

# **Annual Report 2004-05**

## Director's Report

It is indeed a privilege for me to present the Director's Report for the year 2004-2005 including the major events and performance of the Institute.

It is with enormous sense of pride that I share with you the news of Dan David Science Prize for 2005 in Materials Science being conferred on Prof. C. N. R. Rao. He shares the award with George Whitesides of the Harvard University and Robert Langer of the Massachusetts Institute of Technology. Prof. Rao has been honored in recognition of his stellar achievements in the field of Solid State and Material Chemistry. Prof. C.N.R. Rao is also the recipient of the Indian Science Award for his outstanding contributions to Solid State Chemistry and Materials Science.

I have another heart-warming piece of news for you. The most recent survey of *Dataquest* ranks IIT Kanpur the BEST Technical School of the country.

### ACADEMIC ACTIVITIES

The academic year 2004-2005 has had a successful run. The number of graduating students both at the undergraduate (B Tech-280, M Sc (5 year Integrated)-27, M Sc (2 year)-69, Total = 376) as well as postgraduate (M Tech-355, M Des 10, MBA 28, Ph D 61, Total = 454) level shows a fairly satisfactory trend. The enrolment in the Doctoral programme as well as the publication record of the faculty and students for the academic year 2004-2005 has improved considerably.

The Institute is launching a five year integrated M.Sc. Programme in Economics in the coming academic year. Eminent journalist and Member of the Parliament Shri Arun Shourie has pledged Rs 11.00 crore out of his Member of Parliament Local Area Development Scheme (MPLADS) funds for establishing a separate and well-equipped building for Environmental Sciences and Environmental Engineering. The Institute envisages constructing a 'Green Building' for the Environmental Sciences. IIT Kanpur is one of the eight institutes chosen by the Department of Science and Technology (DST) for creating state-of-the-art Nano-technology center. Under the auspices of the FIST scheme of DST, a new facility for developing Intelligent Sensors and Control will be installed in the Electrical Engineering Department.

## **AWARDS AND HONORS**

The faculty and students of IITK continue to break new grounds in the forefront of research. This has been duly recognized in the form of various awards and honors to the faculty including Fellowships of professional societies, Editorship of international journals, and best paper awards to the students. IIT Kanpur is proud of Professor Vinod Kumar Singh (Chemistry) who was conferred the prestigious Shanti Swarup Bhatnagar Award for 2004. The Swarnajayanti Fellowship, given by the Government of India, recognizes outstanding young researchers who explore new frontiers in science and technology. Professor Debabrata Goswami from the Department of Chemistry was awarded this Fellowship in 2004. Wellcome Trust International Senior Research Fellowship, instituted by the Wellcome Trust of the United Kingdom, is open to outstanding researchers from several countries including India whose work impacts the fields of biology and medicine. Dr. Debabrata Goswami (Chemistry) and Dr. Balaji Prakash (BSBE) have been conferred the Wellcome Trust grant for 2004.

I am happy to share with you the good news that Mr. Cherian Varkey Mathew , a first-year undergraduate student (who will soon move into his second year) of Computer Science and Engineering Department, has been chosen for the prestigious Lucent Scholarship in recognition of his outstanding all-round qualities among all the undergraduate students in the country. He shares the honor with Ms. Poonam of National Institute of Technology, Surathkal. The Bell Labs in New Jersey has invited him along with selected students from across the globe for visiting various laboratories and meeting scientists including some Nobel Laureates. Our hearty congratulations to Mathew!

Prof. A.K. Mallik has been honored with the Distinguished Teacher Award of IIT Kanpur for 2004.

Professor C.N.R. Rao has been nominated the Chairman of the Scientific Advisory Council to the Prime Minister of India and Professor S.G. Dhande has been chosen member of the Council.

A representative list of Awards and Honors is included as an addendum to the Report.

## **RESEARCH & DEVELOPMENT**

The research profile of the Institute is continually growing every year. At any given time, the faculty and research engineers/ scientists are engaged in carrying out about 400 sponsored projects and almost an equal number of consultancy projects. During 2004-2005, the research grants received under the sponsored projects category have been about 415 million rupees, whereas under the consultancy projects category, these have been approximately 54 million rupees.

The Institute faculty members have filed more than 20 patents in India and overseas. Five patents have been awarded in the past two years. The Institute has signed several memoranda of understanding with Indian as well as international academic/research institutions and industries to strengthen its collaborative research efforts.

The Institute has taken up a Technology Mission project on various aspects of Railway Safety sponsored by the MHRD, Ministry of Railways and various Industrial groups. Department of Computer Science & Engineering has undertaken a project on development of a multi modal Biometric system for human identification which integrates at least four markers such as the face, the finger-prints, the signature and the iris in ascertaining one's personal identity. They have also developed a Portable Model of Primary Healthcare Delivery funded by the Media Lab Asia. Department of Civil Engineering has a project on treatment of domestic wastewater in India sponsored by the Swedish International Development Corporation. Department of Electrical Engineering has undertaken a project on development of Independent Component Analysis Based Blind Source Separation Algorithms for Audio/ Image Separations. They aim to develop neuron model based Blind-Source-Separation (BSS) algorithms which will be able to separate the audio and image mixtures. Department of Atomic Energy, Board of Research in Nuclear Sciences (BRNS) has sponsored a project to the Mechanical Engineering Department for development of a general purpose Computational Fluid Dynamics (CFD) code. Sponsored by the DST under the Swarnajayanti fellowship scheme, a project on ultrafast pulse shaping approaches to coherent control of molecular systems to achieve quantum computation has been undertaken by the Chemistry Department. Quantum computing with ultrafast pulse shaping technology project in the Chemistry Department has been sponsored by the Ministry of Communications and Information Technology. It is an initiative to develop ultrafast tunable shaped pulses as an approach to quantum computations. BSBE Department has received a couple of projects last year: Tumor genomics in *Drosophila*: An expression profiling of tumors of diverse genetic origins, Nonneuronal cell-mediated neuroprotection in the

neurodegenerative disease, Amyotrophic lateral sclerosis (ALS), Nonneuronal cell-mediated neuroprotection in the neurodegenerative disease, Amyotrophic lateral sclerosis(ALS), An in vivo assay for high throughput screening of compounds for their effect on the expression of cytochrome P450 genes, Isolation and Characterization of microbial strains for the degradation of hydroxyls and nitro toluene.

Department of Materials and Metallurgical Engineering has undertaken a couple of projects as listed below: Computer simulation of charge motion in tumbling mills using the Discrete Element Method (DEM), Reduction of skull in tundish during the Final Stages of a sequence casting of Steels, SPEED (Steel Plant Engineering, Education and Development), Electro remediation of Cr (VI) Contaminated Soil, Development of New Stereological Analysis Software Tools, Stress Induced Martensitic Transformations in Titanium Alloys, Preparation of Metallic Strips by P/M routes, Development of a New Thermomechanical Treatment for Medium-Carbon Microalloyed Steels, Synthesis of Nanocrystalline Alloys using the Mechanical Alloying Approach, Nanostructured Y-TZP Ceramics and TZP-TiB<sub>2</sub> and WC-ZrO<sub>2</sub> Nanocomposites, Sintering Time Compression using Microwave Sintering, Novel Structure Based Organic Thin Film Transistors (OTFTs), Development of Polysilane based Ultra-violet Light Emitting Diodes, Hydrogen Interaction in Materials.

As mentioned earlier, the DST has provided about 2 crore rupees for establishing an Intelligent Sensors and Control Research Facility in the Electrical Engineering Department. Other major projects pursued by the faculty and research engineers of the Electrical Engineering Department include the Development of Active Matrix Organic Light Emitting Diode Display, Development of Organic Solar Cells, and Enhancement of Power Systems Performance using FACTs. Mathematics Department has also undertaken a couple of important projects. Increasing and Convex Along Rays Functions over Cones: A Study in Monotonic Analysis, Issues on Estimation, Prediction and Calibration in Measurement Error Models, Evolution Equations and their Applications.

The Department of Mechanical Engineering has been actively working on the following projects: Dynamic Mechanical Thermal Analyzer, Stereoscopic Particle Image Velocimetry System, Horiba Exhaust Emission Analyzer, Smart Structures Test Setup, Flow solver for Thermal Hydraulics of Neutron Spallation Target of Accelerator Driven Sub critical System (jointly with Mathematics). Recently undertaken projects in the Physics Department include: Mesoscopic structures,

patterning and properties with emphasis on soft matter and thin films, Radiation induced electronic phase separation in epitaxial films of perovskite manganites, Fundamental studies of manganese oxides and analogs for suitability as cathodes in rechargeable lithium ion batteries, Development of MgO coatings by sputtering for plasma displays, and Laser matter interaction using short pulsed laser.

Several projects covering a wide spectrum of areas, which have a direct industrial relevance, are currently underway. For instance, research sponsored by Unilever India, Bangalore, on particulate adhesion and detachment focuses on uncovering the fundamental physico-chemical and interfacial aspects of detergency, with the aim of designing futuristic ultra-efficient detergents. Chevron-Texaco Inc, USA, is sponsoring experimental and computational studies on flow patterns in bubble column reactors, and the development of novel catalysts. GAIL-India is supporting process intensification studies that can lead to miniaturization of chemical plants similar to the progress witnessed in the microelectronic devices.

A few major consultancy projects recently undertaken by the Civil Engineering Department include: Development and application of Uttar Pradesh Spatial Decision support system, Review of Building Codes and Preparation of Commentary and Handbooks on earthquakes, wind and fire, Design of Drainage Master Plan for Kanpur South under Kanpur Development Authority. A Consultancy project involving synthesis of several important organic intermediates for the purpose of high-speed analoging drug discovery program has been started in the Chemistry department. Sun Microsystems, USA has funded establishment of a Sun Grid in the Department of Computer Science and Engineering. The grid has 20 Opteron based machines.

## **RESEARCH INFRASTRUCTURE DEVELOPMENT**

To strengthen the research infrastructure, the Institute has procured a large number of new equipment: A new facility for the study of fuel sprays and aerosols (Malvern Particle Size Analyzer) has been created in the Aerospace Engineering Department. Other worth mentioning facilities include: A Femtosecond Laboratory for Quantum Computation, Pulsed Electron Deposition (PED) unit for Thin Film Nanostructures, CEM Voyager Stopflow system integrated with microwave enhanced Raman spectrometer, CCD X-Ray Diffractometer, Affymetrix Microarray Platform, Time-lapse Video Microscopy, Automated DNA Sequencer Facility, Laser Scanning Confocal Microscopy, Facilities for Biomaterial Research, A Research Centre (Prabhu Goel ) for computer and internet security, a computer hardware laboratory to

train students and carry out research in the area of computer hardware, Superconducting Quantum Interference Device (SQUID), Ellipsometer and Spectrofluorometer.

## **FINANCIAL POSITION**

The Institute has had a satisfactory financial year during 2004-05. The total non-plan grant(s) from MHRD was Rs 68 crore and that from the total plan funds was Rs 30 crore. The Institute received a grant of Rs 4.13 crore (approximately) for various schemes, like R & D, thrust area and laboratory modernization. I am sure we will be able to cope well, thanks to the able guidance of our Chairman and the support of the alumni and other well-wishers of the Institute.

We have also received Rs. 74.06 lacs from the 1980 batch, Rs 23.41 lacs from the 1969 batch, Rs 2.97 lacs from the 1970 batch and Rs 1.27 lacs from the 1990 batch. In addition, we have received liberal donations from various alumni towards establishing different lecture series in different departments (Prof. Arindam Bose, US\$ 5000, in addition to his earlier donation of Rs 2.35 lacs for BSBE; Dr. ESP Das, US\$ 10000, for Materials Science, Dr. Anil Chopra, US\$10000 for Petro Tel Lecture in Chemical Engineering, Mr. Satish Dasari, US\$10000, for DP Rao Lecture series in Laser Technology, Mr. Devendra Shukla, US\$10000 for Civil Engineering). We have also received Rs 8.75 lacs from various donors for Prof. S. Sampath Chair. The Institute has received Rs 5.38 lacs for Endowment Corpus of NICEE. Sukriti Vidyut Udyog is giving a donation of Rs 2.0 lacs on a yearly basis for five years to support outstanding researchers. We have also received Rs 21.83 lacs from Dr. Ajit Gill in addition to his earlier donations of Rs 13.55 lacs and 12.02 lacs towards the BSBE department. Prof G S Kainth has donated Rs 2 lacs in addition to his earlier donation of Rs 1 lac towards the establishment of Dr Gurcharan Singh Kainth Scholarship. The Institute received a donation of Rs. 1.45 lacs for Prof. Sachchidanand Memorial Fund. A donation of Rs. 3.0 lacs has been received from Ram Rajendra Malhotra Educational Society, New Delhi for the institution of an Annual Exhibition-cum-Lecture series as part of the M Des programme. Mr. Devendra Shukla has donated US\$10000 for instituting the Devendra Shukla Distinguished Lecture Series in the Civil Engineering department. The Institute has received a total donation of Rs. 4.36 lacs from different donors for instituting the J. Mahanty Lecture Series in the Physics department. Infosys Technologies, Bangalore has donated Rs.3.0 lacs for instituting Infosys Fellowship. Generous donations are being received for instituting the Satyendra K. Dubey award. Satyendra K. Dubey Memorial Fund Committee has already donated Rs. 3.19 lacs. Satyendra Dubey Memorial Fund Committee has

further donated Rs. 1.50 lacs for installing an appropriate thematic structure in memory of the Late Sri Satyendra K. Dubey. Prof. CNR Rao has donated Rs 1.0 lac for instituting the Prof. CNR Rao Lecture Series at IIT Kanpur. The alumni continue to support the Institute morally, physically and financially. I wish to place on record our gratitude to all of them on behalf of the faculty, staff and students of IITK and on my own. The Institute participated in the PanIIT event held in New Delhi in December 2004. The Institute also participated in a recently held IIT2005 event in Washington DC.

## STUDENT ACTIVITIES

The previous year had been a very active and fruitful one for our Institute. IIT Kanpur has always striven to encourage an equitable balance between academics and extracurricular engagements. Our aim is to create future leaders in their chosen fields and not just technically accomplished individuals. Knowledge and skills that are easily measured or assessed are not the only ones worth having; some very precious qualities such as a person's sense of values and cultural awareness are equally important goals to attain. We take pride in the support the Institute provides to various social, cultural and sporting activities pursued by the Students' Gymkhana and other student groups. The activities range from clubs like **Prayas**, where students teach children coming from socially disadvantaged and economically deprived backgrounds to the **Dramatics club** which through its thematic and socially relevant plays often alert us to the most crucial questions concerning humanity, thus providing a corrective to our traditional knowledge-based and examination-driven teaching. Other technically oriented student groups are engaged round the year in pursuing special interests like robotics, electronic aids, animation, aero-modeling and astronomy to name just a few.

The overriding objective of our large-scale events like the Cultural Festival **Antaragni**, the Science and Technology Festival **Techkriti**, the sports Festivals **Udgosh and Josh**, the entrepreneurial event **Megabucks** and the film festival **Umang** organized by the Students Films Society is to infuse in our students a sense of richness and purpose. We are fully convinced that extracurricular activities and community services play a significant role in school life contributing to the development of the student into a whole person. The Gymkhana Festivals have seen vastly improved participation levels, both from within the Institute and also from



students from other Indian and international institutes. The revenue generated from the conduct of these well-organized festivals witnessed a dramatic growth this year and ably testifies to the managerial and logistical skills of our students.

Students' strenuous efforts often involving months of intensive training were well rewarded at the **Inter IIT Sports meet held at IIT Madras**. In our contingent of 120 there were over 40 first year students whose enthusiasm and experience, we hope, would provide a source of strength in the coming year. Other activities like nature trails, trekking, and mountaineering are being taken up actively by the students. Student's interest in activities like photography and music are also being actively encouraged and the Institute is doing all it can to provide the enthusiasts of these and other clubs with the requisite funding and equipment. In order to encourage the sports activities among the students, the Institute has introduced Sports Prizes to the medalists in the Inter IIT Sports meet, and twenty sports scholarships of Rs 500/- per month each for achieving outstanding leadership in sports.

Both the general interest student Magazine Meander and the campus news reportage of Spark are sustaining discussion and debate in the student community. These journalistic endeavors have been successful in cultivating a broader awareness in the student community of certain problems. They facilitate an active personal engagement in the system of redressal and also act as a sounding board for student opinion.

The placement scenario this year has witnessed a positive upswing with almost 93% of the B.Tech and 70% of the M. Tech students registered with the student placement office getting offers. A remarkable improvement in M. Tech placement has been observed with more than 100 additional offers compared to the previous years. Placement of the MBA students has been 100 % with substantial increase in the average pay package. Many companies of repute also registered for the on-campus-recruitment program for the first time. From the next academic session, the placement activities will start after the inter IIT Sports meet in December. A new complex comprising Students' Placement Office, Alumni Activities, and a mini convention centre is coming up adjacent to the stadium between Visitors' Hostel and SAC with enthusiastic support from alumni of 1969 and 1980 batch. With improved facilities and a response system in place, we earnestly hope that the coming year would see increased participation of companies and industrial organizations for effective placement and industrial training programs.

## AWARDS AND HONORS

Prof. CNR Rao, who was appointed chair of the Scientific Advisory Council to the Indian Prime Minister in January, has received the Indian Science Award for his contributions to Solid State Chemistry and Materials Science

Shanti Swarup Bhatnagar Award 2004: Prof. V. K. Singh (Chemistry)

B. M. Birla Science Prize (2004) in Chemical Sciences: Prof. F. A. Khan (Chemistry)

B. M. Birla Science Prize (2004) in Chemical Sciences: Prof. S. Verma (Chemistry)

Swarnajayanti Fellowship (2004): Prof. D. Goswami (Chemistry)

Wellcome Trust International Senior Research Fellowship Award, U.K. (2004): Prof. D. Goswami (Chemistry)

Wellcome Trust International Senior Research Fellowship Award, U.K. (2004): Prof. Balaji Prakash. (BSBE)

Distinguished Teacher Award (2004): Prof. A.K. Mallik (Mechanical Engineering)

Fellow of the Indian Academy of Sciences (2004): Prof. V. K. Singh (Chemistry)

Fellow of the Indian Academy of Sciences (2004): Prof. A. Chandra (Chemistry)

Fellow of the Indian Academy of Sciences (2004): Prof. R.C. Budhani (Physics)

Fellow of the National Academy of Sciences (2004): Prof. V. K. Singh (Chemistry)

Fellow of Indian National Academy of Engineering (2005): Prof. V.K. Gupta (Civil Engineering)

Fellow of the Indian National Academy of Engineering (2005): Prof. K. Deb (Mechanical Engineering)

Fellow of the Indian National Academy of Engineering (2005): Prof. A. Ghosh (Electrical Engineering)

C.L. Chandna Award for the year 2004: Profs. D. Kundu & B.V. Rathish Kumar (Mathematics and Statistics)

Dr. V.K. Gupta (Civil Engineering) has been chosen Associate Editor of ASCE Journal of Structural Engineering

Prof. G. Biswas (Mechanical Engineering) has been chosen Associate Editor of the Journal of Heat Transfer, Transactions of the American Society of Mechanical Engineers (ASME) [w.e.f January 2006]

Prof. Sanjay Mittal (Aerospace Engineering) has been elected a member of the Editorial Board of the International Journal for Numerical Methods in Fluids

Professor P Jalote (Computer Science) has been appointed Associate Editor of IEEE Transactions on Software Engineering

Professor P Jalote (Computer Science) has been appointed on the Technical Advisory Board of Microsoft Research Lab, India

Prof. S.C. Srivastava (Electrical Engineering) has been elected Vice Chairperson of Technical Activities of IEEE India Council (2004)

Dr. R. Balasubramaniam (Department of Materials & Metallurgical Engineering) has been appointed a member of the International Advisory Board of the Journal 'Material Science Research India'

Dr. Neeraj Mishra (Mathematics and Statistics) has been chosen for the 2003 Jacob Wofowitz Prize for Theoretical Advances in the Mathematical and Management Sciences for, Simultaneous Multiple Comparison with the Worst and Best

Dr. Bikramjit Basu (Materials & Metallurgical Engineering) has been chosen the Young metallurgist of the year 2004 by the Indian Institute of Metals

Dr. Bikramjit Basu (Materials & Metallurgical Engineering) has been chosen for the INSA Medal for Young Scientist (2005) by the Indian National Science Academy, New Delhi

Professor R. C. Budhani (Physics) has been elected a Fellow of the American Physical Society

Drs. Sanjeev Swami (Industrial & Management Engineering) and A K Agarwal (Mechanical Engineering) have been chosen for the AICTE Career Award for Young Teachers for the Year 2004-2005

Prof. R.P. Singh (Civil Engineering) has been elected Vice President GeoRisk Commission of the International Union of Geodesy and Geophysics; and also a Member, Editorial Board, International Journal of Remote Sensing, Taylor and Francis, UK

Professor R K Ghosh (Computer Science) was appointed chair of the Conference on International Conference on Distributed Computing and Internet Technology, 2004

Professor Manindra Agrawal (Computer Science) presented an invited talk at the 22nd Symposium on Theoretical Aspects of Computer Science, Stuttgart, 2005

Best paper award in the Conference on Intelligent Sensors and Information Processing, ICISIP-2004: Dr. L. Behera and Bharat Sundaram (Electrical Engineering)

Prof. K. Deb (Mechanical Engineering) is an Executive Council Member of the International Society for Genetic and Evolutionary Computation (ISGEC), and also Associate Editor of IEEE Transactions on Evolutionary Computation Journal, and Evolutionary Computation Journal from MIT Press

Prof. V.K. Jain (Mechanical Engineering) has been appointed Editor of the online Journal, International Journal of Manufacturing Technology and Management

Dr. S. Ghorai (Mathematics) visited the University of Glasgow, as a BOYSCAST fellow to work on the Design of efficient Numerical/qualitative methods for solving differential equations

Dr Anish Upadhyaya (Materials and Metallurgical Engineering) received the Young Scientist of the Year 2004 Award by Indian National Science Academy and also G. S. Tendulkar Prize for the overall best oral presentation among Ferrous, Non-Ferrous, Metal Science & Environment Science Groups at the 58th Annual Technical Meeting of the Indian Institute of Metals (2004)

Drs. A.K. Gupta and S. Anantha Ramakrishna (Physics) became Young Associates of the Indian Academy of Sciences, Bangalore

## Organisation

The Indian Institute of Technology, Kanpur is an autonomous organization incorporated under an Act of Parliament in the year 1961, and is wholly financed by the Government of India, under the control of the Ministry of Human Resource Development, Government of India. The authorities constituted under the Act and Statutes, which govern and guide the functioning of the Institute in the areas of administration and academic programmes are the Council of IITs, the Board of Governors assisted by two statutory bodies the Finance Committee in financial matters, and the Building and Works Committee in matters related to construction and repair of buildings and major works. The Senate is assisted by its various Standing Committees. The composition of these constituent bodies is as follows:

### THE IITS COUNCIL

#### **Chairman**

Shri Arjun Singh  
Minister of Human Resource Development  
New Delhi – 110001

#### **Chairmen of the Seven Institutes (Ex-officio)**

Shri Sanjeev Goenka  
Chairman, Board of Governors, IIT Kharagpur  
RPG Group of Companies  
Coal Ltd. 463, Dr AB Road  
Mumbai – 400025

Shri Rahul Bajaj  
Chairman, Board of Governors, IIT Bombay  
Mumbai

Dr. K Kasturirangan  
Chairman, Board of Governors, IIT Madras  
Member, ISRO, Bangalore

Prof. C N R Rao  
Chairman, BOG, IIT Kanpur  
Linus Pauling Research Professor & Honorary President  
Jawaharlal Nehru Centre for Advanced Scientific Research

P O Jakkur  
Bangalore – 560064

Prof. M G K Menon  
Chairman, Board of Governors, IIT Delhi  
Hauz Khas  
New Delhi – 110016

Shri Achyut Kumar Saikia  
Chairman, Board of Governors, IIT Guwahati  
Guwahati

Shri S K Joshi  
Chairman, Board of Governors, IIT Roorkee  
Roorkee

**Directors of Institute (Ex-Officio)**

Prof. S K Dube  
Prof. Ashok Misra  
Prof. M S Ananth  
Prof. S G Dhande  
Prof. D P Kothari  
Prof. Gautam Barua  
Prof. Prem Vrat

Kharagpur  
Bombay  
Madras  
Kanpur  
Delhi  
Guwahati  
Roorkee

**Other Members (Ex-Officio)**

Prof. Arun S Nigavekar  
Chairperson (Officiating)  
University Grants Commission  
Bahadurshah Zafar Marg  
New Delhi – 110002

Dr R A Mashelkar  
Director General  
Council of Scientific & Industrial Research  
Anusandhan Bhawan, Rafi Marg  
New Delhi

Dr Raja Ramanna  
Chairman, Council of IISc Bangalore  
National Institute of Advance Studies

Indian Institute of Science  
Bangalore – 560012

Prof. Goverdhan Mehta  
Director  
Indian Institute of Science  
Bangalore – 560012

**Nominees of the Central Government**

Shri V. S. Pandey (upto 28-10-2004)  
Joint Secretary  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

Shri Ravi Mathur (upto 29-10-2004)  
Joint Secretary  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

Shri S K Ray  
Financial Advisor  
Government of India  
Ministry of Human Resource Development  
Department of Education  
Shastri Bhawan  
New Delhi – 110001

Shri S K Tripathi  
Secretary  
Department of Secondary Education & Higher Education  
Government of India  
Ministry of Human Resource Development  
Shastri Bhawan  
New Delhi – 110001

Shri D C Gupta  
Secretary  
Department of Expenditure  
Ministry of Finance  
Government of India  
Yojana Bhawan  
New Delhi

Shri K K Jaswal  
Secretary  
Department of Information Technology  
Government of India

**Nominee of All-India Council for Technical Education**

Prof. R Natarajan  
Chairman  
AICTE

**Nominees of the Visitor**

Shri N R Narayan Murty  
Chairman  
Infosys Technologies Ltd.  
Bangalore

Dr R Chidambaram  
Principal Scientific Adviser to the GOI  
New Delhi

Prof. P V Indiresan  
Former Director  
IIT Madras

Shri L M Thapar  
Chairman  
Ballarpur Industries



**Three Members of the Parliament (Two from Lok Sabha and one from Rajya Sabha)**

Shri Prithviraj D Chavan  
Member of Parliament (Lok Sabha)  
C-12, Humayun Road  
New Delhi – 110003

Shri M A Kharabela Swain  
Member of Parliament (Lok Sabha)  
166, North Avenue  
New Delhi – 110001

Shri B J Panda  
Member of Parliament (Rajya Sabha)  
295, Gulmohar  
New Delhi

**Secretary**

Shri V. S. Pandey (upto 28-10-2004)  
Joint Secretary  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

Shri Ravi Mathur (from 29-10-2004)  
Jt. Secretary (Technical)  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

## **THE BOARD OF GOVERNORS**

### **Chairman**

Prof. C N R Rao  
Linus Pauling Research Professor & Honorary President  
CSIR Centre of Excellence in Chemistry  
Chemistry & Physics of Materials Unit  
Jawaharlal Nehru Centre for Advanced Scientific Research  
P O Jakkur  
Bangalore – 560064

### **Members**

#### **Four Nominees of the Council of IITs**

Prof. G K Mehta  
Nuclear Science Centre, Aruna Asif Ali Marg,  
New Delhi – 100 067

Prof. S Lele  
Rector  
Institute of Technology  
Banaras Hindu University  
Varanasi – 221005

Shri Anil D Ambani  
Chairman & Managing Director  
Reliance Centre, 3<sup>rd</sup> Floor  
Walchand Hirachand Marg  
Pallar Estate  
Mumbai – 400038

Shri V. S. Pandey [upto 28-10-2004]  
Joint Secretary  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

Shri Ravi Mathur [From 29.10.2004]  
Joint Secretary (Technical)  
Government of India  
Department of Secondary Education & Higher Education  
Ministry of Human Resource Development  
Shastri Bhawan  
New Delhi – 110001

**The Nominees of the Concerned State Government**

Shri P B Sharma [Upto 05.03.2005]  
Principal  
Delhi College of Engineering  
[Govt. of National Capital Territory of Delhi]  
Bawana Road  
New Delhi – 110042

Prof. S S Katiyar [Re-nominated w.e.f. 12.05.2004]  
Vice-Chancellor  
Chhatrapati Shahuji Maharaj University  
Kanpur – 208024

Shri Rakesh Bhan  
Adviser to the Chief Minister  
Chattisgarh Bhawan  
7, Sardar Patel Marg  
New Delhi – 110022

**Director (Ex-Officio)**

Prof. Sanjay G Dhande

**Two Nominees of the Senate**

Prof. V Bansal  
Department of Materials & Metallurgical Engineering  
IIT Kanpur

Prof. Binayak Rath  
Department of Humanities & Social Sciences  
IIT Kanpur

**Secretary**

Prof. N K Sharma  
Professor Incharge (Admin.) &  
Secretary, Board of Governors  
IIT Kanpur

[Upto 03.02.2005]

Dr. Vikram Singh  
Registrar &  
Secretary, Board of Governors  
IIT Kanpur

[From 04.02.2005]

**THE FINANCE COMMITTEE**

**Chairman**

Prof. C N R Rao  
Linus Pauling Research Professor & Honorary President  
CSIR Centre of Excellence in Chemistry  
Chemistry & Physics of Materials Unit  
Jawaharlal Nehru Centre for Advanced Scientific Research  
P. O. - Jakkur  
Bangalore – 560064

**The Nominees of the Central Government**

Shri V K Pipersenia  
Financial Advisor  
Government of India  
Ministry of Human Resource Development  
Department of Education  
Shastri Bhawan  
New Delhi – 110001

[upto 30.08.2004]

Shri S K Ray  
Financial Advisor  
Government of India  
Ministry of Human Resource Development  
Department of Education  
Shastri Bhawan

[From 31.08.2004]

New Delhi – 110001

Shri V. S. Pandey  
Joint Secretary  
Ministry of Human Resource Development  
Government of India  
Department of Secondary Education and Higher Education  
Shastri Bhawan  
New Delhi – 110001

[upto 28-10-2004]

Shri Ravi Mathur  
Joint Secretary (Technical)  
Government of India  
Department of Secondary Education & Higher Education  
Ministry of Human Resource Development  
Shastri Bhawan  
New Delhi – 110001

[From 29.10.2004]

**Nominees of the Board**

Prof. G K Mehta  
Vice Chancellor  
University of Allahabad  
Allahabad – 211001

Prof. Binayak Rath  
Department of Humanities & Social Sciences  
IIT Kanpur

**Director (Ex-Officio)**

Dr S G Dhande

**Secretary**

Prof. N K Sharma  
Professor Incharge (Admin.) &  
Secretary, Board of Governors

[Upto 03.02.2005]

IIT Kanpur

Dr. Vikram Singh  
Registrar &  
Secretary, Finance Committee  
IIT Kanpur

[From 04.02.2005]

## **THE BUILDING AND WORKS COMMITTEE**

### **Chairman**

Prof. S G Dhande  
Director  
IIT Kanpur

### **Members**

Shri S P Singh  
Chief Engineer (Northern Zone)  
Central Works Department  
Uttaranchal – 2, Sector H  
CGO Complex, 3<sup>rd</sup> Floor  
Lucknow – 226024

Shri P B Vijay  
Director General, CPWD (Retired)  
Self Finance Scheme Flat  
A-39/B, DDA Flat Munirka  
New Delhi - 110067

Shri D N Agarwal  
Retd. Chief Engineer (Electrical) CPWD  
M-21, Greater Kailash – II  
New Delhi - 110048

Prof. V Bansal  
Department of Materials & Metallurgical Engineering  
IIT Kanpur

Shri P K Gupta  
Director  
Government of India  
Ministry of Human Resource Development  
Shastri Bhawan  
New Delhi 110001

Prof. Kripa Shanker  
Deputy Director  
IIT Kanpur

Prof. N K Sharma  
Professor Incharge (Administration) &  
Secretary, Building & Works Committee  
IIT Kanpur

[Upto 03.02.2005]

Dr. Vikram Singh  
Registrar &  
Secretary, Building & Works Committee

[From 04.02.2005]

**SENATE**  
**[From 01.04.2004 to 31.03.2005]**

Director & Chairman Senate:  
Prof. S. G. Dhande

Deputy Director:  
Prof. Kripa Shankar

**Members of the Senate:**

**AEROSPACE ENGINEERING (AE):**

Prof. NGR Iyengar  
Prof. Krishna Kumar  
Prof. Vijai Gupta  
Prof. Kunal Ghosh  
Prof. RK Sullery  
Prof. Dayanand Yadav

Prof. E Rathakrishnan  
Prof. C. Venkatesan  
Prof. T.K. Sengupta  
Prof. Sanjay Mittal  
Prof. Sudhir Kamle  
Prof. Kamal Poddar  
Dr. CS Upadhyay

[Upto 30.09.2004]

**BIOLOGICAL SCIENCES & BIO-ENGINEERING (BSBE):**

Prof. Pradip Sinha

**CHEMICAL ENGINEERING (CHE):**

Prof. MS Rao

[Upto 30.06.2004]

Prof. SK Gupta

Prof. Anil Kumar

Prof. Deepak Kunzru

Prof. JP Gupta

Prof. YV Chalapati Rao

[Upto 30.06.2004]

Prof. DP Rao

Prof. RP Singh

[Upto 30.06.2004]

Prof. PK Bhattacharya

Prof. RP Chhabra

Prof. Ashok Khanna

Prof. Ashutosh Sharma

**CHEMISTRY (CHM):**

Prof. SK Dogra

[Upto 30.06.2004]

Prof. N Sathyamurthy

Prof. S Sarkar

Prof. BD Gupta

Prof. YD Vankar

Prof. TK Chandrashekar

Prof. V Chandrasekhar

Prof. RN Mukherjee

Prof. Parimal K Bhardwaj

Prof. (Ms) H Ila

Prof. N.S. Gajbhiye

Prof. P. Gupta Bhaya

Prof. Amalendu Chandra



Prof. Veejendra K Yadav  
Prof. Vinod K Singh  
Prof. S. Manogaran  
Dr. R. Gurunath  
Dr. Faiz Ahmed Khan

[Upto 30.11.2004]  
[From 01.10.2004]

**CIVIL ENGINEERING (CE):**

Prof. Ashwini Kumar  
Prof. Malay Chaudhari  
Prof. BC Raymahashay  
Prof. B.R. Marwah  
Prof. PK Basudhar  
Prof. Sudhir K Jain  
Prof. Sarvesh Chandra  
Prof. Bithin Datta  
Prof. Vinod Tare  
Prof. Umesh Dayal  
Prof. Ramesh Pratap Singh  
Prof. Vinay Kumar Gupta  
Prof. S.K. Chakrabarti  
Prof. CVR Murty  
Prof. Mukesh Sharma  
Dr. Purnendu Bose  
Dr. Onkar Dikshit

[Upto 30.06.2004]  
[Upto 30.06.2004]

[Upto 30.06.2004]

[Upto 30.09.2004]

**COMPUTER SCIENCE & ENGINEERING (CSE):**

Prof. RMK Sinha  
Prof. Somnath Biswas  
Prof. HC Karnick  
Prof. Pankaj Jalote  
Prof. TV Prabhakar  
Prof. Sanjeev Kumar Aggarwal  
Prof. Sanjeev Saxena  
Prof. Rajat Moona  
Prof. Manindra Agrawal  
Prof. Amitabha Mukherjee  
Prof. Dheeraj Sanghi  
Prof. Phalguni Gupta  
Prof. R.K. Ghosh

Prof. Ajai K Jain

**ELECTRICAL ENGINEERING (EE):**

Prof. S Kar

Prof. Vishwanath Sinha

[Upto 31.01.2005]

Prof. SR Doradla

[Upto 30.06.2004]

Prof. KE Hole

[Upto 30.06.2004]

Prof. Avinash Joshi

Prof. Ravindra Arora

Prof. KR Srivathsan

Prof. GC Ray

Prof. Arindam Ghosh

Prof. M Sachidananda

Prof. SC Srivastava

Prof. Anjan Kumar Ghosh

Prof. Prem Kumar Kalra

Prof. Shafi Qureshi

Prof. Sumana Gupta

Prof. Utpal Das

Prof. Govind Sharma

Prof. Alope K Dutta

Prof. Joseph John

Prof. Pradip Sircar

Prof. Animesh Biswas

Dr. A.K. Chaturvedi

[Upto 30.11.2004]

**HUMANITIES & SOCIAL SCIENCES (HSS):**

Prof. TVS Ramamohan Rao

Prof. BN Patnaik

[Upto 30.06.2004]

Prof. (Ms) Lilavati Krishnan

Prof. Binayak Rath

Prof. AK Sharma

Prof. KK Saxena

Prof. AK Sinha

Prof. Amit Ray

Prof. BH Boruah

Prof. Binay Kumar Pattnaik

Prof. G. Neelakantan

Dr. Munmun Jha

[From 01.12.2004]

**INDUSTRIAL & MANAGEMENT ENGINEERING (IME):**

Prof. AK Mittal  
Prof. Tapan P Bagchi  
Prof. Kripa Shanker  
Prof. Arun P Sinha  
Prof. R.R.K. Sharma  
Prof. Jayanta Chatterjee  
Prof. NK Sharma  
Dr. Rahul Varman

[From 01.10.2004]

**MATERIALS & METALLURGICAL ENGINEERING (MME):**

Prof. A. Ghosh  
Prof. G.S. Upadhyaya  
Prof. SP Mehrotra  
Prof. RK Ray  
Prof. RC Sharma  
Prof. Shant P Gupta  
Prof. RK Dube  
Prof. Brahma Deo  
Prof. SC Koria  
Prof. Sanjeev Bhargava  
Prof. N Chakraborti  
Prof. Dipak Mazumdar  
Prof. Virendra Bansal  
Prof. V.S.R. Murthy

[Upto 10.07.2004]

Prof. Sandeep Sangal  
Prof. Rajiv Shekhar  
Prof. Barada K Mishra  
Prof. R. Balasubramaniam  
Dr. Monica Katiyar

[From 01.12.2004]

**MATHEMATICS (MTH):**

Prof. UB Tewari  
Prof. MR Sridharan  
Prof. PC Joshi  
Prof. (Ms) Prabha Sharma

Prof. RKS Rathore  
Prof. (Ms) Manjul Gupta  
Prof. MK Kadalbajoo  
Prof. Prawal Sinha  
Prof. GP Kapoor  
Prof. Peeyush Chandra  
Prof. V Raghavendra  
Prof. ID Dhariyal  
Prof. (Ms) Shobha Madan  
Prof. Debashis Kundu  
Prof. Pravir Kumar Dutt

**MECHANICAL ENGINEERING (ME):**

Prof. Amitabha Ghosh  
Prof. SN Bandyopadhyay  
Prof. B Sahay  
Prof. AK Mallik  
Prof. Ashok Sengupta  
Prof. Prashant Kumar  
Prof. BP Singh  
Prof. Manohar Prasad  
Prof. BN Banerjee  
Prof. MS Kalra  
Prof. SG Dhande  
Prof. VK Jain  
Prof. NN Kishore  
Prof. Himanshu Hatwal  
Prof. PM Dixit  
Prof. Keshav Kant Saxena  
Prof. K Muralidhar  
Prof. Gautam Biswas  
Prof. Prabhat Munshi  
Prof. BP Pundir  
Prof. S.K. Chaudhury  
Prof. N.S. Vyas  
Prof. V. Eswaran  
Prof. Kalyanmoy Deb  
Prof. P.S. Ghoshdastidar

[Upto 30.06.2004]

[Upto 30.06.2004]

[Upto 30.06.2004]

**MATERIALS SCIENCE PROGRAMME (MSP):**

Prof. D.C Agarwal  
Prof. Jitendra Kumar  
Prof. KN Rai

**PHYSICS (PHY):**

Prof. SC Agarwal  
Prof. K. Banerjee  
Prof. AK Majumdar  
Prof. SD Joglekar  
Prof. Keshawa Shahi  
Prof. Vijai A Singh  
Prof. Rajendra Prasad  
Prof. Debashish Chowdhury  
Prof. RC Budhani  
Prof. Y.N. Mohapatra  
Prof. Avinash Singh  
Prof. Deshdeep Sahdev  
Prof. V.N. Kulkarni  
Prof. Manoj K Harbola  
Prof. Satyendra Kumar  
Prof. V Ravishankar  
Prof. Pankaj Jain  
Prof. H C Verma

**LASER TECHNOLOGY PROGRAMME (LTP) : Prof. R K Thareja**

<b>LIBRARIAN</b>	:	Dr. Bhooshan Lal	[Upto 28.02.2005]
		Mr. R. Mishra	[From 01.03.2005]
<b>SECRETARY, SENATE</b>	:	Prof. N K Sharma	[Upto 03.02.2005]
		Dr. Vikram Singh	[From 04.02.2005]

**THREE NOMINEES OF THE CHAIRMAN, BOARD OF GOVERNORS  
(From 01.11.2003 to 31.10.2004)**

Prof. J. Patterson  
104, Ashray Apartment  
7/115, Swaroop Nagar  
Kanpur - 208002

Prof. K.P. Singh  
Director  
H.B.T.I.  
Kanpur - 208002

Prof. V.N. Seth  
17/3, Mall Road  
Kanpur – 208001

**THREE NOMINEES OF THE CHAIRMAN, BOARD OF GOVERNORS  
(From 01.11.2004 to 31.10.2005)**

1. Prof. S K Katiyar  
Principal  
G S V M Medical College  
Kanpur-208002
2. Prof. S K Awasthi  
H.B.T.I.  
Kanpur-208002
3. Prof. Pervez E Deen  
Principal  
Christ Church College  
Kanpur-208001

**SENATE STANDING COMMITTEES:  
[From 01.10.2003 to 30.09.2004]**

**(1) SENATE EDUCATIONAL POLICY COMMITTEE:**

(a) MEMBERS (EX-OFFICIO):

1. Chairman, Senate : Chairman
2. Chairman, SPGC : Dr. YVC Rao, CHE  
[From 01.10.2003 to 19.04.2004]  
: Dr. Sanjeev Garg, CHE  
[From 20.04.2004 to 21.04.2004]  
  
: Dr. Mukesh Sharma, CE  
[From 22.04.2004 to 05.05.2004]  
: Dr. RK Sullerey, AE  
[From 06.05.2004 to 30.09.2004]
3. Chairman, SUGC : Dr. CS Upadhyay, AE

(b) SENATE NOMINEES:

1. Dr. S. Biswas CSE
2. Dr. R.K. Thareja PHY :
- Convener
3. Dr. L. Krishnan HSS

(c) STUDENTS' SENATE NOMINEES:

1. Ms. Karishma Jain (Y0160)
2. Mr. Gajera C Ravjibhai (Y211805)

**(2) SENATE ELECTIONS COMMITTEE:**

SENATE NOMINEES:

1. Dr. Surajit Sinha HSS
2. Dr. V. Eswaran ME :
- Chairman
3. Dr. M. Harbola PHY

**(3) SENATE LIBRARY COMMITTEE:**

LIBRARY:

Librarian

SENATE NOMINEES:

1. Dr. A. Joshi	EE
2. Dr. D. Kundu	MATH
3. Dr. V. Ravi Shankar	PHY
4. Dr. S. Guha	CE

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES:

1. Dr. D. Das	AE	
2. Dr. R. Sankaramakrishnan	BSBE	
3. Dr. Nishith Verma	CHE	
4. Dr. V.K. Yadav	CHM	
5. Dr. Rajiv Sinha	CE	
6. Dr. Sanjeev Saxena	CSE	:
Chairman		
7. Dr. Nandini Gupta	EE	
8. Dr. Mini Chandran	HSS	
9. Dr. Anoop Singh	IME	
10. Dr. S. Sivaprakasam	LTP	
11. Dr. A. Sengupta	ME	
12. Dr. R.K. Dube	MME	
13. Dr. Y.N. Mohapatra	MSP	
14. Dr. V. Raghavendra	MATH	
15. Dr. A. Sengupta	NET	
16. Dr. R. Prasad	PHY	

(d) STUDENTS' SENATE NOMINEES:

Ms. Karishma Jain	(Y0160)
Mr. Rohit Khare	(Y1303)

**(4) SENATE POST-GRADUATE COMMITTEE:**

MEMBER (EX-OFFICIO):

Dr. Binayak Rath HSS



(b) SENATE NOMINEE:

1. Dr. U. Das EE

NOMINEES OF DEPARTMENTS/PROGRAMMES:

1. Dr. R.K. Sullerey AE  
 2. Dr. S. Ganesh BSBE  
 3. Dr. Y.V.C. Rao CHE :

Chairman

4. Dr. T. Chakraborty CHM  
 5. Dr. Saumyen Guha CE  
 6. Dr. Mukesh Sharma EEMP  
 7. Dr. Somenath Biswas CSE  
 8. Dr. Laxmidhar Behra EE  
 9. Dr. M. Jha HSS  
 10. Dr. Sanjeev Swami IME  
 11. Dr. Harshwardhan Wanare LTP  
 12. Dr. N.V. Reddy ME  
 13. Dr. D. Gupta MME  
 14. Dr. K.N. Rai MSP  
 15. Dr. A.K. Maloo MATH  
 16. Dr. P. Munshi NET  
 17. Dr. P. Jain PHY  
 18. Dr. Prashant Kumar DES

STUDENTS' SENATE NOMINEES:

1. Mr. Brajesh Pandey (Y120963)  
 2. Mr. Ambarish Kunwar (Y110961)  
 3. Mr. Gaurav Sharma (Y210409)  
 4. Mr. Ramesh Kumar Sonkar (Y3104118)

**(5) SENATE RULES COMMITTEE:**

MEMBER (EX-OFFICIO):

Parliamentarian of the Senate:  
 Dr. Peeyush Chandra, MTH

- (b) SENATE NOMINEES:
- |                             |      |   |
|-----------------------------|------|---|
| 1. Dr. V. Bansal            | MME  |   |
| 2. Dr. J. Kumar<br>Chairman | MSP  | : |
| 3. Dr. P. Chandra           | MATH |   |

**(6) SENATE SCHOLARSHIPS & PRIZES COMMITTEE:**

- (a) MEMBERS (EX-OFFICIO):
- |                                    |                         |
|------------------------------------|-------------------------|
| Head Institute Counselling Service | : Dr. Onkar Dikshit, CE |
| Chairman, APEC                     | : Dr. RC Sharma, MME    |
| Dean of Students' Affairs          | : Dr. C Venkatesan, AE  |

- (b) SENATE NOMINEES:
- |                            |     |   |
|----------------------------|-----|---|
| 1. Dr. Manohar Prasad      | ME  |   |
| 2. Dr. D. Gupta            | CSE |   |
| 3. Dr. P.K. Bhattacharya   | CHE |   |
| 4. Dr. P. Bose<br>Chairman | CE  | : |

- (c) STUDENTS' SENATE NOMINEES:
- |                       |         |
|-----------------------|---------|
| 1. Ms. Karishma Jain  | (Y0160) |
| 2. Mr. Vyom Kr. Gupta | (Y1409) |
| 3. Mr. Sandeep Gupta  | (Y1316) |

**(7) SENATE STUDENTS' AFFAIRS COMMITTEE:**

- MEMBERS (EX-OFFICIO):
- |                                     |                         |
|-------------------------------------|-------------------------|
| Head, Institute Counselling Service | : Dr. Onkar Dikshit, CE |
| Chairman, APEC                      | : Dr. RC Sharma, MME    |
| Representative of COW               | : Dr. D Bahuguna, MTH   |
| Dean of Students' Affairs           | : Chairman, Ex-Officio  |

- SENATE NOMINEES:
- |                   |      |
|-------------------|------|
| Dr. A. Chaturvedi | EE   |
| Dr. N. Mishra     | MATH |
| Dr. B.N. Banerjee | ME   |

- STUDENTS' SENATE NOMINEES:

- |                           |           |
|---------------------------|-----------|
| 1. Ms. Karishma Jain      | (Y0160)   |
| 2. Mr. Rahul Luthra       | (Y0255)   |
| 3. Mr. Aditya Kumar       | (Y0022)   |
| 4. Mr. V. Shreeniwas Iyer | (Y211128) |

**(8) SENATE UNDERGRADUATE COMMITTEE:**

(a) MEMBER (EX-OFFICIO):

Dr. Sanjay Mittal AE

SENATE NOMINEE:

Dr. B. Datta CE

NOMINEES OF DEPARTMENTS/PROGRAMMES:

Chairman	1. Dr. C.S. Upadhyay	AE	:
	2. Dr. K. Subramaniam	BSBE	
	3. Dr. R.P. Singh	CHE	
	4. Dr. S.Verma	CHM	
	5. Dr. Vinay Kumar Gupta	CE	
	6. Dr. Malay Chaudhuri	EEMP	
	7. Dr. Deepak Gupta	CSE	
	8. Dr. A.R. Harish	EE	
	9. Dr. Achla Raina	HSS	
	10. Dr. A.P. Sinha	IME	
	11. Dr. Asima Pradhan	LTP	
	12. Dr. P.K. Panigrahi	ME	
	13. Dr. R.C. Sharma	MME	
	14. Dr. Jitendra Kumar	MSP	
	15. Dr. G. Santhanam	MATH	
	16. Dr. M.S. Kalra	NET	
	17. Dr. S. Raychaudhuri	PHY	
	18. Mr. Satyaki Roy	DES	

STUDENTS' SENATE NOMINEES:

- |                       |         |
|-----------------------|---------|
| 1. Mr. Harish Awasthi | (Y2163) |
| 2. Mr. Ravi Kumar     | (Y1287) |
| 3. Mr. Rahul Luthra   | (Y0255) |
| Mr. Pradeep Kumar     | (Y2516) |

**SENATE STANDING COMMITTEES:  
[From 01.10.2004 to 30.09.2005]**

**(1) SENATE EDUCATIONAL POLICY COMMITTEE:**

MEMBERS (EX-OFFICIO):

1. Chairman, Senate	:	Chairman (Ex-Officio)
2. Chairman, SPGC	:	
3. Chairman, SUGC	:	

(b) SENATE NOMINEES:

1. Dr. I D Dhariyal	MTH	
2. Dr. P Gupta Bhaya	CHM	
3. Dr. S Mittal Convenor	AE	:

(c) STUDENTS' SENATE NOMINEES:

1. Mr. Brajesh Pandey	Y120963
2. Mr. Saksham Agrawal	Y1310

**(2) SENATE ELECTIONS COMMITTEE:**

SENATE NOMINEES:

1. Dr. V Eswaran	ME	:Outgoing Chairperson
2. Dr. R Varman	IME	: Chairman
3. Dr. A Biswas	EE	

**(3) SENATE LIBRARY COMMITTEE:**

LIBRARY:

Librarian

SENATE NOMINEES:

1. Dr. D Chowdhury	PHY
2. Dr. J John	EE
3. Dr. P M Dixit	ME
4. Dr. P Shunmugraj	MTH

NOMINEES OF DEPARTMENTS/PROGRAMMES:

1. Dr. D P Mishra	AE	
2. Dr. K Subramaniam	BSBE	
3. Dr. D P Rao	CHE	
4. Dr. Faiz Ahmed Khan	CHM	:
Chairman		
5. Dr. Rajiv Sinha	CE	
6. Dr. T V Prabhakar	CSE	
7. Dr. Nandini Gupta	EE	
8. Dr. K K Saxena	HSS	
9. Dr. Jayanta Chatterjee	IME	
10. Dr. S Sivaprakasam	LTP	
11. Dr. A. Sengupta	ME	
12. Dr. R K Dube	MME	
13. Dr. D C Agrawal	MSP	
14. Dr. Neeraj Mishra	MATH	
15. Dr. A. Sengupta	NET	
16. Dr. R Prasad	PHY	
17. Dr. Bisakh Bhattacharya	M Des	

(d) STUDENTS' SENATE NOMINEES:

Mr. K V Narasimha Rao	Y1172
Mr. Rohit Garg	Y2327

**(4) SENATE POST-GRADUATE COMMITTEE:**

MEMBER (EX-OFFICIO):

Dr. R K Sullerey Chairman	AE	:	Outgoing
------------------------------	----	---	----------

SENATE NOMINEE:

Dr. Pradip Sircar	EE	:	Chairman
-------------------	----	---	----------

NOMINEES OF DEPARTMENTS/PROGRAMMES:

1. Dr. D Yadav	AE
2. Dr. Balaji Prakash	BSBE
3. Dr. Sanjeev Garg	CHE
4. Dr. R Gurunath	CHM
5. Dr. Durgesh C Rai	CE
6. Dr. Sachchida Nand Tripathi	EEMP
7. Dr. Rajat Moona	CSE
8. Dr. L Behera	EE
9. Dr. G Neelakantan	HSS
10. Dr. Sanjeev Swami	IME
11. Dr. Harshwardhan Wanare	LTP
12. Dr. Subrata Sarkar	ME
13. Dr. Bikramjit Basu	MME
14. Dr. K N Rai	MSP
15. Dr. D Kundu	MATH
16. Dr. M S Kalra	NET
17. Dr. P Jain	PHY
18. Dr. Prashant Kumar	MDES

STUDENTS’ SENATE NOMINEES:

1. Mr. Ambarish Kunwar	Y110961
2. Mr. Brajesh Pandey	Y120963
3. Mr. Sathyaraj V	Y210063
4. Mr. Ramesh Kumar Sonkar	Y3104118

**(5) SENATE RULES COMMITTEE:**

MEMBER (EX-OFFICIO):

Parliamentarian of the Senate

SENATE NOMINEES:

- |                      |     |            |
|----------------------|-----|------------|
| 1. Dr. Y N Mohapatra | PHY | : Chairman |
| 2. Dr. S Gupta       | EE  |            |
| 3. Dr. R Shekhar     | MME |            |

**(6) SENATE SCHOLARSHIPS & PRIZES COMMITTEE:**

MEMBERS (EX-OFFICIO):

Head Institute Counselling Service  
Chairman, APEC  
Dean of Students' Affairs

SENATE NOMINEES:

- |                            |     |                     |
|----------------------------|-----|---------------------|
| 1. Dr. Purnendu Bose       | CE  | : Outgoing Chairman |
| 2. Dr. Manoj Kumar Harbola | PHY | : Chairman          |
| 3. Dr. B H Boruah          | HSS |                     |
| 4. Dr. P S Ghoshdastidar   | ME  |                     |

**(c) STUDENTS' SENATE NOMINEES:**

- |                       |         |
|-----------------------|---------|
| 1. Mr. Brajesh Pandey | Y120963 |
| 2. Mr. Sandeep Gupta  | Y1316   |
| 3. Mr. Chetan Swarup  | Y1111   |

**(7) SENATE STUDENTS' AFFAIRS COMMITTEE:**

MEMBERS (EX-OFFICIO):

Head, Institute Counselling Service  
Chairman, APEC  
Representative of COW  
Dean of Students' Affairs : Chairman, Ex-Officio

SENATE NOMINEES:

- |             |     |
|-------------|-----|
| Dr. P Gupta | CSE |
|-------------|-----|

Dr. S Qureshi	EE
Dr. A Raina	HSS
STUDENTS' SENATE NOMINEES:	
Mr. Udai Singh Pawar	Y0362
Mr. Ambarish Kunwar	Y110961
Mr. Joe Verghese Yeldho	Y220062
Mr. K V Narasimha Rao	Y1172

**(8) SENATE UNDERGRADUATE COMMITTEE:**

MEMBER (EX-OFFICIO):

Dr. C S Upadhyay AE : Outgoing Chairman

SENATE NOMINEE:

Dr. Alope Dutta EE

NOMINEES OF DEPARTMENTS/PROGRAMMES:

1. Dr. E Rathakrishnan	AE
2. Dr. Sandeep Kumar	BSBE
3. Dr. Nitin Kaistha	CHE
4. Dr. J K Bera	CHM
5. Dr. Bharat Lohani	CE
6. Dr. Purnendu Bose	EEM
7. Dr. Deepak Gupta	CSE
8. Dr. A R Harish	EE
9. Mr. Satyaki Roy	HSS
10. Dr. A P Sinha	IME
11. Dr. Asima Pradhan	LTP
12. Dr. S K Choudhury	ME
13. Dr. Anish Upadhyaya	MME
14. Dr. Jitendra Kumar	MSP
15. Dr. M Gupta	MATH
16. Dr. A Sengupta	NET
17. Dr. S Raychaudhuri	PHY : Chairman
18. Mr. Satyaki Roy	DES

STUDENTS' SENATE NOMINEES:

1. Mr. Vineet Singh	Y2425
2. Mr. T V Avinaash Chandra	Y1372



3. Mr. Akash Gupta	Y2035
4. Mr. Rajiv Ranjan	Y1278

## **The Faculty**

There are thirteen departments and five interdisciplinary programmes offering degrees at various levels in the Institute.

The faculty strength of the Institute as on March 31, 2005 was 306. Out of these 18 are shared by two departments on a half time basis. There were also 45 Research Engineers/ Scientific Officers and Design Engineers, who are treated at par with faculty, on March 31, 2005. 21 faculty members retired/resigned/expired during the period. The Institute also had a number of Visiting Faculty members: 9 Visiting Faculty and 2 Adjunct Faculty joined and 3 left during the year. The Visiting/Adjunct Faculty contributes significantly and they also get an opportunity to know the Institute.

During the year, the Institute was able to attract a number of distinguished personalities from the academic and research fields to serve as Distinguished Honorary Professors in the Institute. In addition a number of Emeritus Professor and Emeritus Fellows continue to serve the Institute. The Institute acknowledges their contributions to the growth of the Institute.

Two Research Associates were appointed during the year. The Research Associates stay for a period of six months to two years.

### **DISTNIGUISHED HONARARY PROFESSORS**

Professor T. V. Ramakrishnan  
Professor G. K.Mehta  
Professor Shiv G. Kapoor  
Professor Komal Ehmann  
Professor Marc Madau  
Professor Nasser Munjee  
Professor Ranga Kamunduri  
Professor D. D. Bhawalkar  
Professor D. Roth  
Professor Ranjit Makkuni

### **EMERITUS PROFESSORS**

Professor N. G. R.Iyengar

Professor Amitabha Ghosh  
Professor A. K. Majumdar  
**EMERITUS FELLOWS**  
Professor S. Kar

**VISITING PROFESSOR**  
Professor G. N. Mathur

**ADJUNCT FACULTY**  
Professor R. Gopa Kumar  
Professor A. Ajaya Ghosh  
Professor Pravin Bhagwat  
Professor Amitava Das Gupta  
Professor K. N. Abraham

**AEROSPACE ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 20**  
**EXISTING STRENGTH : 18+1HT**

PROFESSOR (Rs.18400-500-22400)

1. 3161 Krishna Kumar
2. 3162 Vijay Gupta
3. 3159 K Ghosh
4. 1798 R K Sullerey
5. 4041 Dayanand Yadav
6. 4458 E Rathakrishnan
7. 4694 C Venkatesan
8. 4581 T K Sengupta
9. 4285 Sudhir Kamle
10. 4664 Kamal Poddar
11. 4696 Sanjay Mittal

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 1830 V K Gupta
2. 4660 Ashish Tewari
3. 4709 A K Ghosh

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4733 D P Mishra
2. 4785 C S Upadhyay
3. 4958 Abhijit Kushari
4. 4993 Debopam Das
5. \*5129 Sivasambu Mahesh

VISITING FACULTY

Dr. T.G. Pai

**BIOLOGICAL SCIENCE & BIO-ENGINEERING**

**SANCTIONED STRENGTH : --**

**EXISTING STRENGTH : 07+1HT**

PROFESSOR (Rs.18400-500-22400)

1. 4959 Pradip Sinha

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 5119 Ashok Kumar

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. \*4876 R Gurunath
2. 5005 R Sankararamakrishnan
3. 5009 K Subramaniam
4. 5020 Subramaniam Ganesh
5. 5023 Balaji Prakash
6. 5103 Dhirendra S Katti

**CHEMICAL ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 32**

**EXISTING STRENGTH : 17**

**PROFESSOR (Rs.18400-500-22400)**

1. 3113 S K Gupta
2. 2432 Anil Kumar
3. 3314 Deepak Kunzru
4. 3064 J P Gupta
5. 3604 D P Rao
6. 3754 P K Bhattacharya
7. 4244 R P Chhabra
8. 4045 Ashok Khanna
9. 4562 Ashutosh Sharma

**ASSOCIATE PROFESSOR (Rs.16400-450-20000)**

1. 4750 Goutam Deo
2. 4794 Nishith Verma

**ASSISTANT PROFESSOR (Rs.12000-420-18300)**

1. 5011 V Shankar
2. 5016 Nitin Kaistha
3. 5021 Sanjeev Garg
4. 5064 Rajdip Bandyopadhyaya
5. 5106 Animangsu Ghatak
6. 5114 Yogesh Moreshwar Joshi

**CHEMISTRY DEPARTMENT**

**SANCTIONED STRENGTH : 30**

**EXISTING STRENGTH : 27+1HT**

**PROFESSOR (Rs.18400-500-22400)**

1. 3827 N Sathyamurthy

2. 3791 S Sarkar
3. 3990 B D Gupta
4. 4008 Y D Vankar
5. 4325 T K Chandrashekar
6. 4394 V Chandrasekhar
7. 4448 R N Mukherjee
8. 4462 P K Bharadwaj
9. 4724 (Ms) H Ila
10. 4047 N S Gajbhiye
11. 3112 P Gupta Bhaya
12. 4460 S Manogaran
13. 4583 Veejendra K Yadav
14. 4596 Vinod K Singh
15. 4676 Amalendu Chandra

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4699 Tapas Chakraborty
2. 4759 S S Manoharan
3. 4746 Faiz Ahmed Khan
4. 4760 K Srihari
5. 4789 Sandeep Verma
6. 4816 J N Moorthy
7. 5071 Debabrata Goswami

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. \*4876 R Gurunath
2. 5024 Manas Kumar Ghorai
3. 5038 Jitendra K Bera
4. 5056 M L N Rao
5. 5127 Sankar Prasad Rath

LECTURER (Rs.10000-325-15200)

1. 5091 Anantharaman Ganapathi

**CIVIL ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 33**

**EXISTING STRENGTH : 26**

**PROFESSOR (Rs.18400-500-22400)**

1. 3462 Ashwini Kumar
2. 4068 P K Basudhar
3. 4209 Sudhir K Jain
4. 4399 Sarvesh Chandra
5. 4546 Bithin Datta
6. 4295 Vinod Tare
7. 4303 Ramesh P Singh
8. 4586 V K Gupta
9. 4464 S K Chakrabarti
10. 4799 Mukesh Sharma
11. 4657 C V R Murty

**ASSOCIATE PROFESSOR (Rs.16400-450-20000)**

1. 4690 Sudhir Misra
2. 4798 Rajesh Srivastava
3. 4662 Onkar Dikshit
4. 4663 Partha Chakroborty
5. 4695 Rajiv Sinha
6. 4784 Soumyen Guha
7. 4775 Purnendu Bose

**ASSISTANT PROFESSOR (Rs.12000-420-18300)**

1. 4793 Ashu Jain
2. 4871 Animesh Das
3. 4978 Javed N Malik
4. 4995 Durgesh C Rai
5. 5026 Bharat Lohani
6. 5057 Sachidanand Tripathi
7. 5079 Pranab Kumar Mohapatra

LECTURER (Rs.10000-325-15200)

1. 5037 Nihar Ranjan Patra

VISITING FACULTY

Dr. S. Jerath

Dr. Kumar Neeraj Jha

**COMPUTER SCIENCE & ENGINEERING**

**SANCTIONED STRENGTH : 18**

**EXISTING STRENGTH : 20 + 2 HT**

PROFESSOR (Rs.18400-500-22400)

1. \*3858 S G Dhande
2. \*3541 R M K Sinha
3. 3972 Somenath Biswas
4. 4297 H C Karnick
5. 4540 Pankaj Jalote
6. 4370 T V Prabhakar
7. 4563 S K Aggarwal
8. 4490 Sanjeev Saxena
9. 4628 Rajat Moona
10. 4754 Manindra Agrawal
11. 4627 Amitabha Mukerjee
12. 4300 Ratan Kumar Ghosh
13. 4385 Phalguni Gupta
14. 4645 Ajai K Jain
15. 4668 Dheeraj Sanghi

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 5010 Shashank K Mehta
2. 4722 Deepak Gupta
3. 4934 Anil Seth
4. 4762 Sumit Ganguly

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 5051 Bhaskaran Raman
2. 5081 Pabitra Mitra
3. 5112 Mainak Chaudhuri

**ELECTRICAL ENGINEERING**

**SANCTIONED STRENGTH : 53**

**EXISTING STRENGTH : 32 + 2 HT**

PROFESSOR (Rs.18400-500-22400)

1. \*3541 R M K Sinha
2. 3927 Avinash Joshi
3. 3199 Ravindra Arora
4. 4046 K R Srivathsan
5. 4292 G C Ray
6. 4293 Arindam Ghosh
7. 4326 M Sachidananda
8. 4495 S C Srivastava
9. 4667 Anjan Kumar Ghosh
10. 4486 Prem Kumar Kalra
11. 4691 Shafi Qureshi
12. 3873 (Ms) Sumana Gupta
13. 4372 Govind Sharma
14. \*4687 Utpal Das
15. 4566 A K Dutta
16. 3999 Joseph John
17. 4652 Animesh Biswas
18. 4478 Pradip Sircar

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4489 R K Bansal
2. 4670 Baquer Mazhari
3. 4745 S Umesh
4. 4827 A K Chaturvedi



5. 5003 S N Singh
6. 4776 Shyama P Das

**ASSISTANT PROFESSOR (Rs.12000-420-18300)**

1. 4771 Yatindra N Singh
2. 4833 K S Venkatesh
3. 4938 K Vasudevan
4. 4988 Laxmidhar Behera
5. 5012 Parthasarathi Sensarma
6. 5013 A R Harish
7. 5015 (Ms) Nandini Gupta
8. 5111 Adrish Banerjee
9. 5113 S Sunder Kumar Iyer
10. 5130 Kameswari Chebrolu

**HUMANITIES & SOCIAL SCIENCES**

**SANCTIONED STRENGTH : 31**  
**EXISTING STRENGTH : 20+1HT**

**PROFESSOR (Rs.18400-500-22400)**

1. 3838 (Ms) Lilavati Krishnan
2. 3989 Binayak Rath
3. 3983 A K Sharma
4. 4373 K K Saxena
5. 4016 A K Sinha
6. 3837 Amit Ray
7. 4375 B H Boruah
8. 4791 B K Pattnaik
9. 4729 G Neelakanthan

**ASSOCIATE PROFESSOR (Rs.16400-450-20000)**

1. 4488 Surajit Sinha
2. 4700 (Ms) Achla M Raina
3. 4702 (Ms) Shikha Dixit

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4773 Munmun Jha
2. 4774 C A Tomy
3. 4927 (Ms) Mini Chandran
4. 4957 (Ms) Suchitra Mathur
5. 5075 P M Prasad
6. 5076 T Ravichandran
7. 5078 Sanjay Kumar Singh

LECTURER (Rs.10000-325-15200)

1. \*4976 Satyaki Roy
2. 5077 Amman Madan

VISITING FACULTY

Dr. V.R.Manoj

**INDUSTRIAL & MANAGEMENT ENGINEERING**

**SANCTIONED STRENGTH : 18**

**EXISTING STRENGTH : 16**

PROFESSOR (Rs.18400-500-22400)

1. 3432 A K Mittal
2. 3977 N K Sharma
3. 4380 T P Bagchi
4. 3792 Kripa Shanker
5. 4042 Arun P Sinha
6. 4525 R R K Sharma
7. 4961 Jayanta Chatterjee

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4701 Rahul Varman

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4830 Sanjeev Swami
2. 4865 (Ms) Veena Bansal
3. 4968 Anoop Singh
4. 5018 Rohit Varman
5. 5031 Parthasarathy Ramachandran
6. 5073 Raghu Nandan Sengupta
7. 5142 Peeyush Mehta
8. 5147 B V Phani

**MATERIALS & METALLURGICAL ENGINEERING**

**SANCTIONED STRENGTH : 32**

**EXISTING STRENGTH : 20**

PROFESSOR (Rs.18400-500-22400)

1. 1932 S P Mehrotra
2. 3845 R C Sharma
3. 3846 Shant P Gupta
4. 3763 R K Dube
5. 4182 Brahma Deo
6. 4245 S C Koria
7. 4524 S Bhargava
8. 4382 Dipak Mazumdar
9. 3195 Virendra Bansal
10. 4565 Rajiv Shekhar
11. 4597 Sandeep Sangal
12. 4571 R Balasubramaniam
13. 4665 Barada K Mishra

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4790 Deepak Gupta
2. 4796 (Ms) Monica Katiyar

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4919 Anish Upadhyaya

2. 4977 Bikaramjit Basu
3. 5034 Ashish Garg
4. 5072 Gauthama
5. 5116 Rajesh Prasad

**MATHEMATICS & STATISTICS DEPARTMENT**

**SANCTIONED STRENGTH : 36**

**EXISTING STRENGTH : 30**

**PROFESSOR (Rs.18400-500-22400)**

1. 2078 U B Tewari
2. 3419 M R Sridharan
3. 3407 R K S Rathore
4. 3772 (Ms) Manjul Gupta
5. 3739 M K Kadalbajoo
6. 3773 Prawal Sinha
7. 3776 G P Kapoor
8. 4058 Peeyush Chandra
9. 4074 V Raghavendra
10. 3824 I D Dhariyal
11. 4290 (Ms) Shobha Madan
12. 4584 Debasis Kundu
13. 4449 Pravir Kumar Dutt

**ASSOCIATE PROFESSOR (Rs.16400-450-20000)**

1. 4707 B V Rathish Kumar
2. 4782 D Bahuguna
3. 4726 Neeraj Misra
4. 4656 P Shunmugaraj
5. 4734 Arbind Kumar Lal
6. 4751 Srikanth K Iyer

**ASSISTANT PROFESSOR (Rs.12000-420-18300)**

1. 4537 (Ms) Aparna Dar
2. 4781 (Ms) Mohua Banerjee
3. 4803 Alok Kumar Maloo

4. 4822 G Santhanam
5. 4832 (Mrs) Rama Rawat
6. 4870 S Ghorai
7. 4930 Swagato Kumar Ray
8. 5029 Joydeep Dutta
9. 5036 Shalabh

LECTURER (Rs.10000-325-15200)

1. 5121 (Ms) Nandini Nilakantan
2. 5128 Shital Rajeshbhai Patel

VISITING FACULTY

Dr. Sangita Kulathinal

**MECHANICAL ENGINEERING**

**SANCTIONED STRENGTH : 42**

**EXISTING STRENGTH : 30 + 4 HT**

PROFESSOR (Rs.18400-500-22400)

1. 2265 A K Mallik
2. \*3665 Ashok Sengupta
3. \*3858 S G Dhande
4. 3764 Prashant Kumar
5. 3759 B N Banerjee
6. 3862 M S Kalra
7. 4093 V K Jain
8. 4224 N N Kishore
9. 4286 Himanshu Hatwal
10. 4210 P M Dixit
11. 4398 K Muralishar
12. 4560 Gautam Biswas
13. 4061 Prabhat Munshi
14. 4810 B P Pundir
15. 4452 S K Choudhury
16. 4459 N S Vyas
17. 4482 Vinayak Eswaran

18. 4650 Kalyanmoy Deb
19. 4288 P S Ghoshdastidar

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4788 Subrata Sarkar
2. 4801 P K Panigrahi

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4779 Bhaskar Dasgupta
2. 4823 V Venkata Reddy
3. 4890 Bishakh Bhattacharya
4. 4931 Avinash Kumar Agarwal
5. 4956 Anupam Saxena
6. 5014 Sumit Basu
7. \*4928 Kamal K Kar
8. 5022 Ashish Datta
9. 5054 P Venkitanarayanan
10. 5074 J Ramkumar
11. 5120 Sameer Khandekar
12. 5122 Arun Kumar Saha
13. \*5129 Sivasambu Mahesh

VISITING FACULTY

Dr. M.P.Sharma

**PHYSICS**

**SANCTIONED STRENGTH : 38**

**EXISTING STRENGTH : 33 + 1 HT**

PROFESSOR (Rs.18400-500-22400)

1. 3498 S C Agarwal
2. 3980 R K Thareja
3. 4019 S D Joglekar
4. 4064 Keshawa Shahi
5. 4184 Vijay A Singh

6. 4254 Rajendra Prasad
7. 4642 Debashish Chowdhury
8. 4688 R C Budhani
9. 4559 Y N Mohapatra
10. 4651 Avinash Singh
11. 4315 V N Kulkarni
12. 4527 Deshdeep Sahdev
13. 4504 V Ravishankar
14. 4552 Satyendra Kumar
15. 4708 Pankaj Jain
16. 4723 H C Verma
17. 4881 M K Harbola

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4653 K P Rajeev
2. 4692 Mahendra K Verma
3. \*4679 (Ms) Asima Pradhan
4. 4831 Sreerup Raychoudhuri

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 4755 V Subrahmanyam
2. 4797 Gautam Sengupta
3. 4893 Harshwardhan Wanare
4. 4964 V V Sreedhar
5. 5028 (Ms) Sutapa Mukherjee
6. 5035 S Sivaprakasam
7. 5040 S Anantha Ramakrishna
8. 5041 Amit Dutta
9. 5046 Anjan Kumar Gupta
10. 5102 Zakir Hossain
11. 5115 Tapobrata Sarkar
12. 5117 Satyajit Banerjee
13. 5123 Sudeep Bhattacharjee

VISITING FACULTY

Dr. Geetanjali Sarkar

### **MATERIALS SCIENCE PROGRAMME**

PROFESSOR (Rs.18400-500-22400)

1. 3762 Jitendra Kumar

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. \*4928 Kamal K Kar

### **LASER TECHNOLOGY PROGRAMME**

PROFESSOR (Rs.18400-500-22400)

1. \*4687 Utpal Das

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. \*4679 (Ms) Asima Pradhan

### **NUCLEAR ENGG & TECHNOLOGY PROGRAMME**

PROFESSOR (Rs.18400-500-22400)

1. \*3665 Ashok Sengupta

### **DESIGN PROGRAMME**

1. \*4976 Satyaki Roy

While Nuclear Engineering & Technology and Environmental Engineering Management interdisciplinary programmes offer separate postgraduate degrees for administrative purpose these are under the administrative control of Mechanical Engineering and Civil Engineering Departments respectively.

\* **Half Time**



**LIST OF ACADEMIC STAFF AS ON MARCH 31, 2005**

<b>S.No</b>	<b>P F No.</b>	<b>Name &amp; Designation (Ms/Shri/Dr)</b>	<b>Department/ Programme</b>
1.	4078	Chaturi Singh, Research Engineer Gr-II	NWTF
2.	4983	Alok Gupta, Research Engineer Gr-II	A E
3.	5059	K K Soundra Pandian, Research Engineer Gr-II	M E
4.	4777	Rajeev Gupta, Senior Research Engineer	NWTF
5.	4616	Sushmit Sen, Senior Research Engineer	Robotics
6.	3414	M N Mungole, Senior Research Engineer	M M E
7.	4818	Ram Prakash Gupta, Senior Research Engineer	E E
8.	4955	Raghuvir Singh Anand, Senior Research Engineer	E E
9.	4824	Anjali V Kulkarni, Senior Research Engineer	Mechatronics
10.	4921	Aurobinda Chatterjee, Senior Research Engineer	M E
11.	5118	Ajay Misra, Senior Research Engineer	A E
12.	4318	Amitabha Roy, Principal Research Engineer	E E
13.	3238	Vishal Saxena, Principal Research Engineer	E E
14.	4807	Brajesh Chandra, Principal Research Engineer	NWTF
15.	4056	V Raghuram, Principal Research Engineer	M E
16.	5095	Shobhit Das, Chief Engineer	AE
17.	4086	J Narayan, Chief Research Engineer	EE
18.	4015	A L Bhavsar, Scientific Officer Gr.I	CHEM
19.	4815	K K Bajpai, Senior Scientific Officer	C E
20.	3780	Sanjay Gupta, Chief Scientific Officer	ACMS
21.	3985	Bansi Lal, Chief Scientific Officer	PHY/LTP
22.	4090	Prem Chand, Chief Scientific Officer	EPR/PHY
23.	4257	Leela Iyengar, Chief Scientific Officer	Chemistry
24.	3782	K V Rao, Principal Scientific Officer	ACMS
25.	2028	H P S Parihar, Computer Engineer Gr.II	C C
26.	4721	Md K Ahmad, Computer Engineer Gr.I	C C
27.	4920	Anju Tewari, Computer Engineer Gr.I	C C
28.	4720	Shikha M Jalote, Senior Computer Engineer	C C
29.	4817	Navpreet Singh, Senior Computer Engineer	C C
30.	4541	B M Shukla, Senior Computer Engineer	C C
31.	4578	Md Aftab Alam, Senior Computer Engineer	C C
32.	4821	Brajesh Pande, Senior Computer Engineer	C C
33.	4820	Gopesh Tewari, Senior Computer Engineer	C C
34.	5019	Soma Sengupta, Senior Computer Engineer	C C

35.	3745	R Tewari, Operation Manager	C C
36.	2035	N P Roberts, Principal Computer Engineer	C C
37.	3868	K S Singh, Principal Computer Engineer	C C
38.	2037	Y D S Arya, Principal Computer Engineer	C C
39.	3957	Umesh Chandra, Senior Pilot Instructor	A E
40.	5030	Vipul Mathur, Aircraft Maintenance Engineer	A E
41.	0834	Rajeshwar Misra, Librarian	Kelkar Lib
42.	0577	S K Srivastava, Deputy Librarian	Kelkar Lib
43.	3981	S K Bose, Deputy Librarian	Kelkar Lib
44.	3969	Umed Singh, Assistant Librarian	Kelkar Lib
45.	3974	(Ms) Neelam Prasad, Assistant Librarian	Kelkar Lib

#### **AWARDS AND HONOURS FOR THE YEAR (APRIL 01, 2004 - MARCH 31, 2005)**

Dr Jayannta Chatterjee, Professor, Department of Industrial & Management Engineering has been invited by the National University of Singapore to join their International Advisory Board for the Knowledge Management Research Laboratory.

Dr. N K Sharma, Professor, Department of Industrial & Management Engineering has been invited by the Society for Consumer Psychology (SCP) to be a reviewer for the SCP-Sheth Dissertation Proposal Competition –Round 2 for the Year 2004.

Dr. S N Bandyopadhyay, Professor , Department of Mechanical Engineering, has been awarded the Bharat Jyoti Award for the year 2004

Dr. V Shankar, Assistant Professor, Department of Chemical Engineering has been chosen as Young Associate of Indian Academy of Sciences, Bangalore.

Dr. Kalyanmoy Deb, Professor, Department of Mechanical Engineering delivered a distinguished keynote lecture at the 17<sup>th</sup> International Conference on Multi-Criterion Decision Analysis held in Whistler, Canada during 6-11 August 2004.

Dr. V. K. Jain, Professor, Department of Mechanical Engineering has been appointed Editor for the online Journal, International Journal of Manufacturing Technology and Management.

Dr. Ashish Garg, Assistant Professor, Department of Materials & Metallurgical Engineering has been selected for Shri Ram Arora Award of TMS, USA of this year.

Dr. A. K. Mallik, Professor, Department of Mechanical Engineering has been conferred the Distinguished Teacher Award by IITK for the year 2004.

Dr. R. Balasubramaniam, Professor, Department of Materials & Metallurgical Engineering has been appointed a member of the International Advisory Board of the Journal 'Material Science Research India'.

Dr. Debabrata Goswami, Associate Professor, Department of Chemistry has been chosen for this year's Swarnajayanti Fellowship.

Dr. Neeraj Mishra, Associate Professor, Department of Mathematics and Statistics has been chosen for the 2003 Jacob Wofowitz Prize for Theoretical Advances in the Mathematical and Management Sciences for, "Simultaneous Multiple Comparison with the Worst and Best".

Dr. Debasis Kundu, Professor and Dr. B V Rathish Kumar, Associate Professor, Department of Mathematics have been chosen for the "C L Chandna Mathematics Award for Distinguished and Outstanding Contributions to Mathematics Research and Teaching" for the year 2004.

Dr. S N Bandyopadhyay, Professor in the Department of Mechanical Engineering has been conferred the Millennium Medal of Achievers India Gold Medal by the International Institute of Success Awareness.

Dr. Vinod K Singh, Professor, Department of Chemistry has been awarded the S S Bhatnagar Prize in Chemical Sciences for the year 2004.

Drs. F A Khan and S Verma, Associate Professors, Department of Chemistry have been awarded the B M Birla Prize in the Chemical Sciences for the year 2004.

Dr. Javed N Mallik, Assistant Professor, Department of Civil Engineering has been awarded the S S Merh Award 2004 by the Council of the Geological Society of India for his contributions in the field of quaternary Geology.

Dr. V K Singh Professor, Department of Chemistry is elected a Fellow, National Academy of Sciences (India), Allahabad for the year 2004.

Dr. Bikramjit Basu, Assistant Professor, Department of Materials & Metallurgical Engineering is chosen the Young metallurgist of the year 2004 by the Indian Institute of Metals.

Professor R. C. Budhani, Department of Physics, Professor Amalendu Chandra and Professor V. K. Singh, Department of Chemistry, have been elected as a Fellow of Indian Academy of Science, Bangalore.

Professor R. C. Budhani, Department of Physics, has been elected as a Fellow of American Physical Society.

Dr. V. K. Singh, Professor, Department of Chemistry, has been elected a Fellow, National Academy of Sciences (India), Allahabad.

Dr. R Balasubramaniam, Professor, Department of Materials & Metallurgical Engineering has been appointed as one of the Co-Chairman of the Organizing

Committee of Corcon 2004 organized by NACE, The Corrosion Society, India Section, Corrosion Society of India.

Dr. Sanjeev Swami, Asst. Professor, Industrial & Management Engineering and Dr. A K Agarwal, Asst. Professor in Mechanical Engineering have been chosen for the AICTE Career Award for Young Teachers for the Year 2004-2005.

Dr. Anish Upadhyay, Asst. Professor, Materials & Metallurgical Engineering has been awarded the G S Tendulkar Award for the overall best presentation among Ferrous, Non-Ferrous, Metal Science & Environmental Science Group at the 58<sup>th</sup> Annual Technical meeting of the Indian Institute of Metals held recently at Trivandrum.

A paper entitled "A Displacement based wall shear stress sensor" by A.M. Pradeep and Dr. R K Sullery Professor in the Department of Aerospace Engineering, has been selected for the best paper award, to be given at the time of the 19<sup>th</sup> Indian Engineering congress to be held in Mumbai on December 17, 2004.

Dr. R. P. Singh, Professor, Department of Civil Engineering, has been elected as one of the Vice Presidents, for a four year term, of the International Union of Geodesy and Geophysics (IUGG) Commission on GeoRisk at the NGRI, Hyderabad.

Dr. S S Manoharan Associate Professor, Department of Chemistry has received US Patent (Patent No. US 679341 B2 dated 21<sup>st</sup> September 2004) for his work on "MAGNETO RESISTIVE CRO2 POLYMER COMPOSITE BLEND".

Prof. CNR Rao, who was appointed chair of the Scientific Advisory Council to the Indian Prime Minister in January, has received the Indian Science Award for his contributions to solid state Chemistry and Materials Science. The prize carries a US\$62,500 Award.

Prof. CNR Rao, has received the Dan David Science Prize for 2005 in Materials Science. He shares the award with George Whitesides, Harvard University and Robert Langer, Massachusetts Institute of Technology Prof. Rao was honoured for his status as one of the world's foremost solid state and Materials Chemists who has made prolific and sustained contributions to the development of the field for over five decades. The awards ceremony will be held on May 23, 2005. The recipients will share a US\$ million cash prize.

Dr. Gautam Biswas, Professor, Department of Mechanical Engineering has been chosen as one of the Associate Editors of the Journal of Heat Transfer, Transactions of the American Society of Mechanical Engineers (ASME) w.e.f., January 2006.

Dr. Sanjay Mittal, Professor, Department of Aerospace Engineering has been selected as a member of the Editorial Board of the International Journal for Numerical Methods in Fluids.

Dr. Bikramjit Basu, Assistant Professor, Department of Materials & Metallurgical Engineering has been chosen for the INSA Medal for Young Scientist (2005) by the Indian National Science Academy, New Delhi.

Dr. Bikramjit Basu, Assistant Professor, Department of Materials & Metallurgical Engineering has been invited to join the editorial board of Society's Journal Trends in Biomaterials and Artificial Organs Organization, Thiruvananthapuram.

The following faculty members have been conferred the various awards by the Indian National Academy of Engineers for the year 2004:

**Fellowship of the Academy:**

Professor Kalyanmoy Deb, Department of Mechanical Engineering,  
Professor Arindam Ghosh, Department of Electrical Engineering and  
Professor Vinay K. Gupta, Department of Civil Engineering

**Young Engineer Award:**

Dr. Animesh Das, Assistant Professor, Department of Civil Engineering  
Dr. Bikramjit Basu, Assistant Professor, Department of Materials &  
Metallurgical Engineering

**Innovation Potential of Student Project Award**

Dr. J. Ramkumar, Assistant Professor, Department of Mechanical Engineering, for his Doctoral thesis submitted to IIT Madras.

**BOOKS PUBLISHED**

Dr. Debasis Kundu, Professor, Department of Mathematics and Mr. Ayanendranath Basu, ISI, Kolkata edited a book entitled STATISTICAL COMPUTING. This book is published by Narosa Publishing House under IIT Kanpur Series of Advanced Texts.

Dr. P. S. Ghoshdastidar, Professor, Department of Mechanical Engineering has written a book on HEAT TRANSFER by using CDTE funds. This book is published by Oxford University Press.

Dr. C R Bector, Dr. S Chandra and Dr. J Dutta, Assistant Professor, Department of Mathematics have written a book entitled 'OPTIMIZATION THEORY', This book is published by Narosa, New Delhi (2004).

# Academic Programme

## EDUCATIONAL GOALS

The engineering education should produce trained manpower for maintaining and advancing technological growth. The scope of engineering education should evolve based on the evaluation of technological growth for their usefulness and relevance to the prosperity of the country. The educational strategy should help to develop a knowledge industry. The systems involved in this endeavor should strive for furtherance of knowledge.

The academic goals of the Indian Institute of Technology Kanpur from the viewpoint of its teaching programme are as the following:

To prepare the students for the highest level of excellence in science, and technology and produce competent, creative and imaginative scientists and engineers.

To promote a spirit of free and objective inquiry in different fields amongst the students and motivate them for higher studies and research.

To foster inter-disciplinary approach. To promote the concept of virtual research departments by bringing together faculty and students into activities of mutual interest.

## TEACHING PROGRAMMES

The Institute offers instructions in various disciplines of science and engineering, both at undergraduate (UG) and postgraduate (PG) levels. These programmes are planned and implemented by the Senate of the Institute through the Senate Undergraduate Committee (SUGC) and the Senate Post-graduate Committee (SPGC), respectively.

### **Undergraduate Programme**

The four-year undergraduate programme consists of two parts having duration of four semesters each. The first part is the core programme common to all students, and is carefully planned to give the students a strong base of basic education in mathematics, physics, chemistry, engineering sciences, technical arts, humanities and

social sciences. The second part of the undergraduate programme consists of the professional courses and a project in the chosen branch of specialization. At the Bachelor's level, we have B.Tech. programs in Aerospace, Chemical, Civil, Computer Science, Electrical, Metallurgy and Mechanical Engineering. We also have integrated M.Sc. programs in Physics, Chemistry, Mathematics and Statistics. From July 2005, we have started an integrated M.Sc. program in Economics. The students for these programs are selected through JEE and usually they are the top students from various places in the country.

#### **Two-Year M.Sc. Programme**

There are programs for M. Sc. (2 years) in Physics, Chemistry, Mathematics and Statistics, where the students with B.Sc. (Hons.) background are chosen through an all-India examination known as JAM.

#### **Postgraduate Programme**

The postgraduate programme is intended to prepare students to enter their professions with a perspective and breadth of knowledge related to the principal divisions of their respective fields of specialization through courses and specialized research experience. A postgraduate student is typically enrolled for three or four courses each semester until the student advances to a point where the principal requirements of the programme left to be fulfilled are research and thesis.

#### **M.Tech. Programme**

We have **M.Tech. Programmes** in all the Engineering Branches, mentioned above. In addition, there are M. Tech. Programs in the interdisciplinary areas, such as, Nuclear Engineering, Biological Sciences and Bioengineering, Laser Technology, Environmental Engineering, Materials Science, and Industrial and Management Engineering. The M. Tech. Students are chosen through an all-India examination, known as GATE. We have also adopted a dual degree (B.Tech.-M. Tech.) program. In this program, the students admitted through JEE, are expected to complete the M. Tech. Program in five years. At the end of five years, the student is awarded both B.Tech. and M.Tech. Degrees.

#### **MBA and MDES Programme**

Recently, we have introduced two interdisciplinary programs, namely, for MBA and Master of Design. For these courses as well, the students are selected through the all-India examinations known as JMET and CEED respectively.

### **Doctor of Philosophy (Ph.D.)**

The academic programmes leading to the Degree of Doctor of Philosophy (Ph.D.) exists in all the engineering departments and two interdisciplinary programmes, namely, Materials Science and Nuclear Engineering & Technology. The Ph.D. programmes also exist in Chemistry, Mathematics, Physics, Statistics, Economics, English, Philosophy, Psychology and Sociology.

The Ph.D. programme culminates in research on a selected topic leading to a thesis submitted in partial fulfillment of the requirements for the degree.

The Department of Physics offers a M.Sc.-Ph.D. dual degree program, which allows their M.Sc. students to continue for a Ph.D.

The M. Tech. and Ph.D. students receive research/ teaching assistantships.

### **D.I.I.T. Programme**

The Institute started a D.IIT programme in Video Communications Systems with effect from first semester 1992-93. The duration of the Course is one year. The DIIT Programme is based on existing PG Course for M.Tech. Programme. This programme is monitored by the Department of Electrical Engineering.

### **Research Environment in IIT Kanpur**

IIT Kanpur has demonstrated its excellence in research in many areas. To cite a few areas: Finite Element Methods Using Domain Decomposition, Flow Induced Vibrations, Wind Tunnel Testing of Large Scale Prototypes, Computational Chemistry, Nano-materials and Nano-technology, Geometric Optimization of Large Organic Systems, Genomics and Bio-Informatics, Electronic Structure Calculations, Aggregation and Etching, Molecular Dynamics, Thin Film Dynamics, Optical / EM Field Calculations, Computational Fluid Dynamics and Heat Transfer, Computer Aided Design and Rapid Prototyping, Tomography, Robotics, Multi-Body Dynamics, Geo-seismic Prospecting, Stress Analysis and Composite Materials, Vibration and Control, Semiconductor Physics, Photonics, Neural Networks and Genetic Algorithms, Earthquake Engineering, Impurities in Anti-Ferro Magnet, Raman Scattering, Particle Physics, Spin Fluctuation in Quantum Magnets and so on.

The most recent initiative of IIT Kanpur has been the Formation of a Strong Research Group in the areas of Nanoscience and Nanotechnology.



### **Curriculum Development and Monitoring Committee (CDMC)**

The Curriculum Development and Monitoring Committee (CDMC) has been formed in order to monitor the curriculum continually. The Committee will solicit a report annually from all Core Course Subcommittees regarding their respective core courses. These reports include all relevant information pertaining to the teaching of the courses, tutorials, laboratories and other aspects. The Committee will work over the period between September 2004 and August 2006

The following is the composition of the CDMC:

Prof. R K Dube	MME	Chairman
Prof. R K Thareja	PHY	Co Chairman
Prof. Harish Karnick	CSE	Member
Prof. A K Mallik	ME	Member
Prof. L Krishnan	HSS	Member
Prof. Ashutosh Sharma	ChE	Member
Prof. Joseph John	EE	Member
Prof. Balaji Prakash	BSBE	Member
Prof. D Kundu	MTH	Member

### **New Initiatives**

#### **(a) M.Sc. in Economics**

IIT Kanpur has introduced a M Sc (5 year integrated) program in Economics from July 2005. This program will provide a strong grounding in basic sciences, engineering as well as in various emerging areas of Economics.

The role of humanities and social sciences in Science Education is to be revisited. A perfect blend of humanities would imbibe intellectual honesty, professional ethics and capacity for teamwork in the face of new challenges. The knowledge of Economics and use of Technology for creation of wealth are necessary preconditions for breaking the chains of poverty and low standard of living in the developing countries. Economics and Technology have always migrated together from one country to another, from Europe to United States, from United States to Japan and from Japan to Asian Tigers. Today India is in the midst of this tremendous migration of global know-how. American and European companies are increasingly carrying out their design and manufacturing work in India.

India has a great tradition in Economics Education and Research. Prof. Amartya Sen, Prof. Jagdish N. Bhagwati are among the finest and best known Economists in the World.

Today's India needs trained mind that is a perfect blend of Technology and Economics. The Integrated MSc program in Economics is a step in that direction.

The programme has been designed keeping the recommendations of the Senate Undergraduate Review Committee in perspective. Twenty-five students will be admitted through the Joint Entrance Examination and there will be no prerequisite of Economics as a subject at the higher secondary level. The four streams of Economics are focused. They are Econometrics and quantitative techniques; Industrial economics and business policy; Development infrastructure and public policy and Environment and resource economics. The credit requirement for the graduation is 199 Credit Points. First four semesters would be common with the other branches of BTech and MSc Integrated programmes.

**(b) Environmental Science and Environmental Engineering**

The Scope of Environmental Science and Environmental Engineering is inherently interdisciplinary and expanding rapidly. Recognizing the challenges for environmentally sustainable development, IIT Kanpur initiated an interdisciplinary M.Tech. Programme in Environmental Engineering and Management in 1997. This experience has convinced the Institute that there is a pressing need to integrate environmental engineering and science across various disciplines to solve problems that have important societal impact.

A National Advisory Committee (NAC) was constituted by IIT Kanpur to identify the strategies related to the education in Environmental Sciences and Environmental Engineering. The NAC further recommended that in order to ensure full and unrestricted growth of environmental science and engineering disciplines, a separate initiative be started.

The sustainability of any academic programme and its viability would depend on better and comprehensive integration of the interdisciplinary aspects of such a programme. It is also essential that research should focus on new emerging areas, which can respond to the varying societal environmental concerns. Faculty members drawn from the current EEM program, and Departments such as Chemistry, Chemical Engineering, Civil Engineering, Physics, Biological Sciences and Bio-

Engineering, Mechanical Engineering etc. can provide the best combination to initiate a world class teaching and research academic program in Environmental Science and Environmental Engineering, once state of the art facilities are created.

It is proposed to initiate a new multidisciplinary facility for Environmental Science and Environmental Engineering at IIT Kanpur, with a focus on the following areas:

Green Technologies

Assessment, monitoring and modeling of environmental quality

Pollution control and remediation

Health risk assessments due to modern technologies and products

Ecological modeling,

Atmospheric Sciences – monsoon dynamics, global warming, ozone depletion)

Land reclamation

Water Resources – groundwater as well as surface water

Environmental Geosciences – Earth systems

Environmental Chemistry

To attain these objectives, a comprehensive infrastructure facility including state-of-the-art laboratory will be required. The equipment proposed to be purchased will also be utilized for the on-going research activities in other Departments of the Institute.

**National Programme on Earthquake Engineering Education**

IIT Kanpur earnestly believes that every Institute of National Importance has an obligation to render necessary service to the country in a crisis. Our country is prone to large earthquakes, and we need to contain the risks this involves. A trained manpower development programme for earthquake risk mitigation, known as NPEEE (National Programme on Earthquake Engineering Education), has been instituted by the Government of India. IIT Kanpur is the nodal agency for the entire gamut of NPEEE activities. The enthusiastic faculty members of the Institute have made enormous contribution in the Earthquake Engineering Education in the country. Their work in the Andaman Islands during the Tsunami calamity deserves deep appreciation.

**Outreach and National Program on Technology Enhanced Learning**

Meaningful growth of an Institution depends on the kind of commitment it has made to the society at large. Benefits of academic excellence cannot remain restricted to the boundaries of the academic wall. In an electronic age that has seen the walls

razed down across states and countries, an institute like IIT Kanpur has a supreme role in providing leadership that addresses societal concerns. As part of our social responsibility, we want to share our expertise with fellow academic institutions across the country and abroad. Towards this goal, we have initiated an Outreach Education Program. Under this scheme, using the VSAT transmission technology, we are providing lecture courses in the area of engineering and biological sciences to the college and university students in the State of Chhattisgarh. IIT Kanpur is promise bound to transmit some advanced courses to the students of newly founded Pandit Dwarka Prasad Mishra Indian Institute of Information Technology, Design and Management (PDPMIITDM), Jabalpur. IIT Kanpur is also participating in a new project, known as Indo-French Cyber University This will foster international collaboration in the areas of emerging technologies. The program will include transmission of courses between IIT-Kanpur and the Université Pierre et Marie Curie (Paris). The courses will be taught in English to the advanced Master's students in both countries by the French and Indian professors.

IIT Kanpur is also participating in the National Program on Technology Enhanced Learning (NPTEL) sponsored by the Ministry of Human Resource Development. Knowledge grows faster when shared. The NPTEL (National Program on Technology Enhanced Learning) is an initiative of the MHRD to promulgate quality education among the Engineering Colleges of the country through the Video and Web-based learning material in some of the popular disciplines. In particular, MHRD wants to monitor the standard of Engineering Education in many colleges where well-trained faculty members are not available in many subjects. The task is bivalent in nature. On one hand, the standards of the colleges are to be uplifted, while on the other hand the courses have to be acceptable to the end users. Seven IITs and IISc Bangalore are the major players in this endeavor. The courses prepared at IIT Kanpur, are being transmitted through the educational TV Channel, Eklavya on regular basis. These courses have earned appreciation form a wide range of learners.

## **ADMISSION**

### **Undergraduate**

Admissions for all the B.Tech. M.Sc. (5-year integrated) and B.Tech.-M.Tech. (Dual Degree) programmes at IIT Kanpur for the academic session 2004-2005 were made by the Joint Admission Committee for all IITs and IT-BHU. The channels open for admission were:

## Joint Entrance Examination 2004

The Joint Entrance Examination (JEE) was held on May 23, 2004. In the Northern Zone (B): IIT Kanpur, Candidates had registered.

The following offers of admission were made from IIT Kanpur:

Department/Disciplines Programmes	Total Number of Candidates-Direct Admission						
	JEE-2004				Preparatory Course-2003		Total
	Gen	SC	ST	PH	SC	ST	
<b>B.Tech.</b>							
Aerospace Engg.	19	04	00	00	01	00	24
BSBE	21	02	00	00	00	00	23
Chemical Engg.	31	06	00	00	05	00	42
Civil Engg.	43	02	00	00	08	00	53
Computer Sc. & Engg.	27	05	03	01	00	00	36
Electrical Engg.	50	10	05	00	00	00	65
Mechanical Engg.	38	07	02	00	01	03	51
Materials & Met. Engg.	48	00	00	00	09	00	57
<b>M.Sc. Integrated</b>							
Chemistry	15	00	00	00	01	00	16
Mathematics & Scientific Computing	26	00	00	00	01	00	27
Physics	15	00	00	00	00	00	17
<b>Total</b>	333	36	10	01	28	03	411
<b>B.Tech.-M.Tech. (Dual Degree)</b>							
Aerospace Engg.	06	01	00	00	01	00	08
Chemical Engg.	09	02	00	00	02	00	13
Civil Engg.	12	00	00	00	00	00	12
Computer Sc. & Engg.	21	04	02	00	00	00	27
Electrical Engg.	17	03	01	00	00	01	22
Mechanical Engg.	13	03	00	00	00	00	16
<b>Total</b>	78	13	03	00	03	01	98

**Two-Year M.Sc. Programme**

Admissions to the 2-year M.Sc. and M.Sc.-Ph.D. (Dual Degree) programmes were made, as usual, on the basis of written test and interview, the department/discipline wise admissions were made only in the 1<sup>st</sup> Semester. Admission statistics for the M.Sc. (2 year) and M.Sc.-Ph.D. (Dual Degree) Physics programmes during 2004-2005 are as under:

Sl. No.	Department/Group	Numbers of Admission Offered	Actual Number of Students Joined
<b>M.Sc. (2-year)</b>			
1	Chemistry	25	24
2	Mathematics	25	24
3	Physics	36	33
4	Statistics	23	20
<b>Total</b>		109	101
<b>M.Sc. – Ph. D. (Dual Degree)</b>			
1	Physics	11	11
<b>Total</b>		11	11

**Post Graduate**

The number of students admitted to the Postgraduate Programme in the First and Second Semesters 2004-2005 is given below:

**ENGINEERING**

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Aerospace Engg.	21	04	25	00	01	01
B.S.B.E.	07	02	09	00	00	00
Chemical Engg.	27	03	30	00	01	01
Civil Engg.	44	09	53	00	02	02
Computer Sc. & Engg.	50	04	54	00	00	00
Design (M.Des.)	12	00	12	00	00	00
Electrical Engg.	84	11	95	00	00	00
Mechanical Engg.	71	08	79	00	05	05
Materials & Met. Engg.	24	07	31	19	00	19
I.M.E.	11	05	16	00	00	00
Laser Technology	04	00	04	00	00	00

Material Science	06	05	11	06	00	06
N.E.T.	00	00	00	07	00	07
E.E.M.	19	00	19	00	00	00
M.B.A. (IME)	47	00	47	00	00	00
<b>Total</b>	427	58	485	32	9	41

### SCIENCES

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Chemistry	00	28	28	00	26	26
Mathematics	00	13	13	00	00	00
Statistics	00	03	03	00	00	00
Physics	00	10	10	00	03	03
M.Sc.-Ph.D. Dual Degree in Physics	00	04	04	00	04	04
H.S.S.	00	07	07	00	05	05
<b>Total</b>	00	65	65	00	38	38
<b>Grand Total</b>	427	123	550	32	47	79

The total department/programme wise strength of the Post Graduate students during the year 2004-2005 is given below:

### ENGINEERING

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Aerospace Engg.	52	31	83	47	31	78
B.S.B.E.	18	23	41	17	22	39
Chemical Engg.	57	31	88	51	31	82
Civil Engg.	98	41	139	87	39	126
Computer Sc. & Engg.	103	12	115	99	10	109
Electrical Engg.	178	44	222	167	42	209
Design (M.Des.)	22	00	22	22	00	22
Mechanical Engg.	131	45	176	115	48	163
Materials & Met. Engg.	71	32	103	76	32	108
I.M.E.	23	12	35	23	10	33
Laser Technology	13	00	13	10	00	10
Material Science	24	14	38	26	11	37

N.E.T.	19	03	22	19	02	21
E.E.M.	34	00	34	29	00	29
M.B.A. (IME)	75	00	75	75	00	75
<b>Total</b>	918	288	1206	863	278	1141

**SCIENCES**

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Chemistry	00	139	139	00	151	151
Mathematics & Statistics	00	59	59	00	56	56
Statistics	00	06	06	00	06	06
Physics	00	46	46	00	44	44
M.Sc.-Ph.D. Dual Degree in Physics	00	16	16	00	20	20
H.S.S.	00	40	40	00	46	46
Total:	00	306	306	00	323	323
<b>Grand Total</b>	832	594	1512	789	601	1464

Strength of Undergraduate and Postgraduate Students during 2004 – 2005 – I:

Department /Group	UG (B.Tech. M.Sc.-5 Yr.)	B.Tech.-M.Tech (Dual Degree).	M.Sc. 2-Yr.	M.Sc.-Ph.D. Dual Degree	M.Tech.	Ph.D.	M.Sc.-Ph.D Dual Degree	Total (UG+PG)
Aerospace	91	21	00	00	52	31	00	195
B.S.B.E.	22	00	00	00	18	23	00	63
Chemical	167	33	00	00	57	31	00	288
Chemistry	57	00	46	00	00	139	00	242
Civil	167	12	00	00	98	41	00	318
C.S.E.	159	76	00	00	103	12	00	350
Design (M.Des.)	00	00	00	00	22	00	00	22
E.E.	293	56	00	00	178	44	00	571
H.S.S.	00	00	00	00	00	40	00	40
Math.	86	00	40	00	00	59	00	185
Stat.	00	00	33	00	00	06	00	39



M.E.	221	62	00	00	131	45	00	459
M.M.E.	186	00	00	00	71	32	16	305
Physics	62	00	53	15	00	46	00	176
I,M.E.	00	00	00	00	23	12	00	35
Laser Tech.	00	00	00	00	13	00	00	13
M.S.P.	00	00	00	00	24	14	00	38
N.E.T.	00	00	00	00	19	03	00	22
E.E.M.	00	00	00	00	34	00	00	34
DIIT (EE)	00	00	00	00	00	00	00	00
M.B.A. (I.M.E.)	00	00	00	00	75	00	00	75
<b>Total</b>	1511	260	172	15	918	594	16	3486

### GRADUATION

During the year 2004-2005, 830 students completed the requirements for the award of B.Tech., M.Sc., DIIT, MBA, M.Tech., and Ph.D. degrees as detailed below:

B.Tech.	280
M.Sc. (2 yr. & 5 yr.)	69 & 27 96
MBA	28
M.Tech.	355
Ph.D.	61
M.Des.	10

**Total : 830**

### COURSES OFFERED

The following Table gives a picture of the courses offered during 2004-2005 at the undergraduate as well as postgraduate level:

#### UNDERGRADUATE LEVEL

Core Curriculum / Department Courses	First Sem.	Second Sem.	Summer	Total
Core Courses run by various departments	29	22	06	57
Aerospace Engineering	08	12	00	20
B. S. B. E.	01	01	00	02
Chemical Engineering	08	12	00	20
Civil Engineering	12	14	00	26
Computer Science & Engineering	08	13	01	22

Electrical Engineering	11	10	01	22
Mechanical Engineering	11	15	01	27
Materials & Metallurgical Engineering	15	12	01	28
Chemistry	11	10	00	21
Mathematics	28	33	05	66
Physics	19	16	00	35
Humanities & Social Sciences	15	18	02	35
Industrial & Management Engineering	00	00	00	00
Nuclear Engineering & Technology	00	00	00	00
Materials Science Program	00	00	00	00
Laser Technology Program	00	00	00	00

### POST GRADUATE LEVEL

Core Curriculum / Department Courses	First Sem.	Second Sem.	Total
Aerospace Engineering	12	18	30
Chemical Engineering	12	12	24
Civil Engineering	17	16	33
Computer Science & Engineering	14	11	25
Design (M.Des.)	05	03	08
Electrical Engineering	24	28	52
Environmental Engg. & Management	05	06	11
Mechanical Engineering	18	23	41
Materials & Metallurgical Engineering	19	13	32
Chemistry	13	15	28
Mathematics / Statistics	14	21	35
Physics	10	16	26
Humanities & Social Sciences	21	18	39
Industrial & Management Engineering	08	07	15
Materials Science Program	07	06	13
Nuclear Engineering & Technology	04	06	10
Laser Technology Program	03	03	06

### UNDERGRADUATE

The following statement shows promotion and detention of B.Tech., M.Sc. (Integrated) and B.Tech.-M.Tech. (Dual Degree), students in the academic year 2004-2005 (upto May, 2005)

Sl. No.	Contents	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	Total
1	Students strength at the beginning of the session	493	400	407	368	103	1171
2	Students strength at the beginning of the 2 <sup>nd</sup> semester	487	396	398	370	85	1736
3	Students joined in 2 <sup>nd</sup> semester on migration	000	000	000	000	000	000
4	Number of students withdrawn or on leave on medical ground in 1 <sup>st</sup> and 2 <sup>nd</sup> semesters	01	03	02	000	000	06
5	Number of students graduated	000	000	000	221	59	280
6	Number of students dismissed due to poor performance in 1 <sup>st</sup> and 2 <sup>nd</sup> semester	02	03	000	01	000	06
		02	05	05	01	000	13

The following statement shows promotion and detention of M.Sc.(2-year) and M.Sc.(Dual Degree) students in the academic year 2004-2005(upto May, 2005)

Sl. No.	Contents	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total
1	Students strength at the beginning of the session	112	75	187
2	Students strength at the beginning of the 2 <sup>nd</sup> Sem.	106	77	183
3	Number of students dismissed in 1 <sup>st</sup> semester	01	00	01
	Number of students dismissed in 2 <sup>nd</sup> semester	09	00	09
4	Number of students graduated in 1 <sup>st</sup> semester	00	08	08
	Number of students graduated in 2 <sup>nd</sup> semester	00	61	61
5	Number of students dismissed in due to continued absence from the programme	00	00	00

Following is the department-wise break-up of students who were awarded the degree at XXXVII Convocation held on 31-05-2005. Dr. K Kasturirangan, Director, National Institute of Advanced Studies, IISC, Bangalore was the Chief Guest at the Convocation:

<b>Department/ Discipline</b>	<b>B.Tech.</b>	<b>M.Sc. 5-Yr.</b>	<b>M.Sc. 2-Yr.</b>	<b>DIIT</b>	<b>MBA</b>	<b>M.Tech.</b>	<b>Ph.D.</b>	<b>TOTAL</b>
Aerospace Engg.	19	00	00	00	00	20	01	40
Bio. Science. & Bio. Engg		00	00	00	00	06	00	06
Chemical Engg.	42	00	00	00	00	32	01	75
Civil Engg.	25	00	00	00	00	44	04	73
Comp. Sc. & Engg.	37	00	00	00	00	37	01	75
Electrical Engg.	68	00	00	00	00	69	04	141
EEM	00	00	00	00	00	15	00	15
IME	00	00	00	00	28	20	01	49
Mechanical Engg.	59	00	00	00	00	53	07	119
MME	00	00	00	00	00	32	02	34
Materials Science	00	00	00	00	00	12	00	12
Nuclear Tech. Prog.	00	00	00	00	00	08	01	09
Laser Tech. Prog.	00	00	00	00	00	07	00	07
Chemistry	00	07	22	00	00	00	20	49
Mathematics	00	00	00	00	00	00	07	07
Maths. & Sci. Comp.	00	12	15	00	00	00	00	27
Physics	00	08	17	00	00	00	08	32
Statistics	00	00	15	00	00	00	00	15
HSS	00	00	00	00	00	00	04	04
<b>TOTAL</b>	280	27	69	00	28	355	61	820

## Research and Development

The Institute has maintained a healthy growth rate in research and development over the years. During the financial year April 2004 to March 2005, 97 sponsored projects with funding commitment of Rs. 41.49 crores and 102 consultancy projects with funding commitment of Rs. 5.38 crores have been sanctioned.

IIT Kanpur has been identified as one of the nodal agencies under the National Program on Nanosciences and Nanotechnology to establish a Unit/Centre for Nanosciences in the Northern region of India. Budget for this Unit/Centre is approximately Rs.11.3 crores and the purpose is to create a state-of-the-art facility for preparation and characterization of nanomaterials that will enable researchers to undertake various nano-related projects and also attract participation from industry.

Noted Journalist and Rajya Sabha MP Dr. Arun Shourie has donated Rs 11 crores from his MPLAD funds for establishment of Environmental Sciences & Engineering Department at IIT Kanpur. A separate green building will be constructed using various energy conservation, natural lighting and cooling measures. The new department will focus on research related to different facets of local and global environmental problems.

Details of some of the major projects sanctioned last year are as follows:

### NATIONAL PROJECTS

**“Technology Mission on Rail Safety ”** initiated by the Ministry of Railways, Govt. of India in collaboration with Ministry of Human Resource Development and a consortium comprising of (i) academic and research institutions (ii) railways organizations and (iii) industry with IIT Kanpur as the nodal agency. Technology development in the areas of traction and rolling stock, tracks and bridges, signals and communications and fog vision instrumentation have been identified as the mission programs.

**“Development of PLG[Poly (dl-lactide-co-glycolide)] for nanocapsulation of Tuberculosis drug for sustained release of drug delivery system”** funded by the Department of Science and Technology, India, aims at cost effective indigenous scale up process involving a CEM Microwave reactor for the production of synthesis of Poly – (dl-lactide-co-glycolide) in kilogram quantities.

The above mentioned polymer forms a class of biodegradable polymers which being biodegradable, non-toxic to bio-systems offers a variety of applications in medical technologies viz. biodegradable implants, sutures and in coating of drugs to achieve sustained release of drugs used in treatment in Tuberculosis.

**“Design, Fabrication, Magnetic and Magneto-transport Studies of Spintronic alloys, oxides, and chalcogenides: A Pulsed Electron Deposition Approach”** funded by Defense Research and Development Organization (DRDO) aims at fabrication of multilayer nanostructures of ferromagnetic and spacer layers employing the Pulsed Electron Deposition technique. Another objective is to develop new hybrid nano-hetero-structure of alloys and oxide thin films to study the magnetic and magneto-transport effects for fabrication of GMR devices circuit chips to produce highly integrated GMR sensors at low cost.

**“Development of a multi modal Biometric system for human identification which integrates at least four traits such as face, finger-prints, signature and iris in making a personal identification.(one to many matching) viz. fingerprint, face, iris and signature.”** funded by Ministry of Communication and Information Technology, New Delhi.

**“A Portable Model of Primary Healthcare Delivery”** funded by Media Lab Asia has the following components:

*Sehat Saathi:* This is prototype software for acquiring patient data and real-time doctor patient communication to enable diagnosis and treatment. Thus all the patient data, details of clinical tests, diagnosis and treatment go into the database and are capable of being retrieved (the retrieval system has not been developed).

*Package of Diagnostic devices and Processes:* A package of devices/processes has been identified as being required for the purpose and is a mix of both digital and conventional methods. The digital devices come with their own software for display of data. They do not need any additional software to be developed for this purpose.

*Preventive Health and Health Promotion:* Patient education, information on health and Disease, Care of chronic cases, pain management, Health screening, tele-counseling etc. form an intrinsic component of the system. Many multi-media information films have been developed.

*Deployment:* It has become essential to train a local person, who has a commitment to the area and its people. Accordingly, a portable model has been developed which is capable of being operated by such a person.

**“Development of Independent Component Analysis Based Blind Source Separation Algorithms for Audio/Image Separations”** funded by Ministry of Communications and Information Technology. In most of the real-world situations, audio and image signals are embedded in noise and are sometimes even mixed. These mixtures can be of images/audio signals and noise. The main aim of the Project is to develop new neuron model based Blind-Source-Separation (BSS) algorithms which are able to separate the audio and image mixtures.

**“Ultrafast Pulse Shaping Approaches to Coherent Control of Molecular Systems for achieving quantum computation”** sponsored by Department of Science and Technology under the Swarnajayanti fellowship scheme. This project aims to develop the optical analogue of NMR spectroscopic schemes to demonstrate logic at molecular levels through their control. As a part of the project, a supersonic molecular beam setup will be built which will interact with ultrafast shaped pulses.

**“Quantum computing with ultra fast pulse shaping technology”** sponsored by Ministry of Communications and Information Technology is an initiative to develop ultra fast tunable shaped pulses as an approach to quantum computations. Femtosecond pulses are shaped in the Fourier domain with microsecond radio frequency pulses through feedback acousto-optic modulation scheme so that they can impart or execute logic in quantum system.

## **INTERNATIONAL PROJECT**

Swedish International Development Cooperation Agency has sponsored a project on treatment of domestic wastewater in India. The objective of the project is to review existing domestic wastewater treatment practices and case studies in domestic wastewater treatment through UASB process in India.

## **Patents Granted to IIT Kanpur Faculty during the financial year 2004-2005**

A Magneto-Resistive CrO<sub>2</sub> Polymer Composite Blend (US 6793841); Microwave Filter Having a Temperature Compensating Element (US 6734766); Process for the Recovery of Inorganic Compounds from Kraft Liquor (189310); A Current Prediction Device for Parallel Resonant DC Link Motors (189403); A Resonant DC Link Inverter Device for Power Supply and AC Motor Drive (189404); A Process of

Depositing Polycrystalline Carbon Film Resembling a Diamond Film on Stainless Steel Substrate (191198).

**Major Multi-disciplinary Facilities Added During the Financial Year 2004-2005 are:**

**1. Affymetrix GeneChip System**

The GeneChip® Instrument System is a fully integrated platform for conducting expression analysis studies using GeneChip Probe Arrays. The system consists of a GeneChip® Scanner 3000, a Fluidics Station 450, a Hybridization Oven 640 and a powerful computer workstation loaded with GeneChip® Operating Software (GCOS). *Drosophila* genome version 2.0 chips are used for experiments. These oligonucleotide spotted GeneChips allow the monitoring of the expression levels of more than 16,000 *Drosophila* genes at the same time.

The GeneChip Scanner 3000 incorporates advanced design improvements with speed, superior performance, saving of space and lower scanner-to-scanner variation to dramatically improve throughput and efficiency in genetic analysis. It provides more accurate gridding and more consistent scanner-to-scanner biological performance, improving data integrity and data sharing between researchers. Combined with the GeneChip Autoloader, the GeneChip Scanner 3000 also provides sample tracking, temperature control and walk away freedom during scanning. The scanner is also designed to accommodate future advancements in GeneChip technology. The GCOS software allows full control of instrumentation as well as basic analysis and filtering of data.

**2. Automated DNA Sequencing Facility**

The ultimate goal of genome research is to map all the genes in the DNA sequence for various model organisms and to develop tools for using this information in the study of human biology and medicine. A high throughput DNA sequencer (CEQ 8000 from Beckman Coulter) has been acquired, which is a fully automated genetic analysis system. This system automatically fills the capillary array with a patented linear polyacrylamide (LPA) gel, denatures and loads the sample, applies the voltage program, and analyzes the data. Software tools help in rapidly reviewing data quality and even customize automated data assessment.

This system is equipped to perform sequence run for 96 samples in 24 hours. The following analyses can be done using this system.



- De Novo DNA Sequencing
- Heterozygote Detection
- Confirmatory Sequencing
- Mutation Analysis
- Allele Identification
- SNP Scoring
- Microsatellite Instability
- AFLP Fingerprinting
- Gene Expression

The CEQ800 system uses standard chain termination sequencing methodology like the radio-active method but employs new detection and sampling technologies. The labels attached to the ddNTPs are different fluorophores. Therefore it is possible to carry out the four sequencing reactions - for A, C, G and T - in a single tube and to load all four families of molecules into just one capillary, as the fluorescent detector can discriminate between the different labels and hence determine if each band represents an A, C, G or T. The sequence can be read directly as the bands pass in front of the detector and sent straight to a computer for analyses. These data files can be opened in several third party software packages for further analyses.

### **3. Malvern's Spraytec Particle Analyzer**

Malvern's Spraytec combines the proven technique of laser diffraction particle characterization with high concentration data inversion routines for the analysis of sprays with rapidly changing concentrations. Spraytec is ideally suited for the study of fuel sprays and aerosols.

Laser beam passing through the spray gets scattered and the scattered light is collected over a series of photo-detectors (receiver). The amount of scattered light on each of the detector is measured and particle size distribution is obtained on this basis. Using the principle of Mie scattering theory and a diode laser to produce a beam of 670 nm wavelength, the instrument has a measuring rate of 2500 Hz (max.) and obscuration level of upto 95%. The instrument allows study of transient phenomenon and very dense sprays and can measure particle sizes upto 0.5  $\mu$ m to 1000  $\mu$ m. The system has been installed in the propulsion laboratory of the Aerospace Engineering department for development, characterization and testing of fuel atomizers. This facility is being used by Mechanical, Chemical and BSBE departments.

#### **4. AFM/STM Facility**

Atomic force microscopy (AFM) /Scanning Tunneling Microscopy (STM) has revolutionized the field of interfacial surface science by enabling direct, high-resolution visualization of surface morphology of variety of surfaces in air, in various solutions and gas environments. Besides topography, AFM imaging is also capable of distinguishing areas that have different chemical phases, physical properties like elasticity, stiffness, hardness, and can image magnetic domains and conductivity in nanoscale. AFM provides a quick way to obtain high-resolution images with little or no sample preparation. With the advent of the new technologies simplifying the preparation and handling of numerous sample types, the use of this powerful technique is becoming widespread in materials and biological research.

AFM/STM facility at IIT Kanpur was established in January 2002 and is equipped with Scanning Probe Microscope (SPM) system made by Molecular Imaging, Inc (USA). Contact mode, Acoustic AC (AAC) mode, Magnetic AC (MAC) mode, Pulse Force Mode (PFM) and Magnetic Force Microscopy (MFM) are the available modes.

The modular design of the microscope, scanner and environmental control equipment, motivated by the need for flexible in-fluid work and in controlled atmosphere, makes this facility very versatile. It has a wide range of both AFM and STM capabilities for examining sample surfaces and to conduct force spectroscopy and tunneling spectroscopy experiments of conducting or semi conducting surfaces with atomic resolution. AFM is used in structural and molecular biology, materials science research and molecular interactions studies through force spectroscopy.

#### **5. SQUID Laboratory**

The Superconducting Quantum Interference Device (SQUID) based Magnetic Properties Measurement System (MPMS) is a highly integrated instrument system specified for experimental and materials characterization tasks that require highest detection sensitivity over a broad temperature range (1.7K-350K) and in applied magnetic fields as high as 5 tesla (50,000 Gauss). In fact these devices are powerful enough to measure the small magnetic fields around the human heart and brain. The SQUID laboratory has a complementary technique to characterize the electron transport properties of materials. It is called the Physical Properties Measurements System (PPMS). This integrated facility with such low-temperature and high-field capability is the first of its kind in India.

## **6. CEM Voyager Stopflow System**

The system along with discover microwave reaction module provides specific designs that satisfies the need to scale up organic reactions with energy in a safe, controlled and consistent method. It is made fit to do reactions with liquid, slurries and solid reagents, scaling up the reaction from 10 ml to 80 ml with same parameters and same yield. The additional feature is the Investigator System, a Raman spectroscopy system, featuring a compact 785nm laser diode and a CCD detector to offer the smallest and most cost-effective Raman system. This technique allows the analytical interrogation of reactions through in situ real time analysis with microwave-enhanced chemistry. Reaction conditions can be controlled and adjusted based on product formation, starting material depletion, reactant uptake, or other critical parameters.

## **7. Pulsed Electron Deposition Unit for Thin Film Nanostructures**

Pulsed Electron Deposition technique allows penetration of a high power electron beam approximately 1m into the target material (ablation) and can be computer controlled for maximum reproducibility. This technique provides a unique platform for depositing thin films of complex materials on a variety of technologically important substrates, with a unique strength of extending the range of materials including multi component metal oxides, complex alloys and novel polymers. Non-equilibrium extraction of target material (ablation) facilitates stoichiometric deposition.

## **8. High Performance Thin Layer Chromatography (HPTLC)**

The technique is used for separation and quantification of non-volatile organic compounds. Movement of organic compounds with any solvent under the capillary action on a stationary plate coated with porous materials (Silica Gel/ RP/ Cellulose etc.) depends on two factors:

- a) Polarity of Coating material (Stationary Phase), Solvent system (Mobile Phase) and the organic compound (Sample).
- b) Molecular weight of the compound (Heavier compounds will rise less)

Molecules of different compounds rise to different levels on a stationary plate under the capillary action with mobile phase. Each molecule of a compound has same affinity to mobile / stationary phase, and hence, all molecules of a specific compound rise to same level on the plate. As a result, such development separates all the compounds in layers and they appear at different heights on the plate. The

compounds separated in different layers can further be quantified by absorbance study under UV-visible spectrum.

In recent past, IIT Kanpur has strengthened its relations with many international institutes and organizations through research collaborations and signed memorandum of understanding.

Core International Inc., USA – Power Distribution System Training in India.  
Old Dominion University, USA - Exchange Programs and Collaborative Research.

Cromoz Inc., USA – Design and Development of Bioinformatics Tools.  
Det Norske Veritas As - Research & Development in Information and Communication Technology.

Institute of Industrial Science, University of Tokyo , Collaborative Research.  
Swiss Federal Institute of Technology- Science and Engineering Education.  
Asian Institute of Technology, Thailand, Research on Wastewater Treatment and Management.

Le Group Des Mines (GEM) France – Academic, Scientific and Technical Cooperation.

The University of Western Ontario, London, Canada- for Research Collaboration Exchange Programs.

UNICEF - Research and Development on Home Defluoridation.  
Gwangju Institute of Science & Technology, United Nations University, Republic of Korea - Risk Characterization Using Blood Lead Level / Physiologically Based Pharmacokinetic.

Memorandum of Understanding have also been signed with many national institutions like National Innovation Foundation (NIF), Ahmedabad; CRISIL Ltd, Mumbai; Gujarat state Disaster Management Authority (GSDMA), Gandhinagar; Chattisgarh Infotech etc.

**List of MOU signed with International Companies based in India is:**

Google Online India Private Limited - business strategy and cooperation in India.  
Honeywell Technology Solutions Lab Private Limited, Bangalore - research and development activities.

Advanced Refining Technologies LLC (“ART”), Hindustan Petroleum Corporation Limited and Chevron U.S.A.Inc., for Industry Sponsored Joint Research and Development & Exchange Program.

**List of major sponsored and consultancy projects sanctioned during the financial year 2004-2005 is provided below.**

## **SPONSORED PROJECTS**

### **A. National Projects**

“LOW SPEED AIR INTAKE TESTS - LCA MODEL PREPARATION & TESTING” funded by ADA, Total cost Rs. 32,18,000

“UPGRADATION OF THE ASSOCIATE CFD CENTRE OF AR&DB AT IIT, KANPUR” funded by ARDB, Total cost Rs. 23,20,000

“AR&DB CENTRE OF EXCELLENCE FOR COMPOSITE STRUCTURES TECHNOLOGY (PHASE-II)-IIT KANPUR AS ASSOCIATE CENTRE” funded by ARDB, Total cost Rs. 55,00,000

“DEVELOPMENT OF A STRATEGIC INTRUSION ASSESSMENT SYSTEM AND CYBER-MEASURES” funded by ATB, Total cost Rs. 20,00,000

“DEVELOPMENT OF A MIXED REALITY FEEDBACK SYSTEM FOR ENHANCED TELEOPERATION” funded by BRNS, Total cost Rs. 24,99,150

“HIGH PERFORMANCE SURFACE ENGINEERED CARBON-CARBON COMPOSITE FOR HIGH TEMPERATURE APPLICATIONS” funded by DAE, Total cost Rs. 28,67,250

“DEVELOPMENT OF A GENERAL PURPOSE CFD CODE” funded by DAE, Total cost Rs. 2,83,00,000

“DEVELOPMENT OF INDEPENDENT COMPONENT ANALYSIS BASED BLIND SOURCE SEPARATION ALGORITHMS FOR AUDIO/IMAGE SEPARATION” funded by DIT, Total cost Rs. 47,00,000

“P/M PROCESSING OF TUNGSTEN BASED HEAVY ALLOYS AND COMPOSITES” funded by DRDO, Total cost Rs. 34,49,000

“DESIGN, FABRICATION, MAGNETIC AND MAGNETOTRANSPORT STUDIES OF SPINTRONIC ALLOYS OXIDES AND CHALOGENIDES:A PULSED ELECTRON DEPOSITION APPROACH” funded by DRDO, Total cost Rs. 45,14,000

“STEREOSELECTIVE C-C BOND FORMATION VIA ENOLATE:MEMORY OF CHIRALITY CONCEPT FOR CHINRAL INDUCTION” funded by DST, Total cost Rs. 22,62,000

“NEW ORGANOMETALLIC REAGENTS FOR GREEN CHEMISTRY:REACTIVITY STUDIES OR ORGANOBISMUTH COMPOUNDS IN ORGANIC SYNTHESIS” funded by DST, Total cost Rs. 23,95,200

“UV AND NEAR-UV LIGHT EMITTING DIODES USING POLYSILANES” funded by DST, Total cost Rs. 24,00,000

“A HIGH THROUGHPUT GENETIC SCREEN AND CHARACTERIZATION OF TUMOR SUPPRESSONRS/NEGATIVE REGULATORS OF GROWTH IN DROSPHILA” funded by DST, Total cost Rs. 28,51,200

“SYNTHESIS OF WATER-SOLUBLE CARBON NANOTUBES WITH TRIPODAL ("Y" OR "T" TYPE) TETRAPODAL, PENTAPODAL AND OTHER NOVEL JUNCTIONS” funded by DST, Total cost Rs. 30,51,400

“ASYMMETRIC ORGANOMETALLIC COBLOXIMES : SYNTHESIS,CHARACTERIZATION AND CO-C BOND REACTIVITY STUDIES” funded by DST, Total cost Rs. 35,47,000

“ACTIVE TECTONIC INVESTIGATION ALONG NORTH-WESTERN HIMALAYA FOOT HILL ZONE” funded by DST, Total cost Rs. 47,27,000

“DEVELOPMENT OF PLG [POLY-(DL-LACTIDE-CO-GLYCOLIDE)] FOR NANOENCAPSULATION OF TUBERCULOSIS DRUG FOR SUSTAINED RELEASE DRUG DELIVERY SYSTEM” funded by DST, Total cost Rs. 49,97,000

“FIST PROGRAM” funded by DST, Total cost Rs. 1,60,00,000

“UNIT ON NANO-SCIENCE & TECHNOLOGY” funded by DST, Total cost Rs. 11,13,65,000

“SYNTHESIS AND CHARACTERIZATION OF CARBON NANO TUBES ON THE SURFACE OF PITCH BASED CONTINUOUS CARBON FIBRE AND THEIR COMPOSITES IN POLYESTER MATRIX FOR STRUCTURAL APPLICATION ” funded by ISRO, Total cost Rs. 19,99,000

“DEVELOPMENT OF TEXT AND IMAGE BASED TOOLS FOR TECHNOLOGY MAPPING FROM PATENTS LITERATURE WITH A SPECIFIC APPLICATION TO LANGUAGE TECHNOLOGY CRM AND MOLECULAR STRUCTURE” funded by MCIT, Total cost Rs. 25,65,000

“MOLECULAR ELECTRONICS:FABRICATION OF NEW PHOTOLITHOGRAPHY-LESS VERTICAL ORGANIC THIN FILM TRANSISTORS (OTFTS) AT IITK” funded by MCIT, Total cost Rs. 37,58,000

“DEVELOPMENT OF A MULTIMODAL BIOMETRIC SYSTEM FOR HUMAN IDENTIFICATION” funded by MCIT, Total cost Rs. 70,10,000

“QUANTUM COMPUTING WITH ULTRAFAST PULSE SHAPING TECHNOLOGY” funded by MCIT, Total cost Rs. 3,28,00,000

“A PORTABLE MODEL OF PRIMARY HEALTHCARE DELIVERY ” funded by MLA, Total cost Rs. 1,02,92,400

“TECHNOLOGY MISSION ON RAIL SAFETY” funded by MHRD and Ministry of Railways, Total cost Rs. 26, 50,00,000

### **B. International Projects**

“FUNDAMENTAL STUDIES ON MANGANESE OXIDES AND ANALOGS FOR SUITABILITY AS CATHODES IN RECHARGEABLE LITHIUM ION BATTERIES” funded by RCI, Total cost Rs. 21,55,000

“TREATMENT OF DOMESTIC WASTEWATER IN INDIA : UASB OPTIMIZATION” funded by SIDA, Total cost Rs. 75,00,000

“ STRUCTURAL STUDIES ON GTPASES AND EDG FAMILY PROTEIN-COUPLED RECEPTORS ” funded by TWT, Total cost Rs. 2,66,81,086

“DEVELOPMENT OF ULTRAFAST PULSE SHAPING BASED HIGH RESOLUTION INFRARED IMAGING INSTRUMENT FOR CANCER DIAGNOSTICS AND THEIR POSSIBLE ELIMINATION” funded by TWT, Total cost Rs. 2,77,25,142

## **CONSULTANCY PROJECTS**

### **A. National Projects**

“DEVELOPMENT OF A NOVEL TURNING INDICATOR MECHANISM USING SHAPE MEMORY ALLOY BASED SYSTEM” funded by GM, Total cost Rs. 4,92,600

“DEVELOPMENT OF IT-ENABLED TRADING SYSTEM FOR NVVN & SETTING UP OF POWER EXCHANGE AT NATIONAL LEVEL” funded by CRISIL, Total cost Rs. 5,00,000

“ HEXAPOD WALKING ROBOT” funded by CMERI, Total cost Rs. 5,94,000

“MONITORING OF AMBIENT AIR QUALITY OPERATION AND MAINTENANCE OF AMBIENT AIR QUALITY” funded by CPCB, Total cost Rs. 6,58,920

“CONSULTANCY SERVICES REGARDING PUMP CHANNEL” funded by MDC, Total cost 7,33,695

“COMPUTATIONAL SIMULATION BASED DESIGN VALIDATION FOR THE ARRESTER BARRIER SYSTEM FOR SU-30 AIRCRAFT” funded by RCMA, Total cost 7,75,000

“DESIGN EVALUATION AND FINALIZATION OF ARMING MECHANISM FOR FUZE DAISD FOR NON-SPINNING SUBMUNITION” funded by ARDE, Total cost 8,50,000

“DEVELOPMENT OF SOFTWARE TOOL” funded by APTECH, Total cost 9,00,000



“SOLUTION OF HPT-32 ENGINE CUT-OFF PROBLEM”, funded by RCMA, Total cost 9,89,000

“MODELING PERFORMANCE OF DISTRIBUTED APPLICATIONS”, funded by MICROS, Total cost Rs. 11,34,915

“PROGRAM CHECKING”, funded by MICROS, Total cost Rs. 13,87,090

“EARTHQUAKE ENGINEERING DEVELOPMENT OF MANUAL & GUIDELINES”, funded by GSDMA, Total cost Rs. 14,32,600

“DEVELOPMENT OF PARALLEL IN-HOUSE FINITE ELEMENT BASED MADAM CODE”, funded by BARC, Total cost Rs. 17,00,000

“REVIEW OF AMBIENT AIR QUALITY CRITERIA / STANDARDS”, funded by CPCB, Total cost Rs. 21,21,987

“REMEDICATION OF GROUNDWATER POLLUTION DUE TO CHROMIUM IN NORAIKHEDE AREA OF KANPUR CITY, UP”, funded by BIUSA, Total cost Rs. 22,50,000

“DEVELOPMENT OF APPLICATION FOR PRINTING OF MAPS”, funded by CHIPS, Total cost Rs. 25,00,000

“EVOLUTIONARY MULTI-OBJECTIVE OPTIMIZATION”, funded by STMICR, Total cost Rs. 39,68,640

“AOD STAINLESS STEEL”, funded by JINDAL, Total cost Rs. 150,00,000

### **B. International Projects**

“ CROMOZ MOU CONSULTANCY” , funded by CRUMOZ, Total cost Rs. 39,15,000

“SYNTHETIC ORGANIC CHEMISTRY SYNTHESIS OF FRAGMENTS”, funded by NRGN, Total cost Rs. 55,00,000

## **Alumni Association Activities**

The Alumni Association of IIT Kanpur organizes a number of activities for the present students and the Alumni. The activities for the year 2004-05 are summarized here:

### **28TH ANNUAL ALUMNI CONVENTION**

The 28th Annual Convention of Alumni Association was held on 27th December 04. Alumni from India and abroad, attended the annual convention with enthusiasm and nostalgia. The visiting alumni interacted with the students and the faculty, both formally and informally, and also visited the various Institute facilities and departments. An alumni archival exhibition was also setup to mark this occasion.

### **ANNUAL GENERAL BODY MEETING**

The Annual General Body Meeting of the Association was held on the occasion of 28<sup>th</sup> Annual Alumni Convention. The meeting was chaired by the Vice President Mr Anurag Goel, Secretary Prof Ashok Khanna presented the annual report of activities while Prof Vinayak Eswaran, Treasurer presented the statement of accounts. Bye-laws have been amended to permit Alumni Association's global members to vote on any issue through secure e-voting or postal voting if they are not physically present at the time of voting.

### **DISTINGUISHED ALUMNUS AWARD**

The Distinguished Alumnus Award is presented every year at the time of the Annual Alumni Convention, Nomination are invited in various areas of pursuits which are presented before a committee appointed by the Director. Dr S G Dhande, Director IIT Kanpur constituted the following Distinguished Alumnus Award Evaluation Committee for the year 2004- 05:

Professor S G Dhande, Director, IIT Kanpur	Chairman
Mr Mukhtar-Ul-Amin, Super House Ltd, Kanpur	Member
Mr Rakesh Bhan, BOG Nominee	Member
Dr Prawal Sinha, Professor and Head, Department of Mathematics, IIT Kanpur	Member
Dr C Venkatesan, Dean of Students Affair, IIT Kanpur	Member
Dr Ashok Khanna, Secretary, Alumni Association	Member- Secretary

The committee selected the following two alumni for the Distinguished Alumnus Award:

Pawan Kumar Goenka (BT/ME/75), Chief Operating Officer (COO), Mahindra & Mahindra Ltd.

For his outstanding and all round contributions in the field of the Vehicle Design & Development and Engine Tribology.

Ajay Kumar (PHD/AE/74), Director, Aerodynamics, Aerothermodynamics and Acoustics Competency, NASA Langley Research Centre Hampton, Virginia, USA

For his outstanding and phenomenal contributions to the world of aviation industry and especially for his significant contribution in the development of X-43A, a hypersonic scramjet-powered research aircraft designed to fly at a speed up to Mach 10.

### **SATYENDRA K DUBEY MEMORIAL AWARD**

Satyendra K Dubey Memorial Award has been established by the Board of Governors, IIT Kanpur for exemplary service to humanity and for upholding human values.

### **REUNIONS**

The Silver Jubilee Reunion of the Class-of-80 was held on December 27-28,04 which completed 25 years of its graduation was held at IITK. A cheque of Rs 75 lakh was handed over to the Director by the class-of-80. This money will go towards the Alumni Centre Building.

The 35th Year Reunion of the Class-of-70 which completed thirty five years of graduation was organized by the Association on January 1-2, 05. About 75 alumni along with their family members came from all over the world to attend the reunion.

The 1970 batch committed itself to a target collection of Rs 1 crore for developing the soft skills of the IITK students.

This year the 15th Year Reunion of the Class-of-90 was organized jointly with the 35th Year Reunion. The 1990 batch has donated Rs 20 Lakhs towards the furnishing of the Auditorium building.

Alumni from all over the world attended these reunions most of them accompanied with their families. The visiting alumni interact with the students and the faculty, both formally and informally, and also visit the various Institute facilities and departments. The Director hosted a lunch in honour of the visiting alumni at his residence. The alumni were also hosted Hall III.

### **KELKAR ALUMNI LECTURE SERIES**

A Kelkar Alumni Lecture is organized every year in the honour of Prof P K Kelkar, Founder Director, IIT Kanpur. The 23rd Kelkar Alumni Lecture was organized on April 05, 04 and was delivered by Dr Bindeshwar Pathak, Founder, Sulabh Sanitation Movement on 'Endeavors in Environmental Sanitation'.

### **NOSTALGIA**

The Alumni Association organized Nostalgia to bid farewell to the graduating students on April 05, 04 following the Kelkar Alumni Lecture. The programme included a farewell speech by the Director and the Secretary of Alumni Association, presentation of mementoes, group photographs and a farewell dinner. Nostalgia is sponsored by the Institute, Student Gymkhana and the Alumni Association.

### **CHAPTER GET-TOGETHERS**

Alumni Association has various chapters all over the world and the Alumni Association helps them organize their get-togethers. This year get-togethers and picnics were organized at chapters like  
Bangalore - Vijay Anand - [superabrasives@vsnl.com](mailto:superabrasives@vsnl.com),  
Delhi - Gyanesh Choudhary - [servel@vsnl.com](mailto:servel@vsnl.com),  
Jaipur - Deepak Sogani - [dssoganindia@yahoo.com](mailto:dssoganindia@yahoo.com),  
Hydredad-Secundredad - Satyam Suvas - [satyams@dmrl.ernet.in](mailto:satyams@dmrl.ernet.in),  
[satyamsuwas@yahoo.com](mailto:satyamsuwas@yahoo.com),  
Mumbai - Tarun Desai - [tmdesai@vsnl.com](mailto:tmdesai@vsnl.com), [primep@vsnl.net](mailto:primep@vsnl.net).

The Secretary attended the chapter get-togethers at Pune- Dr Pradeep - [pradip@pune.tcs.co.in](mailto:pradip@pune.tcs.co.in) and Meerut - Abhay K Gupta - [abhaygupta73@yahoo.com](mailto:abhaygupta73@yahoo.com). A Aloo paratha breakfast was organized in the Hall I mess @ IITK to revive the Kanpur chapter. At a follow up meeting a core group of Kanpur alumni was formed. Mr Ashok Bajaj, GM of UPSIDC - [bajajak@hotmail.com](mailto:bajajak@hotmail.com) agreed to be the Kanpur chapter coordinator.

Prof S G Dhande, Director, IIT Kanpur with Prof G K Lal, Director of Alumni Relations visited seven US chapter in May this year. The details of the chapters they visited are as follows:

SF Bay Area - May 8, Ajay Bharadwaj-[ajaybharadwaj@yahoo.com](mailto:ajaybharadwaj@yahoo.com),

Los Angeles - May 9, Saurabh Tewari [stewari@CS.UCLA.EDU](mailto:stewari@CS.UCLA.EDU),

Dallas - May 11 Samir Bhargava [Samir\\_Bhargava@i2.com](mailto:Samir_Bhargava@i2.com),

Chicago - May 13, Ajay Gupta [ajgupta@lucent.com](mailto:ajgupta@lucent.com), Sanjeev Maddila - [smaddila@sumapura.com](mailto:smaddila@sumapura.com), Jaideep Srivastava [srivasta@cs.umn.edu](mailto:srivasta@cs.umn.edu),

Cleveland - May 15, Ajay Gupta [ajgupta@lucent.com](mailto:ajgupta@lucent.com),

Washington -May 17, Ranjan Pant [ranjanpant@yahoo.com](mailto:ranjanpant@yahoo.com), Boston - May 19, Rakesh Pandey

[rakesh\\_pandey@bose.com](mailto:rakesh_pandey@bose.com),

New York - May 21, Ram Misra [rambmisra@yahoo.com](mailto:rambmisra@yahoo.com).

These events started with a presentation of the current vision of IITK followed by a discussion/feedback session over lunch or dinner.

## **NEWSLETTER**

The Alumni Association publishes an e-version of its Newsletter which is being e-mailed to all alumni on a bi-monthly basis. Regular features of Newsletter include Secretary's Message, Newsmakers, Faculty & Students corner, Alumni chapter and Campus News, PAN IIT events, Books authored to count a few.

## **MAINTAINING ALUMNI DATABASE**

The Association maintains the database of all its alumni. The Alumni Association is in contact with approximately 60% of the alumni.

## **MAINTAINING ALUMNI WEBSITE**

The Association has its own website [www.iitkalumni.org](http://www.iitkalumni.org) which is presently hosted in the US and is financially supported by the IIT Kanpur Foundation. New features as per the need/desire/ suggestions of alumni are being developed and their contents uploaded regularly.

Alumni Association was also represented at PAN -IIT 2004 held in New Delhi.

## **Central Facilities**

### **P. K. KELKAR LIBRARY**

P. K. Kelkar Library is housed with all modern amenities, in a magnificent three-storied building covering an area of 6873 square meters. With the growth in the collection, the Library is bursting at its seams. A proposal for an annex building to the Library is under active consideration. In the meantime, basement of the Library, earlier occupied by Graphic Arts, is predominantly used for stocking compact journal collections up to 1970, excepting HSS. The Library has been rendering essential support to the academic, research and development programme of the Institute. The Library remains open, for 358 days of the year, from 8 a.m. to 12 midnight on all working days; 9 a.m. to 12 midnight on Saturday; 9 a.m. to 5.30 p.m. on Sundays and Gazetted holidays, and for 24 hours during the three examinations each semester.

### **NEW ADDITIONS**

A total of 8672 volumes including 4080 books and 4592 bound journals were added to the collection during 2004-2005. The budget of Rs. 100 lacs was fully utilized for procurement of books.

### **SUBSCRIPTION TO PERIODICALS AND BINDING**

The periodicals budget for 2004-2005 continued to be Rs. 5.5 crores with additional grant of 20.00 lacs made available by NBHM. The Library subscribed to 1468 current periodicals for the year 2005. Of these 578 are print versions, whereas 877 are print plus on-line and 13 are on-line only. The Library added 4592 bound volumes to its periodicals holdings. Besides, 2715 books and 1645 old periodicals were also bound.

### **LIBRARY SERVICES**

#### **WEEKLY DISPLAYS**

The books added to the Library collection are displayed on the first working day of each week and a weekly 'List of Additions' is published. The current issues of the journals are also displayed, as usual, on alternate days thrice a week.

## CIRCULATION

During the year 2004-2005, 60567 publications were circulated for home study. As usual, a large number of books and journals from reference, textbook, and general collection areas were consulted by users within the Library. Circulation facility is also extended to the superannuating faculty against a token deposit.

## DOCUMENT DELIVERY SERVICES & EXTERNAL USER MEMBERSHIP

Inter-Library Loan (ILL) services are extended free to sister IITs, IISc, TIFR, BARC and other technical institutions & universities. During 2004-2005, ILL (OUT) requests for 347 articles/chapters were received and processed from the host of Institutions, whereas ILL (IN) requests for 68 articles/chapters were made to other libraries. Complimentary copies of CAS services, departmental work etc. accounted for 98,817 xerox copies.

Individual and institutional membership of the Library was made available to 1402 external users.

## ON-LINE CATALOGUES UNDER PROCESS

An on-line catalogue to back volumes of journals for creating a retrospective data file is under way. Besides, a database for CD-ROMs, received in the Library as accompanying material to books, journals, archival volumes of on-line databases, conference proceedings, books only on CD-ROM etc. using WINISIS software is under process.

## LIBRARY AUTOMATION

The User Services module of the IIT Kanpur Library Automation System (iitKLAS) has been re-engineered and available on Web-based platform. The Catalogue search, current contents, journal subscription queries can be accessed through web. The new version of circulation Module, in Java/Jsp, is in the process of development. Digital library initiatives help provide accessibility to the on-line journals from various publishers/Vendors, including INDEST, the MHRD Consortia. Our Library is also accessible to out side community through web: <http://library@iitk.ac.in/> but with limited services.

## **COMPUTER CENTER**

Computer Center at IIT Kanpur is a central facility that caters to the computing needs of the faculty members and the students for their research and teaching. It also manages Internet and campus LAN infrastructure. It provides several popular applications like email and web access. It currently supports more than 5000 users.

For high performance computing, Computer Center has acquired a large 96-node cluster from SUN. Each node is a dual-Opteron 2.4 GHz CPU with 4GB RAM, and 36 GB disk. It runs Linux on all nodes and there is master node, which runs SUN Grid Engine software to manage access to the cluster.

Computer Center has about 200 PCs running Linux or Window 2000 Operating System. All the computers in the Center are connected through a 100 Mbps switched network. About half the PCs are based on Intel Pentium 4 2.0 GHz processor with 256MB RAM, and the other half are based on Intel Pentium 4 with Hyper threading, 3.4GHz processor with 1GB RAM.

Computer Center supports an institute-wide 6000 points, 100 Mbps, fiber optic network that connects all academic departments, central library, student hostels, R&D hostel, and visitors' hostel, lecture halls and all administrative sections. This is one of the largest campus networks in an academic institute. Connectivity to faculty residences is provided through ADSL. For other residential users, both inside and outside the campus, dialup service is provided. For Internet access, we have a leased line of 34Mbps capacity from VSNL, and an additional 2Mbps from ERNET. IIT Kanpur is one of the best connected campuses in India. We also provide wireless access in several important buildings on campus.

Computer Center also has a specialized Virtual Reality Lab, for researchers in visualization and other similar needs. This includes an excellent 3-D projection facility, with a backend graphics engine, and two SGI advanced workstations for development work.

Computer Center provides email and web access facilities to all its users. Faculty members have access to all CC facilities for the life time.

Computer Center operates 24 hours a day, 365 days an year. It has a power back up through a 270 KVA UPS and a 320 KVA generator set. Air conditioning is provided by the central air conditioning plant and split air conditioners.



## HARDWARE IN THE COMPUTER CENTER

Computers in the Center have broadly been divided in various categories based on the activity supported by them. The broad categories and servers with configuration in each of the categories are listed below:

### Central File Server

1. SUN V440 4\* 1.28 GHz UltraSparc IIIi processors, 8 GB RAM,  
6TB SAN storage with tape backup facility.

### Compute Servers

1.	SUN Cluster	Master nodes (2): SUN V40z, AMD Opteron Dual Processor 2.4 GHz, 8 GB RAM, 3X146 GB Disk  Compute nodes (96): SUN V20z, AMD Opteron Dual Processor 2.4 GHz, 4 GB RAM, 36 GB Disk.
2.	SGI Origin 3400	16 MIPS R12000 processors, 8GB RAM, 108GB disk, Graphics engine for Virtual Reality Lab.
3.	HP 9000/ L-3000	4 PA_RISC processors at 550 MHz, 2GB RAM, 108GB disk
4.	IBM RS 6000	4 Processors, 2GB RAM, 108GB disk
5.	Compaq ES40	4 Alpha Processors at 667 MHz, 2GB RAM, 108 GB disk

### Application Servers

1	Internal web server (web)	Dual-Xeon, 2.0 GHz, 1GB RAM, 36GB disk
2	External web server (www)	Dual-Xeon, 3.06GHz, 4GB RAM, 72GB disk
3	Personal webpages - edit (webhome)	P4, 3.4GHz, 2GB RAM, 80GB disk

4	Personal webpages – display (home)	P4, 3.4GHz, 2GB RAM, 80GB disk
5	Remote access server (access)	Dual-Xeon, 2.0GHz, 1GB RAM, 90GB disk
6	Students Gymkhana server (navya)	Dual-Xeon, 2.0GHz, 1GB RAM, 90GB disk
7	Web proxy (proxy)	Dual-Xeon, 3.2GHz, 4GB RAM, 292GB disk
8	Web proxy (vsnlproxy)	Dual-Xeon, 3.2GHz, 4GB RAM, 292GB disk
9	Web proxy (ernetproxy)	Dual-Xeon, 2.0GHz, 1GB RAM, 90GB disk
10	Mailbox server (mailhost)	Dual-Xeon, 3.06GHz, 4GB RAM, 360GB disk
11	Lists server (lists)	P4, 3.6GHz, 2GB RAM, 80GB disk
12	Web-based mail service (webmail)	Dual-Xeon, 2.8GHz, 4GB RAM, 72GB disk
13	Windows Server 1 (CCNT1)	Dual-Xeon, 2.8GHz, 4GB RAM, 72GB disk
14	Windows Server 2 (CCNT4)	Dual-Xeon, 2.8GHz, 4GB RAM, 72GB disk
15	FTP server (ftp)	Dual-Xeon, 3.06GHz, 4GB, 146GB disk
16	External DNS server (ns1)	P4, 3.6GHz, 2GB RAM, 80GB disk
17	Internal DNS, YP server (nis)	Dual-Xeon, 3.2GHz, 4GB, 292GB disk
18	Outgoing mail server (mail2)	P4, 3.6GHz, 2GB RAM, 80GB disk

### **Servers for Office/Library/Digital Library Automation**

1. HP L-1000 PA-RISC 8500@360 MHz, 512 MB RAM, 27GB HDD.
2. SUN E-450 (OA, Digital Lib.) Four sparc @ 400 Mhz, 2GB RAM, 36 GB HDD one 1000 storage with 12 X 18 GB.
3. Zenith One up (NT server) 2 Pentium-Pro processors, 1 GB RAM, 12 GB HDD.
4. PCs (150) in admin sections 486 Pentiums with varying configurations.

- |                          |   |
|--------------------------|---|
| 5. Sun E250 (data vault) | 2 Spare II Processor, 1 GB RAM, 216 GB HDD in RAID. |
| 6. Compaq ML 530 server  | Server for thin clients.                            |
| 7. Compaq thin clients   | 125 thin clients for Office Automation.             |

### **OTHER EQUIPMENT**

Computer Center has two spam filtering hardware from Barracuda Networks.

Computer Center also supports campus networking, and has one main switch, firewall, router, 45 distribution switches, and over 400 access switches.

### **SOFTWARE IN THE CENTER**

Database packages- Oracle, Ingress

CAD/CAM and solid modeling package- I-Deas, Autocad

FEM Packages- Nastran, MSC Mark

CFD Packages- Fluent

Tool to solve symbolic mathematical equations- Mathematica, Math Cad

Simulation- Arena, Solversuite, Gams, Cplex

Chemical Process modeling – Aspen plus

Statistical Analysis Packages- Statistica, SPSS, SAS

Numerical Libraries – NAG

Graphic Presentation – Tecplot, Origin

Deform-3D

Atila, Maple, Adobe Digital video studio, Macromedia Director, Macromedia dream viewer, 3D studio Max 5.1

Katia, Toleran, Chemcad

Autocad 2002, Mechanical desktop, Land Desktop

GE04, Magic RP

Most flavours of Unix operating systems-AIX, Solaris, Irix, HP-UX, True64 Unix, Linux

Windows 2000 and Windows NT environments,

Office Suites- Applixware, Staroffice, Office 2000, Mathype

Compilers-NAG Compiler, Fujitsu Fortran Compiler, Visual Studios (C, C++, Pascal, Ada, Fortran-77, Fortran-90, Java, etc.)

Most of the popular Microsoft Products-Front Page, Back Office, Project, etc.

Abaqus 6.4

All the softwares which come with RedHat/Mandrake Linux distributions

Anti Virus-Norton, Symantec Antivirus for mail gateway

We have site licenses for Solaris, Sun Forte Compiler suite (C, C++, HPC), NAG libraries, and NAG compilers.

Acrobat 6.0 Win 50 users license.

Protector Plus Antivirus 3000 user license.

### **CENTER FOR DEVELOPMENT OF TECHNICAL EDUCATION**

The Center for Development of Technical Education continued its multifaceted activities. Under Quality Improvement Programme (QIP) 07 candidates in M.Tech. and 02 in Ph.D. are admitted to various departments. The Curriculum Development Cell (CDC) approved 09 text book writing proposals in addition to the 10 projects which had been sanctioned earlier. The work for both proposals is under progress. During the last financial year 04, book writing projects have been completed is given below.

Through the Continuing Education Programme numerous short-term courses, conferences and workshops were organized. A List of all short-term courses and workshops/conferences/seminars is given below.

### **BOOK WRITING PROJECTS DURING 2004-2005**

Book writing projects continued	-	10
Proposal approved during the year	-	09
Book writing Projects Completed during the year	-	04

**LIST OF CONDUCTED SHORT TERM COURSES UNDER QIP**

<b>S. N.</b>	<b>Coordinator(s)</b>	<b>Title of the Course</b>	<b>Department</b>	<b>Duration</b>
1	Dr. Binayak Rath	Environmental Economics and Environmental Impact Assessment	(HSS)	May 17-24, 2004
2	Dr B. Dasgupta & Dr. R. Tiwari	Scientific Computing with MATLAB	(ME) (CC)	June 07-12, 2004
3	Dr. Lilavati Krishnan	Communication Skills for Engineers	(HSS)	Oct. 15-21, 2004
4	Dr. V. K. Jain	Advanced Machining Process	(ME)	Oct. 18-23, 2004
5	Dr Avinash Agarwal	Alternative Fuels and Emissions Control	(ME)	Nov. 24-28, 2004
6	Dr. T. K. Sengupta	Advanced Computation Dynamics	(AE)	Dec. 14-18, 2004
7	Dr. Nandini Gupta & Dr. A R Harish	The Finite Element Method in Electrical Engineering Applications	(EE)	Dec. 15-19, 2004
8	Dr. A. Upadhyaya	Power Metallurgy Processing of Materials	(MME)	Dec. 20-25, 2004
9	Dr. Sudhir Misra	Advances in Teaching Cement and Concrete	(CE)	Feb. 13-19, 2005
10	Dr. D P Mishra	Combustion-generated Emission and Its Control	(AE)	Feb. 21-25, 2005
11	Dr. B. Basu	Materials for High Temperature Applications	(MME)	Mar. 12-15, 2005

**SELF-FINANCING COURSES:**

<b>S. N.</b>	<b>Coordinator(s)</b>	<b>Course title</b>	<b>Department</b>	<b>Duration</b>
1	Dr. P. Ramachandran	Revenue Management Practice in the Airline Industry	(IME)	April 05-08, 2004
2	Dr. Kalyanmoy Deb	Genetic Algorithms for Engineering Optimization	(ME)	April 07-09, 2004
3	Drs. Anoop Singh	Challenges and Implementation Issues Post Electricity Act 2003:	(IME) (IME)	April 10-14, 2004
4	A. K. Mittal	Regulatory, Policy and Technical Solutions		
5	Dr. Vinod Tare	Waste Management and EIA	(CE)	May 06-22, 2004
6	Drs. S N Singh & S C Srivastava	Electric Power Distribution: Reforms, Automation and Mgmt.	(EE)	May 10-14, 2004
7	Dr. T V Prabhakar Dr. P Nagaraju	Software Architecture – Do and Describe held at Bangalore	(CSE) (M.Des)	May 24-28, 2004
8	Dr. Durgesh C. Rai	Introduction to Earthquake Engg for UP Polytechnic Teachers	(CE)	June 01-05, 2004
9	Dr. Sudhir K. Jain	Seismic Design of Buildngs	(CE)	June 23-26, 2004
10	Dr. Ashutosh Sharma	SERC School on Modeling of Industrial Reactors	(ChE)	July 12-17, 2004
11	Dr. D. Kunzru	Modeling of Industrial Reactions	(ChE)	July 12-18, 2004
12	Dr. CVR Murty	One Semester Programme on “Earthquake –Resistant Design”	(CE)	July 25-Dec. 10, 2004
13	Dr. J.N. Moorthy	DST – PAC Meeting	(Chem)	July 30 – Aug. 02, 04
14	Dr. A K Sharma	Methodology of Writing Reposts	(HSS)	Aug. 21-22, 2004

15	Dr. A.K. Mallik	Refresher Courses in Mechanical Engg. At Site	(ME)	Sept.2004 -Mar. 05
16	Shri Santosh Kumar	Course for Professional Civil Engineers	(IWD)	Oct. 26-28, 2004
17	Dr. CVR Murty	Seismic Design of Steel Structures	(CE)	Sept. 27-Oct. 01, 2004
18	Dr. A.K. Mittal	Maternal Management of Indian Railway Officers	(IME)	Oct. 10 – Nov.11, 2004
19	Drs. S. Sangal & R K Ray	Principles and Applications of Quantitative Microscopy and Texture of Metallic Materials (AMITEX 2004)	(MME)	Oct. 11-15, 2004
20	Dr. Ashutosh Sharma	SERC School on Colloids and Interfaces: Fundamentals and Research Challenges	(ChE)	Oct. 18-23, 2004
21	Dr. S. S K. Iyer	Plasma Processes for IC Fabrication	(EE)	Oct. 30-31, 2004
22	Dr. Vinod Tare	Air Pollution	(CE)	Nov. 12-13, 2004
23	Dr. T V Prabhakar	Topics in Software Architecture (held at New Delhi)	(CSE)	Nov. 15-16, 2004
24	Dr. CVR Murty	Career Opportunities in Engineering held at Kanpur	(CE)	Dec. 10, 2004
25	Dr. Phalguni Gupta	ACM (International Collegiate Programming Contest)	(CSE)	Dec. 14-15, 2004
26	Dr. B K Mishra	Milling Practice at Kudremukh	(MME)	Dec. 16-18, 2004
27	Dr. S C Koria Dr. N K Sharma	Pedagogy and Teaching Skill Development	(MME) (IME)	Dec. 17-22, 2004
28	Dr. Navpreet Singh	Linux System and Network Administration	(CC)	Dec. 20-24, 2004
29	Dr. CVR Murty	Architecture for Earthquake Resistance of Buildings	(CE)	Jan. 17-21, 2005
30	Dr. Sudhir K. Jain	Bridge Engineering	(CE)	Jan. 18 – Feb. 02, 2005

31	Dr. D. Mazumdar	Modelling in Metals Processing: Concepts, Theory and Application	(MME)	Feb. 01-04, 2005
32	Dr. Rajiv Shekhar	Computer Networking	(SIDBI)	Feb. 05-Apr.05, 2005
33	Dr. Sudhir K. Jain	Seismic Design of Bridges	(CE)	Nov. 22-26, 2004
34	Dr. Prem Chand	Laboratory Practices in Physics	(PHY)	Feb. 07-12, 2005
35	Dr. Animesh Das	Recycling and Other Pavement Rehabilitation Methods	(CE)	Feb. 08-10, 2005
36	Dr. Sudhir Misra	Advances in Testing Cement and Concrete	(CE)	Feb. 13-19, 2005
37	Dr. A. Ghosh	India-Japan Joint Seminar on Manufacturing Science	(ME)	Feb. 20-27, 2005
38	Dr. B K Mishra	Introduction to Discrete Element Methods	(MME)	March 03-05, 2005
39	Dr. B Dasgupta	Mathematical Modeling, Simulation and Optimization	(ME)	March 14-24, 2005

### WORKSHOPS/CONFERENCES/SEMINARS

S. N.	Coordinator(s)	Title of the Conference/ Workshop/Symposium	Department	Duration
1	Dr. Ajai Jain	First Workshop on Anglobharati Technology	(CSE)	Mar. 29-Apr.03, 2004
2	Dr. B. Deo	Deoxidation of Steel and Ladle Management	(MME)	April 09-10, 2004
3	Dr. CVR Murty	Review Workshop in Earthquake Engineering	(CE)	April 19-23, 2004
4	Dr. K K Bajpai	Review Workshop for Resource Material in Earthquake Engineering	(CE)	April 26-30, 2004
5	Dr. R. Sinha	Brainstorming Workshop on Tectonic Geomorphology	(CE)	May 03-07, 2004



6	Dr. P. Mohapatra Dr.P. Chakroborty Dr. S K Jain	Summer Camp 2004	(CE) (CE) (CE)	June 08- July 02, 2004
7	Dr. K K Bajpai	Earthquake Engineering Review Workshop for Masters' Students	(CE)	Aug. 23- 28, 2004
8	Dr. Vinod K. Singh	Symposium on "Emerging Trends in Organic Chemistry"	(Chem)	Sept. 03- 04, 2004
9	Dr. Sudhir K. Jain Dr. K K Bajpai	Workshop on Introduction of Earthquake Engineering Concepts in the Curriculum of Architecture Diploma course of UP Polytechnics	(CE) (CE)	Oct. 11, 2004
10	Drs. Sudhir Misra	International Symposium on "New Technologies for Urban Safety of Mega Cities in Asia" held Agra	(CE)	Oct. 18- 19, 2004
11	Dr. R.K. Sullerey	7 <sup>th</sup> National Conference on Airbreathing Engines and Aerospace Propulsion	(AE)	Nov. 05- 06, 2004
12	Dr. D P Mishra	National Seminar on Combustion	(AE)	Nov. 08, 2004
13	Dr. P. Sensarma Dr. S P Das	National Workshop on Electric Power Quality	(EE) (EE)	Nov. 09- 10, 2004
14	Dr. R P Singh Dr. Vinod Tare	International Conference on "Arosol Clouds and Indian Mansoon"	(CE) (CE)	Nov. 15- 17, 2004
15	Dr. CVR Murty	National Workshop on Introducing Earthquake Engineering in Architecture Curriculum"	(CE)	Nov. 28- 29, 2004
16	Dr. J.P. Gupta	International Conference on "Bhopal and Its Effects on Process Safety"	(ChE)	Dec. 01- 03, 2004
17	Dr. Onkar Dikshit	Brainstorming Session on "Development of Technologies for the Study of the Past"	(CE)	Dec. 04- 05, 2004

18	Dr. Gautam Biswas	Winter Academy 2005	(ME)	Dec. 06-11, 2005
19	Dr. N S Vyas	Conference on "VETOMAC-3 and ACSIM-2004"	(ME)	Dec. 07-10, 2004
20	Dr. NGR Iyengar Dr. A. Kumar	International Congress on "Computational Mechanics & Simulation"	(AE) (CE)	Dec. 09-12, 2004
21	Dr. Vinod Tare	Inter IIT Symposium on Advances in Environmental Science, Engineering and Management	(CE)	Dec. 20-21, 2004
22	Dr. D. Kundu Dr. N. Misra	International Conference in Statistics	(Math) (Math)	Jan. 03-06, 2005
23	Dr. R. Balasubramaniam	Seminar on "History of Indian Science and Technology"	(MME)	Jan. 14-17, 2005
24	Dr. Joseph John	International Conference and Exposition on "Communications and Computing: Trends and Technologies for Tomorrow and Beyond"	(EE)	Feb. 04-06, 2005
25	Dr. D. Gupta Dr. D. Sanghi	2 <sup>nd</sup> Annual IIT Kanpur Hackers Workshop	(CSE) (CSE)	Mar. 04-05, 2005
26	Dr. S. Guha	ARRPET Combined regional Workshop of WWTM and HWTM	(CE)	Mar. 11-12, 2005
27	Dr. Onkar Dikshit	Brainstorming Session on "Development of Technologies for the Study of Past"	(CE)	Mar. 18-19, 2005
28	Dr. P Mitra Dr. A Mookerjee	Workshop on Spatial Issues in Language and Vision	(CSE) (CSE)	Mar. 23-24, 2005

## CENTER FOR CREATIVE WRITING AND PUBLICATION

### The Center organized the following activities during April 2004 to March 2005:

Staging Anton Chekhov's "The Anniversary" on 2<sup>nd</sup> April, Modern Drama which was directed by Prof. G. Neelakantan.

A brainstorming session on 8<sup>th</sup> April to reflect on the roles of the CCWP, and identify a few major activities.

Seminar by Shri Indresh Kumar on "Kashmir: Bhulen, Parinam aur Sambhawnayen" on 15<sup>th</sup> August.

Lecture by Mr. Sandipan Deb, an ex-IITian, Managing Editor of *Outlook Express* magazine, and writer of *IITians*, on 20<sup>th</sup> August.

Two days workshop on *Methodology of Writing Reports*, for secretaries of grassroots organizations working under Mahatma Gandhi Mission Scheme on 21<sup>st</sup> and 22<sup>nd</sup> August.

Creative writing contest for all, jointly with English Literary Society and Hindi Sahitya Sabha, on 21<sup>st</sup> August.

A "Mise-en-scene" i.e., camera language workshop dealing with principles of film making and a mime art workshop from 1<sup>st</sup> to 7<sup>th</sup> September.

Workshop on "Stress Management" by Yogacharya Vinayak Ji on 26<sup>th</sup> September.

Lecture on "Writing Fiction" by Mr. Chetan Bhagat on 30<sup>th</sup> September.

One day workshop on *Leadership and Emotional Intelligence* on 10<sup>th</sup> November by Mr. Edward Payson Hall, and Mr. Ravi Verma.

Seminar on *Writing Narratives: A Case Study of Kashmir Narratives*, by Prof. Ashok Kumar Kaul on 7<sup>th</sup> January.

## STAFF DEVELOPMENT & COORDINATION CENTER

The Staff Development Coordination Center oversees the smooth progression of all the staff members in their career advancement and develops skills of an individual to satisfy current and future manpower needs of the Institute.

The non-teaching staff is an important component in the Institute and they must be taken along the journey of excellence. This Center committed to design to meet the challenges in terms of high qualities of training of human resources in the Institute. The staff members were whole-heartedly participated in the learning activities to acquire new knowledge, skills, attitude and change habits. The Center has organized industrial visit of staff members in order to practice new technology and latest modern techniques of management as well as work culture prevailing in esteem organizations.

The following training programmes were organized during the financial year 2004-2005.

<b>Sr. No</b>	<b>Title of the Training</b>	<b>Duration</b>	<b>No. of Participants</b>	<b>Participants Profile</b>
1	Human Relation at work	Two-weeks April 20-30, 2004	15	Group D
2	Induction Programme	Three-days July 14-16, 2004	16	Group C
3	OB & Work Culture	Two-days July 21-22, 2004	22	Group C (technical)
4	Human Relation at Work	Two-weeks Nov. 02-11, 2004	15	Group D (mess employees)
5	Work Culture	Two-days Feb. 04-05, 2005	35	Group C (ministerial)
6	Computer Proficiency	Two-weeks Feb. 07-19, 2005	32	Group C (mechanics)
7	Safety management	Two-days Feb. 21-22, 2005	38	Group B & C
8	Communication at work	Two-days March 03-04, 2005	25	Group B & C

9	Induction Programme	One-week March 14-18, 2005	17	Group A, B & C
10	Administrative Vigilance	One-day March 26, 2005	18	Group A & B

### SC/ST AND OBC CELL

At present, Prof. NS Gajbhiye (Deptt. of Chemistry), is the Liaison Officer for SC/ST & OBC w.e.f. September 20, 2001.

### IMPLEMENTATION OF RESERVATION ORDERS

The effective date of implementation of reservation for SCs and STs in the direct recruitment is **5<sup>th</sup> September 1974** in this Institute.

### MAINTENANCE OF ROSTERS/ PERCENTAGE OF RESERVATION

The Board of Governors had approved, in its meeting held on July 27, 1995, maintenance of 120 points vacancy-based roster [for Group A other than exempted posts (Points reserved in favour of OBCs-31, SCs-20, STs-9)] & B posts and 100 points roster for Group C & D posts (Points reserved in favour of OBCs-27, SCs-21, STs-1) for direct recruitment at the Institute.

On the basis of Judgement passed by the Constitution bench of Supreme Court, the Government of India, Deptt. Of Per. & Trg., issued O.M. 36012/2/96-Estt.(Res.) dated July 02, 1997 vide which the above vacancy-based rosters have been revised into post-based rosters for the different category of employees in direct recruitment. The Board after due consideration accorded its approval, in its 1997/5<sup>th</sup> meeting held on December 05, 1997 for maintenance of post-based rosters.

As per Recruitment and Career Development Scheme (not in operation at present) which is personal promotion scheme (non-vacancy linked promotion scheme), there is **no promotion based on vacancies**, hence reservation in career advancement is not applicable.

## CONCESSIONS/RELAXATIONS

- (a) There is no upper age bar in the Institute for any post for any community. In case any age limit is prescribed due relaxation of 5 years in upper age is made available for SC/ST candidates and of 3 years to OBCs.
- (b) SC/ST are fully exempted from payment of application and registration fees:
- (c) To and fro TA is being paid to the candidates of all categories out of Kanpur to attend the test and interview [For Group-A: 1<sup>st</sup> class and for Group B, C & D: 2<sup>nd</sup> class rail fare];
- (d) Experience requirement is relaxable at the discretion of competent authority.
- (e) In addition to relaxation of experience requirement, higher initial pay is given to exceptionally qualified and deserving candidates. During the period of report, higher initial pay was given to the following employee:
  - (i) Two additional increments in the pay scale of Rs.8000-275-13500 were given to Shri Arun U. Shrot (ST), Assistant Registrar, DORD Office.
  - (ii) Two additional increments in the pay scale of Rs.8000-275-13500 were given to Shri Avadh Behari (SC), Assistant Registrar, Central Stores.
  - (iii) Ten additional increments in the pay scale of Rs.2650-65-3300-70-4000 were given to Shri Suresh Chandra (SC), Dresser, Health Center.
  - (iv) Two additional increments in the pay scale of Rs. 2650-65-3300-70-4000 were given to Shri Raj Kamal Sharma (OBC), Dresser, Health Center.
  - (v) One additional increment in the pay scale of Rs. 3050-75-3950-80-4590 was given to Shri Man Mohan Nath (OBC), Mechanic, Dept. of Physics.
  - (vi) Four additional increments in the pay scale of Rs.3200-85-4900 were given to Shri KM Gupta (OBC), Lab. Asstt., Dept. Chemistry.
  - (vii) Two additional increments in the pay scale of Rs.3200-85-4900 were given to Shri K. Yohesh (OBC), Lab. Asstt., Dept. of Chemical Engg. (not turned up to join the Institute)
  - (viii) Two additional increments in the pay scale of Rs.3050-75-3950-80-4590 were given to Shri Binod Kumar (OBC), Mechanic, Dept. of Chemical Engg.
  - (ix) One additional increment in the pay scale of Rs.3050-75-3950-80-4590 was given to Shri M.K. Seth (OBC), Mechanic, Dept. of Elect. Engg.

- (x) Five additional increments in the pay-scale of Rs.3050-75-3950-804590 were given to Shri Manoj Sharma (OBC), Mechanic, Dept. of Chemistry.
- (xi) Two additional increments in the pay-scale of Rs.3050-75-3950-804590 were given to Shri Siya Ram Kuril (SC), Mechanic, Dept. of MME.
- (xii) Four additional increments in the pay-scale of Rs.3200-85-4900 were given to Shri Ram Kewal Maurya (OBC), Lab. Asst., Dept. of Civil Engg.

### EMPLOYMENT NOTIFICATION

Advertisement/Notification is released in the Employment News with details of concessions/ relaxations to SC/ST & OBC candidates and the number of posts reserved available for them. A copy of the Advt. is sent to AIR/ Doordarshan for publicity. The copies of Employment Notices/ Notifications are sent to recognise SC/ST Welfare Associations for publicity among their members.

During the period of report, the detail of Advts. (internal/ external) issued through Recruitment Section is as under :

Advt. No.	Name of Post(s)	Pay Scale	No. of Vacancies				Total	Published in
			S C	S T	OB C	U R		
2/ 2004	Registrar	16400-22400	-	-	-	1	1	The Hindu-All Edns., Times of India-All Edns., Hindustan Times-All Edns., Dainik Jagran-All Edns., University News-Delhi and Employment News -All
	Librarian	16400-22400	-	-	-	1	1	
	Superintending Engineer	14300-18300	-	-	-	1	1	
	Asst. Placement Officer	8000-13500	-	-	1	-	1	
	Asst. P.E. Officer	8000-13500	-	-	1	-	1	
	Asst. R&D Officer	8000-13500	-	1	-	-	1	
	Assistant Librarian	8000-13500	1	-	1	2	4	

	Assistant Registrar	8000-13500	1	1	1	1	4	Edns
	Security Officer	8000-13500	-	-	1	-	1	
3/ 2004	Mechanic	3050-4590	1	-	4	6	11	Dainik Jagran -All Editions, Amar Ujal - All Editions and Employment News-All Edns.
	Lab. Assistant	3200-4900	1	-	2	3	6	
	Technical Assistant	4500-7000	3	-	6	8	17	
	STA (Translation)	5500-9000	-	-	1	-	1	
	Dresser	2650-4000	1	-	1	-	2	
	Lab. Asst. (Radiography)	3200-4900	-	-	-	1	1	
<b>Total</b>			8	2	19	24	53	

The recruitment for all academic posts of Institute is made through the press/ professional journals/ circulars to educational Institutes etc.

#### **INCLUSION OF SC/ST MEMBER**

A SC/ST member of comparable status is included in the Selection Committee as a full member. For the period of report, the detail of Selection/ Assessment Committee meetings held through Recruitment Section is given below:

For Selection:	Total 26 Selection Committee meetings: 02 S/C meetings, wherein SCT representative included. 11 S/C meeting, wherein SCT/OBC representative included. 12 S/C meeting, wherein OBC representative included. 01 S/C meeting, wherein No SCT/OBC representative included as there was no candidate was called from SCT/OBC category
For Assessment:	01 Asmt. Committee meeting held, wherein SCT representative included.



### CALL LETTERS FOR INTERVIEWS/ APPOINTMENT LETTERS

1. To ensure that the interview/ appointment letters are received by the candidates (including reserved category candidates) well in time – the interview/ appointment letters are being sent through UPC and registered post to ensure delivery.
2. Normally for interviews a minimum of three weeks' time and for appointments a minimum of one month's period of interval is being provided.

### RESERVATION OF QUARTERS

The Institute has been allotting one in every ten qrs. to SC/ST employees, out of Type-IA, Type-I and Type-II Qrs. and one in every twenty qrs. in Type-III, and Type-IV Qrs. (only from the pool reserved for allotment to Officers other than faculty).

The available data related to house allotment is given below for the period under reference:

Type of house	Houses allotted to			Total
	SC/ST		GEN	
	As per Reservation	As per Seniority		
Type-IA (Single room)	-	-	-	-
Type-1A (Double room)	02	02	07	11
Type-I	02	02	16	20
Type-II	03	02	16	21
Type-III	-	-	-	-
Type-IV	-	-	-	-

2. There is no reservation in the quarters of Type –V (as these quarters are more or less allotted to faculty members and other eligible officers without any discrimination of caste and creed etc.)

### COMPLAINTS/ GRIEVANCES

No letter received for redressal of grievance of a SC/ST employee. Any **Caste falsification** brought to notice is also followed up by the Cell. No new case came in notice.

Apart from the above, the data, as available for showing the **representation of SCs/STs & OBCs in other areas**, is given below:

**A. Academic Staff:**

Area(s)	SC	ST	OBC	GEN	Total
Appointments	01	-	-	26	27
Retirement	-	-	-	14	14
Deaths	-	-	-	01	01
Resignation	-	-	-	03	03
V/Retirement	-	-	-	01	01
C/Retirement	-	-	-	-	-
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-

**B. Non-Academic:**

Area(s)	SC	ST	OBC	GEN	Total
Appointments					
a) On permanent basis (Through open Recruitment)	-	-	1	3	4
b) On compassionate grounds	-	-	1	2	3
c) On deputation basis	-	-	-	1	1
d) On contract for 3 yrs	3	1-UR	6	9	19
<b>Total</b>	3	1	8	15	27
Retirement	09+5●	-	-	62	71+5●
Deaths	1●	-	-	4	4+1●
Resignation	-	-	-	3	3
V/Retirement	-	-	-	-	-
C/Retirement	-	-	-	-	-
SVRS	-	-	-	3	3
Deputationists repatriated	-	-	-	-	-
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-
<b>Total</b>	9+6●	-	-	72	81+6●

● Cleaners

**Assessment (Non-Vacancy linked personal promotion)**

Pay-scale		SC	ST	OBC	GEN	Total
From	To					
12000-18300	16400-20000	1	-	-	-	1

In addition to above, the data, as available for showing the **representation of SCs/STs & OBCs related to existing strength** of the employees at the Institute, is given below:

**Existing Strength of Academic Staff (Teaching/Non-teaching) as on 01.04.2005:  
Recruited through DOFA Office**

Academic	SC	ST	OBC	GEN	Total
Teaching	3	-	-	304	307
Non-Teaching	1	-	-	46	47
<b>Total</b>	4	-	-	350	354

**Existing Strength of Non-Academic Staff as on 01.04.2005:  
Recruited through Recruitment Section**

Group	SC	ST	OBC	GEN	Total
A	6	-	4	30	40
B	31	2	17	186	236
C	63	6	31	243	343
D	66+19*	-	9	178	253+19*
<b>Total</b>	166+19*	8	61	637	872+19*

- Cleaners not counted towards reservation.

**Existing Strength of Account-II Employees as on 01.04.2005:  
Recruited Through DORD Office**

Group	SC	ST	OBC	GEN	Total
B	-	-	1	5	6
C	1	-	-	15	16
D	3	1	6	3	13
<b>Total</b>	4	1	7	23	35

**Existing Strength of Mess Employees as on 01.04.2005:  
Recruited through COW Office**

Group	SC	ST	OBC	GEN	Total
B	-	-	1	4	5
C	-	-	1	4	5
D	16+6*	-	45	67	128+6*
<b>Total</b>	16+6*	-	47	75	138+6*

\* Cleaners not counted towards reservation

E- The data as available for showing the **representation of SCs/STs related to the students admitted in the 1<sup>st</sup> Semester 2004-05** in various programmes/discipline at the Institute is given below:

Programmes	Registration Data in the 2004-2005 (I Semester)			
	SC	ST	GEN	Total
<b>B.Tech</b>				
Aero. Engg.	17	-	74	91
BSBE	2	-	20	22
Chem. Engg.	26	2	139	167
Civil Engg.	21	3	143	167
Comp. Sc & Engg	21	14	124	159
Elect. Engg.	49	23	221	293
MME	18	1	167	186
Mech. Engg.	34	11	176	221
<b>Total</b>	188	54	1064	1306

<b>Programmes</b>	<b>Registration Data in the 2004-2005 (I Semester)</b>			
<b>M.Sc (5yrs. Integrated)</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Chemistry	1	-	56	57
Mathematics	1	-	85	86
Physics	3	-	59	62
<b>Total</b>	5	-	200	205

<b>Programmes</b>	<b>Registration Data in the 2004-2005 (I Semester)</b>			
<b>B-Tech-M-Tech (Dual Degree)</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Aero. Engg.	3	-	18	21
Civil Engg	-	-	12	12
Chem. Engg.	5	-	28	33
Comp. Sc & Engg	10	4	62	76
Elect. Engg.	8	2	46	56
Mech. Engg.	9	-	53	62
<b>Total</b>	35	6	219	260

<b>Programmes</b>	<b>Registration Data in the 2004-2005 (I Semester)</b>			
<b>M.Sc-Ph. D (Dual Degree)</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Physics	2	1	12	15
<b>Total</b>	2	1	12	15

<b>Programmes</b>	<b>Registration Data in the 2004-2005(I Semester)</b>			
<b>M.Sc (2 yrs.)</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Chemistry	4	1	41	46
Mathematics	4	-	36	40
Statistics	3	-	30	33
Physics	3	2	48	53
<b>Total</b>	14	3	155	172

<b>Programmes</b>	<b>Registration Data in the 2004-2005 (I Semester)</b>			
<b>M-Tech</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Aero. Engg	6	-	46	52
Chem. Engg.	4	-	53	57
Civil Engg.	3	1	94	98
Com. Sc. & Engg	5	1	97	103
Elect. Engg.	10	-	166	176
Mech. Engg.	10	-	120	130
MME	6	-	65	71
MSP	-	1	23	24
IME	3	-	20	23
NET	-	-	19	19
LTP	-	-	12	12
EEM	3	-	31	34
BSBE	1	-	17	18
DES	3	-	19	22
DIIT	-	-	-	-
MBA	11	-	64	75
<b>Total</b>	<b>65</b>	<b>3</b>	<b>846</b>	<b>914</b>

<b>Programmes</b>	<b>Registration Data in the 2004-2005 (I Semester)</b>			
<b>Ph.D</b>	<b>SC</b>	<b>ST</b>	<b>GEN</b>	<b>Total</b>
Aero. Engg.	3	-	28	31
Chem. Engg.	4	-	27	31
Civil Engg.	2	-	39	41
Comp. Sc & Engg	-	-	12	12
Elect. Engg.	3	-	40	43
Mech. Engg.	1	-	44	45
MME	2	-	30	32
MSP	1	-	13	14
IME	1	-	11	12
NET	-	-	3	3
CHM	9	-	142	151
MTH	1	-	53	54
PHY	1	-	43	44
M.Sc-Ph.D Dual Degree	1	-	19	20

HSS	1	-	45	46
STAT	-	-	6	6
BSBE	2	-	20	22
<b>Total</b>	32		575	607

### **RAJBHASHA PRAKOSHTHA**

IIT Kanpur is an Institute of national importance where students from all over the country and abroad are admitted for higher education in Science, Engineering, Technology and Humanities disciplines. Therefore, the English language has been adopted as the medium of instruction / syllabus, research and academic activities.

Rajbhasha Prakoshtha was established in the Institute in September 1986. It has got its own office which is equipped with two bilingual personal computers for smooth and efficient working. It is managed by a liaison officer, Assistant Registrar, a senior Stenographer (Hindi) and a Technical Assistant (Translation). The Rajbhasha Prakoshtha is effortive in creating awareness of Hindi among the Institute employees. "Sansthan Rajbhasha Karyanvayan Samiti" constituted by the Director monitors and provides guidance to the Rajbhasha Prakoshtha in its planning and performance. The Rajbhasha Prakostha performs various activities like organisation of Hindi Diwas and holds meetings for promoting the atmosphere of Rajbhasha in the Institute round the year.

#### **The Rajbhasha Prakostha has adopted the following policies:**

Entire correspondence with Group D employees are done in Hindi.

All Hindi letters are replied in Hindi.

All routine forms and the heading of Registers have been printed bilingually in most of the departments of the Institute.

The name plates, office stamps, signboards, letter heads, and envelopes etc, have been made bilingual. 15 LDCs/ UDCs have been trained in Hindi type under the Hindi training programme organised by the Hindi Shikshan Yojana Kanpur. Similarly, 4 ``Stenographers have been trained in Hindi Stenography under the scheme.

Regular classes of Probodh, Praveen & Pragya for the Non Hindi speaking employees have already been started. 7 Non Hindi speaking employees have been trained in Prabodh, Praveen and 6 trained in Pragya.

The Act and the Statutes of the Institute have been made bilingual.

The Annual Report of the Institute for the year 2003-2004 and the Audit Report 2003- 2004 received from Account Section/AG, UP were translated into Hindi and a fair copies typed for submission to the Ministry.

The press release and invitation cards for the convocation were issued bilingually. All periodical reports were sent to the Ministry and the Nager Rajbhasha Karyanvayan Samiti in time.

In compliance to the directives of the Official Language Department, New Delhi, Hindi week was observed by conducting various competitions and on 27.09.04, Hindi Diwas samaroh was held in the Lecture Hall complex, in which the winner of various competitions were honored with suitable cash awards.

**Following competitions were held on 21.09.04 to 27.09.04:**

- a) General story order competition (Fourth class employees)
- b) Hindi essay competition
- c) Vocabulary competition
- d) Noting and Drafting competition
- e) Poetry recitation competition

Winner of the above competition were as under:

**General story order competition**

- |    |                          |       |
|----|--------------------------|-------|
| 1. | Shri Arvind Kumar Pandey | Ist   |
| 2. | Shri Om Prakesh Yadav    | IInd  |
| 3. | Shri Om Prakesh II       | IIIrd |

**Hindi essay competition**

- |    |                           |       |
|----|---------------------------|-------|
| 1. | Shri Radha Shran Satsangi | Ist   |
| 2. | Shri Krishan Kumar Tiwari | IInd  |
| 3. | Shri H.L Prasad           | IIIrd |

**Vocabulary competition**

- |    |                        |       |
|----|------------------------|-------|
| 1. | Shri Abhey Kumar Nayak | Ist   |
| 2. | Shri Binu S            | IInd  |
| 3. | Shri K.V. Satyamurti   | IIIrd |



**Noting and Drafting competition**

- |    |                     |       |
|----|---------------------|-------|
| 1. | Shri Ashok Kumar    | Ist   |
| 2. | Mohd. Nizam Khan    | IInd  |
| 3. | Shri J.P. Kannoziya | IIIrd |

**Poetry recitation competition**

- |    |                     |      |
|----|---------------------|------|
| 1. | Shri Nishant Kumar  | Ist  |
| 2. | Shri Brijesh pandey | IInd |

During the year 2004 -2005, about 87 letters from Directorate, 73 letters from Registrar's office, 260 letters/ circulars along with Hindi translation.

Rajbhasha Prakoshtha is dedicated for the upliftment of Hindi at the Institute. It is always prepared to co-ordinate with each and every department of the Institute in the implementation of the orders and directives received time to time from the Ministry of Human Resource & Development, Govt. of India.

**MEDIA TECHNOLOGY CENTER**

The Media Technology Center is an attempt to encourage and cultivate a sense of appreciation and explores the skills involved in the new media for creative expressions. Center aims to provide a meaningful platform for the students of the Indian Institute of Technology Kanpur to foster their creative potentials and merge it with their gradual process of acquiring and exchanging knowledge with technology based education at the Institute.

One of the major on going projects of the center involves faculty across the Institute in production of quality video based courseware to generate resources and aids for supporting the engineering, sciences and technology based education that can reach out to the larger Education system through television or other communication media. The Ministry of Human Resource and Development support the initiative under the auspicious of National Program on Technology Enhanced Learning (NPTEL). In the long term, Media Technology Center aims to create a digital portal as an archive of supportive materials to serve educational purposes and research references in the field of Engineering, Science and Technology, Humanities and Management studies as well as in the relevant areas of National Heritage and Culture. The relevant information can be utilized for classroom teaching, student references and research aid.

Students of the Media Communication in the Design Program have a direct relevance to the Center with their academic course work. The resources and expertise are shared to create a range of productions ranging from documentary films to commercial ads.

Committed manpower and resources of the Media Technology Center is round the year involved in providing its support in various academic and non-academic events.

## **Finance**

The Ministry of Human Resources & Development (MHRD) has released Rs. 6800.00 lakh as Non-Plan Grant and 3000.00 lakh as Plan Grant in the financial year 2004-2005.

### **NON-PLAN**

The total receipt under Non-Plan during the financial year 2004-05 from Ministry of Human Resources & Development, Government of India is Rs. 6800.00 lakh. The Institute has also generated its own Internal Receipts of Rs. 1514.37 lakh, which includes Rs. 743.69 lakh as student fees, Rs. 507.12 lakh interest earned on investments/bank balances and Rs. 263.56 lakh as other miscellaneous income.

The Institute has also withdrawn an amount of Rs. 100.00 from Endowment fund account of the Institute for Non Plan activities during the financial year 2004-05.

The total Non Plan expenditure during the financial year 2004-2005 comes out to Rs. 8414.37 lakh against the total earnings of Rs. 8414.37 lakh.

### **PLAN**

Total receipts under Plan during the financial year 2004-2005 is Rs. 3010.00 lakh which includes 3000.00 lakh grant-in-aid under Plan from the MHRD, Government of India, and Rs. 10.00 lakh from other sources.

The total expenditure under Plan has been restricted to Rs. 3010.00 lakh. This expenditure includes Rs. 871.87 on Building & Works, Rs. 39.69 lakh on Central Air- Conditioning Facilities, Rs. 1451.00 lakh on Non- consumable purchases including Equipment, furniture & fixtures etc., Rs. 445.70 Lakh on Library Books and Periodicals & Journals and Rs. 201.74 lakh for Building and Works (Project).

**INCOME AND EXPENDITURE UNDER MAJOR HEADS**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Income (Rs. In Lakh)</b>	<b>Expenditure (Rs. In Lakh)</b>
01	Non- Plan	8414.37	8414.37
02	Plan	3010.00	3010.00
03	Other Operational Funds		
	GPF/CPF	1001.28	859.77 (Non Plan)
04	JEE	477.49	374.66 (Non Plan) 0.48 (Plan)
05	GATE	141.55	82.78 (Non Plan) 0.15 (Plan)
06	GATE (JMET)	7.15	4.81 (Non Plan)
07	Research & Development	444.83	256.68 (Non Plan) 43.31 (Plan)
08	Deans Capital Fund	49.76	14.31 (Non Plan) 4.64 (Plan)
09	Hall Management	294.06	266.00 (Non Plan)
10	Fund Hall Management	66.98	46.39 (Non Plan)
11	Pension Hall Management	56.14	50.02 (Non Plan)
12	Student Gymkhana	25.02	17.13 (Non Plan)
14	Visitors Hostel	55.18	53.01 (Non Plan) 0.53 (Plan)
14	Endowment Fund	1014.18	250.11 (Non Plan)

**Donations received from 01-04-2004 to 31-03-2004**

Bokil Memorial Award	Rs.	57224.00
NICEE-INDIA Endowment Fund	Rs.	318525.00
SIDBI Innovation & Incubation Centre (UP Govt.)	Rs.	20000000.00
Prof. C N R Rao Lecture Series	Rs.	100100.00
VI National Symposium Chemistry Deptt. Lecture Series	Rs.	296712.00
Satyendra K Dubey Memorial Fund	Rs.	150000.00
Satyendra K Dubey Memorial Award	Rs.	319150.00
Prof. S Sampath Chair	Rs.	875601.00
Infosys Fellowship	Rs.	300000.00
Arindam Bose Lecture Series	Rs.	217121.00
Devendra Shukla Lecture Series	Rs.	434318.00
R R Dasari Lecture Series	Rs.	434318.00
J Mohanty Lecture Series	Rs.	436286.00
Dr. Sachidanand Memorial Fund	Rs.	145000.00
Dr. Grusharan Singh Scholarship	Rs.	200000.00
R R Malhotra Education Society Lecture Series	Rs.	300000.00
Alumni 1966 Batch	Rs.	88600.00
Alumni 1967 Batch	Rs.	371258.00
Alumni 1970 Batch	Rs.	297200.00
Alumni 1990 Batch	Rs.	127730.00
Alumni Association	Rs.	113212.00
SIDBI/ IITK Endowment (for SIDBI Cell at IITK)	Rs.	200000.00
Alumni 1980 Batch	Rs.	7406595.00
Alumni 1977 Batch	Rs.	10000.00
Alumni 1969 Batch	Rs.	2341522.00
Alumni 1979 Batch	Rs.	1626278.00
SUKRITI Research Grant	Rs.	200000.00
For Mechanical Engg. Deptt. (KanGAL)	Rs.	21410.00
For BSBE Department (Mr. Ajit Gill)	Rs.	2183741.00

## Facilities to Students

### RESIDENTIAL ACCOMMODATION FOR STUDENTS

#### **Hall of Residence:**

IIT Kanpur is a residential Institute and thus requires that all students registered for a degree programme in the Institute reside in the Campus itself. Therefore, all students except (i) married students who are allotted alternative accommodation in single bed room apartments (SBRA) and (ii) students who are wards of campus residents are provided room accommodation in the Halls of Residences with mess and other facilities. Students, who are wards of campus residents, as a special case, are permitted to stay with their parents on the campus.

The Institute has eight Halls of Residence for boys, namely Hall I to Hall VIII, and one for girls (GH) with total capacities of 3433 and 350 for boys and girls respectively. In addition, there is accommodation for 60 students in single bedroom apartments (SBRA). The construction of hall of Residence No.9 is in planning stage.

The Halls have single and double-seated rooms. Presently, most of the senior undergraduate and all post graduate students are given single-seated rooms, while most of first and second year and some third year B. Tech. and M. Sc., (Integrated) students and Ist year M. Sc. (2-Year) are living in double seated rooms. Each Hall has a mess of which every hall resident is a member. The Halls of Residence also have a well subscribed reading room, TV room, TT rooms, badminton and volley ball courts, canteen, library (with the books on general topics) and several hobby clubs. The affairs of these amenities in each Hall are managed by (i) the respective committee of students for the amenities and (ii) a central Hall Executive Committee (HEC) under the overall guidance and supervision of three wardens (two for Hall-VI). The overall management of the Halls of residence is through the central Hall Management Council (HMC). The Council of Wardens (COW) looks after the affairs of mess workers.

In addition to students, staff working in various research projects of the Institute are also provided accommodation in the halls depending upon the availability of the rooms. The boarding and lodging arrangements for the participants of conferences and short-term courses are also made in the Halls of Residence.

### **Single Bed Room Apartments (SBRAs)**

Depending on the availability, the accommodation in single bedroom apartments (SBRA) is provided to married students. In exceptional cases bachelors, on specific medical grounds, may also be provided SBRA accommodation. A Married Students Welfare Committee (MSWC) manages the affairs of SBRAs under the supervision of the Warden-in-Charge.

## **FINANCIAL ASSISTANCE TO STUDENTS**

All possible efforts are made by the Institute to render financial assistance (i) in the form of scholarships and (ii) short-term loans to needy and deserving students during their stay at the Institute. Short-term loans are given to some students, depending on the requirement of the case, out of the Students' Benefit Fund (SBF) so that their minor financial emergencies are overcome. The details of the financial assistance offered to the students at the Institute are given below:

## **SCHOLARSHIPS**

### **Undergraduate Students**

Merit-cum-Means (MCM) scholarships of the value of Rs.500/- p.m. with tuition fee waiver are awarded per semester to students up to 25% of the total strength enrolled in each of the batches of the B. Tech., M. Sc. (Integrated) and M. Sc. (2-year) programmes provided that the income of their parents does not exceed Rs.1,00,000.00 p.a. In the previous financial year, 20% of the total numbers of available MCM scholarships in each batch are reserved for students belonging to SC/ST category. SC/ST students not in receipt of scholarships from any other source including the State Governments or Directorate of Harijan and Social Welfare are eligible for the MCM Scholarships.

In addition, several students of the B. Tech./M. Sc. (Integrated) and M. Sc. (2-yrs) programmes are in receipt of the financial assistance through scholarships, stipends and grants from Central and State Governments, Directorate of Education and other organizations. Table-I shows various scholarships awarded to undergraduate students during 2004-2005.

**TABLE I (A): SCHOLARSHIPS FOR B.TECH. / M.Sc. (Integrated) 2004-05**

Undergraduate Scholarships	B. Tech. /M .Sc. (Intg.)				
	I	II	III	IV	V
MCM @ Rs. 500/- p.m. with Freeship	89	79	87	99	7
Freeship	2	10	13	8	-
Free Basic mess plus Pocket Allowance @ Rs.125/-p.m. (For SC/ST)	41	17	26	13	1 3
NTS Scholarships	27	11	11	6	3
Punjab Education Board	-	-	1	-	-
SBI Scholarships	4	4	4	4	1
Lalit Narain Das Memorial Scholarships	-	-	-	1	-
Kinra Scholarships	1	1	-	1	-
IWA Bonn Scholarships	-	1	1	1	-
Neeraj Kapoor Memorial Scholarships	-	-	-	1	-
RRMES Scholarships	3	-	-	-	-
Pt.Balajee G Hardiker Scholarships	1	-	-	-	-
Post Matric Scholarships (A P)	1	2	-	1	-
PNB Scholarships	2	1	5	2	-
CSIR Scholarships	1	-	-	-	-
Coal India Scholarships	-	-	-	-	1
Dr. V.Rajaraman Scholarships (2) Rs. 1000/- p.m.	-	-	-	1	-
Tata Iron Steel Co. Ltd. (TISCO)	1	1	-	1	-
BSNL	3	2	-	-	-
Indian Oil Scholarships	2	-	-	-	-
KVPY Scholarships	2	1	2	3	3
Central Coal fields	-	-	-	-	1
Govt. of Rajasthan	1	-	-	-	-
Govt .of UP	-	1	-	-	-
Dr. D. R. Bhagat Scholarship Rs. 2000/- pm for 10 Months	-	-	2	-	-
A. K. Vasudev Scholarship Rs. 2000/- pm for 10 Months	-	-	1	-	-
Govinda & Indira Srikanth Scholarship Rs.2000/-pm for 10 Months	-	-	1	-	-
Anil and Reshma Nigam Scholarship Rs. 2000/- pm for 10 Months	-	1	-	-	-
Anurag Bartaria Scholarship Rs. 500/- pm for 9 Months	-	-	1	-	-



Pratibha Scholarship (Govt. of Andhra Pradesh)	26	11	1	3	-
Prof. Netar Lal Kapur Scholarship	-	-	1	-	-
Govt. of Maharashtra	-	-	1	-	-

**TABLE 1 (B): SCHOLARSHIPS FOR M.Sc. (2-years) 2004-05**

Undergraduate Scholarships	M. Sc. (2-year)	
	I-Year	II-Year
MCM @ Rs. 500/- p.m. with Freeship	28	16
Freeship	-	4
Free Basic Mess Plus Pocket Allowance @ Rs.125/- p.m.	4	17
Dr. R. C. Srivastava Memorial Scholarships	-	2

Student's Benefit Fund (SBF) also provides scholarships of the value of Rs.600/- p.m. to the needy students. 37 scholarships from the SBF were provided during the year 2004-2005.

### Postgraduate Students

The amount of teaching/research assistantship or fellowship for M. Tech. students is Rs. 5000/- p.m. while that for Ph. D. students in engineering disciplines was (a) Rs. 9500/- for first two years and (b) Rs.10,000/- for subsequent years. The amount of assistantship or fellowship for Ph. D. students in Physics, Chemistry, Mathematics and Humanities and Social Sciences was (a) Rs. 8000/- p.m. for the first two years of their programmes and (b) Rs. 9000/- p.m. for subsequent years, with stipulation that these students will put-in additional hours of work in departments.

### EDUCATIONAL GRANTS TO POSTGRADUATE STUDENTS

The Institute gives financial assistance to the M. Tech. /Ph. D. students who are in receipt of Institute Scholarship in the form of grant for (a) the preparation of thesis, (b) purchase of books and stationary items and (c) charges for photocopying. The amounts of grants given under these heads are summarized in Table II.

**Table II: Amount of Educational Grants given to Postgraduate Students**

<b>S. No</b>	<b>Items of Expenditure</b>	<b>Ph. D.</b>	<b>M. Tech.</b>
1	Thesis Preparation Aid	3,000.00	750.00
2	Purchase of Stationary Items and payment of photocopying charges or purchase of books	5,000.00	750.00

**LOANS / GRANTS FROM THE STUDENTS' BENEFIT FUND (SBF)**

Ten students were provided Short Term Loan out of the Students' Benefit Fund during the 2004-2005 and eighteen students were provided reimbursement of medical expenses who were hospitalized during 2004-2005.

**SPECIAL ASSISTANCE TO SC/ST STUDENTS**

Rules for admission to undergraduate programme through JEE are relaxed for the SC/ST categories of students. 15% of seats are reserved for the Scheduled Caste (SC) and 7.5% for the Scheduled Tribes (ST) students. A separate merit list is drawn for those SC/ST students, who appear for the Joint Entrance Examination. Cut-off point for calling them for the Counseling and thereafter for the offer of admission is based on the relaxed criterion.

In addition, SC/ST students are also selected from among the list of students who do not qualify for the admission for a one-year preparatory course scheme. 36 candidates belonging to the SC/ST category were granted admission for the one-year preparatory course out of which 22 took admission at the Institute during 2004-2005. All the SC/ST category students get tuition freeships irrespective of their parent's income. Concession of free messing (basic menu only) plus pocket allowance of Rs.125/- p.m. and room rent exemption are admissible to these SC/ST category students whose parents income does not exceed Rs. 1,00,000/- p. a., in the previous financial year.

One fifth of the Merit-cum-Means (MCM) scholarships are reserved for the SC/ST category of students. MCM scholarship of Rs.500/- p.m. with free tuition fee is awarded to those registered SC/ST students who are not in receipt of scholarships from any other source including the State Directorate of Harijan and Social Welfare, and whose parents'/ guardians' income in the year preceding the award does not exceed Rs. 1,00,000/- per year.

SC/ST students who are eligible or are in receipt of the Post- Matric Scholarship are given an allowance of free basic mess plus pocket allowance of Rs.125/- p.m.

While granting any financial assistance other than the teaching/research assistantship or fellowship available to all the students, including SC/ST students, the SC/ST students are given special consideration.

### AWARDS AND PRIZES TO MERITORIOUS STUDENTS

The students at IIT Kanpur are engaged throughout their programme in various academic, co-curricular and extracurricular activities. The outstanding students are given various awards and prizes for their achievements in their activities. Table III shows the awards and prizes given during 2004-2005. In addition, 7% students in order of merit in each year are given a Certificate of Merit and a Notional prize of Rs. 400/-

**TABLE III: AWARDS AND PRIZES (2004-05)**

Sl. No.	Awards and Prizes	B. Tech. /M. Sc. (Integrated)	M. Sc. (2-Year)
1.	President Gold Medal	1	-
2.	Directors Gold Medal	2	-
3.	General Proficiency Prize (Silver Medal)	10	4
4.	Proficiency Prize (Best Project)	19	4
5.	Cadence Gold Medal	1	-
6.	Cadence Silver Medal	1	-
7.	Prof. Adidam S. R. Sai Memorial Gold Medal	1	-
8.	Prof. Adidam Sri Ranga Sai Memorial Medal	-	-
9.	Ratan Swarup Memorial Prize Rs. 400/-	1	-
10.	Banco Foundation Prize (ME) Rs. 500/-	1	-
11.	Mars G. Fontana Prize (MME) Rs. 400/-	-	-
12.	Sridhar Memorial Prize (EE) Rs. 600/-	3	-
13.	Ajai Agarwal Memorial Prize (ME) Rs. 1000/- Share	4	-
14.	Tata Consultancy Services Prize Rs. 5000/- each Dept. share	2	-
15.	Jayesh Memorial Award Rs. 30000/-	1	-
16.	Aditya Birla Scholarship of Rs. 65000/- each student.	5	-
17.	Dr. Sangeeta Goel Memorial Award	1	-
18.	Dr. S. D. Bokil Memorial Medal	1	-

19.	Notional Prizes	83	4
20.	O. P. Bajaj Memorial Award	1	-
21.	Amit Saxena Memorial Award	1	-

## ACTIVITIES OF STUDENTS GYMKHANA

As mentioned above, academic activities are only one facet of student's life at IIT Kanpur. Our students actively participate in various extra and co-curricular activities focused towards the holistic development of their mind and body. The year 2004-2005 also saw a very active calendar in the form of various games and cultural events.

### Games and Sports Activities at IIT Kanpur

IIT Kanpur has a very vibrant sports atmosphere. There are sports events all over the year at both, the hostel level and at the Institute level. The Games and Sports Council conducts all sports activities at the Institute level and actively helps in the conduction of the events in the various hostels. There are dedicated institute teams for each sport in addition to clubs that augment the sports culture in their own way.

IIT Kanpur boasts about some of the very best facilities of any Institute in the country. There is a full grass cricket ground, athletics track, two volleyball courts, basketball courts, an indoor setup for Badminton, TT and weightlifting and fully Floodlit Hockey and Football grounds. In addition to these great playgrounds, there is also an Olympic size swimming pool, replete with a diving board set-up, five regularly maintained tennis grounds, two concrete and three clay courts and an indoor gymnasium. The maintenance and addition of new facilities is entrusted to the Physical Education Section, a separate department devoted to sports activities, which boasts some very highly qualified coaches.

The Games and Sports Council comprises of the teams for various sports and a clubs related to sports. The past one-year has been very successful for the Council. The Institute teams practice regularly in preparation for the Inter IIT Sports Meet, conducted every year in December. They play practice matches against local clubs, both at home and away, and other teams that come over to IIT Kanpur during **Udghosh**, The IIT Kanpur sports festival. Some of our teams have developed very well in the past one-year. The football team hasn't lost a single match at home in the past one year against in all competition.

In addition to the regular activities of the teams, the council conducts two sports festivals, **Udghosh** and **Josh**. Udghosh, the IIT Kanpur Sports festival is a great competitive experience where colleges from all over the country come and participate in a three-day event. Udghosh attracted over 900 participants from colleges all over the country. The home teams performed extremely well at Udghosh, with Gold medals in six different sports. It was a huge sporting success with record number of participant. Josh is the Intra IIT Kanpur sports festival, where all the events are conducted at night. It was started the year before, and was an even bigger success this year. Over sixty teams registered in all the events with night Phatta registering over a hundred teams, and an estimated 2500 students took part in one event or the other. Such participation level from the predominantly academic minded students of IIT Kanpur was a big surprise. In addition to these mega events, the hostels also have their own sports festival. The two undergraduate hostels, Hall 2 and Hall 3, conduct **Unmad** and **Olympus** respectively while Hall 4 continues its love affair with Volleyball with **Smash**.

There are four Clubs under the Sports Council viz. the **Adventure Sports Club**, the **Tae-Kwon-do Club**, the **Bridge club** and the **Nature Club**. The Adventure sports club is one of the most active clubs in the campus. It undertakes treks and cycling expeditions to exotic places of great natural beauty. In the past one year it successfully undertook two treks and two cycling expeditions. In addition to these activities it also conducts activities such as river rafting and wall climbing. The members of each expedition are selected after a rigorous conditioning program.

The Tae-Kwon-do club was very active and successful in the past one year. The club enrolls students at nominal fees and imparts Tae-Kwon-do training. The club successfully conducted many belt promotion tests in the last one year. The Club was very successful at the district belt tests and now boasts a few black belts in its ranks. The coaching is imparted by a very highly qualified coach, who himself is a black belt holder. The club has also initiated the process to get Tae-Kwon-do recognized as a regular sport in the Inter IIT sports meet.

The Bridge Club was started this year. It was started to cater to the interests of many students who are interested in this card game. It has been very active since its inception, and has been successful in conducting workshops and holding Bridge competitions. The Nature Club caters to the interests of a few nature lovers. The club holds workshops and visits wildlife sanctuaries. It labels the trees inside the campus and gives its say in all environment related issues inside the Institute.

The last one-year has been a very productive year. A much larger number of individuals are participating in sports activities than a year before, both from the junior and senior batches. This spurt in sports activities will surely go a long way to improve our performance at the Inter IIT meet and also help maintain the vibrant sports culture of IIT Kanpur.

#### **INTER IIT SPORTS MEET'04**

Inter IIT Sports Meet was held in IIT Madras in December 13<sup>th</sup> – 19<sup>th</sup>, 2004. The performance by our teams didn't live up to our expectations. However, to put things into perspective, a comparison with the last years results, which is acknowledged to be much better, shows that we made it to the semifinals in three sports in Men category (compared to 4 last year) and one in Women category (none). We had to drop many senior players due to injuries, departmental tours and last minute seminar call-ups, etc. The constructive aspect to come out of this meet was that we had over 40 first year students in the contingent of 120, which is a very good base to improve on for next year.

We won Silver medal in Football and Bronze medal in Badminton (Women). In individual events Mr. Sandeep Yedlapalli won gold medal in Shot-put Throw and Mr. Rajeev Kapoor won Bronze medals in 1500m and 5000m races. Volleyball and Badminton (Men) missed the medals but got fourth position.

We got a dismal 6<sup>th</sup> position but we plan to take effective measures to avoid situations due to which our key players had to back out and to build on fresh talent of the first yearites.

#### **UDGHOSH'04**

Udghosh 2004, the Inter Collegiate Sports festival, organized by the Games and Sports Council, Students Gymkhana, IIT Kanpur was held from September 30<sup>th</sup> to October 3<sup>rd</sup>, 2004. The total number of participants at Udghosh 2004 was a record 950, nearly 600 more than the number of participants at Udghosh 2003 from different Engineering Institutes from all over India.

The colleges participated were MNNIT Allahabad, HBTI Kanpur, St. Xaviers Kolkata, GSITS Indore, NIT Jalandhar, IIIT Noida, Integral College Lucknow, Jalpaiguri govt. Engg. College, Allahabad Agriculture Institute Deemed University, PEC Chandigarh, Govt. college of architecture Lucknow, Jaipuria Institute of Management Lucknow, Punjab Engineering College Chandigarh, BIET Jhansi,

Jabalpur Engineering College Jabalpur, BRANIT Jalandhar, MERI Kolkata, Modi College, IT BHU, Kamla Nehru Institute of Technology Sultanpur and IIT Kanpur.

Our teams performed very well in this Sports' meet. We won Gold Medals in Volleyball, Basketball (Men), Football, Badminton (Women), Table Tennis (Men) and Cricket. We won silver medal in Badminton (Men). We won bronze medal in Lawn Tennis.

In individual games Mr. Rajeev Kapoor won silver medal in 5000m race and bronze medals in 1500m & 800m race.

The overall performance of our teams was good and upto our expectations. This event prepared an effective platform for the upcoming Inter IIT Sports' Meet '04.

### **CULTURAL COUNCIL'S ACTIVITIES**

Cultural Council aims at holistic development of students of the Institute. It organizes activities in several fields such as fine arts, music, SPIC MACAY, drama, dance, appreciation of Hindi and English literature, spiritual and cultural values and action, and quizzes. During 2004-05 Cultural Council organized several such activities through students clubs devoted to each of them. The activities of Cultural Council start with Freshers Night and continue through out the year. Each club organized four-five events. Among them Galaxy, the inter hall cultural competition is very popular among students. It was organized with typical fun and fare. Some other successful events organized by the Cultural Council were: Musical Extravaganza, Dramatics Workshop, and Guitar classes which ran throughout the year.

Every Friday Vivekanand Samiti held a study circle to discuss books written by great thinkers. A discussion on Bhagwat Gita was carried out on every Saturday. Vivekanand Samiti also conducted semester long courses in Yoga with the help of an outside expert. Lectures and workshops on meditation and book exhibitions were held at regular intervals. Among other activities the Samiti mobilized students to realize their social responsibility by having organized medical camps, old clothes and books distribution camps. It also worked in association with Shiksha Sopan and Prayas which run schools in nearby villages. The Samiti maintains a library of over 300 books on spiritual matters.

One of the new features of the activities of the Cultural Council this year was that it joined hands with the Centre for Creative Writing and Publication and organized creative writing competition, film workshop by Narendra Ketkar, and lectures by well known writers such as Chetan Bhagat and Sandipan Deb.

However, the most important task of the Cultural Council was to organize Antaragni, the annual cultural festival of IIT Kanpur. Antaragni 2004 was organized from 28 October to 31 October 2004. More than 1000 participants from 45 colleges of India representing different types of colleges, institutions and universities participated in it. Apart from debates, competitions, professional nights, Antaragni 2004 added a two-day event **India Haat** aiming at the cultural union of different states of India. Representatives from Mizorum, Assam, Manipur, Uttar Pradesh and Madhya Pradesh took part in this and presented folk art from the respective regions. At the organizational level a new institution of **Mid Night Meeting** was introduced; in the mid night each day the team leaders and the organizing team met to discuss problems and complaints of participants and find solutions. Through this “important announcements” were conveyed to the participants. During 2004 the Cultural Council made a special effort to convert the event from the purely students’ event to campus event in which not only students but also other campus residents could participate and develop a feeling of oneness. This promotes integration between different groups on the campus and ultimately helps the students in developing a sense of integration, pride, culture and leadership.

### **Techkriti 2005**

Techkriti, the Annual Science and Technology Festival of IIT Kanpur, was held from 24<sup>th</sup> to 27<sup>th</sup> February 2005. Techkriti '05 celebrated the spirit of creativity, innovation and technical expertise in its full vigor. Nearly 1000 participants from colleges all across India visited IIT Kanpur to participate in the festival. This figure was the largest for any festival ever held in IIT Kanpur. In addition to competitive events, workshops, lectures and demonstrations were held to give a hand-on experience with the latest in technology. Following sections give a detailed review of Techkriti '05.

**Events:** New events, Gearloose, i-Quiz and Techcetera were introduced in Techkriti'05. An event restructuring was done and smaller events were clubbed together into a single large event, which helped in marketing and organization. Traditional and popular events like Endeavor, Robogames, ECDC, Eureka, and Software Corner were scaled up with increased scope of competition, innovative organization and increased prize money. All the events attracted huge enthusiastic



participation. International Online Programming Contest (IOPC) deserves special mention, as it saw huge participation from all across the globe, giving Techkriti a truly international color. The Quiz organized by the famous Quiz Master, Barry O'Brian attracted huge crowds. This Quiz was largely responsible for the revitalization of quizzing culture in IIT Kanpur. The main attraction of the festival, however, was Techtalk. Dr. Heng Phon Too gave a lecture on Bio-entrepreneurship from National University of Singapore, Singapore. Hacking workshop by eminent hacking specialist Sachin Deodhar was a big crowd puller in the festival. A RFID, Smart Cards, Embedded Systems Workshop was organized, which included lectures from Dr. Rajat Moona (IIT Kanpur), and Mr. Aditya Razdan, Vice-President, Infotek Software and Systems Pvt. Ltd. For the first time in IIT Kanpur, a design lecture-cum-workshop was organized by Dilip Chhabria. Eminent speaker Shiv Khera delivered his motivational talk.

**Participation:** Techkriti '05 witnessed huge participation from colleges all across the country with the number of participants scaling up to 1000. A step was taken towards automation with the development of Web based Event Management System. The software developed can be used in future too.

### **Umang 2005**

Umang 2005, the annual film festival of the Students' Film Society, Students' Gymkhana, was held from January 7 – 15, 2005. The 9-day festiaval started on a Friday and continued on to the next weekend's Saturday (Sunday could not be utilized because of the ongoing Gymkhana elections – Sunday the 16<sup>th</sup> was the designated polling day) and a total of 35 films were screened as a part of the festival.

The films spanned all possible genres and themes as were feasible given the timeframe, and were very well appreciated by the student as well as faculty communities.

The biggest change we made for Umang 2005 was the length of the festival and the number of films screened – 9 days and 35 films for a complete film festival was unheard of till this year. However, a complete film festival is what we got, in all senses of the phrase.

The films screened spanned Indian films (in Hindi, English and regional languages), western films (from Europe as well as Hollywood), animated films (Hollywood and Japanese) and Indian documentary films that focused on various social concerns.

Also, the students' community of IIT Kanpur also participated in making their films as a part of Umang (*Director's Cut*), and selected films from here were also screened. The focus was not only on quantity, but also definitely on quality.

### **Information about PE-Course for First Year Students:**

Compulsory Physical Activities (CPA) Programme is a senate approved programme for 4 year B.Tech, 5 Year Integrated M.Sc.-5 years B.Tech, M.Tech. Dual Degree students. This is a two-semester Programme run under the Course Number PE-101 and PE-102. In both the courses there are two components, namely:

- |    |                                    |                    |
|----|------------------------------------|--------------------|
| 1. | Physical Exercise                  | One Hour per week  |
| 2. | Personality Development Activities | Two Hours per week |

The Dean of Students Affairs is the instructor in-charge of these courses. The courses are graded as S (Satisfactory) / X (Unsatisfactory). The grade will be given after the End semesters Examination. A minimum of 75% attendance and satisfactory performance in each of the two components will be necessary for passing the courses.

All students undergo total three hours activities per week. The students have to opt for one of the Personality Development Activities (I) Games & Sports (II) Yoga (III) Tae-Kwon-Do (IV) NSS (V) NCC. The students opting Games & Sports and selected in Trials for Games & Sports will under go three hours of games per week. The remaining Students will under go Physical Exercises once a week for an hour out of three hours per week. Remaining two hours will be for one of the personality Development Activities namely. (I) Yoga (II) Tae-Kwon-Do (III) NSS (IV) NCC. Minimum attendance requirement must be fulfilled for both the parts (chosen stream and 'or Physical: Physical exercise not being mandatory for those choosing Games & Sports as their Streams).

### **PE-101, FIRST SEMESTER FROM AUGUST 08 TO NOVEMBER 23, 2005**

Physical Exercise: Participation will be one in a week for students opted other than Games Stream. This would run during August-November in the morning. Jogging, Long Distance Run, lightweight training, games and Athletics would be under taken for at-least twelve weeks.

Personality Development Activities: - Participation will be thrice/twice a week (for Games & Sports thrice a week, for other Personality Development activities twice a week). Selection trials will be held from July 30 to August 05, 2005 to fill up the seats for different streams.

Students are required to fill-up option forms for the streams, which will be collected on the day of registration.

Number of seats available under different stream are as follows. These numbers can be changed, if circumstances so require.

**NSS (Coordinator: Dr. H. C. Verma)** Total Seats=30  
Participation in NSS activities twice a (Each session of an hours duration) for at least 24 hours in each semester. Seats will be filled on the basis of first come first serve the day of Registration.

**YOGA (Coordinator: Dr. K. K. Saxena)** Total seats=30  
Participation in Yoga Exercise twice a (Each session of hours duration) for at least 24 hours in each semester. Seats will be filled up through test/interviews. The coordinator, Yoga will conduct these test/interviews on the next day of the registration in the Yoga hall, Students Activities Center at 06:00 P.M.

**TAE-KWON-DO (Coordinator: Dr. Satyendra Kumar)** Total seats = 50  
Participation in Tae-Kwon-Do activities twice a week (Each session of an hour duration) for at least 24 hours in each semester. Seats will be filled on the basis of first come first serve the day on the Day of Registration.

**NCC (Coordinator: Commanding Officer, NCC)** Total seats = No limit  
Participation in NCC parades for at least 24 hours in each semester. For NCC no trial will be held. Any student can take NCC excepting Foreign Nationals. There is no limit on number of seats.

**Games & Sports (Coordinator: Vishram Yadav)** Total seats = 194 (152 Boys+42 Girls).  
Participation in Games & Sports thrice a week (each session of an hour duration) for at least 36 hours in each semester. Seats will be filled up through selection Trials.

The instructors, Games will conduct these selections Trials as programme mentioned below:

S. N.	Games & Sports	Boys	Girls	Trial Time 5:00 P:M	Trial Location
1	Athletics	20	10	29 July, 2005	Main Stadium
2	Badminton	06	04	29 July, 2005	Indoor Gymnasium
3	Basketball	18	12	29 July, 2005	Basketball Court
4	Cricket	18	00	30 July, 2005	Main Stadium
5	Football	22	00	30 July, 2005	Football Ground
6	Hockey	22	00	30 July, 2005	Hockey Ground
7	Table-Tennis	06	04	30 July, 2005	Indoor Gymnasium
8	Tennis	06	03	31 July, 2005	Tennis Court
9	Volleyball	14	00	31 July, 2005	Volleyball Court
10	Wt. Lifting	08	00	31 July, 2005	Indoor Gymnasium
11	Swimming	15	06	31 July, 2005	Swimming Pool

Note:

- (a) Activities under particular game/sports may not run if less than three Students opting it. The seats will be filled up only on the basis of Students performance to be judged by the instructors during the trials.
- (b) No change over will be allowed from one stream to the other stream or one game to another game.
- (c) Streams (including sub-streams under Games & Sports) will be finalized within 5 days of the Registration and final list will be put out before the day.
- (d) Students failing to get seat in the opted stream shall join NCC straightway without any loss of time.

### **SWIMMING POOL**

Institute has a full size (50x20 meters) Swimming Pool for its students, faculty and staff and also for their family members. The membership is open to all on payment of a nominal fee. Arrangements have been made to coach beginners in swimming. To ensure maximum safety of the members, lifeguards are engaged. The exact rates for these sessions are fixed and notified by the Swimming Pool Management Committee, for regular memberships as well as guest charges. The Pool has been operating for 7 months in a year, i.e. from April to October on monthly basis. Pool is operating in the morning as well as evening hours i.e. 5:30 am to 8:15 am and 3:30

pm to 8:00 pm divided into 45 minutes slots with 15 minutes free time in between. Swimmers and non-swimmers are separated.

## **STUDENTS' PLACEMENT**

The Students' Placement Office continues to play a vital role in assisting the students in career planning and employment. It was actively engaged in disseminating information of job opportunities and prospects with the employers in both the Public and Private Sectors. Students Placement Office has been arranging campus interviews and organizing Paid Summer Internships for students.

Invitation letters were sent to about 700 Industrial Organizations, both in Public and Private Sectors, for visiting our campus for recruitment of students. About 115 organizations participated in the On-Campus-Recruitment-Programme during the academic year 2004-05 either by sending their top ranking executives to the campus or by calling the students to their Head Office for the interviews.

This year some organizations like Sybase, Intel, Nextag, Kanbat Software, Fair Isaac, Appulse Software, Induslogic India, Pricewater Cooper, Contata, Solidcore, Goldman Sachs, LLSI Logic, Hero Honda, Infineon Technologies, ITTC Japan, HCL Comnet, Power Finance, Systat, Nikson, Redpine Signal, Yamaha Motors, Career Network, Kritikal, Airvana, Minda Industries, MG Mobiles, Cordys and Mellon Financial have recruited for the first time through the On-Campus-Recruitment-Program. The employment scenario during this year has improved to a great extent in comparison with the last two years.

A total number of 548 offers of appointments have been made till 14.07.2005 to the students by various employers through Students Placement Office. A total of 86.98% of the students registered with SPO have received job offers so far. The placement for our B.Tech. students has crossed 90.41% mark this year where as for M.Tech. students, it was about 84.02%.

With the objective of close monitoring and uniform opportunity to all the students registered for the placement, the policy introduced was one student on job. However, a new policy was initiated, Job with appropriate back ground, especially for those who got an offer in haste initially.

With regard to the IN-Plant-Training Programme during summer vacation for the prefinal year students, the Students Placement Office offered assistance to students

of all the engineering departments. About 25 paid summer training seats were offered to our students. Statement showing the number of students registered for availing placement assistance and those who received job offers through Students Placement Office are given in Tables I to V.

About five organizations are in the process to schedule their placement process in the month of July 2005.

**TABLE I: JOBS OFFERED TO STUDENTS GRADUATING IN THE  
B.TECH  
PROGRAMME- 2004-2005**

<b>S. No.</b>	<b>Discipline</b>	<b>Students Registered</b>	<b>No. of Students Offered One Job - Two Jobs</b>		<b>Total Job Offered</b>
1	Aerospace Engg.	18	15	02	17
2	Chemical Engg.	35	33	--	33
3	Civil Engg.	32	29	03	32
4	Electrical Engg.	73	71	---	71
5	Mechanical Engg.	58	55	05	60
6	Mat. Met. Engg.	39	24	01	25
7	Comp. Sc. & Engg.	37	37	03	40
	<b>Total</b>	292	264	14	278

**TABLE II: JOBS OFFERED TO STUDENTS GRADUATING IN THE  
M.TECH  
PROGRAMME – 2004-2005**

<b>S. No.</b>	<b>Discipline</b>	<b>Students Registered</b>	<b>No. of Students Offered One Job - Two Jobs</b>		<b>Total Job Offered</b>
1	Aerospace Engg.	28	27	--	27
2	Chemical Engg.	27	24	--	24
3	Civil Engg.	40	28	--	28

4	Electrical Engg.	69	56	--	56
5	Mechanical Engg.	49	38	--	38
6	Mat. Met. Engg.	31	28	01	29
7	Comp. Sc. & Engg.	49	48	05	53
8	IME	10	10	---	10
9	Mat. Sc. Prog.	10	08	--	08
10	Nuclear Engg.	11	10	--	10
11	Envr. Engg. & M.	09	03	--	03
12	Laser Technology	05	04	--	04
	<b>Total</b>	338	284	06	290

**TABLE III: JOBS OFFERED TO STUDENTS GRADUATING IN THE M.Sc. (5yrs.) PROGRAMME – 2004-2005**

S. No	Discipline	Students Registered	No. of Students Offered		Total Job Offered
			One Job	Two Jobs	
1	Physics	07	02	--	02
2	Chemistry	07	02	--	02
3	Mathematics	10	09	01	10
	<b>Total</b>	24	13	01	14

**TABLE IV: JOBS OFFERED TO STUDENTS GRADUATING IN THE M.Sc. (2yrs.) PROGRAMME – 2004-2005**

S. No.	Discipline	Students Registered	No. of Students Offered		Total Job Offered
			One Job	Two Jobs	
1	Physics	05	--	--	--
2	Chemistry	15	--	--	--
3	Mathematics	15	07	--	07

4	Statistics	13	12	--	12
	<b>Total</b>	48	19	--	19

**TABLE V: JOBS OFFERED TO STUDENTS GRADUATING IN THE MBA,  
M.Des. & B.S.B.E. PROGRAMME – 2004-2005**

S. No.	Discipline	Students Registered	No. of Students Offered		Total Job Offered
			One Job	- Two Jobs	
1	M.B.A.	27	27	--	27
2	M.Des	07	07	--	07
3	B.S.B.E	09	--	--	--

### **COUNSELLING SERVICE**

Counselling Service is an organization made up of student volunteers, faculty members and staff who offer help and guidance to students on the academic, emotional and financial fronts. During the session April 2004-March 2005, the Counselling Service had two UG coordinators, one PG Coordinator, assisted by 5 UG assistant coordinators and 3 PG assistant coordinators and a team of nearly 73 UG student guides and 23 PG student guides.

Like every year, the activities of the Counselling Service started during the summer with the preparation for welcoming the new batch of students. A well planned brochure including letters from the Head, Counselling service, Student Coordinators, President, Students' Gymkhana informing them about the practical details of life at IIT Kanpur and other useful information like the bus schedule, academic calendar and the map of the Institute etc. were sent to all the new students before their arrival on the campus. A workshop was organized for the student guides to sensitize them to the problems that the new students assigned to them might face. A group of 5-6 new students was associated with a student guide and a faculty counsellor who facilitated their smooth settlement in the initial stages.

A common Orientation Programme for the new UG and PG students (for 5 days) was organized for the first time during which they were shown around the campus and informed about the various facilities available to them. They were assisted in



opening up new bank accounts and were guided through all the official processes of making I-Cards, health booklets, cc logins and the final registration. The Counselling Service also organized a bank presentation where the new students got to know about the various educational loan schemes of the different participating banks. Lectures by the Head, Computer Center and the Games Counsellor were also included.

A Link structure was also formed after the commencement of the academic session in August to take care of academically deficient students. The team consisted of 22 link students and 14 link faculty members associated with every department. Regular meetings were organized to monitor their academic performance. A total of 6 meetings (3 in each semester) were held to discuss the issues related to these students. During the session 2004-05 (I), 58 students were on Academic Probation list and 54 students on Warning. 71 students came out of the list after this semester. A total of 190 students were on AP/ Warning during the 2004-05 II sessions.

Group counselling was also introduced during this year to identify the problems of the academically deficient students. 3 such sessions with different groups of students were held. Around 57 students were involved in these sessions. Many students personally met the Head, Counselling and the Counsellor regularly for guidance.

Like the previous year, this year too certain students were recommended the slow paced programme, on the basis of their performance up to the first mid semester examination. Meetings were held with these students to suggest semester wise course plans according to their departments. Two meetings of slow pace committee (one in each semester) were held to review the slow pace policy.

To assist the students having problems in English conversation and comprehension, the Counselling Service organized conversational classes at nominal rates.

A Student Faculty Open House Discussion on the Academic Issues concerning the students was organized in the 2004-05 (I) Session. The forum witnessed active participation from both student and faculty communities and it was realized that more of such sessions should be organized to enhance student-faculty interaction and discussion of academic concerns of mutual interest.

A thesis-writing workshop was conducted for the PG students. A total of 70 students attended this workshop.

Like every year, Counselling Service appointed a professional psychiatrist who visited the campus on alternate Saturdays to resolve various psychological problems of the students and an assistant counsellor to support the various activities of the service. A total of 80 students consulted the psychiatrist. In addition to this, psychiatric help was also available outside the campus in cases of emergency through the Counselling service. A proactive initiative by the assistant counsellor motivated students to come forth for guidance in personal and emotional issues. A total of 60 students met her during the period from August 2004- April 2005.

On the financial front, students were provided assistance through SBF scholarships. Around 50 students could avail this facility. Loans were provided to students facing acute financial problems.

In addition to this, volunteers from Counselling Service helped make arrangements for the PM's visit to the Institute.

In February, the new coordinators both for UG and PG were selected and interviews were held for selecting the new assistant coordinators and student guides for the next session. New faculty counsellors were also appointed as per the choice of the student guides. The new team took charge after the handing over ceremony in April, where the old team was presented badges by the Director.

#### **FACULTY INCHARGES STUDENTS'S AFFAIRS**

Dean, Students Affairs	Dr. C. Venkatesan	From 01-01.2003
Head, Counselling Service	Dr. Onkar Dikshit	From 28-04-2003
Chairman, Council of Wardens	Dr. M.K.Harbola	Upto 31.01.2004
	Dr. Munmun Jha	From 01.02.2004
Vice-Chairman, Council of Wardens	Dr. Munmun Jha	Upto 31.01.2004
	Dr. Utpal Das	From 01.02.2004

#### **COUNCELLORS, STUDENTS'GYMKHANA**

Chief Counsellor	Dr. C. Venkatesan
Cultural Counsellor	Mr. Nitin Kaistha
Games Counsellor	Dr. Neeraj Mishra
Films Counsellor	Dr (Mrs) Suchitra Mathur

Science & Technology Counsellor	Dr. P. Munshi
Treasurer	Dr. S. Sangal
Foreign Students' Advisor	Dr. Prabha Sharma
Chairman Students Benefit Fund	Dr. Onkar Dixit
Chairman Students' Placement Committee	Dr. Vinod Tare
Faculty Advisor, NSS	Dr..H.Verma
Chairman, Swimming Pool Management Committee	Dr. P. Shunmugaraj
Faculty Advisor, Yoga	Dr. K.K. Saxena
Faculty Advisor, Tae-kwon-do	Dr. Satyendra Kumar

## WARDENS

### HALL OF RESIDENCE No. I

Dr. R.K. Sullerey, Warden-in-Charge

Dr. Rajesh Srivastava, Warden

Dr. F.A.Khan, Warden

### HALL OF RESIDENCE No. II

Dr. M.K. Harbola , Warden-in-Charge

Dr. Satyaki Roy, Warden

Dr. B.V. Rathis Kumar warden

### HALL OF RESIDENCE No. III

Dr. P. S. Ghoshdastidar, Warden-in-Charge

Dr. Bikramjit Basu

Dr. A. K. Lal, Warden

### HALL OF RESIDENCE No. IV

Dr. Partha Chakraborty, Warden-in-Charge

Dr. Deepak Gupta, Warden

Dr. Animesh Biswas, Warden

### HALL OF RESIDENCE No. V

Dr. P.M.Dixit, Warden-in-Charge

Dr. N.V.Reddy, Warden

Dr. G.Santhanam. Warden

**HALL OF RESIDENCE No. VI**

Dr. C.A. Tomy, Warden-in-Charge

Dr. Y.N. Singh, Warden

**HALL OF RESIDENCE No. VII**

Dr. A. K. Chaturvedi, Warden-in-Charge

Dr. Deepak Gupta, Warden

Dr. S. Manoharan, Warden

**HALL OF RESIDENCE No. VIII**

Dr. V.Ravi Shanker, Warden-in-Charge

Dr. A.R.Harish, Warden

**HALL OF RESIDENCE- GH**

Dr.Brahma Deo, Warden-in-Charge

Dr.Raina ,Warden

Dr.Asima ,Warden

**SBRA**

Dr. Onkar Dikshit, Warden-in-Charge

Mr. Suresh A, Convener

**STUDENTS' GYMKHANA EXECUTIVE**

The philosophy followed at this Institute is to involve students at various decision-making levels. The President, Students' Gymkhana and the Convener, Students' Senate are special invitees to the Senate. Students' Senate also sends its nominees for various standing committees of the senate namely EPC, SPGC, SUGC, SSAC, SLC, SSPC and various other users committees. The following list gives the names of students holding various posts of the executive wing of students' Gymkhana.

**President-** Mr. Abhishek Chaudhary (upto Feb. 2005), Mr. Neeraj Kumar (From February 05)

**Convener, Students Senate -** Mr. Joe Vanghese Yeldho (Upto Feb. 05), Mr. Yashodhan Shevade (From Feb 05)

**General Secretary (Cultural) -** Mr. Mukul Tulli (Upto Feb. 2005), Mr. Vipin Pathak (From Feb 2005)

**General Secretary (Games)** - Mr. Mrityunjay Panda (upto Feb2005), Mr. Harendra Verma (From Feb 05)

**General Secretary (Films)** - Mr. Ravi Kumar (Upto Feb. 2005), Mr. Abhinav Biyani (from February 05)

**General Secretary (Science & Technology)** - Mr. Saurabh Nanda (Upto Feb. 2005), Mr. Varun Garg (From February 05)

## Services / Amenities

### INSTITUTE WORKS DEPARTMENT

Institute Works Department (IWD) is primarily responsible for the maintenance of capital assets for providing the following utility services to the resident community:

- Civil, Electrical and Air-conditioning maintenance services
- Water supply and sewage disposal
- Power Distribution
- Estate Management
- Sanitation and upkeep
- Horticulture Development & Maintenance
- Furniture repairs
- Roads

In addition to above, IWD also executes development projects from concept to commissioning. It comprises of the following units for facilitating operation & maintenance of services and construction activity:

S. N.	Unit	Responsibility	Unit-in-charge
1.	Civil Division-I	Development Works	Executive Engineer
2.	Civil Division-II	Maintenance & up-gradation works. Water supply, furniture, roads.	Executive Engineer
3.	Electrical Division	Electrical maintenance Domestic/ Central AC maintenance	Sr. Electrical Engineer/ Superintending Engineer
4.	Horticulture	Development & maintenance	Horticulture Officer
5.	Estate	Estate management & sanitation	Estate Officer

During the financial year 2004-05, IWD has undertaken the following major development works:

<b>S. N.</b>	<b>Name of Work</b>	<b>Value of work (Rupees)</b>	<b>Date of Start</b>	<b>Date of Completion</b>	<b>Works Status</b>
1	Renovation of kitchen and dining hall of Hall-III.	46,58,592	06.05.04	05.09.04	Completed
2	Renovation of kitchen and dining hall of Hall-V.	39,82,389	06.05.04	05.09.04	Completed
3	Renovation of toilet and bathroom of 'D&H' block of Hall-IV.	7,77,328	20.05.04	19.08.04	Completed
4	Renovation of cupboard / drawers / initial white washing painting of Hall-I	38,62,466	06.04.04	09.12.04	90% completed
5	P/F wire mesh window shutter & internal white washing and painting of Hall-V.	47,56,949	10.06.04	09.12.04	Completed
6	Waterproofing of roof of 301 to 310, 306 to 309, 213 etc in SL building	6,25,850	12.06.04	21.08.04	Completed
7	Renovation of house no. 1069 to 1084 Type -I	5,33,741	28.06.04	27.08.04	Completed
8	Silicon coating external surface of CSE new Lecture Hall, Samtel Centre, SIDBI & BSBE Building.	7,18,443	01.07.04	30.08.04	Completed
9	Construction of five additional classroom in KV IIT K	17,64,631 (Out of this Rs. 10.00 Lac was given by KV)	15.08.04	14.01.05	Completed

10	P/L CC road from Hall-VIII to swimming pool.	7,84,265	25.10.04	24.01.05	Completed
11	Conversion of oxidation pond on south side of campus into sewage treatment pond.	21,50,561	03.11.04	02.05.05	Completed
12	Construction of canteen building at the back of workshop extension	7,17,345	03.11.04	02.02.05	Completed
13	Construction of road from Health centre to new gate and construction of guard room at distributory canal.	5,59,299	18.11.04	17.02.05	Completed
14	Re-flooring of main corridor of Hall-V	8,59,824	24.10.04	11.12.04	Completed
15	Renovation of Lab of MME in workshop extension	8,75,968	28.11.04	27.03.05	90% completed
16	Renovation of mess kitchen & dining hall and P/L kota stone flooring in common area & main corridor of Hall of Residence No. -IV	48,61,600	24.12.04	23.04.05	50% completed
17	P/F wire mesh window shutter in room and common area of Hall-VI	8,35,804	28.03.05	27.05.05	70% completed
18	Remodeling and extension of Environmental Engg. Lab	38,81,555	07.05.06	06.10.05	In Progress
19	Construction of 24 nos. Single Bed Room Apartment	1,11,57,892	09.06.05	08.03.06	In Progress
20	Construction of RCC boundary wall towards ALIMCO.	8,72,273	05.06.05	04.10.05	In Progress
21	Construction of storeroom and model working room.	15,24,083	26.06.05	25.10.05	In Progress



22	Const. of 480 single seated hall of residence for boys No.-VIII (SH: Electrical).	102,99,000	27.12.02	26.6.04	Completed
23	Electrification of internal wiring in new RA Hostel (Phase-I).	24,62,000	18.6.03	17.5.04	Completed
24	Providing light point, fan point and PC point in basement of P. K. Kelkar Library Bldg.	7,82,000	2.11.03	1.02.04	Completed
25	Rewiring of dinning hall and kitchen area at hall-V.	5,30,000	9.7.04	22.8.04	Completed
26	Rewiring of dinning hall and kitchen area at hall-III.	5,26,000	22.6.04	5.8.04	Completed
27	Providing alternative power supply for faculty building and providing interconnection between both switch-rooms (East & West side switch-room).	11,09,000	7.8.04	6.11.04	completed
28	Providing solar water heating system (4x1000LPD) at hall-I & IV.	7,14,000	15.10.04	14.02.05	Completed
29	Installation of capacitor bank at SS No.-V & Old AC Plant.	15,53,000	17.12.04	16.4.05	Completed
30	Renovation of science block feeder from SS No.-II.	6,29,000	10.2.05	9.5.05	Completed
31	Providing external power supply, shifting of cable and panel by modification of switch room at Boys Hostel No.-1	37,91,000	10.02.05	9.06.05	Completed
32	Providing external power supply & main panel in Hall-V.	29,11,000	10.2.05	9.6.05	Completed

33	Modification of Sub-station No.1 by shifting and installation of transformer and modification of existing LT panel.	20,74,000	24.03.05	23.07.05	In Progress
34	Providing solar water heating system (7x1000 LPD) vertical shape at 60 degree C in kitchen of hall-II, III, V, GH and VH.	11,57,000	16.3.05	15.7.05	In Progress
35	Provision of 2 <sup>nd</sup> source of supply 11kV for SS No.-VI from SS No.-III.	43,11,000	16.6.05	15.12.05	In Progress
36	Renovation of 11kV HT panel at SS No.1.	35,32,000	6.06.05	5.12.05	In Progress
37	Providing power supply & shifting old existing MCC panel with accessories at AC Plant (new)	22,01,000			In Progress
38	Construction of 24 units SBRA Qtrs. (SH : Electrical)	10,79,000	12.6.05	11.3.06	Yet to Start
39	Modification of elect installation of WL 115, 116 & 117.	9,55,000	12.6.05	11.11.05	In Progress.
40	Rewiring & modification of dinning hall & kitchen at Hall-IV.	6,05,000	11.6.05	10.12.05	In Progress
41	Modification & replacement of panel in western lab	8,06,000	24.3.05	23.5.05	Completed
42	Providing & installation of split type air-conditioner in Media Asia Lab at campus school.	14,91,000	27.9.02	27.3.03	Completed
43	Providing GI sheet metal ducting & centrifugal blower fan for exhaust in kitchen at Hall-III, V and VIII.	5,82,000	11.7.05	10.10.04	Completed

44	Supply & installation of walk-in-cooler & freezers for hall-III, V and VIII.	9,89,000	30.7.04	29.10.04	Completed
45	Replacement of condenser pipe line, valves and other works at old central AC Plant.	17,48,000	17.12.04	16.03.05	Completed
46	Installation of 400 TR capacity screw chiller at new AC Plant.	55,52,000	6.6.05	5.12.05	In Progress
47	Supply of 400 TR screw chiller.	US\$ 96,000	6.6.05	5.12.05	In Progress

Following new projects are at different stages of planning:

Hall of Residence for Boys No. – IX.

Alumni & Student Career Centre.

RCC boundary wall from Pradhan Gate, Nankari to Barasirohi.

Extension of Library

Extension of Core Lab.

## **STORES & PURCHASE SECTION**

The Store and Purchase section is an important service unit to cater to the needs of department/units for purchase of various equipment, chemicals glassware, hardware consumables, stationery, medicines/pharmaceutical products, industrial gases, etc. for research and general purpose. The procurements are from both indigenous and foreign sources.

The section handles customs clearance of all foreign consignments and matters relating to Import Licenses /Duty Exemption certificates and other certificates from Government of India. The re-export of consignments to the suppliers for repairs/replacements is also done through this section.

During the financial year 2004-2005, the purchase section placed 1569 orders valued Rs. 35,20,55,184=42 which includes import orders numbering 382 costing Rs.23,82,08,320=63. The purchase orders and their values under various categories are as follows:

S. N.	Category	No of Purchase Orders	P.O. Value (in Rs.)
(1)	Import :-		
(A)	Institute fund		
a	Consumable	56	25,17,538=46
b	Non Consumable	49	9,99,35,563=03
(B)	Project fund		
a	Consumable	94	64,38,448=63
b	Non Consumable	183	12,93,16,770=51
	Total Import (A&B)	382	23,82,08,320=63
(2)	Indigenous :-		
(A)	Institute fund		
a	Consumable	319	92,61,532=83
b	Non Consumable	369	4,63,86,021=07
(B)	Project Fund		
a	Consumable	128	55,25,445=41
b	Non Consumable	371	5,26,73,864=48
	Total Indigenous (A&B)	1187	11,38,46,863=79
	<b>Total Value(1&amp;2)</b>	1569	35,20,55,184=42

Central Store procures highly technical items as and when required by different departments to maintain the pace with science and technology development. It stocks some items of consumable nature like stationery, hardware, and liveries etc. The Central store has two units, namely Purchase unit and Receipt/Issue unit. This section is headed by a professionally competent Deputy Registrar (Materials) who is assisted by a professionally competent team of 22 persons.

The store also handles disposal of unusable and scrap materials. Clearance of parcels and dispatch of rejected materials to both local and foreign firms for repairs/replacements is also done by this section. It assists the department in areas like transportation, procurements of furniture, etc.

Stores Accounts maintain the expenditure details under working expenses and stationery grants sanctioned to department/ section, etc.

We have been successful in computerizing the transactions both in Stores & Purchase & Import Section. We are processing all Indents through the software

developed by Automation Division and each and every function of Stores & Purchase has been automated in this financial year. We can generate reports as per our requirements as and when needed. We have full connectivity in Central Store through LAN/WAN for complete automation. Maximum correspondence is done by e-mail where it is available keeping in view the speedy action for the procurement. Store and Purchase is now connected with main frame Computer of Computer Centre. Full communication with every net user is now possible in campus from Store and Purchase Section. We are also planning to provide the Web based postal, so that department can send electronic indent directly to Central Store and check the status of this indent/purchase order/sanction sheet on the monitor.

### **ESTATE OFFICE**

The Institute has a sprawling area of 960 acres having total population around ten thousand. Being a residential campus with 1034 houses in various categories far away from the heart of the city, the Institute had to create its own infrastructure and civic amenities such as sanitation, water supply, sewage disposal and shopping complexes and such facilities, which are required for day-to-day living.

The Estate Office is entrusted with various kinds of activities including house allotment, commercial shops management, tendering process of unserviceable materials, eviction of unauthorized occupants, realization of license fee/electric charges from shopkeepers & house allottee's, estate management and civic amenities.

The Institute has various types of residential accommodation, i.e. Type- IA, IB, I, II, III, IV and V out of which type III & above are allotted to Faculty members, Scientists, Research Engineers, group officers and rest is allotted to other staff. We have mainly four shopping complexes at various locations i.e. one in the heart of campus called as main shopping complex and other at Type-II complex, third one at security crossing & forth one at Type-I area consisting of various kinds of 98 shops, which fulfill the basic needs of the residents.

Besides the above shopping complexes, we have 9 hostels for students' accommodation out of which seven are for boys and two are for girls. Every hostel has a barber shop, washer man shop, tailoring shop which mainly fulfills the immediate needs of the students. As per demand, we have already been started the operation of the PCOs in most of the hostels.

A new state-of-art building of Biological Sciences and Bio-Engineering department has completed and in operation with approximately 64,000 sq. feet area. Also the

construction of twelve residences for visiting faculty completed and used for accommodation.

Looking from the hygienic point of view in the campus, the Estate Office has been operating cleaning, sweeping & up-keeping work in the campus, which has been appreciated by the campus community. The above job is attended by private contractors under supervision of the office.

Further a cable T.V. Network is also being operated 24 hours round the clock by the Institute to provide entertainment to the entire campus community.

Besides, the Estate Office is managing all the activities related to the estate very successfully and cautiously by way of taking all the precautions to solve all types of problems satisfactory. During the financial year 2004-05, the office has realized about **Rs. 71, 32,736.00** from the different sources.

### **CAMPUS SCHOOL**

Campus School catering to give education to the wards of faculty & staff, is imparting the best possible pre & post education. Child is always at the centre of concern. Activities of the school are geared to make all round development of a child. Its infra structure is strong to provide curricular & co-curricular activities to the students. There are 400 students served by a team of highly qualified & dedicated 28 teachers, 17 supporting staff & the Principal. There are special teachers for P.T., Art, Science, Computer and Dance.

The school wishes to give a holistic approach to the children in the morning assembly. Various programme/events/functions/competitions like fancy dress, hand writing, quiz, poetry recitation, art, excursion, cricket match, etc. were held thorough out the year. Also skits were organized on the occasions of Raksha Bandhan Janmashtami, Gandhi Jayanti and Teacher's Day.

Newly introduced Best Teacher's award was given to Mrs. B. Pathak and Mrs. M. Sinha. The Chief Guest on behalf of the Institute Administration presented a small gift to all the teachers as a token of recognition of their services. Evening co-curricular activities like cricket for boys and kho-kho for girls in class I to V are arranged. A friendly cricket match with Montora Public School was organised by the school. Our school won the match.

**Major Events / Functions:**

Inter - School cultural Competition: Folk Song and Folk dance:

Inter- School Kho - Kho Tournament was organised by the school. Campus School was the winner.

Wild Life Week celebrations (Oct. 1st to 7<sup>th</sup> 2004): Different competitions were organised by the Director Zoological Garden, Kanpur. Our students participated in different - events such as: Races, Art, Essay writing, Quiz, Group song and Group Dance etc. Our students brought many laurels to the school.

Our students participated in Inter-school competition "Joy De Verse" (for class IV to VII) organised by Jain International School in Jan 05. Km. Amruta Naik, class IV won IIIrd prize in classical vocal solo.

IInd Inter School Cricket Tournament was organized from Feb. 7 to 10 2005. Campus School was the runner.

Independence Day and Republic Day were celebrated with great zeal and enthusiasm as usual. The kids presented very colourful cultural programmes on both the occasions which were applauded by the audience.

As per discussion with the Director, Dy. Director, Prof. Incharge, Principals of the Campus School and Kendriya Vidyalaya and the Chairman, SMC, an academic co-ordination committee was formed to facilitate admission of the out going students of Campus School (Grd. V) in class VI of K.V. IIT/Kanpur.

**HEALTH CENTRE**

Health Centre had been established with the objective of addressing health needs of the Institute Community. It provides services round the clock to meet its goal. Health Centre is manned by 9 Medical Officers and Medical Advisor of the Institute. Apart from the Medical Officers, it is equipped with a Pathology & Biochemistry lab, X-Ray Unit, Dressing Unit, Pharmacy and Nursing Station.

The details of the Health Centre services provided for the period with effect from 1.4.2004 to 31.03.2005 are as follows:

<b>S. N.</b>	<b>Annual Performance</b>	<b>Number</b>
	Number of Patients treated in OPD	61322
	Number of Student treated	11221
	Number of Patients treated in Indoors	1043

	Number of Patients treated in Homeopathy OPD	4661
	Number of Surgical Operation (Minor)	53
	Number of Deliveries	24
	Number of Plastering	78
	Number of Surgical Dressing	6631
	Number of Injections	21626
	Number of Pathology Test and Bio Chemistry Test	35422
	Number of Family Planning Operation (Tubectomy)	Nil
	Number of E.C.G.	609
	Number of Babies attended in Well Baby Clinic	904
	Number of X-Ray done	1787
	Number of babies attended National Pulse Polio Programme	854
	Number of Anti Rabies Injections	350

Immunization are done round the year in the Health Centre for protection against Typhoid, Cholera, Tuberculosis, Diphtheria, Pertussis Tetanus, Polio and Measles. Facilities for maternity management, family planning counselling and Tubectomy operation are also available.

### **VISITORS' HOSTEL**

Housed in an imposing double storied building and located at a central place, the Visitors' Hostel provides boarding and lodging facilities for the guest, newly appointed faculty/staff members and delegates/participants attending various conferences, seminars symposia and workshop.

The Visitors' Hostel can accommodate 170 persons in 70 single rooms (twin bed) and 15 double rooms, 10 are air-conditioned. All the rooms have attached bath rooms (W.C.). It has 2 dining halls of which one is air-conditioned and a recreation room with W.C. facilities attached with this. It also has an air-conditioned conference room.

Facilities and services have further been improved at a professional level, which has increased occupancy rate and messing by about 12% thus increase in revenue.

A Pioneer batch Continuing Education Center Building has also been attached with Visitors' Hostel. This has one air-conditioned conference room, 2 class rooms, waiting lounge pantry and an Ante Room.



## Publications and Outreach Activities

### BOOKS AND BOOK-CHAPTERS PUBLISHED

1. Proceedings of the International Congress on Computational Mechanics and Simulation, Vol.I and II, Dec 9-12, 2004, Indian Institute of Technology, Kanpur, Ed. N.G.R. Iyengar and Ashwini Kumar.
2. Airbreathing Engines & Aerospace Propulsion Proceedings of NCABE-2004, 05- 07, Nov. 2004, Ed. R.K. Sullerey
3. Mathematical Methods in Chemical and Environmental Engineering, Thomson Learning, Singapore, 2004, 689 pages, A. K. Ray and S. K. Gupta.
4. Advances in Nanoscience and Nanotechnology, National Institute of Science Communication and Information Resources, Council of Scientific and Industrial Research, New Delhi (2004), Ashutosh Sharma, Jayesh Bellare and Archana Sharma (Eds.).
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1006. Scanning electron microscopy, spectroscopy and viscoelastic studies of nano low density polyethylene, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/2505-2509, Kamal K. Kar, P.Paik, A.S. Suresrao and J.U. Otaigbe.
1007. Characterization of structure and viscoelastic properties of polypropylene nanopolymer, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/2495-2499, Kamal K. Kar, P.Paik and J.U. Otaigbe.
1008. Finite element analysis of hyperelastic materials: Elastomeric seal, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/2277-2281, M. Rawat, Kamal K. Kar and J.U. Otaigbe.
1009. Hysteresis loss of polymeric materials: Finding of new dimensionless parameters, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/1994-1998, Kamal K. Kar, A.K. Bhowmick and J.U. Otaigbe.
1010. A Rheological model for quantitative prediction of die swell: effect of shear rate and temperature, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/1059-1063, Kamal K. Kar, S.Gupta and J.U. Otaigbe.
1011. Rheological Characterization of liquid crystal polymers (Xydar-300, Xydar-400 and Xydar-900) measured in ARES spectrometer, Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/991-995, Kamal K. Kar and J.U. Otaigbe.
1012. Development of rubber pressure moulding technique using polyester resin and natural rubber, Name of Conference: Annual Technical Conference (ANTEC 2004), May 16-20, 2004 - Chicago, Illinois, USA, Page # ANTEC 2004/1430-1434, Kamal K. Kar, S.D. Sharma, P.Kumar, and J.U. Otaigbe.

1014. Proposal of universal dimensionless parameters describing the heat generation of polymeric materials, The XIV international congress on Rheology 2004, August 22-27, 2004, Seoul, Korea, Page # AR08-1-AR08-3, Kamal K. Kar and A.K. Bhowmick
1015. The die swell of commercial polyethylene, polypropylene and polystyrene: Comparison of experimental behavior with Tanner, Macoscow and Proposed Models, The XIV international congress on Rheology 2004, August 22-27, 2004, Seoul, Korea, Page # PM12-1-PM12-3, Kamal K. Kar and S. Gupta
1016. Nonlinear viscoelastic behavior/Rheology of xydar in the melt, The XIV international congress on Rheology 2004, August, 22-27, 2004, Seoul, Korea, Page # NF42-1-NF42-3, Kamal K. Kar.

### **SEMINAR PRESENTED**

1. Introduction to Virtual Instrumentation, Sanjay Gupta, Keynote Address: Workshop on Virtual Instrumentation, Anand Engineering College, Agra, 2005.
2. Virtual Instrumentation And LabVIEW: An Introduction. S Gupta. Keynote Address: Short Course on Virtual Instrumentation, MNNIT, Allahabad, 2005 (Organised by National Institute of Technical Teachers' Training and Research, Chandigarh).
3. Electrooptical Materials and Their Applications, K.V.Rao, Military College of Telecommunications Engineering, Mhow, March 2005
4. Mini-helicopter Design and Development, Invited talk, National Institute of Technology, Srinagar, India, June 2004. Venkatesan, C.
5. Helicopter Vibration and Its Control, Invited talk, Military College of Electrical and Mechanical Engineers, Secundrabad, India, July 2004. Venkatesan, C.
6. Invited paper: International Conference on Advances in Structural Integrity, IISc Bangalore, July 2004. Venkatesan, C.
7. Helicopter Dynamics and Stability, Annual Meeting of the Indian National Academy of Engineering, New Delhi, Dec. 2004. Venkatesan, C.
8. Organized a National Seminar on Combustion at IIT, Kanpur, D. P. Mishra.
9. Stability of Composite laminates Using a Simple Higher order Shear, Deformation Theory, Seminar, Aeronautics Design and Research center, HAL Bangalore, June 30,2004, N,G.R.Iyengar.
10. Stability of Composite laminates Using a Simple Higher order Shear Deformation Theory, Seminar, CEMILAC, Bangalore, July 6, 2004, N,G.R.Iyengar.
11. Re-entry Trajectory Modelling and Simulation, ISRO Satellite Centre, Bangalore, December 21, 2004, Ashish Tewari.
12. Re-entry Trajectory Modelling and Simulation, VSSC, Trivandrum, April 15, 2004, Ashish Tewari.
13. Honeywell, Bangalore Sullerey R.K.
14. High Performance Computing in Fluid Mechanics, Academic Summit, Microsoft Research, Bangalore, India, 2004, S. Mittal.
15. Instabilities in Bluff Body Flows in Tenth Asian Congress on Fluid Mechanics, University of Peradeniya, Srilanka, 2004, S. Mittal.
16. Instabilities in Bluff Body flows in International Workshops on Advances in Computational Mechanics, Tama Campus, Hosei University, Tokyo, Japan, 2004, S. Mittal.

17. Effect of elastic supports on the critical value of Reynolds Number past a cylinder, National Conference on Recent Advances in Mechanical Engineering – NCRAME-2004, Jabalpur Engineering College, 2004, S.Mittal.
18. Instabilities in Bluff Body Flows IUTAM Symposium for Laminar Turbulent Transition, Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore, India, 2004, S.Mittal.
19. Application of a Mesh Moving Scheme to Ram-Air Parachute, International Seminar on Technologies & Trends in Development of Para Recovery Systems (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, Prashant S Hadagali and S. Mittal.
20. Effect of blockage on vortex induced vibrations, International Seminar on Technologies & Trends in Development of Para Recovery Systems (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, Suresh Behara, Prasanth T.K. and S. Mittal.
21. Vortex Induced Vibrations of a Spinning and Translating Cylinder, International Seminar on Technologies & Trends in Development of Para Recovery System (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, T.K. Prasanth and S. Mittal.
22. An Efficient Airfoil Configuration for Ram-Air Parachute Applications, International Seminar on Technologies & Trends in Development of Para Recovery Systems (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, S. Mittal, R. Balaji and A.K. Rai.
23. Title –The Fat tumor suppressor represses Wnt signaling to regulate cell proliferation and cell adhesion. Medical Research Council, Cambridge, UK. 29<sup>th</sup> March 2005.
24. Delivered a talk titled “ATCUN-like metal-binding motifs in proteins: Crystal structure and sequence analysis” in Molecular Biophysics Unit, Indian Institute of Science, Bangalore in Feb. 2005, Prof. Pradip Sinha.
25. Contributing talk in the International Symposium on Aerosols, Clouds and Indian monsoon, IIT Kanpur, November, 2004, R. Bandyopadhyaya.
26. A series of 4 lectures in the short term course on Smart Materials: Opportunities and Future Challenges, NIT Allahabad, December 2004, R. Bandyopadhyaya.
27. A lecture in the Indo-US winter school on Futuristic Manufacturing, IIT Kanpur, December 2004, R. Bandyopadhyaya.
28. Contributing talk in the Indo-US joint Chemical Engineering Congress, Chemcon 2004, Bombay, December 2004, R. Bandyopadhyaya.

29. Invited talk in the Nanotechnology Symposium, IIT Bombay, March 2005, R. Bandyopadhyaya.
30. Designing supported metal oxide catalysts by understanding the effect of the kinetic-parameters: Propane ODH over unmodified and modified  $V_2O_5/TiO_2$  catalysts, ACS meeting, Philadelphia, Aug-2004, Goutam Deo.
31. The effect of oxide support on the kinetic-parameters for ODH of propane over well-characterized  $MoO_3/TiO_2$  and  $MoO_3/Al_2O_3$  catalysts, Chemcon-2004, IIChe Annual Meeting, Mumbai, December 2004, T.V. Malleswara Rao and Goutam Deo.
32. The effect of vanadium oxide loading on the kinetic parameters for the ODH of propane over well-characterized  $V_2O_5/TiO_2$  catalysts, Chemcon-2004, IIChe Annual Meeting, Mumbai, December 2004, Debaprasad Shee, Rudra Pratap Singh and Goutam Deo.
33. The effect of modifiers on supported  $V_2O_5/Al_2O_3$  catalysts: ODH of Propane, Chemcon-2004, IIChe Annual Meeting, Mumbai, December 2004. Girish Joshi, Brishti Mitra, Israel E. Wachs and Goutam Deo.
34. Molecular drug design and array informatics using mathematical programming, Department of Chemical and Biomolecular Engineering, National University of Singapore, Singapore. June 4, 2004, S. Garg.
35. Peeling from a Smooth and a Patterned Layer of Elastic, Adhesive, NCL, Pune, 1<sup>st</sup> January, 2005, A. Ghatak.
36. Stability of Single Layer and Two Layer viscoelastic shear flows past a deformable solid layer, Complex Fluids Symposium, National Chemical Laboratory, Pune, January 1, 2005, V. Shankar.
37. National Chemical Laboratory (Pune), A. Sharma.
38. Lehigh University, USA, A. Sharma.
39. University of Vigo, Spain, A. Sharma.
40. DMSRDE (Kanpur), A. Sharma.
41. 3<sup>rd</sup> Singapore-India Collaborative and Cooperative Research Symposium, IIT Kanpur, December, 2004, Parimal K. Bharadwaj.
42. Transition Metal Based Smart Materials, Parimal K. Bharadwaj, MNIT, Allahabad, October, 2004.
43. Transition Metal Induced Signal Transduction in Cyclic as well as Acyclic Systems, Parimal K. Bharadwaj, Recent Advances in Chemistry at the Organic-Inorganic Interface, IIT Guwahati, December, 2004.
44. Highly Porous Metal-Organic Framework Structures, Parimal K. Bharadwaj, NCL, Pune, February, 2005.

45. Chemistry of Smart Materials, Parimal K. Bharadwaj, University of Goa, March, 2005.
46. Venue: Institute of Inorganic Chemistry, University of Wuerzburg, Wuerzburg, Germany, 2004, Rings, Cages and Polymers: Building Bridges Between Main-Group and Transition Metal Chemistry, V. Chandrasekhar.
47. Venue: Institute of Chemistry, Freie University, Berlin, Germany, 2004, Stannoxanes and phosphonates: New approaches in organometallic and transition metal assemblies, V. Chandrasekhar.
48. Venue: Department of Chemistry, University of Dortmund, Dortmund, Germany, 2004, Title of Seminar: Rings, Cages and Polymers: Building Bridges Between Main-Group and Transition Metal Chemistry, V. Chandrasekhar.
49. Venue: Institute of Inorganic Chemistry, University of Gottingen, Gottingen, Germany, 2004, Title of Seminar: Stannoxanes and Phosphonates, V. Chandrasekhar.
50. Venue: Department of Inorganic and Physical Chemistry, Indian Institute of Science, Bangalore, 2004, Title of Seminar: Stannoxanes and phosphonates: New approaches in organometallic and transition metal assemblies, V. Chandrasekhar.
51. Title: Hydrogen Bond Mediated Vibronic Mode Mixing and Electronic Energy Transfer in Carboxylic Acid Dimers. Organization: The University of Akron, Ohio, USA. Date: June 24, 2004, T. Chakraborty
52. Title: Photophysics of Aromatic Carboxylic Acid Dimers: Hydrogen Bond Mediated Vibronic Mode Mixing and Electronic Energy Transfer. Organization: Technical University of Munich. Date: July 7, 2004, T. Chakraborty
53. Title: Size Dependent Properties of Atomic and Molecular Clusters. Organization: National Institute of Technology, Allahabad. Date: November 29, 2004, T. Chakraborty
54. 3<sup>rd</sup> Singapore India Collaborative and Cooperative Chemistry symposium, 2004, IIT-Kanpur, Ghorai M.K.
55. Title: Stereoselective C-C Bond Formation Via Enolate: Memory of Chirality Concept for Chiral Induction, Ghorai M.K.
56. Ultrafast Pulse Shaping Approaches to Quantum Computing, Debabrata Goswami, INAE Conference on Nanotechnology (ICON-2003), Chandigarh, India, Dec. 22 – 23 (2003).
57. Laser Polarization Induced Control of Highly Nonlinear Process, Debabrata Goswami, International Workshop on Optimal Control of Quantum

- Dynamics: Theory & Experiment, Ringberg Castle, Max-Planck-Institut fuer Quantenoptik, Garching, Germany, Dec. 7 – 10 (2003).
58. Computing with Dancing Molecules, Debabrata Goswami, Singapore-India Symposium, IIT, Kanpur, December 16-17, 2004.
  59. Polarization Induced Control of Nonlinear Processes, D. Goswami, Condensed Matter Workshop (CMP 2005), Department of Physics, IIT, Kanpur, Feb. 5-6, 2005.
  60. Optical Approaches to Quantum Computing, Debabrata Goswami, Workshop on Quantum Information, Computation and Communication (QICC-2005), Centre for Theoretical Studies, IIT, Kharagpur, Feb. 15-18, 2005.
  61. High Tech Research: Applications to Low Cost, Debabrata Goswami, International Workshop ICT as a development enabler:-S&T Interventions, Department of Science and Technology, Govt. of India, TIFAC, New Delhi, February 21-22, 2005.
  62. Shaping an Ultrafast Laser Laboratory, Department of Nuclear and Atomic Physics Seminar, Tata Institute of Fundamental Research, Mumbai, India, Jan. 13, 2003. Debabrata Goswami.
  63. Quantum Computing with Ultrafast Pulse Shaping Approaches, Indian Institute of Technology, Kanpur, India, Feb. 21, 2003. Debabrata Goswami.
  64. Ultrafast Pulse for Quantum Logic, SERC School on Quantum Information and Quantum Optics, Physical Research Laboratories, Ahmedabad, India, Feb. 9, 2004. Debabrata Goswami.
  65. Seminar delivered, Ohio University, Organobridged dicobaloximes: Low temperature NMR study, May 21, 2004 Gupta B.D.
  66. Biodegradation of nitro toluenes- Center for fire, explosive and environmental safety, a DRDO lab in Delhi April 2004, Gurunath R.
  67. Bioremediation of toxic environmental contaminants- IITK-Nussymposium in Chemistry, IIT Kanpur- 18 December, 2004, Gurunath R.
  68. Advances in Biotechnology, Engineering College Raipur, Chhatisgarh. March 2004, Gurunath R.
  69. SInCCCS-3: Third Singapor-India Collaborative and Cooperative Chemistry Symposium at IIT Kanpur (December 16-17, 2004), F. A. Khan.
  70. Invited Lecture: A concise Synthesis of Novel Oxabridged Compounds, Lecture series on:  $\pi$  Facial selectivity and stereoelectronic effects (4 lectures) at NCL Pune on 28, 29 January 2005, F. A. Khan.
  71. Nano Structures and Display devices, Department of Physics and Chemistry, Lucknow University, Feb 2004, S Sundar Manoharan.

72. Microwave Approaches to Material Synthesis, at CEM Corporation North Carolina, USA Oct 2004, S Sundar Manoharan.
73. Chemical approaches to Nanomaterial synthesis at Karunya Deemed University, Tamil Nadu, Feb 2004, S Sundar Manoharan.
74. Devising molecules for Display devices, Christ College, Bangalore, January 2005, S Sundar Manoharan.
75. While light emission using organic semiconductors, Indo-Singapore conference at IIT Kanpur, December 2004, S Sundar Manoharan.
76. Nanotechnology: at Royal Institute of Technology at Bhutan, April 2004, S Sundar Manoharan.
77. Photochromism, Photocyclization and Tandem PhotoenolizationHetero DielsAlder Cycloaddition Reactions of o-Tolualdehydes in the Solid State, University of Hyderabad, Hyderabad, 23 September, 2004, Moorthy, J. N.
78. Photochemistry of o-tolualdehydes, University of Bangalore, Bangalore, 25 September, 2004, Moorthy, J. N.
79. Control of Organic Molecular Reactivity and Ordering in the Solid State, University of Siegen, Siegen, Germany, 22<sup>nd</sup> February, 2005, Moorthy, J. N.
80. Instrumental and Analytical Techniques in Chemistry, Department of Chemistry, University of Allahabad, Allahabad (December 17, 2004), Mukherjee R. N.
- A. V. Rama Rao Foundation Prize Lecture in Chemistry (2005), Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore (proposed to be delivered on March 23, 2005), Mukherjee R. N.
81. Transition state, Department of Chemistry, Gorakhpur University, Gorakhpur, December 30, 2004, N. Sathyamurthy.
82. Medal lecture at CRSI meeting on February 6, 2004 at IIT Kanpur, Vinod K. Singh.
83. Invited talk in India-French Organic Seminar during October 6-7, 2004 at Gif-Sur-Yvette, France, Vinod K. Singh.
84. Invited lecture at a symposium CBISNF-2004 during November 21-26, 2004 in New Delhi, Vinod K. Singh.
85. Invited lecture at a symposium during March 6-7, 2005 at BHU, Varanasi, Vinod K. Singh.
86. Invites talk - Highly excited eigenstates and dynamics in CDBrCIF and CF<sub>3</sub>CHFI - Discussion meeting on High resolution molecular spectroscopy, Mumbai, April 2004. Srihari K.



87. Invited talk - Energy flow in highly excited molecules: is statisticality only 'skin-deep'? - Department of Inorganic and Physical Chemistry, IISc, Bangalore, July 2004. Srihari K.
88. Invited talk - Resonance and chaos assisted tunneling in molecules: 'non-classical' routes to energy flow - Windberg workshop, Germany, September 2004. Srihari K.
89. Invited talk - Dynamical tunneling in molecules: spectral consequences of classical phase space structures - Max-Planck-Institut für Selbstorganisation und Stromungsforschung, Goettingen, December 2004, Srihari K.
90. Group talks at the Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany. Finite systems (Nov. 2004), Andreas Buchleitner's group (Nov. 2004), and Sergej Flach's group (Jan. 2005), Srihari K.
91. Aggregational studies with bioinspired synthetic peptide palindromes. Chemistry Biology Interface-Synergistic New Frontiers. November 22-27, 2004, New Delhi. Verma, S. \*, Madhavaiah, C., Prasad, K.K., Purohit, C.S.
92. Protein assemblies and aggregates: Biological relevance and modeling studies. First National Frontiers of Science Symposium, December 10-11, 2004, New Delhi, Verma, S.
93. Synthetic peptide assemblies: Enforcing aggregation in bioinspired peptide scaffolds. First Indo-US Frontiers of Science Symposium, January 9-11, 2005, Bangalore, Verma, S.
94. Ordered peptide aggregation in synthetic conjugates derived from biologically relevant proteins. National Symposium on Organic Synthesis: New Dimensions, March 6-7, 2005, BHU, Varanasi, Verma, S.
95. 3<sup>rd</sup> Singapore-India Collaborative & Cooperative Chemistry Symposium, IIT, Kanpur, India, 2004, Invited Speaker, Veejendra K. Yadav.
96. Fakultät für Chemie, Universität Konstanz, Konstanz, Germany (September 2004), ETH, Zurich, Switzerland (September 2004), Yashwant D. Vankar.
97. Department of Organic Chemistry, I.I.Sc. Bangalore, 24<sup>th</sup> January 2005, Yashwant D. Vankar.
98. Department of Chemistry, University of Delhi, 3<sup>rd</sup> February, 2005, Prof. T.R. Seshadri Memorial Lecture, Yashwant D. Vankar.
99. The Tale of Rainwater Harvesting from Alwar, Rajasthan, Seminar on Water Conservation and Rainwater Harvesting, UP Chamber of Commerce, June 2004, Kanpur, Jain, A..
100. Wavelet-Based Stochastic Seismic Response of Structural Systems, Rice University, Houston, USA: July 30, 2004, Gupta, V.K.

101. Gupta, V.K., Design Spectrum-Based Scaling of Strength Reduction Factors  
University of Toronto, Toronto, Canada: July 22, 2004  
Ecole Polytechnique, Montreal, Canada: July 23, 2004  
University of Southern California, Los Angeles, USA: July 26, 2004  
University of California at San Diego, La Jolla, USA: July 27, 2004  
Birla Institute of Technology and Science, Pilani: December 13, 2004
102. Influence of Fibre-Wrap Retrofitting on Gravity Designed RC Beam-Column Joints under Cyclic Loading, Proceedings of International Symposium on New Technologies for Urban Safety of Mega Cities in Asia, Agra, India, 18-19 October 2004, pp Parallel Sessions 27-36, Bajpai, K.K., Murty, C.V.R., and Rai, D.C.,.
103. Title Earthquake Engineering at IIT Kanpur: Present and Future Directions Organzn. Indo-US Joint Network of Earthquake Engineering Simulation (NEES) Workshop Place IIT Bombay Dates Feb 3-5, 2005, Rai, D.C.
104. Title Battened built-up beam-columns under cyclic loads Organzn. EERI Chapter of University of Michigan Place Ann Arbor, MI, USA Dates July 23, 2004, Rai, D.C.
105. Digital Gang tic Plains (DGP): 802.11-based Low-Cost Networking for Rural India, Presentation at Wireless4Development, Djursland, Denmark, Sep 2004, Bhaskar Raman.
106. Universality for Nondeterministic Logs Space Indo-German Workshop On Algorithms, IISC Bangalore, October 2004, Somenath Biswas.
107. Mobile Computing Cutting Edge-2004 IIT Kanpur April 2004, R.K Ghosh.
108. Routing in Mobile Ad Hoc Networks, Workshop on Wireless Networks and Mobile Computing August 2004, R. K Ghosh.
109. The 2nd Annual IIT Kanpur Hackers' Workshop 2005 March, 2005, Deepak Gupta.
110. Machine Translation: Problems and techniques. ISI Calcutta, Jan 04, 2005.
111. Scaling Machine Learning Algorithms to Large Data Sets IBM India Research Lab. New Delhi, April 10, 2004, Pabitra Mitra.
112. Embedded Systems Technologies. Excitement of Research IIIT Hyderabad, March 5-6, 2005, Rajat Moona.
113. Software Performance Assessment Profiling and Performance, Improvements, Infosys. September 13-14, 2004, Rajat Moona.
114. Smart Cards Technology for Secure Management of Information Cutting Edge April, 2004, Rajat Moona.
115. The Landscape of Software Architecture, Wipro, Hyderabad, March 2005, T V Prabhakar.

116. Growth of Internet in India TRAI, New Delhi, October, 2004, Dheeraj Sanghi.
117. Rural Connectivity Using WiFi Networks Development Professionals Meet Pant Institute of Social Sciences Allahabad March, 2005, Dheeraj Sanghi.
118. A type system for polynomial time computation, Calcutta University Oct, 2004, Anil Seth.
119. Biometrics, Workshop on Computer Technology Trends Present and Future Centre for Development of Advanced Computing, Nodia, August, 2004, R.M.K Sinha.
120. Food, Family, Culture and Power Structure in Anita Desai's Fasting Feasting, The National Seminar on Familial Relations and Society in Contemporary Indian Writing in English, organized by the Department of English, DAV College, Kanpur, 17-18 March, T. Ravichandran.
121. Delivered a lecture on The Problems of Communication to the participants of Staff Development Coordination Workshop on Supervision and Managerial Effectiveness, IIT Kanpur, 12 March 2005, T. Ravichandran.
122. Delivered an invited lecture on 'Effects of Divorce on Children' in an awareness programme organized by the Police Department, Kanpur at Christ Church College Auditorium, Kanpur, on 28.11.04, Shikha Dixit.
123. Delivered an invited lecture on 'Managing Relationships and Communicating Effectively in Groups and Teams' in a Training Programme on General Management and Communication Skills conducted by The Institute of Chartered Accountants of India, Civil Lines, Kanpur, Jan. 24-9, 2005, Shikha Dixit.
124. Two Lectures on Policy of Disinvestment in India and Application of I-O Technique delivered to the participants of UGC workshop for college and university teachers, Organised by Narosa Public Administration Institute, Bhopal, December 17-18, 2004, K. K. Saxena.
125. Presentation of the Project Report on Rapid Evaluation of ISRHHD and SAY Schemes, Ministry of Rural Development, Department of Rural Development, Krishi Bhavan, New Delhi, 13 May 2004, A.K. Sharma.
126. Communication Skills: Communication Competence and Group Communication, Communicator Styles, and Listening Skills, M.P. Academy of Administration, Bhopal, Dec. 9, 2004, L. Krishnan.
127. Memory: Aspects of Short-term Memory, Department of Psychology, Government Nutan Girls' College, Indore, Dec. 21, 2004, L. Krishnan.
128. Prosocial Behaviour and Social Identity Theory, Advanced Social Psychology Refresher Course, Organized by Academic Staff College,

- Department of Psychology, Allahabad University, and University of Dundee, Scotland, U.K., March 8, 2005, L. Krishnan.
129. Distributive Justice: Trends in Research, Advanced Social Psychology Refresher Course, Academic Staff College, Department of Psychology, Allahabad University, and University of Dundee, Scotland, U.K., March 9, 2005, L. Krishnan.
  130. Environmental Impact Analysis of the Linking of Indian Rivers with reference to Orissa, Kalinga Institute of Technology, Bhubaneswar, Orissa, May 8, 2004, B. Rath.
  131. Chairman, Technical Session on Planning and Culture, 11<sup>th</sup> International Planning History Society (IPHS), Barcelona, Spain, July 14-17, 2004, B. Rath.
  132. Mainstreaming Environment and Development: The Indian Experiences, Copernicus Institute for Sustainable Development and Innovation, University of Utrecht, The Netherlands, July 24, 2004, B. Rath.
  133. Sustainability in the Development of Minor Irrigation Projects in India, Copernicus Institute for Sustainable Development and Innovation, University of Utrecht, The Netherlands, July 24, 2004, B. Rath.
  134. EIA of Indo-Dutch Collaboration Project at Kanpur under the Ganga Action Plan, Copernicus Institute for Sustainable Development and Innovation, University of Utrecht, The Netherlands, July 24, 2004, B. Rath.
  135. Chairman, Second Technical Session of the National Seminar on Issues in Human Development, GB Pant Social Science Institute, Allahabad, October 29-30, 2004, B. Rath.
  136. Chairman, Technical Session on Watershed Development Projects in India, 37<sup>th</sup> Annual Conference of Orissa Economic Association, Christ Church College, Cuttack, Orissa, February 20, 2005, B. Rath.
  137. Chairman, Technical Session on Rehabilitation & Resettlementt, National Workshop on Dams and Development, Institute of Development Studies Jaipur, March 2, 2005, B. Rath..
  138. Phototacti bioconvection in two dimensions, Math bio lunch meeting, University of Glasgow, UK, 1<sup>st</sup> June, 2004, Ghorai S.
  139. Ghorai, S, Simulations of bioconvection in three dimensions, Research Meeting on Motile Cells, Micro-Organisms & Fish Larvae, Universities of Glasgow and Strath-clyde's Centre for Mathematics Applied to the Life Sciences. 28<sup>th</sup> and 29<sup>th</sup> June, 2004, Ghorai S.
  140. Approximations by K-finite functions,at Harish-Chandra Research Institute, Allahabad during 21.03.05 to 24.03.05, Rawat R.

141. An Introduction to Wavelets University of Ranchi, Feb.6, 2005, Tewari, U.B.
142. Nonsmooth Optimization: A finite dimensional tour, June 2003, Halle, Germany, Dutta, J.
143. Regularity and Optimality in Vector Optimization, June 2003, Halle, Germany, Dutta, J.
144. Monotonic Analysis over Codes, July 2003, Alicante, Spain, Dutta, J.
145. Generalized derivatives in nonsmooth optimization, July 2003, Alicante Spain, Dutta, J.
146. Maximization of Convex and Lipschitz functions, June 2004, Frieberg, Germany, Dutta, J.
147. Harmonic analysis on noncompact rank one symmetric spaces, ISI Bangalore, NBHM Instructional School, 21<sup>st</sup> June – 9<sup>th</sup> July, 2004, Ray S.K.
148. Harmonic analysis on noncompact rank one symmetric spaces, ISI Bangalore, NBHM Instructional school, 21<sup>st</sup> June – 9<sup>th</sup> July, 2004, Ray S.K.
149. Role of linear and non-linear estimators in the consistent estimation of regression coefficient in ultrastructural model with replicated observations University of Dortmund, Dortmund, Germany in May, 2004, Shalabh.
150. Non-linear and linear estimators in ultrastructural model with replicated observations, Institute of Statistical Science, Academia Sinica, Taipei, Taiwan in June, 2004, Shalabh.
151. Risk and Pitman closeness properties of feasible generalized double k-class estimators in linear regression models with non-spherical disturbances under balanced loss function, Department of Statistics, National Cheng-chi University, Taipei, Taiwan in June 2004, Shalabh.
152. On the usefulness of knowledge of error variances in the consistent estimation of an unreplicated ultrastructural model, Department of Mathematics, National Kaohsiung Normal University, Kaohsiung, Taiwan in June, 2004, Shalabh.
153. Consistent Estimation of coefficients in measurement error models with replicated observations, Department of Applied Mathematics, National Sun Yat-sen University, Kaohsiung, Taiwan in 2004, Shalabh.
154. Wavelet Taylor Galerkin Method for Partial Differential Equations, Indo-French Workshop on Partial Differential Equations and Applications, at IISc(IMI) & TIFR Bangalore, Feb. 7-12, 2005, Rathish, B.V.K.

155. High Performance Computing & Cardio-Vascular Modelling, Symposium on Scientific Computing, Dec. 23-24, 2004, at SSIHL, Prasanthinilayam, Rathish, B.V.K.
156. Flow in Blood Vessels, Chandna Award Talk at SSIHL, Aug. 11, 2004, Prasanthinilayam, Rathish, B.V.K.
157. Heat Transfer and Fluid Mechanics Related to Turbulent Flows, Indian National Academy of Engineering (INAE) Annual General Meeting, December 11, 2004, Gautam Biswas.
158. Mechanical Characterization of Functionally Gradient Materials, Advanced Systems Laboratory, DRDO, Hyderabad, August 06, 2004, P.Venkitnarayanan.
159. M.N. Saha Memorial Lecture at Indian Association for Cultivation of Science, Dec. 13, 2004. From Natural Numbers to Numbers in Nature, A.K. Mallik.
160. Importance of Convection in the Growth of Optical Crystals, presented at the symposium entitled Topical meeting on Frontiers in Materials Science and Technology, on 30<sup>th</sup> December 2004 at Center of Advanced Technology, Indore, K. Muralidhar.
161. Heat Transfer enhancement and fluid flow transport phenomena behind surface mounted solid and permeable ribs, German Aerospace center, Goettingen, Germany, July 16<sup>th</sup>, 2004, P.K. Panigrahi.
162. Turbulent structures, flow control and optical techniques, Technical University of Braunschweig, 9<sup>th</sup> September, 2005, P.K. Panigrahi.
163. Applications of Various Optical Techniques for engines, 17th June, 2004, Photonics institute, Technical University of Vienna, Austria, Avinash Kumar Agarwal.
164. Engine Diagnostics, 22nd, June, 2004, Chemical Engineering Department, Technical University of Vienna, Austria, Avinash Kumar Agarwal.
165. Biodiesel Program in India, April 07th, 2005, Argonne National laboratory, Chicago, USA, Avinash .Kumar Agarwal.
166. At ISRO Bangalore on Thermal Management of Satellite, Sameer Khandekar.
167. Generative Manufacturing, Winter Programme on Micro-fabrication, IIT Kanpur, December 17-24, 2004, N. Venkata Reddy.
168. Build Strategies for Layered Manufacturing, CMERI, Durgapur, March 23, 2005, N. Venkata Reddy.
169. Thermophysical properties of polymers and nanomaterials, Defence Materials and Stores Research and Development Establishment (DMSRDE) India, 12th October, 2004, Kamal K. Kar..

170. High performance surface engineered carbon-carbon composite for high temperature application, Bhabha Atomic Research Centre, Mumbai, India, 27th October, 2004, Kamal K. Kar.
171. Synthesis and characterization of carbon nanotubes on the surface of pitch based continuous carbon fiber and their composites in polyester matrix for structural application, ISRO Satellite Centre (ISAC), Bangalore, India, 22nd December, 2004, Kamal K. Kar.
172. Role of Hysteresis Loss on Heat Generation of Thermoplastic Elastomers and its Modeling for Pneumatic Tyres of High Performance Vehicles, Sardar Vallabhbhai National Institute of Technology, Gujrat, India, 1st February, 2005, Kamal K. Kar.
173. Resistivity minima in bulk disordered alloys, Low-temperature Physics Laboratory of Helsinki University of Technology, Helsinki, Finland, May 24, 2004, A.K. Majumdar.
174. Magnetic scattering, Hall effect, and magnetization in Fe-Cr GMR multilayers, Forschungszentrum Karlsruhe, Institut fur Nanotechnologies, Karlsruhe, Germany, June 8, 2004, A.K. Majumdar.
175. Perfect lenses with negative refraction: a celebration of evanescence, Raman Research Institute, Bangalore, May 2004, S.A. Ramakrishna.
176. Super-lenses with sub-wavelength resolution using optical anti-matter, Colloquium at the Physics Deptt, IIT Kanpur, Jan 14, 2005, S.A. Ramakrishna.
177. Vortex dynamics in two-dimensional superconductors, Brookhaven National Laboratory, USA, May 2004, R.C. Budhani.
178. Interlayer exchange coupling in ferromagnet-superconductor-ferromagnet heterostructures, Institut d'Electronique Fundamentale, Orsay, France, R.C. Budhani.
179. Discovery of Aymptotic Freedom: Nobel prize in 2004, IIT Kanpur, Nov. 11, 2004, S.D. Joglekar.
180. High density plasma generation using microwave: new frontiers and applications, EE Dept, IIT Kanpur, Oct. 30-31, 2004, S. Bhattacharjee.
181. Physics of intense microwave plasma ion sources for RI applications, DAE-BRNS, Indian Particle Accelerator Conference, Variable Energy Cyclotron Center, Kolkata, March 1-5, 2005, S. Bhattacharjee.
182. Physics of intense electromagnetic wave plasma ion sources for multicharged ions: from high frequency to high power sources, Nuclear Science Center, New Delhi, March 28, 2005, S. Bhattacharjee.
183. STM/S Imaging Studies in the Vortex State, tutorial given at IVW10 School in TIFR, Mumbai, January 2005, Anjan K. Gupta.

184. Tunneling into Superconducting (proximity) Structures, Talk at SERC School in Strongly Correlated Electrons at HRI, Allahabad, Nov. 2004, Anjan K. Gupta.
185. Supersymmetry and the Lorentz Fine Tuning Problem, IIT Kanpur, 16 Feb. 2005, Pankaj Jain.
186. Is there a preferred direction in the universe, IUCAA, Pune, 22 Dec 2004, Pankaj Jain.
187. Is there a preferred direction in the universe, IISc, Bangalore, 15 October 2004, Pankaj Jain.
188. Pseudoscalar-Photon Mixing, IMSC, Chennai, 12 Oct. 2004, Pankaj Jain.
189. Is there a preferred direction in the universe, IIT Chennai, 11 Oct. 2004, Pankaj Jain.
190. Is there a preferred direction in the universe, HRI, May 2004, Pankaj Jain.
191. Jahn-Teller effect in clusters and lithiated manganese oxides, IIT Roorkee, April 2, 2004, R. Prasad.
192. Jahn-Teller effect in clusters and manganese oxides, Northeastern University, Boston, Nov. 10, 2004, R. Prasad.
193. Patterns and traffic of life, University of Cologne, Germany, June 2004, D. Chowdhury.
194. Time domain spectroscopic study of PL decay in Zinc Benzothiazole suitable for White light emitting OLEDs, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore on 6 January, 2005 in In Optical Probes 2005, Y.N. Mohapatra.
195. Yb-based Heavy Fermion Systems Close to Quantum Critical Point, CMP Workshop 2005, IIT Kanpur, February 6, 2005, Z. Hossain.
196. Recent Developments in Organic Semiconductors for Displays and Lighting Applications, Invited talk at 49<sup>th</sup> DAE Solid State Physics Symposium, Amritsar, Dec 26-30, 2004, Satyendra Kumar.
197. Organic Solar Cells, Solar Cells Group, ETH Zurich, Feb 21, 2005, Satyendra Kumar.
198. Seminar cum workshop on Materials Characterization and Surface Modification in Research and Industry using Ion Accelerators. , CCCM, BARC, Hyderabad, Feb 9-11, 2005. Title: Ion beams in nano science and engineering (Invited Talk), V.N. Kulkarni.
199. Quantum entanglement in spin system, CMP-2005, IIT Kanpur, February 2005, V. Subrahmanyam.
200. Colloquium entitled String Theory and Time Machines at Inst. of Mathematical Sciences, Chennai June 2004, G. Sengupta.



201. Seminar Review of the Holographic Principle at Inst. of Mathematical Sciences, Chennai, June 2004, G. Sengupta.

## CONFERENCES ATTENDED OUTSIDE IIT KANPUR

1. International Conference on Advances in Structural Integrity, July 2004, IISc Bangalore, Venkatesan, C.
2. 12-th AIAA/ASME/AHS Adaptive Structures Conference, Palm Springs, California, USA, April 2004, Venkatesan, C.
3. 2004 ASME Heat Transfer/Fluids Engineering Conference, July 11-15, Charlotte, North Carolina, USA, 2004, D. P. Mishra.
4. International Symposium on Recent Advances in Aeroacoustics and Active Flow-Combustion Control. In Honour of Professor John E. Ffowes Williams. Jan 4-6, 2005, Goa India, Debopam Das.
5. 18<sup>th</sup> National Convention of Aerospace Engineers, Nov. 17-19, 2004, IIT Kharagpur, Invited speaker, Chairing a session, N.G.R.Iyengar.
6. International Conf. Theoretical, Applied, Computational and Experimental mechanics, Dec. 28-30, 2004 IIT Kharagpur, Keynote Speaker, Chairman of session, N.G.R.Iyengar.
7. High Performance Computing, Jan. 28-29, 2004, Cornell Theory Center, Cornell, USA, S. Mittal.
8. High Performance Computing in Fluid Mechanics, Academic Summit, Microsoft Research, Bangalore, India, 2004, S. Mittal.
9. Tenth Asian Congress on Fluid Mechanics, University of Peradeniya, Sri Lanka, 2004, S. Mittal.
10. International Workshops on Advances in Computational Mechanics, Tama Campus, Hosei University, Tokyo, Japan 2004, S. Mittal.
11. National Conference on Recent Advances in Mechanical Engineering- NCRAME-2004, Jabalpur Engineering College, 2004, S. Mittal.
12. National Frontiers of Science Workshop, held at INSA, Delhi, December 2004, S. Mittal.
13. First Indo-US Frontiers of Science Workshop (FOS), IISc Bangalore, January 2005, S. Mittal.
14. IUTAM Symposium for Laminar-Turbulent Transition, Jawharalal Nehru Center for Advanced Scientific Research, Bangalore, India, 2004, S. Mittal.
15. International Seminar on Technologies & Trends in Development of Para Recovery Systems (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, S. Mittal.
16. National Conference on Control and Dynamics, IIT, Bombay, Jan'2005, presented an invited paper, A.K. Ghosh
17. Conference on Technologies and Trends in Development of Para Recovery Systems, ADRDE Agra, 15-17 March, 2005, A.K. Ghosh.

18. International Conference on, Development of knowledge infrastructure role of consultants, India habitat center, New Delhi, Oct-2004, A.K. Ghosh.
19. Regulation of organ growth by the tumor suppressor genes of *Drosophila*: negative regulation of Wnt signaling by the Fat tumor suppressor, EMBO International workshop on Cell Interactions in Development and Disease at Centre for Cellular and Molecular Biology, Hyderabad. 16-18 December 2004, Pradip Sinha.
20. Organ size regulation in *Drosophila*: The Fat tumor suppressor represses Wnt signaling to regulate cell proliferation and cell adhesion, 46<sup>th</sup> Annual *Drosophila* Research Conference, Town & Country Resort & Convention Centre, San Diego, California, USA. 30<sup>th</sup> March to 3<sup>rd</sup> April'2005, Pradip Sinha.
21. A genetic screen to identify the targets of puf-8, a Puf family gene involved in the meiotic progression of *C. elegans* spermatocytes. 64<sup>th</sup> annual meeting of the Society for the Developmental Biologists, 2005, K. Subramaniam and Mohd Ariz.
22. Maternal RNA-binding proteins direct the primordial germ cell-specific translation of the germ cell regulator nos-2 in *Caenorhabditis elegans*. Invited presentation at the Cold Spring Harbor Laboratory meeting on Germ Cells, 2004, Nishi Maithil, Shreyas Jadhav, Adrian Cuenca, Geraldine Seydoux and K. Subramaniam.
23. Maternal RNA-binding proteins control the translation of the *C. elegans* germ cell regulator, nos-2, Invited presentation, Indo-EMBO Symposium on Cell interactions in disease and development, Centre for Cellular and Molecular Biology, Hyderabad, 2004, Shreyas Jadhav, Mainpal Rana and K. Subramaniam.
24. Implications of *C. elegans* genomics for plant parasitic nematodes, Invited presentation, Indo-Israel Symposium on Nematology,, Indian Agricultural Research Institute, New Delhi, 2004, K. Subramaniam.
25. Title of talk: Development of Nano-Biomaterials for Tissue Engineering Applications, Indo-Australian Conference on Biomaterials, Implantable Devices and Tissue Engineering (BITE 2005) at Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, India. Dates: January 19<sup>th</sup> to 21<sup>st</sup> 2005, Dharendra Katti.
26. Invited lecture: New Polymeric Materials for Protein and Cell Separations, 2005, Ashok Kumar.
27. BIOHORIZON2005- The 7<sup>th</sup> National Symposium on Biochemical Engineering and Biotechnology, March 11 – 12, 2005, IIT Delhi

- Chairperson: Technical Review Session -Downstream Processing, Ashok Kumar.
28. Session chair in Nanotechnology session of Indo-US joint Chemical Engg. Congress, Chemcon 2004, Bombay, December 2004, R. Bandyopadhyaya.
  29. Membrane Processes based Effluent Treatment - Some Case Studies, P. K. Bhattacharya, IChE-AIChE meeting during CHEMCON-2004 on Chemical Engineering in a global Environment, December 27-30, 2004 in Mumbai (in absentia), P.K. Bhattacharya.
  30. Overview of Membrane Technology for Effluent Treatment, Indo - French Seminar on Emerging Technologies for water and waste water management, 9 -12 February, 2004 at India Habitat Centre, New Delhi, P. K. Bhattacharya.
  31. Attended Gordon Research Conference on Catalysis, New London, New Hampshire, USA, G. Deo.
  32. Conference on Complex Fluids, National Chemical Laboratory, Pune, January, 1, 2005, A. Ghatak.
  33. Bhopal and the Global Movement on Process Safety', Keynote paper, Hazard XVIII, Institution of Chemical Engineers (U.K.), Manchester, November 23 – 25, 2004. Proceedings page 15 – 27, J.P. Gupta.
  34. Site Security of Process Industry including a Case Study', International Conference 'Bhopal Gas Tragedy and its Effects on Process Safety', Kanpur, December 1 – 3, 2004, Abstract Volume page 57. Full paper on CD, S. Bajpai and J.P. Gupta.
  35. Mitigating consequences of Hazardous Gaseous Releases by Air Dilution – A Concept', International Conference 'Bhopal Gas Tragedy and its Effects on Process Safety', Kanpur, December 1 – 3, 2004, Abstract Volume pages 143-144. Full Paper on CD, J.P. Gupta.
  36. Securing Oil and Gas Infrastructure', Kuwait Oil and Gas Conference and Exhibition, Kuwait City, March 7 – 9, 2005, S. Bajpai and J.P. Gupta.
  37. Hazard XVIII, Institution of Chemical engineers (U.K.), Manchester, UK, November 23 –25, 2004, Keynote paper, J.P. Gupta.
  38. Annual Conference of the Indian Institute of Chemical Engineers, Mumbai, December 27-30, 2004, J.P. Gupta.
  39. Kuwait Oil and Gas Conference and Exhibition, Kuwait City, Kuwait, March 7 – 9, 2005, presenting a contributed paper, J.P. Gupta.
  40. Nonlinear dynamics of confined polymer melt with attractive walls, Complex fluids Symposium, National Chemical Laboratory, Pune, January 1, 2005, Joshi Y. M.

41. Control structure synthesis using steady state analysis, 2004 Annual AIChE Conference in Austin, TX, N. Kaistha, M.V. Pavan Kumar, Ram Singh and B.P. Singh.
42. Steady state simulation of reactive distillation columns using the Naphtali-sand hole method, CHEMCON 2004, Mumbai, (Won best session paper award), N. Kaistha, M.V. Pavan Kumar, Ram Singh and B.P. Singh.
43. Steady state sensitivity analysis for reactive distillation column control structure synthesis, CHEMCON 2004, Mumbai, N. Kaistha and M.V. Pavan Kumar.
44. An SPC framework for the characterization of batch profile, 2004 Annual Meeting of the American Statistical Association, Boulder Co. (Invited Lecture), N. Kaistha, CF Moore and M.G. Leitnaker.
45. 18th Canadian Symposium on Catalysis, Montreal, May 2004, D. Kunzru.
46. National Symposium on Engineering Education, Bangalore, Feb.2005-invited paper, D. Kunzru.
47. Innovations for Intensifications in the process Industry International Conference on the 20th Anniversay of the Bhopal Tragedy, IIT Kanpur, India Decemember 1-3, 2004, S. V. Sivakumar, N. Kaistha, D. P. Rao.
48. A simple method for multicomponent distillation design calculations, Paper NO. 403 o. AIChE Annual metting, Austin, Dec. 2004, D.P.Rao, Amit Kumar, Ashok Kumar, Devendra Agarwal, Abhishek Sinha.
49. Process Intensification in a 'simulated Moving-bed' Heat regenerator', Paper #: HT-FED2004-5629, Proc. 2004 ASME Heat Transfer Engineering Summer Conference: July 11-15, 2004 North Carolina, USA, D. S. Murthy, S. V. Sivakumar, Keshav Kant, D. P. Rao.
50. Invited to be a Panelist for Panel Discussion on Process Intensification at AIChE Spring meeting 2004, 25-29 April, New Orleans, LA, USA, D. P. Rao.
51. A novel simulated movong-bed adsorber for the fractionation of gas mixtures, 17<sup>th</sup> International symposium, Exhibit & Workshops on Preparative. Chromotography, Baltimore, 23-26 May, 2004, Baltimore, Maryland, USA, D. P. Rao, S. V. Sivakumar and Susmita Mandal & B. S. G. Ramaprasad.
52. Process Intensification in Fixed beds using Moving-Port Systems, AIChE Spring meeting 2004, 25-29 April, New Orleans, LA, USA, D. P. Rao, S. V. Sivakumar and J Chakravarti, & B. S. G. Ramaprasad.
53. A novel rotor design for intensification of gas-phase mass transfer in a Hige, AIChE Spring meeting 2004, 25-29 April, New Orleans, LA, USA, D. P. Rao, P. Goswami, A. Bhowal.

54. Duplex PSA cycles for the enrichment of and fractionation of gas mixtures in fixed beds, CHECON 2004, S.V. Sivakumar, K. Sridevi, D. P. Rao.
55. A novel rotor design for intensification of gas-pagse mass transfer in a HIGEE, CHECON 2004, A.P.S. Chandra. P.S. Goswami and D.P. Rao.
56. Duplex PSA cycles for the enrichment of and fractionation of gas mixtures in fixed beds, CHECON 2004, C.P. Mittal, S.V. Sivakumar D.P. Rao.
57. In-Flight liquid oxygen collection systems for air-breathing hypersonic vehicle, 7<sup>th</sup> National Conference on Airbreathing Engines and Aerospace Propulsion, NCABE-2004, to be held at IIT Kanpur, November 5-7, 2004. Proceedings of NCABE 2004, ed. Raghunandan BN, Oommen Ch. Sullery RK. Page 289-301, D. P. Rao, A. Bhowl, S. Pandey, R. Gopalswami, Satish Kumar, P. Manna, and S.S. Panwar.
58. Complex Fluids Symposium, National Chemical Laboratory, Pune. January 1, 2005, V. Shankar.
59. Self-organization in soft nanosystems, 91<sup>st</sup> Indian Science Congress, Chandigarh, 2004, A. Sharma.
60. Patterns, forces and metastable pathways in debonding of elastic films, 27<sup>th</sup> Adhesion Society meeting, Wilmington, North Carolina from February 15-18, 2004, A. Sharma.
61. Self-organized Meso-Scale Patterning of Soft Materials, Indo-US Workshop on Futuristic Manufacturing, IIT Kanpur, 2004; also a co-coordinator of the workshop, A. Sharma.
62. Self-organized patterns in thin soft films, Indo-US Workshop on Nanoscale Materials, Puri, April 2004, A. Sharma.
63. Adhesion and debonding of elastic films: patterns, forces and metastability, STATPHYS-22 Satellite: Pattern Formation in Nonequilibrium Systems, Kolkata, July 11-13, 2004, A. Sharma.
64. Adhesion failure induced by interfacial instabilities in ultra-thin soft films, Gordon Research Conference on Science of Adhesion, Tilton, NH, August 8-13, 2004, A. Sharma.
65. Adhesion, dewetting and debonding of soft elastic films: Patterns, forces and metastability, Workshop on Pattern formation through instabilities in thin liquid films: from fundamental aspects to applications, Max-Planck Institute for the Physics of Complex Systems, Dresden (Germany), September 21-28, 2004. Also chairman of a session in this symposium, A. Sharma.
66. Catalytic oxidation of toluene by metal impregnated activated carbon fibers (ACF), Chemcon proceedings-2004, Mumbai, India, Dec 27-30, 2004, V. Gaur, A. Sharma, and N. Verma.

67. Control of NO<sub>x</sub> emissions by activated carbon fibers, Indo-US conference proceedings-2004, Mumbai, India, Dec. 29-30, 2004, S. Adapa, V. Gaur and N. Verma.
68. Computation Fluid Dynamics Study of flow past a circular cylinder confined in a plane channel: vortex shedding phenomena, Indo-US conference proceedings-2004, Mumbai, India, Dec. 29-30, 2004, S. Mettu, R.P. Chhabra and N. Verma.
69. Catalytic oxidation of toluene by metal impregnated activated carbon fibers (ACF), Chemcon proceedings-2004, Mumbai, India, Dec 27-30, 2004, V. Gaur, A. Sharma, and N. Verma.
70. Control of NO<sub>x</sub> emissions by activated carbon fibers, Indo-US conference proceedings-2004, Mumbai, India, Dec. 29-30, 2004, S. Adapa, V. Gaur and N. Verma.
71. Computation Fluid Dynamics Study of flow past a circular cylinder confined in a plane channel: vortex shedding phenomena, Indo-US conference proceedings-2004, Mumbai, India, Dec. 29-30, 2004, Srinivas Mettu, R.P. Chhabra and N. Verma.
72. Transition Metal Based Smart Materials, MNIT, Allahabad, October, 2004, Parimal K. Bharadwaj.
73. Transition Metal Induced Signal Transduction in Cyclic as well as Acyclic Systems, Parimal K. Bharadwaj, Recent Advances in Chemistry at the Organic-Inorganic Interface, IIT Guwahati, December, 2004.
74. Highly Porous Metal-Organic Framework Structures, Parimal K. Bharadwaj, NCL, Pune, February, 2005.
75. Chemistry of Smart Materials, Parimal K. Bharadwaj, University of Goa, March, 2005.  
Invited lecture at the 11<sup>th</sup> International Conference on the Coordination and Organometallic Chemistry of Germanium, Tin and lead (ICCOG-GTL-11), Santa Fe, New Mexico, USA, 27<sup>th</sup> June-2 July 2004, Date of talk: 28<sup>th</sup> June 2004, Title of talk: Organostannoxane based cages and supramolecules, V. Chandrasekhar.
76. Invited Session Lecture in 36<sup>th</sup> International Conference on Coordination Compounds, Merida-Yucatan, Mexico, July 18-23, 2004, Date of talk: July 22<sup>nd</sup> 2004, Title of Talk: Organostannoxane based cages and supramolecules, V. Chandrasekhar.
77. Bhatnagar Laureates (2003) Symposium, NPL, New Delhi September 13 2004, Title of talk: Stannoxanes and phosphonates: New approaches in organometallic and transition metal assemblies, V. Chandrasekhar.

78. 59<sup>th</sup> International Symposium on Molecular Spectroscopy, Ohio State University at Columbus, Ohio, USA. Date: June 23, 2004. Title of the paper presented: Hydrogen-bond mediate vibronic mode mixing and electronic energy transfer. T. Chakraborty
79. National Conference on Laser Applications in Basic and Applied Sciences, Shantiniketan, Viswabharati University, Date: January 10, 2005. Title of the invited talk delivered: Structural mutation and energy redistribution in model DNA base-pairs: Probing by laser-induced fluorescence spectroscopy. T. Chakraborty.
80. First Asia-Pacific Conference on Theoretical and Computational Chemistry, Okazaki, Japan, May 12-15, 2004, Invited speaker, Amalendu Chandra.
81. NANO-2004: 7<sup>th</sup> International Conference on Nanostructured Materials, Wiessbaden, Germany, June 21-24 2004. Oral and Poster Presentations. N. S. Gajbhiye
82. SCM-2004: Second Seeheim Conference on Magnetism, Seeheim, Germany, June 27- July 01, 2004. Session Chairman, Invited Talk, and Poster presentations N. S. Gajbhiye
83. SSP-2004: 8-th International Conference on SOLID STATE PHYSICS, Almaty, Kasakhstan, August 23 – 26, 2004, Session Chairman & Plenary Lecture on Magnetic Properties of Co and Ni Doped  $\epsilon$ -Fe<sub>3</sub>N Nanoparticles. N. S. Gajbhiye
84. National Seminar on Applied Research on Solid State Chemistry and Nanotechnology (NSASN – 2005), Department of Chemistry, Annamalai University, India, February 25 – 26, 2005, Keynote address on The Fascinating World of Materials and the Role of Solid State Chemistry. N. S. Gajbhiye
85. National Symposium on Advances in Material Science, Department of Physics, D. D. U. Gorakhpur, March 17 – 19, 2005, Poster Presentations. N. S. Gajbhiye
86. ACS meeting, Indianopolis, Indiana, USA June 2-4, 2004, Gave a talk titled Organobridged dicobaloximes: Synthesis and NMR study Gupta B.D.
87. New Synthetic Strategies for Tetrahydroisoquinoline, Indolo-fused and other Biologically Important Small Molecule Heterocycles, ICOB-4 & ISCNP-24: IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications, University of Delhi, New Delhi, January 26–31, 2004, H. Ila.



88. 2<sup>nd</sup> International Symposium on Current Trends in Drug Discovery Research, CTDDR-2004, February 17-20, 2004, Central Drug Research Institute, Lucknow, Chairperson of a session, H. Ila.
89. 6<sup>th</sup> Chemical Research Society of India National Symposium (CRSI), February 6-8, 2004, IIT Kanpur, Kanpur, H. Ila.
90. Polarized Ketene S,S-, N,S- and N,N-Acetals: Versatile Building Blocks for Heterocycle Synthesis, Institute fur Organische Chemie Technical University, Dresden, Germany, 24<sup>th</sup>/ 25<sup>th</sup> June 2004, H. Ila.
91. Polarized Ketene Dithioacetals: Versatile Synthons for Regioselective Synthesis of Substituted Benzimidazoles and Pyrazoles, 21<sup>st</sup> International Symposium on the Organic Chemistry of Sulfur (ISOCS-XXI), Madrid, Spain, July 4-9, 2004, H. Ila.
92. Delivered a Invited Lecture during International Symposium held at Central Drug Research Institute, Lucknow, August, 2004, H. Ila.
93. From Synthons to Bioactive Molecules: Efficient Strategies for Heterocycle synthesis, National Chemical Laboratories, Pune, 26<sup>th</sup> September, 2004, H. Ila.
94. Polarized Ketene S,S-, N,S- and N,N-Acetals: Versatile Building Blocks for Heterocycle Synthesis, Chemistry Biology Interface: Synergistic New Frontiers, November 21-26, 2004, Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, New Delhi, November, 2004, H. Ila.
95. Polarized Ketene S,S-, N,S- and N,N-Acetals: Versatile Building Blocks for Heterocycle Synthesis, National Symposium on Chemistry at the Inorganic and Organic Interphase, Indian Institute of Technology, Guwahati, 6-7<sup>th</sup> December, 2004, H. Ila.
96. Polarized Ketene S,S-, N,S- and N,N-Acetals: Versatile Building Blocks for Heterocycle Synthesis, University of Pondichery, December, 2004, H. Ila.
97. From Synthons to Bioactive Molecules: Efficient Strategies for Heterocycle Synthesis, XVIII National Symposium, Punjab University, Chandigarh, February, 2005, H. Ila.
98. CBISNF-04 (International Conference on 'Chemistry Biology Interface: Synergistic New Frontiers' held at Vigyan Bhawan, New Delhi from 21 - 26 November 2004), Invited Lecture: Towards the Synthesis of Antibiotics, Pentenomycins and Streptazolins, F. A. Khan.
99. 227<sup>th</sup> American Chemical Society National Meeting in Anaheim, CA, as part of the Symposium on 'Non-heme Iron Chemistry in Biology (March 28 - April 1, 2004) R. N. Mukherjee

100. (2) International Conference on Coordination Chemistry (ICCC36), Merida, Mexico (July 18-23, 2004) R. N. Mukherjee
101. (3) Crystal Engineering Discussion 2004: New Trends in Crystal Engineering, University of Nottingham, UK; Invited to prepare a paper for publication in CrystEngComm (September 8-10, 2004) R. N. Mukherjee
102. (4) Indo-French Seminar on Structure and Function of Metalloenzymes, Goa; organized by Indo French Centre for the Promotion of Advances Research, New Delhi (IFCPAR), Centre Franco-Indien Pour La Promotion de La Recherche Avanchee (CEFIPRA) and Tata Institute of Fundamental Research, Mumbai (December 3-5, 2004), R. N. Mukherjee
103. Third Symposium on Advances in Bioinorganic Chemistry (SABIC-2004) in conjunction with Second Asian Biological Inorganic Chemistry Conference (AsBIC-II), Goa; organized by Tata Institute of Fundamental Research, Mumbai (December 5-10, 2004), R. N. Mukherjee
104. 23<sup>rd</sup> Conference of Indian Council of Chemists, K. C. College, Mumbai, 29<sup>th</sup>-31<sup>st</sup> October, 2004, Rao M.L.N.
105. Acted as a judge for Young Scientist Award for poster presentation in organic chemistry section, Rao M.L.N.
106. National Conference on Recent Advances in Chemical Sciences, December 18-19, 2004; DAV (PG) college, Dehradun- 248 001, Rao M.L.N.
107. Invited Lecture on Recent Developments in carbon-carbon formation reactions involving organometallic reagents Rao M.L.N.
108. Participated 7<sup>th</sup> CRSI National Symposium in Chemistry held on February 4-6, 2005 at IACS Calcutta, Sankar Prasad Rath.
109. Elementary chemical reactions: not so elementary! III Annual convention of Indian Association of chemistry Teachers, Science city, Ahmedabad, November 2004, N. Sathyamurthy.
110. Atoms and Molecules in confined environments, Indo-Japan workshop, Indian Association for Cultivation of Science, Jadavpur, Kolkata, Dec. 3-4, 2004, N. Sathyamurthy.
111. Dynamics of (H-,H<sub>2</sub>) collisions Theoretical Chemistry Symposium, BARC, Mumbai, Dec. 9-12,2004, N. Sathyamurthy.
112. Dynamics of certain ion-molecule processes, XV National conference on atomic and molecular physics, Physical Research Laboratory, Ahmedabad, Dec. 20-23, 2004, N. Sathyamurthy
113. CECAM workshop on Energy Localization, Lyon, France, September 2004, Presented a poster, Srihari K.
114. International Conference on Chemistry Biology Interface: Synergistic New Frontiers, New Delhi, 2004, Veejendra K. Yadav.

115. First International symposium on design and construction of long lasting asphalt pavements, Auburn, 7-9<sup>th</sup> June, 2004, presented a contributed paper, Das, A.
116. International Conference on Structural and Road Transportation Engineering, IIT Kharagpur, 3<sup>rd</sup> to 5<sup>th</sup> January, 2005, presented a contributed paper and co-chaired a session, Das A.
117. Intl. Conf. on Hydrological Perspectives for Sustainable Development (HYPESD2005), February 23-25, 2005, IIT Roorkee, Roorkee, India, presented contributed paper, Das A.
118. 13<sup>th</sup> World Conference on Earthquake Engineering, Vancouver, Canada; August 1-6, 2004, Presented a Contributed Paper, Gupta V.K.
119. IGCP End of the Project Meeting, 12-18 December, 2004, Malaga, Spain, Gupta V.K.
120. Thirteenth World Conference on Earthquake Engineering, Vancouver, Canada, 1-6 August 2004, Murty, C.V.R.
121. Importance of maintenance technologies in the field of concrete, The First International Conference of Asian Concrete Federation, Chiang Mai, October 28-29, 2004 [Invited lecture], GTaketo Uomoto and Sudhir Misra.
122. QC in concrete construction on the basis of acceptance criteria for compressive strength, The First International Conference of Asian Concrete Federation, Chiang Mai, October 28-29, 2004, Arun Kumar, R. and Sudhir Misra,.
123. Participated in Indian Geotechnical Conference 2004 at Warangal, dated Dec. 18- 20, 2004 for presenting paper, Patra, N.R.
124. Title 13th World Conf. on Earthquake Engineering Place Vancouver, B.C., Canada Dates August 1-6, 2004 Participation. Oral and poster presentation of two research papers, and meetings on Network of Earthquake Engineering Simulation and World Housing Encyclopedia, Rai, D.C.
125. Title Indo-US Joint NEES (Network of Earthquake Engineering Simulation) Workshop Place IIT Bombay Dates Jan 3-5, 2005 Participation. Oral presentation, Rai, D.C.
126. Title National Workshop on Experimental Methods in Earthquake Engineering Research Place IISc Bangalore Dates Feb 10-11, 2005 Participation. Oral presentation, Rai, D.C.
127. Parameterization of Ion Induced Nucleation of Sulphuric Acid and Water, AGU Fall Meeting, San Francisco, December 2004, Tripathi, S.N, Sanjeev Kumar, M.S. Modgil and E.R. Lovejoy.

128. Black Carbon Absorption Over Kanpur (an Industrial City in the Indo-Gangetic Basin) Retrieved From AERONET Data, AGU Fall Meeting, San Francisco, December 2004, Tripathi, S. N., Sagnik Dey, R.P. Singh.
129. Electrical charging of the clouds of Titan, presented in AGU Fall meeting in San Fransisco, Tripathi, S.N., W. J., Whitten, Borucki, W. J., R. C., Bakes, E. L. O. and Tripathi, S.
130. Model studies on atmospheric ion-induced nucleation of sulfuric acid and water: Interpretation of in-situ measurements, presentation in European First Space Weather Week, Noordwijk (The Netherlands), 29<sup>th</sup>- 3<sup>rd</sup> Dec. 2004, Vijay Kanawade and Tripathi, S. N.
131. Session chair for Tropospheric Aerosol Processes Session, American Geophysical Fall Meeting, San Francisco, December 2004, Tripathi, S.N.
132. Five invited lectures in the 4<sup>th</sup> PG Course on Space and Atmospheric Science of CSSTEAP (Center for Space and Technology Education in Asia and Pacific) conducted at Physical Research laboratory, Ahemdabad, August 2004, Tripathi, S.N.
133. Sun HPC Consortium, Heidelberg, Germany, June 2004, Conference Attended, S.K Aggarwal
134. Supercomputing 2004, Heidelberg, Germany, June 2004, Conference Attended, S.K Aggarwal
135. Advances in Computer Science and Technology 2004, St Thomas Island USA, Nov2004, Contributed Paper, S.K Aggarwal
136. FSTTCS 2004, Chennai, Dec 2004, Conference Attended, Manindra Agarwal
137. STACS 2005, Stuttgart, Feb2005, Invited Talk, Manindra Agarwal
138. Wireless Development, Djursland Denmark, Sep 2004, Invited Talk, Bhaskar Raman, Third workshop on Hot Topics in Networks, San Diego CA USA, Nov 2004, Contributed Paper, Bhaskar Raman
139. International Conference on Very Large Databases, Toronto Canada, Aug 2004, Contributed Paper, Sumit Ganguly.
140. International Conference On Distributed Computing and Internet Technology, Bhubaneswar, Dec 2004, Contributed Paper and Programme Chair, RK Ghosh
141. International Workshop on Distributed Computing, Kolkata, Dec 2004, Contributed Paper, RK Ghosh
142. 13th Unix Security Symposium, San Diego, Aug 2004, Contributed Paper, Deepak Gupta
143. Fourth Indian Conference on Computer Vision, Kolkata, Dec 2004, Chairing a Session, Phalguni Gupta

144. International Conference on VLSI Design, Calcutta, Jan 2005, Conference Attended, Ajai Jain
145. International Conference on VLSI Design, Calcutta, Jan 2005, Conference Attended, S K Mehta
146. Indian Conference on Vision Graphics and Image Processing, Calcutta, Dec 2004, Conference Attended, Pabitra Mitra.
147. Embedded Systems Conference, Munich, Nov 2004, Contributed Paper, Rajat Moona.
148. International Conference on Field Programmable Technologies, Brisbane
149. Australia, Dec 2004, Contributed Paper, Rajat Moona
150. High Performance Computing, Bangalore, Dec 2004, Contributed Paper, Rajat Moona.
151. Sun Network Conference, Shanghai China, June 2004, Conference Attended, Dheeraj Sanghi
152. Microsoft Faculty Summit, Seattle, USA, Aug 2004, Conference Attended, Dheeraj Sanghi.
153. 11th Int'l Conf. on High Performance Computing, Bangalore, Dec 2004, Conference Attended, Dheeraj Sanghi.
154. FSTTCS 2004, Chennai, Dec 2004, Conference Attended, Anil Seth.
155. ISTRANS- 2004, New Delhi, Nov 2004, Conference Co- Chair, R.M.K Sinha.
156. SPLASH- 2004, New Delhi, Nov 2004, Conference Co-Chair, R.M.K Sinha.
157. 26 THAICL, Shillong, Dec 2004, Contributed Paper, R.M.K Sinha.
158. National Seminar on Contemporary, Delhi, March 2005, Contributed paper, R.M.K Sinha.
159. Landmarks on the American Scene: Then and Now, MELUS-India Conference, Panjab University, 28-29 March, 2005, G. Neelakantan.
160. De-Scribing the Indian Woman: New Autobiographical Ventures by Indian English Women Writers, National Seminar on 'Fact and Fiction: Autobiography After the Death of the Author', Department of Germanic and Romance Studies, University of Delhi, 10-12 March, 2005, Suchitra Mathur.
161. Language, Nation, Community: The Politics of Ethnicity in the Indian-English Novel, The Thirteenth International Triennial Conference of ACLALS, Hyderabad, 4-9 August 2004, Suchitra Mathur.
162. Caught Between the Goodness and the Cyborg: The Politics of Science and Gender in Indian English Science Fiction, The National Women's

- Studies Association Conference, Milwaukee, USA, 17-19 June, 2004, Suchitra Mathur.
163. Complex Predicates and Semantic Underspecification, ICOSAL-6, Osmania University, Hyderabad, 2005, Achala M Raina.
  164. Contrastive Polysemy Resolution in the Bilingual Mind, ICOSAL-6, Osmania University, Hyderabad, 2005, Somshukla Banerjee, Achla M Raina.
  165. Focus Particles in Complex Predicate Structures: Crosslinguistic Asymmetries, The 26<sup>th</sup> All India Conference of Linguists (AICL-26), Shillong, 2004, Achla M. Raina, K. Choudhary, A. Thakur,
  166. Imagination in Amitav Ghosh's Shadowlines, International Conference on Commonwealth Language & Literature, Hyderabad, Aug. 4-9, 2004, Mini Chandran.
  167. Locating the White Writer in Post-apartheid South Africa, National Conference of Indian Association of Commonwealth Language & Literature Studies, Chennai, Feb. 9-12, 2005, Mini Chandran
  168. From Resistance to Acceptance: A Wriggling Journey Between Despair and Hope in Rohinton Mistry's Such a Long Journey, International Conference on Protest and Aftermath in Post-War Literature in English, Department of Post-Graduate Studies & Research in English, Rani Durgavati Vishwavidyalaya, Jabalpur in Association with Indira Gandhi National Open University, Aug. 20-21, 2004, T. Ravichandran
  169. Grecian Urn in Garbage Can: The Postmodern Disabling of Ethics, Aesthetics and Axiology, The Second International Conference on Postmodernism, Globalisation and the Media, The Mudra Institute of Communication (MICA), Ahmedabad, India, the University of Limerick, Ireland and Tokyo Urban Tech, Japan, 5-7 March, T Ravichandran.
  170. Pain in the Neck of a Theory of Meaning, National Seminar on Mind and Language, University of Hyderabad, Nov. 15-17, 2004, B.H. Boruah.
  171. Autonomy and the Virtue of Self-legislation, National Seminar on 200 Years of Kant: An Examinatin of the Notions of Enlightenment, Autonomy and Terror, Goethe-Institute, Max Muller Bhavan, New Delhi, Neemrana for Palace, Rajasthan , Oct.7-9, B.H.Boruah.
  172. Environmental Protection: The Role of Regulatory System in India, The Annual Conference of the Indian Econometric Society, Jadavpur University, Kolkata, Jan. 20-22, 2005, P.M. Prasad.
  173. Return to Scale in Urban Bus Transport, 41<sup>st</sup> Annual Conference of The Indian Econometric Society (TIES), the Department of Economics, Jadavpur University, Kolkata, Jan. 20-22, 2005, S.K. Singh.

174. Productivity, Prices and Profitability: A Case Study of Urban Bus Companies in India, 46<sup>th</sup> Annual Conference of the Indian Society of Labour Economics, Institute of Development Studies, Jaipur, Dec. 16-18, 2004, S.K. Singh
175. Urban Bus Policy to Reduce Air Pollution and Congestion, Better Air Quality (BAQ) Workshop, Ministry of Environment and Forests (MoEF), India and the Clean Air Initiative for Asian Cities (CAI-Asia), Agra, Dec. 6-8 2004, S.K. Singh
176. National Workshop on Liberalism, Indian Liberal Group, Mumbai, 15-18 October 2004, M. Jha
177. North Zone Regional Workshop on Curriculum on Human Development, Institute for Social Development, New Delhi in Association with Giri Institute for Development Studies, Lucknow, Sept. 13, 2004, M. Jha.
178. Tribal Health Issues and Challenges: A Study of Raigarh and Surguja Districts of Chhattisgarh, National Seminar on Tribal Demography, Health and Development in India, Hotel Piccadily, Raipur, Chhattisgarh, February, 25-26, 2005, A. K. Sharma, A. K. Mishra, and Rita Singh.
179. Steering Development: Some Lessons from the Indian Villages, National Seminar on Rethinking Villages: An Interdisciplinary Discourse on Development, Modernity and Change, Govind Ballabh Pant Social Science Instituasdte, Jhusi, Allahabad, 24-25 May 2004, A.K. Sharma.
180. Routes to General Population: Redefining Vulnerability, International Conference on People's Sexual and Reproductive Health Needs in Asia: Progress, Achievements and Ways Forward, Organized by Centre for Operations Research and Training (CORT), Baroda, in collaboration with WHO, Population Council, Pathfinder International, Family Planning Association of India, CST-UNFPA Nepal, and CRDC Baroda, at The Claridges Hotel, New Delhi, 2-4 Dec. 2004, Ashish Kumar Mishra, S. K. Singh and A. K. Sharma.
181. Issues in Implementing Rural Development Programmes in India, National Seminar on Changing Perspectives of Rural Development: Emerging Challenges in the Context of Globalization, Department of Sociology, Osmania University, Hyderabad, Feb. 17-18, 2005, A.K. Sharma and Rita Singh.
182. Sexual Behaviour among MSM: Problems and Prospects of Risk Reduction for STD/HIV, Ist National Conference of AIDS Society of India, April 2-4, 2005, Hotel Ashok, New Delhi Ashish Kumar Mishra, S. K. Singh, and A. K. Sharma.

183. Religiosity and Spirituality in the Domain of Health: Some Observations, 8<sup>th</sup> International and 39<sup>th</sup> National Conference of the Indian Academy of Applied Psychology on Positive Health and Well Being, The Department of Psychology, Maharishi Dayanand Univertisty, Rohtak, July, 15-17, 2004, R. Singh, A. Mehrotra and Shikha Dixit.
184. Facilitating Learning: A Framework for Effective Instruction, National Seminar on Enhancing Human Potential: Psychology Perspectives, Department of Psychology, Dayalbagh Educational Institute, Agra, Oct. 1-2, 2004, Shikha Dixit.
185. The Concept of Quality of Life in Health and Illness: Some Relevant Issues, International Conference on Applied and Community Psychology: Trends and Directions, Department of Psychology, Gurukul Kangri University, Haridwar, Feb. 26-28, 2005. R. Singh, Shikha Dixit.
186. A Study of Objective and Perceived Disease Severity Among Cancer Patients, International Conference on Applied and Community Psychology: Trends and Directions, Department of Psychology, Gurukul Kangri University, Haridwar, Feb.26-28, 2005, A. Mehrotra and Shikha Dixit.
187. Human Development in a Rights Framework, National Seminar on Issue in Human Development, GB Pant Institute of Social Science, Allahabad, Oct.28-30, 2004, M. Jha.
188. Notion of Human Rights in India, National Seminar on Reconstructing Democratic Concerns in Modern India, Lokniti, Centre for the Study of developing Societies (CSDS), New Delhi, Oct. 8-10, 2004, M. Jha.
189. (31) The Competitiveness Index and Factors Affecting the Index, presented as Key Note Speaker in the International Conference on Creating Global Competitive Advantages, Laxpra Foundation, Udaipur, August 07-08, 2004, K. K. Saxena, Ruchi Sharma.
190. Intellectual Property Rights and Foreign Direct Investment – A Review, accepted in the IIDS 6<sup>th</sup> International Seminar on WTO and An Asian Union, La Salean Institute, Colombo, November 27-28, 2004, K. K. Saxena, Ruchi Sharma.
191. Are Mental Kind Terms Rigid Designators, National Seminar on Mind and Language, University of Hyderabad, 2004, C. A. Tomy.
192. Projective Techniques: Can They be Standardized, Workshop on Standardization of Measures of Psychological Constructs, G.B. Pant Social Science Institute, Jhusi, Allahabad, July 11-12, 2004, L. Krishnan.
193. Concepts of Social Behaviour in India, International Congress of Psychology, Beijing, China, Aug. 8-13, 2004, L. Krishnan.



194. Reward-Cost Orientation and Reactions to Performance Feedback, 15<sup>th</sup> Annual Convention of the NAOP, K.S. Saket P.G. College, Ayodhya, March 4-6, 2005, L. Krishnan.
195. Enhancing the Role of Environmental Information for Improved 'Decision Making', Workshop programme organized by MOEF, Government of India at New Delhi, June 28, 2004, B. Rath.
196. Scope of Linking of Indian Rivers for Human Development of a Backward Region like Orissa, National Seminar on Issues in Human Development, GB Pant Social Science Institute, Allahabad, October 29-30, 2004, B. Rath.
197. Performance Evaluation of Watershed Development Schemes in the KBK Districts of Orissa, 64<sup>th</sup> Annual Conference of Indian Society of Agricultural Economics, Coimbatore, Tamilnadu, December, 15-17, 2004, B. Rath.
198. Scope of Water Harvesting System in Hilly Terrains: A case Study of Purunagarh Area of Angul District, 37<sup>th</sup> Annual Conference of Orissa Economic Association, Christ College Cuttack, February 19-20, 2005 B. Rath and N. C. Sahu.
199. Organized a Symposium on Current Contributions to Indian OB Research and Practice, the 15<sup>th</sup> Annual conference of the National Academy of Psychology, KS Saket College Faizabad, March, 4 – 6, A. K. Sinha.
200. Not by Trust Alone: Explorations in Hospitality Industry Annual conference of the National Academy of Psychology, KS Saket College Faizabad, March, 4 – 6, N. S. Bhullar and A. K. Sinha.
201. Keeping Security Service Personnel Functional: The Role of Some Organizational Level Variables, Annual conference of the National Academy of Psychology, KS Saket College Faizabad, March, 4 – 6, N. S. Bhullar and A. K. Sinha.
202. Firm Size, Venture Status and Organizational Performance: An Experience from Indian Two-Wheeler Manufacturing Organizations, Annual conference of the National Academy of Psychology, KS Saket College Faizabad, March, 4 – 6, A. K. Jain, and A. K. Sinha.
203. Urban Land use in India: A case Study of Urban Development Authorities, Conference on Law, Economics and Development, during March 31- April 1, 2005 at Centre for the Study of Law and Governance, Jawaharlal Nehru University, New Delhi, P. M. Prasad.
204. Environmental protection: The Role of Regulatory System in India International Conference on Environment and Development: Developing Countries Perspectives, during 7-8 April 2005 at School of International Studies, Jawaharlal Nehru University, New Delhi, P. M. Prasad.

205. International Conference on Environmental Fluid Mechanics (ICFEM'05), IIT Guwahati, March 3-5, 2005, Ghorai, S.
206. WCNA 2004, Orlando, USA: June 30 – July 07'04, Kadalbajoo, M.K.
207. Attended first Indo German conference on PDE, Scientific
208. Computing and Optimization in Applications at University of Trier as a member of INSA delegation and delivered an invited talk on Spectral element methods for parabolic problems on parallel computers in September 2004. (This has been submitted to Journal of Computational and Applied Mathematics which is bringing out a special issue on this conference), Dutt P.
209. Feb. 2005 and delivered a talk on Pulsating spectral element methods for Hyperbolic Problems (Currently under review in Mathematics of Computation) , Dutt P.
210. 6<sup>th</sup> International Conference of the Asia Pacific Operational Research Society, December 7<sup>th</sup>-11<sup>th</sup> 2003, New Delhi, Dutta J.
211. Dutta, J., 4<sup>th</sup> Internal Conference on Operations Research, 7<sup>th</sup> to 9<sup>th</sup> January 2004, ISI, Calcutta, Dutta J.
212. Dutta, J., World Congress of Nonlinear Analysis, June 30<sup>th</sup> – July 7<sup>th</sup>, Orlando, U.S.A. 2004, Dutta J.
213. Dutta, P., 6<sup>th</sup> International Conference on Optimization Techniques and Applications, University of Ballarat, 9<sup>th</sup>-11<sup>th</sup> December 2004, Dutta P.
214. 37<sup>th</sup> Annual ORSI Convention, IIM Ahmedabad, 8-11<sup>th</sup> Jan. 2005, Sharma P.
215. International Conference on Recent Advances in Statistics held at I.I.T. Kanpur, from January 6, 2005, Misra N.
216. Conference on Mathematics, 2004 organized by Bharat Ganita Parishad and Department of Mathematics & Astronomy, Lucknow University, Lucknow in December, 2004, Manjul G.
217. National Conference on Fluid Mechanics and its applications at Osmania University, Hyderabad, Feb. 9-10, 2005, Chandra P.
218. Wavelet Taylor Galerkin Method for Partial Differential Equations, World Congress of Nonlinear Analysis, June 29-July 7, 2004, Orlando, USA, Rathish, B.V.K.
219. Wavelet Based Methods for NS Equations, Conference on Recent Trends in Nonlinear Analysis and its Applications (CNAA-04, 11-13 Dec. 2004 at IIT, Mumbai, Rathish B.V.K.
220. WEB-Spline based Stabilized Mesh Free Methods for Viscous Fluids, National Conference on Mathematical Modelling and Scientific Computing, Oct. 7-8, 2004, BITS, Pilani, Rathish B.V.K.

221. Hemodynamics in Arteries under pathological conditions, National Conference on Computational Fluid Dynamics, NAL, Aug. 7-9, 2004, Bangalore, Rathish B.V.K.
222. International Conference on Recent Advances in Statistics at IIT Kanpur, during January 4th to 6th, 2005, Kundu D.
223. Analysis of a new step stress model, International Conference on Recent Developments in Statistics, held at the McMaster University, Canada, during July 15-16, 2004, Kundu D., Balakrishnan N.
224. Chairing a session on reliability, at the International Conference on future of Statistical Theory, Practice and Education, held at the Indian School of Business Hyderabad during 27<sup>th</sup> to 31<sup>st</sup> of December, 2004, Kundu D.
225. Prediction and Analysis of the Bubble Formation in Film Boiling, IMECE-2004, Vol. 1 (ISBN: 0-7918-4178-2, November 13-19, 2004, Anaheim, California, USA. Agrawal, G. Biswas, S.W.J. Welch and F. Durst.
226. National Conference on Nonlinear Systems and Dynamics held at AMU, Aligarh, Feb. 2005, Presented an invited talk, Chaired a session, A.K. Mallik.
227. 31<sup>st</sup> Fluid Mechanics and Fluid Power conference at Jadavpur University in December 2004. Chaired a session on Inverse techniques, K. Muralidhar.
228. 4th International Symposium on Fuels and Lubricants, Oct 27-29, 2004. Chairman, Technical Session on 'Gaseous Fuels', Attended & Invited Talk, B.P.Pundir.
229. Homogeneous Charge Compression Ignition Engine Concepts, National Seminar on Combustion under the aegis of The Combustion Institute (Indian Section), IIT Kanpur, Nov 8, 2004, B.P.Pundir.
230. Biodiesel - Its Potential as an Alternative Fuel, National Conference on Energy from Bio-Mass, LNCT, Bhopal, March 11-13, 2005, B.P.Pundir
231. 4<sup>th</sup> WSEAS International Conference on Wavelet analysis and multivariate systems, Athens, Greece, 28-12-04 to 01-05-05, Paper presentation, P.K. Panigrahi.
232. IASTA Meeting and International Conference on AEROSOLS, CLOUDS AND INDIAN MONSOON, November 15-17, 2004, IIT Kanpur. (Presented two contributed papers), Avinash Kumar Agarwal.
233. National Conference on Biodiesel, held at CIAE, Bhopal, 3-4 December 2004. (Presented two invited and two contributed papers), Avinash Kumar Agarwal.
234. ICES2005 ASME Internal Combustion Engine Division 2005 Spring Technical Conference, April 5-7, 2005, Chicago, IL, USA. (Chaired three sessions and presented two contributed papers), Avinash Kumar Agarwal.

235. SAE World Congress 2005, April 11-14, 2005, Detroit, Chicago. (Chaired a session and presented three contributed papers), Avinash Kumar Agarwal.
236. 13<sup>th</sup> International Heat Pipe Conference, September 21-25, 2004, Key Note Lecture, Closed and open loop pulsating Heat Pipes, Sameer Khandekar.
237. 8th India-Japan Joint seminar on Advanced Manufacturing Systems, February 20-26, 2005, Indian Institute of Technology Kanpur, N. Venkata Reddy.
238. Annual Technical Conference (ANTEC 2004), May 16-20, 2004, Chicago, Illinois, USA, Kamal K.Kar.
239. The XIV international congress on Rheology 2004, August 22-27, 2004, Seoul, Korea (Contributed Paper), Kamal K.Kar.
240. Numiform at Ohio State University, Columbus, Ohio (USA), V.K.Jain.
241. ISEM held at Univ. of Edinburgh, Edinburgh (UK), V. K. Jain.
242. AIMTDR Conf. Held at V.I.T. Vellore, V.K.Jain.
243. Chaired a session on Micro-machining in 21<sup>st</sup> AIMTDR held at VIT Vellore, (TN), India, Dec. 2004, V.K.Jain.
244. Session chaired in National Conference on Advancement in Engineering and Technology held at Jabalpur during Feb. 20-21, 2004 at Jabalpur and organised by Hitkarni College of Engineering and Technology, Jabapur, V.K.Jain.
245. The EPFL Latsis symposium – 2005 on Negative refraction: revisiting electromagnetics from microwaves to optics at the Ecole Polytechnique Federale de Lausanne, Switzerland on 28 Feb to 02 Mar 2005, presenting an invited talk entitled Designing super-lenses with negative refractive index materials S.A. Ramakrishna.
246. International Workshop on Vortex Physics, TIFR, Mumbai, January 2005, R.C. Budhani.
247. RRNS-DAE Spintronics core group meeting at BARC, Feb. 16, 2005, R.C. Budhani.
248. Some general results for non-covariant gauges in Yang-Mills theory, Invited Plenary Talk in THEP-1 Conference at IIT Roorkee, March 16-20, 2005, S.D. Joglekar.
249. Violation in Non-local Quantum Field Theory, Invited Talk in THEP-1 Conference at IIT Roorkee, March 16-20, 2005, S.D. Joglekar.
250. DAE-BRNS, Indian Particle Accelerator Conference, Variable Energy Cyclotron Center, Kolkata, March 1-5, 2005, Invited Oral Presentation, S. Bhattacharjee.

251. Invited talk at International Conference on Complex Networks: Statphys Kolkata V, a satellite meeting of STATPHYS 22, Kolkata, June 2004, D. Chowdhury
252. Invited talk at International Conference on Pattern Formation in Nonequilibrium Systems, a satellite meeting of STATPHYS 22, Kolkata, July 2004, D. Chowdhury.
253. Contributed talk at STATPHYS 22: International Conference of International Union of Pure and Applied Physics on Statistical Physics, Bangalore, July 2004, D. Chowdhury.
254. Invited talk at Life Science Interface Workshop, Engineering and Physical Sciences Research Council, U.K., coordinated by the British High Commission in India, January 2005, D. Chowdhury.
255. Presented an invited talk titled Melting of heterogenous vortex matter: the vortex nanoliquid at the x<sup>th</sup> international vortex state studies workshop (IVW-X) at the Tata Institute of Fundamental Research, Mumbai, 9<sup>th</sup> – 14<sup>th</sup> Jan, 2005, S.S. Banerjee.
256. Presented an invited tutorial talk titled Magneto-optical imaging of superconductors at a satellite tutorial session arranged prior to the the x<sup>th</sup> international vortex state studies workshop (IVW-X) at the Tata Institute of Fundamental Research, Mumbai, 7<sup>th</sup> – 9<sup>th</sup> Jan, 2005, S.S. Banerjee.
257. International Conference on Optical Probe 2005, held at Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore on 04-08 January, 2005, Y.N. Mohapatra.
258. To attend International Conference on Materials Research Society 2005 (MRS), Sanfransico, CA, USA, on March 28 to April 1, 2005, Y.N. Mohapatra.
259. 20<sup>th</sup> General Conference of Condensed Matter Division European Physical Society, 19-23 July, 2004, Prague, Czech Republic; Presented a poster. Z. Hossain
260. 49<sup>th</sup> DAE Solid State Physics Symposium, Amritsar, Dec 26-30, 2004. (Invited Talk), S. Kumar.
261. Attended International String Theory Workshop ISM04 at Khajuraho, Dec 2004. Organization, G. Sengupta.
262. Living on the Edge: The search for a Multi-dimensional world – TIFR Institute Colloquium, TIFR Bombay, March 2004, Invited talk by S. Raychaudhuri.
263. A Critique of New Physics Expectations at a TeV – DAE High Energy Physics Symposium, Saha Institute of Nuclear Physics, Kolkata, November 2004, Invited talk by S. Raychaudhuri.

## OTHER ACTIVITIES

### TECHNOLOGY DEVELOPED

1. Design and development of a novel vortex combustor, D.P. Mishra.
2. Estimation algorithm for parameter estimation of a projectile using radar tracked data, A K Ghosh.
3. S. Garg. A cheap method for Methyl-ester estimation in biodiesel production. Further refinement of the methodology underway.
4. J.P. Gupta, 'Study of runaway reactions'.
5. Funded by Dr Arindam Bose, an alumnus, this project is to study runaway reactions in chemical industry so appropriate procedures can be put in place to minimize this event and also to contain the consequences if it should occur. A greatly improved version of an equipment, costing in import over Rs. 20 lacs (over \$40,000), has been designed and fabricated for approx. Rs. 3 lacs (\$6,000). It incorporates Labview software for operations purposes. Its design will be released so more companies can afford to conduct tests. Thorough testing of the equipment will soon start. (Jointly with Dr. Sanjay Gupta, ACMS)
6. Methodology to generate suitably substituted cyclopentenes for meaningful drug-design and drug-development, Veejendra K. Yadav.
7. Methodology to generate 2,4-6-trisubstituted tetrahydropyrans for meaningful drug-design and drug-development, Veejendra K. Yadav.
8. Methodology for the transformation of nitriles into industrially useful imidates, Veejendra K. Yadav.
9. Sanjeev K Aggarwal, Tools for Programme Quality Testing, Technology commercialized by STQC, DIT.
10. Bhaskar Raman, The 2P MAC protocol (modification for performance improvement, Implementation in open source HostAP driver), further development needed.
11. Rajat Moona, Smart Card OS for Id Applications., Ready for transfer and Deployment.
12. B M Shukla, Indian Railway Information System. It is a superset database for Indian Railway.
13. Till now it is developed as Open Domain. It needs more money for further development & data collection.
14. B M Shukla, Web based Horoscope Casting & Match Making Package (Open Domain)

15. B M Shukla, Hindi Film Information Software (Under Continuous Data updation), (Open Domain).
16. B M Shukla, On Line Web based Hindi Film Information System (Open Domain).
17. B M Shukla, Plants of India" V 2 web based Software. Software transferred to NBRI in May 2004.

### **(B) SOFTWARE DEVELOPED**

1. Numerical simulation of droplet combustion, D P Mishra.
2. Software for parameter estimation of a projectile using radar tracked data, Handed over to ARDE Pune, A. K. Ghosh.
3. Software for stability analysis of ribbon stabilized non-spinning bomblet/ammunition, Handed over to ARDE, Pune, A. K. Ghosh.
4. S. Garg, "JACA: Java implementation of Adaptive Centroid Algorithm for gene expression Profiling". Further development to add gene pathway analysis underway.
5. Chakroborty, Partha, "A GIS based software for transit trip planning," the software needs some slight modifications on the GUI.
6. Dr. P.M. Dixit, Wrinkling Prediction in Deep Drawn Cup. Further development needed.
7. Dr. Anupam Saxena, Software on reconstruction of 3D solids using multiple orthographic views with Amitesh Mishra
8. Dr. Anupam Saxena, Software on Automated Modular Fixture planning with Prince Malik, Srikant Bansal and N V Reddy

### **(C) INDUSTRIES VISITED**

1. Peer Review Meeting At ARDE, Pune for "Trajectory Correction system for PINAKA" with IMI, Israel 10<sup>th</sup> April, 2004, A K Ghosh.
2. Peer Review Meeting at ARDE, Pune for "Project Enhanced of range rocket 122mm, 11<sup>th</sup> Jan, 2005, A K Ghosh.
3. G. Deo, Visit to Lehigh University, Bethlehem USA for Research on Heterogeneous Catalysis from May, 2004 to December, 2004. Patents
4. Delivered two lectures at a UGC-Refresher Course in Osmania University, Hyderabad 18-10-2004, V. Chandrasekhar, Ruhr-Universitaet Bochum, Germany, Collaborative Research, June 10-July 9, 2004, Chandra A.

5. Das, A., visited Worcester Polytechnic Institute, USA from 10<sup>th</sup> May to 2<sup>nd</sup> July, 2004 and did collaborative research works.
6. Das, A., visited Transportation Infrastructure Division, L&T Chennai, on 5<sup>th</sup> November, 2004, gave a talk on “Chances that a bituminous mix design will meet specifications” and had a detailed discussion on possible collaborative research with IIT Kanpur, IIT Madras and L&T Chennai.
7. Lohani, B., LEOS, ISRO, Bangalore, to discuss development of a Chandrayan instrument, 25-26 February 2005
8. Rajat Moona, Mentor Graphics Hyderabad, ECIL Hyderabad, Infosys Bangalore, Free scale.
9. IIIT Hyderabad, Dheeraj Sanghi.
10. IIIT Allahabad, Dheeraj Sanghi.
11. Pant Institute of Social Sciences Allahabad, Dheeraj Sanghi.
12. AK College of Engineering Srivilliputtur, TN, Dheeraj Sanghi.
13. Univ. of Texas Austin, USA, Dheeraj Sanghi.
14. CDAC Hyderabad, Dheeraj Sanghi.
15. Shoghi Communications Ltd. New Delhi, Dheeraj Sanghi.
16. Cisco Inc., San Francisco USA, Dheeraj Sanghi.
17. Microsoft Corpn. Seattle USA, Dheeraj Sanghi.
18. Hughes Software Systems Gurgaon, Dheeraj Sanghi.
19. SIFY New Delhi, Dheeraj Sanghi.
20. MCTE Mhow, Dheeraj Sanghi.
21. TRAI, New Delhi, Dheeraj Sanghi.
22. ERNET New Delhi, Dheeraj Sanghi.
23. EDCI Noida, Dheeraj Sanghi.
24. Larsen & Toubro- Management Development Center, Dr. J Chatterjee.
25. TIFAC, DST, Dr. J Chatterjee.
26. Siemens Public Communication Networks Ltd, Dr. J Chatterjee.
27. Pulsar Knowledge Center, Dr. J Chatterjee.
28. Wataniya Telecom, Kuwait, Dr. J Chatterjee.
29. Showtime, Dubai, Dr. J Chatterjee.
30. Burgen Bank, Kuwait, Dr. J Chatterjee.
31. APAC study group for Product Life Cycle Management Institute, Singapore for Product Development Management Association, New Jersey, Dr. J Chatterjee.
32. The expert group on 'IT based Applied project management' at MHRD, Dr. J Chatterjee.
33. ITC e-Choupal and Karnataka Bhoomi Project Development Centers, Dr. J Chatterjee.



34. Research Centre Imarat, Defence Research & Development Laboratories, Hyderabad, Dr. J Chatterjee.
35. Ghorai, S., University of Glasgow, BOYSCAST fellowship on Design of Efficient Numerical/Qualitative methods for solving differential equations, 30/01/2004-23/07/2004.
36. Rawat, R., In International workshop on Harmonic Analysis on Symmetric Spaces”, held from June 21, 04 to July 9, 04 in ISI, Bangalore and jointly organised by IIT Kanpur & ISI Calcutta.
37. Bahuguna. D., Delivering series of lectures on “Ordinary Differential Equations” and Laplace Transforms”, for Chattisgarh Universities.
38. Bahuguna, D., Participated and Chaired a session in the International Congress of Nonlinear Analysis – WCNA-2005 at Orlando, Florida, USA, June 1-8, 2004.
39. Sharma, P., “Minimising Makespan of Deteriorating Jobs: An Efficient Heuristic”, The 18<sup>th</sup> International Symposium on Mathematical Programming”, Technical University of Denmark Copenhagen, Denmark, Aug. 2003.
40. Sharma, P., Gupta, A., “An Efficient Local Search Scheme for Mean Absolute Deviation Problem”, 37<sup>th</sup> Annual ORSI Convention, IIM Ahmedabad, January 2005.
41. Ray, S.K., Harmonic analysis on noncompact rank one symmetric spaces”, ISI, Bangalore.
42. Rathish, B.V.K., ICMB 2004, Feb. 19-22, 2004.
43. Chandra, P. delivered two lectures on Biofluid Mechanics at Department of Mathematics, Osmania University, Hyderabad, Feb. 11, 12, 2005.
44. Chandra, P., Will be delivering lectures at National Workshop on “Biomechanics” March 18-19, 2005 at Kamala Inst. Tech. and Science, Huzurabad.
45. Shalabh, Institute of Statistics, Ludwig Maximillian University, Munich., Germany in 2004.
46. Shalabh, Department of Statistics, University of Dortmund, Dortmund, Germany in 2004.
47. Shalabh, Institute of Statistical Science, Academia Sinica, Taiwan in 2004.
48. Kundu, D., Editorial Board Member of the Journal of Modern Applied Statistical Methods.
49. Kundu, D., Editorial Board Member of the Journal Statistics and Its Applications.
50. Kundu, D., Editorial Board Member of the Journal Communications in Statistics – Theory and Methods.

51. Kundu, D., Editorial Board Member of the Journal Communications in Statistics – Simulation and Computation.
52. Sharma, P., Co-Editor of the Special Edition of Journal of Applied Mathematics & Decision Sciences.
53. Dr. A.K. Mallik, Bose Corporation- Boston- June, 2004. Possible collaboration between Bose Corp. & IIT Kanpur.
54. Dr. P.K. Panigrahi, AIR BUS, Bremen, 15<sup>th</sup> March, 2005.
55. Dr. Avinash Kumar Agarwal, Argonne National Laboratory, Chicago, 7th April, 2005.
56. Dr. Avinash Kumar Agarwal, Photonics Institute, Technical University of Vienna, Austria, June 2004.
57. Dr. Avinash Kumar Agarwal, AVL Research and Development Center, Gurgaon, July 2004.
58. Dr. N.Venkata Reddy Central Mechanical Engineering Research Institute, Durgapur, March 21-23, 2005.
59. Dr. Kamal K. Kar Avadh Rubber Limited, Lucknow and DMSRDE, Kanpur Purpose: Utilization of Instrumental facilities.
60. A.K. Majumdar – Forschungszentrum Karlsruhe, Institut für Nanotechnologie, Karlsruhe, Germany, Alexander von Humboldt Fellow, May-June 2004.
61. A.K. Majumdar – Low-temperature Physics Laboratory of Helsinki University of Technology, Helsinki, Finland. To interact with scientists and specially the Director and to give invited talk, May 20-24, 2004.
62. S.A. Ramakrishna – Raman Research Institute, Bangalore, Collaborative research and to give a course entitled “Quantum Optics” to the struduate students, 10 May – 05 June 2004.
63. S.A. Ramakrishna – Imperial College London, Collaborative Research, 10 June – 25 July 2004.
64. R.C. Budhani – visited Superconductivity Research Centre, University of Maryland, May-June 2004.
65. R.C. Budhani – visited CRISMAT Laboratory, Caen, France, June-July 2004.
66. S. Bhattacharjee – visited Nuclear Science Center, New Delhi for Scientific Interaction, 15-17 December, 2004.
67. S. Bhattacharjee – visited Nuclear Science Center, New Delhi for Invited Presentation, 28-29 March, 2005.
68. Z. Hossain - Max-Planck Institute for Chemical Physics of Solids, Dresden, for collaborative research, June 1- July 23, 2004.
69. Z. Hossain - NPL, New Delhi, to visit low temperature facility, September 2004 (one day).

70. Z. Hossain - Max-Planck Institute for Chemical Physics of Solids, Dresden, for collaborative research, December 1- 24, 2004.
71. S. Kumar - Samtel Technology Lab, Ghaziabad.
72. V.V. Sreedhar – Institute of Theoretical Physics, Uppsala University, Uppsala, Sweden, June-August, 2004.

#### **(D) PATENTS**

1. A Wind Turbine System which uses a Flexible Cable for Transmission of Torque & Mechanical Power”. Kunal Ghosh.
2. A Patent filed in collaboration with NIO Goa, NCCS Pune, AIIMS and ICGEB New Delhi. The patent has been filed to India and U.S.A. also “Novel Molecules to develop drug for the treatment of Osteoporosis” Rao, K.V.S.; Wani, M.R.; Manivel, V.; Parameswaran, P.S.; Singh, V.K.; Anand, R.V.; Mishra, G.C.; Chatterji, A. 0412NF2003, WO, 31/12/2003, PCT/IN03/00431.
3. Amitabh Mikerjee, Prakash, Manu, Gaurav Sharma, “Invention Disclosure form”, Title of Invention: Programmable Blocks. (Formal Provisional Patent Filed through Anand and Anand with Indian patent office August 04.
4. Amitabha Mukerjee and Sarala Verma, “Programmable Interface without Computer”, Initial Disclosure Filed through Media Lab Asia March 2004.
5. S. Sundar Manoharan, *Magneto-resistive CrO<sub>2</sub> – Polymer Composite Blends*,) Granted US Patent 6,793,841 B2 Sept 21, 2004.
6. Dr G. C. Ray, Patent on "Anaesthesia Monitor": Provisional Patent (No. 167/DEL/2004) February, 2004.
7. Dr S. P Das, Dr. K. S. Venkatesh, Pankaj Agarwal, and Rajendu Choubisa “Design and Development of a Power Supply for Personal Computer (Built-in UPS or BUPS) in Place of a Conventional SMPS and UPS Combination” submitted on 26<sup>th</sup> July 2004.
8. Dr Animesh Biswas, “Dielectric Resonator”, Application No: 1972/DEL/2004, Co-Investigators:K.V.Srivastava and V.V.Mishra.
9. Dr. Kamal K. Kar, "A process for preparation of micron sized high molecular weight polymer", Reference # 2503/DEL/2004 (INDIA), Dated 16th December 2004.
10. Dr. Kamal K. Kar, "A method of preparing fiber reinforced plastic articles using rubber pressure moulding technique, Reference # 2078/DEL/2004 (INDIA) Dated 25th October 2004.

11. White Light Emitting Zinc based OLED, Inventors: Y. N. Mohapatra, Samarendra P. Singh, S. S. Manoharan, and Q. Mohammad (Patent No.: 1776/DEL/2004).
12. S. Kumar - Patent granted: A process for depositing a polycrystalline carbon film resembling a diamond film on stainless steel substrate, No. 191198.

#### **(E) AWARDS AND HONOURS**

1. C. Venkatesan elected as a Fellow of Indian National Academy of Engineering.
2. Member, Advisory Board, International Journal for Numerical Methods in Fluids, John Wiley & Sons, Sanjay Mittal.
3. Member of the Organizing Committee of the Indo-US Frontiers of Science Symposium conducted in January 2005 by the Indo-US Forum, DST, Sanjay Mittal.
4. Member of the Organizing Committee IUTAM Symposium for Laminar Turbulent Transition, Jawaharlal Center for Advanced Scientific Research, Bangalore, India, 2004, Sanjay Mittal.
5. Member of the Organizing Committee International Seminar on Technologies & Trends in Development of Para Recovery System (PARA INTERNATIONAL 05), Agra, India, March 15-17, 2005, Sanjay Mittal.
6. Member of the Organizing Committee Seventh National Conference on Air-breathing Engines (NCABE 2004), IIT Kanpur, November 5-7, 2004, Sanjay Mittal.
7. Certificate of Merit for 2003-2004 from Institution of Engineers (India) for paper titled, "Trajectory Modeling of an Artillery Shell Using Feed Forward Neural Networks, A K Ghosh.
8. Two of the faculty members have received the prestigious "**Wellcome Trust International Senior Research Fellowship award**" from United Kingdom: **Balaji Prakash**: "Structural Studies on GTPases and EDG Family G Protein-Coupled Receptor", July 2004 – June 2009, Approx. Rs 266 lakhs. GTPases are Guanosine Tri-Phosphate (GTP) binding proteins that control multiple biochemical pathways in the cell. Hydrolysis of GTP by GTPases requires the crucial role of a highly conserved amino acid Glutamine. Mutation of this Glutamine in one such GTPase, called Ras, leads to cancers and search for drugs is a difficult task. Since three-dimensional structure of a protein dictates its function, drugs can be designed based on this knowledge. Although a lot is now understood about Ras and its structure, little success

has come by way of drugs. The project proposed here aims to provide an alternative methodology to facilitate this goal. We wish to understand how certain atypical GTPases carry out GTP hydrolysis, despite carrying oncogenic (cancerous) mutations. These GTPases (HAS-GTPases) are atypical because the essential glutamine is substituted by a hydrophobic residue, which cannot perform the same role. Using Bioinformatics, Biochemistry and Structural biology as major methodologies, we wish to understand the novel catalytic mechanisms underlying the function of these proteins. This knowledge will provide the structural framework for anti-Ras drug design.

9. V. Shankar, INSA Medal for Young Scientist (2004) awarded by the Indian National Science Academy, New Delhi for scientists under the age of 32. Award received at INSA Annual meeting held at Chennai, December 27 2004.
10. V. Shankar, Selected as an Associate of the Indian Academy of Sciences, Bangalore for the years 2004 - 2007.
  - A. Sharma, Professor Gopal Tripathi Memorial University Lecture, Banaras Hindu University (2005).
11. N. Verma, Humboldt Research Fellowship (2004-05).
12. Fellow of Indian Academy Sciences, Bangalore, V Chandra.
13. Member, International Advisory Committee for the SCM-2004: Second Seeheim Conference on Magnetism, Seeheim, Germany, June 27- July 01, 2004, N. S. Gajbhiye.
14. SSP-2004: 8-th International Conference on SOLID STATE PHYSICS, Almaty, Kasakhstan, August 23 – 26, 2004, N. S. Gajbhiye.
15. Member, National Advisory Committee for the NSASN – 2005: National Seminar on Applied Research on Solid State Chemistry and Nanotechnology, Annamalai University, February 25 – 26, 2005.
16. NSAMS – 2005: National Symposium on Advances in Material Science, D.D.U.Gorakhpur, March 17 – 19, 2005, N. S. Gajbhiye.
17. Chairperson, Project Advisory Committee (PAC, Organic); DST New Delhi, H. Ila.
18. Chairperson, WOS-I (Women Scientist Scheme, Chemical science), DST, New Delhi, H. Ila.
19. Member, Science and Engineering Research Cell (SERC), DST, New Delhi, H. Ila.
20. Member, Chemical Sciences and Technology Committee CSIR, New Delhi (for selection of SRF and RA), Awarded B. M. Birla Science Prize in Chemical Sciences for the year 2003 (2004), F. A. Khan.

21. Member, Editorial Board, Indian Journal of Chemistry, Section A, 2005, R N Mukherjee.
22. Member, Sectional Committee in Chemistry, Indian Academy of Sciences, Bangalore (2004 – ), R N Mukherjee.
23. Shanti Swarup Bhatnagar Award, V K Singh.
24. Fellow, The National Academy of Sciences (FNASc), V K Singh.
25. Fellow, Indian Academy of Sciences (FASc), V K Singh.
26. Das, A., INAE Young Engineer Award –2004 by Indian National Academy of Engineers.
27. Gupta, V.K., became Fellow of “Indian National Academy of Engineering” effective from January, 2005.
28. Gupta, V.K., became Foreign Member of “Russian Academy of Natural Sciences” effective from April, 2004.
29. Gupta, V.K., got Kapitsa Medal from “Russian Academy of Natural Sciences” in 2004.
30. Gupta, V.K., gave Keynote Address in the inaugural ceremony of the 3-week long training programme under the “National Programme for Capacity Building of Engineers in Earthquake Risk Management” at Birla Institute of Technology and Science, Pilani on December 13, 2004.
31. Rai, D.C., Awards and Honours Title Technical Textbook Award Awarded by All India Council of Technical Education for to Hindi translation of IAEE Guidelines for Earthquake Resistant Non-Engineered Construction.
32. Singh, R.P., Vice President GeoRisk Commission of the International Union of Geodesy and Geophysics.
33. Singh, R.P., Member, Editorial Board, International J. Remote Sensing, Taylor and Francis, UK.
34. Sinha, Rajiv, National Mineral Award, Ministry of mines, Government of India.
35. Mainak Choudhory, Best paper award, 11th IEEE International Symposium on High- Performance Computer Architecture, February 2005.
36. R.M.K. Sinha, Member National Technical Advisory Committee of Centre for Development of Advanced Computing (CDAC).
37. Inclusion in Marquis Who’s Who in the World, 2004. G. Neelakantan.
38. Dr. Sanjeev Swami, 2004 AICTE (All India Council of Technical Education) Career Award for Young Teachers.
39. Dr. Sanjeev Swami, 2004 DST (Department of Science and Technology), Govt. of India, Fast Track Proposal for Young Scientist Awardee.
40. Jacob Wolfowitz Award 2003 for theoretical advances in Mathematical and Management Sciences for the research paper “Simultaneous Multiple

- Comparisons with the Worst and Best”, Awarded by American Journal of Mathematical and Management Sciences.
41. Rathish, B.V.K. C.L. Chandna Award by Canadian World Education Foundation for excellent teaching and research in Statistics, in the year 2004.
  42. Chandra, P., Member of PAC (Mathematical Sciences), DST, New Delhi.
  43. Kundu, D., C.L. Chandna Award by Canadian World Education Foundation for excellent teaching and research in Statistics, in the year 2004.
  44. R. Balasubramaniam: Member of Advisory Board, Materials Science Research India Journal.
  45. R. Balasubramaniam: Co-Chairman, International Conference on Corrosion CORCON2004, NACE International India Section, New Delhi, December 2-4, 2004.
  46. R. Balasubramaniam: Chairman, Infinity Meeting on History of Science and Technology in India, Kanpur, January 14-17, 2005.
  47. Bikramjit Basu: Indian National Science Academy medal for ‘Young Scientist’ in Engineering Sciences, 2005.
  48. Bikramjit Basu: ‘Young Engineer Award’ of Indian National Academy of Engineering (INAE), 2004.
  49. Bikramjit Basu: ‘Young Metallurgist Award’ of IIM by Ministry of Steels and Mines, Govt. of India, 2004.
  50. Dr. Gautam Biswas appointed as the Associate Editor to the Journal of Heat Transfer Transactions of the American Society of Mechanical Engineers (ASME) with effect from January 2006.
  51. Dr. A.K. Mallik elected Fellow of the National Academy of Sciences, India (Allahabad) - 2004.
  52. Dr. A.K. Mallik Distinguished Teacher Award- IIT Kanpur (2004).
  53. Dr. Avinash Kumar Agarwal, Career Award for Young Teachers, awarded by AICTE 2004.
  54. S.A. Ramakrishna – Young Associate of the Indian Academy of Sciences, Bangalore, 2004-2007.
  55. R.C. Budhani – Materials Research Society of India - Medal 2005.
  56. R.C. Budhani – Elected Fellow of the Indian Academy of Science.
  57. R.C. Budhani – Elected Fellow of the American Physical Society.
  58. Anjan K. Gupta – awarded Young Associate, Indian Academy of Sciences, Bangalore, India.

**(F) CONTINUING EDUCATION ACTIVITIES**

1. Organized a QIP short term course “**Applied Combustion**”, 14-18<sup>th</sup> February 2005, IIT, Kanpur, D. P. Mishra.
2. CEP Course On “Ballistics in Armaments” from 30<sup>th</sup> Aug, 2004 – 3<sup>rd</sup> Sep, 2004 at ARDE, Pune, A K Ghosh.
3. CEP Course on “Flight Dynamics, Stability and Control” from 16<sup>th</sup> – 20<sup>th</sup> Aug, 2004 at DRDL, Hyderabad, A K Ghosh.
4. J.P. Gupta organised a conference on the 20<sup>th</sup> Anniversary of the Bhopal Gas Tragedy: ‘International Conference on the Bhopal Gas Tragedy and its Effects on Process Safety’, December 1- 3, 2004, I.I.T., Kanpur. It was attended by delegates from 26 countries. An exhibition of photos of the tragedy by the famous photographer Mr. Raghu Rai was held. Videos on the Bhopal tragedy and the current situation there were screened. A group of 35 participants travelled to Bhopal to see the Union Carbide plant that caused the tragedy. They visited the hospital where most autopsies were done and viscera are kept. An international group was formed to work to alleviate the current situation in Bhopal. There was a lot of coverage in the press and visual media. Further details are available at the web page [www.iitk.ac.in/che/jpg/bhopal2.htm](http://www.iitk.ac.in/che/jpg/bhopal2.htm)
5. S. K. Gupta, Co-Coordinator, SERC School on Modeling of Industrial Reactors, IIT Kanpur, July 12 – 17, 2004 (42 participants, including 9 from industry /R&D labs).
6. D. Kunzru, co-Coordinator, SERC School on Modelling of Industrial Reactors, July 7-12, 2005, IIT Kanpur.
  - A. Sharma, Coordinator, SERC School on Colloids and Interfaces: Fundamentals and Research Challenges, IIT Kanpur, February 7-11, 2005.
  - A. Sharma, Coordinator, Advanced Workshop on Microfabrication, Self-assembly, MEMS and NEMS, IIT Kanpur, December 17-24, 2004.
7. Das, A., Short course at IIT Kanpur: *(a) proportioning of concrete mixes, and, (b) development and utilization of special concretes* Invited lectures (March, 2004).
8. Das, A., Concrete day celebrations, Indian Concrete Institute, Allahabad Chapter, *Variations in concrete compressive strength – A serious concern in QC* Invited lecture on Sept 26, 2004.
9. Conducted at IIT Kanpur on 28-29 November 2004, a National Workshop on Introducing Earthquake Resistant Design in Architecture Curriculum to develop a model curriculum and debate issues related to earthquake



- engineering education. About 60 persons from all over the country participated.
10. Conducted at Bhuj on 3-5 November 2004 along with Alpa R. Sheth, VMS Consulting Engineers, Bombay, a workshop in association with Babbie India Limited, Ahmedabad, on Workshop on Earthquake Engineering Issues and Scrutiny of Drawing for municipal engineers to train them on how to scrutinize the designs submitted to municipal offices for scrutiny.
  11. Conducted at New Delhi on 23-25 June 2004, a workshop in association with Government of NCT of Delhi on Capacity Building in Earthquake Engineering for engineers to train them on basic concepts in earthquake resistant design of RC structures.
  12. Conducted at Visakhapatnam on 7-8 June 2004, a workshop in association with the Association of Consulting Civil Engineers (India), Hyderabad Chapter, Hyderabad, on Indian Seismic Code IS: 1893(Part1)-2002 to provide train practicing professionals on the new Indian seismic code.
  13. Murty, C.V.R. Murty, Short Course on *Architecture for Earthquake Resistance of Buildings* for architecture college teachers at:
    - A. I.I.T.Kanpur in 17-21 January 2005 (24 participants under NPEEE)
    - B. SCET, Surat in March 2005 (38 participants under NPEEE)
    - C. Sensitisation of Architects of *Indian Institute of Architects*, 14 April 2004 at Jammu, 04 September 2004 at Chandigarh
    - D. Sensitisation of Polcity Makers of *Government of NCT Delhi* 13 December 2004 at New Delhi.
  14. Rai, D.C., Introduction to Earthquake Engineering Type Sponsored by IRDT, Kanpur, IIT Kanpur Dates June 14-18, 2004 Number attended 22.
  15. Sinha, Rajiv, Tectonic Geomorphology, Sponsored by Department of Science and Technology, New Delhi, 3-7 May, 2004, 25 participants from Academia.
  16. Conducted a self-sponsored workshop on “Recycling and other Pavement Rehabilitation Methods”, during February 8-10, 2005 at IIT Kanpur. A total of 38 persons from various parts of the country (from both Industry and academia) attended the workshop.
  17. Lohani, B. PWD Assam Engineers Course: Delivered lectures on Geoinformatics. Completed half of the video lecture series under NPTEL on Basic Surveying.
  18. R.K Ghosh, Workshop on wireless Networks and Mobile Computing, Kanpur August 14, 2004.
  19. Deepak Gupta organized a workshop titled 2<sup>nd</sup> Annual IIT Kanpur Hackers Workshop (IIT Hack 2005), March 2005.

20. T V Prabhakar, Software Architecture: Do and Describe, Bangalore, May 2005.
21. T V Prabhakar, Topics in Software Architecture, New Delhi, November 2005.
22. T V Prabhakar, Software Architecture, Infosys, Bangalore, June 2005.
23. Nandini Gupta, Theoretical and Experimental Investigation into an Artificial Tree Channel in High Voltage Polymeric Insulation, sponsored by DST under DST-SERC Fast Track program for Young Scientists.
24. Nandini Gupta, Experimental Investigation into the Mechanisms of Electrical Treeing in High Voltage Cable Insulation, sponsored by MHRD under R&D scheme.
25. Nandini Gupta, Modeling of the Gaseous Discharge in Stationary Plasma Thruster, sponsored by DIT, Ministry of Communication and Information Technology, New Delhi.
26. P.K. Kalra, Development of Independent Component Analysis Based Blind Source Separation Algorithms for Audio / Image Separation, sponsored by BESCOM, Bangalore.
27. P.K. Kalra, Development of Cost to Serve (CoS) MODEL for BESCOM, Bangalore, sponsored by CRISIL Limited Mumbai.
28. P.K. Kalra, Development of IT-enabled Trading system for NVVN and setting up of Power Exchange at National Level sponsored by CHIPS Raipur.
29. P.K. Kalra, Development of Application for Printing of MAPS, sponsored by MHRD.
30. P.K. Kalra, Modeling of Human Perception through Eye-Movement Matrices and Visual-Motor Control, sponsored by NBRC, Gurgaon.
31. P.K. Kalra, Development of Methodologies for Extracting Information from the Neuro-Informatics Data, sponsored by IISU, ISRO.
32. P.K. Kalra, Modeling, Classification and Fault Detection of Sensors using Intelligent Methods.
33. S. P. Das, A Utility Friendly Four Quadrant Induction Motor Drive System for Traction and Industrial Applications, sponsored by Department of Science and Technology, NewDelhi, 2002.
34. P. Sensarma, Custom Power and Improvement of Power Quality at Critical Load Centers in the Distribution Network, sponsored by Ministry of HRD, Govt. of India.
35. P. Sensarma, National Mission Project on Power Electronics Technology (a Nationwide effort of premier institutes to design, develop and deploy Power Electronics Technology), sponsored by Ministry of Communications and IT, Govt. of India.

36. S.C. Srivastava, Strategies for Promotion of Energy Efficient and Cleaner Technologies in the Power Sector, sponsored by AIT, Thailand.
37. S.C. Srivastava, Enhancement of Power Systems' performance using FACTS in competitive power market, sponsored by CPRI Bangalore, (MoP).
38. S.C. Srivastava, Assessment and Analysis of Electric Power Quality Problems using Artificial Intelligence and Advanced Digital Signal Processing Techniques, sponsored by DST, New Delhi.
39. G. C. Ray, A Multipurpose Talking Aid for the Blinds, sponsored by Ministry of Human Resource Development.
40. Animesh Biswas, Development of anisotropic ceramic dielectric resonator for miniature microwave circuit application, sponsored by DST, New Delhi.
41. P. Sensarma, Custom Power and Improvement of Power Quality at Critical Load Centers in the Distribution Network, sponsored by Ministry of HRD, Govt. of India.
42. P. Sensarma, National Mission Project on Power Electronics Technology (a nationwide effort of premier institutes to design, develop and deploy Power Electronics Technology), sponsored by, Ministry of Communications and IT, Govt. of India.
43. R.S. Anand, Evaluation of organo-fullerene Based material for photo sensing photovoltaic & electro luminescence properties, sponsored by DMSRDE (DRDO).
44. R.S. Anand, Integration of Silicon and Organic Semi conductors For Light Emission, sponsored by MHRD.
45. Joseph John, Design and Development of Indoor and Outdoor wireless links for high speed data communications, sponsored by MHRD project R&D project.
46. A Short-term QIP course on "Communication Skills for Engineers", sponsored by the AICTE, was conducted between 18<sup>th</sup> and 23<sup>rd</sup> of October 2004 at IIT Kanpur. The Course Coordinators were Prof. Lilavati Krishnan and Dr. T. Ravichandran (Department of HSS). Twenty-five teachers of various engineering colleges and institutes of technology all over the country participated in the course.
47. IME Faculty, Course on Materials Management for Indian Railway Officers at IIT Kanpur, November 2004.
48. Anoop Singh, five day short-course on "Challenges and Implementation Issues *post* Electricity Act 2003: Regulatory, Policy & Technical Solutions", April 10-14, 2004.

49. Anoop Singh, "Investment Opportunities for Power Sector in the North East - Mining the Electricity Act 2003" Energy Summit IV, 23rd –24th September 2004, Guwahati.
50. Anoop Singh, "An Assessment of Power Sector Regulation in India", SARI/Energy Regional Regulation Partnership Executive Meeting, July 19-21, 2004, Colombo, Sri Lanka.
51. Anoop Singh, "Economics of Energy Markets", Workshop on PDOE Module, Bangkok, June 9 – 12, 2004.
52. Anoop Singh, "Institutional Aspects of Electricity Trade in South Asian Region", Workshop on Energy Statistics and Analysis Requirements in Support of Regional Energy Trade Evaluation, Kathmandu, Nepal, May 31 – June 4 2004.
53. Anoop Singh, Workshop presentation at "Energy Statistics and Analysis" Workshop, January 6-7, 2005, New Delhi.
54. Veena Bansal, Evaluation, Rating and certification of Web pages, IIITM, Tiruvananthapuram, Kerala in May 2004.
55. Dr. A.K. Mallik, Conducted a course for Engineers of Lohia Starlinger Limited, Kanpur.
56. Dr. Avinash Kumar Agarwal, A one-week short course sponsored by Chattisgarh Government for engineering college teachers entitled "Alternative Fuels and advances in Engines" at Government Engineering College, Raipur from 16-20th October 2004.
57. Dr. Avinash Kumar Agarwal, A one-week short course sponsored by Quality Improvement Program for engineering college teachers and industry entitled "Alternative Fuels and Emission Control" to be held at IIT Kanpur from 24th-28th November 2004.
58. Dr.V.K. Jain, QIP Sponsored short term course on "Advanced Machining Processes", 18<sup>th</sup> to 23<sup>rd</sup> Oct. 2005, Kanpur. (No. of Participant: 26 from Engineering Institutes & 14 from Industries).
59. Dr.V.K.Jain, Institute of Reserch & Development and training (I.R.D.T.) sponsored short term course on "Advanced Machining processes ", 11<sup>th</sup> to 15<sup>th</sup> April'2005, Kanpur, (No. of participants : 11 from different polytechnic institutes).
60. D. Mazumdar: "Modelling in metals processing: concepys, theory and application"; offered to Industrial and R & D engineers (20) (February, 2005).
61. Bikramjit Basu: *Materials for High Temperature Applications (HIMAT-2005)*, 12-15<sup>th</sup> March, 2005.

62. B.K. Misra: *Modern Trends in Milling Practice* KIOCL, Kudremukh December 13-15, 2004 *Discrete Element Method for Particulate Systems*, I.I.T. Kanpur 22-24 April, 2005.
63. V. Ravishankar – NPTEL, CHIPS, KV.

**(G) PARTICIPATION IN HIGH LEVEL INDUSTRY ACADEMIA  
INDUSTRY INTERACTION PROGRAMME DURING SUMMER**

1. Signed a MOU between IIT K- DST and Life care Innovation (Industry Partner) on Development of PLG Polymer for sustained drug delivery in nanoencapsulated Tuberculosis drug, Sanctioned amount 49 Lakhs.
2. Indo-German Nano-technology initiatives program: member of the committee appointed by DST, New Delhi to visit various German universities and international reputed institutes during April 19<sup>th</sup> to 30<sup>th</sup>, 2004, N. S. Gajbhiye.
3. Member, International Research & Training Graduate Program (IRTG) in nanoscience and nanotechnology in collaboration with Germany and some European countries, 2004, N. S. Gajbhiye.
4. Participated in International Conference on Bhopal Gas Tragedy and its Effects on Process Safety held at IIT Kanpur, Dec. 1-3, 2004, P.M. Prasad.
5. Attended the appreciation course on Parliamentary Processes and Procedures held at Bureau of Parliamentary Studies and Training, Lok Sabha Secretariat, New Delhi, Jan. 31-4 Feb. 2005, P.M. Prasad.
6. Participated as a resource person in the short-term course on Environmental Economics & Environmental Impact Assessment is being organized at IITK from May 18-24, 2004, P.M. Prasad.
7. Two day workshop on Methodology of Writing Reports, for secretaries of grassroots organizations working under Mahatma Gandhi Mission Scheme, August, 21 – 22, 2004, IIT Kanpur. The workshop was sponsored by Banwasi Seva Ashram, Sonabhadra, A. K. Sharma.
8. Short Term Course on “Environmental Economics & EIA”, 18-24 May, 2004, sponsored by CDTE/QIP, IIT Kanpur, Course Coordinator: B. Rath.
9. Convener, 12<sup>th</sup> International Planning History Society (IPHS- 2006) Conference to be held at New Delhi, India, December 11-14, 2006, B. Rath.
10. Consultancy support for The Ganges Radio/Educational Project: Independent Broadcasting Associates, Inc.USA, B. Rath.
11. Among the major ongoing projects Prof. B. Rath is conducting two studies: (a) SES Study for Ash Dyke Stage III of FGUTPP, NTPC Ltd., Unchahar, Raibareli, U.P., and (b) EIA of Proposed Mahanadi-Godavari River Link.

12. The department introduced five-year integrated programme in M.Sc. (Economics) in which admissions will be done through JEE. This will satisfy a long felt need of industry and financial institutions to have Economists with background in science and mathematics.
13. The department encouraged all Ph.D. students to attend at least one national level conference in their discipline and also provided travel support for this from its annual budget. As a result of this almost all Ph.D. students presented papers in national level conferences.

**(H) ANY OTHER IMPORTANT ACTIVITY NOT SPECIFIED IN ABOVE COLUMNS**

1. A project on the Development of Sensors for Detecting Hot-boxes and Hot-wheels has been received under the *Technology Mission on Railway Safety*. Hot-boxes and Hot-wheels are responsible for about 90% of derailments. Fast sensing systems for detecting and raising alarms on trains traveling at speeds in excess of 200kph are being developed. Principal Investigator: Dr. Sanjay Gupta.
2. Preparation and characterization of LiNbO<sub>3</sub> single crystal fibers by LHPG, Bansilal and K.V.Rao, CSIR, Rs.4.5 lakhs, 2003-05.
3. Development of Photonic Devices based on single crystal fibers, Bansilal and K.V.Rao, DIT, Rs.20.04 lakhs, 2004-07.
4. Development of a green laser based on single crystal fibers, Bansilal and K.V, Rao, DRDO, Rs.12.4 lakhs, 2005-07.
5. Organised one semester Certificate Program on Helicopter Technology for sponsored candidates from Industry and defence services, Venkatesan, C.
6. N.G.R.Iyengar, Coordinator, HAL Management Training Program, Aug 4, 2004-Nov. 29, 2004 at IIT Kanpur.
7. N.G.R.Iyengar, Convener, First International Congress on Computational Mechanics and Simulation, Dec. 9-12, 2004 at IIT Kanpur.
8. N.G.R.Iyengar, delivered Lectures in Helicopter Technology course for HAL and Defence Scientists and engineers, at IIT Kanpur, Jan 4- April, 2005.
9. R. Bandyopadhyaya, Joint Course Coordinator and Lecturer in the short term course on Colloids and Interfaces: Fundamentals and Research Challenges, IIT Kanpur, February 2005.
10. R. Bandyopadhyaya, Technical committee member of 3-rd Asian Aerosol Conference, Bombay December 2005.
11. R. Bandyopadhyaya, Refereed papers for following journals, J. Nanoscience and Nanotechnology, Surface Science, Nanotechnology.

12. G. Deo, Review of manuscripts of Chemical Engineering Journal, Catalysis Today, Journal of Catalysis, Catalysis Communication, etc.
13. G. Deo, One project-proposal submitted (DST).
14. G. Deo, M.Tech Thesis – (i) P. Singh, Structure-Reactivity Relationships for Titania Supported Chromium-Phosphorous-Oxide Catalysts: ODH of Propane, 2004. (ii) R.P. Singh, Structure-Reactivity Relationships for Titania Supported Vanadium-Phosphorous-Oxide Catalysts: ODH of Propane, 2004.
15. S. Garg, Recipient of DST awarded project under SERC scheme, "Decolourization and degradation of 4-ABS containing azo-dyes under microaerophilic conditions" as co-PI (with Mrs. Leela Iyengar, Department of Chemistry, IIT Kanpur). (SR/S3/CE/C38/2004-SERC Engg).
16. A. Ghatak, Gave lecture in SERC school on Colloids and interfaces held at IIT Kanpur (Sponsored by Department of Science and Technology), February 7 to 11, 2005.
17. S. K. Gupta, Member, Editorial Board, *Intl. J. Chem. Reaction Engineering* (e-journal), 2005- S. K. Gupta, Member, Editorial Board, *Journal of Polymer Engineering* (UK), 1995- .
18. A. Sharma, Council Member, Materials Research Society of India (MRSI), 2004-2007.
19. A. Sharma, Member, Research Councils of CGCRI, Kolkata and IICT, Hyderabad (2004-2006); both CSIR labs.
20. A. Sharma, Member, Scientific Advisory Committee (SAC) of the Ministry of Petroleum and Natural gas, Government of India, and Centre for High Technology, New Delhi (2003-2006).
21. Synthesis, Characterization of Monodisperse Self-assembly of Magnetic Nanostructures (Ni, Co, Fe, Ag, Pd, FePt, FeCrPt, CoPt, CoPd, CoCrPt, Ni-Ag and Fe-Ag). (CSIR-New Delhi), 2004 – 2006, N. S. Gajbhiye.
22. Novel Materials for Nanotechnology. (MHRD – New Delhi), Thrust Area Research Project, 2004-2006 (Rs. 30 - Lacs), N. S. Gajbhiye.
23. The 6th Chemical research society of India conference in Chemistry- Feb 6-8 2004, R Gurunath.
24. Emerging trends in organic Chemistry- October 2004, R Gurunath.
25. R Gurunath, Delivered Lectures in Chhatisgarh outreach program in the e-class room on biology.
26. Moorthy, J. N, coordinated a DST-PAC meeting on Organic Chemistry at IIT, Kanpur, 29<sup>th</sup> July, 2004 to 31<sup>st</sup> July, 2004.
27. Visiting Professor, Departament de Química, Universitat de Girona, Spain (September – October, 2004) (Host: Prof. A. Llobet), Mukherjee R. N.

28. Singapore-India Collaborative and Co-operative Chemistry Symposium – III, Department of Chemistry, Indian Institute of Technology Kanpur, Kanpur (December 16-17, 2004) (Chaired a Scientific Session), Mukherjee R. N.
29. Department representative on institute library committee 2003-2004, Veejendra K. Yadav.
30. As Convenor of NMR Facility (2003-2004 and 2004-2005), I look after the day-to-day functioning of the facility that encompasses three machines, 400 MHz, 80 MHz, and 60 MHz, Veejendra K. Yadav.
31. Das, A., Third International Symposium on New Technologies for Urban Safety of Mega Cities in Asia at Agra on October 18-19, 2004 (Organizing Secretary).
32. Das, A., One week QIP – Short course on Advances in Testing of Cement and Concrete, IIT Kanpur, February 2005 (Course coordinator).
33. Jain, A., Member, Technical Committee-Environmental Systems (2004-2007), International Association of Science and Technology for Development, IASTAD.
34. Jain, A., Member, Program Committee, Second Indian International Conference on Artificial Intelligence: IICAI2005, December 20-22, 2005, Pune, India.
35. Gupta, V.K., worked as Vice-President, Indian Society of Earthquake Technology (ISET) in the second year of this term.
36. Gupta, V.K., worked as Editor, ISET Journal of Earthquake Technology for the seventh consecutive year.
37. Gupta, V.K., continued to work as Associate Editor, ASCE Journal of Structural Engineering.
38. Mohapatra, P.K., organized summer camp 2004 (June 8 to July 2).
39. Rai, D.C., Workshop organized, Workshop on Capacity Building in Earthquake Engineering Type Sponsored by Govt. of NCT Delhi Dates June 23-26, 2004 Number attended ~150 engineers and professionals.
40. Rai, D.C. Workshop on Earthquake Engineering Issues and Scrutiny of Drawings Type Sponsored by Babbie India Limited, Ahmedabad Dates 13-14 Sept., 2004 Number attended ~30 engineers.
41. Tripathi, S.N., convener (Technical) (IASTA Meeting and International Conference on Aerosols, Clouds, and Indian Monsoon, IITK 15-17 November, 2004).
42. Tripathi, S.N., Member, Technical Committee, Asian Aerosol Conference, Mumbai, December, 2005
43. Tripathi, S.N., Edited IASTA Conference Proceedings held in IITK (November 2004).



44. Lohani, B., Consultant: KESCO, Kanpur, Reviewer: JISRS and IJG.
45. Pankaj Jalote, "Performance analysis of software architectures", Microsoft Corporation, \$30K.
46. Pankaj Jalote, "Software checking through static and dynamic analysis", Microsoft, \$30K.
47. Dheeraj Sanghi, Development of Intrusion Detection System (Co-PI) Sponsored by Army Technology Board, Rs.20 lakhs. October, 2004.
48. Dheeraj Sanghi, Recommendations for Increasing Internet Penetration in India Consultancy Project from TRAI, New Delhi, Rs. 2 lakhs December, 2004.
49. Harish Karnick, MLA, DIT has funded the project 'A Portable Model of Primary Healthcare Delivery' for an amount of Rs.102.924 Lakhs.
50. Sanjeev K Aggarwal, Tools for Computational Grid, Sun Microsystems, US \$ 40000, Dec 2004.
51. Sanjeev K Aggarwal, Equipment grant for setting up a Grid, of Sun Workstations, US \$ 90000, Sun Microsystems, 2005.
52. R.K Ghosh, Program Chair for ICDCIT 2004.
53. Phalguni Gupta, ACM International Collegiate Programming Contest (Asia Region- Kanpur Site) held at Kanpur in December 2004.
54. Ajai Jain, V Honorary, IETE Member, Editorial Board of the Journal on Science and Technology, ICFAI University.
55. Sharma, R.R.K, Referee for OPSEARCH, INDIA, 2004-2005.
56. Sanjeev Swami, Reviewer for Marketing Science, Management Science, Annals of Operations Research.
57. Veena Bansal, Reviewer for IEEE Transactions on Engineering Management
58. Jayanta Chatterjee, Reviewer of IIMB Management Review, India.
59. Jayanta Chatterjee, Journal of Information and Knowledge management (JIKM), USA.
60. Jayanta Chatterjee, People, knowledge and Technology, Ed.B.Trezzini & P.Lambe, Straits Knowledge Society, Singapore.
61. Sharma, R.R.K, Chairman of various technical sessions at the 37 th annual convention of "Operational Research Society of India: Vision 2020: The Strategic Role of Operational Research", held at IIM Ahmedabad, INDIA, Jan 8-11, 2005.
62. Mittal, A.K, Chairman of various technical sessions at the 37 the annual convention of "Operational Research Society of India: Vision 2020: The Strategic Role of Operational Research", held at IIM Ahmedabad, INDIA, Jan 8-11, 2005.

63. Mittal, AK, 37<sup>th</sup> Annual Convention of ORSI Jan 8-11, 2005 Ahemdabad (Invited Paper).
64. Mittal, AK, ICIL 2005 14-18 February 2005 Montevideo Uruguay (Contributed Paper).
65. Mittal, AK, QCFI Kanpur chapter Convention October1, 2004 Kanpur (Chief Judge).
66. Mittal, AK, National convention of Quality Circle Dec27-28 2004 Mumbai India (Judge).
67. Veena Bansal, Reviewed book on MIS for Tata McGraw Hill Ltd.
68. Veena Bansal, Reviewed book for Oxford University Press on Pattern Recognition.
69. Rahul Varman, Book Review, Examining the origins and nature of corporations. Organizing America: Wealth, power, and the origins of corporate capitalism, Charles Perrow Princeton University Press, Princeton and Oxford, 2002. Indian Journal of Labour Economics, forthcoming, 2005.
70. Dr. A.K. Mallik Delivered 28 Lectures for NPTEL Project.
71. Dr. N.Venkata Reddy, Modernization of TA201N - Introduction to Manufacturing Processes Laboratory (Completed, Institute Core Laboratory, approximate expenditure: Rs 150 lakhs).
72. S. Bhattacharjee – submitted a proposal “Intense plasma sources for Terahertz radiation” to CSIR requesting Rs. 12 lacs as funds.
73. Anjan K. Gupta – attended Indian Academy of Sciences November meeting in BHU, Varanasi.
74. D. Chowdhury – Member, Physical Sciences Research Committee, CSIR, 2004-2007.
75. D. Chowdhury – Member, National Organizing Committee, STATPHYS 22: International Conference of International Union of Pure and Applied Physics on Statistical Physics, Bangalore, July 2004.
76. D. Chowdhury – Member, Organizing Committee, International Conference on Complex Networks: STATPHYS Kolkata V, a Satellite meeting of STATPHYS22, Kolkata, June 2004.
77. D. Chowdhury – Member, Organizing Committee, International Conference on Pattern Formation in Nonequilibrium Systems, a Satellite meeting of STATPHYS22, Kolkata, July 2004.
78. D. Chowdhury – Member, Advisory Committee, International Conference on Disordered, Complex and Biological Systems, a Satellite meeting of STATPHYS22, Varanasi, July 2004.
79. S. Sivaprakasam - Visiting Fellow, University of Wales, Bangor, UK, during December 2004.

80. R.K. Thareja, Member Advisory Committee, NLS-2004.
81. R.K. Thareja, Member, Advisory Committee, OSI 2005.
82. R.K. Thareja, Member Advisory Committee, 2<sup>nd</sup> Int Conf on Frontiers of Plasma Physics and Technology, Feb. 21-25, Goa.
83. R.K. Thareja – His student, Mr. A.K. Sharma, received Best PhD thesis award by Indian laser Association.
84. R.K. Thareja – Member, Program Advisory Committee (DST).
85. V.V. Sreedhar - Guest Faculty: For the course on Instanton Physics given by Prof. Rajesh Gopakumar (HRI) in the XX SERC School on Theoretical High Energy Physics, 4-24 Dec. 2004, IITK.
86. G. Sengupta - Member Organization for International String Theory Workshop ISM04 at Khajuraho, Dec 2004.