular Composite Structure using Ultrasonic NDE	ARDE	3.89
2.	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, Bangalore	5.00
		Development of Network Module of Secondary Air System for Kaveri Engine	GTRE, Bangalore	4.80
3.	Dr. B.V.S.S.S. Prasad Dr. N. Sitaram	Conjugate Heat Transfer in the Vicinity of Compressor Discs	GTRE, Bangalore	3.40
		Rotor-Stator Interactions for 3 Stages of a Compressor	GTRE, Bangalore	5.00

4.	Dr. B.V.S.S.S. Prasad Dr. Y.V.S.S. Sanyasraju	Determination of Heat Transfer Coefficients for the Nozzle Guide Vanes	GTRE, Bangalore	3.40
5.	Dr.Vijay R. Raghavan	Generation of performance data on finned tubes	GEA Energy Systems	1.00
6.	Dr. A.K. Kolar	Dev. Of temperature Sensitive Magnetic Switch	IGCAR	24.73
7.	Dr V Babu	Development of Efficient solution methods for steady - state response of Non-linear oscillators involving rotor stator rat interaction	BOEING, USA	6.00
8.	Dr T Sundararajan Dr E G Tulapurkara	Modelling of Flow through Annular Diffuser and Volute Exhaust	GTRE, Bangalore	4.96
9.	Dr T Sundararajan Dt V Babu	Development of a CFD software for the performance evaluation of STED at VAST, SHAR Centre	ISRO-SHAR	1.93
10.	Prof.S.Srinivasa Murthy M.P.Maiya Dr.G.Venkatathnam	Performance evaluation of a thermal hydraulic engine	Deluge Inc, Arizona, USA	10.50
11.	Dr Y G Srinivasa Dr T Nagarajan	Development of Electric Power Steering System	Rane, TRW, Chennai	2.00

Retainer Consultancy:

Sl. No.	Name of Faculty	Title	Industry	Amount (in Lakhs)
1	Dr S Kumaraswamy	Retainer Consultancy	M/s NDF Engineering, Coimbatore	0.60
2	Dr B Ramamoorthy Dr M S Shunmugam	Improving Efficiency of plant	Godrej Agrovet, Ambattur	0.50

Exchange programme with other Universities:

Three B.Tech. students under the guidance of Dr.Krishnan Balasubramaniam underwent Summer Training at Iowa State University, USA during May 2001.

Dr.R.Gnanamoorthy visited Nagaoka University of Technology, Japan under Exchange Program and had discussions on many on-going projects

Shri Jitendra Shah, M.S. Research scholar went to Germany under DAAD Sandwich Fellowship program

DST-DAAD Exchange programme, University of Hannover, Germany.

Journal Editorial Boards:

Sl. No.	Name of the Faculty	Level	Journal
1	Dr Krishnan Balasubramaniam	Member	Journal of Non Destructive Evaluation
2	Dr V Balabaskaran	Member, International Advisory Committee	Fourth International Conference on Pumps and Fans, Beijing, China (scheduled for August 26-29, 2002)
3	Dr Vijay R Raghavan	Chief Editor	J. Energy and Fuel Users Association
4	Dr Sarit Kumar Das	Member	Int. Journal of Heat Exchanger

Research Publications:

No. of papers published in National Journals	..	4
No. of papers published in International Journals	..	38
No. of papers presented in National Conferences	..	42
No. of papers presented in International Conferences	..	38

In Refereed National Journals:

1. Raju Sethuraman and V.Desikan - Pseudo Elastic Finite element analysis of elasto-plastic pressure vessel problems, Journal of Structural Engineering, Vol-27, no.4, P 287-291, 2001.

2. Viswanath, KBSN. and Ganesan, V. (2001) - Experimental and Numerical Investigation of an Axisymmetric Free Jet Indian Journal of Engineering and Material Sciences, India, Vol.8, pp.189-197.
3. U.S.P. Shet, G. Sai Prasad, P. Bhaskar, S. Swarnamani, "Pulsating Premixed Laminar Flames Issuing from Rectangular Burner Ports", J. Acous. Soc. India, Vol. 29, 2001, pp 178 - 183.
4. P.K.Philip, A.S.Varadarajan and B.Ramamoorthy, "Influence of cutting fluid composition and delivery variables on performance in hard turning using minimal fluid in pulsed jet form", IE (I), Vol82, Sep,2001, pp. 12-18.

In Referred International Journals:

1. S. Anil Lal, B.V.S.S.S. Prasad and N. Sitaram, "Geometry Based Hyperbolic Grid Generation for Computational Fluid Dynamics", AIAAJ, Vol. 34, No. 8, August 2001, pp. 1631-33.
2. M. Govardhan and T. S. Dhanasekaran, "Effect of Guide Vanes on the Performance of a Self-Rectifying Air Turbine with Constant and Variable Chord Rotors", Journal of Renewable Energy, Vol. 26, pp. 201-219, 2002.
3. Ramesh, A. - "An Experimental Study of the Characteristics of a LPG based Dual Fuel Engine Using water Diesel Emission on the pitot fuel" - Journal of the Institute of Energy, U.K., March 2002
4. Ramesh, A. - "Influence of Injection Timing and Load on the Performance and Combustion characteristics of a Biogas/Diesel Dual Fuel Engine", Fuels International, April 2001, U.K.
5. Ramesh, A. - "An experimental study of knock in a National gas fuelled Sparkignition Engine", SAE Fuels & Lubricants, USA, Sept. 2001.
6. Core Heat Transfer in a CFB Powder Technology, Vol. 124, (2002), pp 138-151.
7. S.Binod and V.R.Raghavan, 'Hydrodynamics of a Swirling Fluidized Bed', Chemical Engineering and Processing, v41, pp.99-106, 2002
8. N. Ramesh, C. Balaji and S. P. Venkateshan, "An Experimental Study of Natural Convection and Surface Radiation in an Open Cavity", International Journal of Heat and Technology, Vol. 19, No. 2, 2001.
9. C. Gururaja Rao, C. Balaji and S.P. Venkateshan, "Conjugate Mixed Convection with Surface Radiation from a Vertical Plate with a Discrete Heat Source", ASME Journal of Heat Transfer, Vol. 4, No. 123, pp. 698 - 702, 2001.
10. S.Aparajith, C.Balaji and V.R.Raghavan, 'Performance Analysis of Extended Surfaces subjected to Fouling', Heat and Mass Transfer, v37, pp.499-505, 2001
11. M. R. Dhanasekaran, Sarit K. Das and S. P. Venkateshan, "Laminar Natural Convection in Cavities Filled with Low Prandtl Number Fluids", International Journal of Transport Phenomena, Vol. 3, 2001.
12. N. Ramesh and S. P. Venkateshan, "Experimental Study of Natural Convection in a Square Enclosure Using Differential Interferometer", International Journal of Heat and Mass Transfer, Vol. 44, pp. 1107 - 1117, 2001.
13. N. Ramesh, C. Balaji and S. P. Venkateshan, "An Experimental Study of Natural Convection and Surface Radiation in an Open Cavity", International Journal of Heat and Technology, Vol. 19, No. 2, 2001.
14. C. Gururaja Rao, C. Balaji and S. P. Venkateshan, "Conjugate Mixed Convection with Surface Radiation from a Vertical Plate with a Discrete Heat Source", ASME Journal of Heat Transfer, Vol. 4, No. 123, pp. 698 - 702, 2001.
15. Alex T. Joseph, S. P. Venkateshan and George Kuruvilla, " Experimental Studies on Cooling of Electronic Components in a Channel", International Journal of Transport Phenomena, Vol. 3, pp. 103 - 118, 2001.
16. M. R. Dhanasekaran, Sarit K. Das and S. P. Venkateshan, "Natural Convection in a Cylindrical Enclosure Filled with Heat Generating Anisotropic Porous Medium", ASME Journal of Heat Transfer, Vol. 124, pp. 203 - 207, 2002.
17. Anindya Roy and S.K. Das, "An analytical solution for a cyclic regenerator in the presence of an axially dispersive wave", International Journal of Thermal Sciences (Revue Generale de Thermique) , 40 (1) pp. 21-29, (2001).

18. Prasant Nanda and S.K. Das, "Application of a new analogy for predicting heat transfer to cross rod bundle heat exchanger surfaces", *Heat Transfer Engineering*, vol. 22, pp. 17-25 (2001).
19. D.G.Roychowdhury, S.K.Das, T.Sundararajan, Numerical simulation of natural convective heat transfer and fluid flow around a heated cylinder inside an enclosure, *Heat and Mass Transfer*; DOI 10.1007/s002310100210 Online publication: November 29, (2001).
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21. Sarit K. Das, Anindya Roy, and Frank Balzereit, "Studies on axial dispersion of concentration profiles in cascaded stirred tanks", Vol 2, pp.-113-128(2001).
22. D. G. Roychowdhury , Sarit Kumar Das and T. Sundararajan , Numerical simulation of natural convective heat transfer and fluid flow around a heated cylinder placed eccentrically inside an enclosure , accepted for the 5th ISHMT-ASME Heat Transfer Conference, Calcutta 2002.
23. Heat Transfer to Tubes in the Near-Exit Zone of a circulating fluidized bed, Proc. 16, National Heat & Mass Transfer Conference, Kolkata, 2-5, Jan., 2002.
24. G.Balakrishnan and V.R.Raghavan, 'Numerical Simulation of Jet Impingement Cooling on a Concave Surface', Proc. 5th ISHMT-ASME Heat and Mass Transfer Conference, Jan. 3-5, 2002, Kolkata, pp.629-634
25. C. Gururaja Rao, C. Balaji and S. P. Venkateshan, "Mixed Convection in a Vertical Channel with Symmetric and Asymmetric Wall Heating" Proceedings of the Fifth ISHMT-ASME Heat and Mass Transfer Conference and 16th National Heat and Mass Transfer Conference, pp.413 - 419, 2001.
26. Nikhil S. Soman and C. Balaji, "Numerical Simulation of Natural Convection from Isothermal Longitudinal Fins in Cylindrical Annulus" Proceedings of the Fifth ISHMT-ASME Heat and Mass Transfer Conference and 16th National Heat and Mass Transfer Conference, pp. 669 - 675, 2001.
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28. Navin V. Bhise, Subrahmanya S. Katte and S. P. Venkateshan, "A Numerical Study of Corrugated Structure for Space Radiators", Proceedings of the Fifth ISHMT-ASME Heat and Mass Transfer Conference and 16th National Heat and Mass Transfer Conference, pp.520 - 526, 2001.
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34. Apurbba Kr.Sharma, S.Aravindan and R.Krishnamurthy, "Microwave glazing of alumina-titania ceramic composite coatings": *Materials Letter*, V-50, (2001), 295-301.
35. J.Ramkumar, S.Aravindan, S.K.Malhotra and R.Krishnamurthy, "Enhancing the metallurgical properties of WC insert (K-20) cutting tool through microwave treatment". *Materials Letters*, Vol.53, (2002), 200-204.
36. Apurbba Kr.Sharma and R.Krishnamurthy, "Microwave Processing of Alumina Composites for Enhanced Performance", *Journal of the European Ceramic Society*, 2002.

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38. Shaji, S. and V.Radhakrishnan, "An investigation on surface grinding using graphite as lubricant", *International Journal of Machine Tools and Manufacture*, 2000, 42/6, 733-740.

In Proceedings of National Conferences:

1. N. Sitaram, M. Govardhan, S. Manikandan and C. Anand, "Computer Aided Instruction Modules on Turbomachines - A Progress Report", *Proc. of I NCACEC - 2001, Osmanabad, March 21 - 23, 2001.*
2. K. S. Santhosh, B.V.S.S.S. Prasad and M. Govardhan, "Development of two dimensional finite element solver for flow over rough surfaces, 4th Annular CFD Symposium, Bangalore, Paper No. CP 24, 10 - 11, August 2001.
3. C. Venkateswara Babu, N. Sitaram and M. Govardhan, "Experimental Investigation of Tip Clearance Effects on Flow Field in an Annular Turbine Rotor Cascade", *Proc. of 28th NCFMFP, Chandigarh, Dec. 13 - 15, 2001.*
4. Ganesan, V. - "Numerical Modelling of Gas Turbine Combustion System using CFD-An Overview"
5. Proceedings of the XVII National Conference on I.C. Engines and Combustion held between December 18-20, 2001 in Surathkal.
6. Ganesan, V. - "Utilisation of Non-edible vegetable oil in diesel engine" Proceedings of the XVII National Conference on I.C. Engines and Combustion held between December 18-20, 2001 in Surathkal.
7. Pramod S Mehta - "Electronic Management Strategies for a Gasoline DI engine". Proceedings of the XVII National Conference on IC Engines and Combustion held between December 18-20, 2001 in Surathkal.
8. Patwardhan, U.G., Rajesh Sharma & Pramod S Mehta - "A model for Fuel-Spray Combustion Chamber Interactions" - Proceedings of the Internal Conference on Industrial Mathematics, IIT Madras 36, August 12-14, 2001
9. Subramanian, K. A. & Ramesh, A. - "Use of Oxygen enriched air in a direct injection diesel engine" - Proceedings of the XVII National Conference on I.C. Engines and Combustion held between December 18-20, 2001 in Surathkal.
10. Senthilkumar, M., Ramesh, A. and Nagalingam, B. - "Use of Hydrogen and methanol as primary fuels in dual fuel engine" - Proceedings of the XVII National Conference on I.C. Engines and Combustion held between December 18-20, 2001 in Surathkal.
11. Gopalakrishnan, K.V. - "Testing of a new catalyst for automobile exhaust treatment" - Proceedings of the XVII National Conference on I.C. Engines and Combustion held between December 18-20, 2001 in Surathkal.
12. Sarit K. Das, Anindya Roy ,W.Roetzel and F. Balzereit, "Theoretical and experimental study on axial dispersion of concentration profiles in packed bed heat/mass transfer equipment" presented at Third International Conference on Compact Heat Exchangers and Enhancement Technology for Process Industry, July 1-6,2001, Davos, Switzerland.
13. Sarit K. Das, Anindya Roy ,W.Roetzel and F. Balzereit, " Heat and mass transfer in packed beds in presence of a thermally dispersive wave" ,presented at the Seminar on Physical Principles of Experimental and Mathematical Simulation of Heat and Mass Transfer and Gas Dynamics in Power Plants, May 20-25 ,2001, St. Petersburg (Russia).
14. Sarit K. Das, Nandy Putra and W.Roetzel , " Pool boiling of nano-fluids on horizontal narrow tubes", Int. Inst. of Refrigeration conference on Thermophysical Properties and Transfer Processes of New Refrigerants, October 3-5, 2001, Paderborn(Germany).
15. Effect of Axial Tube Location In a CFB riser Proc. 5th World Conference on Experimental Heat Transfer, Fluid Mechanics & Thermodynamics, Greece, September, 2001.
16. N. Ramesh, C. Balaji and S. P. Venkateshan, "An Experimental Study of Natural Convection and Surface Radiation in an Open Cavity", *Experimental Heat Transfer, Fluid Mechanics and Thermodynamics*, pp. 667 - 672, 2001.

17. K.V. Subbareddy, V. Babu, T. Sundararajan, K.A. Bhaskaran, : Modeling of Combustion in Liquid Rocket Engines" Proc. of XVII National Conference on IC Engines and Combustion, REC Surathkal, Dec. 18-20, 2001, pp 569 - 577.
18. M.P. Assiz, T. Sundararajan, K.A. Bhaskaran, and K. Ramamurthi "Performance Prediction of An H₂-O₂ Based Igniter for Cryogenic Engine, Proc. Of XVII National Conference on IC Engines and Combustion, REC Surathkal, Dec. 18-20, 2001, pp. 603 - 613.
19. Pankaj Y Jagdale, U.S.P. Shet, and T. Sundararajan, "A Numerical Study on Effects of Operating Parameters on NO_x Level in Open Premixed Turbulent Flames", Proc. of XVII National Conference on IC Engines and Combustion, REC Surathkal, Dec. 18-20, 2001, pp 479 - 483.
20. U.S.P. Shet, K. Ravikanth, Soloman Raj and B. Lenze, "An Experimental Study on Stability of Air - Staged Flames in a Co - Swirl Burner", Proc. of Second International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM) Aerospace Engineering Department, Indian Institute of Technology, Kharagpur, Dec. 27-30, 2001, p 091.
21. Pankaj Y Jagdale, U.S.P. Shet, and T. Sundararajan, "A Numerical Study on Burning Velocity of Swirled Open Premixed Turbulent Flames", Proc. of Second International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM) Aerospace Engineering Department, Indian Institute of Technology, Kharagpur, during Dec. 27-30, 2001, p, 093.
22. M.Venkata Rami Reddy, V.Babu, T.Sundarajan and K.A.Bhaskaran, "Simulation of Reacting Flows using Finite Rate Chemistry models in Liquid Rocket Thrust Chamber" Workshop on CFD, IIT Kharagpur, Dec.5-7, 2001.
23. SANJAY AGARWAL and M.P.MAIYA, Desiccant Assisted Systems for Low Humidity Air Conditioning, International Conference on Emerging Technologies in Airconditioning and Refrigeration, ACRECONF 2001, September 26 - 28, 2001, New Delhi.
24. Somashekar.S.H, M.Singaperumal and Krishnakumar, Jan2002 " Finite element analysis of Spring Elements in Two stage Jet Pipe Electrohydraulic Servo valve", Proc. Of Second National Conference on Precision Engineering, COPEN 2002 , PSG College of Technology, Coimbatore PP 174-179.
25. Somashekar S.H, M.Singaperumal and R. Krishnakumar Jan.2002 " The role of reverse Engineering in Design of Precision Hydraulic components", Proc. Of Second National Conference on Precision Engineering COPEN 2002, PSG College of Technology, Coimbatore, PP B1-88.
26. Somashekar.S.H., M.Singaperumal and R. Krishnakumar, Feb 22-23, 2002"Dimensional sensitivity Analysis of Feed Back spring through Finite Element Simulation". First National Conference on CAD/CAE, GissEta India, Chennai, PP 209-214.
27. Raju, H.P., Narayanasamy,K., and Srinivasa, Y.G., Jan2002 "Investigations into the Precision Finishing of Internal Surfaces through Extrude Honing", Proc. Of Second National Conference on Precision Engineering, COPEN 2002 , PSG College of Technology, Coimbatore PP 35-40 .
28. Raju, H.P., Narayanasamy,K., and Srinivasa, Y.G., Jan2002 "Effect Of Process Parameters On The Quality Of Internal Surface Finished Through Extrude Honing Process", Proc. Of SYMAX IIT Madras, Chennai PP 118-119.
29. A.S.Varadarajan, P.K.Philip, B.Ramamoorthy, Comparison of Hard turning with Minimal Fluid Application (HTMF) with Dry turning and conventional wet turning, 19th AIMTDR, IIT Madras, Dec.2001, pp.99-104.
30. D.Ramesh Rajkumar, S.Natarajan, B.Ramamoorthy, "Effect of plating on Torque load bearing capacity of shrink fitted assemblies", Proceedings of National Conference on Recent advances in Material Processing 2001, Annamalai University, pp.116 - 121.
31. B.S.K.Reddy, B.Ramamoorthy, P.Kesavan Nair, "Influence of grinding parameters on surface characteristics of MC steel in the as ground condition using Taguchi's techniques", Proceedings of National Conference on Recent Advances in Material Processing, Sept. 7-8 2001, Annamalai University, pp.144-151.
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40. Arul Saravana Priyan, R.Krishnamurthy and L.Vijayaraghavan, "Acoustic emission, an active sensor for detection of grinding burn", National Symposium on Acoustics, Vellore Institute of Technology, Tamilnadu, Journal Acoustic Society of India, Vol 29/ 2-4, 2001, pp. 190-194
41. Arul Saravana Priyan, R.Krishnamurthy and L.Vijayaraghavan, "Quality of performance of high speed steel inserts influenced by grinding burn", Proceedings of the Second National Conference in Precision Engineering (COPEN 2002), PSG College of Tech., Coimbatore, January 11-12, pp.120-127.
42. Arul Saravana Priyan, R.Krishnamurthy and L.Vijayaraghavan, "Defect Tolerancing in Grinding of High Speed Tools", Symposium on Manufacturing Excellence, SYMAX, IIT Madras, January 7-8, 2002, pp.57-58.

In Proceedings of International Conferences:

1. R Gnanamoorthy, Y Miyahsita, M Horikokshi, J Q Xu, Y Mutoh, H Fukuhara, ' Effect of Density on Contact Fatigue Behaviour of and Damage Mechanisms of Sintered ALLOys', Presented and Published in Proceedings of 9th Materials and Processing Conference (M & P) JSME, November 2001
2. 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, 2002.
3. R. Gnanamoorthy "Fracture toughness of niobium aluminide base intermetallics in air and vacuum" Proc of International conference on advances in materials and materials processing (icamp-2002), IIT Kharagpur, Feb 2002
4. 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 (icamp-2002), IIT Kharagpur, Feb 2002
5. K. S. Santhosh, B.V.S.S.S. Prasad and M. Govardhan, "Numerical Simulation of Lading Edge Separation Bubbles on Turbomachinery Blades", ISABE 2001 - 1095, PP. 1 - 8, Bangalore, India.
6. Subramanian K.A. and Ramesh, A. - "A Study on the Use of Water-Diesel Emulsions in a DI Diesel Engine -Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
7. Ramesh, A. - "Experimental Investigation on Cycle by Cycle Variations in a Natural Gas Fuelled Spark Ignition Engine" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.

26. Pugazhenthir S., Singaperumal M. and Nagarajan T. "Inverse Dynamic Analysis and Stiffness Optimization of Hexapod Machine Tool during Contour Machining", Proceedings of the 2nd Asian Symposium on Industrial Automation & Robotics (ASIAR) held at the Bangkok International Trade & Exhibition Centre, Bangkok, Thailand on 17 & 18 May 2001 PP 239-244.
27. Pugazhenthir S., Singaperumal M. and Nagarajan T. "Optimal Trajectory Planning for Hexapod Machine Tool during Contour Machining", CD ROM Proceedings of the International Mechanics ICTACEM 2001 held at the IIT Kharagpur during 27-30 Dec.2001. Paper No031
28. H.Ramesh and N.Ramesh Babu. "Water Jet Peening - A new Surface treatment Process", Proceedings of the International Conference on Shot Peening & Blast Cleaning (ICSP&BC) MACT, Bhopal, Sep. 17-19. 2001, pp. 239-249.
29. S.N.Kurbet, R.Krishnakumar and N.Gowrishankar, "Finite Element Analysis of a Piston Ring for Assembly load measurements and interface stresses", Proceeding of the 2nd International SAE INDIA Mobility conference, Jan.10-12, 2002, PP.399 - 403.
30. Apurba Kr. Sharma and R.Krishnamurthy, "Microwave glazing of Alumina-titania ceramic composites for enhanced properties", Proceedings of 7th Ecers Conference and Exhibition of the European Ceramic Society, Ecers VII, Sept. 9-13, 2001.
31. Apurba K. Sharma and R.Krishnamurthy, "Response of sprayed ceramic composites to sliding contact", 2nd World Tribology Congress, Vienna, Sept. 03-07, 2001
32. Apurba Kr. Sharma and R.Krishnamurthy, "Microwave processing of alumina-titania ceramic composite coatings", International Conference on Microwave and High Frequency Heating, Bayreuth, Germany, Sept. 3-7, 2001
33. Apurba Kr. Sharma, K.Vijayakumar and R.Krishnamurthy, "Evaluation of plasma deposited alumina-titania ceramic composite coatings", International Thermal Spray Conference ITSC 2002, March 4-8, 2002
34. Microwave glazing of Alumina-titania ceramic composites for enhanced properties", Proceedings of 7th Ecers Conference and Exhibition of the European Ceramic Society, Ecers-VII, Sept. 9-13, 2001.
35. Y.S.Varadarajan, L.Vijayaraghavan and R.Krishnamurthy, "Performance Evaluation of multi-coated carbide inserts with restricted contact rake face and PCEN in machining MMC", Tenth International Symposium on Procuring and Fabrication of Advanced Materials, Indianapolis, USA, Nov.2001.
36. Y.S.Varadarajan, L.Vijayaraghavan and R.Krishnamurthy, "Machining of Aluminium alloy reinforced with SiC particulates", 8th International Conference on Composites Engineering, Tenerife, Spain, Aug. 5-10, 2001
37. S.N.Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "On line identification of Grinding Burn on High Speed Steel by Integrated sensing", International Conference on Factories of Future-CAR & FOF, South Africa, July 10-12., 2001.
38. S.N.Arul Saravana Priyan, L.Vijayaraghavan and R.Krishnamurthy, "On-line detection of Grinding burn by Integrated sensing", "Sensors for Industries Conference-Sicon'01, Chicago, Nov.5-7, 2001, pp.89-93.

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1	Dr. Drig. Prof. Kurf Lusk	22 nd and 23 rd February 2002	Guest Lectures and Discussions
2	Prof S.S Rao	15 th to 17 th March 2002	Guest Lecture on Optimisation and had discussions
3	Prof.Bo Leckner, Chairman Energy Conversion department Chalmers University, Gothenberg, Sweden	18-20 December 2001	Project Review
4	Prof.M.Groll, IKE Univ.of Stuttgart, Germany	Dec. 2001	Indo-German project

8. Ganesan, S. and Ramesh, A. - "Investigation on the use of Water-Diesel Emulsion in a Dual Fuel Engine" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
9. Ganesan, S. and Ramesh, A. - "Characterization of the LPG - Diesel Dual Fuel Combustion - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
10. Senthilkumar, M., Ramesh, A. and Nagalingam, B. - "Complete Vegetable Oil Fuelled Dual Fuel Compression Ignition Engine" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
11. Senthilkumar, M., Ramesh, and Nagalingam, B. - "Hydrogen Induction for Improving the Performance of a vegetable oil fuelled CI Engine" - Proceedings of the International Conference on Waste to Energy, Jaipur, March 2002.
12. Achuth, M. Ganesa Subramanian and Pramod S Mehta - "Model Predictions for Tumble and Turbulence in SI Engine Combustion Chamber"- Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
13. Ganesan, V. - "Theoretical and Experimental Investigation of Metering Characteristics of a Variable Venturi Mechanically Controlled Carburettor" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
14. Praphull S. Lal and Ganesan, V. - "Flow Field Behind the Flame Holders in an Isothermal Model of an Afterburner - A Theoretical Study" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
15. Suresh, D. and Ganesan, V. - "Modeling of Reacting Flows in an Afterburner" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
16. Vasudevan, A. and Ganesan, V. - "Simulation of Isothermal Flow Field Structure in a Gas Turbine Combustor" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
17. Balasubramaniam, V. and Ganesan, V. - "Modeling of Combustion in a Gas Turbine Combustion System" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
18. Basu, P. and Ganesan, V. - "Flow Through Zero Degree Hubbed Vanes" - A Theoretical Study" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
19. Shafi, K.A. and Gopalakrishnan, K.V. - "Effect of In-Cylinder Catalysts and Turbulence Chamber Spark Plug on a Two-Stroke Engine" - Proceedings of the 2nd International SAE India Mobility Conference - January 10-12, 2002.
20. T.K. Ganesh Anavardham, V. Babu, B. Umesh Chandra, S.R. Chakravarty, and S. Panneerselvam, " Experimental and Numerical Investigation of confined Unsteady Supersonic Flow over cavities:", AIAA - 2002 - 2405, 8th AIAA/CEAS Aeroacoustics Conference, Brecken ridge, Colorado, USA, 2002.
21. A.A.DHAS and M.P.MAIYA, Equilibrium Temperatures and Performance of Triple Effect Series Flow Water - Lithium Bromide Absorption Refrigeration System, HPC'01, 2nd International Heat Powered Conference, September 5-7, 2001, Paris, France.
22. SANJAY AGARWAL and M.P.MAIYA, Performance of Desiccant Coupled Air Conditioning Systems at Different Climatic Conditions, CLIMA 2000, September 15-18, 2001, Napoli, Italy.
23. Somaashekhar S.H, M.Singaperumal and R. krishnakumar, May 30-June 1 2001, "Solid Modeling and Parametric Evaluation of Two stage Jet Pipe Flow Control Valve" Proceeding o the Seventh Scandinavian International Conference on Fluid Power , Linking, Sweden, May 30-June 1 2001, volume 1, page 67-75.
24. 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.
25. Somashekar.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.

26. Pugazhenth. S., Singaperumal. M. and Nagarajan. T. "Inverse Dynamic Analysis and Stiffness Optimization of Hexapod Machine Tool during Contour Machining", Proceedings of the 2nd Asian Symposium on Industrial Automation & Robotics (ASIAR) held at the Bangkok Internal Trade & Exhibition Centre, Bangkok, Thailand on 17 & 18 May 2001 PP 239-244.
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28. N.Rajesh and N.Ramesh Babu, "Water Jet Peening - A new Surface treatment Process", Proceedings of the International Conference on Shot Peening & Blast Cleaning (ICSP&BC) MACT, Bhopal, Sep. 17-19, 2001, pp. 239-249.
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3.	Prof.Bo Leckner, Chairman Energy Conversion department Chalmers University, Gothenberg, Sweden	18-20 December 2001	Project Review
4.	Prof.M.Groll, IKE Univ.of Stuttgart, Germany	Dec. 2001	Indo-German project

5.	Prof.L.R.Oellrich, Univ.of Karlsruhe	Feb-March 2002	Indo-German Project
6.	Dr.Ing.A.Eiber, Scientist, University of Stuttgart	Dec. 2000	Indo-German Project
7.	Prof.Dr.Ing. Hartmut Louis	Dec.2-9, 2001	DST-DAAD Joint Research project
8.	Prof.T.R.Thomas, Högskolan Halmstad, Sweden	Jan 7-8, 2002	Attending Symposium at IIT Madras
9.	Prof.Raja, Univ. of North Carolina, USA	Jan 7-8, 2002	Attending Symposium at IIT Madras

4.10.6. Other Activities:

Dr.Vijay R Raghavan:

- Guided a student, Mr. Henrik Stebener, from the Technical University of Hamburg-Harburg, towards his Diplomarbeit (Master's thesis)
- Guided a student, Mr.Focke Schwarzer, from the Technical University of Hamburg-Harburg, towards his Studienarbeit (Master's thesis)

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

- Treasurer, Indian Society for Heat and Mass Transfer, 1998 - date.
- Reviewer, I Mech. E (U.K.).
- Reviewer, Journal of Thermal Engineering (U.K.).
- Reviewer, Heat and Mass Transfer – International Journal (Germany).
- Reviewer, World Conference of Fluid Mechanics, Thermodynamics & Heat Transfer

Dr. N. Sitaram:

- Reviewer, I Mech. E (U.K.).

International Student Exchange Programme:

- Herr Philipp Schoenberger, Univ.of Stuttgart, Germany on DAAD-IIT Madras student exchange program
- Herr.C.Windmeier, Universitat Karlsruhe, Germany on Indo-German project.

4.11 DEPARTMENT OF METALLURGICAL 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 Forming
- Metal Joining
- Materials Technology

4.11.2. Academic Programmes:

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	28	25	28	24	-	105
Dual Degree	4	5	5	5	-	19
M.Tech.	16	14	-	-	-	30
M.S.	1	13	3	1	-	18
Ph.D.	9	4	5	3	6	27
Total	58	61	41	33	6	209

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

Sl. No.	Name of the Student/Scholar	Programme	Name of the Conf/Seminar/Symposia	Date and Venue
1.	R. Narayanan	Ph.D.	55 th Annual Technical Meeting of the IIM	18-21, Nov.2001 Bhubaneswar
2.	G. Suresh Babu	Ph.D.	55 th Annual Technical Meeting of the IIM	18-21, Nov.2001 Bhubaneswar
3.	A. Murugaiyan	M.S.	55 th Annual Technical Meeting of the IIM	18-21, Nov.2001 Bhubaneswar
4.	G. Ramesh Kumar	M.S.	55 th Annual Technical Meeting of the IIM	18-21, Nov.2001 Bhubaneswar

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
Padmanabhan, K.A. Ph.D. (Cantap)	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. Ph.D. (IIT Madras)	[Head] Metal Joining, Corrosion

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., (IISc Bangalore)	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 Metallurgy, High Temperature Deformation, Fatigue, Fracture Mechanics, Structure - Property Correlation.
Kamaraj, M. Ph.D. (IIT Madras)	Mechanical Behaviour of Materials, High Temperature Materials, Failure Analysis, Wearsurfacing Materials
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)	Surface Science, Biomaterials and Composite Super Conductors
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
Prathap Haridoss Ph.D. (Univ. of Wisconsin, USA)	Fuel Cells, Rechargeable Batteries, Electrochemistry, Materials Characterization
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 / Symposia / Conferences organized:

Sl. No.	Co-ordinators	Title	Institution	Period
Conference:				
1.	Dr. S.K. Seshadri Dr. T.S.Sampath Kumar & Dr. S.P. Venkatesan	Conference of the Society for Bio-Materials and Artificial Organs - Innovations and Challenges in Medical Materials	IIT Madras	28.11.2001 & 29.11.2001
Seminar:				
1.	Dr. S.K. Seshadri & Mr. G. Jothinathan	Non-destructive Testing for Engineers and College Teachers	IIT Madras	14.07.2001 & 15.07.2001
Workshop:				
1.	Dr.S.D. Pathak, Dr. S. Ganesh Sundara Raman & Dr.M.Kamaraj	Creep, Fatigue and Fracture of Materials and Industrial Components	IIT Madras	03.12.2001 to 07.12.2001
2.	Dr. M. Balasubramanian	Advances in Composite Materials	IIT Madras	03.12.2001 to 07.12.2001
3.	Dr.R. Devanathan & Dr. S.K. Seshadri	Advances in Electron Microscopy of Materials	IIT Madras	11.03.2002

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	Institution	Period
Workshop:				
1.	Dr. M. Balasubramanian	Complete Characterization of Materials	IGCAR, Kalpakkam	12.09.2001 to 21.09.2001
Conference:				
2.	Dr. S.K. Seshadri	55 th Annual Technical Meeting	IIM Bhubaneswar	18.11.2001 to 21.11.2001
3.	Dr. U.Chakkingal	55 th Annual Technical Meeting	IIM Bhubaneswar	18.11.2001 to 21.11.2001
4.	Dr. S.K. Seshadri, Dr. K. Prasad Rao, Dr. P.Kesavan Nair Dr. M. Kamaraj & Dr. S. Ganesh Sundara - Raman	6 th International Conference on High Nitrogen Steels	IIM Kalpakkam Chapter	21.02.2002 to 24.02.2002
Seminar:				
5.	Dr. V. Sampath & Dr. T.S..Sampath - Kumar	Asia Academic Seminar on New Materials under the auspices of India-Japan Science Council	Hyderabad	12.12.2001 to 21.12.2001

Special Lectures delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1.	Dr.T.S.Sampath Kumar,	Thermal Analysis of Brazing Alloys	ISRO, Trivandrum (29.5.2001)
2.	Dr. B. Guha	Recent Development in Metal Joining	Annamalai university (10.06.2001)
3.	Dr. R. Devanathan	Atomic Level Studies of Dynamic Defect Production in Ceramics	Pacific Northwest National Lab., Richland, WA, USA (02.07.2001)

		Solid State Amorphization of Intermetallic Compounds	Indian Institute of Science, Bangalore (13.07.2001)
		Atomic Level Studies of Defects in Materials	IIT Kanpur (23.07.2001)
4.	Dr.K. Prasad Rao	Effect of Pulsed Current and Arc Oscillation Techniques on Weld Properties	Annamalai University (07.09.2001 & 08.09.2001) (Invited to chair technical sessions)
07.	Dr. Paramanand Singh	(i) Phase Evolution and Crystallization C-N Ceramics Derived from a Polyboro-silazane Precursor (ii) Creep Studies of Ultra-low Cement Self-flow Castable	Annamalai University (07.09.2001 & 08.09.2001) (Invited to chair technical sessions)
08.	Dr.T.S. Prasanna Kumar	Computer Simulation of Castings	Annamalai University (07.09.2001 & 08.09.2001) (Invited to chair technical sessions)
09.	Dr. M. Balasubramanian	Composite Materials	Thiagaraja College of Engg., Madurai (5.10.2001)
10	Dr. S.K. Seshdri	Corrosion and its Prevention by Coating	Sri Venkateswara College of Engineering, Sriperumbudur (22.11.2001)
11.	Dr.K. Prasad Rao	Metal Joining - An Overview	Sri Venkateswara College of Engineering, Sriperumbudur (24.11.2001)
12.	Dr. P. Kesavan Nair	Measurement of Residual Stresses by X-ray Diffraction Techniques	VSSC, Trivandrum 26.11.2001)
13.	Dr. S. Ganesh Sundara Raman	Role of Surface in Fatigue	Sri Venkateswara College of Engineering, Sriperumbudur (26.11.2001)
14.	Dr. P. Kesavan.Nair	Residual Stresses - Techniques of Measurements	Sri Venkateswara College of Engineering, Sriperumbudur (28.11.2001)
15.	Dr. P. Venugopal	Metal Forming	ASM International, Chennai Chapter (14.12.2001)
16.	Dr. K. Prasad Rao	Current Trends in Welding Processes & Applications	National Welding Seminar 2001 (07.01.2002)
17.	Dr. U. Chakkingal	Microstructure Development in Galvanized Coatings during Galvannealing	Tata Steel, Jamshedpur (25.01.2002)
18.	Dr.R. Devanathan	Applications of Accelerators in Materials Science	Department of Nuclear Physics, University of Madras, Chennai (30.01.2002)
19.	Dr. P. Venugopal	Metal Forming Techniques	Combat Vehicles Research and Development Organization, Avadi, Chennai (19.02.2002)
20.	Dr.S.D. Pathak	Short Crack Aspects with Particular reference to a Carbon Steel	BARC, Mumbai (28.02.2002)
21.	Dr. K. Prasad Rao	Current Trends in Welding Processes & Applications	American Society of Materials (11.03.2002)
22.	Dr. P. Kesavan Nair	Materials and their Properties	Industrial Quality Concepts (28.03.2002)
23.	Dr. K. Prasad Rao	Current Trends in Welding Processes & Applications	American Welding Society, India International (30.03.2002)

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of visit
1.	Dr. D.R.G. Achar	Germany	3.5.2001 to 5.5.2001	Chaired a Technical Session and presented a paper at the 7 th International Welding Conference held at Aachen.
2.	Dr. R. Devanathan	USA	May-June 2001	Research at Pacific Northwest National Laboratory Richland.
3.	Dr. D.R.G. Achar	Germany	1.8.2001 (one year)	Research at Research Centre, Juelich, Germany
4.	Dr.K.A.Padmanabhan	Germany	01.10.2001 (one year)	Guest Scientist Programme for Outstanding Researchers

Honours and Awards obtained:

Sl. No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	Dr. R. Devanathan	Faculty Fellow	Associated Western University, USA	Research at Pacific Northwest National Laboratory Richland.	May 2001
2.	Dr. K.A. Padmanabhan	Guest Scientist Programme for Outstanding Researchers	Germany	Research	Oct. 2001 (One year)
3.	Dr.K. Prasada Rao	IT Mirchandani award	National Welding Seminar 2001	Best Paper	Jan. 2002 Chennai

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

- Comptuer Aided Weld Design (Dr. B. Guha)
- Weldability Tests (Dr. B. Guha)
- Development of a software for the prediction of the superplastic deformation behaviour of different materials using generic formulations (Dr. S.S. Bhattacharya).
- Development of a software for the data acquisition of load-displacement values during a high temperature tensile test (Dr. S.S. Bhattacharya).
- Development of a back-pressure superplastic forming facility (Dr. S.S. Bhattacharya).
- Design and development of adapters and grips for the compression testing of nanocrystalline materials (Dr. S.S. Bhattacharya).
- Design and development of a high temperature testing system for the study of pre and post superplastic deformation behaviour (Dr. S.S. Bhattacharya).
- Design and development of a compact x-band electron resonance spectrometer (Dr. T.S. Sampath Kumar).
- Microwave processing of bio- materials (Dr. T.S. Sampath Kumar).
- Hydrotherrnal processing laboratory in binery set (T.S. Sampath Kumar).

Patents filed:

- Open Die Sleeved Extrusion of Sintered Iron P/M Preforms for Enhanced Properties with a Focus on Low Force and Energy (Dr. P. Venugopal)
- Single Stage Ironing of Sintered P/M Preforms for Larger Strains and Enhanced Property (Dr. P. Venugopal).
- One US Patent on Protection of PEM Fuel Cells from Fuel Starvation (Dr. Prathap Haridoss).
- One Provisional US Patent on Anode GDL for Improved Water Transport in PEM Fuel Cells (Dr. Prathap Haridoss).

4.11.5 Research and Consultancy:

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Improvement of Toughness of Titanium Alloys	1997 - 2001	DST	8.00	Dr. K. Prasad Rao Dr. B. Guha
2.	Removal of Obsolescence in Computer Network	1997 - 2001	MHRD	6.00	Dr.S.S. Bhattacharya Dr. K. Varghese Dr. V. Vasudevan Dr. Ramakrishna Dr. M. Sundar Dr. M.S.Shiva Kumar
3.	Fundamental Studies in Superplasticity and High Temperature Creep - Phase II: Phenomenological Studies	1997 - 2002	Naval Research Lab., USA	13.86	Dr.S.S.Bhattacharya
4.	Production and Characterization of Carbon Nano-tubes	1999 - 2002	NBB	20.25	Dr. P. Kesavan Nair
5.	Characterisation of Semi-conductor Nanocrystals produced by Ion Implantation	From 1999	Inter-Univ. Consortium for DAE facilities	0.78	Dr. R. Devanathan Dr. C. Vijayan
6.	Modernisation of NDT Lab.	2000 -	MHRD	15.00	Dr. S.K. Seshadri Mr. G. Jothinathan
7.	Study of Crack Initiation and Propagation in Nuclear Components under LCF	2001 - 2004	AERB	11.3903	Dr. Uday Chakkingal Dr. R. Devanathan
8.	Pre- and Post-Deformation Studies on Superplastically Formed Ti-6Al-4V	2001 - 2003	ISRO-IIT(M)	7.158	Dr. S.S. Bhattacharya Dr. S. Ganesh Sundara Raman
9.	Improvement of Corrosion Resistance of Al alloys by Surface Modification	2001 - 2004	MHRD	10.50	Dr. K.Prasad Rao
10.	Representation of Composite Materials in Solid Modeling for Finite Element Analysis through PATRAN	2001 - 2003	ISRO - IIT(M)	10.94	Dr. T.S. Prasanna Kumar
11.	Expert Systems for Welding of Aerospace Alloys	2001 - 2003	ISRO - IIT(M)	5.996	Dr.K. Prasad Rao Dr. M. Kamaraj
12.	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
13.	Studies on the Superplastic Deformation Behaviour of Nanocrystalline Ceramics	2001 - 2003	Indo-German	-	Dr. S.S.Bhattacharya Dr. S.D. Pathak
14.	Studies on Natural Fibre Reinforced Polymer Composites	2001 - 2003	Indo-German	-	Dr. S.K. Malhotra Dr. M.Balasubramanian
15.	Computer Simulation Study of Defects Produced by Ion Implantation in SiC	2001 - 2003	Indo-German	-	Dr. R. Devanathan
16.	Structure and Properties of PbS Nanocrystals produced by Ion Implantation	2001 - 2003	DST	3.84	Dr. R. Devanathan
17.	Studies on Ni-B-Si ₃ N ₄ Composite Coatings	2001 - 2004	CSIR	9.57	Dr. S.K.Seshadri
18.	Feasibility studies on Composites waste recycling	2001-2002	DST	5.85	Dr.M.Balasubramanian Dr. P.Alagu Sundaramoorthy
19.	Development of Constitutive Models of Smart Materials	2001-2003	NPSM	24.50	Dr.M.S. Sivakumar Dr. V.Sampath

Industrial Consultancy:

Sl. No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	Dr. C.V. Gokula-Rathnam	SEM Analysis of Various materials	Various Industries (WS Insulators, LUCAS TVS etc.)	3.5
2.	Dr. P. Kesavan Nair	Phase Analysis of Drug Samples	Orchid Chemicals and Pharmaceuticals	0.28

		Phase Analysis of Miscellaneous Samples	Various Industries	0.434
		Residual Stress Analysis	TVS Group, Hyundai, Strum Schule and other Auto Ancillary Industries	1.70
		Phase Analysis of Drug Samples	Shasun Drugs & Chemicals	4.896
3.	Dr. S.D. Pathak	Tensile Behaviour	Cylinder Liners	0.05
4.	Dr. K. Prasad Rao	Metallurgical Analysis	Various Organisation viz. Central Excise etc.	0.55
5.	Dr. M. Balasubramanian	To study Wollastonite as a possible Reinforcement for Polyester Resins	Wolkem India Ltd, Mumbai	0.6
6.	Dr. B. Raghunatha Rao	Failure Analysis of Karnataka Bridge failure	Southern Railways	0.7
		Failure Analysis	Tube Products India Ltd.	0.35
		Metallographical Studies of CI Rings	FIAT & Co.	0.25
		Microstructural Studies	Metro Water	0.25
		Piston Failure Analysis	Electro City	0.29
		Failure Analysis	FORD	0.25
7.	Dr. T.S. Sampath Kumar	Evaluation of Brazing Foils	ISRO	0.24

RBIC

Sl. No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	Dr. S.D. Pathak	Short Crack Growth Behaviour of SA333 Gr.6 Carbon Steel	BARC, Mumbai	4.95

Journal Editorial Boards:

Sl. No.	Name of Faculty	Level	Journal
1.	Dr. S.K. Seshadri	Member	Editorial Board of Indian Journal of Chemical Technology (CSIR publication) for a period of three years (Jan 2002 - Dec. 2004)
		Member	Transactions of Metal Finishers' Association of India (2001-2003)
2.	Dr. K. Prasad Rao	Member	Board of Review of Metallurgical and Materials Transactions, A.

Research Publications:

No. of papers published in Refereed National Journals	..	2
No. of papers published in International Journals	..	19
No. of papers presented in National Conference	..	31
No. of papers presented in International Conferences	..	6

In Refereed National Journals:

1. M. Palaniappa and S.K. Seshadri, "Deposition and Corrosion Characteristics of Electroless Ni-W-P Ternary Alloy Coatings", Trans. Metal Finish, Assoc., India, 10(1), 9-13, 2001.
2. V.Hemalatha, A. Parameswaran and T.S. Sampath Kumar, "Bioceramics in Clinical Dentelortory (Biphasic Calcium Phosphates), 4-7, 74, 2001.

In Refereed International Journals:

1. F. Gao, R. Devanathan and W.J. Weber, "Si Displacement Cascades Revealed by Atomic-Scale Simulation in 3C-SiC." Fusion Technology, 39(2), 574-578, 2001.
2. R. Devanathan, W.J. Weber and F. Gao, "Atomic Scale Simulation of Defect Production in irradiated 3C-SiC", J. Applied Phys. 90(5), 2303, 2001.
3. F. Gao, W.J. Weber and R. Devanathan, "Atomic Scale Simulation of Displacement Cascades and Amorphization of β -SiC", Nuclear Instruments and Methods B, 180, 176-186, 2001.
4. B.D. Begg, W.J. Weber, R. Devanathan, J.P. Icenhower, S. Thevuthasan and B.P. McGrail, "Heavy-Ion Irradiation Effects on Structures and Acid Dissolution of Pyrochlores," J. Nucl. Mater. 288, 208, 2001.

5. R. Sandhya, K. Bhanu Sankara Rao, S.L. Mannan and R. Devanathan, "Structural Recovery in a Cold Worked Ti-modified Austenitic Stainless Steel during High Temperature Low Cycle Fatigue", *Int. J. Fatigue*, 2001.
6. M.R. Varma, R. Sasikumar, SGK Pillai and P.K. Nair, "Cellular Automation Simulation of Microstructure Evolution during Austenite Decomposition under Continuous Cooling Conditions", *Bulletin of Materials Science*, 24, 305-31, 2001.
7. P. Nandakumar, C. Vijayan, K. Dhanalakshmi, G. Sundararajan, P. Kesavan Nair and Y.V.G.,S.Murthy, "Synthesis and Characterisation of CdS NanoCrystals in a Perfluorinated Ionomer (Nafion)", *Materials Science and Engineering B*, B83, 61-65, 2001.
8. M. Kamaraj, K. Serin, M. Kolbe and G.Eggeler, "Influence of Stress State on the Kinetics of Gamma-Channel Widening during High Temperature and Low Stress Creep of Single Crystal Superalloy CMSX-4", *Materials Science and Engineering A319-321*, 796-799, 2001.
9. K. Serin, R.D. Neuser, G. Eggeler, M. Kamaraj, M. Kolbe and M. Heitkemper, "A Quantitative Metallographic Study of Rafting and of Channel Widening in Single Crystal Nickel Base Superalloys, *Pract. Met.*, 38, 667-698, 2001.
10. C. Sridhar, G. Santhana Krishnan, C.V. Gokularathnam and R. Krishnamurthy, "Effect of Processing Parameters on the Laser Glazing of Plasma Sprayed Alumina, Titania, Ceramic, *J. Mater. Processing Technology*, 114, 246-51, 2001.
11. S. Raghavan, "Thermodynamic Stabilities of Lanthanum Tungstates Using a Calcium Fluoride Solid Electrolyte Galvanic Cell", *Mineral Processing & Extractive Met. Review*, 221-230, 22, 2001
12. J.N. Balaraju, T.S.N. Sankaranarayanan and S.K. Seshadri, "Evaluation of the Corrosion Resistance of Electroless Ni-P and Ni-P Composite Coatings by Electrochemical Impedance Spectroscopy", *Journal of Solid State Electrochemistry*, 5(5), 334-338, 2001.
13. R. Ramaseshan, S.K. Seshadri and N.G.Nair, "Electroless Nickel Phosphorous Coating of Ti and Al Elemental Powders", *Scripta Materialia*, 45, 183-189, 2001.
14. R. Narayanan and S.K. Seshadri, "Chromium-Ceria Electrodeposition using Nitrate Additions", *Metal Finishing*, 99(2), 84-89, 2001.
15. A.A. Reddy, B. Guha and D.R.G. Achar, "Microstructural of ASS Steel Weldments - A Study of Effect of Weld Current Pulsing, *Practical Metallography*, 38, 31-37, 2001.
16. A.A. Reddy, B. Guha and D.R.G. Achar, "Finite Element Analysis of Grain Growth in HAZ of HSLC Steel Pulsed GTA Weldments", *Int. J. for the Joining of Materials*, 13, 4, 2001.
17. A.A. Reddy, B. Guha and D.R.G. Achar, "FEM of 3-d Transient Heat Transfer in SS304 Pulsed GTA Weldments", *Numerical, Heat Transfer-A (NHT00/2847)* 2001.
18. U. Betz, S.S. Bhattacharya and H. Hahn, "Some Studies on the Superplastic Deformation Behaviour of Nanocrystalline Ytria Stabilised Zirconia Based Ceramics", *Scripta Mater.*, 44, 1553-56, 2001.
19. Uday Chakkingal and P.F. Thomson, "Development of Microstructure and Texture during High Temperature Equal Channel Angular Extrusion of Aluminium", *Journal of Materials Processing Technology*, 117, 169-177, 2001

In Proceedings of National Conferences:

1. R. Devanathan, Karthik Shankar, K. Suresh Babu, B.K. Panigrahi and B. Sornadurai, "Phase Stability of Ti₃Al under Ion Implantation", 55th Annual Technical Meeting of the IIM Bhubaneswar, 18-21, Nov. 2001.
2. R. Devanathan, G. Suryanarayanan, K. Suresh Babu, C. Vijayan and B.K. Panigrahi, "Synthesis and Characterisation of Ag Nanocrystals in a Glass Matrix," 55th Annual Technical Meeting of the IIM Bhubaneswar, 18-21, Nov.2001.
3. K. Suresh Babu, R. Devanathan and C. Vijayan, "Synthesis of PbS Nanocrystals by Chemical Route", 55th Annual Technical Meeting of the IIM Bhubaneswar, 18-21, Nov.2001.
4. G. Gopalakrishnan, R. Devanathan, K. Suresh Babu, K.V.S. Rama Rao and G. Markandeyulu, "Structure and Magnetic Properties of ErPrFe17 and ErPrFe12Co5", 55th Annual Technical Meeting of the IIM Bhubaneswar, 18-21, Nov.2001.

5. V. Viswabaskaran, F.D. Gnanam and M. Balasubramanian, "Synthesis and Characterisation of Porous Mullite Supports," National Conference on 'Recent Advances in Materials Processing (RAMP-2001) organised by Annamalai University, Sept. 7-8, 2001.
6. V. Viswabaskaran, F.D. Gnanam and M. Balasubramanian, "Characterisation of Clay and Clay Derived Mullite," Workshop on Complete Cycle Characterisation of Materials, IGCAR, Kalpakkam, Sept. 12-14, 2001.
7. G. Prasanth Balamurugan, V. Sadasivam and M. Balasubramanian, "Effect of Chemical Treatment of Coir Fibre on the Performance of Coir-Polyester Composites," Workshop on Natural Fibre Composites, IIT Madras, January 18, 2002.
8. H. Achyutha, P. Prakash, N.P. Rajamani and C.V. Gokularathnam, "Comparison of Strength and Durability Properties of Concrete with and without Fly Ash having Similar 28-Day Compressive Strength", National Conference on Trends in Prestressed Concrete, 67-74, 1-2 June 2001.
9. H. Achyutha, P. Prakash, N.P. Rajamani and C.V. Gokularathnam, "Influence of Silica Fume on Strength and Durability of Concrete of Different Water - Binder Ratios", National Conference on Trends in Prestressed Concrete, 75-82, 1-2 June 2001.
10. K. Prasad Rao, S.R.K. Rao, T. Mahesh Kumar, "Effect of Cryogenic Treatment and Aging on Corrosion Behaviour of some Age Hardenable Aluminium Alloys", Recent Advances in Materials Processing, RAMP 2001, Annamalai University, Sept. 2001.
11. K. Prasad Rao, "Effect of Pulsed Current and Magnetic Arc Oscillation Techniques on Weld Properties, Recent Advances in Materials Processing, RAMP 2001, Annamalai University, Sept. 2001.
12. D. Janakiram and K. Prasad Rao, "Effect of Welding Manipulation Techniques, Annual Weld Meet, Institute of Engineers, Oct. 2001.
13. S.R. Koteswara Rao, K. Prasad Rao, M. Kamaraj, K. Chenniappan and P.P. Sinha, "Application of Expert Systems in Welding Engineering : An Overview", National Welding Meet, Indian Institute of Welding, Kochi, Oct. 2001.
14. T. Mahesh Kumar, G. Madhusudan Reddy and K. Prasad Rao, "Studies on Titanium Aluminide Welds," Indian Institute of Metals, Annual Meet, Bhubaneswar, Nov. 2001.
15. M. Palaniappa and S.K. Seshadri, "Influence of Bath pH on Electroless Ni-W-P Ternary Alloy Coatings," NMD-ATM, Bhubaneswar, Nov. 2001.
16. R. Narayanan and S.K. Seshadri, "Behavior of Anodic Oxide Coating of Ti-6Al-4V in Physiological Solution", NMD-ATM, Bhubaneswar, Nov. 2001.
17. R. Narayanan, G.R. Raghuraman and S.K. Seshadri, "Corrosion Behaviour of Ni-Cr Codeposited Coatings", 10th National Convention of Electrochemistry, Karaikudi, April 2001.
18. D. Sivaramkrishnan, C.K. Chaithanya, S.K. Seshadri and T.S. Sampath Kumar, "Flourinatel Hydroxyapatite by Microwave Hydrolysis of β -TCP", 12th National Conference of the Society for Biomaterials and Artificial Organs, Chennai, Nov. 2001.
19. E.J. Rao, G. Malakondaiah, B. Buha and V.M. Radhakrishnan, "Austenitic Stainless Steel Versus Low Alloy Ferritic Steel Mismatch Welds of a High Strength Steels", Recent Advances in Material Processing (RAMP - 2001) Sept.7-8, 219-225, Annamalai University, 2001.
20. G. Ramesh Kumar, S. Ganesh Sundara Raman and S.D. Pathak, "Short and Long Fatigue Crack Growth Studies and Kitagawa Plot Generation for a Nuclear Grade SA 333 Grade 6 Steel", 55th Annual Technical Meeting of the Indian Institute of Metals, Bhubaneswar, Nov. 2001.
21. G. Ramesh Kumar, S. Ganesh Sundara Raman and S.D. Pathak, "Short Crack Aspects with Particular Reference to a Carbon Steel", Indo-German Theme Meeting on Fatigue and Fracture Assessment of Pressure Retaining Components, BARC, Mumbai, Feb. 2002.
22. B. Sasisekaran and B. Raghunatha Rao, "Iron in Ancient Tamil Nadu Metallurgy Perspective - A Retrospective", NML Golden Jubilee Commemorative, 93-103, 2001.
23. D.N. Srinivas and B. Raghuantha Rao, "Heat Treatment of Spring Steels", REC, Jamshedpur, 2001.

24. A. Murugaiyan, V. Sampath and M.S. Sivakumar, "Influence of Post Quench and Ageing Treatment on the Transformation Characteristics and Mechanical Properties of a Cu-Zn-Al Alloy" Perspective in Physical Metallurgy and Materials Science (CPPM-2001), Indian Institute of Science, Bangalore, 73, 12-14, July 2001.
25. V. Sampath, M. Rajesh and N.G.Nair, "Synthesis of Zirconia through Sol-Gel Technique and Its Characterisation", Annual Technical Meeting of the Indian Institute of Metals, Bhubaneswar, 192, 18-21, Nov. 2001.
26. V. Sampath, M. Srikanth and N.G. Nair, "Large-scale Synthesis of Silica using Cheaper Raw Material", Conf. of Students, Metallurgical Engineers & Technologists (COSMET-2001), Andhra University, Visakhapatnam, (Met.-2), 19-20, Oct. 2001.
27. A. Murugaiyan, V. Sampath and M.S. Sivakumar, "Effect of Thermal Treatment on Transformation Behaviour and Mechanical Properties of a Cu-Zn-Al Alloy", National Seminar on Advances in Materials & Processing, University of Roorkee, 201-209, 9-10 Nov. 2001.
28. A. Murugaiyan, V. Sampath and M.S.Sivakumar, "Effect of Grain Refinement on Cu-Zn-Al Shape Memory Alloys", Annual Technical Meeting of the Indian Institute of Metals, Bhubaneswar, 86, 18-21, Nov. 2001.
29. V. Arvind and T.S. Sampath Kumar, "Structural and Spectroscopic Characterisation of Functionally Graded Biomaterials", Perspectives in Physical Metallurgy and Materials Science, 40, 75, 2001.
30. K. Ramkumar and T.S. Sampath Kumar, "The Plight of Denturer in Chennai", Dental Conference, 2001.
31. Zubear Ahmed Khan, Uday Chakkingal and P. Venugopal, "Equal Channel Angular Extrusion - Processing of a Commercial Grade Aluminium Alloy", 55th Annual Technical Meeting of the Indian Institute of Metals, 251, 2001.

In Proceedings of International Conferences:

1. R. Devanathan, W.J. Weber and L. Rene Carrales, "Atomistic Simulation of Displacement Cascades in Zircon, 2001", Fall Meeting of the Materials Research Society, Boston, USA, 26-30, Nov. 2001.
2. W. Weber, F. Geo, W. Jiang and R. Devanathan, 4th Pacific Rim Conference on Advanced Materials and Processing, Ed. S. Hanada, Z. Zhong, S.W. Nam and R.N. Wright, The Japan Institute of Metals, 1359-1363, 2001.
3. R. Devanathan, F. Gao and W.J. Weber, "Computer Simulation of Energy Dependence of Primary Damage States in SiC", Materials Research Society Symposium Proceedings, 650, 2001.
4. S. Maheswara Rao, K. Jhothsna, M. Sireesha, S.H. Lalam and K. Prasad Rao, "Prediction of Ferrite Number of Austenitic Weldmetal using Bayesian Framed Neural Networks", Int. Welding Conf., New Delhi, 560-570, 2001.
5. K. Angamuthu, K. Prasad Rao, P. Balasrinivasan, George Thomas and N. Gunasekaran, "Effects of Various Electron Beam Weld Bead Techniques on the Weld Metal Fracture Toughness of Ti6Al4V Alloy, Int. Welding Conf., New Delhi, 696-706, 2001.
6. M. Balasubramanian, R. Velmurugan, K. Senthil Kumar and S. Nanjundan, "Mechanical Properties of Glass-toughened Epoxy Composite, International Conference and Exhibition on Reinforced Plastics, IIT Madras, Feb.7-9,2002.

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of visit	Purpose of Visit
01.	Dr. B.S.S. Daniel Post Doctoral Fellow Institute for Solid State and Materials Research, Dresden, Germany	10.04.2001	Interact with Faculty and to deliver a Lecture
02.	Dr. R. Ramesh Senior Materials Technologist Littelfuse, Ireland	23.07.2001	-do-
03.	Mr. Balla Vamsi Krishna Research Engineer Materials Scienc & Tech. Divn	02.08.2001	-do-

	Thapar Centre for Industrial Research & Development, Patiala		
04.	Dr. N. Ranganathan Professor (Mechanics & Materials Sciences) University of the Laboratory de Mechanique de Rheologie, France	21.08.2001	-do-
05.	Dr. C. Ravindran Professor Centre for Near-Net-Shape Casting of Materials Ryerson University Toronto, Canada	23.08.2001	-do-
06.	Dr. A.J. Bottger Assistant Professor Delft University of Technology Delft, The Netherlands	06.10.2001	-do-
07.	Prof. T.R. Anantharaman Formerly Director Institute of Technology BHU, Varanasi	13.11.2001	-do-
8.	Prof. Hitoshi Ohsato Department of Materials Science and Engineering Nagoya Institute of Technology Japan.	22.11.2001	-do-
09.	Prof. Srikanth Gopalan Dept. of Manufacturing Engg. Boston University, Boston, USA	19.12.2001	-do-
10.	Dr. Charles Wert, Professor Emeritus University of Illinois at Urbana Champagne, U.S.A.	15.01.2002	-do-
11.	Dr. G. Sundararajan Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) Hyderabad	29.01.2002	-do-
12.	Dr. V. Mahadevan, Professor (Retd) Dept of Chemical Engineering, IIT Kharagpur	06.03.2002	-do-
13.	Dr. Kumar Sadayappan Materials Technology Laboratory (CANMET), Natural Resources Canada, Ottawa, Ontario, Canada	18.03.2002	-do-
14.	Dr. R. Balamuralikrishnan Scientist, Defence Metallurgical Research Lab. Hyderabad.	26.03.2002	-do-

4.11.6 Other Activities:

Dr. S.K. Seshadri chaired a monitoring committee meeting of HGT project of TIFAC, DST, Govt. of India on establishing a detonation spray coating job shop for coating of various components, tools, vessels, valves, etc. used in chemical, textile, automotive and aerospace industry for improving the wear and corrosion resistance during 29th and 30th Sept. 2001.

Dr. P. Venugopal has been invited to serve as a referee to review papers that are published in the Journal of Materials Processing Technology, Elsevier Science Publishers, Netherlands based on his vast experience of research and publication in the area of metal forming and materials processing.

On the invitation of DST Dr. P. Venugopal has been serving as an expert in reviewing research proposals.

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 Centre are :

Structural analysis, Design and Testing
Wave Hydrodynamics
Floating and Submerged Bodies
Marine Geotechniques

Materials in Ocean Environment
Ocean Energy
Naval Architecture
Underwater instrumentation

4.12.2. Academic programmes:

New Courses introduced:

Sl. No.	Course No.	Title
1	OE 313	Physical Modeling and Instrumentation
2	OE 405	Maritime Regulations and Safety
3	OE 531	Guidance and control of Marine Vehicles
4	OE 532	Nonlinear problems in Ocean Engineering
5	OE 533	Advanced Marine Structures
6	OE 534	Ocean Environmental Policy & Coastal Zone Management

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year	Others	Total
B.Tech.	20	19	19	21	-	-	79
Dual Degree	4	5	5	6	-	-	20
M.Tech.	13	9	-	-	-	-	22
M.S.	10	12	10	2	-	-	34
Ph.D.	5	8	4	1	2	2	22
Total	52	53	38	30	2	2	177

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.G.Dhinakaran, Ph.D. Scholar	International Conference	International Conference in Ocean Engineering, (ICOE 2001)	IC & SR Office, IIT Madras from 11 th to 14 th December,2001
2	G. Ganesh M.S. Scholar	International Conference	International Conference in Ocean Engineering, (ICOE 2001)	IC & SR Office, IIT Madras from 11 th to 14 th December,2001
3	R. Balaji M.S. Scholar	International Conference	International Conference in Ocean Engineering, (ICOE 2001)	IC & SR Office, IIT Madras from 11 th to 14 th December,2001
4	Mr.K.A. Roop Sekhar M.S. Scholar	International Conference	International Conference in Ocean Engineering, (ICOE 2001)	IC & SR Office, IIT Madras from 11 th to 14 th December,2001
5	Mr.G.Dhinakaran, Ph.D. Scholar	International Conference	International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2001)	IIT, Kharagpur from 27 th to 30 th December, 2001

Sl. No.	Name of the Student	Programme	Name of the Conference/Seminar/Symposia	Date & venue
6	G. Ganesh M.S. Scholar	International Conference	International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2001)	IIT, Kharagpur from 27 th to 30 th December, 2001
7	R. Balaji M.S. Scholar	International Conference	International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2001)	IIT, Kharagpur from 27 th to 30 th December, 2001
Seminar:				
	Mr.M.G. Muni Reddy, Ph.D. Scholar Mr.J. Venkataramana Reddy M.S. Scholar Mr.R. Premkumar M.S. Scholar Mr.Nagoor Meerala Vali M.S. Scholar Mr.D. Prasad Raju M.Tech.	Seminar 2002	Marine Hydrodynamics Prospects and Progress in Indian Context	1 and 2 .2. 2002

4.12.6 Faculty and their activities:

Faculty:

Name and Qualifications

Professors:

S.K. Bhattacharyya, Ph.D.
(IIT, Madras)

K.Ganesh Babu, Ph.D. (IIT, Madras)

V.G. Idichandy, Ph.D.(IIT, Madras)

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

K.Muthukrishnaiah, Ph.D.(IIT, Madras)
[Head]

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

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

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

V.S. Raju, Dr.Ing.(Karlsruhe)
(on lien to IIT, Delhi as Director)

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

SP.Subramanian, Ph.D.(IIT, Madras)

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

C.P. Vendhan, Ph.D., (IIT, Kanpur)

Major Area of Specialization

Computer aided structural analysis, Analysis of motion characteristics of floating bodies, Model studies

Analysis and design of ocean structures, Behaviour of materials in Ocean Environment

Experimental techniques, Instrumentation, Analysis and testing of structural models and prototypes

Hydraulic and numerical modeling of Coastal and offshore Processes

Marine geotechnical engineering, Analysis and design of foundations for offshore and onshore structures

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

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 geotechniques

Computer aided analysis, Design of ship, underwater and offshore structures, Reinforced and prestressed concrete structures

Marine geotechnical Engineering, Foundation design for onshore and marine structures.

Wave-structure interaction, Coastal erosion and shore protection, Fluid flow problems

Geological oceanography, Engineering geology

Computer aided analysis, design and experimental studies of coastal and offshore structures

Computer aided analysis of Ocean, Civil and Aerospace structures, dynamics of floating bodies and structures

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

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

S.Surendran, Ph.D. (Yokohama National Univ., Japan)

Naval Architecture, Dynamics of mooring and surface towing ship model making and testing

Short-term courses/Workshops/ Seminars/ Symposia/ Conferences Organized by the Faculty Members

Sl. No.	Coordinator(s)	Title	Period
Conference			
	Prof.V.G.Idichandy Prof.R. Sundaravadivelu	International Conference in Ocean Engineering	11 - 14 Dec. 2001
Short Term courses			
	Dr.S.Neelamani	Design of Coastal Structures	14-18 May, 2001
	Dr.S. Neelamani	Ocean Engineering (AICTE sponsored STTP Course)	14-25 May, 2001

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
Seminar :			
	Prof.K. Muthukrishnaiah	Recent Trends on application of geosynthetics, Indian Geotechnical Society, Chennai	15.2.2002
	Prof.V. Sundar	Pollution of Urban River Systems in Chennai at Anna University	April 2001
Symposia:			
	Prof.C.P. Vendhan	National Symposium on Acoustics (NSA-2001) at Vellore Engineering College	18-20 Oct., 2001
	Prof.S.K. Bhattacharyya	National Symposium on Acoustics (NSA-2001) at Vellore Engineering College	18-20 Oct., 2001
Conference:			
	Prof.R. Sundaravadivelu	International Conference on Port & Maritime R & D Technology held at Singapore	29-31 Oct. 2001
	Prof.J.S. Mani	International Conference on Port & Maritime R & D Technology held at Singapore	29-31 Oct. 2001
	Dr.S. Neelamani	International Conference in Ocean Engineering [ICOE - 2001], IIT Madras	11-14 Dec. 2001
		Second International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2001), IIT Kharagpur,	27-30 Dec. 2001

Special Lectures Delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
1	Prof.C.P. Vendhan	Acoustic scattering analysis in half-space by using boundary dampers and Eigen function	Vellore Engineering College, Vellore 18-20 October, 2001

Sl. No.	Name of Faculty	Topic of Lecture	Venue and Date
2	Prof.V. Sundar	Coastal processes	Anna University, 6 th September 2001
		Coastal Erosion & Protection	Univ. of Wuppertal, Germany, Nov8, 2001
		Coastal Engineering Problems in India	Queen's University, Kingston, CANADA, 15 th April 2002
		Coastal processes	Anna University, 6 th Sept., 2001
		Earthquake assessment at Kandla Berthing Structures Berthing Structures	Annamalai University, 26 th Nov. 2001 Vizagapatnam Port, Sep 16 & 17 2001 NIPM, 22 nd Nov. 2001
4	Prof.S.K.Bhattacharyya	Efficient finite element analysis of fluid structure interaction of elongated bodies	18-20 October, 2001
5	Prof.J.S. Mani	Coastal protection	Anna university, 8 th Nov.2001
		Coastal environment and pollutants	CECRI Chennai 6 th Jan. 2002
6	Dr.S. Neelamani	Environment and its impact on coastal region	M.S.Swaminathan Research Foundation. 18 th Feb. 2002
		Delivered a Guest Lecture on "INDUSTRY- INSTITUTE INTERACTION" for the aegis of ISTE	Annamalai Polytechnic, CHETTINAD, 27 th July, 2001
		Special Lecture on "CHALLENGES IN OCEAN ENGINEERING" to Civil Engineering students	Pondicherry Engineering College, 15 th Feb., 2002
7	Dr.S. Surendran	Chief judge for STRESS 2002 Students Seminar and Special Lecture on "CHALLENGES IN OCEAN ENGINEERING" to Civil & Structural Engineering students	Annamalai University, Chidambaram, 20 th Mar. 2002
		Judge for the National Level Technical Symposium on Water Resource Management	Hindustan College of Engineering, Chennai, 26 th Feb., 2002
8	Prof.V.S. Raju	Performance of Berthing Structures at Kandla Port (Gujarat, India) during the devastating January 26 th Earthquake	Technical University of Darmstadt in May 2001/ University of Karlsruhe in April 2001
		Global Challenges in Technical Education and Indian Perspective	Banaras Hindu University, Varanasi in October, 2001
9	Prof.S. Narasimha Rao	Ground Improvement Methods using Lime Columns	Jayachamaraja College of Engg., Mysore, Jan. 2001
		Behaviour of Defective piles in clays	Regional Engineering College, Warangal, February, 2001
		Ground Improvement using stone column	Regional Engineering College, Warangal, February, 2001

Visits abroad by Faculty:

Sl. No	Name of Faculty	Country visited	Date	Purpose of visit
1	Prof.V.S.Raju	Germany	1 st May 2001 to 15 th Jun., 2001	Alexander Von Humboldt.,
2	Prof.K. Muthukrishnaiah	Germany	3-21 Sept. 2001	Indo German Bilateral Co-operation in Science and Technology

Sl. No	Name of Faculty	Country visited	Date	Purpose of visit
		USA	21-28 Sep. 2001	Visited Texas, A & M University, USA to deliver a Seminar talk Guest Scientist, University of Essen (Indo-German Bilateral Co-operation in Science & Technology, BMBF)
		Germany	Sept. 2001	
3	Prof.R.Sundaravadivelu	Singapore	29-31 Oct. 2001	To attend International conference on Port and Maritime R and D Technologies and to visit to National University, Singapore
		Kualalumpur Malaysia	23-26 Apr. 2001	To attend and present a paper at the First Asia Pacific Conference on offshore systems
		Bulgaria	4-8 June 2001	To attend MARIND 2001 Conference
		Bulgaria	2-24 June 2001	Professional visit on summer vacation
		Kualalumpur Malaysia	1-5 July 2001	Consultancy project work
		Germany	9-22 June 2001	In connection with ISP programme
4	Prof.V. Sundar	Kualalumpur Malaysia	23-26 Apr. 2001	To attend and present two technical papers at the First Asia Pacific Conference on offshore systems
		Singapore	27-30 Apr. 2001	
		Bulgaria	4-8 June 2001	To attend MARIND 2001 conference
		Denmark	9-10 June 2001	DHI software course
		Kualalumpur Malaysia	24-26 June 2001	Consultancy project work
		Kualalumpur Malaysia	1-5 July 2001	Consultancy project work
		Malaysia	25 th Aug. 2001 - 3 rd Sept. 2001	Consultancy project work
		Malaysia	24-26 Sept. 2001	Consultancy project work
		Univ. of Wuppertal, Germany invited by DAAD, Germany	1 st Oct 2001 - 30 th Sept 2002	Visiting Professor
		London	30 th Nov 2001	Invited to Visnet (Violent waves interaction with Structures) working group workshop
	University of Waterloo, Canada	9-18 April 2002	Invited for discussion to examine possibilities for joint research	
5	Prof.J.S. Mani	Singapore	29-31 Oct 2001	For attending International Conf on Port Maritime Research and Development ICPMRDT
6	Prof.S.K.Bhattacharyya	Brazil	3-8 June 2001	To attend and present a per @ 20 th Offshore Mechanics and Arctic Engineering Conference
		Brazil	10-22 June 2001	Visit Universities
		U.S.A.	11-15 June 2001	To present paper in First MIT Conference in Computational Fluid and Solid Mechanics at MIT, Cambridge, Massachusetts
		Norway	17-22 June 2001	To attend ISOPE 2001 Conference in Stavanger

Honours and Awards obtained:

Sl. No	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1	Prof.M.R. Pranesh	Institutional Medal (donated by Col.G.N.Baj Pal) Marine Engineering Division medal	Institution of Engineers (India) Kolkatta	The paper entitled "Impact of Marine Corrosion on ship operation"	Dec. 2, 2001
2	Prof.V.Sundar	Rashtriya Gaurav Award	International Institute of Success Awareness		for the year 2001
		Eminent Indian Achievers"	Society for Global Unity		For the year 2002
		Noble Son of India	Society for Global Unity		For the year 2002

4.12.4 Design and Development Activities

- Design of S-type sea wall for coastal protection and the design has been implemented on the coast.

4.12.5. Research and Consultancy:**Sponsored Research Projects:**

Sl. No.	Title	Period	Industry	Amount (in lakhs)	Co-ordinators
1.	Development of predictive models for long and short term coastal change	3 years	Department of Science and Technology, New Delhi	9.42	Prof.J.S. Mani
2.	Digital Signal processing for Maritime applications	1 year	Inventa Informatics, (P) Ltd., Chennai	1.00	Dr.V. Anantha Subramanian
3.	Studies on Energy Dissipating Sloped Seawalls as Shore Protection Structures	3 years	MHRD, Govt. of India	14.69	Dr.S. Neelamani
4.	Intact and damaged ship stability in a dynamic environment.		NRB Project	18.00	Dr.S. Surendran
5.	Development of techniques for the fuzzy reliability and optimization of ship structures		Ministry of Shipping, New Delhi	4.945	Prof.K. Rajagopalan
6.	Development of techniques for the reliability analysis of ship decks		Ministry of Shipping, New Delhi	3.910	Prof.K. Rajagopalan

Industrial Consultancy:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1	Prof.V.S. Raju Prof.R. Sundaravdivelu Prof.P.K. Aravindan, CE Prof.S.R. Gandhi, CE Prof.A. Meher Prasad, CE	Repair and Restoration scheme for machine structures damaged due to earthquake	Kandla Port Trust, Gujarat	16.00
2	Prof.V.S. Raju Prof.V.G. Idichandy Prof.P.K. Aravindan, CE Prof.S.R. Gandhi, CE Prof.A. Meher Prasad, CE	Integrity Test on berthing structures damaged due to earthquake	Kandla Port Trust, Gujarat	10.50
3	Prof.V.S. Raju Prof.R. Sundaravdivelu Prof.J.S.Mani	Detailed Engg. And design review service for the LNG jetty and breakwater	HOCHTIEF (India) (P) Limited, Chennai	14.00

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
	Dr.S. Neelamani Prof.P.K. Aravindan, CE Prof.S.R. Gandhi, Prof.A. Meher Prasad, Dr.Devadas Menon, CE			
4	Prof.V.S.Raju Prof.S.R. Gandhi, CE	Consultancy Services for Kinnerasani Dam	C.E.(Civil) Thermal APPG Corp.Ltd., Hyderabad	2.00
	Prof.V.S.Raju Prof.S.R. Gandhi, CE	Consultancy services towards options to meet the water requirement of VTPS	C.E.(Electrical) Andhra Pradesh	1.50
5	Prof.V.S. Raju Dr.B.S.Murthy, CE	Investigation on the condition of the cooling water canal	C.E.(Civil) Thermal Vidyut Soudha, Hyderabad	1.00
6	Prof.S. Narasimha Rao	Foundation consultancy for Doppler weather radar building near ASLV launch pad site at Shar	Department of Space Civil Engineering Division Sriharikotta	0.25
		Foundation consultancy and Stability Certificate for IMC, JRE, USTIL Terminals at Kandla	M/s.United Stores and Tank Terminals Ltd., Chennai	0.10
		Consultancy for new BG line, geotechnical investigations for important bridge across river Gowtham	M/s.UPC Concrete & Geo Technologies, Visakhapatnam	0.06
		Foundation consultancy for Tirupati (R & B) Division Government of A.P.	EE (R & B), Tirupathi	0.45
		Geotechnical investigation along pipeline route	Geo Marine Consultants, Chennai	0.10
		Design of RCC foundation system for storage tanks and other structures at Irumpanam, Cochin	M/s.Geo Marine Consultants, Chennai-20	0.15
		Geotechnical investigation for ship building center through S.S. consultants	M/;s.VPC concretes and Geo Technologies, Visakhapatnam	0.10
		Construction of 100 mtrs. High RCC MW tower at Machillipatnam	Department of Communications Hyderabad	0.40
		Construction of high level bridge at Bakampet Road, Yellamanda	Executive Engineer, R & B Division, Andhra Pradesh	0.15
		Foundation consultancy	M/s.Garrison Engineer, Chennai	0.25
		Construction of Hospital complex at Mukkudal foundation consultancy	CPWD, Chennai	0.06
		Foundation consultancy for SE, CPWD, Hyderabad	CPWD, Hyderabad	0.13
		Design of Mooring Dolphins	Mormugao Port Trust	1,50,000/-
		Design of Pile Supporting systems for pipeline Across Ganga River	GAIL	80,000/-

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
		Design of Foundation System for Doppler Radar	ISRO	50,000/-
7.	Prof.K. Muthukrishnaiah	Subsoil investigation and recommendations for suitable type of foundations	Indian Oil Corporation Limited	19.33
		Subsoil investigation and recommendations for suitable type of foundations	Indian Oil Corporation Limited	4.26
		Drainage and civil work in and around ACTP area	Cochin Refineries Limited	1.64
		Construction of overhead tanks at Vedaranyam and sumps and other structures at Vanduvancherry under Vedarayam CWSS	TWAD Board	1.50
		Subsoil investigation and recommendations for suitable type of foundations	M/s.Mukesh & Associates	0.29
		Evaluation of building foundation	Jani Housing and constructions	0.12
		Soil investigation to determine the safety of building	Garrison Engineer	0.22
		Soil investigation and recommendations for suitable type of foundations	Indian Oil tanking Limited	0.95
		Soil investigation and recommendations for suitable type of foundations	Garrison Engineer	0.86
		Consultancy for soil investigation study and report for the VCPL's	Venkatesh Coke and Power Limited	0.20
		Soil investigation and recommendations for suitable type of foundations	Garrison Engineer	0.54
		Design of overlay to existing worn out concrete test tract at HVF Avadi	Garrison Engineer	0.15
		Subsoil investigations and recommendations for suitable type of foundations	M/s.Mukehs and Associates, Salem	0.13
8	Prof.K. Ganesh Babu Dr.K.N.Satyanarayana,CE	Quality Audit of construction supervision of Eluru-Rajmundry section of NHS	AARVEE Associates Hyderabad	3.50
		Quality Audit of construction supervision of Itchapur to Khurda Road section of NHS	AARVEE Associates Hyderabad	3.50
9	Prof.K. Ganesh Babu	Quality Assurance Proj.((Quality Audit)	Hallmark Foundations Ltd., Chennai	0.20
10	Prof.V.G. Idichandy	Development of Wind Tunnel Balances	DRDL, Hyderabad	4.00
		Development of 5 component wind tunnel balance	DRDL, Hyderabad	2.00
		Computation of stresses during proof pressure tests of oil and gas tanks for DRDL	M/s.Ventura Engineers, Chennai	5.88
		Proof pressure testing and analysis of titanium air bottles	M/s.Titanium Equipment and Anode Mfg.Col.Ltd., Chennai	3.49
11	Prof.V. Sundar Prof.R. Sundaravadivelu	Kuantan River Mouth Improvement Project, Pahang Darul Makmur	Perunding Bakti idn bhd, Consulting Engineers, Malaysia	10.36

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
		Physical Model Testing	Perunding Bakti idn bhd, Consulting Engineers, Malaysia	1.35
12	Prof.SP. Subramanian	Granik entrepreneurship testing of granite samples and recommendation	Delta Granites Kanchipuram	0.25
13	Prof.R. Sundaravadivelu Prof.V. Sundar Prof.S.R. Gandhi, CE	Supervision of remedial work at the surf zone for under water ranges	M/s.Ellath Enterprises, Vasco-da-Gama, Goa	0.40
14	Prof.R. Sundaravadivelu Prof.R. Ambalavanan. CE Prof.S.R. Gandhi, CE	Rehabilitation of damaged structure of Trawler Wharf at Fishing Harbour	Chennai Port Trust, Chennai	2.00
15	Prof.R. Sundaravadivelu Dr.V. Thamirarasan, Prof.S.R. Gandhi. CE	Subway connecting Rajaji Salai and Chennai Port at Anchor Gate	Chennai Port Trust, Chennai	2.50
16	Prof.R.Sundaravadivelu	Modification of existing landing jetty at JNPT	Jawaharalal Nehru Port Trust, Bombay	0.40
		Groin field for Pondicherry Coast	Executive Engineer (Ports), Port Department, Pondicherry	8.66
17	Prof.R.Sundaravadivelu Dr.S.Neelamani	EIA report for proposed extension of jetty at Jakhau, Gujarat	M/s.Good Earth Maritime Ltd., Chennai-17	1.00
18	Prof.R.Sundaravadivelu Dr.V.Alagusundaramurthy Dr.R. Natarajan	Development of Salt unloading facility at Bassein Port	M/s.Good Earth Maritime Ltd., Chennai-17	2.00
19	Prof.R.Sundaravadivelu Prof.S.R. Gandhi, CE	Construction of platforms on RCC piles for erection of Transmission Tower at Port Blair Harbour, Andaman	Ministry of Shipping Andaman Harbour works	0.50
20	Prof.R. Sundaravadivelu Prof.S.R.Gandhi, CE	Proof check and design of pile foundation of pile foundation for bridge across River Pennar for Nellore Bypass Project on NH5	Navayuga Engineering Company	0.40
		Construction of bridge in Krushna Prasad to Mahnikuda Road	Chilika Development Authority	1.00
21	Prof.R. Sundaravadivelu Dr.R. Natarajan	Design and drawing for one Self propelled barge	Chilika Development Authority	0.75
22	Prof.R.Sundaravadivelu	Proposed construction in inner and outer boundary wall and other works for IOCL	M/s.Devi Construction	0.50
23	Prof.R.Sundaravadivelu Dr.R. Natarajan	Approval of drawings for Dry feeding system and silos for materials handling system at Mineral separation plant	IREL, Orissa	0.40
24	Prof.R.Sundaravadivelu Prof.S.R. Gandhi, CE	Design of barrier block for UWR, Goa	DRDO, Goa	1.00
25	Prof.R.Sundaravadivelu	Inspection of pipeline support from oil jetty to VCM pipe location	DCW Ltd., Sahapuram	0.30
		Report on GR jetty at River Hoogly, Calcutta	M/s.Good Earth Maritime Ltd., Chennai-17	0.25
26	Prof.R.Sundaravadivelu Prof.S.R. Gandhi, CE	Gracing dock along with repair facility in NMPT	Waterways shhipyard (P) Ltd., Goa	11.00
27	Prof.S.K.Bhattacharyya	Design and analysis of rudder and stabilizer fin	Velijan Hydraulics	
		Stress analysis of OTEC seawater intake system	NIOT	

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
28	Prof.J.S.Mani Dr.A. Meher Prasad, CE	Design of wave shield near dyke wall	Finolex Industries Ltd., Pune	0.50
29	Dr.R. Natarajan	Propulsion and sea keeping model tests of floating border outposts	Mazagon Dock Ltd., Bombay	4.00
		Approval of drawings of doy feeding system and silos with structures for material handling system at Mineral separation Plant	Indian Rare Earths Limited, Orissa	0.40
30	Dr.V. Anantha Subramanian	Hydrodynamic Investigations for offshore vessel	Handersen International A1 Jadaf, Dubai, UAE	1.00
31	Dr.S. Neelamani	Physical Model Testing of breakwater sections during construction L & T Ramboll	L & T Ramboll Consulting Engg., Chennai	3.25
32	Prof.R.Sundaravadivelu Dr.S. Neelamani Dr.R. Natarajan Prof.J.S. Mani	Design of Groin field and artificial Nourishment Scheme for Pondicherry Coast	Pondicherry Port, Pondicherry	12.00
33	Dr.S. Neelamani Prof.R.Sundaravadivelu	Protection of the landing jetty of Thiruvalluvar Statue, Kanniyakumari from wave loads and overtopping	Tamilnadu State Construction Corporation, Chennai	0.20
34	Dr.S. Neelamani Prof.R.Sundaravadivelu	Design of Hollow Cubes for coastal Protection	Pondicherry Port, Pondicherry	0.85
35	Dr.S. Neelamani	Design of a Marine Outfall System	Prof. D.V.Reddy, Florida Atlantic University, USA	US\$ 5400

Research Publications:

No. of papers published in Refereed National Journals	..	3
No. of papers published in Refereed International Journals	..	16
No. of papers presented in National Conferences	..	10
No. of papers presented in International Conferences	..	58

In Refereed National Journals:

1. Neelamani, S., and Muni Reddy, M.G. (2001). "Wave Forces on a Vertical Cylinder Defenced by a Perforated Vertical and INCLINED barriers". Indian Journal of Marine Sciences
2. Subramanian, V.A. and V.I. Beena (2001), An interactive versatile technique for ship hull form development, Journal of Institution of engineers (India), pp.81,43-46
3. Subramanian, V.A. and V.I. Beena (2001), Performance Evaluation of semi-SWATH and Nonlinear Motion Effects. Journal of Institution of Naval Architects, India 1-11.

In Refereed International Journals:

1. Prabhakar, V. and Sundar, V., "Standing Wave pressures on walls", Ocean Engineering, Vol.28,2001, pp 439-455.
2. Sundar, V. and Subbarao, B.V.V., "Hydrodynamic pressures and forces on quadrant front face pile supported breakwater", Ocean Engineering, Vol.29, 2002, pp 193-214.
3. Dhinakaran, V.Sundar, R.Sundaravadivelu and K.U.Graw, " Dynamic pressures and forces exerted on Impermeable and seaside perforated semicircular breakwaters", Ocean Engineering.(In press).
4. Dhinakaran, V.Sundar, R.Sundaravadivelu and K.U.Graw, " Pressures and forces exerted on Impermeable semicircular breakwaters due to regular waves", Oceanic Engineering International, pp.73-83, Vol.5, No.2, 2001.
5. Mani, J.S., (May 2001) "Coastal Conservation Programme for Chennai Sea Shore, India - A Case Study".. Journal of Coastal Conservation Sweden 2001.

6. R. Paneerselvam and S.K.Bhattacharyya "Parameter identification of a nonlinear SDOF system in random ocean waves by reverse MISO method" *Ocean Engineering*, Vol. 28, pp. 1199-1223, 2001
7. S.K. Bhattacharyya, S. Sathyapal and C.P. Vendhan "Absorbing boundary conditions on elliptic boundary for finite element analysis of water wave diffraction by large elongated bodies" *International Journal of Numerical Methods in Fluids*, Vol. 37, No. 3, pp. 249-277, 2001
8. Vincent Mathew, V.G.Idichandy and S.K.Bhattacharyya "Perforated ball velocity meter measurements of water wave kinematics in nonlinear, long and short crested waves" *Applied Ocean Research*, Vol. 23, No.4, pp. 235-248, 2001
9. Neelamani, S., and Rajendran, R. (2001). "Wave interaction with T-type breakwaters". *Ocean Engineering*, Volume 29/2. pp. 151-175.
10. Neelamani, S., and Vedagiri, M. (2001). "Wave interaction with partially immersed twin breakwaters". *Ocean Engineering*, Volume 29/2. pp. 215-238.
11. Neelamani, S., and Rajendran, R. (2002). "Wave interaction with L-type breakwaters". *Ocean Engineering*, Vol. 29, pp.561-589.
12. Thiruvenkatasamy, K., Neelamani,S., and Michio Sata. (2002). "Non-breaking wave forces on MOWC wave power calsson". Communicated to ASCE JI. Of Waterway, Port, Coastal and Ocean Engineering.
13. Rajasekharan, G., and Narasimha Rao, S., (2001), "Permeability characteristics of lime treated Marine Clay"
14. Rajasekharan, G., and Narasimha Rao, S., (2001), "Effect of Pollutants on the Physical and Engineering Behaviour of Lime Treated Marine Clay" *Journal of Marine Georesources and Geotechnology*, Vol.19, pp.17-35
15. Madhusudhan, C., Sundar V., and Narasimha Rao, S. (2002), "Wave induced forces around buried pipeline" *Journal of Ocean Engineering*, Pergamon, March-May, 2002, Vol.29, pp.533-534
16. Rajasekharan, G., and Narasimha Rao, S., (2002), "Compressibility Behaviour of Lime Treated Marine Clay" *Journal of Ocean Engineering*, Pergamon, March-May 2002, Vol.29, pp.545-560.

In Proceedings of National Conferences:

1. Mani, J.S., (6-7 July 2001) "Sea bed change in the vicinity of a pile in coastal environment".. Presented in Hydraulic structures, Bharathi Vidyapeeth. Pune 6-7 July, 2001
2. Ramanamurthy, M.V., Mani, J.S., Ramesh, S., Subramanian, B.R., and Ramachandran, S., (December 2001) "Effect of satellite port on Environmental parameters" HYDRO 2001 held at CWPRS Pune.
3. Rambabu, A.C., and Mani, J.S., (December 2001) "Wave transmission characteristics of submerged breakwater - a numerical model" HYDRO 2001 held at CWPRS Pune.
4. Mani, J.S., (7,8 September 2001) "Innovative solutions to the coastal erosion problems".. National workshop on coastal erosion and management held at KREC.
5. Ramanamurthy, M.V., and Mani, J.S., (18-19 December 2001) "Monitoring Oceanographic process by selective marine instrumentation and deployment" National Symposium on Ocean Electronics held at Cochin University.
6. Neelamani, S., Vijayalakshmi, K. and Uday Bhaskar, N. (2001). "Wave Loads on a Seawater Intake Structure and the Suction Pipe". National Conference on Hydraulics and Water Resources, HYDRO 2001, December 6-7 , CWPRS, PUNE, INDIA.
7. Neelamani, S., Sandhya, N. and Sumalatha, B.V. (2002). "Wave Interaction with Plane and Dentated Sloped Seawalls". Marine Hydrodynamic Seminar, NSTL, Visakhapatnam, 1-2 February 2002.
8. R. Premkumar and S.K. Bhattacharyya "Efficient finite element analysis of fluid-structure interaction of elongated bodies" Proc. National Symposium on Acoustics, held at Vellore Institute of Technology, Vellore, Tamilnadu, Vol. 29 of J. Acoustical Society of India, pp. 424-433. Oct. 18-20, 2001.
9. R. Premkumar, S.K. Bhattacharyya and C.P. Vendhan "Transient acoustic fluid-structure interaction of cylindrical and spherical shells" Proc. Seminar on Marine Hydrodynamics: Prospects and Progress in Indian Context, held at Naval Science and Technological Laboratory, Visakhapatnam, pp. 299-306, Feb. 1-2, 2002.

10. Subramanian, V.A., V. Jagadeesh Kumar and S.K. Nagur Meera Vali (2002) on Design of Active Fin Control Stabilization System Proceedings of Marine Hydrodynamics, pp.108-116.

In Proceedings of International Conferences:

1. Illamparuthi, K and K. Muthukrishnaiah K., 2001 "Breakout capacity of seabed anchors due to snap loading". Proc. International Conference in Ocean Engineering-2001, Indian Institute of Technology, Madras, Chennai, India, 393-400 (held in December, 2001)
2. Sundar, V., Sundaravadivelu, R. and Purushotham, S. " Hydrodynamic Characteristics Of Moored Floating Pipe Breakwater", Proc. First Asia Pacific Conf (APCOS 2001), Kuala Lumpur, Malaysia, April 23-26, 2001, pp 165-169.
3. Sundar, V., Sundaravadivelu, R. and Srivedakumar, K. " Hydrodynamic Characteristics Of Moored Floating Plate Breakwater", Proc. First Asia Pacific Conf (APCOS 2001), Kuala Lumpur, Malaysia, April 23-26, 2001, pp 159-164.
4. Dhinakaran, G., Sundar, V. and Sundaravadivelu, R. " Hydrodynamic Characteristics Of Impermeable And Seaside Perforated Semicircular Breakwaters", Proc. of Intl. Conf on offshore Mechanics and Arctic Engg, OMAE 2001, Rio de Janeiro, Brazil, 3-8 June, 2001, Paper No. OFT-1243, pp.1-8.
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Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor and Designation	Date of visit	Purpose of visit
1	Dr.V. Ranganatha Raju Director, KELLER MALAYSIA	3.4.2001	For giving Seminar on "Ground Improvement in soft soil"
2	Dr.Ravindra Gettu Head Structural Technology Laboratory Technical University of Catalonia Spain	9.8.2001	To deliver a lecture on "High performance concretes"
3	Prof.G. Gudhehus Director Institute of Soil and Rock Mechanics University of Karlsruhe GERMANY	3.9.2001	To give Seminar Talk on "Safety assessment after the new German Code DIN 1054 on permissible loadings of subsoil"
4	Prof.Erwin W.A.Schwing Dean of Faculty of Civi IEngineering and Naval Architecture University of Applied Sciences Karlsruhe GERMANY	6.11.2001	To give Seminar Talk on "Soil Nailing" – self supporting earth nailing
5	Dr.Sathish Balasubramanian Senior Naval Architect, Band, Lavis of Associates, Inc., U.S.A.	7.12.2001	To give Seminar Talk on "Advanced Marine Vehicles"
6	Dr.S. Sankara Naranarayanan Ocean Engineer Applied Science Associates USA	19.12.2001	To give Seminar Talk on "3-D Hydrodynamic Modeling of Circulation of Transport using boundary-filled co-ordinates"
7	Mr.Heimo Richter His Excellency the Ambassador of Federal Republic of Germany	7.1.2002	
8	Shri R. Venugopala Pillai General Manager J.B. Boda Surveyor Ltd., Chennai	15.1.2002	To give an Industrial Lecture on "Marine Operation and Accidents"
9	Dr.S. Kathirol Project Director and Mr.D. Venkata Rao Joint Project Director National Institute of Ocean Technology CHENNAI	22.1.2002	To give an Industrial Lecture on "Marine Investigation techniques with a case study on submarine pipelines"

Sl. No.	Name of the Visitor and Designation	Date of visit	Purpose of visit
10	Dr.G. Janakiraman Scientist E Vessel Management Cell National Institute of Ocean Technology CHENNAI	5.2.2002	To give an Industrial Lecture on "Oceanographic Research Vessels"
11	Dr.P.V. Chandramohan Chief Engineer Kandla Port	12.2.2002	Novel shipping system at Cochin
12	Dr.Carsten Sorensen and Dr.K. Upendra Rao L & T Rambol, Chennai	26.2.2002	To give Industrial Lecture on "Ports and Marine Project Consultancy"
13	Prof.M.Ravindran Director NIOT,MADRAS	26.3.2002	To give Industrial Lecture on "The Indian 1 MW Demonstration OTEC Plant"

4.13 DEPARTMENT OF PHYSICS

4.13.1. Introduction:

The Department of Physics was established in the year 1959 and now has M.Sc. and Ph.D. programmes in Physics as well as an M.Tech programme in Solid state technology. 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.

Students on Roll:

Programme	I Year	II Year	III Year	IV Year	V Year	Total
M.Sc.	34	30	-	-	-	64
M.Tech	6	7	-	-	-	13
Ph.D	12	9	7	3	7	38
Total	52	46	7	3	7	115

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

Sl. No.	Name of the Scholar	Programme	Name of the Conference/ Seminar / Symposia	Date and Venue
1	R Justin Rajesh	Ph.D.	National Seminar on SPENDIE 2001	25.5.2001 to-26.5.2001 Thiruvanantha-puram
2	Kaladevi Sendhil	Ph.D.	Second International Conference and XXVI Annual Convention of the Optical Society of India	27.8.2001 to 29.8.2001 Thiruvanantha-puram
3	B Ullash Kumar	Ph.D.	National Symposium on Science & Technology of Vacuum and Thin Films	5.9.2001 to 7.9.2001 Bangalore
4	M Pattabiraman	Ph.D.	Int. Symp. On Advances in Superconductivity & Magnetism Materials & Mechanics Devices	25.9.2001 to 28.9.2001 Mangalore
5	V. Ravindranath	Ph.D.	-do-	-do-
6	R. Nirmala	Ph.D.	DAE solid State Physics Symposium 2001	26.12.2001 to 30.12.2001 BARC, Bombay
7	Umakanta Tripathy	Ph.D.	Third Asian Photo-Chemistry Conference	6.1.2002 to 11.1.02 BARC, Mumbai
8	Umakanta Tripathy	Ph.D.	National Symposium on Mathematical methods and applications	22.12.01 IIT, Madras
9	N Mani	Ph.D.	Solid State Physics Symposium 2001	26.12.2001 to 30.12.2001 BARC, Mumbai
10	J.C. Ingersoll	Ph.D.	-do-	-do-
11	Kumari Lakshmi K.C.	Ph.D.	Int. Conference on Statistical Physics	14.1.2002 to 19.1.2002-Kolkata
12	N. Kejalakshmi	Ph.D.	Advance Materials and Technologies 2001	1.7.2001 to 6.7.2001 Suntech City, Singapore

4.13.3 Faculty and their activities:

Faculty:

Name and Qualification

Professors:

V.Balakrishnan, Ph.D (Brandeis Univ., USA)	Mathematical Physics, Statistical Physics and Dynamical Systems
V.Damodara Das, Ph.D (SPU, Vidyanagar)	Thin film science and technology
P.C.Deshmukh, Ph.D (Nagpur Univ., Nagpur)	Atomic and Molecular Physics
K.Hariharan, Ph.D (IIT, Madras)	Solid state ionics
M.P.Kothiyal, Ph.D (IIT, Madras)	Physics - Applied optics
(Mrs) Maha Seshasayee, Ph.D (RPI, New York, USA)	Condensed matter physics, (structure studies)
J.Majhi, Ph.D (IIT, Madras)	Semiconductor physics
V.R.K.Murthy, Ph.D (IIT, Madras) [Head]	Microwaves and Dielectrics
T.S.Natarajan, Ph.D (IIT, Madras)	Conducting polymers, Instrumentation Electronics
T.A.Prasada Rao, Ph.D (Andhra Univ., Waltair)	Electronic spectra of molecules, lasers, nonlinear optical processes, electro-optic Kerr effect in liquids and liquid crystals
V.Ramachandran, Ph.D (IIT, Madras)	Theoretical and Experimental condensed matter physics
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)	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)	Metal hydrides, Resonance Spectroscopy
V.Sankaranarayanan, Ph.D (IIT, Madras)	Superconductivity, Low Temperature Physics, Cryogenics
G. Sreenivasa Murthy, Ph.D. (IIT, Madras)	X-ray crystallography
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 with specialization in Field Theory & Dynamical Systems
S.Kasiviswanathan, Ph.D. (IIT, Madras)	Thin Films
M.S.Ramachandra Rao Ph.D (IIT, Kharagpur)	Experimental Solid State Physics (Electronic and Magnetic Materials - Thin films and bulk)
M.V.Satyanarayana, Ph.D (Madras Univ.)	Photonics, Quantum optics
K.Sethupathi, Ph.D (Moscow State Univ., Russia)	Low temperature physics and Superconductivity
V.Subramanian, Ph.D. (IIT, Madras)	Microwaves, Semiconductors, Ferroelectrics
P.B. Sunil Kumar, Ph.D. (IISc, Bangalore)	Condensed Matter Physics
(Ms) T.M.Vimala, Ph.D (IIT, Madras) Chief Design Engineer	X-ray crystallography
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:

Sl. No.	Name of the Faculty	Title	Institution	Period
1	Dr.P.B. Bisht	UGC refresher course on Ultrafast lasers and applications	IIT Madras	Jan. 15 - 29, 2001

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

Sl. No.	Name of the Faculty	Title	Institution	Period
1	Dr.V. Damodara Das	Metallurgical coatings and Thin Films (ICMCTF - 2001)	San Diego, California	Apr. 30 - May 4, 2001
2	Dr.M.P. Kothiyal	Perspectives in Modern Optics	I.I.T., Delhi	Jan 4-6, 2002
3	Dr.K.V.S. Rama Rao	8 th Jone MMM-Inter Conf., San Antonio, USA	San Antonio, USA	Jan 7-11, 2001
4	Dr.K.V.S. Rama Rao	Recent Advances in 2:17 permanent magnet materials	TU, Darmstadt, Germany	October 2001
5	Dr.K.V.S. Rama Rao	Seeheim Conference on Magnetism (SCM 2001)	Seeheim, Germany	Sept 9-13, 2001
6	Dr.K.V.S. Rama Rao	New Perspectives in Material Science (NPMS 2002)	Department of Physics, University College of Science, Osmania University, Hyderabad	March 22-23, 2002
7	Dr.P.C. Deshmukh	Division of Atomic and Molecular Physics (DAMCP) Conference	Ontario Canada	May 16-18, 2001
8	Dr.J. Majhi	International Conference on Physics at Surfaces & Interface	Institute of Physics, Bhubaneswar	Mar. 4-8, 2002

9	Dr.K. Hariharan	Solid State Ionics	Department of Physics, Nagpur University, Nagpur	Feb.15-17, 2002
10	Dr.V.S. Murty	Some spectroscopic studies leading to applications in Bio, Environmental and Medical Physics	S.V. University, Tirupati	Aug. 29-31, 2001
11	Dr.V.S. Murty	Analysis of photoplethymographic signals of cardiovascular patients	Istanbul, Turkey	Oct. 25-28, 2001
12	Dr.V.Sankaranarayanan	Advances in Superconductivity and Magnetism	Mangalore University, Mangalore	Sep. 25-28, 2001
13	Dr.P. B. Bisht	National seminar on spectroscopy, optoelectronics and nondestructive evaluation 2001	Kerala University, Trivandram	May 24-26, 2001
14	Dr.P.B. Bisht	Vth International Conference	University of Castilla La Mancha, Toledo, Spain	Sep. 2-6, 2001
15	Dr.P.B. Bisht	UGC refresher course on Ultrafast lasers and applications	IIT Madras	Jan 15-29, 2001
16	Dr.C.Vijayan	Optical Nonlinearity and Photonic switching effects in Zinc Tetraphenyl Porphyrin	Pondicherry University	Dec. 4-5, 2001
17	Dr. Neelima M Gupte	International Conference on Women in Physics	International Union of Pure and Applied Physics, Paris	Mar. 7-9, 2002
18	Dr.M.V.Satyanarayana	Quantum Information and Quantum Computation	Kumari L.A. Meera Memorial Trust, Mysore	Jan. 10, 2002
19	Dr.Suresh Govindarajan	Workshop on Geometric transition	Department of Physics and Astronomy, Univ. of Southern California, Los Angeles, USA	Jan. 23-Feb 8, 2002

Special Lectures Delivered by the Faculty in other Institutions:

Sl. No.	Name of Faculty	Topic of Lecture	Venue & Date
1	Dr.V. Balakrishnan	International Conference on Lagrange Dependent Stochastic Processes and their applications	IISc, Bangalore January 7-12, 2002
2	Dr.M.P. Kothiyal	Invited talk on Optical Metrology	I.I.T., Delhi in the symposium on perspectives in Modern Optics 4-6, January 2002
3	Dr.K.V.S. Rama Rao	Recent Advances in 2:17 permanent magnet materials	TU, Darmstadt, Germany October 2001
4	Dr.G. Rangarajan	Current topics in Material Science (Series of 5 lectures)	PSG College of Technology, Coimbatore
5	Dr.K. Hariharan	Solid State Ionic Devices & Applications	Bharathiar University, Coimbatore 22.1.2002
6	Dr.K. Hariharan	Crystallization of copper Iodomolybdate and Silver Iodomolybdate glasses in the Tenth National Convention of Electrochemistry	CEERI, Karaikudi 26-27, April 2001
7	Dr.A. Subrahmanyam	Intelligent materials for the new Millenium	Pondicherry Engineering College, Pondicherry May 22-23, 2001

8	Dr.V.S. Murty	Some spectroscopic studies leading to applications in Bio, Environmental and Medical Physics	S.V. University, Tirupati August 29-31, 2001
9	Dr.V.S. Murty	Wireless application Protocol (NSWAP - 2001)	Gandhi Institute of Engineering and Technology, Gunupur, Orissa September 30-October 1,2
10	Dr. Neelima M Gupte	Non Linear Dynamics	Indian Institute of Astrophysics, Kodaikanal Observatory Kodaikanal June 4-9, 2001
11	Dr.C. Vijayan	Novel materials for nonlinear optical applications	Gandhigram Rural Institute, Gandhigram, 10 Dec. 2001
12	Dr.C. Vijayan	Nonlinear optical processes and applications	Academic staff college, Pondicherry University, 11 Dec. 2001
13	Dr.C. Vijayan	Photonic processes in semiconductor nanostructures	Cochin University of Science and Technology 18 Jan 2002
14	Dr.C.Vijayan	Optical Nonlinearity and Photonic switching effects in Zinc Tetraphenyl Porphyrin	Pondicherry University December 4-5, 2001
15	Dr.C. Vijayan	Workshop on Optoelectronics for college Teachers	International School of Photonics, Cochin University January 7-21,2002
16	Dr.P.B. Bisht	Fluorescence microscopy and their applications	Univ. of Castilla La Mancha. 8 Sep. 2001
17	Dr.P.B. Bisht	Space and time-resolved spectroscopy	Ludwig Maximilian Univ, Munich 11 Sep. 2001
18	Dr.V. Subramanian	Photonic Bandgap structure materials	BARC, Mumbai July 27, 2001
19	Dr.Suresh Govindarajan	Integrable Models, Strings, and Quantum Gravity	Institute of Mathematical Sciences, Chennai January 15-19, 2002

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of Visit
1	Dr.V. Damodara Das	San Diego, California	April 30-May 4, 2001	Metallurgical coatings and Thin Films (ICMCTF - 2001)
2	Dr.V. Damodara Das	Germany	March 4,2002 March 3, 2003	AVH Fellowship, University of Regensburg, Germany
3	Dr.P.C. Deshmukh	Ontario Canada	May 16-18,2001	Paper presentation in a Conference
4	Dr.P.C. Deshmukh	Atlanta, USA	May 20-July 11, 2001	Visit
5	Dr.G. Rangarajan	Austria, Germany, Switzerland	July 17, 2000 July 16, 2001	To attend an International Conference and Visiting Professor at RWTH, Achen, Germany and acceptance of Invited Professorship at DPEPFL, Lausanne, Switzerland
6	Dr.K.V.S. Rama Rao	Germany	Sept 2000- November 2001	AVH Fellowship, DAAD Guest Professor
7	Dr.K.V.S. Rama Rao	USA	Jan 2001	Participated in Intermag in San Antonio
8	Dr.T.S. Natarajan	Taiwan	June 27,2001 - June 26, 2002	Visiting Scientist Position at Institute of Atomic Molecular Sciences
9	Dr.V.S. Murty	Istanbul, Turkey	October 25-28, 2001	Analysis of photoplethymographic signals of cardiovascular patients
10	Dr.P.B. Bisht	Spain	Sept. 1-8, 2001	Paper presentation in a conference and lab visit at Univ. of Castilla La Mancha, Toledo

11	Dr.P.B. Bisht	Germany	Sept. 9-12, 2001	Lab visit and seminar talk at Ludwig Maximilian Univ. Munich
12	Dr. Suresh Govindarajan	Geneva, Switzerland and Trieste, Italy	May 14-July 8 th 2001	Invited to visit the Theory Division of CERN
13	Dr.Suresh Govindarajan	Los Angeles, USA	Jan 23-Feb 8,2002	Attended the Workshop on Geometric transition

Fellowships of Academies and Professional Societies:

Sl. No.	Name of Faculty	Name of Academy / Professional Society	Level	Year of Admission
1	Dr.K. Hariharan	Materials Research Society of India	Life Member Through Payment	2001
2	Dr.C. Vijayan	Indian Physical Society	Life Member	1998
3	Dr.C. Vijayan	Indian Association of Physics Teachers	Life Member	1992
4	Dr.C. Vijayan	SPIE Madras Chapter	Member	1997
5	Dr.C. Vijayan	Luminescence Society of India	Member	1999
6	Dr.D.K. Sharma	Optical Society of India	Fellow	1980
7	Dr.D.K. Sharma	SPIE-India Chapter	Secretary	1995

4.13.4. Design and Development Activities:

Thermoelectric power measuring setup for Ionic conducting materials

Insitu conductivity measurement setup for flash evaporated ionic thin films.

Set up a new Experiment "Calibration of thermocouple and determination of inversion temperature of Thermocouple" for the General Physics Laboratory for the M.Sc. students.

In the year 2001, immense efforts were made to establish a thin film lab at MSRC. The technique is the well known pulsed laser deposition (PLD). A Nd:YAG laser was procured from Quantel, France and the same is hooked up with a vacuum chamber with target rotation and substrate heating facilities. A shutter arrangement was also provided for pre-ablation. The laser beam when focused on to the rotating target (1" dia) with suitable energy density (Fluence) ablates the material and generates a plume (plasma). Initial growth optimization is being done on the film quality is good.

A special lab for PLD growth has been established. Room no 111 in the centre has now been converted in to a full-fledged thin film lab. With the kind support from the institute, this lab has false roofing, vinyl flooring and air-conditioning to facilitate clean room environment. This PLD technique is the first of its kind in IITM and only the second one in the southern region.

PC controlled laser-induced transient grating technique for fast decay curve measurements and efficiency measurements has been developed.

Fluorescence microscopy technique for imaging and steady state fluorescence measurements has been introduced.

Photonic Band gap structure at microwave frequencies.

Details of patents held in the department

Dielectric resonators for microwave devices
Electroless deposition of copper on PTFE

4.13.5 Research and Consultancy:

Sponsored Research Projects:

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Coordinators
1	Genetic Algorithm for structure prediction of complex systems	2000-2003	DST	8.72	Dr. Maha Seshasayee Dr.A.Subrahmanyam
2	Investigations for a p-type conducting transparent oxide thin films by DC Magnetron Sputtering Technique	2001 - 2004	CSIR	5.88	Dr.A. Subrahmanyam Dr.J. Majhi
3	Investigations on the Reactive kinetics of Silane Glow Discharge Plasma at high frequencies	2002 - 2005	DST	17.92	Dr.A. Subrahmanyam Dr.J. Majhi
4	Proposal for Facility for Research at Low Temperature and High Magnetic Fields	2001-2004	DST	65.00	Dr.G. Rangarajan Dr.V.Sankaranara-yanan Dr.K. Sethupathi
5	Photonic band gap studies in ferrites	2000-2003	DRDO	12.50	Dr.V.R.K. Murthy Dr.V.Subramanian
6	Development of rare earth based complex perovskite for dielectric resonator and photonic band gap applications	2002-2005	CSIR	10.73	Dr.V.Subramanian Dr.V.R.K. Murthy
7	Dynamics on Small world networks	2001-2004	CSIR	7.33	Dr. Neelima M Gupte/ Dr.V. Balakrishnan
8	Characterization of Semiconductor Nanoparticles produced by Ion-Implantation	1999-2002	DAE-IUC facility at IGCAR	4.00	Dr.C. Vijayan Dr. Ram Devenathan
9	Angular Distribution and Spin Polarisation of Photoelectrons	2000-2003	DST	12.00	Dr.C. Vijayan, Dr.P. C. Deshmukh
10	Morphology dependent resonances in microcavities and their effect on laser action in xanthene dyes	2001-2004	DST	21.42	Dr.P.B. Bisht
11	Studies on Multiphoton distributed feedback dye lasers	2001-2004	DRDO	15.23	Dr.P.B. Bisht
12	Studies of Dyes and Semiconductors by using laser induced transient grating	2002-2005	CSIR, New Delhi	8.20	Dr.P.B. Bisht Dr.S.Kasiviswanathan
13	Ultrafast excited state reactions in condensed and gas phase	2001-2004	IIT Madras-DLR, Germany.	Sponsored Visits of 60 days per year	Dr.P.B. Bisht Prof. Dr.Riedle, LMU, Germany
14	Investigations of ultrafast response of vacuum tunnel junction	2001-2004	DRDO, New Delhi	19.89	Dr.S.Kasiviswanathan Dr.V D. Das, Dr.V. Subramanian Dr.P.B. Bisht
15	Spatio-Temporal order and chaos in systems with many degrees of freedom	1997-2001	DST	29.00	Dr.Suresh Govindarajan Dr. Neelima M Gupte Dr.S. Lakshmi Bala
16	Fabrication of grain boundary junction (GBJ) thin films of CMR manganites for physical studies	2001-2003	DST, New Delhi	17.98	Dr.M.S. Ramachandra Rao

17	Studies on grain boundary effects in CMR manganites through the fabrication of tunnel junctions (natural/artificial) and magnetotransport studies on magnetically doped CMR manganites.	2001-2004	Indo - German (IIT -BMBF (German Science Foundation) Project	6.00	Dr.M.S. Ramachandra Rao
18	Technology development for Indium tin oxide (ITO) coatings on plastic and glass for EMI suppression	1999-2001	DoE, (MIT), Government of India, New Delhi	6.80	Dr.A. Subrahmanyam Dr.M.S. Ramachandra Rao
19	Silver doped indium oxide thin films for space applications	2001-2004	Indian Space Research Organisation (ISRO- ICSR)	8.98	Dr.A. Subrahmanyam Dr.M.S. Ramachandra Rao
20	Development of constitutive models for smart materials	2001-2004	National program on smart materials, New Delhi	22.00	Dr. M.S. Siva Kumar Dr.M.S. Ramachandra Rao
21	Dynamics of Semi-flexible polymers and their network	2001	CSIR	6.80	Dr.P.B. Sunil Kumar
22	Spectrally Resolved White Light Interferometer	2001-2003	BRNS	20.15	Prof. M.P. Kothiyal Dr.D.K. Sharma
23	Doppler Michelson Interferometer	DRDO	2002-2002	66.00	Dr.M.P. Kothiyal Dr.N. Krishna Mohan
24	Fast ion conducting glass ceramics - application to solid state ionic devices	DST	1999-2002	11.00	Dr.K. Hariharan Dr.Maha Seshasayee

Industrial Consultancy projects:

Sl. No.	Name of the Faculty	Title	Industry	Amount (in lakhs)
1	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Cryogenic system for Energy Dispersive X-ray Diffraction Unit	Anna University Chennai	0.10
2	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Maintenance of cell tissue for tissue culture work	Centre for Biotechnology, Anna University	0.04
3	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Cryogenic treatment of Materials	Anna University Chennai	0.05
4	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Cryo preservation technique to preserve Mammalian Cells and Hybridomas	Mediclone Biotech Pvt. Ltd, Chennai	0.05
5	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Preserving biological samples using liquid nitrogen	Cancer Institute	0.10
6	Dr.G.Rangarajan Dr.V.Sankaranarayanan Dr.K.Sethupathi	Low Temperature Demonstration Experiments	Tamilnadu Science and Technology Centre, Chennai	0.05

Research Publications:

No. of papers published in Refereed National Journals	..	4
No. of papers published in Refereed International Journals	..	27
No. of papers presented in National Conferences	..	20
No. of papers presented in International Conferences	..	21

In Refereed National Journals:

- 1 R. Justin Rajesh, T. S. Natarajan and Prem B. Bisht,, Computer controlled femtosecond optical delay line for ultrafast optics and spectroscopy, *Indian J. Pure & Applied Physics*, 39, 636-639, 2001
- 2 S.L.Badnikar, N. Shanmugam, and V. R. K. Murthy, Resonant frequencies of whispering gallery modes of dielectric resonators, *Defence science journal*, vol51, No.2, 189-193, 2001
- 3 Chitra.M, Subramanyam .B, and V. R. K. Murthy, Conformational and dielectric analysis of hydrogen bonded polar binary mixtures of methyl benzoate with aniline, *Indian JI of pure and applied physics*, vol.39, 461-466, 2001
- 4 J. Venkatesh, V. Subramanian and V. R. K. Murthy, Microwave dielectric properties of $(\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ relaxor ferroelectrics, *Indian J. Phys.*, 75A(4), 339 - 342, 2001.

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- 1 S.Angappane, P.Murugaraj, K.Sethupathi, G.Rangarajan, V.S.Sastry, Arul Chakravarthy and P.Ramasamy, Electrical and magnetoresistivity studies in chemical solution deposited $\text{La}(1-x)\text{Ca}_x\text{MnO}_3$ thin films, *Journal of Applied Physics*, 89, No.11 p.6979-81, 2001
- 2 V. Ravindranath, M.S. Ramachandra Rao, G. Rangarajan, Y. Lu, J. Klein, R. Klingeler, S. Uhlenbruck, B. Buchner and R. Gross, Magnetotransport studies and mechanism of Ho and Y doped, $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$, *Phys. Rev. B*, 63, 184434, 2001
- 3 M. Chitra, B. Subramanyam, and V. R .K. Murthy, Conformational and dielectric analysis of hydrogen bonded polar binary mixtures of methyl benzoate with n-methyl aniline, *Molecular Physics* vol99, No 18, 1569-1573, 2001
- 4 S. Suja Helen, M. P. Kothiyal and R. S. Sirohi, Analysis of spectrally resolved white light interferograms: use of a phase shifting technique, *Optical Engineering*, 40, 1329-1336, 2001.
- 5 M. Venkatesan, U.V. Varadaraju and K.V.S. Rama Rao, ^{57}Fe Mossbauer spectroscopy of $\text{HoErFe}_{17-x}\text{Ga}_x\text{C}_y$ compounds, *Phys. Rev (B)* 64, 094427 - 8 pages, 2001
- 6 S Pandian, V. Chandrasekharan, K.J.L. Iyer and K.V.S. Rama Rao, Investigations on the metallurgical features and magnetic properties of $\text{Nd}_{16.8}\text{Fe}_{75.7-x}\text{Al}_xB_{7.5}$, *IEEE Trans. Magn.* 37, 2489-2491, 2001.
- 7 G. Markandeulu, V.R. Shah, K.V.S. Rama Rao, M-Q. Huang, K. Sirisha, M.E. McNery and V.R.V. Ramanan, Anisotropy and FOMP in $(\text{Sm}_x\text{Pr}_{1-x})_3\text{Fe}_{27.5}\text{Ti}_{1.5}$ ($x = 0-1$) and $\text{Pr}_3(\text{Fe}_{1-y}\text{Co}_y)_{27.5}\text{Ti}_{1.5}$ ($y = 0 - 4$) compounds, *IEEE Trans Magn.* 37, 2615-2617, 2001.
- 8 R. Sivakumar, S. Ramaprabhu and K.V.S. Rama Rao, Electrical resistivity studies on $\text{Zr}_x\text{Tb}_{1-x}\text{Fe}_3$ ($x = 0.2, 0.3$) hydrides, *J. Phys. Condens. Matter* 13, 4155-4164, 2001.
- 9 N. Chatterjee and N. Gupte, Analysis of spatio-temporally periodic behaviour in lattices of coupled piece-wise, Monotonic maps, *Phys. Rev. E*, 63, 017202 (pgs 1-4) (2000).
- 10 S. Sinha and N. Gupte, Targetting spatio-temporal patterns in systems with multiple co-existing attractors, *Phys. Rev. E* 64, 015203(R) (pgs 1-4), (2001).
- 11 G.R. Pradhan and N. Gupte, New characterisers of bifurcations from kink solutions in coupled sine circle map lattices, *International Journal of bifurcations and chaos*, 11, 2501(2001).
- 12 R.Nirmala, V.Sankaranarayanan, A.V. Morozkin and K. Sethupathi, Magnetism and electronic transport in $\text{R}_2\text{Mn}_3\text{Si}_5$ (R - Dy, Ho, and Er) compounds, *Journal of Alloys and Compounds*, 325 pp. 37-41, 2001
- 13 R.Nirmala, V.Sankaranarayanan, K. Sethupathi and A.V. Morozkin, Magnetism in $\text{DyGd}_4\text{Si}_2\text{Ge}_2$, *Journal of Alloys and Compounds*, 326, pp. 174-176, 2001
- 14 R.Nirmala, V.Sankaranarayanan, A.V. Morozkin and K. Sethupathi, Multi-magnetic transitions in $\text{Tb}_2\text{Mn}_3\text{Si}_5$, *Journal of Alloys and Compounds*, 316/1-2, pp. L1-L3, 2001
- 15 P. Nandakumar, C. Vijayan, K. Dhanalakshmi, G. Sundararajan, P. Kesavan Nair and Y. V. G. S. Murti, Synthesis and Characterization of CdS Nanocrystals in a Perfluorinated Ionomer, *Materials Science and Engineering* B83 61-65, 2001

- 16 M. H. Majles Ara, C. Vijayan and Y. V. G. S. Murti, Second Order Optical Nonlinearity of FA centers in KCl Crystals : Optical Parametric Mixing, *Nonlinear Optics*, 26, 313-323, 2001
- 17 P. Nandakumar, C. Vijayan, K. Rajalakshmi, A. K. Arora and Y. V. G. S. Murti, Raman spectra of CdS nanocrystals in Nafion : Longitudinal optical and confined acoustic phonon modes, *Physica E (nanostructures)*, Vol. 11/4, pp 373-383, 2001.
- 18 P. Nandakumar, C. Vijayan and Y. V. G. S. Murti Optical Absorption and Photoluminescence Studies on CdS Quantum Dots in Nafion, *Jl. of Applied Physics*, 91 (3) pp 1509-1514, 2002.
- 19 Prem B Bisht, Relaxation processes using transient grating technique, *Research on Chemical Intermediates*, 27, 539-548, 2001
- 20 Sandeep P. and Prem B. Bisht, Theoretical calculations on morphology dependent resonances of microparticles and their effects on the spontaneous emission of dye molecules, *Indian J. Phys.* 75B, 539-543, 2001
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- 22 R. J. Rajesh and Prem B. Bisht, Simulations and experiments on ultrafast pulse generation in distributed feedback dye laser, *SPIE* 4417, 352-355, 2001
- 23 Suresh Govindarajan, T. Jayaraman & T. Sarkar, "On D-branes from gauged, linear sigma models," *Nuc. Phys.* B593, 155-182, 2001.
- 24 Suresh Govindarajan & T. Jayaraman, "D-branes, exceptional sheaves and quivers on Calabi-Yau manifolds: from Mukai to McKay," *Nuc. Phys.* B600, 457-486, 2001.
- 25 Suresh Govindarajan & T. Jayaraman, "Boundary Fermions, coherent sheaves and D-branes on Calabi-Yau manifolds," *Nuc. Phys.* B618, 50-80, 2001.
- 26 K. Veera Krishna Meera, V. Ravindranath and M.S. Ramachandra Rao, Magnetotransport studies in $\text{La}_{0.7}\text{Ca}_{0.3}\text{Mn}_{1-x}\text{M}_x\text{O}_3$ (M = Co and Ga), *J. Alloys and Compounds*. 326, 98, 2001
- 27 Ralph Gerard Monteiro, V. Ravindranath and M.S. Ramachandra Rao, Magnetotransport correlations in Pr- and La- based manganites:, *Solid State Commun.* 120, 469, 2001

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- 2 K. Hariharan, Crystallisation of copper iodo molybdate and silver iodomolybdate glassy electrolytes, Invited talk- Tenth National convention of ElectroChemists abstracts, 3.3(20-21) April 26-27 CECRI Karaikudi.
- 3 P.S. Anantha K.P Sooraj and K. Hariharan, Electrical conductivity of solid composite $\text{NaNO}_3\text{-Al}_2\text{O}_3$ and NaNO_3 and glassy $\text{NaNO}_3\text{-B}_2\text{O}_3$ electrolytes, Tenth National convention of Electrochemists 7-11, 50 April 26-27 CECRI Karaikudi
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- 5 R. Nirmala, V. Sankaranarayanan, K. Sethupathi and V. Ganesan, Thermoelectric power of RCu_2X_2 (R - Pr and Y, X - Si, Ge) Compounds, Proc. *Inorganic Materials for New Millenium*, Symposium held at MSRC, IIT Madras, Jan. 18 - 19, 2001
- 6 R. Nirmala, V. Sankaranarayanan, K. Sethupathi and A.V. Morozkin, Effect of Ti - substitution at R - site of R_5Ge_4 (R - Rare-earth) Compounds, Proc. *Inorganic Materials for New Millenium Symposium* held at MSRC, IIT Madras, Jan. 18 - 19, 2001
- 7 R. Nirmala, V. Sankaranarayanan, K. Sethupathi and A.V. Morozkin, Electrical and Magnetic Properties of $\text{Dy}_x\text{Gd}_{5-x}\text{Si}_2\text{Ge}_2$ alloys, Proc. *DAE - Solid State Physics Symposium* held at BARC, Mumbai, Dec. 26 - 30, 2001
- 8 C. Vijayan, Photoluminescence and Related Phenomena in Semiconductor Quantum Dots, *National Symposium of Luminescence and Applications at Osmania University, Hyderabad*. Januray 2001, Invited talk.

- 9 Anusha Krishna, Kaladevi Sendhil, C. Vijayan and J. Subramanian, Photobleaching Effects on the Optical Nonlinearity of Zinc Tetraphenyne, Porphyrin, National Seminar on Spectroscopy Optoelectronics and Nondestructive Evaluation SPENDE 2001 at Kerala University, Thiruvananthapuram 25-26 proceedings, page 30-32, May 2001.
- 10 K. Suresh Babu, R. Devanathan and C. Vijayan, A new synthetic route for the preparation of semiconductor nanocrystals, National conference on Perspectives in Metallurgy and Materials Science, Bangalore, proceedings pp27-28, July 2001
- 11 C. Vijayan, Kaladevi Sendhil, M. P. Kothiyal and J. Subramaniam, Optical nonlinearity and Photonic switching effects In Zinc Tetraphenyl porphyrin, Conference on Contemporary Concepts in Chemistry, Pondicherry University, Proceedings pp 8-9, Dec. 2001.
- 12 Kaladevi Sendhil, C. Vijayan and M. P. Kothiyal Observation of mirrorless bistability in Zinc Tetraphenyl Porphyrin, National Laser Symposium CAT Indore,. Proceedings pp 253-254, Dec. 2001
- 13 Sandeep P, R. Sallaja, R. Justin Rajesh and Prem B. Bisht, Evanescent wave coupling of morphology dependent resonances of a microcylinder with fluorescence of rhodamine 6G, Proc. of National seminar on spectroscopy, optoelectronics and nondestructive evaluation 2001, Trivandrum, May 25-26, p. 28-29, 2001,
- 14 R. Sallaja, R. J. Rajesh and Prem B. Bisht, Theoretical simulations on ultrashort pulse generation in multiphoton distributed feedback dye laser, National Symposium on Math. Methods and Appl., IIT Madras, Dec. 22, p. 14, 2001.
- 15 Umakanta Tripathi, Pem B. Bisht and A. Subrahmanyam, Calculations of excited state absorption cross sections of laser dyes, National Symposium on Math. Methods and Appl., IIT Madras, Dec. 22, 2001.
- 16 P. Sandeep and Prem B Bisht, Fluorescence microscopy and its uses, National workshop in synthesis and characterisation of materials, Feb 6-7, NPL, New Delhi, 2002.
- 17 P. Amalraj, Prem B Bisht and R. Justin Rajesh, An efficient and economic flow cell for the use in transient grating experiments, 14th National seminar on recent developments in scientific glass blowing, Feb. 7-8, IIT Madras, p. 1, 2002.
- 18 Abhijat Goel, V. Ravindranath and M.S. Ramachandra Rao, Influence grain (domain) network modifications on the magneto-transport properties in CMR manganites. Inorganic Materials for the New Millennium (IMNM) - 2001, held at IIT Madras
- 19 V. Ravindranath and M.S. Ramachandra Rao, Effect of the asphericity of the rare earth 4f-shell on the magneto-transport properties of CMR manganites. Inorganic Materials for the New Millennium (IMNM) - 2001, held at IIT Madras
- 20 Abhijit Das, M.S. Ramachandra Rao and Nandita Das Gupta, Ta₂O₅/SiO₂ stacked gate dielectric for Silicon MOS devices, National conference on devices held at New Delhi.

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- 1 M. Pattabiraman, G.Rangarajan, Kwang-Yong Choi, P. Lemmens, G. Guentherodt, G. Balakrishnan, D. Mc K Paul, and M.R. Lees, Polarized Raman Scattering in Single Crystals of Nd_{0.7} Sr_{0.3} Mn O₃, presented at International Symposium on Advances in Superconductivity and Magnetism: Materials, Mechanisms and Devices, Mangalore, September 25-28, 2001.
- 2 M. Pattabiraman, P. Murugaraj, G. Rangarajan, C. Dimitropouts, Jean-Philippe Ansermeet, G. Papavassition, G. Balakrishnan, D Mck Paul and M R Lees, Mn NMR investigation of Nd_{1-x} Sr_x Mn O₃ presented at the 46th Conference on Magnetism and Magnetic Materials, Nov. 2001.
- 3 S.Angappane, K.Sethupathi and G.Rangarajan, Electrical Transport in La(1-x)Ca_xMnO₃ thin films at low Temperatures, Presented at the International Symposium on Advances in Superconductivity and Magnetism conducted by TIFR at Mangalore University during 25-28 September 2001
- 4 S. Angappane, N Rajiv Kinyi, T.S. Natarajan, G.Rangarajan and B. Wesling, PANI-PMMA blend metal Schottky barriers, presented at International Conference on Materials for Advanced Technology, Singapore, July 2001.
- 5 R.Nirmala, V.Sankaranarayanan, K. Sethupathi and A.V. Morozkin, Electrical Transport and Magnetic Ordering in R₂Ti₃Ge₄ (R = Dy, Ho, Er) Compounds, Proc. Int. Symposium ASMM2D-2001 on Advances in Superconductivity and Magnetism, Materials Mechanisms and Devices, Sep. 25-28, 2001

- 6 M. H. Majles Ara, M. Talebi, C. Vijayan and R. S. Sirohi, Volume hologram recording with an applied electric field and a moving grating in photorefractive crystals, SPIE Annual Meeting, San Diego, California, USA, SPIE proceedings, Vol 4459, pp 76-83, August 2001
- 7 K. Suresh Babu, R. Devanathan and C. Vijayan, Quantum size effects on the optical properties of PbS nanocrystals synthesized by chemical routes, OPTONICS-2001, International symposium on Millennium Challenges in Optics and Optoelectronics, Thiruvananthapuram, August 2001
- 8 Kaladevi Sendhil, C. Vijayan and M. P. Kothiyal, A compact, automated Z scan set up for measuring optical nonlinearity, OPTONICS-2001, International symposium on Millennium Challenges in Optics and Optoelectronics, Thiruvananthapuram, August 2001
- 9 R. Justin Rajesh and Prem B. Bisht, Femtosecond pulse generation by figure of eight laser (F8L): theoretical simulations, Proc. of Femtochemistry Vth conference, Sept. 2-6, Toledo, Spain, p. 22(II), 2001
- 10 R. Radhan, Rajesh R. Justin and Prem B. Bisht, Effect of nonlinear amplifying loop mirror (NALM) and central coupler ratio on femtosecond pulse evolution in figure of eight laser, Optonics, Trivandrum, Aug. 26-29, , pp. 12-13, 2001
- 11 P. Sandeep and Prem B. Bisht, Resonances of optical microcavities and their effect on the lasing of dyes, , Optonics, Trivandrum, Aug. 26-29, pp. 118-119, 2001
- 12 Rajesh R. Justin and Prem B Bisht, Simultaneous measurement of ultrafast relaxation times and fluorescence life times by femtosecond optical delay line, Optonics, Trivandrum, Aug. 26-29, 2001, pp. 73, 2001
- 13 P. Sandeep and Prem B Bisht, Influencing radiative rates of a fluorophore: Fluorescence microscopy and morphology dependent resonances, Proc. of 3rd Asian photochemistry conference-2002, Jan 6-11, , BARC, Mumbai, p. 122, 2002
- 14 Umakanta Tripathi, R. Justin Rajesh, Prem B Bisht and A. Subrahmanyam, Optical nonlinearity of organic dyes as studied by Z-scan and transient grating technique Proc. of 3rd Asian photochemistry conference-2002, Jan 6-11, BARC, Mumbai, p 157, 2002.
- 15 Justin Rajesh and Prem B Bisht , Observation of coherent effects in pump probe experiments on ultrafast time scale and their control, Proc. of 3rd Asian photochemistry conference-2002, Jan 6-11, BARC, Mumbai, p. 158, 2002,
- 16 A. Josephine Prabha, V. Ravindranath and M.S.R. Rao, Modifications in magnetoresistance mechanisms in (magnetically) doped $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$, International symposium on Advances in Superconductivity & Magnetism: Materials, Mechanisms and Devices (ASMM2D), Sept. 25-28, Mangalore, India, 2001
- 17 Sudarshan, N. Rama, V. Ravindranath and M.S.R. Rao, Effect of Ho and Y-doping on the magnetotransport properties in $\text{La}_{0.7}\text{Ba}_{0.3}\text{MnO}_3$, S. International symposium on Advances in Superconductivity & Magnetism: Materials, Mechanisms and Devices (ASMM2D), Sept. 25-28, Mangalore, India, 2001
- 18 V.S. Prashanth, V. Ravindranath and M.S.R. Rao. Comparison of the magnetotransport properties of Er and Tb doped LCMO and LSMO compounds, International symposium on Advances in Superconductivity & Magnetism: Materials, Mechanisms and Devices (ASMM2D), Sept. 25-28, Mangalore, India. 2001
- 19 R.Nirmala, V.Sankaranarayanan, K.Sethupathi and A.V.Morozkin, Electrical Transport and Magnetic ordering in $\text{R}_2\text{Ti}_3\text{Ge}_4$ (R - Dy, Ho and Er) Compounds, Presented at the International Conference on Advanced Material Technologies, ICMAT - 2001 held in Singapore during July 2001
- 20 R.Nirmala, V.Sankaranarayanan, K.Sethupathi and A.V.Morozkin, Electrical Transport and Magnetic ordering in $\text{R}_2\text{Ti}_3\text{Ge}_4$ (R - Dy, Ho and Er) Compounds, Presented at the International Symposium on Advances in Superconductivity and Magnetism conducted by TIFR at Mangalore University during 25-28 September 2001
- 21 V. Subramanian and V .R. K. Murthy, Microwave hall effect studies in some semi conductors, XI- International workshop on the physics of semi conductors -New Delhi, Dec 11-15 2001

Distinguished Visitors to the Department:

Sl. No.	Name of the Visitor & Designation	Date of Visit	Purpose of Visit
1	Dr.Srinivasan Krishnamurthy SRI International Menlopark California, USA	23.6.2000	lecture

Sl. No.	Name of the Visitor & Designation	Date of Visit	Purpose of Visit
2	Dr. Debasish Ghoshal Harish Chandra Research Institute, Allahabad	24.4.2001	-do-
3	Dr.Chitra Rangan Department of Phphysics Univ. of Michigan Ann Arbor, USA	25.4.2001	-do-
4	Dr.K. Sridhar TIFR, Mumbai	02.4.2001	-do-
5	Dr. Pramod Kumar Rastogi Stress Analysis Laboratory Civil Engineering Department Swiss Federal Institute of Technology, Lausanne CH 1015, Switzerland	8.5.2001	Visited Applied Optics Laboratory
6	Prof. Ram Gopal Dept. of Physics Allahabad University Allahabad	11.6.2001	lecture
7	Prof.R.N.P. Chowdhary Department of Physics I.I.T., Kharagpur	19.7.2001	-do-
7	Dr.O. Narayanan Department of Physics IISc, Bangalore	6.9.2001	-do-
8	Prof. P. Hariharan University of Sydney Australia	8.10.2001	-do-
9	Prof.D. Naresh Inter University Centre for Astronomy and Astrophysics Pune	11.10.2001	-do-
10	Prof.A.K. Kapoor School of Physics Univ. of Hyderabad	7.3.2002	-do-
11	Prof.Dr. Rudolf Gross Director University of Munich Germany	19.3.2002 & 21.3.2002	-do-
12	Dr. Volker Dyczmons Universitat Gottingen Germany	28.3.2002	-do-

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 in industrial production

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 takes 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 31.3.2002, the following number of students/scholars were with this center:

- M.Tech - 7
- M.S. - 3
- Ph.D. - 4

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

S. No.	Name of the student	Programme	Name of the conference / seminar / symposia	Date and venue
Conference:				
1.	A. Thirunavukkarasu	Ph.D.	Perspectives in Physical Metallurgy and Materials Science	July 2001 IISc, Bangalore
		Ph.D.	International Conference on Powder Metallurgy for automotive components	January 22-23, 2002, New Delhi
2	R.V. Sudarsana Reddy	Ph.D.	National Conference on Advances in Structural Engg.	Dec'2001 Tirupati

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 using FRP Composites.
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 faculty:

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	Dr. P. Alagusundaramoorthy Dr. M. Balasubramanian Dr. R. Velmurugan Dr. S.K. Malhotra	International Conference and Exhibition on Reinforced Plastics (ICERP-2002), IIT, Madras (in collaboration with FRP Institute, Chennai)	Feb. 7-9, 2002
Workshop:			
1.	Dr. S.K. Malhotra Dr. A.P. Deshpande (Chemical Engg.) Dr. C. Lakshmana Rao (Applied Mech.)	Workshop on Natural Fibre Composites	18 th Jan. 2002
Short-term course:			
1.	Dr. P. Alagusundaramoorthy	Design & Manufacturing of FRP Chemical Plant Structures FRP Technology	May 21-26, 2001 June 18-22, 2001
2.	Dr. M. Balasubramanian	Advances in Composite Materials	December 3-7, 2001
3.	Dr. R. Velmurugan	Design & Manufacture of FRP for Land Transport Applications	August 20-25, 2001

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

S.No.	Name of Faculty	Title	Period and Venue
Workshop:			
1.	Dr.M.Balasubramanian	Complete cycle characterisation of Materials Natural Fibre Composites	Sept. 12-14, 2001 IGCAR, Kalpakkam Jan. 18, 2002, IIT Madras
2.	Dr.S.K.Malhotra	Recent Advances in Polymer Blends & Composites	Nov. 26-28, 2001 M.G.University, Kottayam
Seminar:			
1.	Dr.S.K.Malhotra	Intl. Seminar "Plastics Testing 2001"	Dec. 13-15, 2001 Chennai
Symposia:			
1.	Dr.P.Alagusundaramoorthy	National Symposium on New Materials & New Technologies in Bridge Engg.	Feb. 24-25, 2002 IIT Madras
Conference:			
1.	Dr.P.Alagusundaramoorthy	Intl. Conf. & Exhibition on Reinforced Plastics	Feb. 7-9, 2002 IIT Madras
2.	Dr.M.Balasubramanian	- do -	- do -
3.	Dr.R.Velmurugan	- do -	- do -

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of Faculty	Topic of Lecture	Venue and date
1.	Dr.P.Alagusundaramoorthy	Design concepts in steel structures. Retrofitting & rehabilitation of concrete structures/Resin and Reinforcements	NIPM, Chennai Nov. 2001 Bagalkot, Karnataka Dec. 2001
2.	Dr.M.Balasubramanian	Composite Materials	Thiagarajar College of Engg., Madurai October 5, 2001
3.	Dr.S.K.Malhotra	Composite Materials & Technology Composite Materials	Venkateswara College of Engg., Chennai June 12, 2001 CVRDE, Avadi Feb.18, 2002

Books, Monographs authored and co-authored:

S.No.	Name of Faculty	Title	Publisher
1	Dr.P.Alagusundaramoorthy (Edited)	Advances in Reinforced Plastics (Proc. of ICERP- 2002)	Allied Publishers, Chennai

Fellowship of Academics and Professional Societies:

S.No.	Name of Author	Level	Year of Admission
1.	Dr.P.Alagusundaramoorthy	Member-ISTE	1997
		Assoc. Member - ASCE	2000
2.	Dr.S.K.Malhotra	Member - MRSI	1995
3.	Dr.R.Velmurugan	Member - Indian Soc. For Mechanical Engg.	1994
		Member - ISTE	1997
		Member - ISTAM	1999

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

S.No.	Equipment	Amount (Lakhs)
1.	DMA, DSC, TGDTA & DEM, TGDSC	49.00
2.	Prodigy true on-line 5 KVA sine wave UPS	0.65
3.	Linear table diamond wheel cutting machine	0.75
4.	Table top mini-spray dryer	4.75
5.	Cryocan Model BA-20 with canister for thermal equipment	0.18
6.	HP Vectra VL-800 desk top (Pentium 4) - 3 Nos.	2.81
7.	HP 21" Color Monitor - 3 Nos.	2.10

5.1.5 Research and Consultancy:**Sponsored Research Projects:**

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Feasibility studies on composite waste recycling.	Jan. - Dec. 2002	DST-TIFAC	5.85	Dr.M.Balasubramanian Dr.P.Alagusundaramoorthy
2.	Processing & Performance evaluation of light weight composite Gears.	Feb. 2002 To Jan. 2005	DST	12.43	Dr.R.Gnamoorthy (Mech. Engg.) Dr.S.K.Malhotra

Industrial Consultancy Projects:

S.No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	Dr.P.Alagusundaramoorthy	Repair of Light Houses at Gujarat	Dept. of Light Houses, GOI	1.33
2.	Dr.M.Balasubramanian	Study of Wollastonite as reinforcement for polyester resins	Wolkem India Ltd.	0.60

RBIC Projects:

S.No.	Name of Faculty	Title	Industry	Amount (in lakhs)
1.	Dr.R.Velmurugan	Development of power pack cover for Arjuna Tank	CVRDE, Avadi	14.82
		Preparation of PJ-10 standards for composites & other materials	DRDL, Hyderabad	9.75

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:

No. of papers published in Refereed National Journals	..	2
No. of papers published in Refereed International Journals	..	1
No. of papers presented in National Conferences	..	5
No. of papers presented in International Conferences	..	6

In Refereed National Journals:

1. R.Velmurugan, T. Sekar, S. Vijaykumar, B.Krishnan, "Experimental investigations on the collapse behaviour of metallic tubes with aerated concrete" *Jl. Of Structural Engg.*, v-28, n-1, pp. 39-42, 2001.
2. T. Sekar, R.Velmurugan, M.S. Palanichamy, " Axially loaded aerated mortar filled steel tubes, " *Jl. of Instrn. of Engrs (India)* v-82, pp-81-84, 2001.

In Refereed International Journals:

1. J.Ramkumar, R.Krishnamurthy, S.K.Malhotra, "Influence of tool status on flexural strength of machined CFRP components", *Jl.Advanced Composites Letters*, v-10, n-4, pp. 187-195, 2001.

In Proceedings of National Conferences:

1. V.Viswabaskaran, F.D.Gnanam, M.Balasubramanian, "Synthesis and characterisation of porous mullite supports", *Proc. of National Conf. on Recent Advances in Materials Processing (RAMP-2001)*, Annamalainagar, Sept. 7-8 2001, pp. 33-41.
2. J.Ramkumar, S.Aravindhyan, S.K.Malhotra, R.Krishnamurthy, "Drilling of Fibre Reinforced Composites using Microwave treated cutting WC inserts", *proc. of National Conf. on Recent Advances in Materials Processing (RAMP-2001)*, Annamalainagar, Sept. 7-8, 2001, pp. 358-365.
3. V.Viswabaskaran, F.G.Gnanam and M.Balasubramanian, "Utilisation of Neyveli clay for value added artefacts", *Proc. 65th Annual Session of the Indian Ceramic Society, Jaipur*, Jan. 23-24, 2002, pp. 78-79.
4. P.Alagusundaramoorthy, R.Veera S.Reddy, B.Sivagurunathan, "Experimental study on Ferrocement Columns", *Proc. National Conf. on Advances in Structural Engg.*, Tirupati, Dec. 2001, pp. 131-135.
5. P.Alagusundaramoorthy, "Fibre Reinforced Polymer Concrete Bridges", *Proc. National Symposium on New Materials & New Technologies in Bridge Engg.*, Chennai, Jan. 2002, pp. X1 - X15.

In Proceedings of International Conferences:

1. P.Alagusundaramoorthy, I.E.Harik, C.C.Choo, "Strengthening of Concrete Beams using CFRP sheets and Fabrics", *Proc. Intl. Conf. on Reinforced Plastics, IIT Madras*, Jan. 7-9, 2002, pp.139-147.
2. M.Balasubramanian, R.Velmurugan, K.Senthil Kumar, S.Nanjundan, "Mechanical properties of glass-toughened epoxy composite", *Proc. Intl. Conf. on Reinforced Plastics, IIT Madras*, Jan. 7-9, 2002, pp. 209-216.
3. M.A.Muthumanickam, R.Velmurugan, N.G.Nair, "Experimental investigation of ceramic encapsulated multi-component composite system for ballistic applications", *Proc. Intl. Conf. on Reinforced Plastics, IIT, Madras*, Jan 7-9, 2002, pp. 189-195.
4. J.Ramkumar, S.K.Malhotra, R.Krishnamurthy, "Online monitoring on material response of glass fibre reinforced composite during ultrasonic machining through acoustic emission", *Proc. 17th Intl.Conference on CAD/CAM, Robotics & Factories of the Future (CARS & FOF 2001)*, Durban, South Africa, July 10-12, 2001, pp. 292-296.
5. J.Ramkumar, S.K.Malhotra, R.Krishnamurthy, "Ultrasonic drilling of Polymeric Composites", *Proc. 3rd Canadian Intl. Composites Conf. (CANOM - 2001)*, Montreal, August 21-24, 2001, pp 465-469.
6. S.K.Malhotra, "Testing and Characterisation of Composites", *Proc. Intl. Seminar, "Plastics Testing - 2001"*, Chennai, Dec. 13-15, 2001, pp. 67-74.

Distinguished Visitors to the Centre:

Sl. No.	Name of the Visitor & Designation	Date of Visit	Purpose of Visit
1.	Dr.Y.Tsujita, Prof.Nagoya Inst. of Technology, Japan	6 th Nov. 2001	Invited talk & technical discussions
2.	Dr.Jayaraman Raghavan, Assoc. Professor, Univ. of Manitoba, Winnipeg, Canada	20 th Nov. 2001	Discussed joint research programme & invited talk
3.	Dr.S.Bandyopadhyay, Assoc. Professor, Dept. of Materials Sci. & Engg., Univ. of New South Wales, Australia	15 th Jan. 2001	Discussed possibility of collaborative research
4.	Dr.G.Tomandi, Director, Institute for Ceramics, Technical Univ. of Freilberg, Germany	20 th Feb. 2002	Lecture & exploring collaboration

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 materials. The major research areas of the Centre are:

- Perovskite mixed oxides
- Magnetoresistance oxides
- PLZT ferroelectric ceramics
- Fast ion conductors
- Thermoelectric Materials
- Luminescent materials
- Electrode materials for Li-batteries
- Thin film Multilayers/heterostructures
- Electroluminescent (EL) thin films

5.2.2. Academic Programmes:

This Centre takes 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 31.3.2002, the following number of students/scholars were with this center:

- Ph.D. - 6

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
Symposia:				
1.	V. Ravindranath	Poster presentation	International Symposium on Advances in Superconductivity magnetism: Materials, mechanisms and devices.	25-28, Sept. 2001, Mangalore, India
2.	M.V.V.M.Kisore N. Lakshminarashimhan	Advanced Materials Workshop	JNCASR	Dec. 3-4, 2001, Bangalore
3.	G. Vignesh, N. Lakshminarasimhan and U.V. Varadaraju	Synthesis and Studies of Luminescence in $A_3MgSi_2O_8$: Eu, Dy (A= Ca, Sr & Ba) – Long Afterglow Phosphors	13 th AGM MRSI	7-9, February 2002, Hyderabad

5.2.3. Faculty and their activities:

Faculty:

Name and Qualification

Prof. B. Viswanathan, Ph.D.,
(IIT Madras) [Head]

Prof. U.V. Varadaraju
Ph.D. (IISC Bangalore)

Dr. M.S. Ramachandra Rao,
Asst. Prof., Ph.D. (IIT Kharagpur)

Dr. K.D. Chandrasekaran,
S.S.O. – I, Ph.D. (IIT Madras)

Major Areas of Specilization

Surface and Materials Science, Catalysis, Energy and Fuel Cells, Nanomaterials

Thermo Electric Materials, Materials for lithium ion battery, Luminescent materials

Spintronics, Multilayers, Heterostructure thin films growth of manganites, double perovskites, PLZT thin films for sensor applications.

Oxide ceramic systems for practical applications, High temperature heating element composition.

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

S. No.	Coordinator(s)	Title	Period
Seminar:			
1.	Dr. B.Viswanathan Dr. U.V.Varadaraju	In-house Seminar on Nano-Materials in collaboration with Metallurgical Engineering Department	14 th December 2001
Workshop:			
1.	B. Viswanathan	Surface Science and Catalysis	Dec. 3-13, 2001

Special Lectures delivered by the faculty in other Institutions:

S.No.	Name of Faculty	Topic of lecture	Venue and Date
1.	Dr.M.S.Ramachandra Rao	1.PLD: a versatile technique to grow oxide electronic materials 2. New surface morphology techniques: STM & AFM	Pondicherry Engineering College
2.	Prof. U.V. Varadaraju	Long -after glow phosphors	Symposium on New Perspectives in Materials science - 2002 Osmania University, Hyderabad, 23-3-2002
3.	Prof. B. Viswanathan	Meso-porous Solids	Singapore during 18 to 20 th December 2001
		Fuel Cells	American Chemical Society, Science Centre, Chicago August 26-29, 2001.

Visits abroad by faculty:

S.No.	Name of faculty	Country visited	Date	Purpose of visit
1.	Prof. U.V.Varadaraju	Ireland	June-July 2001	carryout research
2.	Prof. B.Viswanathan	USA	August 23-Sep.3, 2001	ACS meeting Discussion with Columbia Chemical Company, Dupont
		Singapore	December, 17-20, 2001	National University of Singapore, Lectures

Honours and Awards obtained:

S.No.	Name of Faculty	Name of Award	Awarded by	Awarded for	Date
1.	B.Viswanathan	Chemical Research Society India Medal	Chemical Research Society India	Contribution to Chemistry	Feb., 2001

Books, Monographs authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/co-author
1.	Prof. B.Viswanathan	Catalysis, Principles, and Applications	Narosa Publishing House Pvt. Ltd. New Delhi, India	Coauthor

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 software has been developed for AC susceptibility measurement and electrical resistivity.
- Special shutter arrangement has been developed in PLD chamber for pre-ablation purpose. Gun metal bushes were installed to facilitate oil free, target rotation in PLD chamber.
- A ferro-electric loop tracer has been fabricated for Curie-temperature-measurement study.
- A new Microwave Synthesis System has been commissioned. Trial Experiments on sol-gel microwave synthesis of electronic oxides have been carried out using the above facility.

- A simple inexpensive formulation and process for self cleaning coatings on ceramic tiles has been developed.
- A vacuum chamber was designed and procured with target rotation facility, multitarget carousel for thin film growth in vacuum (10^{-6} torr) and gas atmosphere (O_2 , H_2 , N_2 , Ar)

New facilities added or major equipment procured through project funds:

- Laser Nd:YAG Pulse Laser (frequency tripled), wavelength 355 nm, 20 ns was procured from Quantel, France. The laser has been installed and being used successfully to grow thin films of a variety of electronic material.

5.2.5. Research and Consultancy:

Retainer Consultancy:

S.No.	Name of faculty	Title	Industry	Amount (Rs. in lakhs)
1.	Prof. B. Viswanathan	Fuel cells	International Tractors Ltd.	0.5
2.	Prof. B. Viswanathan	Fuel Cells	SPIC Science Foundation	0.9

Research Publications:

No. of papers published in Refereed National Journals	..	4
No. of papers published in Refereed International Journals	..	8
No. of papers presented in National Conferences	..	2
No. papers presented in International Conferences	..	5

In Refereed National Journals:

1. Encapsulation of metal complexes in zeolites – possible mimics for natural enzymes: R.Ganesan, B.Viswanathan, *Bull. Catal.Soc. Ind.*, 10 (2001) 1.
2. Redox properties of metal complexes encapsulated in various zeolites: R.Ganesan, B.Viswanathan, *Ind. J. Chem.*, 40 A (2002) 1.
3. Perovskites as alternative anode materials for direct methanol fuel cells: V.Raghuveer and B. Viswanathan, *Ind. J.Chem.*, 40A (2001) 263.
4. Nanomaterials – A new generation in material science, M.Aulice Scibioh and B. Viswanathan, *Bull. Catal. Soc. India*, 11 (2001) 2-52.

In Refereed International Journals:

1. 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 nano-scale insulating tunnel barrier: M.S.Ramachandra Rao, V.Ravindranath, Y.Lu, J.Klien and R.Gross, *Journal of Physics D: Applied Physics*, 35 (2002), 1-4.
2. Magneto Transport Correlations in Pr- and La- based Manganites: Ralph Gerard Monteiro, V. Ravindranath and M.S. Ramachandra Rao, *Solid State Commun.* **120** (2001), 469 - 474.
3. Mossbauer studies on $(R_1R_2)Fe_{15}Ga_2C_x$ ($x=0,1$ $\{(R_1R_2) = (Ho, Er), (Tm, Pr), (Nd, Sm) \}$ & $(Sm, Pr)\}$: M. Venkatesan, U.V.Varadaraju and K.V.S.Rama Rao, *Physical Review B* 64 (2001) 094427.
4. Hydroxylation of aromatics over transition metal substituted MCM-48: Ch. Subrahmanyam, B. Louis, B. Viswanathan, A. Renken and T.K. Varadarajan, *Eurasian Chemico Technological Journal*, B (2001) 59.
5. Vapour phase oxidation of toluene with molecular oxygen over mesoporous Cr-ALPO: Ch. Subrahmanyam, B. Louis, F.Rainone, B. Viswanathan, A. Renken and T.K. Varadarajan, *Catal. Commun.*, 3 (2002) 45.
6. Synthesis and Characterization of MCM-41 coatings on stainless steel grids: B. Louis, Ch. Subrahmanyam, L. Kiwi-Minsker, B. Viswanathan, R.A.Buffat and A. Renken, *Catal. Commun.*, 3 (2002) 159-163.
7. Carbon nanotubes generated from polyphenyl acetylene: B. Rajesh, S. Karthikeyan, K. Ravindranathan Thampi, J.-M.Bonard and B. Viswanathan, *Eurasian Chem. Tech. Journal.*, 3 (2001) 11-15.
8. Lanthanum cuprates as electrocatalysts for methanol oxidation: V.Raghuveer, K.Ravindranathan Thampi, N. Xanthapoulos, J.N.Mathieu and B. Viswanathan, *Solid State Ionics*, 140 (2001)263.

In Proceedings of National Conferences:

1. Three Poster Papers were presented at the International Conference, on Superconductivity and Magnetism held at Mangalore. The conference was organized by Tata Institute of Fundamental Research, Mumbai. The conference had many interesting talks delivered by Indian and Foreign scientists.
2. Pt-WO₃.xTiO₂ as possible alternate for DFMC anode, V.Raghuveer and B.Viswanathan, 15th National Symposium on Catalysis and 2nd Conference of the Indo-Pacific Catalysis Association, National Chemical Laboratory, 23-25 Jan. 2001, Pune, India.

In Proceedings of International Conferences:

1. Structural and Magnetic Properties of (Sr_{2-x}Ca_x)FeReO₆: T. Alamelu, U.V. Varadaraju, M. Venkatesan, A.P. Douvalls and J.M.D. Coey, 46th Annual Conference on Magnetism and Magnetic Materials, November 12-16, 2001, Seattle, Washington.
2. Pt-WO₃ supported on carbon nanotubes as possible anodes for direct methanol fuel cells: B. Rajesh and B.Viswanathan, ACS symposium, 26-29 Aug. 2001, Chicago, USA (This paper has been nominated for the Richard Glenn Award in the symposium).
3. Pt-WO₃ supported on carbon nanotubes generated from polyphenylacetylene as the possible anodes, for Direct Methanol Fuel Cells (DMFC): B.Rajesh, V.Raghuveer and B.Viswanathan, International Conference on Fuel Cell Applications and Opportunities, 26-29 Nov. 2001, Gorgeon, India.
4. Can La_{2-x}Sr_xCuO₄ be used as anodes for Methanol Fuel Cells?, V.Raghuveer and B.Viswanathan, ACS Symposium, 26-29 Aug. 2001, Chicago, USA.
5. Nanocrystalline Pb=Ru pyrochlore as cathodes for possible application in fuel cells, V.Raghuveer and B.Viswanathan, International Conference on Fuel Cell Application and Opportunities, 26-29 Nov. 2001, Gorgeon

Distinguished Visitors to the Centre:

S.No.	Name of the visitor and designation	Date of visit	Purpose of visit
1.	Dr. R. Suryanarayanan, CNRS, Orsay, France	February 2002	Electron and Hole doped Manganites.
2.	Mr. S. P. Pai, Tata Institute of Fundamental Research, Mumbai	February 2002	Pulsed Laser Deposition in TIFR - Past, Present & Future.
3.	Dr. B. (Sri) Srinivasan, Application Specialist, Columbia Chemicals Co. USA	November. 2001	Fundamentals of Carbon Black, Manufacturing and its Applications.
4.	Dr. M. Venkatesan University of Dublin, Ireland	January 2002	High Temperature Nano-Magnets.
5.	Prof. R. Gross, Director, Walther-Meissner Institute of the Bavarian Academy of Sciences, University of Munich, Germany,	March 17 to 26, 2002,	Indo-German collaborative project. Two lectures on 1. Fabrication and Properties of Complex Oxide Heterostructures 2. Fabrication of Meso-scopic Metallic Structures.
6.	Prof. Jagadese J. Vittal, Department of Chemistry, National University of Singapore	January 2002	Formation, Transformation and Reactivity of Supramolecular Architectures

5.2.6. Other Activities:

MSRC review committee consisting of:

1. Dr. B.A. Dasannacharya, Director, IUC, Indore
2. Dr. C. Ganguly, Director, NFC, Hyderabad
3. Prof. S. Ranganathan, I.I.Sc., Bangalore

visited MSRC during 26 & 27th October 2001.

Faculty and students made scientific presentations. The committee also visited the Laboratories in MSRC. Presentations were also made by Heads and faculty of other Departments of the Institute viz., Chemistry, Physics, Civil Engg., Electrical Engg., Metallurgical Engg., Chemical Engg., Ocean Engg., Applied Mechanics, Mechanical Engg. on Materials Science activities in their respective Departments. Scientists/Alumni from IGCAR, Kalpakkam and Industry Columbia Chemicals Co., USA, M/s Anabond Ltd., Chennai also highlighted to the committee their interaction with MSRC.

MSRC coordinated the proposal on Nanomaterials and Nanotechnology that was submitted to the Nanomaterials Science and Technology (NST) programme of the Department of Science and Technology (DST), New Delhi 110 016 with 5 Principal Investigators : Dr. K. Prasada Rao, Dr. B. Viswanathan, Dr. K.N. Bhat, Dr. U.V. Varadaraju and Dr. S.S. Bhattacharya and 35 Faculty as co-investigators from Chemical Engineering, Chemistry, Electrical Engineering, Materials Science Research Centre, Mechanical Engineering, Metallurgical Engineering and Physics.

5.3 REGIONAL SOPHISTICATED INSTRUMENTATION CENTRE

5.3.1. Introduction:

Regional Sophisticated Instrumentation Centre (RSIC) established with the help of 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.	Course No.	Title	Faculty
1.	MT407	Modern Materials	Dr. T.S. Sampath Kumar
2.	MT307	Materials Characteristics	Dr. T.S. Sampath Kumar

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

S.No.	Name of the Student	Programme	Name of the Conference/Seminar	Date and venue
Conference:				
1.	Mr. D. Sivaramakrishnan	M.S	National Conference on Medical Materials	November 28-29, 2001 IIT Madras
Seminar:				
1.	Mr. D. Sivaramakrishnan	M.S	II International School on Powder Diffraction	January 22-23, 2002 Kolkata

5.3.3. Faculty and their activities :

Faculty :

Name and Qualification	Major Area of Specialization
Prof. S. Sankararaman, Ph.D [Head]	Organic Chemistry, Photo Chemistry
Dr. T. Pradeep, Ph.D	Chemical Physics, Spectroscopy, Ion Chemistry, Monolayers, clusters
Dr. T.S. Sampath Kumar, Ph.D	Microwave processing, Biomaterials Surface Science
Prof. P.T. Manoharan, Ph.D Institute Emeritus Professor	Spectroscopy, Bioinorganic Chemistry

Short-term Courses/Workshops/Seminars/Symposia/Conferences organised

Sl. No.	Co-ordinators	Title	Period
Conference:			
1.	Prof. S. Sankararaman Co-Chairman Dr. T.S. Sampath Kumar Organising Secretary	National Conference on Medical Materials 2001	November 28-29, 2001
Workshop:			
1.	Prof. S.P. Venkateshan Dr. M. Mylrajan Dr. M.S. Moni	Short Term Training Program on "Instrumental Methods of Analysis for Engineers and Scientists"	December 10-14, 2001

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

Sl. No.	Co-ordinators	Title	Period
Conference:			
1.	Prof. P.T. Manoharan	Modern Trends in Inorganic Chemistry	February 2002
Seminar:			
1.	Dr. T. Pradeep	International Seminar on Solid State and Materials Chemistry	December 4-7, 2001
2.	Dr. T. S. Sampath Kumar	Asia Academic Seminar on New Materials	December 12-21, 2001
Symposia:			
1.	Dr. T. Pradeep	4 th National Symposium in Chemistry	February 1-3, 2002
		Annual Symposium of the Materials Research Society of India	February 9-11, 2002 DMRL, Hyderabad
Workshop:			
1.	T. Pradeep	IUPAC workshop on Advanced Materials II	February 13-16, 2002 JNCASR, Bangalore

Special Lectures Delivered by the faculty in other Institutions :

S.No	Name of Faculty	Topic of Lecture	Venue & Date
1.	Prof. S. Sankararaman	Organic Photochemistry	Dept. of Chemistry Sri Paramakalyani College, Tirunelveli, 8.3.2002
		Modern Catalytic Asymmetric Syntheses	Loyola College, Chennai 1.2.2002
		Applications of NMR Spectroscopy	Loyola College, Chennai 4.3.2002
		Pericyclic reactions	Dept. of Chemistry Annamalai University 14-15, February 2002
2.	Dr. T. Pradeep	Nanoclusters	Dept. of Physics Pondicherry Engineering College, May 25, 2001
		Ice Chemistry	Dept. of Physics Pondicherry Engineering College, May 25, 2001
		Chemistry of molecular surfaces from monolayers to Ice	Raman Research Inst., Bangalore, August 3, 2001
		Structure and properties of monolayers on planar and cluster surfaces	Indian Inst. of Science Bangalore December 7, 2001
		Clusters: from molecules to materials	S.D.N.B. Vaishnav College for Women, Chennai December 10, 2001
		From molecules to Materials	NCL, Pune, Feb.3, 2002
		Materials and Monolayers	DMRL, Hyderabad February 9, 2002
		Structure and dynamics of Monolayers	JNCASR, Bangalore February 15, 2002
3.	Dr.T.S. Sampath Kumar	Thermal Analytical Methods	VSSC, Thiruvananthapuram 28.5.2001
		Thermal Analysis - Electron Spectroscopy	Annamalai University Chidambaram December 31, 2001
		Microwave Processing of Bioactive	Anna Inst. of Tech., Chennai, 6.2.2002
		Biomaterials	Presidency College Chennai, 22.3.2002
4.	Prof. P.T. Manoharan	Jahn Teller effect in Pseudo - octahedral copper and silver complexes	University of Fribourg Switzerland, July 2001
		One ligand - many properties with different metal ions	University of Stuttgart Germany, July 2001

	Jahn Teller effect in Pseudo - octahedral copper and silver complexes	National Inst. of Health, Maryland, USA, July 2001
	Superoxide production in hemoglobin under hypoxic condition	Chemical Research Society of India, Bangalore, Feb., 2002

Visits Abroad by Faculty:

Sl. No.	Name of Faculty	Country visited	Date	Purpose of visit
1.	Prof. S. Sankararaman	Germany	May - July 2001	Collaborative research
2.	Prof. P.T. Manoharan	Switzerland and Germany	June - July 2001	Collaborative research
		Nepal	Mar.-Apr., 2002	Bilateral Exchange program of INSA

Honours and Awards obtained:

S.No.	Name of Faculty	Name of Award/Honour	Awarded by	Awarded for	Date
1.	Dr. T. Pradeep	MRSI Medal	Materials Research Society of India	Research	Feb. 9, 2002
		Tamilnadu Scientists Award (TANSA)	Tamilnadu Council for Science and Technology	Research	Feb. 28, 2002
2.	Prof. P.T. Manoharan	Chairman Research Council	RRL Thiruvanthapuram		June 2001
		Vice President	Chemical Research Society of India		Feb., 2002

Books, Monographs, Journal authored or co-authored:

S.No.	Name of faculty	Title	Publisher	Author/Co-author
Books:				
1.	Dr. T. Pradeep	Catalysis: Principles and Applications	NAROSA, New Delhi	Author of a Chapter
2.	Dr. T.S. Sampath Kumar	Trends in Biomaterials and Artificial Organs, V15 Number 2	Society for Biomaterials and Artificial Organs India	Guest Editor

Fellowships of Academies and Professional Societies:

S.No.	Name of faculty	Level	Year of Admission
1.	Prof. P.T. Manoharan	Fellow of the Indian National Science Academy (INSA)	1985
		Fellow of the Indian Academy of Sciences, Bangalore (IASc.)	1982
		Fellow of the World Innovation Foundation (WIF)	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

- Design and development of a compact X-band electro spin resonance spectrometer

New facilities added or major equipment procured through project funds:

Dr. T.S. Sampath Kumar

- Design and development of a compact X-band electro spin resonance spectrometer
- Microwave processing of bioactive materials
- Hydrothermal Processing Laboratory is being set up

5.3.5. Research and Consultancy:

Sponsored Research Projects:

S.No	Title	Period	Funding Agency	Amount (in lakhs)	Co-ordinators
1.	Novel Cyclophanes with Acetylenic Bridges. Synthesis, Structure and Reactivity studies	1999-2002	Volkswagen Stiftung Germany	DM 95,400	Prof. S. Sankararaman
2.	Cyclophanes with Novel Molecular Architectures	2000-2003	CSIR New Delhi	10.6	
3.	Design and development of a compat X-band electron spin resonance spectrometer for identifying the irradiated food stuffs	1999- 2002	AERB	26.68	Prof. SP Venkateshan Dr. TS Sampath Kumar
4.	Monolayers on metal clusters	1999-2002	CSIR	6.63	Dr. T. Pradeep
5.	Structure of monolayers assembled clusters superlattices	2000-2003	IUC	3.00	
6.	Nanocomposites as light sensors	2001-2003	ISRO	7.5	
7.	Tandem mass spectrometry and ion/surface collisions	1997-2002	DST	58.6	
8.	Nanosopic optical limiters	2002-2005	MIT	23.5	
9.	Multi-spectroscopic investigation on biological systems and inorganic materials	2002-2005	DST	17.70	Prof. P.T. Manoharan Dr. T. Pradeep

Industrial Consultancy projects:

Sl.No	Name of the Faculty	Title	Industry	Amount (In Rs.)
1.	Dr. R. Murugesan	Characteristics of Polymethylmethacrylic (PMMA)	A.I. Optics Chennai 600 106	Rs.1500/-
2.	Dr. T. Pradeep	Quantitative Analysis of Hydrogen Samples	M/s Cetex Petrochemicals, KEC Intl., Chennai 600 068	Rs.6000/-
4.	Dr. R. Murugesan	UV Analysis of five different PP Tube samples	M/s G.M. Pens International Ltd., Chennai 600 042	Rs.5000/-
		Development and Spectroscopic Studies of Thin Films	M/s Garware Polyester Ltd., Aurangabad 431 210	Rs.26,650/-

RBIC projects:

Sl.No	Name of the Faculty	Title	Industry	Amount (In Rs.)
1.	Dr. T. Pradeep	Oxidation of CO on palladium clusters	DRDE	Rs.4,91,000/-
1.	Prof. P.T. Manoharan	Project to analyse the nature of adulteration of petroleum products from retail outlets and vehicles	Tamil Nadu Pollution Control Board Chennai	Rs.4,70,715/-

Journal Editorial Boards:

Sl.No	Name of Faculty	Level	Journal
1.	Dr. T. Pradeep	Member of Editorial Board	Asian J. of Spectroscopy
2.	Dr. T.S. Sampath Kumar	Member of Editorial Board	Trends in Biomaterials and Artificial Organs - India
3.	Prof. P.T. Manoharan	Member	Indian Journal of Chemistry

Research Publications:

No. of papers published in Refereed National Journals	..	3
No. of papers published in Refereed International Journals	..	20
No. of papers presented in National Conferences	..	2

In Refereed National Journals:

1. Hemamalathi, A. Parameswaren and T.S. Sampath Kumar, Bioceramics in Clinical Dentistry (Biophas Calcium phosphates), P 4-7, V72, 2001.
2. P. Killickiran, S. Sankararaman and H. Hopf, Synthesis and Photochemistry of 2,2-Ditert-butyl-6(4,4-ditert-butylbuta1, 3-dienyl) -2H-pyran, Ind. J. Chem Sec. B., 40B, 781-785 (2001).
3. R. Selvan, L. Gowrishankar and T. Pradeep, $M_4C_9^+$ (M = Ti, V): New gas phase clusters, Proc. Indian Acad. Sci. Chem. Sci., Special Issue on Solid State and Materials Chemistry, 113, 681-688 (2001)

In Refereed International Journals:

1. H. Hopf, S. Sankararaman, I.Dix, P.G. Jones, H.G. Alt and A. Licht Eur, Novel Chiral Metallocenophanes Derived from [2.2] Paracyclophane and Their use in olefin polymerization, Eur. Inorg. Chem., 123-131, (2002).
2. M. Srinivasan, S. Sankararaman, H. Hopf, I. Dix and P.G. Jones, Syntheses and Structures of Isomeric {6.6}- and {8.8} Cyclophanes with 1,4-Dioxabut-2-yne and 1,6-Dioxahexa-2, 4-diyne Bridges, J. Org. Chem., 66, 4266-4303 (2001).
3. S. Mitra, Binoj Nair, T. Pradeep, P. S. Goyal and R. Mukhopadhyay, Alkyl chain dynamics in monolayer protected clusters (MPCs): A quasielastic neutron scattering investigation, J. Phys. Chem. B. (2002, In Press, April 25th issue).
4. N. Sandhyarani, T. Pradeep and J. S. Francisco, Radical induced core destruction of monolayer protected clusters, Chem. Phys. Lett., 342 272-276 (2001).
5. S.-C. Park, K.-W. Maeng, T. Pradeep and H. Kang, Reactive ion scattering from pure and mixed HCl, NH₃ and D₂O surfaces, Nuclear Instruments and Methods, B., 182 193-199 (2001).
6. N. Sandhyarani and T. Pradeep, Oxidation of alkanethiol monolayers on gold cluster surfaces, Chem. Phys. Lett., 338, (2001) 33-36.
7. R. Philip, S. Mujumdar, Hema Ramachandran, G. Ravindra Kumar, N. Sandhyarani and T. Pradeep, Comparative features of optical limiting in monolayer protected gold, silver and alloy nanoclusters under picosecond and nanosecond laser excitation, Nonlinear Optics, 27 357-365 (2001).
8. S. -C. Park, K.-W. Maeng, T. Pradeep and H. Kang, Angew. Unique chemistry at ice surfaces: Incomplete proton transfer in H₃O⁺ - NH₃ system, Angew. Chem. Int. Ed. Eng. 40, 1497-1500 (2001).
9. N. Sandhyarani and T. Pradeep, An investigation of the structure and properties of copper thiolates, J. Mat. Chem., 11 1294-99, (2001).
10. M.R. Resmi, Shuguang Ma, R. Caprioli and T. Pradeep, C₁₂₀O_n from C₆₀Br₂₄, Chem. Phys. Lett., 333 515-521 (2001).
11. P.Manikandan,R.Mthukumar,K.R.Justin Thomas, B.Varghese, G.V.R.Chandramouli and P.T.Manoharan, Copper(II)-Azide Complexes of Aliphatic and Aromatic Amine Based Tridendate Ligands:Novelty in Structure, Spectroscopy and Magnetic Properties, *Inorganic Chemistry*,40 ,2378-2389(2001)
12. J.M.Rifkind, O.O. Abugo, E.Nagababu, R.S.Ajmani, E.J.Metter, A.Demehin, P.T.Manoharan, C.Balagopalakrishna and F.J.Chrest, Role of Altered Blood Properties in the Propagation of Ischemic Blood Flow: Contribution of Aging and Oxidative Stress , *Ischemic Blood Flow in the Brain (Vol.6)*, Y.Fukuuchi,M.Tomita and A.Koto (Eds.) p.369-380 (2001)
13. P. Manikandan, K.Padmakumar, K.R. Justin Thomas, B. Varghese,H.onadera and P.T. Manoharan, Lattice Dictated Conformers in Bis(pyrazolyl)pyridine Based Iron(II) complexes: Mossbauer, NMR and Magnetic Studies, *Inorganic Chemistry* (2001)
14. G. Vasuki, V. Parthasarathi, K. Ramamurthy, P. Jayasankar, Babu Varghese. 3- Chloro-2-methylquinolin-4(1H)-one, *Acta Cryst.* E57, 1-3, 2001.
15. R. V. Krsihnakumar, M. Subha Nandhini, S. Natarajan, K. Sivakumar and Babu Varghese. Glycine sodium nitrate, *Acta Cryst.* C57, 1149, 2001.

16. P. Manikandan, K. Padamakumar, K. R. Justin Thomas, B. Varghese, H. Onodera and P. T. Manoharan. Lattice-Dictated Conformers in Bis(pyrazolyl)pyridine-Based Iron(II) Complexes: Mossbauer, NMR and Magnetic Studies, *Inorg. Chem.* 40, 6930, 2001.
17. Sandip Dey, Vimal K. Jain, Babu Varghese. Synthesis and characterization of benzylselenolate complexes of palladium(II) and platinum(II), *J. Organometallic Chemistry*, 623, 48, 2001.
18. Thanukrishnan Kannan, Subramanian Vinodhkumar, Babu Varghese and Duraikkannu Loganathan. Synthesis of Glycosyl Phosphoramidates: Novel Isoteric Analogues of Glycosyl Phosphates, *Bioorg. Med. Chem. Lett.* 11, 2433, 2001.
19. Rajnikant, V. K. Gupta, E. H. Khan, S. Shafi, S. Hashmi, Shafiullah, B. Varghese, Dinesh. Crystallographic Investigations of 3β -acetoxy- 5α -cholestan-6-one-semicarbazone - A Steroid, *Crystal. Res. Technol.* 36, 1281, 2001.
20. Rajnikant, V. K. Gupta, M. B. Deshmukh, B. Varghese, Dinesh. Structure Analysis of Methyl-3,4-dihydro-3-(p-methylphenyl)-4-oxo-2-quinazolinyI thiopropionate, *Crystal. Res. Technol.* 36, 1451, 2001.

In Proceedings of National Conferences:

1. V. Arvind & T.S. Sampath Kumar, Structural and Spectroscopic Characterization of functionally graded biomaterials, Conference on Perspectives in Physical Metallurgy and Materials Science, p.40, pp75, 2001.
2. K. Ramkumar and T.S. Sampath Kumar, The plight of dentures in Chennai, Dental Conference 2001

Distinguished Visitors to the Centre:

Sl.No.	Name of the Visitor and Designation	Date of Visit	Purpose of Visit
1.	Mr. Tomoshige Sato AFM Product Specialist, Jeol Ltd., Japan	29.8.2001	Delivered a lecture
2.	Prof. Vitaly K. Koltover, Fellow of Russian Academy of Science Institute of Problems of Chemical Physics, Russia	24-28, Jan. 2002	INSA Exchange Visiting Fellow Program
3.	Dr. P. Raveendran, National Science Foundation Science and Technology Centre University of North Carolina, USA	5.2.2002	Delivered a lecture

5.4 CENTRE FOR SYSTEMS AND DEVICES

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

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

The centre 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 centre 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 centre 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 centre 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 centre 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 (2001-02) the following R and D activities of the centre could be highlighted:

Development of software for study of the radar cross-section of an aerodynamic object in the form of an ogive.

Radar cross-section of aerodynamic objects become quite important in system design with a view to estimate the extent of visibility of these objects by a radar which is required to track and thereby monitor its trajectory during its launch phase. Further, aerodynamic objects developed purely for certain defence applications should necessarily have a reduced radar cross-section. Towards this end software for study and analysis of radar cross section for a widely used aerodynamic object has been developed based on an accurate electromagnetic analysis carried out previously has been developed. The software has been delivered to the concerned DRDO laboratory to meet their requirements.

Development of micro-accelerometer

Micro-accelerometer has been fabricated using bulk micromachining of silicon. All the unit processes such as anisotropic silicon etching with KOH and EDP, silicon fusion bonding technique, anodic bonding of glass to silicon have been developed indigenously in the laboratory. The development work is being taken up for prototype and production by BEL Bangalore.

Development of piezo-resistive pressure sensors

Development of piezo-resistive pressure sensors have been designed and fabricated using silicon micromachining technique. For this purpose silicon diaphragms of 5 micron thickness with a rectangular size of 1mm length and 0.5 width have been realized using boron etch stop technique and anisotropic etchants. The pressure sensors have been realized by arranging the piezo resistors in the Wheatstone bridge configuration on the thin diaphragms of silicon. These sensors have been tested at 1BAR differential pressure. The sensor exhibited a sensitivity of 87 mV/BAR. Further work is in progress to incorporate an electronic circuit in the sensor.

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, 305 faculty members from other institutions have obtained Ph.D Degrees and 421 faculty members M.Tech degrees under this programme.

Following are the data on Quality Improvement Programme (QIP) for the year 2001-02 :

Programme	Number Admitted	Number on Roll	Degrees Awarded
M.Tech	28	32	11
Ph.D	15	46	7

6.1.3 Short Term Training Programmes (STTP) Under QIP:

Under QIP STTPs, 6 courses were held in 2001-02 and 152 teachers of Engineering Institutions as well as a few professionals from industries / R & D organisations have participated in these programmes.

From 1970-71 to 2000-02, 196 STTPs were held and 4,527 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 / industries.

During the year under review a major thrust on development of web based course materials were given and nearly 100 courses of the Institute are in different stages of development.

6.1.5 Book Writing Scheme (BWS):

This scheme is designed to encourage text book writing by teachers. During the year 2001-02, 2 faculty members have come forward to write book under this scheme. One book has been published during the year. 31 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. At present, 13 students are doing PG Programme under the scheme.

6.1.7 Continuing Education Programme (CEP-STC):

Our Institute faculty members organize several short term courses 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 & 2000-01, 433 STCs were conducted benefitting 8749 participants. About 25 to 30 such programmes are organised every year. During the year under review, 23 Short Term Courses have been conducted and 430 participants attended these programmes.

6.1.8 Educational Consultancy/ Training 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, 54 training programmes were held and during the year under review, 16 such programmes have been taken up.

6.1.9 Short Term Training Programmes Under ISTE:

Three STTPs have been approved by the ISTE. They have been conducted during the year 2001-02. 87 participants have attended these programmes.

6.1.10 Short Term Training Programmes under UGC:

Three STTPs have been approved by UGC. One has been conducted during the year 2001-02 and the other two are proposed to be conducted during 2002-03.

6.1.11 Other Activities:

Electronic Class Rooms:

45 Class rooms of the institute has been modernised with LCD projectors and computer systems with all necessary softwares. Network connection has also been given in the class room. The general ambience of the class rooms have also been improved considerably. A good number of faculty are using these facilities, making IIT Madras one of the few institutions adopting Technology Enhanced Learning.

Web based courses:

A Web Studio has started functioning mainly to convert courses to web-enabled courses. A large number of students and core project staff are engaged in this work. About 100 courses are being made web-enabled.

Special Lecture:

WebCT

As a prelude to converting courses to web-enabled courses, a lecture by Dr. K. Mangala Sunder on, "IIT Course Online : A model course from Chemistry" was arranged in the seminar hall of Department of Chemistry on 25th May 2001. About 75 faculty members and students participated in this lecture.

A formal launching of the "IIT Madras Courses on the Web" was made on 5th November 2001 by Prof. R. Natarajan in the presence of the faculty of the Institute.

A meeting on Web CT - a general overview and with specific mention to the following topics was held on 25th March 2002.

- Uploading / backing up courses and file system management in WebCT.
- Assignments / Quizzes submission online using WebCT.
- Tracking students and communication online in WebCT.

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 the ETC.

Video recording of Semester based lecture courses:

- "Rocket Propulsion " by Prof. S. Krishnan of the Department of Aerospace Engineering. (32 lectures of 50 minutes each)

Video production of visual based short programmes :

- "Flow visualisation and its importance " by Prof. V. Ramjee, Department of Fluid mechanics Engineering. (Duration 43 mins)
- "Wind Tunnels & Model Testing" by Prof. V. Ramjee, Department of Fluid mechanics Engineering. (Duration 25 mins)

Research projects/Shooting for CCE sponsored Multimedia CDROM Project :

- Video shooting of traffic pattern/control for Research study.
- Flow visualisation for Prof. E.G. Tulapurkara, of Aerospace Engineering.
- Civil Engineering for Prof. V. Kalyanaraman.
- RSIC labs for Dr. T.Pradeep.
- HTML labs for Prof. M. Govardhan.
- Chemistry for Dr. Mangala Sundar.

Institute Functions covered:

- 38th Convocation covered.
- Sharavathi Hostel Inauguration.
- Complete video visuals provided for Production of Multimedia CD for IITM.

Documentary produced:

- A Documentary film was produced for RSIC and this was Telecast on Gyan Darshan Satellite T.V channel of Doodarshan.

Studio Upgradation:

- The Studio has been upgraded from Analog to Digital. Conversion of the available lessons in tape format to CD ROM format is in progress.

Sale of video programmes:

- About 900 hours of video material with the ETC are being disseminated to various colleges and R&D establishments at a subsidized rate.

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 industries. 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 and materials.

Some of the areas of major activities of the Centre are:

- Sponsored Research programmes
- Plan Schemes
- Technology Development Mission Schemes
- Consultancy programmes: Project / research / retainer based
- Collaborative projects with foreign countries
- Industrial Associateship Scheme
- ISRO-IITM Space Technology Cell joint projects
- IGCAR-IITM Cell joint projects
- Projects sponsored by National Institute of Ocean Technology
- Patents and Technology Transfers

Dean : Prof. S. Srinivasa Murthy

Staff

Dr. D. Balakrishnan	Chief Techno Economic Officer
Sri R. Sundaram	Senior Techno Economic Officer
Sri V. Suresh	Senior Techno Economic Officer
Sri S. Mahalingam	Assistant Registrar (F & A)
Sri B. Ramaswamy	Assistant Registrar (Project Purchase)

6.2.2 Sponsored Research:

A. National Projects

77 projects of value totaling to Rs. 1525.39 lakhs were taken up by the Institute during 2001-2002.

Sl. No.	Name of Agency	No. of Projects	Sanctioned Value (Rs. in lakhs)
1.	Aeronautical Development Agency	1	50.82
2.	All India Council for Technical Education	1	3.00
3.	Alumni Association	1	186.88
4.	Aeronautics Research & Development Board	1	5.87
5.	Centre for Development of Advanced Computing	1	1.50
6.	Council of Scientific and Industrial Research	11	98.29
7.	Defence Research and Development Organisation	6	222.11
8.	Department of Science & Technology	18	393.18
9.	Electro-optical Instruments Research Academy	1	9.90
10.	Indira Gandhi Centre for Atomic Research	3	17.68
11.	Indian Space Research Organisation	16	140.04

12.	Ministry of Human Resource Development	9	82.50
13.	Ministry of Information Technology	1	23.51
14.	Ministry of Non-conventional Energy Sources	1	22.69
15.	National Institute of Ocean Technology	2	3.96
16.	National Programme on Smart Materials	2	256.25
17.	RCI, Hyderabad	1	4.95
18.	Tamil Nadu State Aids Control Society	1	2.26
	Total	77	1525.39

B. International Collaborative Projects .. 4 (Value: Rs.95.58 Lakhs)

C. Industry Sponsored Projects .. 8 (Value: Rs.237.82 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 Telematics
- Nationally co-ordinated project on Educational Technology
- Nine projects under Thrust area, Modernisation and Removal of Obsolescence and Research & Development schemes

6.2.4 Consultancy Programmes:

697 Consultancy assignments of value totaling to Rs.394.01 lakhs, 40 Research Based Industrial Consultancy for a total value of Rs.314.54 lakhs were taken up during 2001-2002. Also 27 faculty were retained as consultants of various industries at a cost of Rs.22.28 lakhs.

6.2.5 Collaborative Research Projects:

13 proposals for joint research projects with Universities in Germany through BMBF, Germany were sanctioned.

6.2.6 New Faculty Scheme:

Three proposals were approved for funding under the New Faculty Scheme for a total sum of Rs.3.00 lakhs.

6.2.7 Industrial Associateship Scheme:

217 Industries are members of this Scheme (Large scale 24, Medium scale 111 and Small Scale 82).

The following six Technology Appreciation Programmes were organized during the period under report:

1. Industrial Statistics
2. Analysis and Design off Air Pollution Control Equipment
3. CFD for Process Industry Applications
4. Industrial Applications of Thin Film
5. Technology for Induction Machine Drives
6. Industrial Information Services

6.2.8 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. Five on-going projects were continued and 16 new projects were taken up during the year 2001-2002.

IGCAR-IITM Cell:

4 on-going projects and 3 new projects were continued during 2001-2002.

AICTE funded Industry-Institute Partnership Cell:

AICTE has funded a project under Industry-Institute Partnership Programme. As part of this programme, two projects were taken up viz.

1. Creating a Databook for the Design of Centrifugal Pumps
2. Use of Power Tools for Restoration and Retrofitting of Monuments

As part of this activity, the following programmes were also conducted

1. Workshop on Use of Power Tools in Restoration and Retrofit of Monuments
(8th & 9th March 2002)
2. Workshops on Usage of Databook for Design of Centrifugal Pumps for College Teachers (3rd December 2001 and 30th March 2002)

6.2.9 Distinguished Visitors to the Centre:

The following visited the Institute during the year 2001-02:

- Dr. A.D.Damodaran, Former Director, CSIR Regional Research Laboratory, Trivandrum.
- Mr. Ashish Chand, Manager – Corporate Strategy, Sterlite, Aurangabad
- Dr. Prakash R.Apte, IIT Bombay, Mumbai
- Mr. Ravi Krishnasamy, Temasek
- Mr. V. Hariharan, Fiat India Limited, Mumbai
- Mr. Kimio Okazawa & Mr. Akinori Kusano, New Energy Foundation, Tokyo, Japan
- Dr. Roberto Pinto Martins, Secretariat for Information Technology Policy (SEPIN), Ministry of Science and Technology, Brazil
- Prof. Hussein Bin Ahmad, Universiti Teknologi Malaysia, Malaysia
- Mr. Urabe, Managing Director & Mr. V. Narayanan, Consultant, Center of the Internal Co-operation for Computerization (CICC), Singapore

MoUs signed by IIT Madras with other organizations / Institutions during 2001-02:

1. Hydrocontrol, Italy
2. FRP Institute, Chennai
3. Shantha Biotechnics Private Limited, Hyderabad & Centre for Biotechnology, Jawaharlal Nehru University, New Delhi
4. Asian Institute of Technology, Thailand
5. Bhabha Atomic Research Centre, Mumbai
6. Defence Research & Development Laboratory, Hyderabad (2 MoUs)

7. Hochtief (India) Private Limited, Chennai
8. Banyan Networks Private Limited, Chennai
9. Media Lab Asia, Mumbai
10. Defence Electronics Research Laboratory, Hyderabad (2 MoUs)
11. Contract & Materials Management, Hyderabad
12. n-Logue Communications Private Limited, Chennai
13. Neyveli Lignite Corporation Limited, Neyveli
14. Columbian Chemicals Company, Georgia, USA

6.2.10 Patents:

Four Patent Applications were filed and the details are given below:

Sl. No.	Title of the Invention	Inventor(s)	Department	Date of filing the application	Pending No.
1	Articles of Glazed Ceramic Composites on Metal substrates and a Method of Manufacture thereof	Prof. R. Krishnamurthy Mr. Apurbba Kr. Sharma	Mechanical Engineering	16.04.2001	563/MA S/2001
2	Post Sintered WC Cutting Tools and a method of Manufacture thereof	Prof. R. Krishnamurthy Mr. Janakarajan Ramkumar Mr. Sivanandam Aravindan	Mechanical Engineering	12.07.2001	777/MA S/2001
3	A Process for Lipase Catalysed Preparation of Alkyl Ethers of Hydrocinnamic Acid	Dr. Anju Chadha Dr. K. Priya	Chemistry	24.02.2002	319/MA S/2002
4	An Efficient Synthesis of (2S,3R)-2-O-Benzyl-3, 4-di-O-Isopropylidene-D-Erithritol: Potentially valuable C ₄ -Chiral building block	Dr. Indrapal Singh Aidhen Mr. Sivalenka Vijaya Sarathy	Chemistry	20.03.2002	---

6.2.11 Publications:

- The quarterly publication titled IIT Madras News continued to be published.
- The publication titled NEWSTECH continued to be published.
- Publication on Abstracts of M.Tech. theses was brought out.
- New edition of Research Consultancy Expertise & Facilities Handbook was published
- A CD on IIT Madras has been brought out

The Summer Assistantship Scheme was continued for 3rd year B.Tech./B.E. students of other Engineering Colleges. 21 Students joined the scheme during the year.

6.2.12 Industrial Lectures:

The Industrial Lecture Programme for V Semester B.Tech. students were conducted by Engineering Departments.

6.2.13 Other information:

Two more Touch Screen Kiosks have been procured and installed in the Central Library and IC & SR building for locating the people and facilities and highlighting the Research Consultancy Expertise & Facilities at IIT Madras.

6.3 CENTRAL ELECTRONICS CENTRE

6.3.1 Introduction:

The Central Electronics Centre (CEC) was established in 1971 with the main objective of servicing and maintaining the wide variety of sophisticated electronic equipment belonging to the various departments of the Institute. The need for training service engineers was recognized and a Training Program, the first of its kind in the country, was started in the same year. Since then, conducting such Training Programs of this type every year, has become one of the important activities of the Centre. Through these programs, so far 200 engineers have been trained. Also, this Centre has been conducting Short Term Courses from time to time for the benefit of practising engineers from Industries.

The Centre is housed in a dust-free environment of about 500m², essential for the proper functioning of a variety of test and measuring instruments, calibration standards and trainer systems. The infrastructural and equipment facilities have been adequately strengthened over the years by collaborative Indo-German Projects. The Centre has a team of well qualified and talented staff members, trained in Germany in various fields of Electronics Instrumentation. The significant advantage, this Centre has over other service organisations is the mixed environment, i.e a blend of academic environment and industry type working atmosphere.

The Centre has continuously enlarged and diversified its activities and is now offering the following services:

- Servicing and Maintenance of Electronic Equipment
- Training Programs for Manpower Development
- Measurement of Physical Parameters
- Calibration of Electronic Equipment
- Development of Custom-built Systems

This Centre has offered its consultancy services in the above areas to about 215 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 the Training Programs and developing sub systems in the area of Solar Photo Voltaics (SPV). In the last five 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.

In the last three years, four batches of special 12 weeks Training Programs of unique in nature, have been organised 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.

Recently the Centre has received ISO 9001 Certification. In addition, the Centre is preparing itself to acquire NABL Accreditation for its newly established Calibration and Testing Laboratories.

6.3.2 Activities:

Training Programs:

Long Term CEC Training Program:

XVI CEC Training Program of one year duration ended on 16th July 2001. XVII CEC Training Program commenced on 15th October 2001 and program duration has been increased to two years. The number of candidates attending this Program is twelve.

New Laboratory facilities established:

- Calibration Laboratory
- Testing Laboratory
- Conference room with Multimedia Projection

Major Equipment procured:

- Universal AC Power Source
- Withstanding Voltage Tester
- Insulation Tester
- Earth Leakage Tester
- Video Projector

Some of the Important Consultancy Projects completed:

S.No.	Coordinator	Title of Project	Organisation	No of Assign.	Project value in Lakh of Rs.
1.	Dr.M.Kumaravel	CNC M/C Modules, Drives and Monitors	Heavy Vehicles Factory, Ministry of Defence, Avadi, Chennai	4	0.94
		Charge controllers	Ford India Ltd, Chennai	5	0.55
		Ultrasonic Scanners	Kodytech Ltd, Chennai	7	1.24
		Drives and Controllers	Spartek, Chennai	2	0.55
		Curve Tracer	Lucas TVS, Chennai	1	0.24
		Drives and Controllers	SPIC Electronics Ltd Chennai	3	0.35
		ALCO Sensors	Indian Airlines, Chennai	2	0.06
		Controllers for Textile Machinaries	Euro Tech, Chennai	4	0.54

Lecture delivered in Workshop:

Author	Lecture Topic	Name of the Workshop	Date
Dr.M.Kumaravel	Solar Photo Voltaic Systems - Overview Prevailing Problems and Remedial Measures	Workshop on "Renewable Sources of Energy" conducted by Sai Ram Engineering College, Chennai.	19-20 th December 2001.

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 as per the License Agreement signed between IITM and n-Logue Communications.

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. Academic Section | 6. Hospital |
| 2. Administration | 7. Hostels |
| 3. Engineering Unit | 8. Joint Entrance Examination |
| 4. Finance & Accounts | 9. Library |
| 5. GATE | 10. Stores & Purchase |

6.4.2. Details of Staff

Name and Qualification

Major Area of Specialization

Krishnakumar R, Ph.D [Head]

Computer Aided Design, Simulation of Manufacturing Processes, Nonlinear Finite Element

Dheenadayalu R, M.Sc(Engg)
Senior Systems Engineer

Data Centre Operations, Systems Administration, Application Software, System selection.

Jayaprakash S, Ph.D.
Senior Systems Engineer

Software Engineering, Computer Networks, Fault-tolerant Distributed Systems, Internet, Next Generation Network (NGN)

Ramesh S.K, M.S
Systems Officer Gr.I

System Administration, MIS, Data Management,
Data Processing, System Programming,

Sourirajan C.S, M.Sc.
Systems Officer Gr.I

System Administration, Programming Languages,
Small computers, Application Software Development.

Ravichandran V, M.Sc.
Senior Systems Officer

Application Programming, Database Management
systems, Systems Programming, System
Administration, Training industrial Personnel
on Mainframes.

Vijayaraghavan C.N, M.Sc. &
Senior Systems Officer

Computer Applications in Industry, Operating
Systems, Systems Operation Administration,
Networking

Baman Banavath B.Tech(C.S)
Assistant System Engineer

System Analysis & Design, AIX A, Windows NT
server Administration, INTERNET, Database
Management System, Power builder,
Visual Basic GUI Applications.

Sreekumar P.Y, B.Tech(C.S)
Junior Systems Engineer

Computer Networks, Database Management
Systems, Systems Administration.

System Trainees on Roll: (2001-02)

- | | |
|---------------------------|-----------------------|
| 1. R. Anand Kumar | 10. K.R. Praveen |
| 2. G. Angeline Ezhilarasi | 11. K.V. Sameer |
| 3. Tapan Kumar Acharya | 12. D. Rajkumar |
| 4. S.M. Devi Premila | 13. G. Gopalakrishnan |
| 5. J. Rathika | 14. K. Venkatesan |
| 6. A. Kalaivani | 15. O. Kamesh Babu |
| 7. M. Mani | 16. B. Manoj |
| 8. P. Remya | |
| 9. T. Balaji | |

Trainees in PC cell

- | | |
|------------------|--------------------|
| 1. B. Duke | 4. S. Revathi |
| 2. V. Manikandan | 5. K. Sundararajan |
| 3. S. Ragupathy | 6. A. Vimal Antony |

New Facilities / Equipment Added:

HARDWARE:

The following hardware has been installed.

- SGI 3800 Compute Server 64 processors (500 MHz) with 32 GB RAM, 12 x 73 GB Hard Disk.
- 6 Ncs. 02 workstations with 256 GB RAM 18 GB Hard Disk added.

Software :

The following applications software have been installed:

- | | |
|----------------|--------------------|
| 1. MSC Patron | 5. MSC Marc Solver |
| 2. MSC Nastron | 6. PRO AM |
| 3. MSC Dytran | 7. Star CD |
| 4. MSC Mentat | |

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. Providing network connectivity to each one of the room in the hostels is in progress.

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 :

1000 copies of Antivirus Software were procured and installed on the machines by Computer Centre. Mr.D. Hariharan co-ordinated this activity.

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 has been nominated by Management Representative as one of the Internal Auditors of the Institute.

Quality Circle :

Mr. C.S. Sourirajan, Mr. C.N. Vijayaraghavan, Mr.V. Ravichandran, Mr.P.Y. Sreekumar did a Quality Circle Study and it was presented to the Director on 1st February 2002 by this Quality Circle team.

Phasing out of water cooled plant was taken up and the work is expected to completed by May 15. The staff of Computer Centre took active part in this. Mr. G. Mani, Electrical Supervisor, Mr.V. Balasubramanian and Mr. V. Ganesan look active part in this.

Chat Site:

A Chat site was launched by the Computer Centre to enable the Campus community to exchange views and express ideas on matters of common interest.

Institute Projects:

S. No.	Title	Coordinators
1.	Campus Network	Dr. S. Jayaprakash Mr. P.Y. Sreekumar
2.	Hospital Information System	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

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 objective 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.

Sl. No.	Shops	Facilities
1.	Carpentry shop	Turning, Thickness reduction - Polishing and Slitting
2.	Fitting shop and Tool Room	Filing, Drilling, Tapping - Jig Boring Toll Milling, Engraving - Marking Slotting and Grinding
3.	Machine shop	Shaping - Milling - Turning - Planning radial drilling tool & cutter grinding and work cutting
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 100 Kg NC Trainer Lathes, Milling Machine
7.	Welding shop	Arc welding, gas welding, soldering, brazing and profile cutting
8.	Foundry	Oil fired furnace, Cupola and Sand Plant
9.	Smithy	Hand forging and a power hammer
10.	Pneumatics & Hydraulics	<ol style="list-style-type: none"> 1. Festo Training kits with different valves 2. Electromagnetic kit 3. PLC to demonstrate pneumatic 4. Practical demonstration like auto wheel brake system. Weight lifting equipment for demonstration from Eukon Bosche Hydraulic Kit for different values for students Bosch Training kit for students' demonstration
11.	Electronic	PCB, Tag Board, Soldering, PLC Proofing
12.	FRP	Material process demonstration of preparation of dust bin-welding hand shield
13.	Plastics	Material process practical demonstration of cycle token-key tags, Caps
NEW ADDITIONS		
1.	N.C. Machine (advanced)	Going to put into operation from July 2002
2.	Quality Control	

Besides the above, Central Workshop also bears the responsibility of maintaining institute vehicles.

Central Workshop very effectively caters to the undergraduate programmes by imparting individual practical training in various shops cited above.

During the year under report, 449 undergraduates (I B.Tech.) got training under the assigned course of ME 107 & ME 108 titled Workshop Training I and II bearing 2 credits each.

For the II year undergraduates of Mechanical Engineering branch, ME 207 Workshop III with 2 credits was offered.

Advanced workshop training with 3 credits for 3rd and 4th year Mechanical Engineering students was also offered (SUMMER-TERM COURSE).

Central Workshop executes fabrication of test setups and their accessories related to Ph.D, P.G. and U.G. project works. 723 work orders were executed during the year 2001-02. Some important work orders are given below:

- Calibration of pressure gauges for M/s. Larsen and Toubro Limited, Neycer India Limited, Kayes Construction Limited were undertaken.
- Calibrated the gauges for Aerospace Engineering, Mechanical Engineering Department (Precision Engineering and Thermodynamics and Combustion Engineering).
- Completed a major project work from Applied Mechanics (Biomedical) Department "Early detection of human breast cancer using laser transiliminants tomography A3 D scanner device for getting tomogram" and the new designed project in progress.
- Fabricated concave + convex milling cutter for production engineering.
- Undertaken a major project of "Advanced Technology for combustion of bio-mass" for Mechanical Engineering Department under Prof. Ajit Kumar Kolar.
- Double pendulam project for the Physics was completed.
- Various B.Tech. students' projects for Mechanical Engineering Department under the Applied Mechanics was undertaken and completed.

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 various important functions such as convocation, conferences held in the Institute. Besides this section render assistance to various departments for the technical Photography. The inhouse processing and printing work is confined to Black and White photography. This centre caters to the requirements of Research students / faculty. This section extend facility for colour photography. However, the processing and printing is done from outside Central Photographic Section as the volumes handled are not commercially viable. The Central Photographic Section handled 285 job orders during 2001-02 to a value of Rs.68,000/-. The prices charged for the various services are only for materials and chemicals.

Academic : Assistance in Technical Photography for various projects and Departments.

Administration : Coverage of important Institute functions such as Convocation, Institute day, Independence day, Sports day, etc.

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	-	255 Nos.
2. Total No. of units received for repairs	-	180 Nos.
3. Total No. of units delivered after repairs	-	50 Nos.
4. Total No. of units compressors replaced	-	13 Nos.

The following new Air conditioning Units were purchased and installed at various departments:

1. 3.0 TON Split Air Conditioners	-	30 Nos.
2. 2.0 TON Split Air Conditioners	-	7 Nos.
3. 1.5 TON Spilt Air Conditioners	-	10 Nos.
4. 7.5 TON DUCTABLE Air Conditioners	-	4 Nos.
5. 5.0 TON DUCTABLE Air Conditioners	-	2 Nos.
6. 2.0 TON Window Air Conditioners	-	12 Nos.
7. 1.5 TON Window Air Conditioners	-	32 Nos.

RICOH make plain paper copier Model No. FT-5422 was purchased for the use of the unit.

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 classes.

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 the quantity ordered and issued to various Departments during the year 2001-02.

Industrial Gases

Item	Ordered Quantity	Consumption
Industrial Gases :		
Oxygen	2250 Cu.M	2170 Cu.M
Dry Nitrogen	2500 Cu.M	2032 Cu.M.
Dissolved Acetylene	300 Cu.M	168 Cu.M.
Standard Hydrogen	400 Cu.M	308 Cu.M.
Special Gases :		
High Pure Argon Gr I	1300 Cu.M	700 Cu.M.
High Pure Nitrogen Gr I	400 Cu.M.	400 Cu.M.
High Pure Oxygen Gr I	200 Cu.M.	49 Cu.M.
Zero Air	300 Cu.M.	281 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 scientific glass apparatus for research and development in various departments. This section also undertakes jobs for the industry consultancy program.

7.5.2 Facility 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.

7.5.3 Important consultancy works undertaken:

During February and March the section undertaken outside work M/s. Shasun Chemicals and drugs (P) Ltd., in the fabrication of Dewar flasks for Liquid Nitrogen storage, and earned Rs. 25,200.

The Central Glass Blowing Section and Indian Society of Scientific Glassblowers in collaboration with Tamilnadu Science & Technology Center successfully conducted the 14th National Seminar on Recent Developments in Scientific Glass Blowing and Workshop on graded glass seals during 4th February to 8th February 2002. The response for this seminar was very high and delegates were from different educational Institutions and Industries were participated.

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.

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, printed and non-printed documents on Applied Science, Engineering, Technology, Humanities, Social Science and other new emerging areas. The Central Library holds 3,58,632 collection, 906 current journals catering to the needs of 5,307 members. The major activities undertaken in the Central Library during the period are given below:

8.1 Library Information Services Statistics:

a. Collection :

Item	2001-02	Total
Books	4,221	1,97,757
Ph.D. Theses	32	2,761
Pamphlets and Reports	35	2,308
Microfilms/Fische	----	1,842
Book-Bank (General)	211	4,948
Book-Bank (Weaker Section)	200	6,567
Current Periodicals by Subscription	820	---
Current Periodicals by Exchange/Gift	86	---
Back Volumes of Periodicals	2,048	77,449
Patents & specifications	----	20,000
Faculty publications	----	1,000
German collections		44,000
Total	7,653	3,58,632

b. Membership

Staff	48	1,101
Retired Faculty	2	34
Students	1,324	3,739
Alumni Members	13	44
Corporate Members	7	61
Industrial Associate Members	39	339
Special Members	18	54
Project Coordinators	10	32
Total	1,461	5,404

C. Services: Circulation

	2001-02
Number of Readers visited	2,28,000
Number of Books/Journals issued	1,22,443

Number of Books issued through Book Bank (General)	3,074
Number of Books issued Book Bank(Weaker Section)	6,065
Consultation cards issued to users	750
Overdue & other charges collected	Rs.5,76,792
Xerox charges collected	Rs.4,63,669

d. Reservation of Books

Registered	18,750
Fulfilled	18,700

e. Loans

Department Loan (Under issue)	6,400
Permanent Loan issued	1,747

f. Inter Library Loans

Borrowed from other Libraries	484
Loaned to other Libraries	45

g. Literature Search

CD-ROM search by users	6,300
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h. Reprint Service

Reprints received from other Institutions	1,340p
Reprint supplied to other institutions	2,650p

i. Reprography Service

Number of Xerox copies supplied	6,56,314
Number of copies printed on Rotoprinter	1,65,000
Barcode-ID cards Produced	1,623

j. Binding

Number of Books and journals bound (internal)	3,115
Number of Miscellaneous publication bound (internal)	2,000
Cutting/Trimming (Sheets)	49,447

k. Expenditure on

a. Books	Rs.56,75,326
b. Journals	Rs.2,92,47,834

l. New Journals Added

1. ACM transactions in internet technology
2. ASME transactions' journal of computing and information science in engineering
3. ASME transactions journal of electronic packaging
4. ASME transactions journal of solar energy engineering
5. IEEE antennas and wireless propagation letters
6. IEEE circuits and systems magazine
7. IEEE pervasive computing magazine
8. IEEE transactions on device and materials reliability
9. IEEE transactions on mobile computing
10. IEEE transactions on molecular, cellular and issue engineering
11. IEEE transactions on nanotechnology

12. IEEE transactions on wireless communications
13. Indian journal of experimental biology
14. Indian journal of training and development
15. Industrial physicist
16. Institutions of mechanical engineers proceeding
17. Journal of mathematical physics
18. Organic letters
19. Powder handling and processing journal

8.2 ISO 9001 Certification

The Central Library participated in ISO activities along with other units of the Institute. Some of the major activities are listed below:

1. Librarian attended ISO 9001 meeting regarding (a) Understanding the focus and requirements of the new version (b) Internal audits and surveillance audit for existing departments/centers (c) Preparing manuals using the new version for the certification (d) Electronic version of documentation (e) Quality circle activity.
2. Internal Quality Auditing was completed on 29-05-2002.
3. Librarian, Deputy Librarian and All Assistant Librarians attended ISO 9001 Workshop at ICSR Hall-II convened by Dr.G. Srinivasan, Management Representative, ISO 9001 on 14-07-2001.
4. Dr.G. Srinivasan, Management Representative ISO 9001 interacted with all Central Library staff regarding ISO 9001 activities with special reference to Central Library and in general on 25-07-2001.
5. Deputy Librarian attended a two day auditors transition course of ISO 9001. Conducted by Seahouse-TNO-Services (Asia) Private Limited on 27th & 28th August 2001.
6. Librarian, Deputy Librarian, Assistant Librarian-III, Assistant Librarian-IV attended ISO 9001 training session on internal audit at ICSR building on 15-02-2002.
7. ISO 9001 Internal Quality Auditors visited Central Library on 21-02-2002 and completed the audit.
8. Second round of ISO-9001 Internal Quality Audit visited Central Library and completed the audit 18-03-2002.
9. Systems and Procedures Manual for ISO-9001:2000 has been prepared.

8.3 Digital Initiatives

With the objective to provide world class facilities for the users to access On-line international databases, the Central Library has taken various initiatives in creating Information Technology Infrastructure with the objective to create a Digital Library. Some of them are listed below:

1. Working paper on digital library was prepared and submitted to Chairman, LAC for his approval.

2. Chairman LAC, Librarian, Head, Computer Centre, Deputy Librarian and Assistant Librarian-III visited IGCAR to see Digital Library Applications on 22-05-2001.
3. Comprehensive and interactive Central Library Website (<http://www.cenlib.iitm.ac.in>) has been designed and is being maintained which has been included in the Google the most popular web directory as well as UNESCO's virtual libraries.
4. Digital Library Working Group Meeting held on 23-07-2001 & 13-08-2001. Chairman, LAC presided over the meeting.
5. Comments about the Consortia based Access to Electronic Resources to the Ministry of Resources Development, Government of India were sent on 03-10-2001.
6. Global Information Systems Technology Private Limited, Bangalore made a presentation on IEEE/IEE Electronic Library On-Line which provides full text access to IEEE transactions. Journals, Magazines and Conference proceedings published since 1988 and all current IEEE standards. Faculty, Students, Librarian, Deputy Librarian and Assistant Librarians and all Professional staff attended the presentation on 31-10-2001.

8.4 Library Publications:

The Central Library has prepared a Catalogue of Periodicals containing the holdings of the periodicals subscribed at the Central Library since the inception, which was released by the Director on 08-03-2002 at the HODs meeting.

8.5 Upgradation of Binding Facilities:

Over the past decades, users used to face problems for not getting the publications in time as external binders used to take on an average 4 to 6 months to complete the binding. To overcome this difficulty, the Central Library installed Welbound Automatic Binding Machine with the facility to bind the books in few seconds using strong glue. This has saved the entire amount spent on binding through external binder and also saved the time of users ensuring great satisfaction among them. The details regarding work completed are given in the following table:

Month	No. of Journals/books	Amount in Rupees
April 2001	377	23,596.00
May 2001	241	16,601.00
June 2001	251	15,206.00
July 2001	416	26,594.00
August 2001	171	11,322.00
September 2001	206	13,289.00
October 2001	264	16,212.00
November 2001	269	16,997.00
December 2001	230	13,340.00
January 2002	226	15,142.00
February 2002	280	17,671.00
March 2002	174	10,830.00
Total	3105	1,96,800.00

8.6 New Facilities/Equipments added:

- a. Five numbers qualitronics make "Pied Pillar Plus" (Rate Repeller) Cylindrical mode and installed at New Library Building and Old Library Building on 17-04-2001.
- b. Touch Screen System was installed on 13-12-2001.
- c. One Sanyo PLCXP 21E LCD projector, Personal Computer, UPS, motorized screen with kit was installed in the Committee Room on 12-07-2001.
- d. One Toshiba 4570 model photocopier was installed in the Reprographic Section on 13-06-2001.
- e. Three HP scanjet scanners were installed in Reprographic Section, Project Room and Librarian's Room on 12-11-2001.

8.7 E-Journals:

Realizing the importance of e-resources, the Central Library initiated to subscribe e-journals. Initially over 1,200 journals published by Elsevier Science have been subscribed through Science Direct and also the ACM digital library core package which facilitates the online access of complete ACM journals and magazines under intranet environment. In this connection, various specialized presentations were also arranged to create the awareness among the faculty, students and staff. The journals are available for access through Central Library website (<http://www.cenlib.iitm.ac.in>). In addition to this, the Central Library has also added 20 new journals which have been listed under 'k'.

8.8 Donation:

1. M/s. Allied Publishers Subscription Agency, Chennai donated 20 books (value US\$158.45 - Rs.8,033/-) useful for students on 18-02-2002.
2. Mr.Sivakumar Tadikonda, alumni donated US\$600 for the subscription of Micromechanics & Microengineering on 12-11-2001.

8.9 Visitors to the Central Library:

Sl. No.	Name of the Visitor & Designation	Date of visit	Purpose of visit
1.	70 Refresher Course students of Public Libraries in Pondicherry	21-07-2001	To see the facilities and functioning of the Central Library
2.	Ms.Yoshiko Suzuki, Institute of Developing Economics, Japan	25-07-2001	To see the facilities and functioning of the Central Library
3.	26 Executives of developing countries of International training programme from NISIET, Hyderabad	13-09-2001	To see the facilities and functioning of the Central Library
4.	A team of Vice-Chancellors of Nepal Universities, Nepal	02-11-2001	To see the facilities and functioning of the Central Library
5.	A batch of 12 students and a faculty member from the Department of Library & Information Science, Mangalore University, Mangalore	05-11-2001	To see the facilities and functioning of the Central Library
6.	25 UGC sponsored refresher course participants from INSDOC, Chennai	28-11-2001	To see the facilities and functioning of the Central Library
7.	A batch of 15 Polytechnic Librarians from Kerala and Karnataka from TTI, Chennai	04-12-2001	To see the facilities and functioning of the Central Library

8.	A batch of 10 Short term training course participants from INSDOC, Chennai	08-01-2002	To see the facilities and functioning of the Central Library
9.	Prof.R.O. Wells, International University Bremen, Germany	09-01-2002	To see the facilities and functioning of the Central Library
10.	Mr.Tomohide Uchida, Economic Adviser, Embassy of Japan	23-01-2002	To see the facilities and functioning of the Central Library
11.	23 TTI participants of Overseas Teachers, Managers & Administrative Officers representing 17 countries	05-02-2002	To see the facilities and functioning of the Central Library
12.	Shri Vinod K. Pipersenia, Joint Secretary and Financial Advisor, MHRD, Government of India, New Delhi	07-02-2002	To see the facilities and functioning of the Central Library
13.	A batch of 25 students of BLISc & MLISc course of Dr.Babasaheb Ambedkar Marathwada University, Aurangabad	08-02-2002	To see the facilities and functioning of the Central Library
14.	A batch of 11 executives of developing countries teachers, administrators, managers belong to educational departments from NISIET, Hyderabad	09-03-2002	To see the facilities and functioning of the Central Library
15.	12 students and 1 faculty from Department of Library & Information Science, S.V. University, Tirupathi	15-03-2002	To see the facilities and functioning of the Central Library

8.10 Staff Publication:

- a. Harish Chandra, Web content management: A Librarian's perception, National Convention on Library and Information Networking (NACLIN 2001). New Delhi, 2002, pp.1-10.
- b. Harish Chandra, Management of electronic journals at the Central Library of IIT Madras. National Convention on Library and Information Networking (NACLIN 2001), New Delhi, DELNET, 2002, pp.70-81.
- c. Harish Chandra, Web based document delivery service at the Central Library of IIT Madras. CALIBER 2002 on Internet Engineering for Libraries and Information Centres, Ahemdabad, INFLIBNET, February, 2002, pp.9-16.
- d. Harish Chandra, Building E-Collections in S&T Libraries, Proceedings of the National Conference on Information Management on e-Libraries (ImeL), Edited by S. Parthan and V.K. Jeevan, Kharagpur, Allied, 2002, pp.421-427.
- e. Harish Chandra, Multimedia application in S&T libraries. In Electronic Libraries, Ed. By Sangayya S. Sirurmah and others, Mumbai, Allied, 2002.
- f. M. Koteswara Rao, published a paper entitled "Scholarly Communication and Electronic Journals: issues and Prospects for Academic and Research Libraries" in the journal "Library Review", Vol.50, No,4, 2001, pp.169-175.

8.11 Books/Manographs authored or Co-authored:

S.No.	Name(s) of Author(s)	Title of Text Book/ Monograph	Publisher
1.	Dr.Harish Chandra & Dr.S. Venkadesan	Digital Asset Management Proceedings of National Conference on Recent Advances in Information Technology (READIT 2001)	READIT 2001

8.12 Staff User Meet:

The following staff user meets were organised followed by special lectures

Sl. No.	Name of the Speaker	Topic	Date
1.	Dr.C.N.Sudarsanan, Management Consultant, Chennai	Budget Formulations for Libraries	01-06-2001
2.	Dr.P. Pichaiappan, Reader, Department of Library & Information Science, Annamalai University	Computer Assisted Classification	06-07-2001 & 09-07-2001
3.	Dr.Bhooshan Lal, Librarian, IIT Kanpur	Role of Librarian in Knowledge Era	26-09-2001
4.	Mr.M. Natarajan, Scientist-Incharge, INSDOC, Chennai	Data Mining	30-10-2001
5.	Dr.P. Vyasamoorthy, Advisor-ICICI, Knowledge Park, Hyderabad	Knowledge Networks and Activities at ICICI Knowledge Park	06-02-2002

8.13 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 Duration
1.	Dr.Harish Chandra	External Expert to conduct Res, Methodology Examination for Ph.D.	Dept. of Library and Information Science, Madras University, Chennai	17-04-2001
2.	Dr.Harish Chandra	National Conference on Recent Advances in Information Technology (READIT 2001)	IIT Madras	17-09-2001 & 18-09-2001
3.	Dr.Harish Chandra	DPC meeting	ISRO Satellite Centre, Bangalore	08-11-2001
4.	Dr.Harish Chandra	Selection Committee Meeting	Cochin University of Science and Technology, Cochin	28-11-2001
5.	Dr.Harish Chandra	Docuworld India 2002	Xerox Modicrop Limited, Mumbai	24-01-2002 & 25-01-2002
6.	Dr.Harish Chandra	National Conference on Information Management in e-Libraries	IIT Kharagpur	26-02-2002 & 27-02-2002
7.	M. Koteswara Rao	Two day auditors transition course of ISO 9001	Seahouse-TNO Services (Asia) Pvt. Limited, Chennai	27-08-2001 & 28-08-2001
8.	M. Koteswara Rao	National Conference on Recent Advances in Information Technology (READIT 2001)	IIT Madras	17-09-2001 & 18-09-2001
9.	C.C. Tom	Seminar on Searching Scientific and Patent Information on STN	Sci-Edge Information, Chennai	21-06-2001
10.	C.R. Sekar	National Conference on Information Management in e-Libraries	IIT Kharagpur	26-02-2002 & 27-02-2002

8.14 Special Lectures Delivered by staff in other Institution:

Sl. No.	Name of the staff,	Topic of Lecture	Venue and Date
1.	Dr.Harish Chandra	Key Note address in the Vth Tamilnadu and Pondicherry Library Conference Seminar	Pondicherry Engineering College, Pondicherry, June 6, 2001
2.	Dr.Harish Chandra	e-Books for S&T Libraries	Annamalai University, Annamalai Nagar, June 22, 2001
3.	Dr.Harish Chandra	Role of IT in Libraries	Directorate of Arts and Culture, Govt. of Pondicherry, Pondicherry, July 18, 2001
4.	Dr.Harish Chandra	Pre-Conference tutorial on Digitize Your Library "Building Digital Library: Vision and Tasks"	IIT Madras, 17-09-2001
5.	Dr.Harish Chandra	Popular Science City Lecture Series on "Digital Information Resources for Science & Technology"	Science City, Chennai, September 27, 2001
6.	Dr.Harish Chandra	Lecture on e-learning resource in Medicine and Nursing Education	SRM College, Chennai, October 10, 2001
7.	Dr.Harish Chandra	Inaugural address for AICTE-ISTE short Term Training Programme for Librarians	Pondicherry Engineering College, Pondicherry, December 10, 2001
8.	Dr.Harish Chandra	Web Based Library and Information Services for Industrial Associates	IIT Madras, February 22, 2002
9.	M. Koteswara Rao	Standards and Standards Information Sources	University of Madras November 12, 2001

8.15 Journal Editorial Board:

S.No.	Name of the Faculty	Level	Journal
1.	Dr.Harish Chandra	Secretary	Journal of Mathematical and Physical Sciences

8.16 Short-Term Courses/ Workshops/Seminars /Symposia/ Conference organized:

Sl. No.	Co-ordinator	Title	Period
1.	Dr.Harish Chandra	National Conference on Recent Advances in Information Technology (READIT 2001)	September 18 - 19, 2001
2.	Dr.Harish Chandra	Pre-Conference Tutorial on Digitize Your Library	September 17, 2001
3.	Dr.Harish Chandra	Technology Appreciation Programme on Industrial Information Services	February 22, 2002

8.17 Paper Presentation by the Staff:

Sl. No.	Name of the Staff	Title	Institution	Duration
1.	Dr.Harish Chandra	Building e-Collections in S&T Libraries	IIT Kharagpur	February 26-27, 2002
2.	M. Koteswara Rao	Knowledge Management for Business Enterprises: Options and Strategies for Implementation	IIT Madras	September 17 -19, 2001

9. STUDENTS AMENITIES AND ACTIVITIES

This Institute is having the following units for student amenities and activities:

9.1 Hostels :

All students admitted to IIT Madras required to reside in the hostels inside the campus. There are 11 men's hostels and 1 ladies hostel with a total of 2555 single room, 40 double room and 196 triple room accommodation. During the period under report, there were 2490 men and 275 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. S. Kumaraswamy
Professor
Mechanical Engg. Dept.
(upto 10.06.2001)

Dr. SP Subramanian
Professor Ocean Engg. Dept
(from 11.06.2001)

Name of the Hostel/Unit

Warden

Alakananda

Dr. A Mani
Associate Professor,
Mech Engg. Dept

Brahmaputra

Dr. K. N. Satyanarayana
Associate Professor,
Civil Engg. Dept

Cauvery

Dr. Amitava Dasgupta
Associate Professor, Elect.Engg. Dept
(upto 16.05.2001)

Dr.T.S. Prasanna Kumar
Professor, Metallurgy Dept
(from 17.05.2001)

Central Supplies Unit

Dr. S Kumaraswamy
Professor Mech Engg. Dept
(upto 10.06.2001)

	Dr. SP Subramanian Professor Ocean Engg. Dept. (from 11.06.2001)
Ganga	Dr. G. Sundararajan Professor Chemistry Dept.
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.
Mandakini	Dr. Amabalavanan Professor Civil Engg. Dept
Narmada	Dr. Prakash Maiya Associate Professor, Mech. Engg. Dept.
Saraswathi	Dr. M. Ramasubba Reddy Associate Professor App. Mech. Dept.
Sharavati	Dr. Hema A Murthy Associate Professor Comp. Sc. & Engg. Dept. (upto 02.01.2002)
	Dr. Guhan Jayaraman Associate Professor Chemical Engg. Dept. (from 03.01.2002)
Tapti	Dr. A Subrahmanyam Professor, Physics Dept.

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

This senior division Air Wing (Tech) NCC Unit is functioning at IIT Madras from 16 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 includes Drill, Civil Defence, Weapon training, Leadership course, Airmanship, Health and Hygiene, History of IAF, Principles of flight, Aeromodelling and Avionics.

Highlights of the training for the year 2001 - 2002:

Small arms training were given to the cadets on 20th & 26th January 2001.

Range Firing was carried out at Air Force Station, Tambaram on 20th & 21st October 2001

Annual Training Camp was conducted at IIT Campus, Alkananda Hostel during 4 - 15 July 2001. Out of 150 Flight Cadets, 132 cadets have attended the camp. Lt. Col. Jacob George, Officiating Officer Commanding was the Camp Commandant. Both the ANOs Flt Lt A. Mani and Fg Offr S. Neelamani also took active part. All the PI staff and civilian staff of this Unit has attended the Camp.

The Camp was concluded with the Camp Fire presided by Prof. R. Natarajan, Director of IITM. Group Captain G.S. Baweja, Group Commander, NCC Group Head Qrs. Ms 'B' and Lt Col E.S. Sathyanesan have also attended the Camp.

Highlights of the Community Development Activities:

Under social services, cadets took part in cleaning the premises of the Vanavani School on 18 September 2001.

50 cadets took part in Tree Plantation program held on 11th November 2001 at Gurunanak College, Chennai.

Blood donation camp was organised on 23 Mar 2002. Prof.S.S.Gokhale, Dean Students inaugurated the function and he donated blood along with 44 NCC cadets, PI Staff volunteers for the noble cause.

The NCC Unit helps to build a sense of discipline, comradeship, a spirit of adventure and quality of leadership in the minds of cadets of IITM.

Commanding Officer	:	Wg Cdr T. Mohanakrishnan
Associate NCC Officer	:	Flt Lt A. Mani & Fg Offr 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 seven 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.

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'.

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. For the first time, a 'Festival of Lights' was held by the NSS volunteers during Diwali. NSS volunteers also helped in conducting a health camp in Taramani along with the Rotary Club of Aarch City, Madras and Rotaract Club of IIT Madras.

Coordinator, NSS: Dr. Susy Varghese, CH

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 10th February to 10th March 2002 with Fourteen teams participating for top honour witnessed a high level of competition.

In one of the severely contested semifinal matches, IIT Madras team won against Sri Venkateshwara College of Engineering and lost to R.K.M. Vivekananda College in the finals. IIT team fought gallantly and placed Runner up in the tournament.

Special Mention: S. Charan won two special prizes, the Best Batsman Award in the semifinal match against SVCE and the other in the final as the man of the match award against RKM Vivekananda College.

Inter IIT Aquatic Meet:

Inter IIT Aquatic meet was held from 19th October to 21st October 2001 at IIT Kharagpur. Five IITs, excluding IIT Guwahati, participated in the above meet in which this Institute contingent declared as Runner up in Water Polo Championship.

Inter IIT Sports Meet:

This year, the Inter IIT Sports meet was held at IIT Kharagpur from 14th to 19th December 2001 and our contingent came fourth overall. Our boys won Gold in Table Tennis and silver in Badminton. Our Girls won Gold in Badminton.

Special Mention: - Our student Sri K. Sudheer was declared as the Champion Athlete at the Inter IIT Sports Meet 2001.

All India Inter Collegiate Invitation Basket Ball Tournament:

This tournament was conducted from 15th to 19th January 2002, attracted outstation teams from all over Tamil Nadu. 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. Our boys won the Bronze Medal. Loyola Colleges Madras won the Gerhard Fischer cup for men Colleges and M.P. Vaishnav College for women won the Kokila Rajaiah Trophy for the women colleges.

Inter Hostel Tournament:

The Inter Hostel tournaments were played 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.

The Dean's Trophy is won by Godavari hostel.

A separate tournament was conducted for girl students this year.

Non Media Tournaments:

The following Non-Media Tournaments were conducted for the students Institute Open Chess, 3-a-side Basketball, 3-a-side Volleyball, 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.

Advisor, Sports: Dr.S.Neelamani, OE

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 fit 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 is introduced from this year onwards 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, 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 180 first year under graduate students were registered under the 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.

Special Awards: -

Mr. Sneh Kumar, our Institute Basketball Captain won Special Sports Awards – Best Player at the Inter Collegiate Basketball Tournament hoisted by Madras Institute of Technology Madras.

IIT Madras students' team won the TNTA, league tournament for 'F' Division and won the cash prize for the second year in succession.

Tamil Nadu Inter Engineering Sports TIES 2002: -

Our Institute for the first time after a gap of twenty five years participated at the TIES 2002 at Trichy. Our Basketball team narrowly lost in the above meet.

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, 2 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 2001 for the weaker section and foreign national students of B.Tech programme as they expressed difficulty in understanding during normal teaching hours.

Advisor, Foreign Students & Weaker Section: Dr.T.J.Kamalanaban, HS

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.

Advisor, Guidance & Counselling unit: Dr.L.Vijayaraghavan, ME

10. STUDENTS PLACEMENT

10.1 Introduction:

IITM considers the placement of its graduating students in appropriate organizations and facilitation of a match between the career aspirations of graduating students and the job requirements of prospective employers to be important responsibilities. It is in this context that the Placement Office has been interacting with about 150 industries in the country on a regular basis for many years. Most of them visit the Campus every year to hold group discussions, interviews and other recruitment programmes.

10.2 Placement:

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. About 80 companies visit our Campus every year 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 2001-02.

Department	B.Tech	M.Tech	M.Sc.	M.S.	Ph.D.	Total
Aerospace Engg.	12	3	-	2	-	17
Applied Mechanics	-	7	-	11	-	18
Chemical Engg.	29	15	-	-	-	44
Chemistry	-	-	1	-	1	2
Civil Engineering	27	19	-	6	-	52
Computer Science & Engg.	27	16	-	9	-	52
Electrical Engg.	50	25	-	6	-	81
Humanities & Soc. Sci.	-	6	-	6	-	12
Mathematics	-	3	6	-	-	9
Mechanical Engg.	56	41	-	10	-	107
Metallurgical Engg.	19	1	-	2	1	23
Ocean Engg. & Naval Arch.	12	2	-	2	-	16
Physics	-	-	5	-	-	5
Total	232	138	12	54	2	438

During the year under report 438 students/scholars were placed in different industries.

Besides above, 4 Systems Trainees of Computer Centre and 8 last years 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 2001-2002 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 118 students benefitted. The year-wise details of number of students benefitted are given in Table 10.1.

SC/ ST students admitted to B.Tech programme upto July 2001 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 31.3.2002, 59 students benefitted. The year-wise details of number of students benefitted also are given below:

No. of MCM and SC/ST scholarships

Batch	MCM Scholarship	SC/ST Scholarship
2001	26	15
2000	28	16
1999	46	19
1998	18	9
Total	118	59

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 2000) students whose parental income is more than Rupees One lakh:

Sl. No.	Roll No.	Name of Student	AIR
1.	CS 01B006	Arvind Thiagarajan	001
2.	CS01B009	Gandharv S Bakshi	005
3.	CS 01B003	Adiya U V	009
4.	CS01B023	Sashi Kanth M	014
5.	CS 01B014	Muralidharan V	015
6.	CS01B018	Pradeep R	027
7.	CS 01B019	Radesh Mekatukatil Mohan	031
8.	CS01B012	John P John	032
9.	CS01B020	Raghuvardhan Reddy M	034
10.	EE01B049	Naresh Satyan	037
11.	EE01B089	Vijay Kumar S	042
12.	EE01B048	Nalluri Vamsi Krishna	053
13.	EE01B056	Bhargav K S	056
14.	CS01B010	Guntury Sridhar	070
15.	CS01B025	Srikanth S	091
16.	CS01B005	Aparajith Raghavan	092
17.	CS01B016	Niteesh Joshi	101
18.	CS01B008	Eachempati Siva Sowmya	102
19.	CS01B004	Anirudh V Ramachandran	104

20.	CS01B029	Vinay Kumar Reddy B	105
21.	CS01B026	Trithankar Dubey	111
22.	CS01B001	Abhishek Kumar	113
23.	EE01B034	Jayakrishnan U	115
24.	EE01B019	Avinash L Varna	116
25.	CS01B013	Kamesh R	117
26.	EE01B020	Balakrishnan V	128

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
2001	33
2000	61
1999	55
1998	41
Total	190

No. of State Government Scholarship obtained by B.Tech students

State	Batch / Total no. of Students			
	2001	2000	1999	1998
Andhra Pradesh	4	19	16	4
Delhi	4	1	4	4
Karnataka	-	-	1	-
Kerala	1	1	3	1
Tamil Nadu	-	-	3	1
Other States	8	20	10	13
Total	17	41	37	23

11.3 M.Tech:

Students who joined M.Tech programme through GATE were awarded Half-time Teaching Assistantship (HTTA) at Rs.5000 per month. During the period under report 225 fresh assistantships and 243 renewed assistantships were given. The department-wise details are given below:

No. of HTTA awarded

Sl. No.	Discipline	Fresh - 2001 batch		Renewal - 2000 batch
		I Sem.	Non-HTTA got HTTA	
1	Aerospace Engineering	8	1	8
2	Applied Mechanics	8	3	10
3	Chemical Engineering	22	1	25
4	Civil Engineering	33	3	37
5	Computer Science & Engg.	31	-	20
6	Electrical Engineering	52	8	37
7	Industrial Management	-	-	17
8	Indl. Maths & Scientific Computing	5	-	7
9	Mechanical Engineering	53	3	54

10	Metallurgical Engineering	12	-	15
11	Ocean Engineering	5	-	6
12	Solid State Technology	7	-	6
Total		236*	19	242

* 11 students left before 30.12.2001

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 55 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	6	6	3	4
2.	Maths	6	6	3	3
3.	Physics	6	6	3	3
Total		18	18	9	10

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 175 scholars received this assistantship of whom 57 were fresh scholars. The department-wise details of the assistantships awarded and renewed are given below:

No. of HTRA awarded

Sl. No.	Discipline	Fresh	Renewal	Total
1	Aerospace Engineering	5	13	18
2	Applied Mechanics	6	17	23
3	Chemical Engineering	5	8	13
4	Civil Engineering -	3	12	15
5	Computer Science & Engg.	10	11	21
6	Electrical Engineering	4	24	28
7	Humanities & Social Sciences	2	6	8
8	Mechanical Engineering	6	13	19
9	Metallurgical Engineering	7	8	15
10	Ocean Engineering	9	6	15
Total		57	118	175

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 159 Students obtained assistantships of whom 38 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	1	3
2	Applied Mechanics	3	5	8
3	Chemical Engineering	6	9	15
4	Chemistry	10	34	44
5	Civil Engineering	7	11	18
6	Computer Science & Engg.	1	6	7
7	Electrical Engineering	6	7	13
8	Humanities & Social Sciences	5	8	13
9	Mathematics	4	13	17
10	Mechanical Engineering	8	24	32
11	Metallurgical Engineering	3	7	10
12	Ocean Engineering	1	5	6
13	Physics	8	20	28
Total		64	150	214

11.7 Financial Assistance to Research Scholars/Students for presentation of papers (abroad):

This Institute is encouraging the Research Scholars to present papers in international conferences for which they are given financial assistance. During the period under report, 2 scholars were given this benefit. In March 2001, the financial assistance to M.S. & Ph.D. scholars was increased as follows:

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.

During the period under report 8 students benefited.

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 2001:

Total Sanctioned intake	Sanctioned Intake		No. joined through			
			JEE		Preparatory Course	
	SC	ST	SC	ST	SC	ST
477	69	38	31	5	30	5

SC/ST students admitted against reservation are given the following benefits:

- Travelling allowance (II Class train fare/ordinary bus fare) from the place of residence to Chennai to join the B.Tech. programme.
- Tuition fee waiver.
- Free lodging and messing (basic menu only) and pocket allowance of Rs.70/- p.m. provided their parents' income is Rs.1,00,000/- net per annum or less.
- A Book Bank as part of Central Library is maintained for the benefit of the SC/ST students. The students are issued 12 tickets for taking books from the Book Bank. Books are issued for a semester.
- Drawing instrument (Mini-drafter) free of cost.
- Help in getting placement. Wherever possible, industries are requested to conduct separate interviews for SC/ST students and the requirements for these students are lower than those for the general category.

12.2 Preparatory Course for admission to B.Tech programme:

A preparatory course of one academic year was initiated by the Ministry of Human Resource Development, Government of India, during the year 1983-84 exclusively for SC/ST students. Selection for this course is made from the Joint Entrance Examination list of SC/ST students who did not qualify for admission. Upon successfully completing the preparatory course at the IIT, they would be eligible to join the B.Tech programme and they will not require to write the JEE again. Following are the details of admission in July 2001:

Offer issued for PC		No. joined	
SC	ST	SC	ST
37	7	25	6

In July 2000, 61 SC and 9 ST candidates were offered admission, but 37 SC and 5 ST students only joined. Of this, only 36 SC and 5 ST students successfully completed the course but only 30 SC and 5 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 2001:

Offer issued		No. joined	
SC	ST	SC	ST
46	16	46	16

12.4 M.Sc programme:

Admission was made to the M.Sc. programme through entrance examinations only. One student each was admitted in SC and ST categories. 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 2001, 19 students (USA-2, Indian National-17) joined B.Tech programme under DASA (Direct Admissions of Students Abroad) scheme.

At the end of March 2002, 14 foreign nationals and 114 Indian nationals residing abroad were on the rolls of the Institute. The programme and country-wise details are given below:

Country	I Year	II Year	III Year	IV Year	V Year	Total
B.Tech						
1. Foreign National Students						
USA	2	1	3	1	-	7
Malaysia	-	-	-	1	-	1
Korea	-	-	-	1	-	1
2. INRA Students						
Arabian Gulf	-	-	1	-	-	1
Abu Dhabi	1	-	-	-	-	1
Bahrain	1	-	4	2	3	10
Canada	-	1	-	-	-	1
Dubai	5	-	-	-	-	5
Hongkong	0	-	1	-	-	1
Indonesia	1	-	1	-	-	2
Israel	0	-	-	1	-	1
Kuwait	2	2	2	4	4	14
Kenya	0	-	-	-	1	1
Mauritius	0	-	-	1	-	1
Muscat	2	-	-	-	-	2
Oman	0	2	3	1	1	7
Papua New Guinea	1	-	-	-	-	1
Saudi Arabia	2	1	2	3	1	9
Srilanka	-	-	-	-	-	-

Country	I Year	II Year	III Year	IV Year	V Year	Total
Thailand	1	-	-	1	-	2
UAE	0	9	8	15	20	52
Qatar	0	-	1	1	-	2
Zambia	1	-	-	-	-	1
Total	19	16	26	32	30	123

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	-	2	2	-	-	-	-	-	-
Iran	-	-	-	-	1	-	-	2	3
Total	-	2	2	-	1	-	-	2	3

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 3000 students and 980 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 2001-02:

S.No.	Name of Work	Rupees in Lakhs
1.	Construction of E I type Quarters, One block of 12 flats (Phase-II)	50.00
2.	Construction of Ladies Hostel	460.00
3.	Construction of Chairman Council of Wardens (CCW) office	64.98
4.	Providing Chainlink fencing around IC & SR Building	4.90
5.	Providing Chainlink fencing around Taramani Guest House	5.30
6.	Construction of RSU for Chennai Telephones	19.20
7.	Interior Renovation of Optical Network Lab at CSD Building	47.50
8.	Providing Asphalt Concrete Road for various places in the Campus	43.00
9.	Deepening and Desilting the Lake Area	25.00
10.	Construction of R.C.C Ramp at Library Building	6.10

Work in progress:

S.No	Name of Work	Rupees in Lakhs
1.	Additional Construction of Lecture Hall Complex	135.00
2.	Construction of additional rooms and toilets for krishna & Cauvery Hostels	351.40
3.	Construction of second floor over computer centre	148.20
4.	Extension of gas Dynamics Lab at Aero Space Engineering department	41.00
5.	Extension of Gate/JEE office at NCC building	25.00
6.	Construction of Ist floor over R and AC lab	30.00
7.	Construction of Security Shelter	5.60
8.	Construction of Electrical substation near computer centre building	9.74
9.	Replacing sewer line from Brahmaputra Hostel to sewage pond	25.50
10.	Renovation of kitchen & dining hall at Guest house	10.00
11.	Modification of toilet at Institute area	82.00
12.	Modification of toilet at Hostel area	286.00
13.	Additional staircase and toilets for MSB	31.50
14.	Providing chainlink fencing at C-1, C-32, B-1 and B-22 quarters	16.60
15.	Construction of RCC ramp to old library building	6.10
16.	Renovation of toilets in workshop zone.	135.00
17.	Renovation of toilets in Residential zone	160.00

18.	Construction of very large Dining hall	585.00
19.	Modification of kitchen at Nandhinee Canteen	5.80
20.	Providing R.C drainage outfall pipe from IITM compound wall to canal via tidal boundary	26.00
21.	Construction of Ist and IInd floor over new library building	724.00
22.	Renovation of toilets in warden quarters No.1 to 8	15.16
23.	Providing scooter/cycle shed in various places	109.00
24.	Construction of overhead water tank of 3 lakh litre in residential zone	30.00
25.	Renovation of toilets in D-30,31,32 blocks	24.00
26.	Providing weldmesh shutters for windows in residential zone	150.00
27.	Improvement of IITM senate hall	30.00
28.	Construction of overhead tank of 3 lakh litres capacity in Hostel zone	30.00
29.	Construction of underground sump for hostel zone	44.00.
30.	Construction of bath house at swimming pool complex	29.00
31.	Extension of electrical substation at pump house area	4.80

13.2 Housing Facilities:

As on 31.3.2002, there were 980 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 2001-2002, this unit developed garden around administrative block, 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 Chennai Telephones in the Campus. All direct telephone lines which are at present working from Raj Bhavan telephone exchange will be functioning from this telephone exchange shortly.

13.5 Central Supplies Unit:

A Warden administers the Central Supplies Unit. It Procures milk from Tamilnadu 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 hostels.

13.6 Guest House:

There are two Guest Houses 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, 6000 dependents, 3500 students and about 500 project staff. In total about 11500 persons were registered in the hospital.

Doctors:

Dr. N.A. Jayavelan, MBBS, (MD)	Chief Medical Officer i/c
Dr. S. Aruna, MBBS	Medical Officer
Dr. C. Sridevi, MD, DCH, M.Sc.	Medical Officer
Dr. Mahalakshmi M. Ravi, MBBS	Medical Officer
Dr. K. Sundarajan, MBBS	Junior Medical Officer
Dr. R. Mala, MBBS	Junior Medical Officer
Dr. D. Vindhya, MBBS	Junior Medical Officer
Dr. S. Uma Maheswari, MBBS	Junior Medical Officer

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	7
Pharmacists	3
Lab Technician	2
Male & Female Helpers	9
Others	8

Out-patient service:

Institute hospital has fully computerised O.P. card registration system for all the staff/ students and others. In 2001-02, 64,765 out-patients were treated in the hospital.

In-patient service:

Hospital has 35 beds for treating in-patients. In 2001-02, 215 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. 2388 emergency cases were attended during non-OP hours in 2001-02. About 107 complicated cases were referred to outside hospital due to lack of treatment facilities at our hospitals. An ambulance service is available on call.

Clinical Laboratory service:

A well equipped clinical laboratory with two Laboratory Technicians is available. 16,288 clinical laboratory tests and 5851 biochemical tests (blood sugar and urea) were done in 2001-02. A modern computerised ECG recorder facility is available round the clock. 612 ECGs were recorded during 2001-02.

Operation Theatre:

A well equipped operation theatre with sophisticated operating microscopes, instruments for IOL surgery, Pulse oximeter, cardiac monitor, etc. along with regular equipments is available. In 2001-02, 21 general and 40 minor surgeries, 20 ENT, 33 eye surgeries and 44 gynaec operations were done at the hospital. This includes successful fixing of 22 intra ocular lenses and 2 hysterectomies caesarians.

Public Health Program:

Under the preventive health care, during the year 2001-02 600 Hepatitis B vaccination was given to students at subsidy rate. About 250 children were immunised under regular immunisation programme.

Public Health Education Programmes were conducted at our hospital on bronchial asthma, allergy and diabetes. Four camps to detect "Bone mineral density" were conducted and about 650 persons were screened. Those with abnormal findings were treated and followed up. The report of the bone density camps were analysed by the biomedical department and a paper was sent for publication with CMO i/c as a co-author.

Under the diabetic project in collaboration with Diabetic Research Centre, Royapuram about 600 normal persons were screened for diabetes and its complications. About 48 abnormal persons are being followed up once in three months with complete checkup.

Treatment for Non-entitled:

Non-entitled guests of a staff member when accompanied by the staff member or his authorised dependent, can avail emergency treatment on payment basis subject to the Institute rules. About Rs.24,300/- were collected in the year 2001-02.

Stores and Dispensary:

A medical cum surgical stores manned by a qualified pharmacist is available. All activities, enquiry, comparative statement, indenting, issues, etc. are computerised. It had dealt with the purchase worth more than Rs.14.14 lakhs in 2001-02.

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 and a sum of Rs 41.81 lakhs were reimbursed in the year 2001-02.

C.M.E. programme:

Four CME programmes for updating the current knowledge for our medical officers and paramedical staff were conducted during the period under report. Outside specialists were invited for the programmes.

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 64th Finance Committee of the Institute in its meeting held on 07.02.2002 recommended Non Plan Revised Estimates of Rs.8600 Lakhs (Gross) for 2001-02 and Budget Estimates of Rs.9100 Lakhs (Gross) for the year 2002-03. The committee also recommended Plan Revised Estimate of Rs.2647 Lakhs for 2001-02 and Rs.3594 Lakhs Plan Budget Estimate for 2002-03.

The following are the summary of Revised Estimates for 2001-02 and Budget Estimates for 2002-03 approved by the Board of Governors of the Institute in their 176th Meeting held on 07.02.2002.

(Rs. in lakhs)

Head	BE 2001-02	RE 2001-02	BE 2002-03
I. Non-Plan			
Income	1805.00	1600.00	1800.00
Grant demanded from MHRD	7445.00	7000.00	7300.00
Total	9250.00	8600.00	9100.00
Expenditure:			
Recurring	9250.00	8600.00	9100.00
Total	9250.00	8600.00	9100.00
II. Plan:			
Grant demanded from MHRD	3209.00	2647.00	3594.00
Opening Balance	@2587.24	@2587.24	-
Total	5796.24	5234.24	3594.00
Expenditure:			
Committed Expenditure	2587.24	2587.24	-
Non-Recurring	3209.00	2647.00	3594.00
Total	5796.24	5234.24	3594.00

@ Carry over from 2000-01 account and represents irrevocable commitments.

Audit:

The Annual Accounts of the Institute for the year 2000-01 was audited by Accountant General (Tamil Nadu & Pondicherry) between May 2001 – July 2002. The certified copy of Accounts and Audit Report were sent to MHRD, New Delhi for placing before Parliament during November 2002.

Summary of Audited Receipts and Payments Account of the Institute for the year 2000-01 is given below:

(Rs. in Lakhs)

Sl.No.	Item	Amount
	I. Receipt:	
1.	Opening Balance	6853.31
2.	Grant from G.O.I. received during 2000-01	8241.25
3.	Grant received in respect of Projects / Modernisation Schemes etc.	2365.88
	Institute Receipts:	
	Fees, etc. collected from Students	964.37
4.	Application Fees / Entrance Exam	312.96
5.	Income from Vehicles	6.76
6.	Income from Buildings	107.02
7.	Recovery of Advances	103.31
8.	Corpus Fund Receipts	605.52
9.	Interest on Term Deposits	204.58
10.	Interest on PF Deposits	184.57
11.	Receipts in respect of various Deposits / Funds	452.25
12.	Other Receipts	210.50
13.	Total	20612.28
	II. Payments	
	a. Capital Account :	
	Buildings & Constructions	554.92
1.	Furniture / Equipment & Fittings, Research Centres & Central Services	708.70
2.	Library Books and Journals	
3.	Total (a)	290.12
	b. Revenue Account :	
	Academic Departments/Centres:	
	Pay & Allowances of Teaching Staff	
1.	Pay & Allowances of Non-Teaching Staff	1088.70
	Department Running Expenses	457.66
	Library Staff Salary and Running Expenses	176.14
	Central Workshop Staff Salary and Running Expenses	72.06
	Research Centres Pay & Allowances including working exp.	77.84
	Institute Scholarships / HTTA and other items	138.08
	NCC, NSS and NSO: Pay and Allowances and other Expenses	354.47
	Total (b.1)	7.18
	Central Administration:	
	Pay and Allowances	
	Hostel	
2.	Stores Pay & Allowances & Other Expenses	305.07
	Gymkhana	223.88
	Lawns & Gardens	24.04
	Service & Maintenance	24.22
	(Telephone, Power, Water, Oil, Petrol)	2.11
	Dispensary including Staff Salary	
	Vanavani Matriculation Hr .Sec. School Subsidy	428.69
	Security Section Pay & Allowances & Other Expenses	90.40
	Total (b.2)	7.66
	Works & Maintenance:	
	Pay & Allowances and other expenses	101.50
3.	Total (b.3)	403.06
		403.06

1. THE SENATE

Chairman

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