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## **Director's Report**

Honorable Chairman, Board of Governors of the Indian Institute of Technology Kanpur, Professor M. Anandakrishnan, Distinguished Chief Guest, Honorable Prime Minister of India, Dr. Manmohan Singh, Honorable Governor of Uttar Pradesh, Shri B.L. Joshi, Members of the Board of Governors, Members of the Academic Senate, all graduating students and their family members, all members of faculty, staff and students, invited dignitaries, guests, and members of the media: I heartily welcome you all on this occasion of the forty-second convocation of the Indian Institute of Technology Kanpur.

It is with great pleasure and pride that I invite Dr. Manmohan Singh, a career bureaucrat, eminent professor and economist, who is rightly acclaimed as a thinker and scholar for our Convocation today. It is a historic moment for all of us connected with this glorious institution to have a philosopher-king in the person of Dr. Manmohan Singh join us for the Convocation in the Golden Jubilee year. He is well regarded for his diligence and the proverbial academic rigor he brings to his work, as well as for his accessibility and his self-effacing demeanor.

In August 2009, the Golden Jubilee celebration of the Institute was inaugurated by our alumnus Shri N. R. Narayana Murthy, Chief mentor of Infosys. The Institute organized several academic, cultural, and sports events throughout the year. People from all walks of life, both from India and abroad participated.

Significantly, the academic year closing in May 2010 has been momentous, and I consider it a privilege to review our activities during this period. And let me begin my review by sharing the good news that DNA-ZEE News Survey and India Today rank IIT Kanpur as the best engineering college in India.

### **Academic Activities**

The academic year 2009-10 has had a successful run. The number of graduating students both at the undergraduate (B Tech - 313, M Sc (5 year Integrated) - 60, B Tech - M Tech Dual Degree (5 year) - 117, M Sc (2 year) - 86) and the postgraduate (M Tech - 386, M Des - 18, MBA - 52, VLFM - 32, PhD - 131) levels show a satisfactory trend. The enrollment in the Doctoral program as well as the publication record of the faculty and students for the academic year has considerably increased. Faculty and students published a large number of research papers in journals and conference proceedings. Books and book chapters published by the faculty are listed in the appendix of this report.

### **Graduation of the first batch of students in the M.Sc. (Integrated) Program in Economics**

The Institute started the five-year integrated M.Sc. Program in Economics in 2005, under the aegis of the Department of Humanities and Social Sciences, with a view to training professional economists who are well-grounded in science and technology. The program admits students through the Joint Entrance Examination (JEE).

The program helps students to sharpen their analytical and modeling skills, and encourages original research through short course projects, term papers and a two- semester long M.Sc. project. As part of their training, students are exposed to a wide range of sophisticated statistical and mathematical software and databases. A significant feature of the program consists in students taking up internships with universities, international organizations and corporations, in India and abroad during their seventh and eighth semesters. Seven students from the fifth year batch and nine from the other batches of M.Sc. Economics programme had an opportunity to go on student exchanges to universities abroad, such as the Utrecht School of Economics in the Netherlands and Darmstadt University in Germany, among others.

The first batch of M.Sc. (Integrated) Economics is graduating in this convocation. The batch has shown excellent all-round performance. As a fitting recognition of their hard work and high caliber, all the thirteen students of this batch who applied for jobs have obtained superb placements. They have been placed in organizations such as the Citibank, Nomura, Deloitte Consulting, Deutsche Bank, Accenture, Genpact, and Daeyang Shipping Corporation. We are confident that the pioneering batch will act as torch-bearers for the subsequent batches in many other respects as well.

#### **Visionary Leaders for Futuristic Manufacturing - VLFM**

The Institute is very happy to graduate the second batch of students in the postgraduate program on VLFM. This program, it may be noted, was the outcome of an understanding between the Honourable Prime Minister of India, Dr Manmohan Singh and the Honourable Prime Minister of Japan. It is supported by the National Manufacturing Competitiveness Council (NMCC) of the Government of India. Along with IIM Kolkata and IIT Madras, IIT Kanpur is proud to lead this unique experiment of human resource development. VLFM program is one of its kind, jointly run by two IITs and one IIM. A unique academic experiment, it is hoped that this spirit of collaboration and cooperation will prosper in the coming years.

#### **Awards and Honors**

The faculty and students of IITK continue to break new grounds at the frontiers 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. A representative list of awards and honors to our faculty members is included as an addendum to the report.

Our students Arunabha Mohan Roy, Deepanshu Arora have been selected for the **GE Foundation Scholar Leaders Program**. Vishwas Aggarwal, Mayank Dang, Abhishek Kar, Kartikey Asthana, Dheeraj Pichapati Venkata, Mayank Baranwal, Geetak Gupta, Dinesh Bharadia received the **University of Tokyo IIT Undergraduate Students Scholarship**. Amritansh Frank received the **IITKLC MCM Scholarship**. Nirmesh Malviya, Nitish Srivastava, Kumar Ritikesh have been conferred the prestigious **Aditya Birla Scholarship**.

Sunil Kumar and G. Srivardhan (CHE) received Ambuja's Young Researcher's Award for pursuing postgraduation in chemical engineering after GATE. A. Shahin (CHE) was awarded

the first prize for poster presentation at the Fifth Rheology of complex fluids Symposium, IIT Madras. C. S. Sharma (CHE) was given the best poster award at the International Symposium of Hydrogen and Energy Storage, held under the aegis of the Energy Conclave 2010. K. Seethalekshmi, Ph.D. student (EE) has been selected for the 2010 Clayton Griffin Student Paper Award at the Georgia Tech Protective Relaying Conference. A. K. Dey (Maths & Stats) was awarded the Young Scientists Award (Statistics Section) of Indian Science Congress-2009. Debjit Datta and Anirban Bagui (EE) bagged the best poster award in Photovoltaic section: Ellipsometric studies on CuPc/C60 heterojunction for solar cell applications, in International Workshop on Physics of Semiconductor Devices (IWPSD) - 2009, New Delhi. Soumitro Mahanty, Ph. D. student (MME), also won the best poster award in the Materials Science category for Electron Microscopy Study on the Surface Modification of Al-SiCP MMC after Pulsed Laser Irradiation, at the International Conference on Advances in Electron Microscopy and Related Techniques and XXXI Annual Meeting of EMSI, BARC, Mumbai. Priyanka Dash's M.Tech. thesis (MME) entitled Effect of Sintering Temperature on Microstructural Evolution and Tribological Properties of Cu-Pb Alloys was awarded the Professor B.D. Upadhyaya Memorial Gold Medal in Physical Metallurgy & Materials Processing (2009).

Prof. P. K. Bharadwaj (Chemistry) has been conferred the prestigious J. C. Bose fellowship. Prof. V. Chandrasekhar (Chemistry) has been elected to the Academy of the Developing World, FTWAS, Trieste, Italy. Dr. Balaji Prakash (BSBE) has been awarded the DBT - National Bioscience Award for 2009. Dr. Anupam Pal (BSBE) was chosen for the Young Investigator Award by Asian Neurogastroenterology and Motility Association, 2009. Prof. Manindra Agrawal (CSE) has been selected for Rajib Goyal Prize for young scientists in physical sciences. Dr. S. N. Tripathi (CE) has been selected for the NASI - Scopus Young Scientist Award (2009) in the area of Earth Sciences. Dr. Ashu Jain (CE) received the Endeavour Executive Award 2009 of the Ministry of Education, Australia. Dr. Yogesh M Joshi (CHE) received the Amar Dye Chem Award for 2009. Drs. Jayant K. Singh (CHE), Surender Baswana (CSE), and Tarun Gupta (CE) received the INAE Young Engineer Award for 2009. Prof. D. Kunzru (CHE) has been elected a Fellow of The National Academy of Sciences, India. Prof. S. K. Gupta (CHE) has been elected a Fellow of the Indian National Academy of Engineering, New Delhi. Prof. R. R. K. Sharma (IME) has been awarded the Outstanding Management Researcher Award. Dr. Krishanu Biswas (MME) has been chosen for the INSA Young Scientist Medal 2010. Dr. Anish Upadhyaya (MME) has been selected for the 2009 Metallurgist of the Year Award. Prof. R. Balasubramaniam (MME) has been chosen to receive the inaugural IIM Distinguished Educator Award for 2009. Dr. Sameer Khandekar (ME) has been awarded the Prof. K. N. Seetharamu Medal for Young Researchers by the Indian Society for Heat and Mass Transfer. Dr. Shantanu Bhattacharya (ME) has been chosen for the IEI Young Engineers Award 2009-10. Dr. Sudeep Bhattacharjee (Physics) has been chosen for the Buti Foundation Award in the field of Plasma Science and Technology for the year 2009.

### **Research & Development**

Over the past years, the Institute has proactively embarked on collaborative-oriented R&D projects involving joint participation of industries, R&D labs and government organizations. The research profile of the Institute is continually growing every year. As a result, the Institute is well-recognized as one of the centers of academic excellence.

During 2009-2010, 133 sponsored projects worth Rs. 69.5 crore and 100 consultancy projects of value Rs. 7.5 crore were undertaken by the faculty and research engineers/scientists of the Institute, respectively.

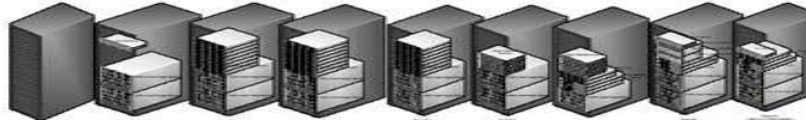
The Institute has filed over 20 patents during the last year. Also, 5 inventions have been accepted by Intellectual Ventures for patenting and commercialization. The Institute has signed several Memoranda of Understanding with Indian as well as international academic/research institutions and industries to strengthen its collaborative research initiative. Some of the organizations include: Bhabha Atomic Research Center, Chevron, Vikram Sarabhai Space Center, Indira Gandhi Centre for Atomic Research, Indian Space Research Organization, Gas Authority of India Limited, and United Nations Development Program.

As part of National Knowledge Network that envisages better mentoring of the new IITs by the established ones, an MoU has been signed with the National Informatics Center Services Incorporated (NICSI) and National Informatics Center (NIC). Three virtual classrooms shall be set up at the Institute. Lectures would be delivered enabling two-way interactions using this infrastructure.

### **High Performance Computing (HPC) facility**

Computational Science and Engineering has undergone revolutionary changes over the past two decades. HPCs have brought about a paradigm shift in the very nature of scientific investigations in the global scenario. Although, India is recognized as one of the leaders in information technology, its capacity for High Performance Computing falls below the optimum level. IIT Kanpur has had a long tradition of computer-aided teaching and research. It aspires to provide leadership in HPC via a two-pronged approach. The Institute would like to carry out cutting edge research in computational science and engineering by utilizing the best-in-class HPC hardware and tools. Nevertheless, it is committed to preparing high quality human resource for the rest of the nation. This requires a constant modernization of the HPC facility.

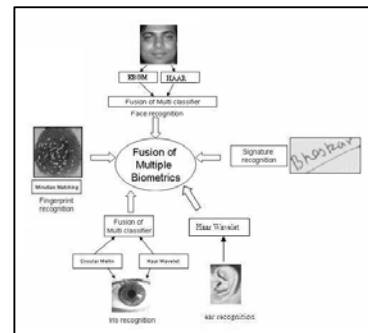
The Institute is in the process of upgrading its HPC infrastructure to a state-of-the-art facility with generous support from the DST. The main HPC system will be a Linux cluster with a master node, 3 management nodes and 256 compute nodes, 40 Gbps QDR infiniband interconnect and 100TB usable storage. Each node will have dual Nehalem quadcore processors. Besides this main system, the Center will have smaller clusters and servers for developing and testing parallel codes. These systems will also be available for applications not amenable to parallelism and which require serial computing. The smaller systems will be integrated with the main HPC facility for optimizing it, including its storage and high-speed network. This integrated facility consisting of 372 nodes and a projected delivered performance of about 30 TF is expected to be the best HPC facility, among all academic institutions in the country.



The HPC facility is expected to provide a major boost to our research in computational science and engineering. The Centre will help train new generation of scientists and engineers in advanced computing, develop sharable application software for parallel platforms and motivate young minds to take up challenging problems in computation. The facility will provide the much needed opportunity to attempt grand challenging problems in science and engineering. Some examples are computational fluid dynamics, environmental modeling, ab initio molecular modeling of chemical processes, biomechanics. Broadly, the research effort of the facility can be classified under three categories: (a) Computational mechanics, (b) Computational materials science, and (c) Computational chemistry and biology. It is envisaged that the facility will throw open newer research areas as it develops. The contributions will be from researchers from both within and outside IIT Kanpur. Inter-disciplinary and inter-institutional research using cutting edge computational technologies will be strongly encouraged. To be supplied by Hewlett-Packard, HPC is scheduled to arrive on campus in June. Once the HPC arrives, IITK will find a place in the TOP 500 HPC list with its rank at 369.

The project India-UK Advanced Technology Center (IU-ATC) of Excellence in Next Generation Network Systems and Services seeks to study the feasibility of transmitting high data-rates through frequency selective fading channels. To this end, Orthogonal Frequency Division Multiplexing (OFDM) would be employed to combat the effects of fading and Inter Symbol Interference (ISI). The other issues that would be addressed are the reduction of the peak-to-average power ratio (PAPR), improving the reliability of transmission using turbo-coding and synchronization. The novelty of this project lies in developing the transmitter and receiver algorithms in discrete-time.

The biometric group of the Institute is working towards developing an indigenous multimodal biometric system. Accordingly the system fuses five biometric traits viz. Face, Fingerprint, Ear, Signature and Iris and works well under controlled environment. Currently, the group is engaged with a DIT funded project titled Biometric System Development to build upon the existing system by minimizing its limitations and by incorporating some new traits. Further, it is developing a face recognition system which can work for the non-digital face images.



The Project titled Engineering Articular Cartilage: A Novel Interdisciplinary Approach is funded by DBT. Osteo-arthritis (OA) is the most prevalent disease in India affecting more than 65% of the elderly (60 years and above) population and has no cure. Since OA is a degenerative disease of a tissue called articular cartilage which is vascular, drug delivery as a treatment option is not viable for this disease. The most attractive remedial approach seems to be tissue engineering of articular cartilage in the laboratory from stem cells of patients and implanting

that engineered tissue on to the patient. To achieve this, we need to precisely understand the etiology of this tissue which is unique developmentally, chemically and responsive to mechanical forces/stimuli. Therefore, we are currently trying to investigate the exact genetic make-up of articular cartilage and the nature of mechanical forces this tissue experiences. We would eventually like to provide these extrinsic and intrinsic cues to stem cells impregnated in an engineered biomaterial mimicking natural chemical environment of articular cartilage.

The attractive feature of the DBT funded project Investigation on developing Ultrahigh Molecular Weight Polyethylene- Hydroxyapatite - Carbon Nanotube Biocomposite for Biomedical Applications lies in applying a synergistic combination of (i) Hydroxyapatite (HA,  $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ ), (ii) aluminum oxide ( $\text{Al}_2\text{O}_3$ ) and (iii) carbon nanotubes via compression molding and achieving enhanced mechanical and tribological properties of the biocomposite without deteriorating its cytocompatibility.

A prototype of the acetabular cup and ball joint is prepared via Z-printing (Figure 1), and compression molding of a whole hip-joint of newly developed UHMWPE-HA- $\text{Al}_2\text{O}_3$ -CNT is envisaged. Further, a combination of UHMWPE and HA coating on a real-life Ti-6Al-4V body implant is also being researched using electrostatic spraying (Figure 2).



Figure 1: Prototype of Hip Ball and socket joint, which will be replaced by UHMWPE-HA- $\text{Al}_2\text{O}_3$ -CNT biocomposite after animal studies and clinical trials.

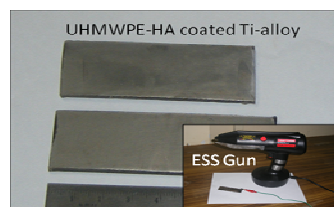


Figure 2: Electrostatic spraying (ESS) coating of UHMWPE-HA on a real-life body implant material Ti-6Al-4V substrate. This coating is expected to provide enhanced tribological properties.

The project funded by the Ministry of Earth Sciences envisages the use of an integrated approach for understanding river dynamics and flood risk evaluation of the Kosi river in north Bihar. The river created havoc last year when a large scale (~120 km) avulsion took place following a breach in the eastern afflux bund at Kusaha in Nepal. This resulted in inundation of very large areas. This project aims to investigate the causative factors of frequent avulsion in the Kosi river using geomorphological approaches for developing a process-based understanding of avulsion and flooding coupled with hydraulic and mathematical modeling. Modern approaches such as high-resolution remote sensing data and kinematic GPS based topographic mapping will be employed to generate geomorphic evaluation of the terrain and to understand the avulsion mechanisms and controlling factors. Results of this project would lead to developing plans for an integrated flood management programme in this region.

This project on High Lift Aerodynamics seeks to enhance understanding of high lift flow physics and to obtain highly accurate and detailed measurements for two-dimensional high-lift

geometry. Design of high lift systems is a challenging task both from the vantage of performance and noise generation. Fundamental understanding of the associated complex flow physics is essential for effective designing of high Lift Systems.

Development of a large format PIV system capable of interrogating an area of  $1\text{m} \times 1\text{m}$  is a challenging task for wind tunnel applications.

Fundamental understanding of the properties of the light sheet, imaging cameras, and their orientation relative to the light sheet is essential for the effective designing of a large format PIV system.



**Multi element Airfoil**



**2D Airfoil**

This project aims to develop a large format PIV system with advanced flow diagnostic capability. The system is to be used for flow past multi-element airfoil to understand high lift flow physics.

### **Solar Energy Project**

The Institute has undertaken an ambitious project to setup a 500 kW Solar Energy Research Experimental Station (SERES) near Shivli road. It will supply power to nearby villages at subsidized rates. The project is first of its kind, since it has technology as well as social dimensions.

A liver support system is being developed in the Department of Biological Sciences and Bioengineering in association with GB Pant hospital, New Delhi. And this system which can be hung outside the body like a glucose bottle performs all the functions of a normal liver, while giving the ailing organ the much needed rest for it to recuperate. The device has been tested successfully in a laboratory in Japan.

Several projects such as Benchmarking of information and communication technology modules in physics and chemistry; Development of open source LMS with ERP functions; National Mission on education through Information & Communication Technology "Virtual Labs" - Internet Based Laboratories; National Mission on education through Information & Communication Technology - proposal pertaining to Virtual Technical university concepts; Quantum and Nano Computing Virtual system; and National program of technology enhanced learning (Phase II) are funded by the MHRD during this year.



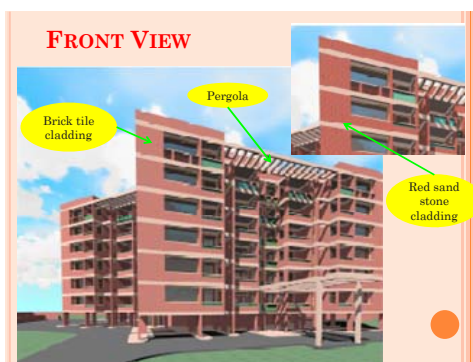
### New RA hostel construction

The ground-breaking ceremony of the extension of new RA hostel has already been completed. The proposed building on seven floors will have 200 single and 36 double rooms for research associates, senior scientists and post-doctoral fellows, apart from office spaces.



### Multi-storied residential flats for faculty

The construction work on multi-storied residential flats for faculty has started near the Health Center. There will be 2 buildings (ground + 6 floors) with 48 flats.



### Time Capsule

As part of the Golden Jubilee celebrations, a time capsule was lowered down by Her Excellency the President of India, Shrimati Pratibha Devisingh Patil in early March. The contents of the time capsule include an aerial map of the Institute, the Institute seal, Silver Jubilee logo, Golden Jubilee logo engraved in silver, copy of Statutes, Ordinances and Acts, minutes of the first and hundredth Senate meetings and the Board meeting, Institute Annual Reports for 1961-62, 1984-85, 2008-09, DRPG Annual Report, photographs of over 50 years, R&D chapter from IITK history book, list of R&D projects, R&D publications, information on birds spotted on the campus, students gymkhana, typical weekly menu of a hostel mess, courses of study, academic program chapter (UG and PG), information about non-academic activities of student life, copy of degree certificates, replica of the President's Gold Medal, DVD of Sharing A Dream - Indian Institute of Technology - The First fifty years, oral records of the interviews conducted by Mr. Sunil Shanbag and the IITK movie 2009, Institute blazer crest, replica of the scroll signed by Mr. Narayana Murthy during the Golden Jubilee inauguration. The event was unique in our academic context and created a great deal of excitement in the campus community.

### Highlights from Departments

The Department of Aerospace Engineering has established a new experimental laboratory with funding from DST for the design, development and testing of autonomous mini helicopter. The Department of Electrical Engineering is developing a new lab for the microwave imaging and material testing. Helium liquefier facility was inaugurated in the Department of Physics from a five-crore project funded largely by DST under the FIST Scheme.

The Department of Biological Sciences and Bioengineering developed a neo-cartilage for osteoarthritis; stem cell separation technology using supermacroporous cryogels (process and product ready for commercialization); Bio-artificial Lever Support using Cryogel bioreactor (preclinical testing); cigarette filter accessory using supermacroporous cryogel (process and product under commercial development); metal chelate affinity precipitation for protein separation; disposable cryogel bioreactor for the production of therapeutics; cryogel filter for the depletion of leukocytes from blood; antiseptic wound dressing bandage using PVP-I macroporous sheet; and polymeric macroporous scaffolds for skin tissue engineering. The Department also developed the software for a four-dimensional reconstruction and characterization system for biomedical images.

The Department of Civil Engineering developed 15 LPM PM2.5 air sampler. The Department of Chemical Engineering developed an organic semiconductor based flexible temperature sensor; white light emitting lanthanide-doped nanomaterials for solid-state light applications; and Nanoparticles-loaded nano/micro polymer capsules for bioimaging and drug delivery applications. The Department also developed the software tool for design of small interfering RNA. The Department of Chemistry developed a fast method to count and quantitate bacteria; drug free polymer nanocoatings on coronary stents – product and process development; low cost nano carbon based water filter for drinking water (now been under field trial). The Department also developed the software constraint density functional theory codes for ab initio molecular dynamics code CPMD. The Department of Electrical Engineering developed Brihaspati-2: SCORM packager and SCORM runtime. The Department of Physics developed a novel focused ion beam system capable of generating multielement focused ion beams (ME-FIB).

The Department of Mechanical Engineering developed a pipe crawling robot with a novel Smart sensor; Power-pro - a novel energy harvesting device for low-power electronic systems and an Active Infusion Pump jointly with the Design Program; 2-D Solar Tracker was developed as a PTB; MEMS based bacterial counter, Autonomous Vehicle Technology; double-sided incremental forming machine (under development); bi-level multi-objective optimization algorithm; and Multi-modal optimization using multi-objective optimization. The Department also developed the software for new damage detection for Composite Laminate using Damage Indexing; LES Solver for Turbomachinery Application (LES-TURBO); and tool path planning for Multistage Single Point Incremental Forming (further work in progress).

Some of the major sponsored projects undertaken by the Institute include those funded by BRNS, DRDO, NRB, DAE, DST, DBT, and DIT. Some of these projects are:

- i. Combustion, material compatibility and engine tribology investigation in a biodiesel fuelled turbo-charged transportation engine (DST);
- ii. Design, simulation and characterization of pneumatic spray nozzle (BRNS);
- iii. Synthesis and measurement of third order optical non linearity of organic and organometallic compounds (DRDO);
- iv. Development of corrosion and wear resistant NI and AL-based metallic glass coatings and nanocrystalline coatings (NRB);
- v. Nano-clusters through laser ablation in liquid (DRDO);
- vi. Bimetallic catalysis involving ruthenium and palladium: C-H bond activation, functionalization and beyond (IFCPAR);
- vii. Zero Discharge Toilet System (ZDTS) (URBAN);
- viii. Powder Metallurgical (PM) processing of tungsten and tungsten-based alloys for iter-like divertor components (DAE);
- ix. Sintering, properties and in vitro characterization of hydroxyapatite-titanium composites (DBT).

A few major consultancy projects received last year include:

- i. BOF process automation at VSP (VSP);
- ii. Qualcomm-IITK research project (Qualcomm);
- iii. Active fault mapping along South Wagad and Gedi fault in eastern part of Kachchh, Gujarat (GSDMA);
- iv. MEMS Based Wireless Ultra-Portable Track Monitoring System (RDSO).

### **Research Infrastructure Development**

The Institute is adding several major infrastructural facilities for carrying out multidisciplinary R&D activities. For development of a Micro-fabrication laboratory, partial funding has been obtained under the CARE scheme. Under CARE, a (Circular Dichroism) CD-spectrometer facility, Integration of excimer laser with the existing microbeam facility, establishment of a multipurpose ultra-centrifugation facility, high temperature electrochemical test station, and Dielectric probe kit for determination of electromagnetic properties over a wide band of frequencies have been funded.

Major equipment funded by the Institute include X-ray fluorescence spectrometer, Laser-induced incandescence for real-time particulate emissions measurement, measurement facility for flight of insects and birds and in general, for low Reynolds number flows, I (intensified) - CCD camera for a laser induced fluorescence spectroscopy facility, Femtosecond laser spectroscopy setup, Fluorescence microscope attached with Digital bacteria colony counter, Instrumented indentation unit, and Table top scanning electron microscope.

### **International Collaborations**

The Institute has entered into oUs with Chevron U.S.A. Inc., USA, European Aeronautic Defence and Space Company, France, IHI Corporation, Japan, Protista Biotechnology AB, Lund, Sweden, Qualcomm Incorporated, USA, Corus Technology BV, The Netherlands,

University of Tokyo, Japan, University of Miyazaki, Japan, Mazardaran University of Science & Technology, Iran, The University of Texas At San Antonio (UTSA), Texas, and Pratt & Whitney Canada Corporation, Canada.

The objectives of these MoUs consist in promoting, strengthening, maintaining scientific and academic co-operation, exchange of faculty, students, staff, technology transfer, sharing of intellectual property for the purposes of engineering research and educational programs, sharing scientific instruments of common interest.

The Government of Malaysia is creating a Centre of Engineering Excellence at Penang with Universiti Sains Malasia (USM) and IIT Kanpur as partners. The goal of the Centre is to provide consultancy services to the multinational companies in the Penang area. In addition, the centre will organize short term courses and training programs for the engineers of the local industry. A Malaysian financial institution, Khazanah will provide the initial funding for infrastructure including the buildings. It will also provide funding for shared services like equipment and software.

The Institute has also signed a Memorandum of Understanding with the University of Texas at San Antonio for exchange of faculty and staff to participate in a variety of teaching and/or research activities and professional development; exchange of graduate students for study and/or research; organize symposia, conferences, short courses and meetings on research issues; carry out joint research and continuing education programs; and exchange information pertaining to developments in teaching, student development, and research.

The Intel Higher Education Program is a worldwide collaboration between Intel and more than 150 universities in 34 countries. In India, this program will collaborate with IIT Kanpur to form the first Focus School for Intel in India. This programme seeks to encourage academia-industry collaboration and to support the development of a higher educational ecosystem.

### **Financial Resource Mobilization**

The Institute has had a satisfactory financial year during 2009-10. The total Grant-in-aid received during the financial year from MHRD, Govt. of India, under non-plan was Rs 138.55 crore, under Normal Plan Rs 35.00 crore and Rs. 67.00 crore under plan (OSC), respectively.

The financial year 2009-10 has been reasonably good for fund raising at IIT Kanpur. As economy slowed down globally, fewer individuals and organizations came forward to donate to the Institute. The Institute received Rs 4.13 crore from 805 donors. This is about 6% lower compared to the previous year. The Institute is devising new programs to augment the donations and the number of donors.

A total of 481 donors contributed about Rs 42 lakhs under the Annual Gift Program. Donations received under AGP have been utilized for providing travel support to the students and faculty for attending international conferences, cash award to students for publication of their research papers in reputed journals, travel support to international visiting faculty, filing of patents and other similar activities supporting and encouraging excellence in the Institute.

Indian Oil Corporation has established an Indian Oil Golden Jubilee Chair of Petroleum Technology in the Institute to support research work in Hydrocarbon sector. They have created an endowment of Rs 40 lakh to support the Chair professorship. Dr. D. S. Hur, CEO of GS Caltex has created two young faculty Research Fellowships to honor Mr. Jeet S Bindra (Ex-President Chevron Global and BT/ChE/1968), a distinguished alumnus of IIT Kanpur. State Bank of India has offered to create an endowed Chair in the area of Environment and Energy at the Institute.

Chevron Corporation (courtesy Mr. Jagjeet Singh Bindra) has created a Foundation to support various activities in the Institute including creation of a Centre for Development of Soft Skills, and a Foundation for the Department of Chemical Engineering in the Institute. They have also donated liberally to support student research magazine NERD.

The Institute has been encouraging research by providing travel support to students and faculty members, rewarding students for publishing research papers in high quality journals, recognizing outstanding faculty members by providing chairs and fellowships, supporting registration of patents, awarding summer internships and supporting schools on campus. These activities are being supported by alumni donations.

The endowment continues to bring good returns on investment. During the financial year 2009-10, despite the low rate of interest on investments given by the banks and financial institutions, the donor accounts have earned 9% annual interest.

There exists an enormous potential for actively engaging our alumni. The challenge ahead of us is to sensitize all the segments of the institute about alumni engagement and fund raising. Without a supportive environment at the grassroots level within the Institute, it may be difficult at times for our alumni and well-wishers to support us. The Institute needs to create a substantial demand for donor funds, for the alumni to respond enthusiastically.

### **Students' Activities**

IIT Kanpur continually strives to encourage an equitable balance between academics and extra-curricular activities among its students. Our vision is to create future leaders in their chosen fields and not just technically accomplished individuals. The Institute strongly believes that an abiding social and humane engagement is the hallmark of its student body. To translate such a belief into reality, the Institute nurtures social, cultural and sporting activities pursued by the students' gymkhana and other student groups.

### **Glucoband**

Diabetes mellitus is a chronic metabolic disorder caused by defects in insulin secretion which results in hyperglycemia. About 6% of the world population is afflicted with this disease and this number is expected to increase. An interdisciplinary student research group of about 17 members has been formed to develop a closed loop glucose sensing and insulin delivery system. This device, named Glucoband, the schematic of which is given below, is a band to be

worn around the shoulder, needs minimal user interference, causes minimal pain, and delivers insulin in a controlled amount. It is expected to counter the growing diabetic situation in the country and worldwide.

The band will have the following features:

1. Glucose sensing using micro cantilever based sensing mechanism,
2. Microneedle for extraction of blood to cause minimal pain,
3. Membrane deflection based piezoelectric micropump,
4. Insulin delivery system (incorporated with insulin reservoir) using microneedles,
5. Micro-controllers to couple the detector with the delivery system.

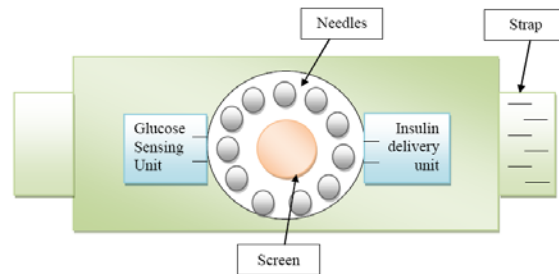


Figure: Proposed schematic of the device

Conducted in the Centre for Environmental Science and Engineering, this student- driven project is scheduled for three years.

### Lunar Rover

The Lunar rover is expected to navigate on very rough terrain. The main focus of the two projects is on wheel traction control and accurate 3D map generation. To experimentally evaluate the interaction between a rover wheel and soft soil, a test set up has been developed (Fig.1). In this setup the wheel and the body of the rover can be driven at different speeds and the resultant effect on traction studied. Kinematic analysis of a prototype lunar rover consisting of 6 wheels with a total of 10 degrees of freedom has also been completed and a CAD model developed using ADAMS software (Fig. 2). The rover is currently being fabricated by an industrial source.



Figure 1 Test platform

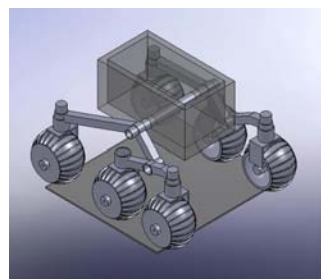


Figure 2 CAD model of rover

Algorithm development for a lunar rover is actively progressing where a line laser mounted mobile platform has been developed (Figure 3). Using the reflected laser light, the algorithm can determine the free space (white) and the obstacle space (red) in front (Figure 4). Based on the free space, an optimal path planning algorithm will be developed for moving the rover to a desired point.

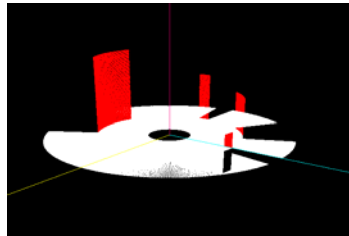


Figure 3 Laser mounted mobile platform.

Figure 4 Freespace and obstacles.

### Jugnu

It is the first nanosatellite developed by students under the guidance of faculty of the Institute and scientists from ISRO. And it has already been handed over to ISRO. The mission hopes to serve the nation by providing indigenous miniaturized technologies for future space missions. Moreover, it aims to provide real life design and development experience of actual space systems to students. Jugnu will transmit a Beacon - blinking signal, at all times - all over the earth. Amateur frequency bands will be used for communication so that the Beacon can be tracked by amateur HAM community anywhere in the World.

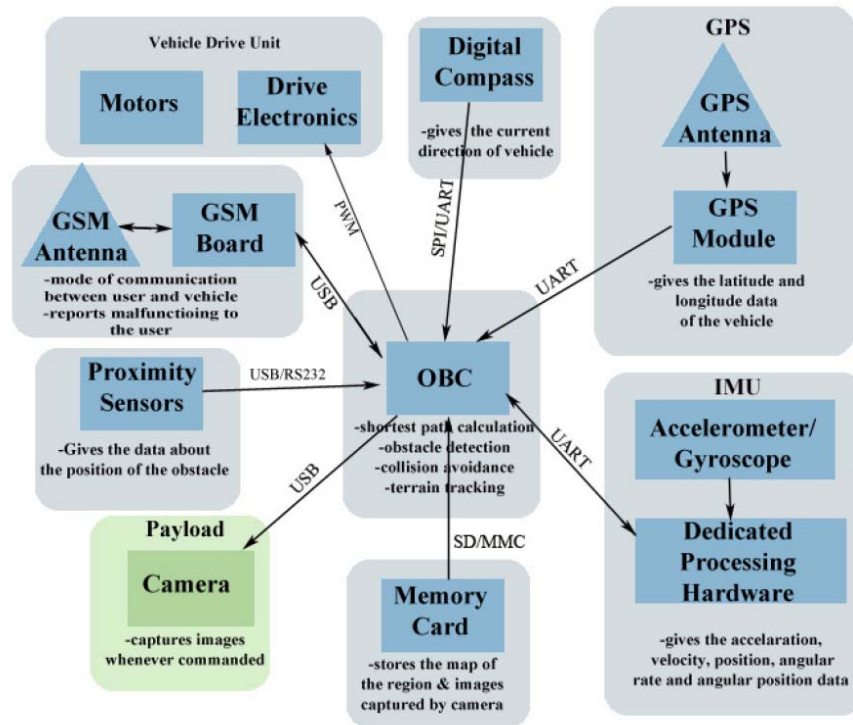
### IIT Kanpur Boeing Collaborative Undergraduate Research Project

Abhyast is a mobile robot device designed to be reliable and rugged for map interpretation, robotic navigation, and imaging. It navigates with the help of GPS (Global Positioning System), IMU and Digital Compass (direction). The robot communicates with the user through GSM network which brings in the added benefit of large areas of network coverage. The autonomous navigation system is enabled through self-localization and path planning capabilities. As such, the commanded paths are susceptible to obstacles-both static and dynamic. The navigation system in Abhyast is able to detect obstacles along the commanded path and steer the vehicle to avoid these. Since this vehicle takes images of the target location, it makes possible vast application areas in monitoring of remote areas.

The following capabilities are inbuilt into the vehicle.

- 1) Accepts the co-ordinates (latitude, longitude or name) of its destination from GSM network (e.g. BSNL, Idea, etc.).
- 2) Finds the shortest path to its destination by processing a pre-stored open street map of the region.
- 3) Navigates autonomously using obstacle detection and collision-avoidance techniques to the destination using IMU assisted GPS, Digital compass and Laser Scanner.
- 4) Takes images in the vicinity of the destination point.

The following diagram summarizes the intended capability of the vehicle.



Phase II of this project is currently underway in which three fold tasks are planned. A new team of 16 undergraduate students are currently working to accomplish these activities.

The tasks for phase II are the following:

- Optimization algorithms on the on board computer with respect to path and time planning and power management.
- Inclusion of On board health management and increasing the level of communication of the existing on board computer for multi agent problems.
- Design and development of a gas sensor for environment reading and monitoring in chemically hostile environments. (i.e., inter vehicle communication in a swarm of such vehicles).

A table top Pin-on-Disc (POD) machine has been developed by students of Mechanical Engineering that measures online, the co-efficient of friction and wear volume between two similar/dissimilar contacting surfaces. The next in the series is a palm-top micro electric discharge machine (m-EDM). This set up has adjustments that are coarse (upto a few microns) and fine (upto a few nanometers). The entire set-up operates at 0.1 mJ to 1 joule energy. The device aims at machining and micro deposition at micro connections in a PCB.



A variety of activities are pursued by various clubs coming under the broad ambit of the councils of the Gymkhana. They range from clubs like **Prayas**, where students teach children coming from socially disadvantaged and economically deprived backgrounds to the **Dramatics** club which stages thematically inspired and socially relevant plays. Other technically oriented student groups are engaged throughout the year in pursuing special interests like robotics, electronic aids, animation, aero-modeling, dance, fine arts, and astronomy to name but a few.

The overriding objective of the large-scale events of the Institute such as **Antaragni**, **Techkriti**, **Udghosh** and **Megabucks** is to infuse a sense of richness and purpose in the lives of students. Antaragni is the cultural festival. Techkriti is the science and technology festival. Udghosh is the sports festival. Megabuck is a festival to promote the spirit of innovation and incubation. All these social, cultural and sporting activities play a crucial role in the transformation of a student into a complete human being. These festivals have seen vastly improved participation levels, both from within the Institute and also from students from other national and international institutions. The revenues generated for conducting these festivals saw an impressive growth last year, which is a tribute to the managerial and logistic skills of our students. During the year, a total of 20 talks were held which include 6 TaLeS talks, 2 talks held in Takneek, 1 seminar and 2 weekly discussion sessions.

New indoor sports complex was also inaugurated during the Inter IIT Sports Met. IIT Kanpur stood third in boys' category and second in girls' category. The Institute team visited BITS Pilani to participate in the sports festival; our chess team won the gold medal, our TT team won the silver, and in volleyball, TT (girls), and badminton (boys) IITK emerged as semi-finalists.

The Institute witnessed stiff inter- hall competition in the form of **Galaxy** and **Varchasva**, inter-hall cultural and sports championships respectively. Fresher Varchasva tournament also had been organized to find some new talent from the incoming batch. The sole guiding principle to organize these championships is to provide the students of this campus, a much needed platform to compete and showcase their cultural and sports talents and to give them a reason and a motivation, strong enough, to come out of their rooms and participate in group activities.

The Student Counseling Service is the most active wing of our students. The activities include organizing the orientation programme for UG as well as PG students; providing specific attention to students having academic, financial or personal problems; monitoring the progress of students who need special attention. It enjoys wide appreciation from both faculty and students.

Owing to the economic downturn, the placement scenario this year was not as encouraging as the previous years but was certainly good when compared with some of the other IITs and other professional engineering colleges. Out of the 1400 public and private organizations invited for recruitment, 140 companies have finally conducted their interviews and the overall placement figure for the year stands at 79.6%. Despite the market crash, an extended effort that included a slew of new initiatives in terms of association with alumni and spreading career awareness led to 41 new companies reporting for placement this year. The relationships formed with the alumni and other prominent people in the industry, besides the different channels explored this year for recruitment, will definitely help the placement scenario of the campus in

the years to come.

The Institute has put in place the entire infrastructure necessary to meet the requirements of the enhanced student strength. As of now, there are eleven halls of residence, nine for boys and two for girls. The total capacity in these halls is above four thousand.

### **Golden Jubilee Celebrations: Aug 2009 - Dec 2010**

IIT Kanpur is celebrating its Golden Jubilee during August 2009 to December 2010. A number of academic and cultural events have taken place. The celebrations started with the inaugural event during August 8-9. The chief guest Shri N. R. Narayana Murthy urged the Institute to chart out a path to become one of the best universities in the world in the next 20 years. Sharing a Dream, a documentary on IIT Kanpur made by Mr. Sunil Shanbagh, was premiered during the event. The event also featured a workshop on Challenges in Higher Education with a number of distinguished speakers, including Mr. Sam Pitroda, Mr. Arun Shourie, and Dr. M. Anandkrishnan giving their views on the current higher education scenario in the country.

The main celebratory event was the visit of the President of India, Smt. Pratibha Devisingh Patil, on 5 March 2010. During her visit, she handed over the nano satellite Jugnu, designed and fabricated by students of the Institute, to ISRO for launch over the next few months. She also buried a time capsule that records the history of the Institute. The time capsule was also designed and fabricated at the Institute. The President also inaugurated a photo exhibition on the Institute.

Five major Golden Jubilee conferences were planned, of which four (Symposium on Fabrication at Small Scale; The Energy Conclave; Interaction, Instability, Transport and Kinetics: Glassiness and Jamming; and Conference on Environmental Health and Technology) have already been held and one on Molecules and Supramolecules will be held in October this year. A year-long Golden Jubilee Seminar Series is underway in which many distinguished speakers, including Mr. Pratap Bhanu Mehta (noted commentator on Indian policy), Prof. Jean-Marie Lehn (Nobel Prize winner in Chemistry), Prof. Douglas Osheroff (Nobel Prize winner in Physics), Mr. Michel Danino (expert on ancient Indian civilization), and Prof. Partha Pratim Majumdar (expert on Genomics) have addressed a large gathering.

Alumni of the Institute are also involved in the Golden Jubilee activities. An alumni convention was held during January 2-4 where the top 50 alumni of the institute were identified (through voting) and honored. This was followed by a convention in Bangalore in June with its focus on innovation. Now we have two more conventions coming soon: first one in Washington DC during July 9-11 to honor universities which participated under KIAP and the second one in Santa Clara during July 16-18 with a focus on rejuvenation.

A number of cultural and sports events were also held on campus. Prominent ones are: 50 km run, Bicycle tour, performances by Shubha Mudgal, Pandit Hari Prasad Chaurasia, Astaad Deboo, and Malini Awasthi, among others.

The Golden Jubilee celebrations covering a wide spectrum of academic and cultural events have truly nourished the soul of the Institute.

### **Closing Remarks**

Dear graduates, on this occasion of the forty-second convocation, I extend my heartiest congratulations and best wishes to the Class of 2010 passing out today. This hard-earned success is a major milestone in your career. And I also take this opportunity to salute your parents, the true miracle makers, who have quietly ensured your success and glory in all that you have chosen to do.

Convocation is a memorable event for every academic institute that values excellence and nurtures the spirit of adventure in its students for them to succeed in their journey of discovering the world and the self. With its mantra of teaching, research and innovation, IIT Kanpur has bestowed on you valuable knowledge as well as a unique value system. There are several paths ahead teeming with endless opportunities. The more you learn, the less you think you know. You are entering the real world, and the opportunity beckons you to use your knowledge of science and technology in the service of the society.

We all fervently hope that you would excel in your professional career. It is time for you to get ready to face a globally competitive world. Wherever you are, we will always be happy and proud to hear about your accomplishments in life.

Dear Graduate of 2010, I admire you for your fine accomplishments during your stay at IIT Kanpur. Given your intellectual attainments and breadth of understanding, you are destined to bring cheer, hope, joy and luck in all the lives you touch. Each of you in your own way has internalized the spirit of IIT Kanpur that privileges commitment, excellence, fellowship, and, importantly, service. No matter where you are and what your vicissitudes, never never stop dreaming! "If in dreams begin responsibilities" as the poet says, then inability to dream would mean lack of engagement with responsibilities. Therefore, be a practical dreamer and see that in your lifetime you change this world a little bit. My sincere, good wishes for the productive work you aspire to do in the future.

### **Awards and Honors**

#### **Fellowship**

1. Dr. S. N. Tripathi (CE) received the NASA Senior Fellowship, National Aeronautics and Space Administration, USA.
2. Prof. Deepak Kunzru (CHE) has been elected Fellow, The National Academy of Sciences, India.
3. Prof. S.K. Gupta (CHE) has been elected Fellow, Indian National Academy of Engineering, New Delhi.
4. Prof. P. K. Bharadwaj (CHM) received the J. C. Bose National Fellowship, DST, New Delhi, India.

5. Prof. J. N. Moorthy (CHM) has been elected Fellow of the Indian Academy of Sciences (FASc), Bangalore.
6. Prof. S. Verma (CHM) has been elected Fellow of National Academy of Sciences, India.
7. Prof. Y. D. Vankar (CHM) has been elected Fellow, Indian National Science Academy, New Delhi, 2009.
8. Dr. Braj Bhushan (HSS) received the Common Future Fellowship (2010), Volkswagen Stiftung, Germany.

### **Awards and Medals**

1. Dr. Anupam Pal (BSBE) was conferred the Young Investigator Award by Asian Neurogastroenterology and Motility Association, 2009.
2. Dr. Balaji Prakash (BSBE) has been awarded the DBT-National Bioscience Award for 2009.
3. Dr. Ashu Jain (CE) has been awarded Endeavour Executive Award 2009 by the Ministry of Education, Australia.
4. Dr. Tarun Gupta (CE) received the INAE Young Engineer Award (2009).
5. Dr. Tarun Gupta (CE) received the INDO-US Frontiers of Science Symposium Joint Research Award (2009).
6. Prof. Rajiv Sinha (CE) has received the best paper award from the Indian Society of Remote Sensing (2009).
7. Dr. S. N. Tripathi (CE) has been given the NASI-Scopus Young Scientist 2009 Award instituted by the National Academy of Sciences India and Elsevier Pvt. Ltd. Asia-Pacific.
8. Prof. Ashutosh Sharma (CHE) received the Homi J. Bhabha Award for Applied Sciences, University Grants Commission (UGC) and National Hari Om Ashram Trust Award for the year 2007 [received in 2010].
9. Dr. Y. M. Joshi (CHE) received the Amar Dye Chem Award, Indian Institute of Chemical Engineers (IChE).
10. Dr. J. K. Singh (CHE) received the Indian National Academy of Engineering (INAE) Young Engineer Award, 2009.
11. Prof. V. Chandrasekhar (CHM) has been elected to the Academy of the Developing World, FTWAS, Trieste, Italy.
12. Prof. J. N. Moorthy (CHM) received the bronze medal awarded by the Chemical Research Society of India (CRSI).
13. Dr. S. S. Manoharan (CHM) was conferred the Gold Medal of the DST - Lockheed Martin Innovation Growth Program for developing nanocoated coronary stent.
14. Prof. S. Verma (CHM) was conferred the CDRI Award for Excellence in Drug Research.
15. Prof. S. Verma (CHM) received the Rajib Goyal Young Scientist Prize in Chemistry.
16. Prof. Manindra Agrawal (CSE) received the G D Birla Award for Scientific Research, Birla Foundation.
17. Prof. Manindra Agrawal (CSE) received the P C Mahalanobis Birth Centenary Award, Indian Science Congress.
18. Prof. Manindra Agrawal (CSE) received the Rajib Goyal Prize, Kurukshetra University.
19. Dr. Surender Baswana (CSE) received the Young Engineer Award for the year 2009 instituted by the Indian National Academy of Engineers for his contribution to the field of design and analysis of algorithms.

20. Dr. Adrish Banerjee (EE) received the Young Engineer Award, Institute of Engineers (IEI), India in the area of Electronics & Communications, 2009.
21. Dr. Adrish Banerjee (EE) received the Microsoft Research India Outstanding Young Faculty Award, 2009.
22. Dr. Jaleel Akhtar's (EE) paper entitled Noninvasive Procedure for Measuring the Complex Permittivity of Resins, Catalysts, and Other Liquids Using a Partially Filled Rectangular Waveguide Structure (IEEE Transactions on Microwave Theory and Techniques) received the CST (<http://www.cst.com>) University Publication Award 2009.
23. Prof. [Ashok K. Mittal](#) (IME) has been honored with Life Time Achievement Award 2010.
24. Prof. R. R. K. Sharma (IME) has been judged the Outstanding Management Researcher, at AIMS-7 conference, at IIM Bangalore, India.
25. Prof. N. K. Sharma (IME) and Manu Kanchan's paper Role of mentoring in enhancing self efficacy: The effect of some personality traits and learning goal orientation as antecedents has been judged the best paper at the Annual Global Conference on Entrepreneurship and Technology Innovation (AGCETI), 2010.
26. Prof. R. Balasubramaniam (MME) has been elected to receive the inaugural IIM Distinguished Educator Award 2009.
27. Dr. Kantesh Balani (MME) has been selected for the Young Scientists Award.
28. Dr. Kantesh Balani (MME) has been selected for Dr R L Thakur Memorial Award 2009.
29. Prof. Dipak Mazumdar (MME) has been selected to receive the G D Birla Gold Medal-2009.
30. Dr. Anish Upadhyaya (MME) has been selected for the 2009 Metallurgist of the Year Award.
31. Dr. Sameer Khandekar (ME) has been awarded the Prof. K. N. Seetharamu Medal for Young Researchers by the Indian Society for Heat and Mass Transfer.
32. Dr. Shantanu Bhattacharya (ME) has been chosen for the IEI Young Engineers Award 2009-10.
33. Dr. Shantanu Bhattacharya (ME) was given the Certificate of Outstanding Leadership by Boeing Corporation for the year 2009.
34. Dr Sudeep Bhattacharjee (Physics) was conferred the Buti Foundation Award and the Endeavour Research Award of the Australian Government.

### Editorships

1. Dr. D. P. Mishra, Associate Professor, Department of Aerospace Engineering, has been invited to serve as the main editor of 8th Eight Asia Pacific Conference on Combustion (ASPACC), scheduled during 10-13 December 2010 at Hyderabad.
2. Dr. D. P. Mishra, Associate Professor, Department of Aerospace Engineering, has been selected as Subject editor, International Journal of Hydrogen Energy, Elsevier Publisher, USA, 2009.
3. Dr. R. N. Mukherjee, Professor, Department of Chemistry, will be on the editorial board of Dalton Transactions, a journal published by the Royal Society, from 2010-11.
4. Edited book entitled Macroporous Polymers: Production Properties and Biotechnological/Biomedical Applications by Dr. Ashok Kumar, Associate Professor, Department of Biological Sciences & Bioengineering, was recently published by CRC Press-Taylor & Frances group. The book has two other co-editors from Sweden.

5. Dr. Ashok Kumar, Associate Professor, Department of Biological Sciences and Bioengineering, has been invited to join as Chief-Editor for Frontiers of Biotechnology and Bioengineering Journal.
6. International Review of Aerospace Engineering (IREASE) has selected Dr. E Rathakrishnan, Professor, Department of Aerospace Engineering, as Editor-in-Chief.
7. Dr. Kalyanmoy Deb, Professor Department of Mechanical Engineering, has been elected Associate Editor of the Applied Soft Computing Journal published by Elsevier.
8. Prof. V.K Jain, Professor, Department of Mechanical Engineering, has been appointed member of the Editorial Board of the International Journal of Manufacturing Technology Research published by Nova Science Publishers, New York (USA).
9. Dr. A. Sengupta, Emeritus Fellow in the Department of Mechanical Engineering, has been appointed Guest Editor of the International multidisciplinary journal on Nonlinear Analysis, Theory, Methods & Applications.
10. Dr. S. N. Tripathi, Associate Professor, Department of Civil Engineering, has been invited to join the editorial board of Indian Journal of Aerosol Science and Technology (IJAST) to be published by IASTA.
11. Dr. Bikramjit Basu, Associate Professor, Department of Materials and Metallurgical Engineering, has recently been invited to join the Editorial board of International Journal of Biomaterials.
12. Dr. R. K. Dube, Professor, Department of Materials and Metallurgical Engineering, continues to be a member of the Editorial Board of the journal Powder Metallurgy, published by the Institute of Materials, Minerals and Mining, London.
13. Dr. D. Goswami, Associate Professor, Department of Chemistry, has been appointed Associate Editor, Global Journal of Analytical Chemistry, Simplex Academic Publishers, 2010.
14. Dr. B.V. Rathish Kumar, Professor, Department of Mathematics and Statistics, has been appointed to serve on the editorial Board of the International Academy of Physical Sciences.
15. Dr. Debashish Chowdhury, Professor, Department of Physics, has been invited to serve as Managing Editor of International Journal of Modern Physics C: Computational Physics and Physical Computation. This journal is published by World Scientific.
16. Dr. Amalendu Chandra, Professor, Department of Chemistry, has been invited to join the Editorial Board of Journal of Molecular Liquids. This journal is published by Elsevier.
17. Dr. D. P. Mishra, Associate Professor, Department of Aerospace Engineering, has been invited to join as Associate Editor for the Journal of Natural Gas Science and Engineering (Elsevier) for an initial period of three years.
18. Dr. Phalguni Gupta, Professor, Department of Computer Science and Engineering, has been appointed editor of Journal of Computers (JCP), published by Academy Publishers for 2 years.
19. Dr. Gautam Biswas, Professor, Department of Mechanical Engineering, has been elected member of the Editorial Board of Computational Thermal Sciences published by Begell House, USA.
20. Dr. Mohua Banerjee, Associate Professor, Department of Mathematics and Statistics, has been invited to join the Editorial Board of the Transactions on Rough Sets, a journal subline of the Springer Lecture Notes in Computer Science (LNCS).

21. Dr. Kalyanmoy Deb, Professor, Department of Mechanical Engineering, has been elected Associate Editor of the Applied Soft Computing Journal published by Elsevier.

### Books Published

1. Gas Dynamics Work Book. E. Rathakrishnan, Professor, Department of Aerospace Engineering. Praise Worthy Prize, 2010.
2. Macroporous Polymers: Production Properties and Biotechnological/Biomedical Applications. Ashok Kumar, Associate Professor, Department of Biological Sciences and Bioengineering. CRC Press-Taylor & Frances group, 2010.
3. Advanced Biomaterials: Fundamentals, Processing, and Applications. Bikramjit Basu, Associate Professor, Department of Materials and Metallurgical Engineering. Dhirendra S. Katti, Associate Professor, Department of Biological Sciences and Bioengineering. John Wiley & Sons, Inc., USA, 2009.
4. Fluid Mechanics and Its Applications. S. K. Gupta, Professor in the Department of Chemical Engineering. Wiley Eastern/New Age Intl. Pub., New Delhi, 1984, Second Edition, 2010.
5. Basic Organometallic Chemistry: Concepts, Synthesis and applications. B. D. Gupta, Professor in the Department of Chemistry. University Press, Hyderabad, 2010.
6. Intelligent Systems and Control. Laxmidhar Behera, Associate Professor in the Department of Electrical Engineering. Oxford University Press, Nov 2009.
7. Digital Communications and Signal Processing. K. Vasudevan, Associate Professor in the Department of Electrical Engineering. Universities Press, Hyderabad, 2010.
8. Services Marketing – People, Technology, Strategy. 6th Edition. Prof. J. Chaterjee, Professor in the Department of Industrial Management and Engineering. Pearson, New Delhi.
9. Statistical Analysis of Designed Experiments. Shalabh, Assistant Professor of the Department of Mathematics and Statistics. Springer 2010.
10. Textbook of Ordinary Differential Equations. V Raghavendra, Professor of the Department of Mathematics and Statistics. McGraw Hill (Education), 2009.
11. Profile of Engineering Education in India: Status, Concerns and Recommendations. Gautam Biswas, Professor in the Department of Mechanical Engineering. Narosa Publishers, 2010.
12. Conduction and Radiation. K. Muralidhar, Professor in the Department of Mechanical Engineering. Narosa Publishers, 2010.
13. Sintering Fundamentals. G. S. Upadhyay, Professor in the Department of Materials and Metallurgical Engineering. Trans Tech. Publications Inc., 2009.
14. CI Engine Performance for Use with Alternative Fuels. Avinash Kumar Agarwal, Associate Professor in the Department of Mechanical Engineering. SAE International, USA, 2009.
15. Modeling of Steelmaking Processes, D. Mazumdar, Professor Department of Materials and Metallurgical Engineering. CRC Press, Boca Raton, Florida, USA, 2009.
16. Solution manual for Modeling of Steelmaking Processes, D. Mazumdar, Professor of Materials and Metallurgical Engineering. CRC Press, Boca Raton, Florida, USA, 2009.

## Book Chapters

1. Controlled Atomization: Needs and Challenges. Combustion Science and Technology: Recent Advances. A. Kushari, Associate Professor, Department of Aerospace Engineering. Narosa Publications, New Delhi, 2009.
2. Design of supermacroporous biomaterials via gelation at sub-zero temperatures-Cryogelation. Advanced Biomaterials: Fundamentals, Processing and Applications. Kumar A., Associate Professor, Department of Biological Sciences and Bioengineering. John Wiley and sons Inc. (Hoboken, NJ).
3. Biomaterial Application in Advanced Biomaterials: Fundamentals, Processing and Applications. Kumar A., Associate Professor, Department of Biological Sciences and Bioengineering. John Wiley and sons Inc. (Hoboken, NJ), (2009).
4. Cryogels as matrices for cell separations and cell cultivations in Macroporous Polymeric Materials: Production, Properties and Biotechnological/ Biomedical applications. Kumar A., Associate Professor, Department of Biological Sciences and Bioengineering. CRC Press, Taylor & Francis Group, Boca Raton, USA, (2010).
5. Macroporous Polymeric Scaffolds for Tissue Engineering Applications in Macroporous Polymeric Materials: Production, Properties and Biotechnological/ Biomedical applications. Kumar A., Associate Professor, Department of Biological Sciences and Bioengineering. CRC Press, Taylor & Francis Group, Boca Raton, USA (2010).
6. Molecular Modeling and Simulation: Can it help in the development of micro and nano devices, in Microfluidics and Microfabrication. J. K. Singh, Assistant Professor in the Department of Chemical Engineering. Springer (USA), 2009.
7. Numerical Methods for Engineers. S.K. Gupta, Professor in the Department of Chemical Engineering. New Age Intl. Publishers (earlier: Wiley Eastern, New Delhi), 1995, Second Edition, 2010.
8. Multi-objective Genetic Algorithm and Simulated Annealing with the Jumping Gene Adaptations in Multi-Objective Optimization: Techniques and Applications in Chemical Engineering. S. K. Gupta, Professor in the Department of Chemical Engineering. World Scientific, Singapore, 2009.
9. Transition Metal-Based Linear Chain Compounds in Macromolecules Containing Metal and Metal-Like Elements. Vol. 9, Jitendra K. Bera, Associate Professor in the Department of Chemistry. John Wiley & Sons.
10. Nano PTFE polymer films as organic insulating barrier in Nanomaterials and devices: Processing and applications for tunneling magneto-resistive Fe/PTFE/Fe. S. Sundar Manoharan, Professor in the Department of Chemistry. Trans. Tech Publications, 2009.
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12. Estimation of flood affected areas using classification of satellite images of a major Indian River in Natural and Manmade Disasters: Vulnerability, Preparedness, and Mitigation. Dikshit, O., MD Publications Pvt. Ltd., New Delhi (2010).
13. Introduction to Environmental Engineering, SI adaptation for Indian Readers, (3rd Edition). Gupta Tarun, Cenage Learning (2010).
14. Response of Seismically Loaded Structures with Nonlinear SFSI- A Numerical Study. Rachowdhury Prishati, VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Saarbrücken, Germany, 2009.



15. Aerosols in the Atmosphere of Mars, In Chapter 2, Chemistry and Aerosols in the Atmospheres of Earth and Mars, in Modeling of Planetary Atmospheres. Tripathi, S. N., Mcmillan Publishers India Ltd., 2010.
16. A multizone doped high breakdown voltage lateral bipolar transistor on buried oxide thick step, Springer's Lecture Notes on Electrical Engineering. S. S. K. Iyer, Associate Professor, Department of Electrical Engineering. 2009.
17. Understanding Transformational Change Using 'Competing Value' Framework, in Integrating Spirituality and Organizational Leadership. R. R. K. Sharma, Professor in the Department of Industrial Management and Engineering. Macmillan India Advance Research Series, New Delhi (2009).
18. Implementing MIS in Organizations: Developing a Theoretical Framework and its Empirical Validation, in Recent Advances in Management and Information Security. RRK Sharma and Kripa Shanker, Professors in the Department of Industrial Management and Engineering. Shree Publishers and Distributors, New Delhi; 2010.
19. A Digital Ecosystem Model for Competitive Agriculture, Knowledge Economy. J. Chatterjee, Professor in the Department of Industrial Management and Engineering. The Indian Challenge, Sage Publications, Delhi 2009.
20. Strategy and Structure in the Knowledge Enterprise, in Knowledge Economy, The Indian Challenge. Arun P Sinha, Professor in the Department of Industrial Management and Engineering. Sage Publications, Delhi 2009.
21. Changing Perspectives on Family Planning in India, in Reproductive Health Management. A. K. Sharma, Professor in the Department of Humanities and Social Sciences. Akansha Publishing House, New Delhi, 2009.
22. Civics Curriculum and Textbooks, Social Science Learning in Schools: Perspective and Challenges. Amman Madan, Associate Professor in the Department of Humanities and Social Sciences. Sage, New Delhi, 2010.
23. Judicious Succession and Judicial Religion: Internal Conflict and Legal Dispute in a Religious Reform Movement in India in Permutations of Order: Religion and Law as Contested Sovereignties. Anindita Chakrabarti, Assistant Professor in the Department of Humanities and Social Sciences. Ashgate, London, 2009.
24. Initiation, 'Re-birth' and the Emergent Congregation: An Analysis of the Svadhyaya Movement in Western India in Ritual Matters: Dynamic Dimensions in Practice. Anindita Chakrabarti, Assistant Professor in the Department of Humanities and Social Sciences. Routledge, London, 2010.
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26. Communication in Perspective. Braj Bhushan, Assistant Professor in the Department of Humanities and Social Sciences. Amani International Publishers, Kiel-Germany, 2010.
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18. Dr. Satyaki Roy	M DES

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

1. Mohd. Ashraf Bhat (Y4200063) ashraf@iitk.ac.in E-213, H-8
2. K Sudheendra Rao (Y5209864) ksrao@iitk.ac.in F-212, H-8
3. Abhishek Kumar Agrawal (Y7104003)abhia@iitk.ac.in E-209, H-9

4. Satendra Kumar Yadav (Y7111036) satendra@iitk.ac.in 2068, ACES

**(5) SENATE RULES COMMITTEE [SRC]:**

**(a) MEMBER (EX-OFFICIO) :**

Parliamentarian of the Senate :

Dr. R K Dube MME : Upto 30.09.2008

**(b) SENATE NOMINEES :**

1. Dr. Kunal Ghosh AE
2. Dr. Ajai K Jain CSE
3. Dr. Keshawa Shahi PHY

**(6) SENATE SCHOLARSHIPS & PRIZES COMMITTEE [SSPC]:**

**(a) MEMBERS (EX-OFFICIO):**

Head, Institute Counselling Service: Dr. A K Ghosh, AE

Member, APEC : Dr. Purnendu Bose, CE

Dean of Students' Affairs : Dr. Partha Chakroborty, CE

**(b) SENATE NOMINEES:**

1. Dr. Sandeep Verma CHM
2. Dr. Suchitra Mathur HSS
3. Dr. Rajesh Srivastava CE
4. Dr. Nandini Nilakantan MTH & STATS

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

1. Indranuj Dey (Y5209863) indranuj@iitk.ac.in C-202, H-8
2. Mohit Kumar Jolly(Y6265) mkjolly@iitk.ac.in 317, H-2
3. Keshav Goel (Y7196) keshavg@iitk.ac.in 314, H-2

**(7) SENATE STUDENTS' AFFAIRS COMMITTEE [S-SAC]:**

**(a) MEMBERS (EX-OFFICIO) :**

Head Institute Counselling Service : Dr. A K Ghosh, AE  
Member, APEC : Dr. Purnendu Bose, CE  
Representative of COW : Dr. Sudhir Misra, CE  
Dean of Students' Affairs : **Chairman, Ex-Officio**

**(b) SENATE NOMINEES:**

1. Dr. Ashu Jain CE  
2. Dr. Anish Upadhyaya MME  
3. Dr. Shikha Dixit HSS

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

1. Arvind Kothari (Y4096) arvikot@iitk.ac.in B-204, H-1  
2. Ankur Verma (Y5102063) ankurv@iitk.ac.in E1-209, H-4  
3. K Sudheendra Rao(Y5209864) ksrao@iitk.ac.in F-212, H-8  
4. Ramnik Arora (Y5365) ramnik@iitk.ac.in D-202, H-1

**(8) SENATE UNDERGRADUATE COMMITTEE [SUGC]:**

**(a) MEMBER (EX-OFFICIO) :**

Dr. P S Ghoshdastidar, ME : **Outgoing Chairman**

**(b) SENATE NOMINEE :**

1. Dr. H C Verma PHY

**(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :**

1. Dr. A Kushari AE  
2. Dr. Ashok Kumar BSBE  
3. Dr. Siddhartha Panda CHE  
4. Dr. M K Ghorai CHM  
5. Dr. Sudhir Misra CE



6. Dr. S N Tripathi	EEMP
7. Dr. Amitabha Mukherjee	CSE
8. Dr. Y N Singh	EE
9. Dr. T Ravichandran	HSS
10. Dr. A P Sinha	IME
11. Dr. D P Mishra	LTP/AE
12. Dr. N N Kishore	ME
13. Dr. B Basu	MME
14. Dr. Rajeev Gupta	MSP
15. Dr. Mahua Banerjee	MTH & STAT
16. Dr. M S Kalra	NET
17. Dr. Anjan K Gupta	PHY
18. Dr. Bishakh Bhattacharya	M DES

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

1. Manu Kapoor (Y4177218) manuk@iitk.ac.in D-210, H-8
2. Anurag Sujania (Y5107) sujania@iitk.ac.in C-215, H-1
3. Pulkit Agarwal (Y7322) pulkit@iitk.ac.in F-301, H -5
4. Abhishek Khetan (Y6019) askhetan@iitk.ac.in 247, H-2

**SENATE STANDING COMMITTEES**

**[FROM 01.10.2009 TO 30.09.2010]**

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

**(a) MEMBERS (EX-OFFICIO) :**

1. Chairman, Senate : **Chairman**
2. Chairman, SPGC
3. Chairman, SUGC

**(b) SENATE NOMINEES :**

1. Dr. Harish C Verma, PHY

2. Dr. Harish Karnick, CSE

3. Dr. T K Sengupta, AE

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

1. Mr. Ashish Agrawal (Y6113), ashagr@iitk.ac.in

2. Mr. K S Rao (Y5209864), ksrao@iitk.ac.in

**(2) SENATE ELECTIONS COMMITTEE :**

**SENATE NOMINEES :**

1. Dr. Ashok K Mittal, IME

2. Dr. F A Khan, CHM

3. Dr. Shankar Ramakrishnan, BSBE

**(3) SENATE LIBRARY COMMITTEE :**

**(a) LIBRARY :**

Librarian

: Dr. V D Shrivastva

**(b) SENATE NOMINEES :**

1. Dr. Pranab K Mohapatra, CE

2. Dr. M L N Rao, CHM

3. Dr. B K Pattanaik, HSS

4. Dr. D P Mishra, AE

**(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :**

1. Dr. E Rathakrishnan	AE
2. Dr. Dharendra S Katti	BSBE
3. Dr. S Sivakumar	CHE
4. Dr. J K Behra	CHM
5. Dr. Saumyen Guha	CE
6. Dr. Saumyen Guha	EEMP
6. Dr. Harish Karnick	CSE
7. Dr. Pradip Sircar	EE

8. Dr. Braj Bhushan	HSS
9. Dr. Ashok K Mittal	IME
10. Dr. H Wanare	LTP
11. Dr. Ishan Sharma	ME
12. Dr. Anish Upadhyaya	MME
13. Dr. Jitendra Kumar	MSP
14. Dr. Parasar Mohanty	MTH & STAT.
15. Dr. I Sharma	NET
16. Dr. Tapobrata Sarkar	PHY
17. Ms Koumudi Patil, HSS	Design Prog.

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

1. Mr. C Rahul (Y6142), crahul@iitk.ac.in
2. Mr. Puneet Singh (Y8378), punsingh@iitk.ac.in

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

(a) **MEMBER (EX-OFFICIO) :**

1. Dr. Vinay K Gupta, CE : Outgoing Chairman

(b) **SENATE NOMINEE :**

1. Dr. Peeyush Chandra, MTH & STATS

(d) **NOMINEES OF DEPARTMENTS/PROGRAMMES :**

1. Dr. D Das AE
2. Dr. S Ganesh BSBE
3. Dr. Animangsu Ghatak CHE
4. Dr. S P Rath CHM
5. Dr. Javed N Malik CE
6. Dr. Tarun Gupta EEMP
7. Dr. T V Prabhakar CSE
8. Dr. A R Harish EE
9. Dr. T Ravichandran HSS

10. Dr. Peeyush Mehta	IME
11. Dr. P K Panigrahi	LTP
12. Dr. P K Panigrahi	ME
13. Dr. Gouthama	MME
14. Dr. K Shahi	MSP
15. Dr. Rama Rawat	MTHS & STAT.
16. Dr. P Munshi	NET
17. Dr. Zakir Hossain	PHY
18. Dr. Munmum Jha	Design Prog.

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

1. Ms. V Sangeetha (Y8116006), [sangiv@iitk.ac.in](mailto:sangiv@iitk.ac.in)
2. Mr. Nitin Jagga (Y8125031), [njagga@iitk.ac.in](mailto:njagga@iitk.ac.in)
3. Mr. Mohammad Atiflam (Y4118062), [atif@iitk.ac.in](mailto:atif@iitk.ac.in)
4. Mr. Md. Ayaz (Y9103068), [ayazmd@iitk.ac.in](mailto:ayazmd@iitk.ac.in)

**(5) SENATE RULES COMMITTEE :**

**(a) MEMBER (EX-OFFICIO) :**

Parliamentarian of the Senate :

Dr. Rajiv Shekhar, MME : Upto 30.09.2009

**(b) SENATE NOMINEES :**

1. Dr. Jitendra Kumar, MSP
2. Dr. V N Kulkarni, PHY
3. Dr. Pradip Sircar, EE

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

**(a) MEMBERS (EX-OFFICIO):**

Head Institute Counselling Service : Dr. A K Ghosh, AE

Chairman, APEC : Dr. N N Kishore, ME

Dean of Students' Affairs : Dr. Partha Chakraborty, CE

**(b) SENATE NOMINEES:**

1. Dr. S Sangal, MME
2. Dr. Animesh Biswas, EE
3. Dr. Purnendu Bose, CE
4. Dr. Animanshu Ghatak, CHE

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

1. Mr. Yash Sidana (Y7519), yashsid@iitk.ac.in
2. Mr. Sanjay Chaudhary (Y7388), sanjayc@iitk.ac.in
3. Mr. C Rahul (Y6142), crahul@iitk.ac.in

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

**(b) MEMBERS (EX-OFFICIO) :**

- |                                    |                            |
|------------------------------------|----------------------------|
| Head Institute Counselling Service | : Dr. A K Ghosh, AE        |
| Chairman, APEC                     | : Dr. N N Kishore, ME      |
| Representative of COW              | : Dr. Siddharta Panda, CHE |
| Dean of Students' Affairs          | : Chairman, Ex-Officio     |

**(c) SENATE NOMINEES:**

1. Dr. Monika Katiyar, MME
2. Dr. J K Bera, CHM
3. Dr. S Qureshi, EE

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

1. Mr. M K Jolly (Y6265), mkjolly@iitk.ac.in
2. Mr. Ashish Agrawal (Y6113), ashagr@iitk.ac.in
3. Mr. K S Rao (Y5209864), ksrao@iitk.ac.in
4. Mr. Abdullah Bin Abubaker (Y7108061), Abdullah@iitk.ac.in

**(8) SENATE UNDERGRADUATE COMMITTEE :**

**(a) MEMBER (EX-OFFICIO) :**

- Dr. Sudhir Misra, CE : **Outgoing Chairman**

**(b) SENATE NOMINEE :**

1. Dr. P M Dixit, ME

**(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :**

- |                              |               |
|------------------------------|---------------|
| 1. Dr. Brijesh Eshpuniyani   | AE            |
| 2. Dr. Balaji Prakash        | BSBE          |
| 3. Dr. Siddharth Panda       | CHE           |
| 4. Dr. Madhav Ranganathan    | CHM           |
| 5. Dr. Amit Prashant         | CE            |
| 6. Dr. A Mukerjee            | CSE           |
| 7. Dr. J Akhtar              | EE            |
| 8. Dr. Achla M Raina         | HSS           |
| 9. Dr. Arun P Sinha          | IME           |
| 10. Dr. D P Mishra           | LTP           |
| 11. Dr. Ishan Sharma         | ME            |
| 12. Dr. Sandeep Sangal       | MME           |
| 13. Dr. Kamal K Kar          | MSP           |
| 14. Dr. S K Ray              | MATHS & STAT. |
| 15. Dr. P Munshi             | NET           |
| 16. Dr. Sudeep Bhattacharjee | PHY           |
| 17. Dr. Bishakh Bhattacharya | Design Prog.  |

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

1. Mr. Anurag Sujania (Y5827107), sujania@iitk.ac.in
2. Mr. Abhishek S Khetan (Y6019), askhetan@iitk.ac.in
3. Mr. Navesh Priyankar (Y7249), navesh@iitk.ac.in
4. Mr. Pranay Dighe (Y8347), pranayd@iitk.ac.in



The Ion Beam Complex in the Nuclear Physics Laboratory is equipped with low energy ion beam facilities ranging from a few keV to a few MeV. It enables research across Departments in material science and prototype device fabrication. A state-of-the-art focused ion beam system was installed in 2006. On 27th Sept 2008, a 1.7MV Tandatron accelerator equipped with micro beam facility was inaugurated. With these installations, we would definitely be the first to embark on fabrication of micro- and nano-devices.

## 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, 2010 was 343. Out of these 22 are shared by two departments on a half time basis. There were also 33 Academic staff comprising of Research Engineers/Scientific Officers/Design Engineers and Library staff, who are treated at par with faculty, on March 31, 2010. 11 faculty members and 03 academic staff retired/voluntary retired/resigned/term over and one faculty member passed away during the period. The Institute also had a number of Visiting Faculty members : 27 Faculty Members, 10 Visiting Faculty and 01 Distinguished Honorary Professor joined during the year. The Visiting/Distinguished/Adjunct Faculty contribute significantly and they also get an opportunity to know the Institute.

### **AEROSPACE ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 20**

**EXISTING STRENGTH : 18 +1**

#### **PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3159 K Ghosh
2. 1798 R K Sullerey
3. 4041 Dayanand Yadav
4. 4458 E Rathakrishnan
5. 4694 C Venkatesan
6. 4581 T K Sengupta
7. 4285 Sudhir Kamle
8. 4664 Kamal Poddar
9. 4696 Sanjay Mittal
10. 4660 Ashish Tewari
11. 4709 A K Ghosh

#### **ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4785 C S Upadhyay
2. 4733 D P Mishra
3. 4958 Abhijit Kushari
4. 4993 Debopam Das

#### **ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**



1. \* 5129 Sivasambu Mahesh

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

2. 5280 Brijesh Eshpuniyani
3. 5288 P M Mohite
4. 5366 Rajesh Kitey

**BIOLOGICAL SCIENCE & BIO-ENGINEERING**

**SANCTIONED STRENGTH : 15**  
**EXISTING STRENGTH : 10**

**POFESSOR AGP-10500 PB-4 (37400-67000)**

1. 4959 Pradip Sinha

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 5119 Ashok Kumar
2. 5005 R Sankararamakrishnan
3. 5009 K Subramaniam
4. 5020 Subramaniam Ganesh
5. 5023 Balaji Prakash
6. 5103 Dhirendra S Katti

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5194 Anupam Pal
2. 5206 Amitabha Bandyopadhyay
3. 5207 (Ms) Jonaki Sen

**CHEMICAL ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 32**  
**EXISTING STRENGTH : 22**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3113 S K Gupta
2. 2432 Anil Kumar
3. 3314 Deepak Kunzru
4. 3064 J P Gupta
5. 3754 P K Bhattacharya
6. 4244 R P Chhabra
7. 4045 Ashok Khanna
8. 4562 Ashutosh Sharma
9. 4750 Goutam Deo
10. 4794 Nishith Verma

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 5011 V Shankar
2. 5016 Nitin Kaistha
3. 5196 Siddharta Panda
4. 5106 Animangsu Ghatak
5. 5114 Yogesh Moreshwar Joshi

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5021 Sanjeev Garg
2. 5175 Jayant K Singh
3. 5208 Pankaj A Apte

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

4. 5298 Raj Ganesh S Pala
5. 5303 Sri Sivakumar
6. 5337 Raghvendra Singh
7. 5362 Abhijit Chatterjee

**CHEMISTRY DEPARTMENT**

**SANCTIONED STRENGTH : 30**

**EXISTING STRENGTH : 30**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

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. 4047 N S Gajbhiye
10. 3112 P Gupta Bhaya
11. 4460 S Manogaran
12. 4583 Veejendra K Yadav
13. 4596 Vinod K Singh
14. 4676 Amalendu Chandra
15. 4746 Faiz Ahmed Khan
16. 4759 S S Manoharan
17. 4789 Sandeep Verma
18. 4816 J N Moorthy

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4760 K Srihari
2. 5071 Debabrata Goswami
3. 4876 R Gurunath
4. 5038 Jitendra K Bera
5. 5024 Manas Kumar Ghorai
6. 5056 M L N Rao
7. 5127 Sankar Prasad Rath

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

1. 5236 Madhav V Ranganathan
2. 5091 Anantharaman Ganapathi
3. 5304 Nishanth N Nair
4. 5305 Pratik Sen

**ASSISTANT PROFESSOR AGP-7000 Contract PB-3 (15600-39100) Ph D + 1 year experience**

1. 5369 Ramesh Ramapanicker

**CIVIL ENGINEERING DEPARTMENT**

**SANCTIONED STRENGTH : 33**  
**EXISTING STRENGTH : 30**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3462 Ashwini Kumar
2. 4068 P K Basudhar
3. 4209 Sudhir K Jain
4. 4399 Sarvesh Chandra
5. 4295 Vinod Tare
6. 4586 V K Gupta
7. 4464 S K Chakrabarti
8. 4799 Mukesh Sharma
9. 4657 C V R Murty
10. 4662 Onkar Dikshit
11. 4663 Partha Chakroborty
12. 4695 Rajiv Sinha
13. 4690 Sudhir Misra
14. 4798 Rajesh Srivastava
15. 4775 Purnendu Bose

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4784 Soumyen Guha
2. 4793 Ashu Jain
3. 4995 Durgesh C Rai
4. 4871 Animesh Das

5. 4978 Javed N Malik
6. 5026 Bharat Lohani
7. 5057 Sachidanand Tripathi
8. 5079 Pranab Kumar Mohapatra

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5152 Amit Prashant
2. 5037 Nihar Ranjan Patra
3. 5192 Tarun Gupta

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

4. 5230 Priyanka Ghosh
5. 5307 Debajyoti Paul
6. 5346 Samit Ray Chaudhuri
7. 5347 (Ms) Prishati Raychowdhury

**COMPUTER SCIENCE & ENGINEERING**

**SANCTIONED STRENGTH : 18**

**EXISTING STRENGTH : 20 + 2 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. \*3858 S G Dhande
2. \* 3541 R M K Sinha
3. 3972 Somenath Biswas
4. 4297 H C Karnick
5. 4370 T V Prabhakar
6. 4563 S K Aggarwal
7. 4490 Sanjeev Saxena
8. 4628 Rajat Moona
9. 4754 Manindra Agrawal
10. 4627 Amitabha Mukerjee
11. 4300 Ratan Kumar Ghosh
12. 4385 Phalguni Gupta
13. 4645 Ajai K Jain
14. 4668 Dheeraj Sanghi
15. 4762 Sumit Ganguly
16. 5010 Shashank K Mehta

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4934 Anil Seth

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5112 Mainak Chaudhuri
2. 5197 Surender Baswana
3. 5222 Peeyush P Kurur

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

4. 5268 Arnab Bhattacharya

**ASSISTANT PROFESSOR AGP-7000 Contract PB-3 (15600-39100) Ph D + 1 year experience**

1. 5372 (Ms) Krithika Venkataramani

**ELECTRICAL ENGINEERING**

**SANCTIONED STRENGTH : 53  
EXISTING STRENGTH : 37 + 2 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. \*3541 R M K Sinha
2. 3927 Avinash Joshi
3. 4326 M Sachidananda
4. 4495 S C Srivastava
5. 4486 Prem Kumar Kalra
6. 4691 Shafi Qureshi
7. 3873 (Ms) Sumana Gupta
8. 4372 Govind Sharma
9. \* 4687 Utpal Das
10. 4566 A K Dutta
11. 3999 Joseph John
12. 4652 Animesh Biswas
13. 4478 Pradip Sircar
14. 4670 Baquer Mazhari
15. 4827 A K Chaturvedi
16. 4489 R K Bansal
17. 5003 S N Singh
18. 4776 Shyama P Das

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4771 Yatindra N Singh
2. 4988 Laxmidhar Behera
3. 4833 K S Venkatesh
4. 4938 K Vasudevan
5. 5013 A R Harish
6. 5113 S Sundar Kumar Iyer
7. 5012 Parthasarathi Sensarma
8. 5015 (Ms) Nandini Gupta

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5111 Adrish Banerjee
2. 5162 Ramprasad Potluri

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

3. 5293 Santanu K Mishra
4. 5295 Rajesh M Hegde
5. 5309 Kumar Vaibhav Srivastava
6. 5321 Naren Naik
7. 5326 Md Jaleel Akhtar
8. 5327 Nishchal Kumar Verma
9. 5338 Priya Ranjan
10. 5343 Aditya K Jagannatham
11. 5344 Bahniman Ghosh
12. 5357 Pradeep Kumar K
13. 5363 Saikat Chakrabarti

**HUMANITIES & SOCIAL SCIENCES**

**SANCTIONED STRENGTH : 31**  
**EXISTING STRENGTH : 31 + 2**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

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. 4375 B H Boruah
7. 4791 B K Pattnaik
8. 4729 G Neelakantan
9. 4488 Surajit Sinha
10. 4700 (Ms) Achla M Raina
11. 4702 (Ms) Shikha Dixit

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4773 Munmun Jha
2. 4957 (Ms) Suchitra Mathur
3. 5076 T Ravichandran
4. 5310 Praveen Kulshrestha
5. 4927 (Ms) Mini Chandran
6. 5075 P M Prasad
7. 5077 Amman Madan

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5181 Braj Bhusan

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

2. \*4976 Satyaki Roy
3. 5231 Kumar Ravi Priya
4. 5270 Sarani Saha
5. 5296 Somesh Kumar Mathur
6. 5237 A V Ravi Shankar Sarma
7. 5287 Anindita Chakrabarti
8. 5332 Vineet Sahu
9. 5333 Vimal Kumar
10. 5335 P B Bagad
11. 5353 Nirmalya Guha
12. 5354 (Ms) Chaithra Puttaswamy

**ASSISTANT PROFESSOR AGP-6000 (Contract) PB-3 (15600-39100)**

1. \*5183 (Ms) Koumudi Prakash Patil
2. 5331 (Mrs) Shatarupa Thakurta Roy
3. 5367 (Ms) Sohini Sahu

**INDUSTRIAL & MANAGEMENT ENGINEERING**

**SANCTIONED STRENGTH : 18**

**EXISTING STRENGTH : 13**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3432 A K Mittal
2. 3977 N K Sharma
3. 3792 Kripa Shanker
4. 4042 Arun P Sinha
5. 4525 R R K Sharma
6. 4961 Jayanta Chatterjee
7. 4701 Rahul Varman

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4865 (Ms) Veena Bansal
2. 4968 Anoop Singh
3. 5073 Raghu Nandan Sengupta
4. 5147 B V Phani

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5142 Peeyush Mehta

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

2. 5348 Deepu Philip

**MATERIALS & METALLURGICAL ENGINEERING**

**SANCTIONED STRENGTH : 32**  
**EXISTING STRENGTH : 20**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 1932 S P Mehrotra
2. 3845 R C Sharma
3. 3763 R K Dube
4. 4182 Brahma Deo
5. 4245 S C Koria
6. 4382 Dipak Mazumdar
7. 4565 Rajiv Shekhar
8. 4597 Sandeep Sangal
9. 4665 Barada K Mishra
10. 4790 Deepak Gupta
11. 4796 (Ms) Monica Katiyar

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4919 Anish Upadhyaya
2. 4977 Bikramjit Basu
3. 5034 Ashish Garg
4. 5072 Gouthama

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

1. 5269 Kallol Mondal
2. 5273 Krishanu Biswas
3. 5289 Anandh Subramaniam
4. 5297 Kantesh Balani
5. 5336 Vivek Verma

**MATHEMATICS & STATISTICS DEPARTMENT**

**SANCTIONED STRENGTH : 36**  
**EXISTING STRENGTH : 34**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3407 R K S Rathore
2. 3772 (Ms) Manjul Gupta
3. 3739 M K Kadalbajoo
4. 3773 Prawal Sinha
5. 3776 G P Kapoor
6. 4058 Peeyush Chandra
7. 4074 V Raghavendra



8. 3824 I D Dhariyal
9. 4290 (Ms) Shobha Madan
10. 4584 Debasis Kundu
11. 4449 Pravir Kumar Dutt
12. 4726 Neeraj Misra
13. 4707 B V Rathish Kumar
14. 4782 D Bahuguna
15. 4656 P Shunmugaraj
16. 4734 Arbind Kumar Lal

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4803 Alok Kumar Maloo
2. 4781 (Ms) Mohua Banerjee
3. 4822 G Santhanam
4. 4832 (Mrs) Rama Rawat
5. 4870 S Ghorai
6. 5029 Joydeep Dutta
7. 5153 Amit Mitra
8. 4537 (Ms) Aparna Dar
9. 4930 Swagato Kumar Ray
10. 5189 Parasar Mohanty
11. 5036 Shalabh

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5121 (Ms) Nandini Nilakantan

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

2. 5229 Sharmistha Mitra
3. 5235 Sudipta Dutta
4. 5291 Malay Banerjee
5. 5314 Sameer Laxman Chavan
6. 5361 T Muthukumar
7. 5370 Akash Anand

**MECHANICAL ENGINEERING**

**SANCTIONED STRENGTH : 42  
EXISTING STRENGTH : 35 + 3 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. \*3858 S G Dhande
2. 3862 M S Kalra
3. 4093 V K Jain
4. 4224 N N Kishore
5. 4286 Himanshu Hatwal
6. 4210 P M Dixit

7. 4398 K Muralidhar
8. 4560 Gautam Biswas
9. 4061 Prabhat Munshi
10. 4810 B P Pundir
11. 4452 S K Choudhury
12. 4459 N S Vyas
13. 4482 Vinayak Eswaran
14. 4650 Kalyanmoy Deb
15. 4288 P S Ghoshdastidar
16. 4788 Subrata Sarkar
17. 4801 P K Panigrahi

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4779 Bhaskar Dasgupta
2. 4823 N Venkata Reddy
3. 4890 Bishakh Bhattacharya
4. 4931 Avinash Kumar Agarwal
5. 5014 Sumit Basu
6. \*4928 Kamal K Kar
7. 5022 Ashish Datta
8. 5054 P Venkitanarayanan
9. 4956 Anupam Saxena
10. 5120 Sameer Khandekar

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. 5074 J Ramkumar
2. 5122 Arun Kumar Saha
3. \* 5129 Sivasambu Mahesh
4. 5199 Ishan Sharma

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

5. 5234 Shantanu Bhattacharya
6. 5267 Basant Lal Sharma
7. 5294 Malay Kumar Das
8. 5299 Panjaj Wahi
9. 5300 Anurag Gupta
10. 5358 Sovan Das
11. 5364 Binod Sreenivasan

**PHYSICS DEPARTMENT**

**SANCTIONED STRENGTH : 38**

**EXISTING STRENGTH : 31 + 4 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3980 R K Thareja
2. 4019 S D Joglekar

3. \*4064 Keshawa Shahi
4. 4254 Rajendra Prasad
5. 4642 Debashish Chowdhury
6. 4688 R C Budhani
7. \*4559 Y N Mohapatra
8. 4651 Avinash Singh
9. 4315 V N Kulkarni
10. 4527 Deshdeep Sahdev
11. 4504 V Ravishankar
12. 4552 Satyendra Kumar
13. 4708 Pankaj Jain
14. 4723 H C Verma
15. 4881 M K Harbola

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. 4653 K P Rajeev
2. 4692 Mahendra K Verma
3. \*4679 (Ms) Asima Pradhan
4. 4755 V Subrahmanyam
5. 4797 Gautam Sengupta
6. 5040 S Anantha Ramakrishna
7. 5041 Amit Dutta
8. 5117 Satyajit Banerjee
9. 4893 Harshwardhan Wanare
10. 5028 (Ms) Sutapa Mukherji
11. 5046 Anjan Kumar Gupta
12. 5102 Zakir Hossain
13. 5115 Tapobrata Sarkar
14. 5123 Sudeep Bhattacharjee

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. \*5167 Rajeev Gupta

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

2. 5284 Tarun Kanti Ghosh
3. 5290 Kaushik Bhattacharya
4. 5306 Dipankar Chakrabarti
5. 5355 Krishnacharya

**ASSISTANT PROFESSOR AGP-7000 Contract PB-3 (15600-39100) Ph D + 1 year experience**

1. 5275 S. Dhamodaran

**MATERIALS SCIENCE PROGRAMME**

**SANCTIONED STRENGTH : 06**

**EXISTING STRENGTH : 01 + 4 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. 3762 Jitendra Kumar
2. \*4064 Keshawa Shahi
3. \*4559 Y N Mohapatra

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. \*4928 Kamal K Kar

**ASSISTANT PROFESSOR AGP-9000 After 3 years experience PB-4 (37400-67000)**

1. \*5167 Rajeev Gupta

**LASER TECHNOLOGY PROGRAMME**

**SANCTIONED STRENGTH :**

**EXISTING STRENGTH : + 02 HT**

**PROFESSOR AGP-10500 PB-4 (37400-67000)**

1. \*4687 Utpal Das

**ASSOCIATE PROFESSOR AGP-9500 Direct Recruitment PB-4 (37400-67000)**

1. \*4679 (Ms) Asima Pradhan

**DESIGN PROGRAMME**

**SANCTIONED STRENGTH :**

**EXISTING STRENGTH : +2 HT**

**ASSISTANT PROFESSOR AGP-8000 Regular PB-3 (15600-39100)**

1. \*4976 Satyaki Roy

**ASSISTANT PROFESSOR AGP-6000 (Contract) PB-3 (15600-39100)**

1. \*5183 (Ms) Koumudi Prakash Patil

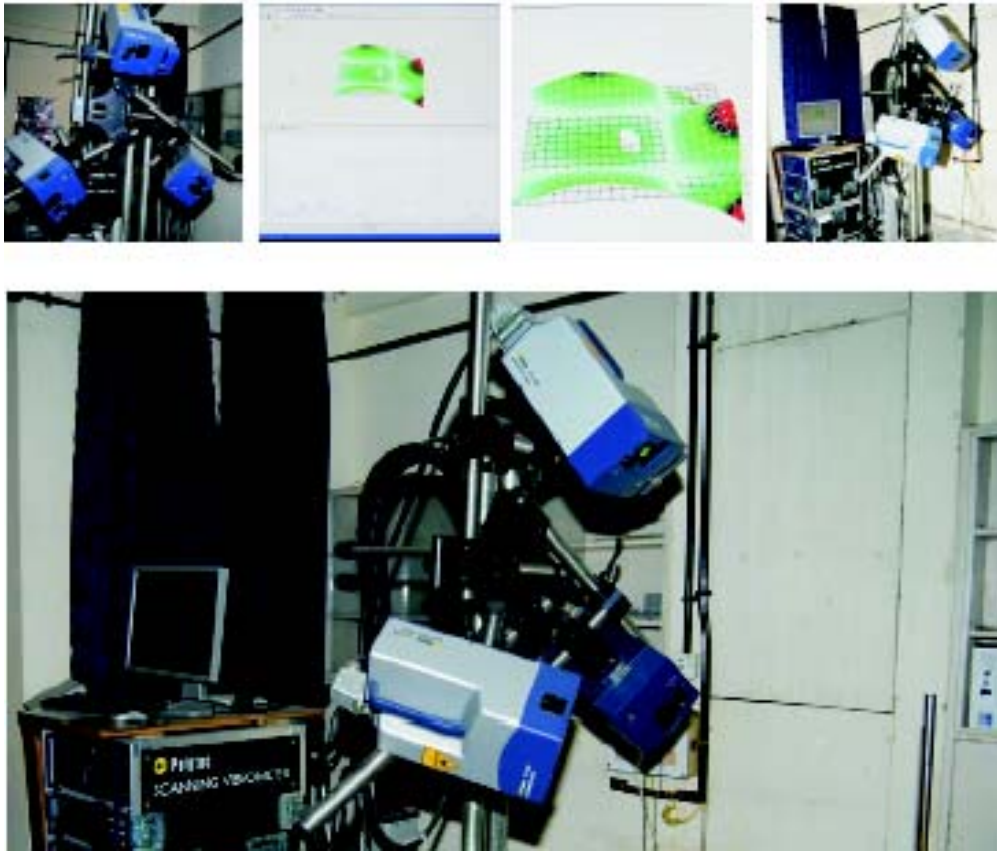
While Nuclear Engineering & Technology and Environmental Engineering Management interdisciplinary programmes offer separate postgraduate degrees for administrative purpose these are under the administrative control of Mechanical Engineering and Civil Engineering Departments respectively.

**\* Half Time**

**List of Academic Staff as on March 31, 2010**

<b>Sl No.</b>	<b>Name &amp; Designation (Ms/Shri/Dr)</b>	<b>Department/ Programme</b>
1.	4983 Alok Gupta, Research Engineer Gr-I	A E
2.	4616 Sushmit Sen, Senior Research Engineer	Robotics

3.	4824	Anjali V Kulkarni, Senior Research Engineer	Mechatronics
4.	5118	Ajay Misra, Senior Research Engineer	A E
5.	4078	Chaturi Singh, Senior Research Engineer	NWTF
6.	5278	Neeru Chhabra, Senior Research Engineer	E E
7.	4318	Amitabha Roy, Principal Research Engineer	E E
8.	4807	Brajesh Chandra, Principal Research Engineer	A E (NWTF)
9.	4056	V Raghuram, Principal Research Engineer	M E
10.	4777	Rajeev Gupta, Principal Research Engineer	A E (NWTF)
11.	4955	Raghuvir Singh Anand, Principal Research Engineer	E E
12.	4921	Aurobinda Chatterjee, Principal Research Engineer	M E
13.	4015	A L Bhavsar, Scientific Officer Gr.I	CHEM
14.	4815	K K Bajpai, Senior Scientific Officer	C E
15.	3780	Sanjay Gupta, Chief Scientific Officer	ACMS
16.	2028	H P S Parihar, Computer Engineer Gr.II	C C
17.	5285	Saikat Kira, Computer Engineer Gr II	C C
18.	4578	Md Aftab Alam, Senior Computer Engineer	C C
19.	4821	Brajesh Pande, Senior Computer Engineer	C C
20.	4820	Gopesh Tewari, Senior Computer Engineer	C C
21.	5019	Soma Sengupta, Senior Computer Engineer	C C
22.	4721	Md K Ahmad, Senior Computer Engineer	C C
23.	4920	Anju Tewari, Senior Computer Engineer	C C
24.	2037	Y D S Arya, Principal Computer Engineer	C C
25.	3868	K S Singh, Principal Computer Engineer	C C
26.	4817	Navpreet Singh, Principal Computer Engineer	C C
27.	4541	B M Shukla, Principal Computer Engineer	C C
28.	5030	Vipul Mathur, Aircraft Maintenance Engineer	A E
29.	5312	V D Shrivastava, Librarian	Kelkar Lib
30.	3969	Umed Singh, Assistant Librarian	Kelkar Lib
31.	3974	(Ms) Neelam Prasad, Assistant Librarian	Kelkar Lib
32.	5148	S K Vijaiand, Assistant Librarian	Kelkar Lib
33.	5157	(Ms) Maitrayee Mondal Ghosh, Assistant Librarian	Kelkar Lib



The 3D scanning laser Doppler vibrometer is a new and unique facility for making small amplitude and high frequency measurements, where displacements can take place in three dimensions. The scanning system is futuristic in the sense that it ensures whole-field measurement of the deflection of a test object. The vibrometer is located in the Smart Structures and Materials Laboratory of the Department of Mechanical Engineering.

## Academic Programmes

### EDUCATIONAL GOALS

Education in the Engineering stream 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 in this context should help to develop a knowledge industry and 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 instruction in various disciplines of science and engineering, both at undergraduate (UG) and postgraduate (PG) levels. These programmes are planned and implemented by the Academic Senate of the Institute. Micro-management and these programmes is carried out by 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, Biological Sciences & Bio Engg., Chemical, Civil, Computer Science, Electrical, Metallurgy and Mechanical Engineering. We also have integrated M.Sc. programs in Physics, Chemistry, Mathematics, Statistics and Economics.

#### **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 entrance

examination known as JAM. These programmes have been largely responsible for the scientific manpower in Indian research institutes and universities.

#### **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.

#### **B.Tech.-M.Tech.**

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**

We have introduced two interdisciplinary programs, namely, 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.

#### **Ph.D. (Dual Degree)**

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, the admission is through JAM, it also allows their M.Sc. students to continue for a Ph.D. degree.

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



### 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 Nanotechnology, 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, Quantum Computation 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 with effect from 01 / 12 / 2009 to 31 / 12 / 2011 for a tenure of 2 years

The following is the composition of the CDMC:

Prof. R K Dube	(MSE)	Chairman
Prof. Amit Prashant	(CE)	Co Chairman
Prof. Mainak Choudhary	(CSE)	Member
Prof. L Krishnan	(HSS)	''
Prof. Alope Datta	(EE)	''
Prof. D Kundu	(MTH)	''
Prof. V Shankar	(CHE)	''
Prof. C S Upadhyay	(AE)	''
Prof. Ravi Shankar	(PHY)	''

### 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 is providing a strong ground in basic sciences, engineering as well as in various emerging areas of Economics.

The knowledge of Economics and use of Technology for creation of wealth are necessary preconditions for breaking the chain 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, and their Hon'ble Prime Minister is himself an eminent economist.

Today's India needs trained mind that perfect blend Technology and Economics. The Integrated MSc program in Economics is a step in that direction. 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 proper 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 strong 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 walls razed cross 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 double-sided 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 from 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 2009-2010 were made by the Joint Admission Committee for all IITs and IT-BHU.

The Joint Entrance Examination (JEE) -2009 was held on April 12, 2009. The following offers of admission were made from IIT Kanpur:

Department/Disciplines	Total Number of Candidates-Direct Admission								
	Programmes	JEE-2009					Preparatory Course-2008		Total
		Gen	SC	ST	OBC	PH	SC	ST	
<b>B.Tech.</b>									
Aerospace Engg.	19	05	02	06		-	02	34	
BSBE	19	03	-	06		03	-	31	
Chemical Engg.	29	08	-	10		-	03	50	
Civil Engg.	39	09	05	14		-	01	68	
Computer Sc. & Engg.	26	07	03	08		-	-	44	
Electrical Engg.	50	13	06	16		-	-	85	
Mechanical Engg.	37	08	05	12		-	-	62	
Materials & Met. Engg.	46	11	-	14		04	02	77	
<b>M.Sc. Integrated</b>			-						

Chemistry	15	-	-	03		-	-	18
Mathematics & Scientific Computing	24	02	-	08		03		37
Economics	22	01	-	02		02		27
Physics	13	01	-	04		01		19
<b>Total</b>	<b>339</b>	<b>68</b>	<b>21</b>	<b>103</b>		<b>13</b>	<b>08</b>	<b>552</b>
<b>B.Tech.-M.Tech. (Dual Degree)</b>								
Aerospace Engg.	05	01	01	02			-	09
Chemical Engg.	08	02	-	02			01	13
Civil Engg.	12	03	-	03			01	19
Computer Sc. & Engg.	20	05	03	05			-	33
Electrical Engg.	16	04	02	05			-	27
Mechanical Engg.	13	03	02	03			-	21
<b>Total</b>	<b>74</b>	<b>18</b>	<b>08</b>	<b>20</b>			<b>02</b>	<b>122</b>

### Two-Year M.Sc. Programme

Admissions to the 2-year M.Sc. and M.Sc.-Ph.D. (Dual Degree) programmes were made on the basis of JAM performance. Admission statistics for the M.Sc. (2 year) and M.Sc.-Ph.D. (Dual Degree) Physics programmes during 2009-2010 are as under:

S. No.	Department/Group	Numbers of Admission Offered	Actual Number of Students Joined
<b>M.Sc. (2-year)</b>			
1	Chemistry	33	33
2	Mathematics	31	30
3	Physics	24	23
4	Statistics	27	25
<b>Total</b>		<b>115</b>	<b>111</b>
<b>M.Sc. - Ph. D. (Dual Degree)</b>			
1	Physics	11	10
<b>Total</b>		<b>11</b>	<b>10</b>

### Post Graduate

The number of students admitted to the Postgraduate Programme in the First and Second Semesters 2009-2010 is given below:

### ENGINEERING

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Aerospace Engg.	31	09	40		01	01
B.S.B.E.	10	07	17		11	11
Chemical Engg.	25	05	30		01	01
Civil Engg.	57	07	64		01	01

Computer Sc. & Engg.	39	03	42		04	04
Design (M.Des.)	20	-	20		-	-
Electrical Engg.	65	13	78		12	12
Mechanical Engg.	83	11	94		02	02
Materials & Met. Engg.	26	09	35		05	05
I.M.E.	16	04	20		01	01
Laser Technology	09	-	09		-	-
Material Science	12	04	16		01	01
N.E.T.	12	02	14		-	-
E.E.M.	17	-	17		-	-
M.B.A. (IME)	42	-	42		-	-
<b>Total</b>	<b>464</b>	<b>74</b>	<b>538</b>		<b>39</b>	<b>39</b>

**SCIENCES**

Department / Group	First Semester	Second Semester
	Ph.D.	Ph.D.
Chemistry	28	13
Mathematics	09	01
Physics	18	06
M.Sc.-Ph.D. Dual Degree in Physics	-	02
H.S.S.	05	01
<b>Total</b>	<b>60</b>	<b>23</b>
<b>Grand Total</b>	<b>134</b>	<b>62</b>

The total department/programme wise strength of the Post Graduate students during the year 2009-2010 is given below:

**ENGINEERING**

Department / Group	First Semester			Second Semester		
	M.Tech.	Ph.D.	Total	M.Tech.	Ph.D.	Total
Aerospace Engg.	55	32	87	49	31	80
B.S.B.E.	22	60	82	20	67	87
Chemical Engg.	68	47	115	59	47	106
Civil Engg.	98	40	138	88	37	125
Computer Sc. & Engg.	78	19	97	75	23	98
Design (M.Des.)	34	-	34	34	-	34
Electrical Engg.	128	57	185	111	65	176
Mechanical Engg.	145	66	211	132	63	195
Materials & Met. Engg.	41	42	83	35	43	78
I.M.E.	29	23	52	28	19	47
Laser Technology	15	-	15	14	-	14
Material Science	25	13	38	21	14	35

N.E.T.	21	04	25	18	04	22
E.E.M.	32	-	32	24	-	24
M.B.A. (IME)	95	-	95	95	-	95
<b>Total</b>	<b>886</b>	<b>403</b>	<b>1289</b>	<b>803</b>	<b>413</b>	<b>1216</b>

## SCIENCES

Department / Group	First Semester	Second Semester
	Ph.D.	Ph.D.
Chemistry	186	179
Mathematics & Statistics	65	62
Physics	64	62
M.Sc.-Ph.D. Dual Degree in Physics	34	34
H.S.S.	44	42
<b>Total</b>	<b>393</b>	<b>379</b>
<b>Grand Total</b>	<b>796</b>	<b>792</b>

Strength of Undergraduate and Postgraduate Students during 2009 - 2010 - 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	112	49	-	-	55	32		248
B.S.B.E.	104	-	-	-	22	60		186
Chemical	173	63	-	-	68	47		351
Chemistry	58	-	65	-	-	186		309
Civil	240	80	-	-	98	40		458
C.S.E.	168	145	-	-	78	19		410
Economics	95	-	-	-	-	-		95
Design (M.Des.)	-	-	-	-	34	-		34
E.E.	292	128	-	-	128	57		605
H.S.S.	-	-	-	-	-	44		44
Math	152	-	57	-	-	65		274
Stat	-	-	46	-	-	-		46
M.E.	210	101	-	-	145	66		522
M.S.E.	260	-	-	-	41	42		343
Physics	86	-	47	21	-	64	34	252
I.M.E.	-	-	-	-	29	23		52
Laser Tech.	-	-	-	-	15	-		15
M.S.P.	-	-	-	-	25	13		38
N.E.T.	-	-	-	-	21	04		25

E.E.M.	-	-	-	-	32	-		32
DIIT (EE)	-	-	-	-	-	-		-
M.B.A. (I.M.E.)	-	-	-	-	95	-		95
<b>Total</b>	<b>1950</b>	<b>566</b>	<b>215</b>	<b>21</b>	<b>886</b>	<b>762</b>	<b>34</b>	<b>4434</b>

## GRADUATION

During the year 2009-2010, 1163 students completed the requirements for the award of B.Tech., M.Sc., DIIT, MBA, M.Tech., and Ph.D. degrees as detailed below:

(2 yr. & 5 yr.)	B.Tech.	313	M.Sc.
	146		
	B.Tech.-M.Tech. (Dual)	117	
	MBA	52	
	M.Tech.	386	
	M.Des.	18	
	Ph.D.	131	
	<b>Total:</b>	<b>1163</b>	

## COURSES OFFERED

The following Table gives a picture of the courses offered during 2009-2010 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	30	26	01	57
Aerospace Engineering	16	21	02	39
B. S. B. E.	11	11	NIL	22
Chemical Engineering	17	26	03	46
Civil Engineering	25	26	03	54
Computer Science & Engineering	22	24	04	50
Economics	12	10		22
Design	02	01		03
Electrical Engineering	28	35		63
Mechanical Engineering	29	36		65
Materials & Metallurgical Engineering	15	18		33
Chemistry	21	24	02	47
Mathematics	28	34		62
Physics	33	32		65



Humanities & Social Sciences	13	19		32
Industrial & Management Engineering	07	08		15
Nuclear Engineering & Technology	03	01		04
Materials Science Program	01	02		03
Laser Technology Program	01	NIL		01
CPA	02	01		03

#### POST GRADUATE LEVEL

Core Curriculum / Department Courses	First Sem.	Second Sem.	Total
Aerospace Engineering	12	14	26
Chemical Engineering	09	12	21
Civil Engineering	18	17	35
Computer Science & Engineering	15	12	27
Design (M.Des.)	05	02	07
Electrical Engineering	21	22	43
Environmental Engg. & Management	03	03	06
Mechanical Engineering	22	29	53
Materials & Metallurgical Engineering	08	07	15
Chemistry	12	08	20
Mathematics / Statistics	11	10	21
Physics	11	12	23
Humanities & Social Sciences	14	13	27
Industrial & Management Engineering	05	06	11
Materials Science Program	04	04	08
Nuclear Engineering & Technology	03	04	07
Laser Technology Program	02	02	04
Biological Science & Bio Engg.	11	10	21
M.B.A.	24	15	39

#### 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 2009-2010 (upto July, 2010)

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	664	573	499	524	214	2474
2	Students strength at the beginning of the 2 <sup>nd</sup> semester	664	563	495	520	201	2443
3	Students joined in 2 <sup>nd</sup> semester on migration	-	-	-	-	-	-

4	Number of students withdrawn or on leave on medical ground in 1 <sup>st</sup> and 2 <sup>nd</sup> semesters	-	-	-	-	-	-
5	Number of students graduated	-	-	-	247	243	490
6	Number of students dismissed due to poor performance in 1 <sup>st</sup> and 2 <sup>nd</sup> semester	0	13	09	09	15	46
		07	06	02	05	08	28

The following statement shows promotion and detention of M.Sc.(2-year) and M.Sc.(Dual Degree) students in the academic year 2009-2010 (upto July, 2010)

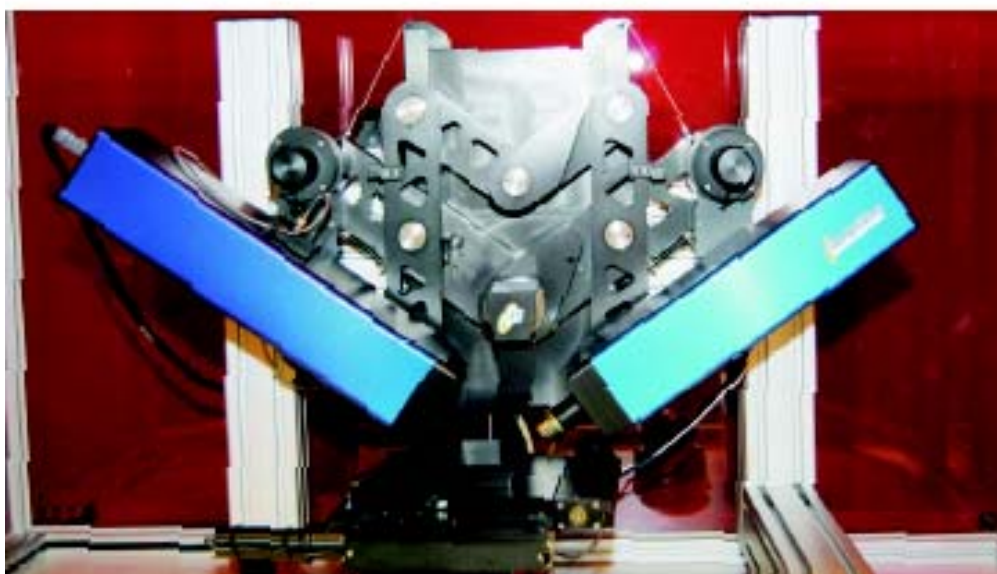
S. No.	Contents	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Total
1	Students strength at the beginning of the session	121	97	218
2	Students strength at the beginning of the 2 <sup>nd</sup> Sem.	117	96	113
3	Number of students dismissed in 1 <sup>st</sup> semester	01	03	04
	Number of students dismissed in 2 <sup>nd</sup> semester	06	02	08
4	Number of students graduated in 1 <sup>st</sup> semester	-	08	08
	Number of students graduated in 2 <sup>nd</sup> semester	-	78	78
5	Number of students dismissed in due to continued absence from the programme	-	-	-

Following is the department-wise break-up of students who were awarded the degree at XLII Convocation held on 03-07-2010. Dr. Manmohan Singh, Honb'le Prime Minister of India was the Chief Guest at the Convocation:

S No	DEPT	B.Tech h.	B.Tech-M.Tech (Dual Degree)	M.S c. (5Y R)	M.S c. (2Y R)	TOTAL	MB A	M.D es	M.Tech	Ph. D.	TOTAL	GRAND (UG+ PG)
1	AERO ENGG.	19	12	-	-	31	-	-	22	06	28	59
2	BSBE	21	-	-	-	21	-	-	07	06	13	34
3	CHEM. ENGG.	35	16	-	-	51	-	-	46	03	49	100
4	CHEMISTRY	-	-	08	31	39	-	-	-	38	38	77
5	CIVIL ENGG.	46	08	-	-	54	-	-	37	05	42	96
6	COMP.Sc.& ENGG.	36	23	-	-	59	-	-	49	-	49	108

7	DESIGN PROG.	-	-	-	-	-	-	18	-	-	<b>18</b>	<b>18</b>
8	ECONOMICS	-	-	15	-	<b>15</b>	-	-	-	-	-	<b>15</b>
9	ELECT. ENGG.	68	30	-	-	<b>98</b>	-	-	95	12	<b>107</b>	<b>205</b>
10	ENV.ENGG.& MGMT	-	-	-	-	-	-	-	15	-	<b>15</b>	<b>15</b>
11	HUMANITIES & SOC. SCs.	-	-	-	-	-	-	-	-	12	<b>12</b>	<b>12</b>
12	INDUSTRIAL & MGMT. ENGG,	-	-	-	-	-	52	-	18	06	<b>76</b>	<b>76</b>
13	LASER TECH.	-	-	-	-	-	-	-	03	-	<b>03</b>	<b>03</b>
14	MATERIALS & MET. ENGG.	51	-	-	-	<b>51</b>	-	-	20	05	<b>25</b>	<b>76</b>
15	MATERIALS Sc.	-	-	-	-	-	-	-	15	-	<b>15</b>	<b>15</b>
16	MATHEMATI CS	-	-	-	19	<b>19</b>	-	-	-	13	<b>13</b>	<b>32</b>
17	MATHS & SC COMPUTING	-	-	23	-	<b>23</b>	-	-	-	-	-	<b>23</b>
18	MECHANICA L ENGG.	37	28	-	-	<b>65</b>	-	-	49	12	<b>61</b>	<b>126</b>
19	NUCLEAR ENGG. & TECHNOLOG	-	-	-	-	-	-	-	10	-	<b>10</b>	<b>10</b>

	Y											
20	PHYSICS	-	-	14	15	<b>29</b>	-	-	-	13	<b>13</b>	<b>42</b>
21	STATISTICS	-	-	-	21	<b>21</b>	-	-	-	-	-	<b>21</b>
	TOTAL	313	117	60	86	<b>576</b>	52	18	386	131	<b>587</b>	<b>1163</b>



The nanoscience unit, located within the Department of Chemical Engineering is an absolutely state-of-the-art facility with resources for soft matter nanoscience and nanotechnology. Here, we innovate new techniques of fabrication based on soft lithography, self-assembly and self-organization. Research areas include mesoscale structures, patterning, and properties, with emphasis on soft materials and thin films. Shown above is a spectroscopic ellipsometer that measures thin film thickness using optical techniques.

## Research and Development

Over the past years, the Institute has proactively embarked on collaborative-oriented R&D projects involving joint participation of industries, R&D labs and government organizations. The research profile of the Institute is continually growing every year. As a result, the Institute is well-recognized as one of the centers of academic excellence.

During 2009-2010, 133 sponsored projects worth Rs. 6943 lakh and 100 consultancy projects of value Rs. 747 lakh were undertaken by the faculty and research engineers/scientists of the Institute, respectively.

Our faculty members have published around 818 research papers in reputed national and international journals. 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.

Details of some of the major projects sanctioned during the year 2009-10 are as follows:

### National Projects:

Some of the major sponsored projects undertaken by the Institute include those funded by DST, DBT, DIT, and MOES.

- **Setting up of a supercomputing facility:** High Performance Computing (HPC) facility

Computational Science and Engineering has undergone revolutionary changes over the past two decades. HPCs have brought about a paradigm shift in the very nature of scientific investigations in the global scenario. Although, India is recognized as one of the leaders in information technology, its capacity for High Performance Computing falls below the optimum level. IIT Kanpur has had a long tradition of computer-aided teaching and research. It aspires to provide leadership in HPC via a two-pronged approach. The Institute would like to carry out cutting edge research in computational science and engineering by utilizing the best-in-class HPC hardware and tools. Nevertheless, it is committed to preparing high quality human resource for the rest of the nation. This requires a constant modernization of the HPC facility.

The Institute is in the process of upgrading its HPC infrastructure to a state-of-the-art facility with generous support from the DST. The main HPC system will be a Linux cluster with a master node, 3 management nodes and 256 compute nodes, 40 Gbps QDR infiniband interconnect and 100TB usable storage. Each node will have dual Nehalem quadcore processors. Besides this main system, the Center will have smaller clusters and servers for developing and testing parallel codes. These systems will also be available for applications not amenable to parallelism and which require serial computing. The smaller systems will be integrated with the main HPC facility for optimizing it, including its storage and high-speed network. This integrated facility consisting of 372 nodes and a projected delivered

performance of about 30 TF is expected to be the best HPC facility, among all academic institutions in the country.

The HPC facility is expected to provide a major boost to our research in computational science and engineering. The Centre will help train new generation of scientists and engineers in advanced computing, develop sharable application software for parallel platforms and motivate young minds to take up challenging problems in computation. The facility will provide the much needed opportunity to attempt grand challenging problems in science and engineering. Some examples are computational fluid dynamics, environmental modeling, ab initio molecular modeling of chemical processes, biomechanics. Broadly, the research effort of the facility can be classified under three categories: (a) Computational mechanics, (b) Computational materials science, and (c) Computational chemistry and biology. It is envisaged that the facility will throw open newer research areas as it develops. The contributions will be from researchers from both within and outside IIT Kanpur. Inter-disciplinary and inter-institutional research using cutting edge computational technologies will be strongly encouraged. To be supplied by Hewlett-Packard, HPC is scheduled to arrive on campus in June. Once the HPC arrives, IITK will find a place in the TOP 500 HPC list with its rank at 369.

- **India-UK Advanced Technology Center (IU-ATC) of Excellence in Next Generation Network Systems and Services**

The project seeks to study the feasibility of transmitting high data-rates through frequency selective fading channels. To this end, Orthogonal Frequency Division Multiplexing (OFDM) would be employed to combat the effects of fading and Inter Symbol Interference (ISI). The other issues that would be addressed are the reduction of the peak-to-average power ratio (PAPR), improving the reliability of transmission using turbo-coding and synchronization. The novelty of this project lies in developing the transmitter and receiver algorithms in discrete-time.

- **Biometric System Development**

The biometric group of the Institute is working towards developing an indigenous multimodal biometric system. Accordingly the system fuses five biometric traits viz. Face, Fingerprint, Ear, Signature and Iris and works well under controlled environment. Currently, the group is engaged with a DIT funded project titled Biometric System Development to build upon the existing system by minimizing its limitations and by incorporating some new traits. Further, it is developing a face recognition system which can work for the non-digital face images.

- **Engineering Articular Cartilage: A Novel Interdisciplinary Approach**

The Project titled is the most prevalent disease in India affecting more than 65% of the elderly (60 years and above) population and has no cure. Since OA is a degenerative disease of a tissue called articular cartilage which is vascular, drug delivery as a treatment option is not viable for this disease. The most attractive remedial approach seems to be tissue

engineering of articular cartilage in the laboratory from stem cells of patients and implanting that engineered tissue on to the patient. To achieve this, we need to precisely understand the etiology of this tissue which is unique developmentally, chemically and responsive to mechanical forces/stimuli. Therefore, we are currently trying to investigate the exact genetic make-up of articular cartilage and the nature of mechanical forces this tissue experiences. We would eventually like to provide these extrinsic and intrinsic cues to stem cells impregnated in an engineered biomaterial mimicking natural chemical environment of articular cartilage.

- **River dynamics & flood risk evaluation of the kosi river, north bihar plains: an integrated approach**

The project funded by the Ministry of Earth Sciences envisages the use of an integrated approach for understanding river dynamics and flood risk evaluation of the Kosi river in north Bihar. The river created havoc last year when a large scale (~120 km) avulsion took place following a breach in the eastern afflux bund at Kusaha in Nepal. This resulted in inundation of very large areas. This project aims to investigate the causative factors of frequent avulsion in the Kosi river using geomorphological approaches for developing a process-based understanding of avulsion and flooding coupled with hydraulic and mathematical modeling. Modern approaches such as high-resolution remote sensing data and kinematic GPS based topographic mapping will be employed to generate geomorphic evaluation of the terrain and to understand the avulsion mechanisms and controlling factors. Results of this project would lead to developing plans for an integrated flood management programme in this region.

**International projects:**

- **High lift aerodynamics project:**

This project seeks to enhance understanding of high lift flow physics and to obtain highly accurate and detailed measurements for two-dimensional high-lift geometry. Design of high lift systems is a challenging task both from the vantage of performance and noise generation. Fundamental understanding of the associated complex flow physics is essential for effective designing of high Lift systems.

- **Agrotagger**

A powerful way to increase the effectiveness of search is to search the metadata of the documents. But metadata or data about data is difficult to create. This project is about automatically creating metadata for agriculture documents - specifically assigning keywords. The keywords are supposed from a controlled vocabulary called Agrovoc, a standard from FAO. We identified a sub-set of Agrovoc, called Agrotags based on their suitability for tagging. We developed an algorithm which can, given an agriculture document, compute a list of keywords and their probabilities to serve as candidate keywords. This has been deployed as a web-service.



**Patents filed by the faculty during the financial year 2009-2010:**

1. Rotatory abrasive flow finishing process for finishing and texturing of internal and external surfaces of hard and composite materials and an apparatus therefore.
2. A nano polymer coating and a process for coating the same on stent system.
3. Process for synthesis of sonicated hierarchal web of carbon micro-nano-fiber and applications thereof.
4. A heat recuperating micro combustor.
5. Low emission energy efficient gas burner.
6. Macroporous polymeric matrix and process of preparation thereof.
7. A data compression method adaptable to static video surveillance systems.
8. A Lithography based "two steps" reservoir in an electrolyte insulator semiconductor device.
9. Superior and cost effective grease from polyethylene waste.
10. Synthesis of nanocrystalline titanium carbide (TiC) powder by reaction milling in a Dual-drive mill.
11. Image-based structural characterization of fibrous materials.
12. Energy saving electric lamps using straight MWCNT coated Tungsten Filament.
13. Alignment of Carbon Nanofibers on Glass fiber through Chemical Vapour.
14. In-situ and Controlled Growth of Hydroxyapatite Polyetheretherketone.
15. Flexible temperature sensor and sensor array.

**Major Multi-disciplinary Facilities Added during the financial year 2009-2010:**

1. **Facilities under CARE Scheme of IITK:** The Institute is adding several major infrastructural facilities for carrying out multidisciplinary R&D activities. Under CARE, a (Circular Dichroism) CD-spectrometer facility, Integration of excimer laser with the existing microbeam facility, establishment of a multipurpose ultra-centrifugation facility, high temperature electrochemical test station, and Dielectric probe kit for determination of electromagnetic properties over a wide band of frequencies have been funded.
2. Major equipment funded by the Institute include X-ray fluorescence spectrometer, Laser-induced incandescence for real-time particulate emissions measurement, measurement facility for flight of insects and birds and in general, for low Reynolds number flows, I (intensified) - CCD camera for a laser induced fluorescence spectroscopy facility, Femtosecond laser spectroscopy setup, Fluorescence microscope attached with Digital bacteria colony counter, Instrumented indentation unit, and Table top scanning electron microscope.

### Memorandum of Understanding

During the year 2009-10, IIT Kanpur strengthened its relations with many national and international institutes and organizations through research collaborations and signed several Memoranda of Understanding. During the year, the following institutes/universities/organizations have joined hands with IIT Kanpur for the purpose of research work in the diverse fields of science and technology. Some of such organizations are:

1. As part of National Knowledge Network that envisages better mentoring of the new IITs by the established ones, an MoU has been signed with the National Informatics Center Services Incorporated (NICSI) and National Informatics Center (NIC). Three virtual classrooms shall be set up at the Institute. Lectures would be delivered enabling two-way interactions using this infrastructure.
2. The Government of Malaysia is creating a Centre of Engineering Excellence at Penang with Universiti Sains Malasia (USM) and IIT Kanpur as partners. The goal of the Centre is to provide consultancy services to the multinational companies in the Penang area. In addition, the centre will organize short term courses and training programs for the engineers of the local industry. A Malaysian financial institution, Khazanah will provide the initial funding for infrastructure including the buildings. It will also provide funding for shared services like equipment and software.
3. The University of Texas at San Antonio for exchange of faculty and staff to participate in a variety of teaching and/or research activities and professional development; exchange of graduate students for study and/or research; organize symposia, conferences, short courses and meetings on research issues; carry out joint research and continuing education programs; and exchange information pertaining to developments in teaching, student development, and research.
4. Department of Panchayati Raj, Government of Uttar Pradesh for computerization of various locations enumerated in the MoU in terms of development application software, procurement of computer hardware along with their functioning, sustainability and AMC.
5. National Agricultural Innovation Project (NAIP), Bangalore for attaining the objective as set out in the project "Potential of RNA interference (RNAi) in insect pest management. A model in silencing genes specific to tomato fruit borer, *Helicoverpa armigera* Hubner (Noctuidae; Lepidoptera)".
6. Central Manufacturing Technology Institute, Bangalore to carry out feasibility study and development of prototype model of Abrasive Flow Machine (AFM) for the super finishing of bores in a phased manner.
7. National Academy of Defence Production, Nagpur to conduct training programme in Manufacturing Management.
8. Research Design & Standards Organisation, Lucknow for Wireless Coach Information Display System (WCIDS) for Indian Railways.
9. National Informatics Center (NIC), New Delhi, and National Informatics Center Services Incorporated (NICSI), New Delhi to chair the Committee for fingerprints/biometrics in an honorary capacity. The Chairman shall ensure that the Committee examines, evaluates and recommends the standards.

10. Indian Institute of Technology Kharagpur, Kharagpur for developing suitable Pedagogical methods for various classes, intellectual calibers and e-learning.
11. Forum for Regulators, New Delhi to conduct capacity building/training programme for officers of Regulatory Commissions.
12. Research Designs and Standards Organisation, Lucknow for MEMS based wireless ultraportable track monitoring system.
13. University of Nottingham, UK and Indian Institute of Management Bangalore, Bangalore to collaborate on a research project entitled RCUK\_DST India Science Bridge BioPharm 2020 Entrepreneurial Opportunities for Indian/UK Scientists in the Pharmaceutical and Biotechnology Industries.
14. Food and Agriculture Organisation of the United Nations, Italy for Prototype of the multilingual AgroTagger/ AgroCalais Service as the basis for multilingual search.
15. Department of Science & Technology, New Delhi, Infotech Enterprises, Hyderabad, Indian Oil Corporation, Mumbai, Hindustan Petroleum Corporation, Mumbai, Council of Scientific and Industrial Research, New Delhi, and Indian Institute of Science, Bangalore for Application of Biofuel for Aviation.
16. Research Design & Standards Organisation, Lucknow for unmanned level crossing gate warning system for Indian Railways.
17. Central Power Research Institute, Bangalore for wide area measurement and control for improving observability and stability of power systems.
18. Central Power Research Institute, Bangalore for performance analysis and trading of wind power generation in emerging power system.
19. Council of Scientific and Industrial Research, New Delhi to understand the reactivity of the formyl group for the Baylis-Hillman reaction in heterocyclic aldehydes.
20. Research Design & Standards Organisation, Lucknow for terms and conditions of IPR sharing

During the year 2009-10, Memoranda of Understanding have also been signed with many companies such as:

1. World Wide Fund India, New Delhi for collation of water quality and pollution data of the river Ganga in the Gangotri - Kanpur stretch.
2. M/S Electronic Corporation of India, Hyderabad and Interra Information Technologies (India) Pvt. Ltd., New Delhi for level-2 automation for LD converters of steel melt shop using Model Building software of IITK.
3. GE India Technology Center Pvt. Ltd., Bangalore for Design and simulation of a STATCOM.
4. IHI Corporation, Japan for Development of outer-rotor surface permanent magnet synchronous motor using electromagnetic analysis.
5. Protista Biotechnology AB, Lund, Sweden for development of Supermacroporous cryogel materials for biomedical applications.
6. Qualcomm Incorporated, USA for Qualcomm-IITK Research Project
7. The Intel Higher Education Program is a worldwide collaboration between Intel and more than 150 universities in 34 countries. In India, this program will collaborate with IIT Kanpur to form the first Focus School for Intel in India. This programme seeks to

encourage academia-industry collaboration and to support the development of a higher educational ecosystem.

8. Manipal Press Ltd. (MPL), Manipal for Starting printable RFID project for MPL, collaboration through participation of two MPL personnel in RFID project.
9. Shell Technology India Private Limited, Bangalore for Engine tests on Biodiesel from Jatropha.
10. Corus Technology BV, The Netherlands to cooperate in the development of coated metal substrates for use in for instance organic and polymer solar cells and organize and polymer light emitting diodes.
11. Aramco Overseas Company B.V., Netherlands, Process Intensification Consultants, Hyderabad for testing of process intensification technology.
12. Pratt & Whitney Canada Corporation, Canada for development and characterization of Slinger Combustor
13. Infotech Enterprises, Hyderabad; Indian Oil Corporation, Mumbai; Hindustan Petroleum Corporation, Mumbai; Council of Scientific and Industrial Research, New Delhi; Indian Institute of Science, Bangalore for collaboration agreement among the collaborators for application of Biofuel for Aviation.
14. Electronica Machine Tools Limited (EMTL), Pune for developing the Electrochemical Machining process and implementing it for die sinking ECM machine and wire ECM machines.
15. North Eastern Hill University (NEHU), Shillong for Microbe implementation at NEHU.
16. Mercados Energy Markets India Pvt. Ltd. for developing a database that monitors power projects and power sector utility operations in India. Through this agreement, responsibilities between the two parties are identified. The work is done for planning commission.
17. Rashtriya Ispat Nigam Limited, Visakhapatnam for R&D project on Lance design for optimal performance of BOF- VSP in terms of Slag-Metal reaction, Heat Transfer to lance & lance skulling.

A list of major sponsored and consultancy projects sanctioned during the financial year 2009-2010 is provided below.

### **Sponsored Projects:**

#### **A. National Projects:**

1. INDIA-UK SCIENCE BRIDGE: BIOPHARM 2020- ENTREPRENURIAL OPPORTUNITIES FOR INDIAN & UK SCIENTISTS IN THE PHARMACEUTICAL AND BIOTECHNOLOGICAL INDUSTRIES, funded by ADA, Total cost Rs. 1564000
2. DEVELOPMENT, VALIDATION AND TESTING OF KINEMATIC CONTROL FOR ALGORITHM FOR ROVER MOTION ON AN UNEVEN TERRAIN, funded by ADA, Total cost Rs. 510000
3. SYNTHESIS AND CO-C BOND REACTIVITY IN COBALOXIMES: CYCLOADDITIONS & MOLECULAR BOX ASSEMBLIES WITH TWO AND MORE COBALT SYSTEMS, funded by ADRDE, Total cost Rs. 996000

4. SWARNAJAYANTI FELLOWSHIP AND PROJECT, funded by ADRDE, Total cost Rs. 996000
5. MECHANISM OF MOBILIZATION OF ARSENIC INTO THE GROUND WATERS OF KANPUR DISTRICT AND REMOVAL OF ARSENIC USING CHITOSAN COATED SAND, funded by ADRDE, Total cost Rs. 960000
6. CONTROL OF FRICTION INDUCED VIBRATION BY TIME-DELAYED FEEDBACK, funded by ADRDE, Total cost Rs. 996000
7. SYNTHESIS OF MONOCYCLIC AND BICYCLIE AZASUGAR AS GLYCOSIDASE INHIBITORS CARBOHYDRATE AND TARTARIC ACID DERIVED CHIRAL SYNTHONS, funded by ADRDE, Total cost Rs. 984000
8. CHARACTERIZATION AND CORROSION STUDIES OF MG-LI ALLOYS, funded by ADRDE, Total cost Rs. 972000
9. TRIARYLBISMUTHS AS A NEW CATALYTIC MULTI-COUPPLING ATOM-EFFICIENT ORGANOMETALLIC REAGENTS FOR GREEN CHEMISTRY: DEVELOPMENT OF NEW METAL CATALYZED REACTIONS AND PROTOCOLS USING ,SYNTHESIS, funded by ADRDE, Total cost Rs. 948000
10. ACCELERATED LIFE TESTING, funded by ADRDE, Total cost Rs. 996000
11. BENCHMARKING OF INFORMATION AND COMMUNICATION TECHNOLOGY MODULES IN PHYSICS AND CHEMISTRY, funded by AOARD, Total cost Rs. 1214750
12. DEVELOPMENT OF OPEN SOURCE LMS WITH ERP FUNCTIONS, funded by ARDB, Total cost Rs. 1391700
13. DEVELOPMENT OF A 3-D PARALLELIZED DIRECT SIMULATION MONTE CARLO (DSMC) CODE FOR SIMULATION OF RAREFIELD HEPERSONIC FLOW OVER RE-ENTRY VEHICLES, funded by BITCOE, Total cost Rs. 1408500
14. DESIGN, SIMULATION AND CHARACTERIZATION OF PNEUMATIC SPRAY NOZZLE, funded by BITCOE, Total cost Rs. 1062000
15. SUPPLY OF INSTRUMENTATION FOR AEROSTAT FOR WIND TUNNEL TESTING, funded by BITCOE, Total cost Rs. 1035000
16. DEVELOPMENT OF TEST FACILITY FOR FIRE PROPAGATION AND ASSOCIATED THERMAL HYDRAULIC ASPECTS IN MULTIPLE COMPARTMENTS, funded by BRFST, Total cost Rs. 1387000
17. SYNTHESIS AND MEASUREMENT OF THIRD ORDER OPTICAL NON LINEARITY OF ORGANIC AND ORGANOMETALLIC COMPOUNDS, funded by BRNS, Total cost Rs. 2998100
18. AERODYNAMIC STUDY OF EAGLE ESM MK II, funded by BRNS, Total cost Rs. 1824300
19. METROLOGY OF FUEL SUBASSEMBLY WRAPPERS AND EVALUATION OF FUEL PELLETS., funded by BRNS, Total cost Rs. 402000
20. FABRICATION OF MODEL OF 2000 CUM AEROSTAT FOR WIND TUNNEL TESTING., funded by BRNS, Total cost Rs. 2916300
21. MODEL DESIGN, FABRICATION, INSTRUMENTATION OF RECOVERY CAPSULE MODEL FOR WIND TUNNEL TESTING., funded by CSIR, Total cost Rs. 528833
22. DEVELOPMENT OF HIGH STRENGTH ULTRAFINE IN-SITU COMPOSITES FOR AEROSPACE APPLICATIONS., funded by CSIR, Total cost Rs. 2400000

23. DEVELOPMENT OF HIGH SPEED SCHLIEREN SYSTEM TO VISUALIZE THE SHOCK STRUCTURE DURING START-UP GSLV MK-III., funded by CSIR, Total cost Rs. 1440000
24. DEVELOPMENT AND TESTING OF ALGORITHMS FOR COMPUTER VISION BASED AUTONOMOUS NAVIGATION SYSTEM FOR THE LUNAR ROVER MISSION., funded by CSIR, Total cost Rs. 1216000
25. MODELING OF INTERFACE DEFORMATION AND FAILURE THROUGH A COMBINATION OF FINITE ELEMENT ANALYSIS AND DIGITAL IMAGE CORRELATION., funded by DAE, Total cost Rs. 50000000
26. MODEL DESIGN, FABRICATION, INSTRUMENTATION & INSPECTION OF ROUND CANOPY PARACHUTE MODEL FOR WIND TUNNEL TESTING., funded by DAE, Total cost Rs. 3706800
27. POWDER METALLURGICAL (PM) PROCESSING OF TUNGSTEN AND TUNGSTEN-BASED ALLOYS FOR ITER-LIKE DIVERTOR COMPONENTS., funded by DAE, Total cost Rs. 7259000
28. STRUCTURE FUNCTION RELATIONSHIP IN A CIRCULARLY PERMUTED GTPASE FROM MYCOBACTERIUM TUBERCULOSIS FOR THE DEVELOPMENT OF NOVEL ANTI-BACTERIAL DRUG TARGETS., funded by DAE, Total cost Rs. 3625900
29. SUPERMACROPOROUS CRYGELS FOR CARTILAGE TISSUE ENGINEERING, funded by DAE, Total cost Rs. 1920000
30. TOUGHENED CERAMICS:ZRO<sub>2</sub> STABILIZED NANO CERAMICS, funded by DBT, Total cost Rs. 7123700
31. FABRIATION OF U CHANNEL ON AEROSPACE MATERIALS, funded by DBT, Total cost Rs. 5607200
32. NATIONAL MISSION ON EDUCATION THROUGH INFORMATION & COMMUNICATION TECHNOLOGY "VIRTUAL LABS" - INTERNET BASED LABORATORIES, funded by DBT, Total cost Rs. 5466500
33. RAMANUJAN FELLOWSHIP, funded by DBT, Total cost Rs. 2958000
34. DEVELOPMENT OF HALL EFFECT BASED SPEED & POSITION SENSORS FOR AUTOMOBILE APPLICATION, funded by DBT, Total cost Rs. 900000
35. RIVER DYNAMICS & FLOOD RISK EVALUATION OF THE KOSI RIVER, NORTH BIHAR PLAINS: AN INTEGRATED APPROACH, funded by DBT, Total cost Rs. 265000
36. PREPARATION AND CHARACTERIZATION OF ACTIVATED CARBON FIBERS/FABRICS, funded by DBT, Total cost Rs. 900000
37. CULTURAL AND LIVELIHOOD OBJECTIVES FOR MSF, funded by DBT, Total cost Rs. 4014000
38. COLLATION OF WATER QUALITY AND POLLUTION DATA OF THE RIVER GANGA IN THE GANGOTRI-KANPUR STRETCH, funded by DBT, Total cost Rs. 4602000
39. EFFECT OF CATION SUBSTITUTION ON THE STRUCTURE & BIOCOMPATIBILITY OF IONOMER GLASSES AND GLASS CERAMICS, funded by DBT, Total cost Rs. 5702000
40. MODELING THE ACTIVE SITE OF [FE]-HYDROGENASES TOWARDS HYDROGEN GENERATION USING SYNTHETIC ANALOGUES, funded by DCHC, Total cost Rs. 1200000

41. NATIONAL MISSION ON EDUCATION THROUGH INFORMATION & COMMUNICATION TECHNOLOGY - PROPOSAL PERTAINING ON VIRTUAL TECHNICAL UNIVERSITY CONCEPTS, funded by DDWS, Total cost Rs. 1053000
42. STUDY OF THE EFFECT OF ELECTRO-PHOSPHORESCENT MATERIALS AND DEVICE STRUCTURE ON THE INCREASE OF EFFICIENCY OF ORGANIC LIGHT EMITTING DIODES, funded by DIT, Total cost Rs. 25226500
43. MONTE CARLO SIMULATION STUDY OF METAL-ION SOLVENT SYSTEM, funded by DMSRDE, Total cost Rs. 400000
44. ENGINEERING ARTICULAR CARTILAGE: A NOVEL INTERDISCIPLINARY APPROACH, funded by DRDO, Total cost Rs. 3477000
45. FLUVIAL GEOMORPHOLOGY AND HYDRAULIC MODELING OF THE UPPER GANGA FOR MAINTAINING SUSTAINABLE FLOWS, funded by DRDO, Total cost Rs. 1368000
46. FLOOD MODELING FOR A TRANS-BOUNDARY RIVER UNDER DEFENCE STRATEGIC SCENARIOS: PHYSICAL MODEL, funded by DRDO, Total cost Rs. 4912000
47. QUANTUM CONTROL IN ATOMIC SYSTEMS, funded by DRDO, Total cost Rs. 1000000
48. MONITORING OF PERMANENT GPS STATION AT IIT KANPUR, funded by DST, Total cost Rs. 30000000
49. LINEAR TRANSFORMATION APPROACH TO VOCAL-TRACT LENGTH NORMALISATION FOR COMPUTATIONALLY EFFICIENT SPEAKER-NORMALISATION AND RAPID ADAPTATION IN AUTOMATIC SPEECH RECOGNITION, funded by DST, Total cost Rs. 3329000
50. TUNABLE COMPOSITE METAMATERIALS WITH IMBEDDED COHERENTLY CONTROLLABLE ATOMIC OR MOLECULAR MATERIALS, funded by DST, Total cost Rs. 14985000
51. DEVELOPMENT OF TOMOGRAPHIC CODE FOR IMAGE RECONSTRUCTION FROM VISIBLE RADIATION FROM ADITYA AND SST-1 TOKAMAK PLASMA, funded by DST, Total cost Rs. 2469000
52. FUSION OF MEDICAL IMAGES OF MRI, PET & SPECT MODALITIES, funded by DST, Total cost Rs. 3128000
53. QUANTUM AND NANO COMPUTING VIRTUAL SYSTEM, funded by DST, Total cost Rs. 1166880
54. DEVELOPMENT OF A NON-HYDROSTATIC FINITE-VOLUME ICOSAHEDRAL MADEL FOR REGIONAL/GLOBAL CLIMATE SIMULATION AND WEATHER FORECAST, funded by DST, Total cost Rs. 1457000
55. UNDERSTANDING THE ROLE OF COSMIC RAY INDUCED IONIZATION ON AEROSOL AND CLOUD MICROPHYSICS. A CASE STUDY OF TOTAL SOLAR ECLIPSE IN 2009 & 2010, funded by DST, Total cost Rs. 2802200
56. SINTERING, PROPERTIES AND IN VITRO CHARACTERIZATION OF HYDROXYAPATITE-TITANIUM COMPOSITES, funded by DST, Total cost Rs. 2088450
57. SYNTHESIS OF MESO/NANO POROUS (CARBONISED) POLYMERIC ADSORBENTS FOR THE REMOVAL OF PHARMACEUTICAL COMPOUNDS IN STAGED FLUIDIZED BED COLUMN, funded by DST, Total cost Rs. 6040000

58. STUDY OF COMPLETELY BOUNDED MULTIPLIERS AND NON-COMMUTATIVE SPACE, funded by DST, Total cost Rs. 1979460
59. DAE-GRADUATE FELLOWSHIP SCHEME-2009, funded by DST, Total cost Rs. 2040000
60. TO CONDUCT A STUDY ON MODIFICATION/UP-UPGRADATION OF TOOLS USED IN WOOD CRAFT, funded by DST, Total cost Rs. 2893267
61. INVESTIGATION ON DEVELOPING ULTRAHIGH MOLECULAR WEIGHT POLYETHYLENE-HYDOXYAPATITE - CARBON NANOTUBE BIOCOMPOSITE FOR BIOMEDICAL APPLICATIONS, funded by DST, Total cost Rs. 1086000
62. A TRANSITION PREDICTION MODEL FOR PERIODIC VORTEX INDUCED INSTABILITY, funded by DST, Total cost Rs. 1406000
63. HIGH LIFT AERODYNAMICS PROJECT, funded by DST, Total cost Rs. 3455000
64. LARGE FORMAT PARTICLE IMAGING VELOCIMETRY SYSTEM, funded by DST, Total cost Rs. 403200
65. INSTRUMENTATION OF RAM AIR PARACHUTE FOR WIND TUNNEL TESTING, funded by DST, Total cost Rs. 1590000
66. MODEL DESIGN, FABRICATION & INSPECTION OF 27 CELL RAM AIR PARACHUTE FOR WIND TUNNEL TESTING, funded by DST, Total cost Rs. 3800000
67. MODEL DESIGN, FABRICATION AND INSPECTION OF 19-CELL RAM AIR PARACHUTE FOR WIND TUNNEL TESTING, funded by DST, Total cost Rs. 1991000
68. NANO-CLUSTERS THROUGH LASER ABLATION IN LIQUID, funded by DST, Total cost Rs. 600000
69. NATIONAL PROGRAMME OF TECHNOLOGY ENHANCED LEARNING (PHASE II), funded by DST, Total cost Rs. 3498000
70. STUDIES ON KINETIC OF SCRAP DISSOLUTION AND EFFECT OF OTHER PARAMETERS ON DYNAMIC CONTROL OF STEELMAKING PROCESS, funded by DST, Total cost Rs. 1788300
71. MONSOON RAINFALL FORECASTING USING NEURAL NETWORKS, funded by DST, Total cost Rs. 3000000
72. LOW SPEED TESTS ON 1:7.645 SCALE LCA AIR INTAKE MODEL, funded by DST, Total cost Rs. 99460000
73. OPAALS-SOCIAL SCIENCES, funded by DST, Total cost Rs. 5000000
74. OPAALS-CS, funded by DST, Total cost Rs. 3237200
75. VIBRATIONAL SPECTRAL DIFFUSION IN AQUEOUS SYSTEMS FROM QUANTUM SIMULATIONS: DYNAMICS OF SOLVENT AND FLEXIBLE SOLUTES, funded by DST, Total cost Rs. 1225000
76. PROCESS DEVELOPMENT OF NATURAL DYING IN CHIKAN EMBROIDERY HANDICRAFTS, funded by DST, Total cost Rs. 2846000
77. POLYMER-NANOPARTICLE COMPOSITE FILMS FOR DIELECTRIC AND CONDUCTING APPLICATIONS, funded by DST, Total cost Rs. 3440000
78. DEVELOPMENT OF CORROSION AND WEAR RESISTANT NI AND AL-BASED METTALIC GLASS COATINGS AND NANOCRYSTALLINE COATINGS, funded by DST, Total cost Rs. 2278080
79. AB INITIO MOLECULAR DYNAMICS SIMULATION OF OXIDATIVE STEAM REFORMING OF ETHANOL OVER RH/AL<sub>2</sub>O<sub>3</sub> CATALYST, funded by DST, Total cost Rs. 3790000



80. IDEAS-2010 THE INTERNATIONAL BUSINESS PLAN COMPETITION, funded by DST, Total cost Rs. 1150600
81. NANOFINISHING USING MAGNETORHEOLOGICAL FINISHING (MRF) TECHNIQUE, funded by DST, Total cost Rs. 3218000
82. TO DEVELOP ORGANIC AND/OR POLYMER SOLAR CELLS AND LIGHT EMITTING DIODES ON CORUS STEEL SUBSTRATE WITH THE IIT KANPUR, funded by DST, Total cost Rs. 899200
83. IDENTIFICATION OF POTENTIAL STRATEGIES FOR PROTECTION AGAINST ALZHEIMER'S DISEASE, funded by DST, Total cost Rs. 3490000
84. GENERATION OF WHITE LIGHT FROM DISPERSIBLE LANTHANIDE DOPED NANOMATERIALS, funded by DST, Total cost Rs. 3374600
85. UNRAVELLING THE ROLE OF LAFORA DISEASE PROTEINS IN STRESS RESPONSE, funded by DST, Total cost Rs. 3350000
86. CONTENT MANAGEMENT AND DELIVERY OVER CELL-PHONE LIKE DEVICES, funded by DST, Total cost Rs. 6486400
87. ATMOSPHERIC HAZE:ADVERSE IMPACTS ON GLACIERS & CULTURAL HERITAGE IN INDIA, funded by DST, Total cost Rs. 3096000
88. FABRICATION OF NANOPATTERNED SURFACES AND THEIR SUBSEQUENT UTILIZATION FOR GROWING 1-D NANOSTRUCTURES, funded by DST, Total cost Rs. 1854820
89. ADVANCE ANALYTICAL COURSE FOR LIFE SCIENCES AND BIOTECHNOLOGY, funded by DST, Total cost Rs. 1280000
90. GLYCEROL AND WATER CONDUCTIVITY IN PLASMODIUM AQUAPORIN, funded by DST, Total cost Rs. 1512000
91. INVESTIGATION OF EUKARYOTIC MRNA FEATURES FACILITATING INITIATION OF TRANSLATION FROM NON-AUG CODONS AND AUG START CODONS IN A SUBOPTIMAL NUCLEOTIDE CONTEXT, funded by DST, Total cost Rs. 499000
92. SETTING UP OF A SUPERCOMPUTING FACILITY AT IIT KANPUR, funded by HAL, Total cost Rs. 312000
93. PLASTIC DEFORMATION IN ZR BINARY ALLOYS: MULTISCALE MODELING AND EXPERIMENTAL VALIDATION, funded by HERBAR, Total cost Rs. 100000
94. DEVELOPING SUITABLE PEDAGOGICAL METHODS FOR VARIOUS CLASSES, INTELLECTUAL CALIBRES AND E-LEARNING, funded by ICMR, Total cost Rs. 2345490
95. A SYSTEMATIC ANALYSIS OF LIFESPAN EXTENSION MECHANISM IN C.ELEGANS, funded by IFCPAR, Total cost Rs. 717875
96. INDIA-UK ADVANCED TECHNOLOGY CENTRE (IU-ATC) OF EXCELLENCE IN NEXT GENERATION NETWORK SYSTEMS AND SERVICES, funded by IFCPAR, Total cost Rs. 2692800
97. THERMAL RATCHETING IN CYLINDRICAL PIPES DUE TO AN AXIALLY OSCILLATING TEMPERATURE FRONT, funded by IGCAR, Total cost Rs. 1880000
98. PHASE TRANSFORMATION OF MULTIPHASE EMBEDDED ALLOY NANOPARTICLES AND MULTILAYER THIN FILMS, funded by INDOUS, Total cost Rs. 690000
99. MORPHOTECTONIC VARIABILITY ALONG THE NW HIMALAYAN FRONT: TECTONICS-CLIMATE COUPLING, funded by ISRO, Total cost Rs. 744000

100. METAL-COORDINATED RADICALS BIOINORGANIC AND INORGANIC PERSPECTIVES, funded by ISRO, Total cost Rs. 1500000
101. SCALABLE VIDEO CODING BASED WIRELESS VIDEO, funded by ISRO, Total cost Rs. 3913000
102. MODELS FOR THE PHOTOSYNTHETIC REACTION CENTER:SYNTHESIS,STRUCTURE,REACTIVITY AND PHOTOPHYSICAL PROPERTIES OF PORPHYRIN DIMMERS AND RATIONALIZATION OF SUPRAMOLECULAR CHIRALITY, funded by ISRO, Total cost Rs. 744000
103. OPTIMIZING ENGINEERING DESIGNS IN PRESENCE OF UNCERTAINTIES IN DESIGN VARIABLES AND PARAMETERS, funded by ISRO, Total cost Rs. 1150000
104. SYNTHETIC AND MECHANISTIC PERSPECTIVES OF SN2 TYPE RING-OPENING OF AZIRIDINES AND AZETIDINES:ASYMMETRIC TRANSFORMATIONS VIA DYNAMIC KINETIC RESOLUTION, funded by ISRO, Total cost Rs. 1960000
105. BIMETALLIC CATALYSIS INVOLVING RUTHENIUM AND PALLADIUM:C-H BOND ACTIVATION, FUNCTIONALIZATION AND BEYOND, funded by ISRO, Total cost Rs. 200000
106. NUMERICAL INVESTIGATION OF ANISOTROPIC TURBULENCE AND HEAT TRANSFER IN LIQUID METAL MHD, funded by MCIT, Total cost Rs. 1997500
107. PULSE-TYPE GROUND MOTION:ENGINEERING CHARACTERIZATION AND EFFECTS ON STRUCTURAL RESPONSE, funded by MESD, Total cost Rs. 14088000
108. ZERO DISCHARGE TOILET SYSTEM (ZDTS), funded by MHRD, Total cost Rs. 21600000
109. A STUDY OF INDUCED STABILITY BY A VORTEX SYSTEM TRAILING BEHIND A LIFTING SURFACE, funded by MHRD, Total cost Rs. 20000000
110. VARIOUS REMEDIATION APPROACHES FOR MANAGEMENT OF LINDANE CONTAMINATION IN CHINHAT AREA OF LUCKNOW, funded by MHRD, Total cost Rs. 10500000
111. DOCUMENTATION OF BANKS OF GANGA, funded by MHRD, Total cost Rs. 30000000
112. INTELLIGENT VISUAL CONTROL OF REDUNDANT MANIPULATOR SYSTEMS FOR GRASPING 3-D OBJECTS, funded by MHRD, Total cost Rs. 10000000
113. NON-LOCAL INITIAL BOUNDARY VALUE PROBLEMS AND THEIR APPLICATIONS, funded by MHRD, Total cost Rs. 112300000
114. 3-D NANOFABRICATION USING ELECTRIC DISCHARGE MACHINING, funded by MHRD, Total cost Rs. 750000
115. MOLECULAR SIMULATION OF WETTING TRANSITIONS ON FUNCTIONAL SURFACES, funded by MHRD, Total cost Rs. 1640000
116. STRUCTURAL AND DYNAMICAL PROPERTIES OF ORGANIC AND AQUEOUS, funded by MOEF, Total cost Rs. 886305
117. FABRICATION OF A CONDUCTING POLYMER BASED FLEXIBLE PRINTABLE TEMPERATURE SENSOR ARRAY, funded by MOES, Total cost Rs. 1783900
118. COMBUSTION, MATERIAL COMPATIBILITY AND ENGINE TRIBOLOGY INVESTIGATION IN A BIODIESEL FUELLED TURBO-CHARGED TRANSPORTATION ENGINE, funded by MOT, Total cost Rs. 960000
119. PLANTWIDE CONTROL OF COMPLEX CHEMICAL PROCESSES, funded by NAL, Total cost Rs. 144000

120. COMPOUND PLASMONIC NANOSTRUCTURES, funded by NAL, Total cost Rs. 480000
121. DESIGN OF COMPACT BAND-PASS FILTER USING COMPOSITE RIGHT/LEFT HANDED TRANSMISSION LINE, funded by NBHM, Total cost Rs. 562500
122. DEVELOPMENT OF MODULAR ROBOTIC SYSTEMS FOR EDUCATION, funded by NRB, Total cost Rs. 3834000
123. FABRICATION OF TOUGHENED HDPE-HAP-A12O3 COMPOSITES WITH HIGH MODULUS AND BIOCOMPABILITY, funded by STC, Total cost Rs. 1550000
124. STRUCTURAL AND BIOCHEMICAL INVESTIGATION ON M. TUBER-CULOSIS N-ACETYL GLUCOSAMINE-1-PHOSPHATE URI-DYLTRANSFERASE(GLMU)-A NOVEL SUBSTRATE OF PKNB, funded by UGC, Total cost Rs. 290000
125. CAST: ALLAHABAD, funded by UOA, Total cost Rs. 600000
126. BIOMETRIC SYSTEM DEVELOPMENT, funded by URBAN, Total cost Rs. 4000000
127. GROUND WATER AND SURFACE WATER REMEDIATION THROUGH BIOFILTERS FOR METAL AND COLOUR REMOVAL, funded by WWF, Total cost Rs. 390000
128. A PREDICTIVE MODEL OF ANEURYSM DEVELOPMENT IN AN ARTERIAL BIFUREACTION, funded by WWF, Total cost Rs. 1207200
129. NATIONAL ADVISORY COMMITTEE (NAC) MEETING, funded by WWF, Total cost Rs. 496800

**B. International Projects:**

1. INSTRUMENTATION OF RECOVERY CAPSULE MODEL FOR WIND TUNNEL TESTING., funded by CORUS, Total cost Rs. 4200000
2. PAN IIT SOLAR RESEARCH INITIATIVE, funded by EC, Total cost Rs. 2152785
3. ASSET MAP, funded by EC, Total cost Rs. 2830740
4. KINETIC MONTE CARLO SIMULATION STUDIES OF SILICON-GERMANIUM THIN FILMS, funded by BOEING, Total cost Rs. 7029116
5. ANALYSIS OF GAS INJECTION SYSTEM AND GAS HEAVY METAL SEPERATION SYSTEM TARGET FOR ACCELERATOR DRIVEN SYSTEM, funded by BOEING, Total cost Rs. 2453856

**Consultancy projects:**

1. ALUMINIUM COATING TECHNOLOGY, funded by BOEING, total cost Rs. 3512250
2. INDIAN CIVIL NUCLEAR ENERGY INITIATIVE, funded by PMDM, total cost Rs. 716950
3. MATLAB BASED MODELING, SIMULATION AND VALIDATION OF LCH MAIN AND TAIL ROTOR ACTUATORS, funded by HAL , total cost Rs. 213700
4. THIRD PARTY QUALITY CHECKING OF UPSIDC WORKS, funded by UPSIDC, total cost Rs. 56180
5. SELECTION OF TECHNO ECONOMICALLY FEASIBLE SEWAGE TREATMENT TECHNOLOGIES FOR POLLUTED STRETCH OF RIVER YAMUNA, funded by MOEF , total cost Rs. 1698883

6. INVESTIGATION OF ABNORMAL DELAYED SETTING OF CONCRETE POURED ON GIRDER AT KM. 101+491 IN JHANSI BYPASS, funded by NHAI , total cost Rs. 61800
7. CONCRETE MIX DESIGN OF GRADE M 20 AND M 25, funded by ACG , total cost Rs. 56180
8. FIELD TESTING OF CONCRETE OF PSC BOX GIRDER BRIDGE, funded by IR , total cost Rs. 337080
9. REHABILITATION SCHEME FOR PSC BOX GIRDER BRIDGE, funded by IR , total cost Rs. 898880
10. MODELING AND IMPACT ASSESSMENT COMPONENT OF THE INDIA-CLIMATE CHANGE IMPACT & ADAPTATION OF COASTAL CITIES STUDY; THE CASE OF KOLKATA., funded by INRMCP, total cost Rs. 250000
11. MODERNISATION AND COMPUTERISATION OF STAMP & REGISTRATION DEPARTMENT BASED ON PPP MODEL., funded by IGR , total cost Rs. 300000
12. MODERNISATION AND COMPUTERISATION OF STAMP & REGISTRATION DEPARTMENT BASED ON PPP MODEL., funded by IGR , total cost Rs. 300000
13. CONSULTANCY FOR CAPACITY VERIFICATION TESTS ON BRIDGE BEARINGS GANGA BRIDGE PROJECT., funded by GIL, total cost Rs. 562530
14. UNSUPERVISED ACTIVITY CLASSIFICATION IN SURVEILLANCE SCENARIOS, funded by EADS , total cost Rs. 4253000
15. USE OF FLYASH IN CONCRETE SLEEPERS, funded by NTPC , total cost Rs. 337080
16. FLYOVER NEAR HANUMAN SETU, LKO, funded by UPBC , total cost Rs. 6618
17. GPR SURVEY TO ESTIMATE THE DEPTH OF RAILWAY BRIDGE FOUNDATION ON THE KICHHA RIVER BAREILLY-LALKUA SECTION UP., funded by NER , total cost Rs. 451687
18. DESIGN OF STRUCTURAL FRAME FOR LARGE GZAZING PANELS, funded by SAGPL, total cost Rs. 50000
19. CONCRETE MIX DESIGN OF GRADE M 20 AND M 25 MD 10, funded by ACG , total cost Rs. 11030
20. DESIGN OF DUMPABLE CONCRETE MIX AND PUMPABLE RMC OF GRADE M 25, funded by CMR&CH, total cost Rs. 27575
21. SEPARATION AND STABILITY STUDIES OF 250KG PRE- FRAGMENTED BOMB., funded by ARDE , total cost Rs. 997000
22. SITE VISIT FOR CONSULTANCY PROJECT: ABNORMAL DELAYED SETTING OF CONCRETE POURED IN GIRDER AT (P4-A2) R2, ROB-II (RHS) AT KM 101491 IN JHANSI BYPASS., funded by NHAI , total cost Rs. 137875
23. CULTURAL AND LIVELIHOOD OBJECTIVES FOR MSF, funded by WWF-I , total cost Rs. 397080
24. ACCREDATION OF WATER QUALITY LABS OF UP JAL NIGAM, funded by UNICEF, total cost Rs. 1773800
25. WIND TUNNEL TEST DATA ANALYSIS FOR A RIGID TOWER MODEL AT NWTF, IIT KANPUR, funded by SGCM , total cost Rs. 200000
26. ESTIMATION OF ENVIRONMENTAL FLOWS IN RIVER GANGA, funded by WWF-I , total cost Rs. 317664
27. VETTING OF STRUCTURAL DESIGN AND DRAWINGS, funded by HNBEPL, total cost Rs. 165450

28. BUSINESS SERVICE DEVELOPMENT FOR MSME CLUSTERS, funded by MSME , total cost Rs. 325000
29. ANALYSIS OF WIND TUNNEL TESTING DATA FOR AN AERO-ELASTIC CHIMNEY, funded by ISGEC, total cost Rs. 303372
30. VETTING OF WATER SUPPLY PIPING SYSTEM, BHOGAON, funded by UPSIDC, total cost Rs. 40000
31. WIND TUNNEL STUDY ON RIGID MODEL OF I.G. STADIUM COMPLEX, NEW DELHI, funded by CPWD , total cost Rs. 330900
32. FLUVIAL GEOMORPHOLOGY AND HYDRAULIC MODELING OF THE UPPER GANGA MAINTAINING SUSTAINABLE FLOWS, funded by WWF-I , total cost Rs. 529440
33. DATA LOGGING SOLUTION FOR SENSORS INSIDE LOCOMOTIVE, funded by HEWPL , total cost Rs. 300000
34. DESIGN EVALUATION FOR FOUNDATIONS OF TWO FLYOVERS IN VARANASI, funded by PWD , total cost Rs. 52944
35. VETTING OF A PIPING SYSTEM, JAL NIGAM, KANPUR, funded by JNK , total cost Rs. 33090
36. RAINFALL INTENSITY, DAHEJ, funded by SENG , total cost Rs. 35618
37. ENHANCING AUDIO AND SPEECH PROCESSING, funded by ATC , total cost Rs. 200000
38. BOF PROCESS AUTOMATION AT VSP, funded by IK, total cost Rs. 11600000
39. PREPARATION OF COMPENDIUM OF SEWAGE TREATMENT TECHNOLOGIES, funded by MEF , total cost Rs. 172000
40. QUALCOMM-IITK RESEARCH PROJECT, funded by QUALCOMM, total cost Rs. 4500000
41. PANCHAYATI RAJ E-GOVERNANCE, funded by DPR , total cost Rs. 1323600
42. NATIONAL LEVEL EMISSION INVENTORY AS PER MALE' DECLARATION, funded by CPCB , total cost Rs. 759552
43. DESIGN OF AERODYNAMIC SHAPE OF CABS OF WAP7 LOCOMOTIVES, funded by HEWPL , total cost Rs. 71736
44. CONCRETE MIX DESIGN STUDIES, funded by DPSPL, total cost Rs. 1673805
45. WIND TUNNEL TEST DATA ANALYSIS FOR A RIGID MODEL, funded by SIMPLE, total cost Rs. 250000
46. VERTICALITY CHECK OF RCC CHIMNEY AT PARICHHA, funded by UPSEB, total cost Rs. 15000
47. CHIMNEY MODEL STUDY AT METTUR SITE, funded by BGRES , total cost Rs. 496350
48. AUTOMATION OF IISER BHOPAL, funded by IISERB, total cost Rs. 5302000
49. CONSULTANCY FOR THE NON DESTRUCTIVE CORE CUTTING AND REBOUND HAMMER TEST, funded by SIEMEN, total cost Rs. 99270
50. DESIGN AND SIMULATION OF A STATCOM FOR HARMONICS AND REACTIVE CURRENT REDUCTION IN A THREE PHASE ALTERNATOR FEEDING A RECTIFIER LOAD, funded by GEGRB , total cost Rs. 289000
51. EXAMINATION OF PROPOSED FACILITIES, funded by BHEL , total cost Rs. 218394
52. CENTRAL PIER ON GH CANAL LUCKNOW, funded by UPBC , total cost Rs. 9265
53. THE DEVELOPMENT OF PROTOTYPE OF ABRASIVE FLOW FINISHING MACHINE FOR NANO LEVEL FINISHING, funded by CMTI , total cost Rs. 701200

54. ACTIVE FAULT MAPPING ALONG SOUTH WAGAD AND GEDI FAULT IN EASTERN PART OF KACHCHH, GUJARAT, funded by GSDMA , total cost Rs. 3750000
55. FIELD VISIT OF BRIDGE ON GANGA,VARANASI, funded by UPBC , total cost Rs. 18530
56. CONSTRUCTION OF 1000 KL TANK ON 18.00 M STAGING AT IA BHOGAON,DISTT-MAINPURI, funded by UPSIDC, total cost Rs. 44120
57. WIRELESS COACH INFORMATION DISPLAY SYSTEM (WCIDS) FOR INDIAN RAILWAYS, funded by RDSO , total cost Rs. 2995967
58. EVALUATION OF BOUNDARY WALL CONDITION AT SANT.GADGE PARK, funded by LDA, total cost Rs. 52944
59. TO DEVELOP ORGANIC AND/OR POLYMER SOLAR CELLS AND LIGHT EMITTING DIODES ON CORUS STEEL SUBSTRATE WITH THE IIT KANPUR, funded by CORUS, total cost Rs. 264720
60. SUZLON AIRFOIL TEST, funded by SUZLON, total cost Rs. 425000
61. DEVELOPMENT OF OUTER-ROTER SURFACE PERMANENT MAGNET MOTOR, funded by IHICOR, total cost Rs. 900000
62. STURTURAL MEASUREMENT AT HOSEMPET, funded by STARME, total cost Rs. 912925
63. CONSULTANCY FOR THE NON DESTRUCTIVE TESTS(UPV AND REBOUND HAMMER TEST), funded by WILBUR, total cost Rs. 132360
64. WIND TUNNEL TESTING OF THE AERO-ELASTIC MODEL FOR TRIPLE FLUE CHIMNEY FOR TIRODA THERMAL POWER PROJECT, funded by GIL , total cost Rs. 330900
65. COMBICASTER YEILD IMPROVEMENT, funded by JSPL , total cost Rs. 1297128
66. DESIGN CHECKING AND RECOMMENDATIONS, funded by UPSIDC, total cost Rs. 99270
67. PLATE LOAD TEST AT ICI INDIA PVT. LTD., funded by VE , total cost Rs. 30443
68. FEASIBILITY STUDY OF EXTRACTING COLD FROM COMPRESSESED LPG, funded by SUPARN, total cost Rs. 60000
69. RIVER TRAINING WORKS AT CHAHLAHRIA GHAT,GHAGHRA RIVER, funded by PWD, total cost Rs. 21178
70. MULTILIGUAL COMPUTING, funded by CDAC , total cost Rs. 350000
71. VETTING OF THE PIPING NETWORK FOR WATER DISTRIBUTION, funded by RAMKYI, total cost Rs. 105888
72. PROPAGATION OF CONFINED MASONRY AS A PREFERRED BUILDING TYPOLOGY, funded by BMTPC, total cost Rs. 750000
73. CONSULTANCY REG EMBANKMENT AT LEHCHURA DAM, funded by MDCDI, total cost Rs. 16545
74. VISIT TO NHAH SITE REGARDING NDT OF A CONCRETE GIRDER:PRELIMINARY OBSERVATIONS, funded by GYATRI, total cost Rs. 59562
75. INTEGRATED CLEAN ROOM TECHNOLOGY, funded by ICLEAN, total cost Rs. 13300
76. RIVER TRAINING WORKS FOR BRIDGE OVER RIVER GHAGHRA NEAR CHAHLARI GHAT, funded by PWD , total cost Rs. 2941039

77. VETTING OF STRUCTURAL DESIGNS FOR HOUSING PROJECT, funded by AWHO , total cost Rs. 100000
78. WIND TUNNEL STUDY FOR NDCT & CHIMNEY, funded by LANCO , total cost Rs. 222480
79. TESTING OF TWENTY SIDED HIGH MOST STANDARD, funded by UTKARS, total cost Rs. 337518
80. STUDY OF SUBSOIL CHARACTERISTICS AT THE SITE OF MULTISTORIED COMPLEX-SHRASTI APPTS. AT LUCKNOW, funded by LDA , total cost Rs. 531425
81. WIND TUNNEL TEST OF TWENTY SIDED HIGH MOST STANDARD, funded by ASTER, total cost Rs. 221650
82. THERMODYNAMIC DESCRIPTION OF SMA, funded by GM, total cost Rs. 405353
83. STUDY OF SUBSOIL CHARACTERISTICS AT THE SITE OF MULTISTORIED COMPLEX AT AISHBAGH, LUCKNOW, funded by LDA , total cost Rs. 720039
84. TRAINING ON IS800 & EC3, funded by SIEMEN, total cost Rs. 165450
85. IPV6 BASED INTELLIGENT TRANSPORT MANAGEMENT SYSTEM USING BSNL NETWORK, funded by BITCOE, total cost Rs. 1031305
86. NDT TESTS(UPV,REBOUND HAMMER,AND IMPACT ECHO)ON CONCRETE GIRDER AT NHAI SITE ON JHANSI-LALITPUR HIGHWAY SECTION, funded by GYATRI, total cost Rs. 225012
87. IMPROVEMENT IN BOTTOM DISCHARGE SYSTEM OF BOBRN WAGON, funded by RDSO , total cost Rs. 2475000
88. UPV(ULTRASONIC PULSE VELOCITY)TESTS ON CONCRETE BEAM OF BRIDGE NO.58/1,5TH STAGE AT VARANASI (PRELIMINARY VISIT), funded by PCL, total cost Rs. 52944
89. 3D MODELLING FOR RAILWAY CORRIDOR, funded by IRCON , total cost Rs. 1188000
90. CONSULTANCY REGARDING WELL FOUNDATION AT DHASAN RIVER, funded by UPBC , total cost Rs. 13788
91. MEMS BASED WIRELESS ULTRA-PORTABLE TRACK MONITORING SYSTEM, funded by RDSO , total cost Rs. 2982660
92. NON DESTRUCTIVE TESTING, funded by NHAI , total cost Rs. 104785
93. AGROTAGGER, funded by FAO , total cost Rs. 1610000
94. PROOF CHECKINGS OF DRAWINGS, funded by UPBC, total cost Rs. 82725
95. DEVELOPMENT OF WEB BASED MICROBIAL DATABASE (BACTERIA, ACTINOMYCETES AND FUNGI) OF NORTH-EAST INDIA, funded by NEHU, total cost Rs. 1430000
96. WIND TUNNEL TESTING OF CHIMNEY, funded by BGRES , total cost Rs. 270000
97. WIND TUNNEL STUDY OF 220M CHIMNEY, funded by THERMA, total cost Rs. 330900
98. 2 MLD MBBR BASED STP FOR GYANSU, UTTARKASHI, funded by GPCU, total cost Rs. 100000
99. TOPOGRAPHICAL MAPPING & STATE PLANNING IN UTTARANCHAL HILLS, funded by SIDCUL, total cost Rs. 591806
100. UNIVERSITY MAP AND GIS-SAGAR, funded by DHGV, total cost Rs. 3299764
101. WIND TUNNEL STUDY OF THE NEW INDIAN RESEARCH BASE AT LARSEMANN HILLS, funded by NCAOR /NWTF/20100001 , total cost Rs. 330900

102. ACQUISITION OF FLIGHT DATA FOR RAM AIR PARACHUTE, funded by ADRDE /AE /20090376 , total cost Rs. 913284
103. ESTIMATION OF FLIGHT CHARACTERISTICS OF RAM AIR PARACHUTE, funded by ADRDE /AE /20090379 , total cost Rs. 860340





With the advancement in technology, ideas which existed only as science fiction are becoming a reality. One such is the development of an autonomous mini helicopter. The development of such a mini flying vehicle is made possible with advancements in small but efficient gyros, accelerometers, magnetic sensors, servo controls, communication equipment, and GPS. The utility of such a gadget can be limited only by our imagination!

## **Alumni Association Activities**

Major Activities of the Alumni Association IIT Kanpur for the year 2009-2010

### **Nostalgia**

'Nostalgia' event jointly organized by AA and the Student's Gymkhana, is held every year for bidding farewell to the students completing their graduation/post raduation/PhD. The Class-of- 2009 had their last meeting 5th April 2009. On this occasion the President of Student's Gymkhana Mohit Jolly delivered farewell speech to the class.

Prof S G Dhande, Director IIT Kanpur, Prof. Sanjeev Agrawal, DRPG and Prof Kripa Shanker, Secretary, Alumni Association, and Dr. Sameer Khandekar addressed the students explaining the role of the DRPG and Alumni Association as a link between the alumni and the institute. Prof. Partha Chakravarthy and Prof. S.G. Dhande, Director, IITK, bid a formal adieu to the graduating students and wished them all the best for their future. The evening concluded with hi tea party.

### **Reunions**

IITK alumni from around the globe participated in the reunions. The attendees included alumnus awardees, entrepreneurs, bureaucrats including the Ambassador to Germany Mr. Sudhir Vyas of 1970 batch and a whole bunch of techies. Three reunions held during current financial year were the Silver Jubilee Reunion of the class of 1985 from 25th to 27th December 2009, 35<sup>th</sup> reunion of the class of 1975 from 28<sup>th</sup> to 30<sup>th</sup> December 2009 and the Golden Jubilee reunion of the Pioneer Batch from 17<sup>th</sup> to 20<sup>th</sup> February 2010.

The Director, Dy. Director, Deans of IIT Kanpur and President, Secretary, and Treasurer of Alumni association along with faculty members and students welcomed the alumni to the campus and shared their views and opinions and valuable suggestions and feelings. Other attractions of the reunions were interaction session with the DRPG, Lunch at Director's residence, Reunion Group Photograph, Campus tour, Felicitation of Alumni by the Director, Lunch at Students' Hall, Open Session and Grand Reunion Dinners at VH and Kamla Retreat of the class of 1975 and a donation of Rs. 50 lakh by the pioneer batch to Opportunity School.

### **Distinguished Alumni Awards**

The Distinguished Alumnus Award (DAA) of the Indian Institute of Technology Kanpur (IITK) is the highest award given by the Institute to its alumni in recognition of their achievements of exceptional merit. The following were the awardees of the year 2009-10:

- 1) Viney Pal Aneja (BT/CHE/71) for his outstanding contributions and academic achievements in the field of Environmental Science and Technology.

- 2) Prof. Arun Kumar Ghosh (MSC2/CHM/81), for his outstanding contributions academic achievements in the field of discovery of drugs for AIDS.
- 3) Prof. J K Jain (MSC2/PHY/81) for his outstanding contributions and academic achievements in the field of composite fermions.
- 4) Dr. Rathin Datta (BT/CHE/70) for his outstanding contributions in development and implementation of various facets of bio-technology.
- 5) Mr. Sudhir Vyas (BT/EE/75) for his outstanding achievements in managing the diplomatic relations of India with several countries.
- 6) Mr. Muktesh Pant (BT/CHE/77) for his outstanding professional achievements in several facets of company management.
- 7) Mr. Sudhakar Kesavan (BT/CHE/77) for his outstanding professional achievements in the field of environment and climate change consultancy.
- 8) Mr. Anupam Khanna (BT/EE/74) for his outstanding professional achievements in the fields of public policy and infrastructure management.
- 9) Mr. Vishnu Chandra Varshney (BT/EE/69) for his outstanding pioneering entrepreneurial contributions in establishment of Venture Capitalism in India.
- 10) Ms. Neera Singh nee Tandon (BT/CHE/81) for her outstanding entrepreneurial contributions in the field of wireless network technologies.
- 11) Mr. Anil Kumar Chopra (BT/CHE/77) for his outstanding entrepreneurial contributions in the field of petroleum, software and energy, as well as service to society in promoting education.
- 12) Mr. B K Thomas David (BT/ME/77) for his outstanding contributions and selfless service towards empowerment of women.

### Satyendra K. Dubey Memorial Award

The Satyendra K Dubey Memorial Award for honoring outstanding alumni of the IIT system all existing Indian Institutes of Technology, who have shown professional integrity and have been upholding human values. Mr. Shailesh Ramkumar Gandhi (IITB) had been awarded the Satyendra K Dubey memorial award in recognition to the exemplary dedication in spreading communal harmony and leading of Right to Information (RTI) campaign in India.

### Alumni Database

Since 1 April 2009, AA has made significant progress in enhancing the coverage of Alumni Database. During these two years the involvement of the PG alumni have been motivated to a great extent. Efforts are on to upgrade this database from its present figures, through department contact programme, chapters, classes and other such efforts.

### Database Statistics, as on Tuesday, May 18, 2010

Degree	Total Alumni	Registered members	Unregistered members	Email Addresses available	Postal Addresses available
Graduate degrees	11282	7479	3803	9666	9299

MT (Dual)	174	174	0	166	160
M Tech	8673	2986	5687	4795	4370
MSC2	1649	645	1004	935	909
MBA	233	200	33	216	171
MDES	55	53	2	53	45
PHD	2142	679	1463	1295	1275
Others	72	2	70	19	38
<b>Grand Total</b>	<b>24280</b>	<b>12218</b>	<b>12062</b>	<b>17145</b>	<b>16267</b>

### **New Initiatives taken by Alumni Association**

IIT Kanpur is celebrating its Golden Jubilee Year in 2009-2010, a number of activities are being organized by the Alumni Association as a part of this celebration.

#### **i) Golden Jubilee Alumni Convention at IIT Kanpur**

Golden Jubilee Alumni Convention was held from January 2-4, 2010 to celebrate and honour IITK alumni achievement in the last fifty years. This event was primarily to fulfill Alumni Association's aim namely: to establish good network amongst alumni themselves, staff and students of the Institute; to enable the alumni; to participate in activities which would contribute to the general development of the Institute; to keep the alumni abreast of scientific and technological developments at IITK. Thus the alumni had a truly memorable weekend and were a part of the historic Golden Jubilee Celebrations. Invitations for the Convention were sent to all IITK alumni. For the alumni who had intimated their travel plans, all boarding and lodging arrangements were made for the three days in the campus. Nearly 150 IITK Alumni and many current and former faculty, many of them with their families, from across the globe attended the Convention. Many lectures, talks, IITK Research presentations by faculty, other presentations, panel discussions were organized. It had also offered cultural programs such as Fastest Feet in Rhythm starring Pt. Chitresh Das and Emmy award winner Jason Samuel Smith and Sangeet Sandhya by campus residents. Finally to facilitate illustrious alumni IITK@50, Distinguished Alumnus and Satyendra K Dubey Memorial Award ceremonies were also scheduled during these three days.

#### **ii) Profiling alumni**

Since a year and half we have been profiling a lot of alumni and their achievements and mailing them to at the all mailing list. All news pertaining to any alumni that the AA becomes aware of is profiled and sent promptly.

#### **iii) IIT Kanpur @ 50 Award**

To honour the spirit of excellence of IIT Kanpur, IITK @ 50 award was initiated by the Board of the Alumni Association. IITK @ 50 is about honouring 50 years of excellence at IITK. An overwhelming support was received for the nomination process and for arriving at the final selection of 50 Alumni. After receiving 180 nominations including national awardees like Padma Bhushan, Padma Vibhushan, Padma Shree, pre-nominated winners of Distinguished

Alumnus Award and Satyendra K Dubey Memorial Award, all the nominees were put up for alumni-wide electronic voting and the top 50 alumni were elected.

IITK@50 award ceremony was held on January 3, 2010. The event started with the lighting of the lamp by Mr. Abhay Bhushan, the President of Alumni Association, IIT Kanpur, Prof. Kripa Shankar, Dr. Sameer Khandekar, Prof. Sanjeev Aggrawal, DRPG of IIT Kanpur. The 14 awardees were present in the function and they were felicitated along with citations and a Golden Jubilee Plaque. The other awardees will be honoured during IITK Golden Jubilee Alumni Conventions in Bangalore, Washington D.C., and Santa Clara, CA

#### **iv) Financial Appeal**

Alumni association sent out another appeal to the alumni when one of our members, Mr Haritash Gulshan (BT/ME/2000) passed away on 15 January 2010. He met a major car accident near Moradabad sustaining multiple head and chest injuries on 12th January 2010. He got through IAS with Rank 6. He joined IAS and got Uttarakhand cadre in year 2004. Gulshan was only son of his parents. He passed away at such young age of 31 leaving behind his parents, wife and two sisters. Although its not possible to fill that vacuum but alumni, especially his batchmates have shown their solidarity with his family and have proposed that they come together and contribute to offer monetary help to the family. Again we wish to express our heartfelt gratitude to all our alumni to have shown generosity in contributing over seven lakhs rupees till now.

#### **v) Souvenir Sales**

Looking at the overwhelming response received for the Alumni Association souvenir shop in the last three years and in order to meet the growing customer demands during the Golden Jubilee year, Alumni Association has outsourced the souvenir sales to Kansas Manufacturing Pvt. Ltd. Mumbai which also has established souvenir shop at IIT Bombay campus.

#### **vi) Ultra Marathon at IIT Kanpur**

First Ever 50 KM Ultra-marathon in North India to Celebrate IIT Kanpur's Golden Jubilee was held at IIT Kanpur Campus on February 21, 2010. The event also had other distances, from 2 km (for children below 10 years), 5 km, 10 km, 21 km half-marathon, 42 km marathon, as well as a 50 km relay (up to five participants running 10 km per leg). Around 800 people participated, it brought out many volunteers, saw 65+ old completing the 50 Km run and the winner of 50 KM Ultra-marathon was Mr. Vishwanathan Jayaraman (BT/EE/85). Reebok T-Shirts, travel bags and backpacks were courtesy of Micky Pant (BT/CHE/77) CMO of YUM and President of Taco Bell, helped IIT Kanpur to get Rs. 5 Lakh sponsorship for the Ultra-Marathon.

The Bay Chapter also had the bay area IIT runners, on Saturday 20th February 2010 evening, to coincide with 50K at IITK at the same time. They clocked 110 km + combined from 82-86 batch, 250+Km total. Overall they had over 25 runners, from 72, 86, 85, and 96 batches, most doing 10K, running in parallel with the team '86 at IITK.

**Off-campus reunions / Chapter get-togethers during 2009-10**

- The Mumbai Chapter of IIT Kanpur Alumni had its annual get together on 28th February 2009, Saturday at MIG Cricket Club, Bandra East, Mumbai.
- ALUMNI ASSOCIATION IIT/KANPUR-DELHI CHAPTER had the annual Chaat On Saturday, 25<sup>th</sup> April 2009 at Chandra Arya Vidya Mandir - Lawns, East of Kailash, New Delhi
- West Coast Alumni Leadership Award: The IITK West Coast Alumni Leadership Award was presented at the IITK Alumni Association Northern California Chapter Annual Gala Dinner 2009 on Saturday May 30, 2009 at Mountain View, CA, USA  
The following awards were conferred during the function: Rajeev Motwani, (Late), Pradeep Khosla, Padmasree Warrior, Suhas Patil and Ravi Sethi
- The Hyderabad chapter had get-together on 8th July at Fusion/Deli-9, Road #1, Banjara Hills.
- On October 3, 2009, the PanIIT group in SF bay Area held their 8th Annual Diwali Dhamaka. One of the hallmarks of this night the seven IIT's presenting a skit on a common theme. This year's theme was "Credit Crunch." IIT Kanpur won the prize for relevance to theme. A highlight of the IIT Kanpur presentation was their Ode to IIT song on stage.
- PanIIT 2009 Global Conference was held from October 9 to11, 2009 at Chicago, USA. It focused on Entrepreneurship and Innovation in a Global Economy. The conference brought together a diverse group of thought leaders from industry, academia and government, including alumni of the prestigious IITs. The Secretary, Prof. Kripa Shanker gave a presentation of Alumni Association, IITK about its aims and objectives, activities etc.
- IITKAA Outer Delhi Chapter had a family get together & picnic on Sunday 1st November 2009 at Indian Business Academy (IBA) Greater Noida.
- IIT K AA Mumbai Chapter had the annual get together on 13th March 2010 at Bandra-E MIG Club.
- On the occasion of Golden Jubilee Year of IITK and Holy festival celebrations the Hyderabad Chapter had a get-together on 27th February 2010 at Police officers' Mess, Banjara Hills, Hyderabad.



National Wind Tunnel Facility, established in 1999 to meet national needs in aerospace and nonaerospace R&D activities, houses the most versatile and efficient wind tunnel in India. It has various measurement systems, interchangeable test sections and is capable of model testing at wind speed up to 80 m/sec. A fixture for every open house event of the Institute, it has probably seen the largest number of visitors and admirers over the years.

## Central Facilities

### P. K. Kelkar Library

The P. K. Kelkar Library provides dynamic and innovative services to IITK user community to support key Institute mission and objectives in relation to learning and teaching, research and innovation and people and culture. The Library plans, develops and implements programs to provide latest information, learning resources and information competencies to students, faculty, and staff. Using appropriate technology, the Library delivers resources to satisfy information needs, promote lifelong learning and create productive environments for the scholarly community.

P. K. Kelkar Library is housed with all modern amenities, in a magnificent three-storied building covering an area of 5730 square meters. 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.

#### ACQUISITION UNIT

##### Books:

P. K. Kelkar Library acquires information resources in all formats through purchase and gifts. During 2009-10, 3564 volumes of books were added to the collection in which 289 volumes were received as Gratis. In all the library spent around Rs. 1.25 crores under book budget during the year.

##### e-books:

The library provides access to over 14000 electronic books. The new title in 2009-10 was 'Encyclopedia Britannica Academic Edition Online' which is accessible through the url : [www.search.eb.com](http://www.search.eb.com)

#### PERIODICALS

**Subscription to periodicals and binding:** The periodical budget for 2009-10 was Rs. 6.25 crores. The Library subscribed to 1251 current periodicals for the year 2010. Of these 743 are print versions, whereas 398 are print plus online, 107 are online only and 02 are on CD. The Library added 3261 bound volumes of periodicals and 3375 books were bound during the year.

The Library continued its focus on the acquisition of electronic products. The archival volumes of journals procured in the previous year were maintained. Significant new electronic products acquired in 2009-10 included:



- E-journals package from Sage for HSS (412 journals available from 1999 to current year)
- Pearson Crystal Database

#### **E-resources through INDEST-AICTE:**

As a core member to the INDEST-AICTE Consortium, IITK academic community is entitled to access more than 6500 full-text journals and 06 bibliographic databases. The following new services were started during the year 2009-10 through INDEST:

- Nature journals (27 Titles)
- Annual Reviews (37 Titles)

#### **LIBRARY SERVICES**

##### **CURRENT AWARENESS SERVICE (Weekly List of Additions):**

The books added to the Library collection were disseminated to academic community through 52 weekly lists of new additions on the first working day of each week. These were also released on Library OPAC. The current issues of the journals are also displayed on alternate days thrice in a week.

##### **CIRCULATION:**

During the year 2009-2010, 88,880 publications were circulated for home study. A large number of books and journals from reference, textbooks and general collection areas were also consulted by users within the Library.

##### **DOCUMENT DELIVERY SERVICES & CONSULTATION FACILITY TO EXTERNAL USERS:**

The Inter-Library Loan (ILL) services are extended free to sister IITs, IISc, TIFR, BARC, INDEST-AICTE members and other technical institutions & universities. During 2009-10, ILL requests for 974 articles/chapters/books were received and document delivery made to outside Institutions whereas IITK users' requests for 48 articles/chapters/books were sent to other libraries.

Consulting facility of the library was extended to 1078 external users including 740 Programme participants of various courses/programmes organized by the Institute.

##### **LIBRARY AUTOMATION:**

Library has already installed and implemented LibSys LSPremia, a web centric integrated library management software package. During the year under report several problem solving sessions were organized in consultation with the Libsys Corporation and the customization on various modules suggested by us were incorporated. Now all housekeeping operations are

running through LibSys. Some of the advanced customizations are in the pipeline with the LibSys.

The unit ensured collection of metadata from various publishers for their e-books and integrated with LibSys Web-OPAC.

### **DIGITAL LIBRARY INITIATIVES:**

The following digital library initiatives continue/added afresh:

**1. Online Submission of Theses:** 622 theses were added in the repository of Electronic Theses and Dissertations (ETD). The total number of theses and dissertations in the Institutional Repository has reached 10996 during the period under report.

**2. Faculty/Academic Staff Publications:** The total number of bibliographic records of Faculty/Academic staff publication reached upto 9341, out of which 5353 are fulltext.

**3. BOG Minutes/Agenda:** 26 volumes consisting of more than 13000 pages of BOG Minutes/Agenda were scanned alongwith complete OCRing and quality checking of Agenda and Minutes as per request from Institute Archival Project/Registrar Office.

### **INVITED LECTURES DELIVERED/MEETINGS ATTENDED/CONFERENCE/ SEMINARS CHAIRED/ATTENDED**

1. Delivered an invited lecture on "Information Resources and Services of P.K. Kelkar Library to the participants of the course on "Micromachining" organized by the Department of Mechanical Engineering, IIT Kanpur on 20<sup>th</sup> July 2009, Dr. V. D. Shrivastva, Librarian.
2. Attended the 15<sup>th</sup> Meeting of the National Steering Committee as Member of INDEST-AICTE Consortium on 27-28 July 2009 at IIT Delhi, Dr. V. D. Shrivastva, Librarian.
3. Attended the Workshop on Record Retention Management at IIT Kanpur during 12-13 August 2009 organised by IIT Kanpur in collaboration with National Archives of India, New Delhi at IIT Kanpur, Dr. V. D. Shrivastva, Librarian.
4. Attended a One day Workshop Cum-Seminar on Higher Education on " A Perspective of International Collaboration for IIT Kanpur" on 21 August 2009 at IIT Kanpur, Dr. V. D. Shrivastva, Librarian.
5. Attended the Selection Committee Meeting as Expert for the posts of Lecturers and Laboratory Instructor in the DLIS at CSJM University, Kanpur on 26<sup>th</sup> August 2009, Dr. V. D. Shrivastva, Librarian.
6. Attended a Lecture on "Right to Information" by Sailesh Gandhi on 7<sup>th</sup> September 2009 at IIT Kanpur, Dr. V. D. Shrivastva, Librarian.
7. Attended the Selection Committee Meeting as Expert for the post of Librarian in the Bundelkhand Institute of Engineering & Technology, Jhansi held at the Tilak Hall of UP

- Technical University. IET Campus. Lucknow on 30<sup>th</sup> September 2009, Dr. V. D. Shrivatsva, Librarian.
8. Attended the National Committee Meeting for Implementation of submission and access to ETDs in Universities in India as its nominated Member at the INFLIBNET Centre, Ahmedabad on 3<sup>rd</sup> November 2009, Dr. V. D. Shrivatsva, Librarian.
  9. Attended the Meeting of Purchase Finalization Committee of INDEST-AICTE Consortium at IIT Delhi on 13<sup>th</sup> November, 2009, Dr. V. D. Shrivatsva, Librarian.
  10. Chaired a session in the INDEST-AICTE workshop on "Collection Development in the Electronic Environment and Intellectual Property Rights" at IIT Kharagpur during 13-15 January 2010, Dr. V. D. Shrivatsva, Librarian.
  11. Was invited to be the panelist for the panel discussion on "Collection Development in the Electronic Environment and Intellectual Property Rights" at IIT Kharagpur on 15<sup>th</sup> January 2010, Dr. V. D. Shrivatsva, Librarian.
  12. Was invited to chair the session on the 55<sup>th</sup> ILA National Conference on "Library and Information Services in Digital Era, at Birla Institute of Management and Technology (BIMTECH) Gr. Noida, during 21-24 January 2010, Dr. V. D. Shrivatsva, Librarian.
  13. Was invited to be a panelist for the panel discussion on "Digital Library Management " during the 55<sup>th</sup> ILA National Conference at BIMTECH, Gr. Noida on 24<sup>th</sup> January 2010, Dr. V. D. Shrivatsva, Librarian.
  14. Chaired a session in the PLANNER 2010 on " Re-engineering of Library and Information Services in Digital Era" at Tezpur University, Tezpur during 18-20 February 2010, Dr. V. D. Shrivatsva, Librarian.
  15. Participated as a panelist in the PLANNER 2010 panel discussion on "Reengineering of Library and Information Services in digital era" at Tezpur University, Tezpur on 20<sup>th</sup> February 2010, Dr. V. D. Shrivatsva, Librarian.
  16. Attended the Selection Committee Meeting for the post of Librarian as the subject expert at IIIT, Allahabad on 5<sup>th</sup> March 2010, Dr. V. D. Shrivatsva, Librarian.
  17. Attended the Price Negotiation Committee Meeting of INDEST-AICTE at IIT Delhi on 19<sup>th</sup> March 2010, Dr. V. D. Shrivatsva, Librarian.
  18. 4<sup>th</sup> National Conference of CGLA at Dehradun, Sept. 03-05, 2009. Participants: Umed Singh and Rajesh Kumar
  19. 55<sup>th</sup> Indian Library Association (ILA) Conference on Library and Information Services in Digital Era, held at Birla Institute of Management Technology (BIMTECH), Greater Noida, Jan. 21-24, 2009. Participants: Vijaianand and Ramakant
  20. Workshop on Record Management, in collaboration with National Archives of India held at I.I.T. Kanpur, Aug. 12-13, 2009. Participant: Rajesh Kumar and Ramesh Yernagulla
  21. INDEST-AICTE Workshop on Collection development in electronic environment & IPR, at I.I.T. Kharagpur, Jan. 13-15, 2010. Participant: Ramesh Yernagulla

## **Center for Development of Technical Education**

Since its inception in 1971, Ministry of Human Resource Development, All India Council for Technical Education has always strived for the development of technical education in the country. The main objective of the Centre for Development of Technical Education (CDTE) is dissemination of knowledge resources of IITK. In a way CDTE is a coordinating facility for the various activities connected with development of curricula, preparation of resource material, administering the continuing education programme and providing in-service training to the teachers of engineering colleges. This is carried out through activities under Curriculum Development Cell (CDC), Quality Improvement Programme (QIP) and Continuing Education Cell (CEC).

### **Summary of various activities during the year 2009-2010.**

#### **1. QIP STUDENTS:**

- (a) M.tech Candidates admitted - 02
- (b) Ph.D. Candidates admitted - 02

#### **2. BOOK-WRITING PROJECTS:**

- (a) Book-writing projects continued - 39
- (b) Book-writing projects approved - 07
- (c) Book-writing projects completed - 04

- 3. Short-term courses conducted under QIP- 05
- 4. Short- term self- financed courses conducted -13
- 5. Workshops/ Conferences/Seminars conducted- 28

### Center for Creative Writing and Publication

The Centre for Creative Writing and Publication (CCWP), IIT Kanpur, aims at nurturing creativity in the broadest sense of the word – in literature, arts, dramatics, and scientific endeavours. The Centre was pioneered by Shri Giriraj Kishore, formerly Registrar at IIT Kanpur, and a Hindi writer of repute. Several faculty members across various departments of the Institute actively participated in the activities of CCWP.

Following Shri Giriraj Kishore's superannuation, the responsibility of CCWP was given to the Department of Humanities and Social Sciences. Then onwards, the Department of HSS has carried forward the task of promoting the creative spirit in multiple domains. The Institute provides financial support for the activities of CCWP.

Under the aegis of this Centre, many literary figures, academicians in the areas of mathematics, engineering, humanities and social sciences, persons involved in theatre, music, and other performing arts have visited our campus from time to time. They have delivered scholarly talks, and conducted seminars, workshops and short courses. A book launch was jointly hosted by a publisher in collaboration with CCWP. Similarly, CCWP was a co-sponsor in a literary festival organized by Alfaaz, the literary unit of Students' Gymkhana. CCWP has provided a platform for students to stage plays, under the enthusiastic guidance of faculty members. Regular literary discussion groups consisting of students and faculty are also being conducted by faculty members. The discussion sessions involve reading works by well-known authors and exchanging views.

Another noteworthy activity conducted by the CCWP is that of inviting eminent persons as Artists-in- Residence. Under this programme, a reputed artist is invited to spend some time in the Institute campus, and interact with students through classes, lectures, discussion sessions, and the like. The first Artist in residence was Smt Veena Sahasrabudhe, the well-known classical Indian (Hindustani) vocalist, who spent three weeks (March-April 2009) at IIT Kanpur. Along with her music classes involving members of the campus community, she gave performances and lecture-demonstrations on the intricacies North Indian classical music. Her stay at IIT Kanpur culminated in a small music programme staged by the participants of her classes, and attended by members of the campus community.

All these activities have enriched the students, faculty, staff and other members of IIT Kanpur. It has also encouraged members of the campus community at large to exhibit their creative talents through writing and various forms of art. Some of the major events organized by the CCWP in the last few years are listed below.

- Poetry recitation sessions by students of IIT Kanpur
- Seminar on Meditation and Self-development by Mr. Subodh Gupta.
- Workshop on 'E-Learning and Creative Communication ' by Mr. Gaurav Gupta(NIIT) and Mr. S.M. Nafay Kumail (Head, Infopro).
- Seminar by Dr. Narendra Kohli, Hindi novelist and satirist.

- Film talk on 'From Words to Images' by Mr. Atul Tiwari, Script Writer (jointly with Students' Film Society).
- Seminar on "Einstein: His ideas and opinions on the human" by Prof. Sitaram Alladi
- Dramatics Workshop, conducted by Mr. Ashok Tewari, which culminated in a few public productions by IIT Kanpur students.
- Talk entitled "Ancient Technology: Has it any relevance today ?" by Dr. Jake Keen.
- Talk on "Creative Non-fiction: The Fourth Genre" by Dr. Emily Hipchen, University of Georgia.
- Talk on "Lucknow: Sham-e-Awadh" by Dr. Veena Talwar Oldenburg, Baruch College, New York.
- Plays staged by students of Eng 433, directed by Prof. G. Neelakantan, Department of HSS, IIT Kanpur.
- Talk on "Engaging the Past: The Filmmaker and the Historian" by Dr. Lalit Joshi, Allahabad University.
- Talk on "Creative Writing", by Dr. Adam Klein, New York.
- Talk on "Nature and Future of Ayurveda" by Dr. R. Ragahavan, Founder President of the International Foundation for Ayurvedic Research, Kerala
- Talk on "Perceptions and Reality : The Fall and Rise of the Indian Mining and Metal Industry", by Dr. Paul Craddock, London.
- Urdu poetry reading session, "Gulistan-e-Naz", by Mrs. Hamida Banu Chopra, USA.
- Literary Discussion Group sessions conducted by Dr. Suchitra Mathur
- Classes, Lecture-cum-demonstrations and concerts by Artist-in-Residence, Mrs. Veena Sahasrabuddhe - exponent of Indian (Hindustani) vocal classical music.
- Talk on "Reflections on the Novel, the Nation, and Globalization" by Dr. Alan G. Johnson, Idaho State University, USA – March 15, 2010
- Talk on NREGA by Mrs. Amita Sharma, IAS – March 19, 2010
- Book launch of 'The Girmitya Saga' by Niyogi Books, in collaboration with CCWP – March 20, 2010.
- Video talk on Folk Music and Dance of Kotgarh, Himachal Pradesh – March 26, 2010 by Dr. Vijay Stokes, Former Professor of Mechanical Engineering, IIT Kanpur.

### SC/ST and OBC CELL

The cell consists of **Prof. Arvind K Sinha** (Deptt. of Humanities & Social Sciences), Liaison Officer (**w.e.f. October 20, 2006**) and **Shri Anil P Gonade**, Superintendent & In-charge, Recruitment Section. Prof. Arvind K Sinha is available in **Room No. 221** (Directorate), Faculty Building at the Institute on **Phone No. 2597950** and Shri Gonade is available in **Room No. 224**, 2<sup>nd</sup> Floor, Faculty Building at the Institute on **Phone No. 2597391**.

#### **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 and the implementation of reservation for **OBCs** is w.e.f. the year **1995**.

#### **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)] and Group 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 Judgment 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.

Further, the Board of Governors of the Institute (in its meeting held in May 2004, vide item no. 2004.2.13) has considered and **approved** the proposal for grouping of staff for the purpose of reservation and separate grouping of technical and non-technical posts. The proposal was as follows - the posts under Group-A, B, C & D would be grouped separately for technical and non-technical posts. However, there would be a single group under Group-D. Under this dispensation, there would be seven groups in all and as far as possible efforts would be made to provide adequate representation of SCs, STs and OBCs to each post under the group. The proposal was approved in the context that grouping of posts would provide greater leverage for purpose of securing adequate representation for SCs, STs and OBCs in the Institute

#### **Concessions/ Relaxations:**

- (a) The upper age bar in the Institute (as per RCPS) is as follows: Group C&D Posts - 18 to 27 years; Group B Posts - 32 years. Relaxation in age is admissible as per Central Govt. Rules. For employees of IITs who are educationally qualified can be considered for direct recruitment across the whole IIT system up to a maximum of 50 years of age. The due relaxation in upper age is made available for SC/ST, OBC, PH and Ex-servicemen

candidates as per Central Govt. Rules. There is no upper age limit for Group-A Officers at the Institute.

- (b) SC/ST and PH candidates 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 interview [For Group-A: 1<sup>st</sup> class/AC-III and for Group B and C : 2<sup>nd</sup> class rail fare];
- (d) Experience requirement is relaxable at the discretion of competent authority.

#### Employment notification etc.:

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. The copies of Employment Notices/ Notifications are sent to recognized SC/ST Welfare Associations for publicity among their members.

During the period of report, the **details of Advts.** (External) issued through Recruitment Section is as under:

Advt. No.	Name of Post(s)	Pay Scale	No. of Vacancies					Total	Published in
			SC	ST	OBC	PH	UR		
1/2009	Superintending Engineer	PB-4:Rs.37400-67000 with GP:Rs.8700/-	-	-	-	-	1	1	All Editions of Employment News, Dainik Jagran (Northern Region), Times of India (Northern Region).
2/2009	Medical Officer	PB-3:Rs.15600-39100 with GP:Rs.5400/-	-	-	1	-	-	1	All Editions of Dainik Jagran, (Nai Rahein) Times of India, & Employment News
	Junior Superintendent	PB-2:Rs.9300-34800 with GP:Rs.4200/-	1	-	1	-	2	4	
	Junior Assistant	PB-1:Rs.5200-20200 with GP:Rs.2000/-	1	-	1	-	2	4	
4/2009	Ex. Engineer (Civil)	PB-3:Rs.15600-39100 with GP:Rs.6600/-	-	-	-	-	1	1	All Editions of Dainik Jagran,



Asstt Ex. Engineer (Electrical)	PB-3:Rs.15600- 39100 with GP:Rs.5400/-	-	-	-	-	1	1	(Nai Rahein) Times of India, & Employment News
<b>Total</b>		<b>2</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>7</b>	<b>12</b>	

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:**

One SCT and/or OBC 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:

<b>For Selection</b>	Total <b>12</b> Selection Committee meetings: <b>09</b> S/C meeting, wherein SCT and OBC representatives included <b>02</b> S/C meeting, wherein OBC representative included <b>01</b> S/C meeting, wherein SCT representatives included
<b>For Assessment</b>	No assessment committee meeting held during the period

#### **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 & registered/speed post or courier 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:**

1. The Institute has been allotting 1<sup>st</sup> in every ten qrs. to SC/ST employees, out of Type-1A, Type-1B Type-1 and Type-II Qrs. & 1<sup>st</sup> 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			
	SC/ST		GEN	Total
	As per Reservation	As per Seniority		
Type-1A	-	-	0	0
Type-1B	-	03	10	13

Type-I	-	09	34	43
Type-II	-	06	12	18
Type-III	-	-	48	48
Type-IV	-	-	16	16
Type - V & VI	<b>No reservation</b>		01	01

2. There is no reservation in the quarters of Type -V & VI (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/OBC employee under the period of report.

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	-	-	-	43	43
<b>Total [a]</b>				<b>43</b>	<b>43</b>
Retirement	-	-	-	3	3
Deaths	-	-	-	1	1
Resignation	-	-	-	2	2
V/Retirement	-	-	-	3	3
C/Retirement	-	-	-	-	-
SVRS	-	-	-	-	-
Deputationists repatriated	-	-	-	-	-
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-
<b>Total [b]</b>				<b>09</b>	<b>09</b>

**B: Non-Academic:**

Area(s)	SC	ST	OBC	GEN	TOTAL
Appointments On permanent basis (Through open Recruitment)	-	-	-	1	1
On compassionate grounds	-	-	-	1	1
On deputation basis	-	-	-	-	-
On contract for 5 yrs	2	1	3	12+1#	18+1#
<b>Total [a]</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>14+1#</b>	<b>20+1#</b>
Retirement	7	-	-	29+1*	36+1*
Deaths	1	-	-	7	8
Resignation	2	1	5	2+1#	10+1#
V/Retirement	1	-	-	-	1
C/Retirement	-	-	-	-	-
SVRS	-	-	-	-	-
Deputationists repatriated	-	-	-	2	2
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-
End of contract	1	-	-	-	1
<b>Total [b]</b>	<b>12</b>	<b>1</b>	<b>5</b>	<b>40+1*+ 1#</b>	<b>58+1*+1#</b>

# PH

\*Cleaners

**A. Existing Strength of Academic Staff (Teaching/Non-teaching) as on 01.04.2010:****Recruited through DOFA Office**

Academic	SC	ST	OBC	GEN	Total
Teaching	2	-	-	342	344
Non-Teaching	1	-	-	32	33
<b>Total</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>374</b>	<b>377</b>

**B. Existing Strength of Non-Academic Staff as on 01.04.2010:****Recruited through Recruitment Section**

Group	SC		ST		OBC		GEN	Total
<b>A</b>	4	13.79	0	0	2	6.89	23	29
<b>B</b>	65	21.45	7	2.30	27	8.92	204	303
<b>C</b>	33	19.88	4	2.41	31	18.67	98	166
<b>D</b>	37	25.69	0	0	10	6.94	97	144
<b>Total</b>	<b>139+8*</b>	<b>21.62</b>	<b>11</b>	<b>1.71</b>	<b>70</b>	<b>10.90</b>	<b>422</b>	<b>642+8*</b>

\*Cleaners, not counted towards reservation.

The detailed summary of existing strength of non-academic staff as on **01.04.2010** and representation of SC/ST/OBC

Group/ Stream/ Mode	SC		ST		OBC		GEN	TOTAL
ANR	0	0.00	0	0	1	12.50	7	8
ANU	3	25.00	0	0	0	0.00	9	12
ATR	1	33.33	0	0	1	33.33	1	3
ATU	0	0.00	0	0	0	0.00	6	6
<b>A</b>	<b>4</b>	<b>13.79</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6.89</b>	<b>23</b>	<b>29</b>

BNR	3	10.71	2	7.14	6	21.43	17	28
BNU	26	27.66	1	1.04	0	0.00	67	94
BTR	19	19.00	3	3.00	21	21.00	57	100
BTU	17	20.99	1	1.23	0	0.00	63	81
<b>B</b>	<b>65</b>	<b>21.45</b>	<b>7</b>	<b>2.30</b>	<b>27</b>	<b>8.92</b>	<b>204</b>	<b>303</b>

CNR	12	21.05	0	0	12	21.05	33	57
CNU	2	12.50	1	6.25	0	0.00	13	16
CTR	14	18.92	1	1.35	19	25.68	40	74
CTU	5	26.32	2	10.53	0	0.00	12	19
<b>C</b>	<b>33</b>	<b>19.88</b>	<b>4</b>	<b>2.41</b>	<b>31</b>	<b>18.67</b>	<b>98</b>	<b>166</b>

<b>Cleaners</b>	<b>8*</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8*</b>
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<b>Total</b>	<b>139+8*</b>	<b>21.62</b>	<b>11</b>	<b>1.71</b>	<b>70</b>	<b>10.90</b>	<b>422</b>	<b>642+8*</b>
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**Abbreviations:** SC-Scheduled Caste, ST-Scheduled Tribes, OBC-Other Backward Class, GEN-General, A, B, C & D - Groups, N - Non-technical, T-Technical, R- Recruited, U-Upgraded, \* Not counted towards reservation

**C. Existing Strength of Account-II Employees as on 01.04.2010:****Recruited Through DORD Office**

Group	SC	ST	OBC	GEN	Total
B	-	-	1	10	11
C	1	-	-	09	10
D	3	1	4	3	11
<b>Total</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>22</b>	<b>32</b>

**D. Existing Strength of Mess Employees as on 01.04.2010:****Recruited through COW Office**

Group	SC	ST	OBC	GEN	Total
B	-	-	1	4	5
C	-	-	1	2	3
D	14	-	31	49	94
<b>Total</b>	<b>14</b>	<b>-</b>	<b>33</b>	<b>55</b>	<b>102</b>

The data as available for showing the representation of SCs/STs/ OBCs related to the students admitted in the 1<sup>st</sup> Semester 2009-10 in various programmes/ disciplines at the Institute is given below:

Programmes	Registration Data in the 2009-2010 I Semester				
	SC	ST	OBC	GEN	Total
<b>B.Tech</b>					
AE	05	04	06	19	34
BSBE	06	0	06	19	31
ChE	08	03	10	29	50
CE	09	06	14	39	68
CSE	07	03	08	26	44
EE	12	05	16	52	85
MME	15	02	14	46	77
ME	08	05	12	37	62
<b>TOTAL</b>	<b>70</b>	<b>28</b>	<b>86</b>	<b>267</b>	<b>451</b>

Programmes	Registration Data in the 2009-2010 I Semester				
	SC	ST	OBC	GEN	Total
<b>M.Sc. (5 yrs)</b>					
Chemistry	0	0	2	13	15
Economics	03	01	02	16	22
Mathematics	05	-	08	22	35
Physics	02	-	04	13	19
<b>Total</b>	<b>10</b>	<b>01</b>	<b>16</b>	<b>64</b>	<b>91</b>

Programmes	Registration Data in the 2009-2010 I Semester				
	SC	ST	OBC	GEN	Total
BT-MT (dual)	01	01	02	05	09
AE	01	01	02	05	09
ChE	02	01	02	08	13
CE	03	01	03	12	19
CS&E	05	03	05	20	33
EE	04	02	05	16	27
ME	03	02	03	13	21
<b>Total</b>	<b>18</b>	<b>10</b>	<b>20</b>	<b>74</b>	<b>122</b>

Programmes	Registration Data in the 2009-2010 I Semester				
	SC	ST	OBC	GEN	Total
M.Sc.-PhD (dual)					
Physics	02	0	02	06	10
<b>Total</b>	<b>02</b>	<b>0</b>	<b>02</b>	<b>06</b>	<b>10</b>

Programmes	Registration Data in the 2009-2010 I Semester				
	SC	ST	OBC	GEN	Total
M.Sc. (2 yrs)					
Chemistry	05	01	9	18	33
Mathematics	06	01	10	13	30
Statistics	03	-	04	18	25
Physics	04	-	05	14	23
<b>Total</b>	<b>18</b>	<b>02</b>	<b>28</b>	<b>63</b>	<b>111</b>

#### Registration Data of M. Tech. / MBA / M.Des. Students of 2009-10-I Semester

Dept.	SC	ST	OBC	GEN	Total
AE	8	1	2	20	31
CHE	3	0	6	16	25
CE	5	0	11	41	57
EE	2	2	10	51	65
ME	13	4	23	43	83
MME	5	0	2	19	26
CSE	1	1	2	35	39
MSP	1	0	4	7	12
IME	3	0	3	10	16
MBA	7	0	8	27	42
NET	1	1	3	7	12
LT	1	0	3	5	9
EEM	1	0	5	11	17
BSBE	1	0	0	9	10

DES	3	0	3	14	20
<b>TOTAL</b>	<b>55</b>	<b>9</b>	<b>85</b>	<b>315</b>	<b>464</b>

**Registration Data of Ph D students of 2009-10-I Semester**

Dept.	SC	ST	OBC	GEN	Total
AE	1	0	2	6	9
CHE	2	0	0	3	5
CE	0	0	1	6	7
EE	1	0	2	10	13
ME	1	0	1	9	11
MME	1	0	0	8	9
CHM	2	0	7	19	28
MATH	4	0	3	2	9
PHY M Sc PhD (Dual)	3	1	7	7	18
	-	-	-	-	-
HSS	0	0	1	4	5
CSE	0	0	0	3	3
MS	1	0	1	2	4
STA	-	-	-	-	-
IME	0	0	1	3	4
NET	0	0	0	2	2
BSBE	1	0	2	4	7
<b>TOTAL</b>	<b>17</b>	<b>1</b>	<b>28</b>	<b>88</b>	<b>134</b>

### **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 the four bilingual computers for smooth and efficient working. It is managed by a liaison Officer, Assistant Registrar, a Superintendent and two technical assistants (Translation) and one Project employee. 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 guidelines to the Rajbhasha Prakoshtha in its planning and performance. The Rajbhasha Prakoshtha performs various activities like organization of Hindi Diwas, Hindi workshops and holds meetings for promoting the atmosphere of Rajbhasha in the Institute round the year.

The Rajbhasha Prakostha has adopted the following policies:

1. Entire correspondence with Group D employees are done in Hindi.
2. All Hindi letters are replied to in Hindi.
3. All routine forms and the heading of Registers have been printed bilingually in most of the department of the Institute.
4. The name plates, office stamps, sign boards, letters heads and the envelopes etc. have been made bilingual.
5. Regular class of Prabodh, Praveen & Pragya for the Non Hindi speaking employees have already been started. Eighteen Non Hindi speaking employees have been trained in Prabodh and Praveen and Pragya.

#### **The act and the Statutes of the Institute have been made bilingual.**

The Annual Report of the Institute for 2008-2009 and the Audit Report for the F.Y. 2008-2009 received from the Account Section/AG,UP were translated into Hindi and fair copies typed for submission to the ministry.

Quarterly news letter SAZAG published in Hindi. The press release and invitation cards for the Convocation were issued bilingually. All periodical reports were sent to the Ministry and the Nagar Rajbhasha Karyanvayan Samiti in time.

In compliance with the directives of Official Language Department, New Delhi, Hindi fortnight was observed by conducting various competitions from 01 Sept.2009 and on 14 Sept. 2009 Hindi Diwas samaroh was held in the Lecture Hall complex, in which winners of the various competitions were honored with suitable books awards.



**Following Competitions were held from 01.09.09 to 14.09. 2009**

- a) Hindi Dictation competition (Fourth class employees)
- b) Hindi essay competition
- c) Dictation competition (Non Hindi speaking employees)
- d) Noting Drafting competition
- e) Poetry recitation competition

Winner of above competitions were as under :

**A) Dictation competition (Fourth class employees)**

1. Shri Om Prakash Yadav (First)
2. Shri Sanjeev Batham (Second)
3. Shri Moh. Na ieem (Third)

**B) Hindi Precis Writing Competition**

1. Shri Moh. Nizam Khan (First)
2. Smt. Richa Gupta (Second)
3. Shri Rajendra Dabra Third)
4. Shri Moh. Yavar Hussain (Con.)

**C) Noting & Drafting Competition**

1. Moh. Nizam Khan (First)
2. Shri Anil Kumar Sharma (Second)
3. Shri Sandeep Kumar Third)
4. Shri Shiv Shankar Shukla (Con.)

**D) Hindi Typing Competition**

1. Shri Sandeep kumar (First)
2. Ms. Priyanka Katiyar (Second)
3. Shri Binu S. (Third)
4. Ms. Akanksha jaiswal (Con.)
5. Sarita Gautam (Con.)

**E) Hindi General Knowledge Competition**

1. Shri Ravi Shukla (First)
2. Shri Uma Shankar (Second)
3. Shri Kamlesh Singh (Third)
4. Shri Radha Saran Satsangi (Third)
5. Shri Anil Kumar Dubey (Con.)
6. Shri Kamlesh Kumar Thapliyal (Con.)

**F) Poetry recitation Competition**

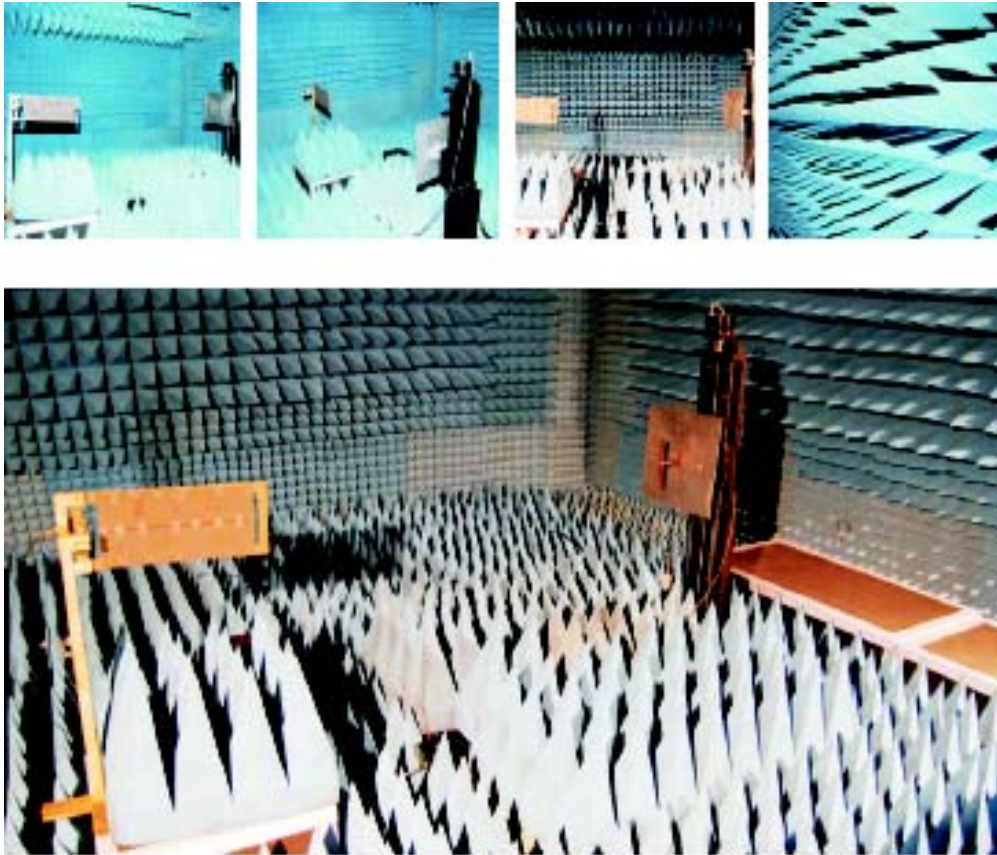
1. Ms. Rakhi. App. (First)
2. Shri C S Goswami (Second)
3. Shri Sanjeev Kumar Gupta (Third)

4. Shri Rajesh Kumar Srivastava (Con.)

During the year 2008-09 about 234 letters from Directorate, 211 letters from Registrar's office, 374 letters/circulars from Administration Section and 467 letters from others Section were issued in Hindi.

Rajbhasha Prakoshtha is dedicated to the upliftment of Hindi in the Institute. Prakoshtha is always ready to co-ordinate with each and every department/ Section of the Institute in implementing the orders and directives received time to time from the Ministry of Human Resources & Development, Govt. of India.

On the occasion of Hindi Diwas samaroh 21 employees of the Institute were honored who are working in official language.



The radio-frequency shielded anechoic chamber, located in the Department of Electrical Engineering, is a closed RF echo free space that simulates infinite free space condition inside a room. It is constructed by covering the inner walls of the room by RF absorbers made of carbon-impregnated foam shaped in the form of pyramids. Such chambers – vital to research on communication engineering, are used for measurement of antenna radiation pattern, electromagnetic compatibility, and radar cross-section.

## Finance

The Ministry of Human Resources & Development (MHRD) has released ` 13855.00 lakh as Non-Plan Grant, 3500.00 lakh as Normal Plan Grant and 6700.00 lakh as Plan (OSC) in the financial year 2009-2010.

### NON-PLAN

The total receipt under Non-Plan during the financial year 2009-2010 from Ministry of Human Resources & Development, Government of India is ` 13855.00 lakh. The Internal Receipts of Institute is 2890.94 lakh.

The Total Non Plan expenditure during the financial year 2009-2010 comes out to 17198.36 lakh. The deficit of 175.00 lakh has been met out from Interest Earning of Endowment Fund Account.

### NORMAL PLAN

A total receipts under Normal Plan during the financial year 2009-2010 is of 3500.00 lakh under Plan from the MHRD, Government of India.

With an opening balance of 720.80 lakh, the total expenditure under Normal Plan is restricted to 3645.41 lakh. This expenditure includes 1231.84 lakh on Building & Works and Central AC Facility, 1923.48 lakh on Non-Consumable purchases including Equipment, Furniture & Fixtures etc., 375.00 lakh on Periodicals & Journals and 115.09 lakh on Recurring Expenditure includes expenditure on scholarships for new entrants. Balance of 575.39 lakh has been carried over as unspent balance for the financial year 2010-11.

### PLAN (OSC)

A total receipts under Plan (OSC) during the financial year 2009-2010 is of 6700.00 lakh under Plan from the MHRD, Government of India.

With an opening balance of 1048.16 lakh, the total expenditure under Plan (OSC) is restricted to 6060.87 lakh. This expenditure includes 3829.43 lakh on Building & Works and Central AC Facility, 1713.11 lakh on Non-Consumable purchases including Equipment, Furniture & Fixtures etc., 518.33 lakh on Library Books, Digitalization of Library and Periodicals & Journals. Balance of 1687.29 lakh has been carried over as unspent balance for the financial year 2010-11.

### INCOME AND EXPENDITURE FOR THE YEAR 2009-10 UNDER MAJOR HEADS

Sl. No.	Particulars	Income (` In lakh)	Expenditure (` In lakh)
1	Non- Plan	17198.36	17198.36
2	Normal Plan (Opening Balance - 720.80 lakh)	3500.00	3645.41

3	Plan (OSC) (Opening Balance - 1048.16 lakh)	6700.00	6060.87
4	JEE	641.17	505.87 (Non Plan)* 10.97 (Plan)
5	GATE	1642.01	1360.90 (Non Plan)* 4.94 (Plan)
6	GATE (JMET)	1.03	5.20 (Non Plan)*
7	Research & Development	1121.17	854.23 (Non Plan)
8	Deans Capital Fund	59.73	11.06 (Non Plan)* 7.87 (Plan)
9	Hall Management	749.50	743.96 (Non Plan)* 0.36 (Plan)
10	Fund Hall Management	123.81	75.37 (Non Plan)*
11	Pension Hall Management	163.71	180.37 (Non Plan)*
12	Student Gymkhana	31.91	29.30 (Non Plan)*
13	Visitors Hostel	90.62	86.77 (Non Plan)*
14	Endowment Fund	1488.89	825.44 (Non Plan)
15	GATE (JAM)	31.82	22.47 (Non Plan)*

### Endowment Report

The total amount of donation received during 2009-10 was Rs. 4.13 crore contributed by 584 donors as compared to Rs. 5.12 crore contributed by 974 donor in 2008-09.

Many new chairs, students scholarships and awards have been instituted during the financial year.

During the financial year 2009-10, 137 students have been sanctioned financial support from DRPG office for attending international conferences. The support ranges from Rs. 20,000 to Rs. 40,000 per student.

During the financial year 2009-10, partial travel support to 9 new faculty members have been sanctioned for attending International Conferences .

One international visiting faculty in Civil Engineering Department has been provided financial support to visit IIT Kanpur.

During SURGE 2009 programme a total number of 52 (IInd and IIIrd year) students have completed 10 weeks research projects. Among them 20 students were from IIT Kanpur, 27 students from National Institute of Technology from across the country, 2 students from Rice University, USA and 3 students from Ecole Centrale, Paris . Seven students from IIT Kanpur

visited overseas universities (3 students to Caltech, USA, 3 students to Ecole Centrale, Paris and 1 student to Ecole Polytechnique, Paris) under this programme.

During the financial year 2009-10, 127 students have been sanctioned cash awards for publication of their research papers in ISI Web Journals.

The following expenditure was made during 2009-10 from Endowment Fund A/c on different activities .

<b>S.No.</b>	<b>Project Title</b>	<b>Total Amount</b>
1-	Development & Operational activities in this Institute	3,73,42,182
2-	Development of Campus School	6,95,658
3-	SURGE Program	9,91,602
4-	Cash Award to Students for writing Research Papers	17,90,000
5-	Partial Travel Support to New Faculty for attending International Conferences	5,07,884
6-	Partial Travel Support to Students for attending International Conferences	32,36,701
7-	Patent Filing	9,00,378
8-	Contract Workers Welfare Relief fund	20,000
9-	Prabhu Goel Research Centre for Computer Security	11,16,640
10-	CSE Building Maintenance	5,60,626
11-	Research I-Foundation	1,04,66,726
12-	Research and Outreach Activities in earthquake engineering	19,93,964
13-	Solar Energy Research Enclave	7,78,271
14-	Student Welfare Activities	9,24,425
15-	Community Services	6,41,615
16-	Civil Engineering Summer Camp	50,000
17-	Faculty Lounge (1968 Batch Fund)	20,00,000
18-	Student Scholarship & Awards	18,31,274
19-	Batch Activities	8,89,964
20-	Distinguished Lecture Series	2,22,287

21-	Faculty Chairs	38,25,102
22-	NICEE Endowment Fund	9,70,146
23-	Miscellaneous Activities	62,12,525
24-	DRPG Activities	78,68,576



The Centre for Environmental Science and Engineering, inaugurated in January 2008, is conceived with the specific objective of integrating the fields of engineering, science and medicine to address research related to health, water, sensors, and remediation. The Centre has been designed and constructed as a building in the garden that is sustainable and environment friendly. The facility has obtained a 5 star TERI-GRIHA Green Building certification. A leader in sustainable research infrastructure, we may truly say that the Center brings the future in our midst.



## **Facilities to Students**

### **1. 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, as a special case, are permitted to stay with their parents on the campus.

The Institute has nine Halls of Residence for boys, namely Hall I to Hall X, and two for girls (GH) with total capacities of 3800 and 450 for boys and girls respectively. In addition, there is accommodation for 72 students in single bedroom apartments (SBRA).

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 Yr.) 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, PC room, 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, staffs 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.

### **1. 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:

Loan	Short Term	Long Term
Short Term/Long Term	45	4

Student's Benefit Fund (SBF) also provides scholarships of the value of Rs. 1200/- per and Rs. 1500/- month to the needy students. 54 and 5 respectively scholarships from the SBF were provided during the year 2009-2010.

### SCHOLARSHIPS FOR UNDERGRADUATE STUDENTS

Merit-cum-Means scholarships of the value of Rs. 1000/- per month 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), B. Tech.-M. Tech. Dual degree and M. Sc. (2-year) programmes provided that the income of their parents does not exceed Rs. 2,00,000.00 per annum. 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 Free Basic Mess (scholarships).

In addition, several students of the B. Tech. /M. Sc. (Integrated) and M. Sc. (2-year) 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 2009-10.

**TABLE-I (A): Scholarships for B. Tech. / B. Tech.-M. Tech. Dual degree/ M. Sc. (Integrated) for the year 2009-10**

Undergraduate Scholarships	Year				
	I	II	III	IV	V
MCM @ Rs. 1000/- p.m. with Freeship	132	104	80	10 0	12
Freeship	---	14	17	10	5
Free Basic mess plus Pocket Allowance @ Rs.250/- p.m.	38	46	43	54	12
Free Basic mess plus Pocket Allowance @ Rs.250/- p.m. for Prep.	06	---	---	---	---
Aedunuthula Prasad Memorial	---	---	---	1	---
Arakere and Karen Vasudev	---	---	1	---	---
BGM Kumar Foundation	---	1	---	---	---
Bhuwan and Indira Joshi	1	---	---	---	---
Bishambar Gupta and Anguri Gupta	---	---	1	---	---
Biswanath Jha Memorial	---	1	---	---	---
Dr. Gurcharan Singh Kainth	---	1	1	1	---
Dr. Hari Mohan and Pushpa Srivastava	---	---	1	---	---

Guru Ji Ghasit Ram	1	1	---	---	---
Harish and Sushila Chandra	1	---	---	---	---
Indra Dhanush Awards	---	---	---	1	---
Khem Chandra Yadav	1	1	---	---	---
Kinra	1	1	---	1	---
Kunta Jha	---	1	---	---	---
Mahesh & Shashi Chandra	---	1	---	---	---
Mathur Brothers	1	---	---	---	---
N.S. Rajaraman	---	1	---	---	---
Neta Ji Balwan Singh	1	---	---	1	---
Nita Goyal and Ashish Gupta	1	---	---	1	---
P.D.Murti Memorial	---	1	1	1	---
Pt. Balajee Govind Hardikar Memorial	1	---	---	---	---
Prof. C.N.R. Rao Science Talent	---	---	---	1	---
Prof. Netarlal Kapur	---	---	1	---	---
Ram Rajendra Malhotra Education Society	3	---	---	---	---
Sarpanch Salik Ram Katiyar	1	1	---	---	---
Shiv Kumari Shukla	---	1	---	---	---
Shiv Prakash and Dayawanti Sharma	---	---	---	1	---
Shri D.P. Shukla	1	---	---	---	---
Smt. Jagat Kaur Memorial	---	1	---	---	---
Sri Jamuna Prasad and Basanti Gupta	---	1	---	---	---
Sri Temasek@iitk	---	1	---	---	---
Tapan Kumar and Swapna Bandhyopadgyay	---	1	---	---	---
Vasudeo Laxman Sahasrabuddhe Vaidya	---	---	---	1	---
Yasodha Yadav	1	1	---	---	---
Yogendra Nath and Sushma Gupta	---	1	---	---	---
Shrikant Mishra Scholarship	---	1	---	---	---
Sudarshan Kasturia Memorial Scholarship	---	1	---	---	---
Shri Shankar Lal Shrimati Prema Debi	1	---	---	---	---
Tarun Sondhi Memorial Scholarship	1	---	---	---	---
Kemchnd Memorial Scholarship	---	---	---	---	1
Dr. M. Anantaswamy and Mrs. Vijayalakshmi Rau	---	---	---	1	---
S. C. Mehrotra's Scholarship	---	1	---	---	---
Shri Kalp Nath Singh	---	---	1	---	---
Shanti Devi and Omkar Nath Maewal Memorial	---	---	1	---	---
K. N. Saluja	2	2	2	2	---
Sri Singhasan Singh	---	---	1	---	---
Romesh Chandra Memorial	---	---	---	2	---
Dharmavati Garg	---	---	---	4	---
Durga Devi Memorial	---	1	---	---	---
Dr. K.P. Gupta	---	---	1	---	---
Baljit and Nirmal Dhinsa	1	1	---	---	---

Mona and Paramjit Singh	---	---	1	1	---
Rajnath Singh Scholarship	---	---	---	1	---
Nitish Thakor	1	---	---	---	---
Pushpa Garg	1	---	---	---	---
Aviation Development Award	---	---	6	---	---
Dr. D.R. Bhagat Scholarship	---	---	2	---	---
Neeraj Kapoor Memorial	---	---	---	1	---
Vinay Kapoor Memorial Scholarship	---	---	---	1	---
Bhawan Das Kapoor Memorial Scholarship	1	---	---	---	---
Anil and Reshma Nigam Scholarship	---	---	1	---	---
Govinda and Indira Srikantiah	---	---	1	---	---
Simran Mandeep Kainth Memorial	---	1	1	1	---

Post Metric Scholarship	1	2		1	
NTS Scholarships	22	27	19	23	16
SAIL, Bokaro City			3		
FAEA Scholarship		4	4		

TABLE-I (B): Scholarships for M. Sc. (2-year)/ M. Sc. - Ph. D. Dual degree 2009-10

Undergraduate Scholarships	M. Sc. (2-years)	
	I-year	II-year
MCM @ Rs. 1000/- p.m. with Freeship	39	34
Freeship	---	07
Free Basic Mess Plus Pocket Allowance @ Rs.250/- p.m.	10	09
Pratima Ghosh Memorial	---	1
Ramesh Chandra Yadav	1	1
Jasmine and Mohiuddin	---	1
Seema Jain Memorial	---	1
ACC Fellowship	1	---

All the SC/ST category students get tuition fee waiver irrespective of their parent's income. Concession of free messing (basic menu only) plus pocket allowance of Rs. 250/- per month to these SC/ST category students whose parent's income does not exceed Rs. 2,00,000/- per annum, in the previous financial year.

## POSTGRADUATE STUDENTS

The amount of teaching/research assistantship or fellowship for M. Tech. students is Rs. 8000/- per month while that for Ph. D. students in engineering disciplines is (a) Rs. 14000/- for first two years and (b) Rs. 15,000/- for subsequent years. The amount of assistantship or fellowship for Ph. D. students in Sciences and Humanities & Social Science is (a) Rs. 12000/- per month for the first two years of their programmes and (b) Rs. 14000/- per month for subsequent years &

Rs.15000(in 5<sup>th</sup> year), with stipulation that these students are expected to devote up to eight hours per week towards job(s) assigned to him/her.

### 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**

S. No.	Items of Expenditure	Ph. D.	M. Tech.
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	1000.00

### 3. SPECIAL ASSISTANCE TO SC/ST & OBC 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), 7.5% for the Scheduled Tribes (ST) students & 18% seats are reserve for OBC (for non-creamy layer). A separate merit list is drawn for those OBC & SC/ST students, who appear for the Joint Entrance Examination. Cut-off point for calling them for the Counselling and thereafter for the offer of admission is based on the relaxed criteria.

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.

All the SC/ST category students get tuition fee waiver irrespective of their parent's income. Concession of free messing (basic menu only) plus pocket allowance of Rs. 250/- per month and room rent exemption are admissible to these SC/ST category students whose parents income does not exceed Rs. 2,00,000/- per annum, in the previous financial year.

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.

### 4. 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 2009-10. In addition, 7% students in order of merit in each year are given a Certificate of Merit and a cash prize of Rs. 400/- for UG and Rs. 600/- for PG students.

TABLE-III: AWARDS AND PRIZES (2009-10)

S. No.	Awards and Prizes	B. Tech./ M. Sc. (Intg.)/Dual degree	M. Sc. (2-Year) / Dual degree
1	President Gold Medal	1	---
2	Directors Gold Medal	1	---
3	General Proficiency Medal	22	5
4	Proficiency Medal	15	3
5	Cadence Gold Medal	01 (M.Tech)	---
6	Cadence Silver Medal	1	---
7	Prof. Adidam S. R. Sai Memorial Gold Medal	01 (M.Tech.)	---
8	Prof. Adidam Sri Ranga Sai Memorial Medal	1	---
9	Ratan Swarup Memorial Prize	1	---
10	Banco Foundation Prize (ME)	1	---
11	Dr. Shanker Dayal Sharma Medal	01 (M.Tech.)	---
12	Prof. Vijay Mahajan Gold Medal	01 (M.Tech.)	---
13	Batra Gold Medal	1	---
14	IEEE/Pedes'96 Award	02 (M.Tech.)	---
15	Bhagwani Devi Maheshwari Gold Medal	1	---
16	Prof. Bal Deva Upadhayaya Memorial Gold Medal	01 (M.Tech.)	---
17	Mars G. Fontana Prize (MME)	1	---
18	N. Balakrishnan Award	---	2
19	Prof. J. N. Kapur Prizes	5	---
20	Smt. P. K. Subbulakshmi Memorial Award	01 (M.Tech.)	01
21	Gargi, Kritika & Maitreyi Awards	3	---
22	Sridhar Memorial Prize (EE)	2	---
23	Ajai Agarwal Memorial Prize	1	---
24	Dr. Sangeeta Goel Memorial Award	1	---
25	Notional Prizes (UG)	126	4
26	Notional Prizes (PG)	48	
27	O. P. Bajaj Memorial Award	2	---
28	Amit Saxena Memorial Award	1	---
29	Aditya Birla group of Industries Scholarships	5	---
30	Goldman Sachs Global Leaders Program	4	---
31	Mehta M. Tech. Gold Medal Award	01 (M.Tech.)	---
32	IITK Excellance Award for Leadership	4	---
33	IITK Excellance Award for Art & Cultural	1	---

34	IITK Excellance Award in Community Services	1	---
35	BEST SOFTWARE AWARD	01 (M.Tech.)	---
36	BINAY KUMAR SINHA AWARD	4	---

## 5. 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 focussed towards the holistic development of their mind and body. The year 2009-2010 also saw a very active calendar in the form of various games and cultural events.

### PRESIDENTIAL COUNCIL

The Presidential council carried out following activities during 2009-2010:

2nd Inter IIT Gymkhana Summit was held from 28th March, to 29<sup>th</sup> March 2010 in IIT Kanpur after much celebrations . Delegates from 5 IIT's participated . The IIT's participating in the Summit were IIT Guwhati , IIT Roorkee , IIT Gandhinagar , IIT Rajasthan and IIT Kanpur.

In the period of March '09 – March '10, a total of 20 talks were held under GLDC which include 6 TaLeS talks , 2 talks held in Takneek 1 seminar and 2 Weekly Discussion Sessions . GLDC also helped in organizing "Masti ki Paathshaala" on Teachers' Day as a part of the Teachers' Day function. GLDC has organized these talks with the help of STAMATICS, GJ Committee and is working on its relations with other clubs like Aeromodeling Club from the SciTech Council. This will help in the bridging the gap between different Councils within the Gymkhana and encourage more such talks.

Prayas came into existence in the year 2001. It all started when a few students from the campus visited a school in an adjoining village, Lodhar on the Republic Day of 2001. This first interaction with the villagers and the children not only started a never ending relationship, but also made them realize their conditions so different from theirs.

Classes are being conducted for 6 days a week, out of which Wednesday is reserved for sports. On Saturday, experiments are shown to students and they are taught the basic theory behind them. On Sunday, computer classes are held for 2hrs in the morning for interested students. Some kids whose families are unable to support their education financially are supported by Prayas fund. This year also 9 students have been supported by Prayas to either begin or continue their journey of education.

The activities mainly consisted of acquisition of new books, from flipkart.com with an average of around 20% discount. Books were bought from the Delhi Book Fair in the first semester.

## SCIENCE AND TECHNOLOGY COUNCIL

The following are some of the major benchmarks, The Science and Technology Council had in this year:

1. Lecture on introducing students to Google Summer of Code.
2. Workshop in Quantitative Finance from Goldman Sachs.
3. "Eyes on the Skies" was initiated by Astronomy club as part of the celebration of 100 years of astronomy. It included lectures, workshops on various aspects of astronomy and observation sessions for all.
4. SnT Summer Camp was organized from May 15 to June 25.
5. Astronomy Club organized a trip to Patna to observe & photograph the total solar eclipse on 22nd June.
6. Snt Pavilion was set up during the orientation.
7. Business Week was organized from Aug 11 to Aug 15 2009.
8. Electrovate, an electronics design competition was started this year.
9. Business Clun organized lectures for discussion of Satyam Scam & Enron Scandal.
10. Strategy games like Oil tycoon were introduced in Business Club this year.
11. Intra Hostel, Science & Technology competition Takneek was organized from 17th to 20th September.
12. Dr. Pradeep Srivastava was invited for a talk on Sciencetoon on 19th September.
13. Contingent from Robotics Club secured 2nd position in event SWAT at Techniche'09, annual technical festival of IIT Guwahati.
14. Joy rides were conducted by Aeromodelling club during Antaragini 2009.
15. Prof. Jayant Murthy, Indian Institute of Astrophysics tools a lecture on Search for Extraterrestrial Life on October 31.
16. Projects Exhibition was organized during Golden Jubilee Open House.
17. PSOC lecture & workshop was organized with help of a speaker from Cypress on March 21 2010.
18. Embedded Week was organized by Electronics club from 18th March to 21st march 2010.
19. Business Club, published its newsletter which was circulated in the campus community.
20. A SnT Showcase was organized on 25th February overviewing the work done in respective clubs over the year.
22. Team from robotics club secured 3rd position in event 'Circuitron' at Cognizance'10 organized by IIT Roorkee.
23. Apart from this regular club lectures, workshop as detailed in the club reports were carried out.

## GAMES AND SPORTS ACTIVITIES

Sports council kicked off its work with the Aquamania, it was scheduled between 3<sup>rd</sup> April. On the same weekend institute team visited ISM Dhanbad for the cricket tournament. They performed very well and won silver medal.

New Semester started with the preparation for the inter iit sports meet. Fresher varchasva tournament also had been organized to find some new talent from incoming batch.



Between 20<sup>th</sup> to 23<sup>rd</sup> September institute team visited BITS Pilani to participate in the sports festival Chess team won gold medal, TT team won silver, volleyball and TT girls and badminton boys were semi-finalists.

Inter IIT Aquatics meet was organized between 2<sup>nd</sup>-5<sup>th</sup> October, 2009. IIT Kanpur performed at its best and grabbed all 20 points by winning water polo and boys swimming championship. In girls IITK were 4<sup>th</sup>.

Inter IIT Sports Meet was conducted between 11<sup>th</sup> to 18<sup>th</sup> December, 2009. New indoor sports complex was also inaugurated during the Inter IIT Sports Met. Tournament was organized successfully. **IIT Kanpur stood 3<sup>rd</sup> in boys category and 2<sup>nd</sup> in girls category. IIT Bombay won boys championship and IIT Madras won Girls championship.**

Club Activity :

TKD organized various workshop and events in this year. Very active club throughout the year . Demo presentation in the opening ceremony of Inter IIT sports meet.

Adventure club organized 4 trips in this year, two in the month of September and two in March. A total of 80 students went for these trips.

Skating club organized various workshops and competitions. It was very popular club this year.

### **Cultural Council**

Dance Club , Dramatics Club, Fine Arts Club, Music Club, Quiz Club, English Literary Society, Hindi Sahitya Sabha, Vivekanand Samiti & SPIC MACAY

A club of students' gymkhana is not meant to build up a group of 50-60 people but is formulated with an aim to involve the complete junta of the campus. So working on these lines dance club begun with an **open junta dance workshop conducted by Zishan Ali**. At the same time a new initiative of **incorporating a contemporary dance style** was taken. For that dance club organized a **contemporary dance workshop** during the summers taken by a renowned **choreographer Gaurav Ahalawat**.

This year the Dramatics Club, IIT Kanpur worked with two major aims in mind:

- To involve maximum IITK junta and hence spread the Dramatics Culture in the campus.
- Maintaining and uplifting the reputation of the club by doing well at inter-collegiate festivals.

### **RENDEZVOUS '09 and ANTARAGNI '09:**

IIT Kanpur took three projects to Rendezvous '09, the annual cultural festival of IIT-Delhi:

- An English play - "Accidental Death of an Anarchist" by Dario Fo which was among top four plays in the competition.
- A Street play - "Dobara Mat Poochna" which stood 3<sup>rd</sup> among more than 30 other street plays.
- A Hindi play - "Operation Cloudburst"

IITK performed the Street Play and the Hindi Play in Antaragni '09 as well (where they were awarded the first and third prize respectively). Apart from that, we also received 2<sup>nd</sup> and 3<sup>rd</sup> prize in "Stand up Comedy".

We were adjudged as the best dramatics team and hence received the Overall Dramatics Championship in Antaragni '09.

The academic year 2009-2010 was a great success for the Fine Arts club. The club was successful in conducting some very good workshops by some of the finest artists in India. The level of participation in these workshops was also very high!

Music Club started its calendar 2009-10 well in the summers with preliminary plans of preparation for the coming batch of students. The club was open to all for practice and jamming sessions throughout the summer holidays. Upon the commencement of the first semester, the club organized institute level auditions for the Fresher's Nite. The audition brought about huge number of the first yearites, full with enthusiasm. Around 30 fresher students were selected to perform for an hour long show, from among 150 students who turned up for the auditions. The participation also included members from the PG student community.

The members of the club also performed on the Independence day, representing the student community. After the first mid-semester exams, the club started its preparation for Rendezvous, the IIT Delhi cultural festival. Open auditions were held for the Musical Extravaganza and Rendezvous to spot new talent.

### **Competitions and Events:**

- The year started with Freshers' Frolics, a series of events for freshers starting during the Orientation and lasting for two weeks. We also had workshops in each fresher hostel where all the ELS activities were explained.
- We then had a series of competitions at the institute level in preparation for Antaragni.
- In the next sem, we had two series of competitions before Galaxy and also had a cryptic crossword workshop.
- In addition, we had extensive practice sessions for Rendezvous and Mood I and Antaragni before the respective festivals.

- The new competitions and events tried during this year were: movie discussions, parliamentary debate and group extempore.

### **SPIC MACAY Kanpur Chapter**

The Society for the Promotion of Indian Classical Music and Culture Amongst Youth (SPIC MACAY) is a non-profit, voluntary, apolitical and participatory youth's movement, aimed to enriching education, by presenting a holistic vision of Indian Culture, its priceless heritage of classical folks and community traditions. Since its inception, atleast two generations have participated in the movement, either deeply or peripherally. Like a wave, thousands of the youth and the not-so-young, have surged forward holding its aims and objectives, resulting in a network of over 200 units in India and more than 20 chapters abroad. About 1500 programs are organized every year of maestros like Ustad Amjad Ali Khan, Pt. Shiv Kumar Sharma, Pt. Vishwa Mohan Bhatt, Pt. Hari Prasad Chaurasia, Pt. Birju Maharaj, Smt. Girija Devi, Vidushi Sonal Mansingh, Shri Habib Tanveer, Shri B.V.Karanth and many others. SPIC MACAY is a voluntary, non-profit 'movement', which does not generate funds through its programmes but gets financial assistance from various sources. The main sources are Central and State governments, Zonal Cultural centers, Sangeet Natak Academies and other apex bodies, Industrial houses, corporate sector, charitable trusts and foundations, Educational institutions and individual donations. Our activities have grown significantly over the past 3 years making SPIC MACAY Kanpur chapter one of the most active chapters. Over the past year, a large number of programs were organized at IIT Kanpur, and various schools like Puranchand Vidya Niketan, DPS Kalyanpur , DPS Azadnagar and Virendra Swaroop education center. In the process, we have developed an effective organizing team. We are now in the process of adding more institutions to our family and further the spread of our knowledge about our heritage, art, and culture. We have been getting very encouraging support from Indian Institute of Technology Kanpur in our efforts and sincerely hope that this movement will continue to grow under the institute's patronage.

### **Antaragni'09**

Antaragni'09 was successfully organized from **October 22nd to 25th, 2009**. The festival witnessed participation from **1528 outstation participants** from nearly **100 colleges** all across the country. The Director of IIT Kanpur, Dr. S G Dhande, who welcomed the participants to the festival and urged everyone to uphold the spirit of participation, officially inaugurated the festival on October 22nd in the Auditorium Grounds with the address. The ceremony also saw the unveiling of the trophies for the General Championship and the 8 group championships.

Competitions at Antaragni'09 were grouped in 8 sub-categories namely, Dance, Dramatics, English Literary, Films Photography & Media, Fine Arts, Hindi Literary, Music and Quiz.

After four days of high quality competitions, **IIT Kanpur** emerged with the maximum cumulative points, followed by **Hindu College** from Delhi University in **second place**. IIT Kanpur also topped 7 out of the 8 categories of the competitions.

Numerous respected artists and experts as the judges for the finals of the competitions graced the festival. This was done on the basis of the suggestions and complaints from the participating teams about the level of judging in the previous years. The high level of expertise involved in judging the competitions this year was highly appreciated by the participating teams. It is recommended that the future organizing teams give due importance to ensure a credible panel of judges so that the competitions enjoy the trust of the participating teams and there is no scope for complaints of partiality towards IIT Kanpur which is what used to happen when the judging panels were dominated by in-campus judges.

Also the total number of competitions was reduced from 56 last year to 47 this year helping in the smooth and timely conduction of the competitions.

Continuing with the trend started in the last year, the scheduling was done so as to bring even more competitions like Stand Up Comedy, Acoustic Unplugged, Solo Impromptu etc. and the prelims of Mridaksh and Nukkad in the open in SAC. This was aimed to give competitions a bigger audience and also the mind space that they deserve. It is hoped that the future teams will continue to find newer ways of raising the interest levels of the audience, especially the IIT Kanpur audience in the competitions at Antaragni.

In addition to the above competitions, Antaragni'09 also witnessed the Rock Competition – Synchronicity. The finalists got a chance to open for the headlining act, Jaded Sun at the Rock Nite. 'Weapon Shop' emerged as the winning band.

Ritambhara – Antaragni'09 saw Ritambhara the Fashion Carnival getting bigger and better than ever before with prizes like direct entry to the top 100 of the Miss India Competition for the best female model along with photo shoots by some of the best fashion photographers of the country. The prelims had 13 teams participating out of which 6 qualified for the finals. INIFD Ludhiana bagged the first position followed by INIFD Chandigarh and Galagotias College, Ghaziabad.

Mridaksh – The Prelims of Mridaksh were held in the open air in SAC and received great response from the audience. The finals were held on the last day in the Auditorium. Ms. Neetisha Besra and Mr. Pratyush Pandey, both students of IIT Kanpur were adjudged Ms. and Mr. Antaragni respectively. Kavi Sammelan was organized in the Convocation Grounds on October 23rd and drew a capacity crowd. The crowd was entertained by an array of distinguished poets. India Haat showcased performances from cultural troupes from the states of Gujarat, Rajasthan, Madhya Pradesh and Delhi. The event, this year, was held in the Convocation Grounds and received an enthusiastic response from the audience to the heritage of the various participating states.

The Mall, the hub of informal events in the festival, was a major crowd puller this year. The activities included various stage and non-stage informal events like Antakshari, Gone in 60 seconds, Bollywood Tambola, Couple Games, Tattoo Making, Clay Castle Making, After Hours and an array of networking games. Also for the first time in Antaragni Casino was introduced as a part of the mall. The participants also showed great enthusiasm in the innovative Mall Stalls, Human Scale Board Games, Messenger Service and Mobile Mall.

The Discotheque in Antaragni'09 for the first time was organized in the open in front of Hall 3. The participation from both in-campus and outstation participants was overwhelming. Bringing the discotheque out in the open was largely successful because of the much increased crowd capacity. It is recommended that the future teams continue the practice of organizing this event in the open.

The Professional Shows this year showcased cultural and popular performances for the entertainment of the audience.

The Opening Night this year for the first time was organized in the auditorium grounds. The Fusion bands 'Advaita' and 'Sitar Funk' enthralled the audience with their mesmerizing performances. The Rock Nite was headlined by the Irish Rock sensation, 'Jaded Sun' who put together a scintillating performance for the rock loving audience. Blitzkrieg – the Professional Nite witnessed the audience dancing to the renowned Bollywood Singer KK's songs.

**India Inspired:** The topic of India Inspired was The price of the untraveled path, where we debated on the tendency of the Indian Youth to follow conventional career choices rather than following unconventional career paths synonymous with their likes and interests. The panel discussion was graced by Mr. Raj Kamal Jha (Managing Editor Indian Express), Mr. Vineet Joshi (CBSE Chairman), Ms. Sujata Ramadorai (Member of the National Knowledge Commission) and Ms. Amrita Dass (Institute for Career Studies). The discussion was also supplemented by a Poster Making Competition and an Essay Writing Competition which got around 120 entries from various schools and colleges across the country.

**Kaleidoscope:** The list of activities held under Kaleidoscope was as follows:

- i. Sand Sculpture Exhibition by Mark and Amanda Mason from USA.
- ii. 3D painting workshop and exhibition by Ms. Tracy Lee Stum from USA.
- iii. Origami Workshop by Mr. Himanshu Agrawal
- iv. Salsa Worksop by Mr. Bhupendra Nigam and Ms. Manjusha Nigam
- v. Caricature Making Workshop by Mr. K V Gautam
- vi. Talk by Mr. Rajeev Masand, the renowned film critic.

The activities under Kaleidoscope successfully added a fresh dimension to the festival and it is recommended that the future teams use this as a platform for connecting with the campus community of IIT Kanpur and involving those members of the community as participants in the workshops, exhibitions and talks who have traditionally not shown an inclination towards the other activities of the festival.

## TECHKRITI

Techkriti 2010 was organized from 11th to 14th February, 2010. Techkriti has traditionally been the Annual Science and Technology Festival of IIT Kanpur. But this year, Techkriti and Megabucks, which was the Annual Business and Entrepreneurship Festival of IIT Kanpur, was merged into one with the name of the new festival retained as "Techkriti". The added flavour of Business and Entrepreneurship boosted the success of Techkriti, which has in the past received overwhelming participation from the top technical institutions of the country. The

new dimension of the festival helped us in getting participation from the top business institutions such as IIMs and ISB as well. Apart from this Techkriti 2010 was even more special because it coincided with the Golden Jubilee of IIT Kanpur. As the whole institute was celebrating 50 years of excellence in the field of research and technology, the additional help from the institute authorities made Techkriti 2010 an even bigger success.

## Talks

The following speakers were invited for a talk during Techkriti 2010:

1. Paul Shuch, Dr. SETI, Executive Director Emeritus of The SETI League: Search for Extra-Terrestrial Intelligence (SETI) is the collective name for a number of activities people undertake to search for extra-terrestrial life. Dr. SETI is the name of the person who inhabits the body of noted author and educator Dr. H. Paul Shuch.

Date, Time and Venue: 11 February - 19:00-20:00, Main Auditorium.

2. Professor Rolf-Dieter Heuer, The Director General of CERN: CERN, the European Organization for Nuclear Research, is one of the worlds largest and most respected centres for scientific research in fundamental physics. Professor Heuer known as the Master of Big Experiments with Small Particles, initiated the restructuring and focusing of particle physics at the energy frontier with particular emphasis on the Large Hadrom Collider(LHC).

Date, Time and Venue: 11 February 2010, 22:00- 23:00, Video Conference, Outreach Auditorium.

3. Jaya Prakash Narayan, Former IAS and Social Activist:

J P Narayanan is a former Indian Public Administrator, Social Activist and Columnist. Jayaprakash Narayan started Lok Satta Movement in 1997 to educate citizens of India about voting, rights and government.

Date, Time and Venue: 12 February, 11:00 12:00, Main Auditorium

4. Bernhard Schlkopf, Director, Max Planck Institute of Biological Cybernetics:

Bernhard Schlkopf leading researcher in the machine learning community where he is particularly active in the field of kernel methods. He has made particular contributions with support vector machines and kernel PCA.

Date, Time and Venue: 12 February, 13:00 - 14:00, Video Conference, Outreach Auditorium

5. Lana Israel, CEO, Musical DNA:

The Musical DNA system harmoniously combines music, shapes and colors to retune how the world perceives music how music is taught, learned, composed, experienced, and ultimately, seen. Musical DNA provides the first mathematically precise visualization of music and sound, in both 2D and 3D.

Date, Time and Venue: 12 February, 17:00 18:00, Main Auditorium.

6. Panel Discussion- India Innovators:

Indian Innovators is a forum where we salute those who made a difference with their thought, foresight and vision. We have four people with us each of whom dared to think differently. They gave up the security of the conventional path to success and yet managed to make it big. There would be no better opportunity to interact with minds that stand apart from the crowd, men and women who put their hands up and say - "I do dare disturb the universe." From recycling plastic to getting an IIM degree to sell fruits differently - Indian Innovators showcases a wide variety of talent, talent that is sure to inspire all of us and add a new dimension to our lives. Rarely does one find such a forum so do not miss the chance to be there and witness it live.

The speakers of the panel discussion were:

- Vinnie Chadha : A Fortune out of Boots
- Akshant Khare : IIT B, IIM A alumnus : Reigning Solar Power
- Rohit Nalwade: Founder of Keeptrak Research Labs

Date, Time and Venue: 12 February, 21:30 22:30, Main Auditorium

7. Neeraj Kayal, Gdel Prize and Distinguished Alumnus Award, IIT Kanpur:

He has been awarded the prestigious Gdel prize for his work in computational complexity theory. He was given the Distinguished Alumnus Award of the IIT Kanpur for the same. He is currently working as a Researcher with the Microsoft Research India.

Date, Time and Venue: 12 February, 18:00 19:00, Outreach Auditorium

8. Douglas D. Osheroff, Nobel Laureate, Physics:

Douglas D. Osheroff was awarded the Nobel Prize in Physics in 1996 along for discovering the superfluidic nature of  $^3\text{He}$ . He currently serves on the board of advisors of Scientists and Engineers for America, an organization focused on promoting sound science in American government.

Date, Time and Venue: 12 February, 19:00 -20:30, Main Auditorium

9. Dr. John G. Baker, Goddards Space Flight Center, NASA:

Dr. John G. Baker is the 2008 recipients of the John C. Lindsay Memorial Award for Space Science. He will be delivering a lecture on When black Holes Collide.

Date, Time and Venue: 12 February, 21:00 22:00, Video Conference, Outreach Auditorium

10. Dr Tom Boddington, Nos Gwawr II:

He is a Research Lecturer at the Sustainable Vehicle Technologies. He was the project leader for the award winning Welsh solar car team Gwawr which received the Panasonic World Solar Challenge 2007 Environmental Awareness Award.

Date, Time and Venue: 13 February, 11:00 12:00, Main Auditorium.

11. Dr. Nikolaos Mavridis, Assistant Professor, UAEU PHD, MIT Media Lab:

Nikolaos Mavridis has designed the worlds first Arabic Speaking Humanoid Robot, Ibn Sina. The robot will keep track of interactions between itself and human friends on Facebook, using this information to create new dialogs. He will be delivering a lecture on Humanoid Robots.

Date, Time and Venue: 13 February, 12:00 13:00, Main Auditorium.

12. Dilip Chhabria, MD and Chief Designer, DC Designs:

Mr. Dilip Chhabria Promoter of the Dilip Chhabria Design Private Limited is Currently recognized as the leading automobile designer in India. His company made the first prototype for the Aston Martin Vanquish which appeared in the James Bond movie Die Another Day.

Date, Time and Venue: 13 February, 15:00-16:00, Main Auditorium

13. Oliver Smithies, Nobel Laureate, Medicine

Oliver Smithies is a geneticist and Nobel laureate, credited with the invention of gel electrophoresis in 1955, and the simultaneous discovery of the technique of homologous recombination of transgenic DNA with genomic DNA. Smithies' work has advanced research in cystic fibrosis and could possibly have applications in other human diseases.

Date, Time and Venue: 13 February, 19.30-20.30, Video Conference, Outreach Auditorium

14. Lee Sonko, Founder SWARM

Lee Sonko is a machine artist, entrepreneur and one of the founding members of SWARM. SWARM is a kinetic art work consisting of multiple semi-autonomous spherical robots ("Orbs") that roll under their own power.

Date, Time and Venue: 14 February, 18:00-19:00, Main Auditorium.

## Exhibitions

The following exhibitions formed a part of Techkriti 2010:

### SWARM:

SWARM is a kinetic art work consisting of multiple semi-autonomous spherical robots ("Orbs") that roll under their own power. SWARM is built to explore the aesthetic possibilities and the emergent behavior of artificial systems. As a first step, Orbs are remote-controlled by human operators, but each Orb's sounds and color illumination is algorithmically generated in response to location and motion.

### SOLAR CAR:

Winners of the Panasonic World Solar Challenge Environmental Awareness Award 2007 are producing a new solar car based upon their original design philosophies. The car will have 2 alternative body kits, an aerodynamic 'race mode' and a smaller 'commuter mode'. Completion of the car is anticipated for the North American Solar Challenge 2010.

### FACEBOT:

FaceBots are the conversational mobile robots with face recognition which utilize and deposit social and meeting information on Facebook towards more interesting dialogues about shared memories and shared friends, and ultimately towards more sustainable human-robot relationships.

### DRDO:

The Defence Research and Development Organisation (DRDO) is one of Asia's largest defence contractors and a leading aerospace manufacturer, headquartered in New Delhi, India. DRDO is dedicatedly working towards enhancing self-reliance in Defence Systems and undertakes



design development leading to production of world class weapon systems and equipment in accordance with the expressed needs and the qualitative requirements laid down by the three services.

### **Professional Shows**

Three major Professional shows were organized in Techkriti 2010 which are namely:

- Feeding The Fish: 13th Feb, 21:00-22:00
- Laserman Experience by Theo Dari: 13th Feb, 21:00-22:00
- Sand Animation by Joe Castillo: 19:30-20:30 and 21:00-22:00

### **Sponsors**

Techkriti 2010 saw the overwhelming support from many sponsors. They include JK White, VMWARE, UNIGURU, BHEL, ONGC, American Center, XILINX, NIF, Canadian Embassy, Department of Science and Technology, BSNL, IOCL, Contact Singapore, SBI, Boeing, NTPC, Imagination Technologies, ITC, Moserbaer, HCL, Ratan Housing, Karbonn Mobiles, Wipro, Mozilla, DAAD and Club Mahindra. We are grateful to their contribution. Without their association, Techkriti would not have achieved the impetus that it achieved.

## **6. COMPULSORY PHYSICAL ACTIVITIES (CPA)**

With the objective of a sound physical health and an all round development of personality of students, several co-curricular and extracurricular physical activities have been integrated as Compulsory Physical Activities (CPA) with the regular curriculum at IIT Kanpur. The streams of activities are:

1. Games and Sports
2. National Cadet Corps (NCC)
3. National Service Scheme (NSS)
4. Yoga
5. Tae-Kwando

All the 1<sup>st</sup> year students admitted in the B. Tech. /M. Sc. (Integrated) programme are required to exercise their option for one of the above activities at the time of registration under the course PE. The two courses PE 101 and PE 102 constitute Compulsory Physical Activities (CPA) at IIT Kanpur.

### **NATIONAL CADET CORPS (NCC)**

1. It is a matter of great pride that the National Cadet Corps (NCC) has been spearheading the youth movement in the country. It has played an important role in propagating the ideals of secularism, national integration and selfless service, which are ever so essential in the present day context. During the past 56 years, the NCC has come a long way. It has grown into a vibrant youth organization and has made substantial contribution for creation of disciplined, and well-motivated citizens, ready for service of the nation. Its credentials as the largest youth organization engaged in grooming the youth and endowing them with qualities of character, comradeship and leadership are unquestionable.

2.The NCC is authorized and administered by the Govt. of India as an integral part of its National Plan. For the successful implementation of the NCC Programme, the scheme has been inter-woven with the National Education Programme. In order to thoroughly groom the NCC cadets to be tomorrow leaders, they are exposed to every facet of the multi-dimensional training programme in as realistic a manner as possible. Due emphasis is given to constantly update and refine training method and ensure its proper implementation. The NCC training strives to inculcate in cadet the qualities of leadership, discipline, courage and corporate living, which stand them in good stead in whatever vocation they choose. The various activities undertaken by the NCC cadets, such as mountain craft, rock climbing, skiing/jumping, camping, gliding and flying and sea faring provide students an immense opportunity to be nature friendly and helps in self discovery.

### **NATIONAL SERVICE SCHEME (NSS)**

The Scheme provides the most diversified opportunities to the students to upgrade their personality through social and community service of different variety, suiting different aptitudes and needs. Special emphasis is laid on tutorial assistance to the weaker sections of the campus. The students volunteers participated in teaching at the opportunity school. Some volunteers visited nonformal schools. NSS volunteers visited nearby villages for distributing books and demonstrating science experiments.

### **YOGA**

Classes to train students in Yoga, as one of the stream of PE courses, were conducted during both the semesters of 2008-2009 successfully by a yoga teacher. These classes included Joints and Glands exercises, Asanas (Postures) in standing, sitting and lying positions, Mudras (Gestures), Bandhas (Locks), body cleansing Kriyas (techniques); Pranayama (Breathing exercises) and Meditation. Counselling is also provided to students for solving their personal physical, mental and emotional problems through yoga.

### **TAE-KWON-DO**

The new scheme of Tae-Kwon-Do as approved by the Senate was introduced from the year 1998-1999. It was found to be extremely popular.

## **7. 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, life-guards 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.

**8. FACULTY INCHARGES STUDENTS'S AFFAIRS**  
**Counsellors, Students' Gymkhana**

Chief Counsellor	Dr. Partha Chakroborty
Cultural Counsellor	Dr. Satyaki Roy
Games Counsellor	Dr. Kallol Mondal
Films Counsellor	Dr. Satyaki Roy
Science & Technology Counsellor	Dr. NN Kishore
Treasurer	Dr. D Bhaguna
Chairman Students' Placement Committee	Dr. J Ram Kumar
Faculty Advisor, NSS	Dr. H.C.Verma
Chairman, Swimming Pool Management Committee	Dr. P Shunmugaraj

**10. WARDENS**

**HALL OF RESIDENCE No. I**

Dr. Arun P. Sinha Warden I/C
Dr. Sanjeev Garg, Warden
Dr. Satyajit Banerjee, Warden
<b>HALL OF RESIDENCE No. II</b>
Dr. Shalabh Srivastava, Warden I/c
Dr. Somesh Kumar Mathur, Warden
Dr. Anurag Gupta, Warden
<b>HALL OF RESIDENCE No. III</b>
Dr. Abhijit Kusheri, Warden I/c, till June 15, 2010
Dr. Amit Prashant, warden
Dr. Anjan Kumar Gupta, Warden I/c from June 16,2010
Dr. Tarun Gupta, Warden
<b>HALL OF RESIDENCE No. IV</b>
Dr. H. Karnik, Warden I/C
Dr. V. Subrahmanyam, Warden
Dr. V Shankar, Warden
<b>HALL OF RESIDENCE No. V</b>
Dr. T Ravichandran , Warden I/C
Dr. Siddharth Panda, Warden
Dr., A.V. Ravishankar Sharma, Warden

<b>HALL OF RESIDENCE No. VI</b>
Dr. Y. N. Singh, Warden I/C
Dr. Shathrupa Thakurta Roy, Warden
<b>HALL OF RESIDENCE No. VII</b>
Dr. D Goswamy, Warden I/c
Dr. J.K. Bera, Warden
Dr. Yogesh M Joshi, Warden
<b>HALL OF RESIDENCE No. VIII</b>
<b>Dr. Pranab Mohapatra, Warden I/C</b>
Dr. D Bahguna, Warden
Dr. Sumit Basu, Warden
<b>HALL OF RESIDENCE No. IX</b>
Dr. J. Ram Kumar, Warden I/C
Dr. M.K. Ghorai, Warden
Dr. Amit Dutta, Warden
<b>HALL OF RESIDENCE No. X</b>
Dr. Sandeep Sangal, Warden I/c
Dr. Rajeev Gupta, Warden
<b>HALL OF RESIDENCE for Girls (GH-1)</b>
Dr. Rajesh Srivastava Warden I/C
Dr. Koumudi Paril , Warden
Dr. Minichandran, Warden
<b>SBRA</b>
Dr. A K Ghosh, Warden I/C
Mr. Vinay Singh, Convener (M) 09415830806

#### 10. 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.Mohit Kumar Jolly & Adarsh Mishra (upto Feb 2010), Mr.Vivek Agarwal (from March 10)

**Convenor, Students Senate**

Mr. Ashish Agarwal (Upto Feb. 2010) Mr. C. Rahul (From March 2010)

**General Secretary (Cultural)**

Mr. Apoorva K Srivastava (Upto Feb. 2010) Mr.Rishi Raj Singh (From March 2010)

**General Secretary (Games)**

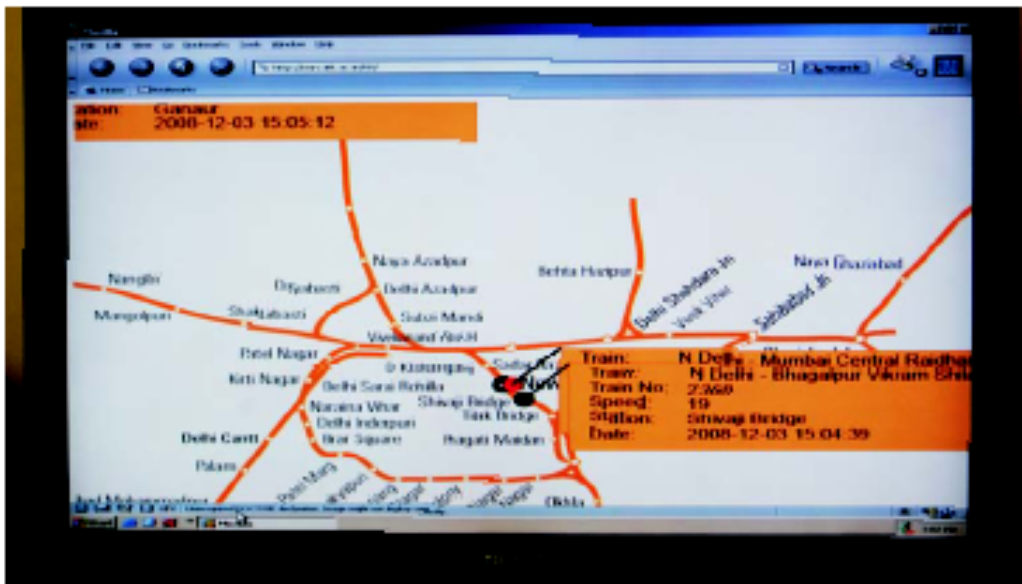
Mr. Shilendra S Rajput (Upto Feb. 2010) Mr Tarun Bhatia (From March 2010.)

**General Secretary (Films)**

Mr. Naved Siddiqui (Upto Feb. 2010) Mr. Hemant Gupta (From March 2010)

**General Secretary (Science & Technology)**

Mr.Puneet Singh Rathor (Upto Feb. 2010) Mr. Pulkit Agrawal (From March 2010)



Satellite Imaging for Rail Navigation (SIMRAN) is a project to disseminate train information dynamically in a given geographical boundary in terms of location, speed and direction of movement. The train tracking system uses the Global Positioning System (GPS). Each train has a locator unit to receive information from GPS satellites and continuously identify the position of the train. Highly appreciated by railway authorities and hailed by the media, the project will ultimately revolutionize rail safety.

## Students' Placement



Students' Placement Office

The present document describes the placement season 2009-10 of the Students' Placement Office and reports the feedback given by companies for 2009-10 as on May 28, 2010.

### Introduction

The Students' Placement Office continues to play an important role in assisting the students in their career planning and helping them in their placement. Although the economy looked up this year, the Students' Placement Office was confronted with a similar challenge as then previous year. Hence, many more new companies were contacted and sessions were held for students to prepare for placements and also take informed decisions.

Pre-Placement Talks were held during the 7<sup>th</sup> semester and the final placements were scheduled after the end semester exams. Multiple companies were called in a day. The PPT's started from 22<sup>nd</sup> August and 35 companies gave their presentations. The final Placements began from 1<sup>st</sup> December and now we have formally closed the placements on campus, however, we are keeping students who have not yet secured a job, informed about opportunities that we receive from the companies.

Invitation letters for participating in the Campus Recruitment Programme 2009-10 were sent to over 1400 Organizations. A total of 140 companies visited the campus and recruited 632 students out of the 794 students who had registered with the SPO (Fig. 1.). The placement statistics for our B.Tech students crossed 76.95% mark this year while for the M.Tech. students it is 79.37% till date. The MBA had 98% and Dual Degree Programme had 87.50% placement. The overall placement for 2009-10 has been 79.60%. Apart from this 15 PhD's also got a job from SPO which are not included in the statistics. With the objective of providing uniform opportunity to all students registered for placement, the policy of "one job per student" still continues. The core sectors attracted maximum number of students. Amongst the new organizations, the

major ones that recruited this year are WorldQuant, ZS Associates, Exxon Mobil, Daimler, Directi, Capital Dynamics, Nomura, Caterpillar, OPAL India, Winshuttle etc.

**Placement Statistics**

**Legend**

- AE=Aerospace Engineering
- BSBE=Biological Sciences & Bioengineering
- CE=Civil Engineering
- CHE=Chemical Engineering
- CSE=Computer Science & Engineering
- EE=Electrical Engineering
- LT=Laser Technology
- ME=Mechanical Engineering
- MME=Materials & Metallurgical Engineering
- NET=Nuclear Engineering & Technology

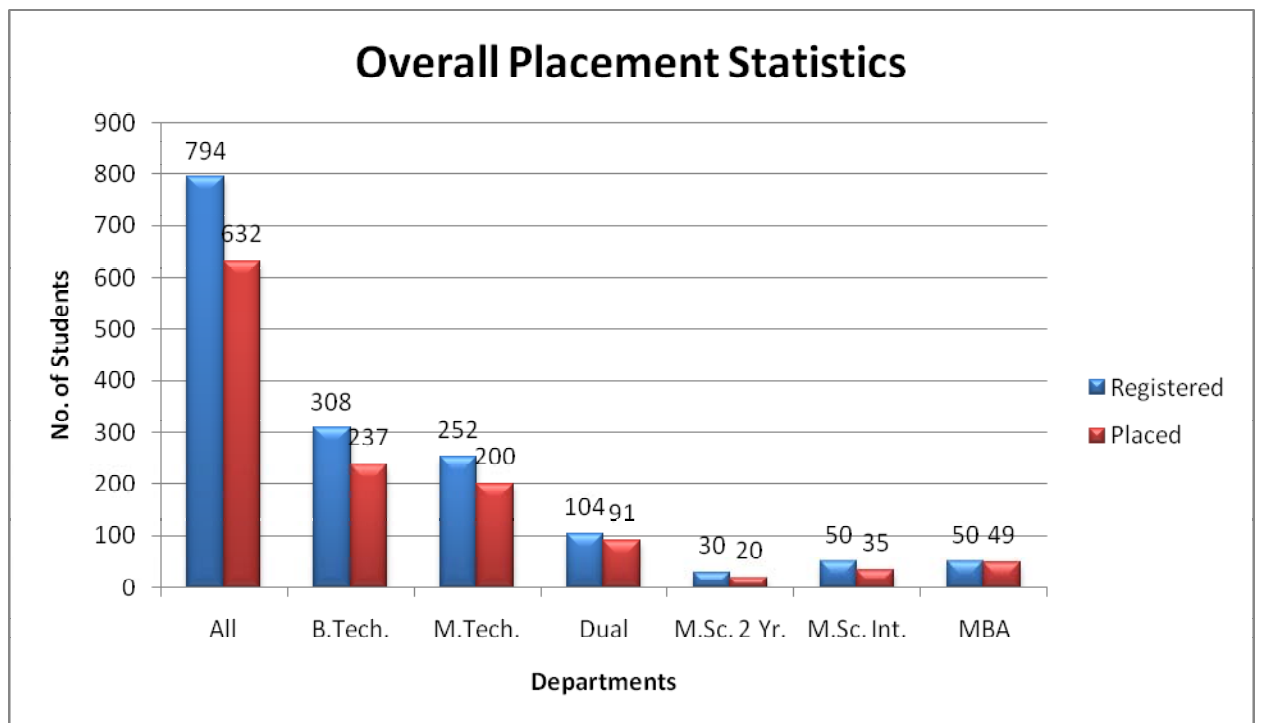


Fig. 1. Overall Placement Statistics



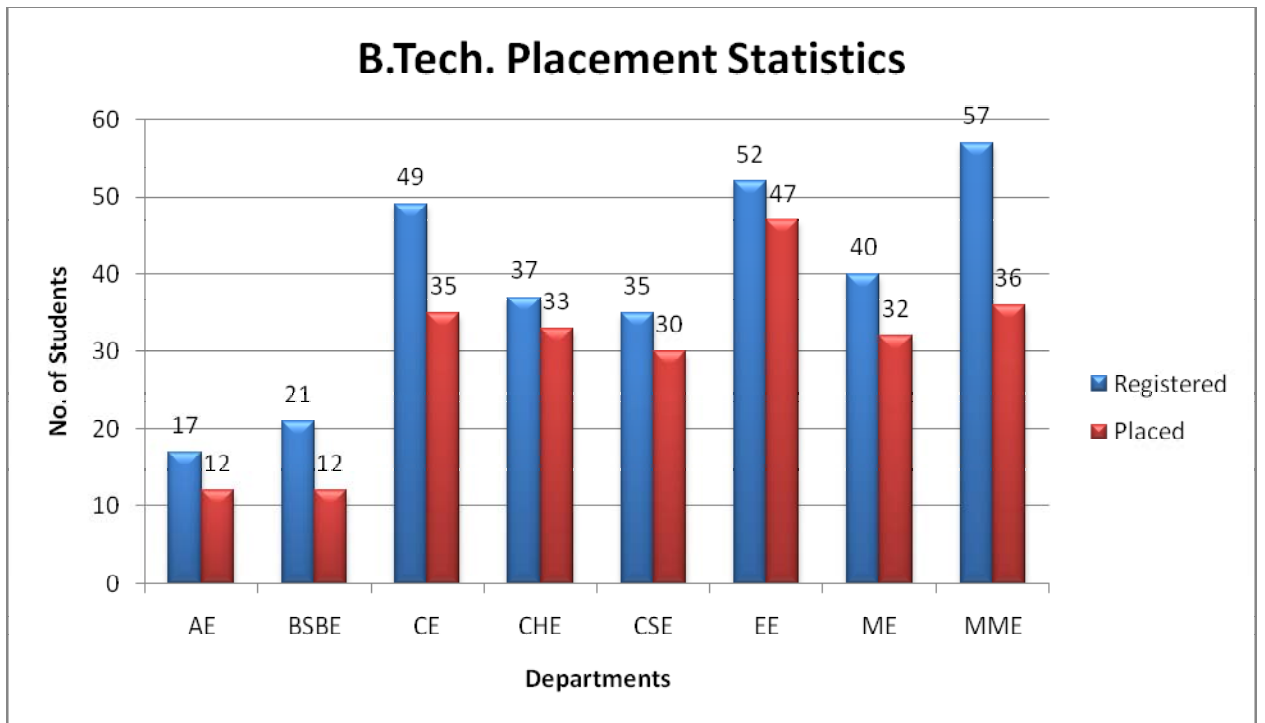


Fig. 2. B.Tech. Placement Statistics

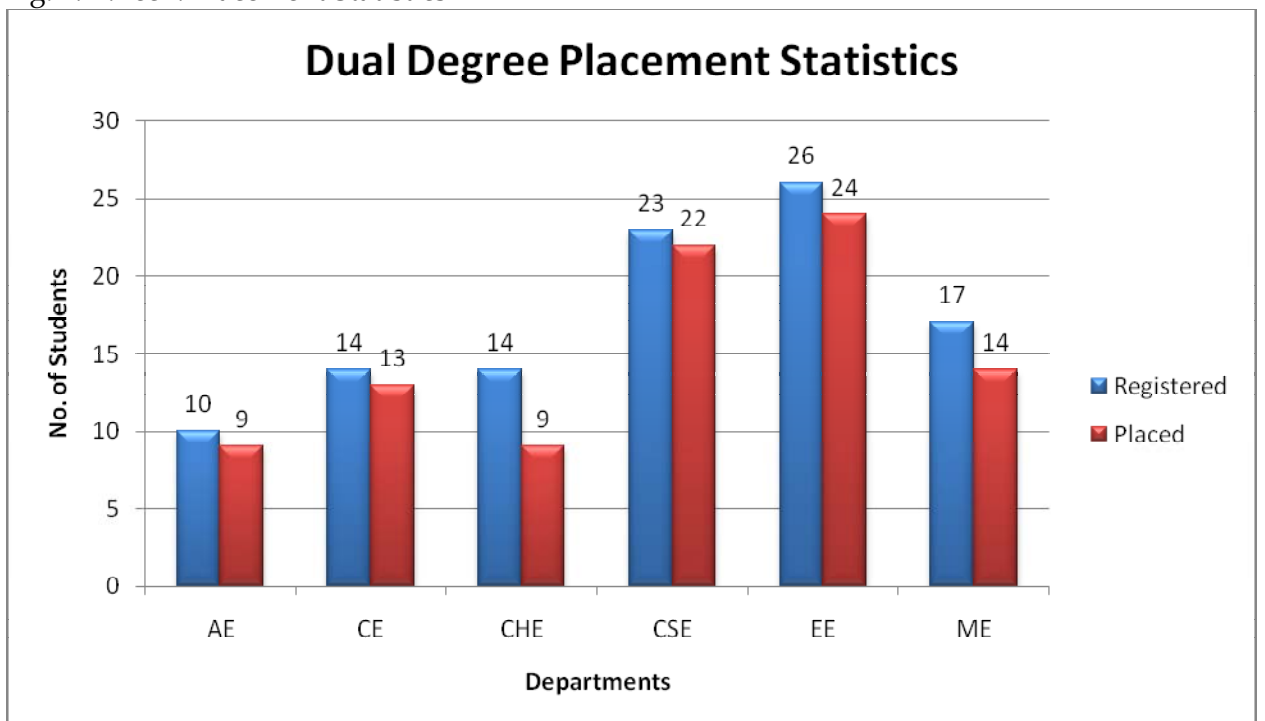


Fig. 3. Dual Degree Placement Statistics

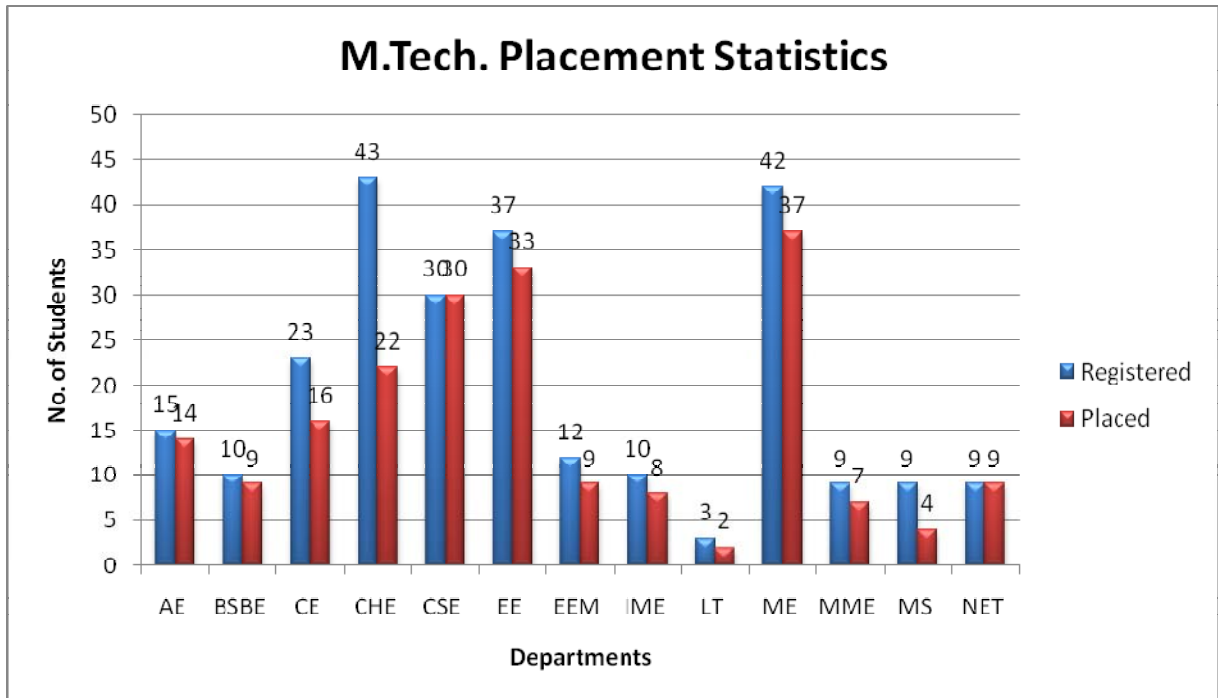


Fig. 4. M.Tech. Placement Statistics

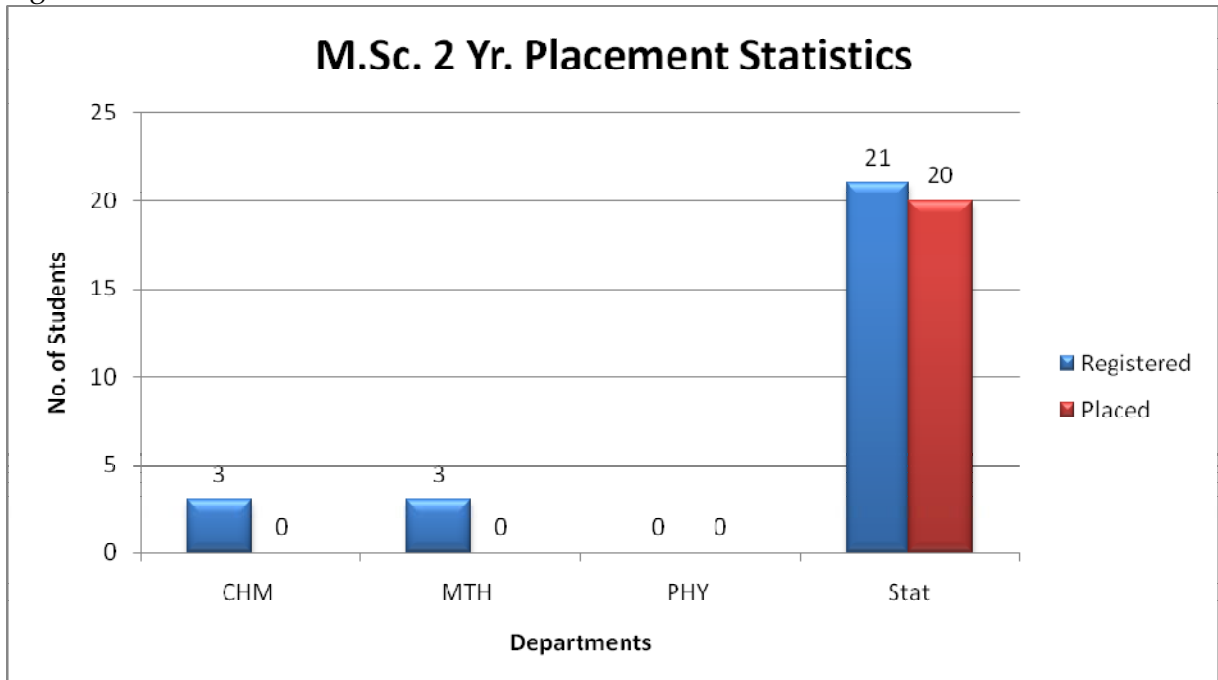


Fig. 5. M.Sc. 2 Yr. Placement Statistics

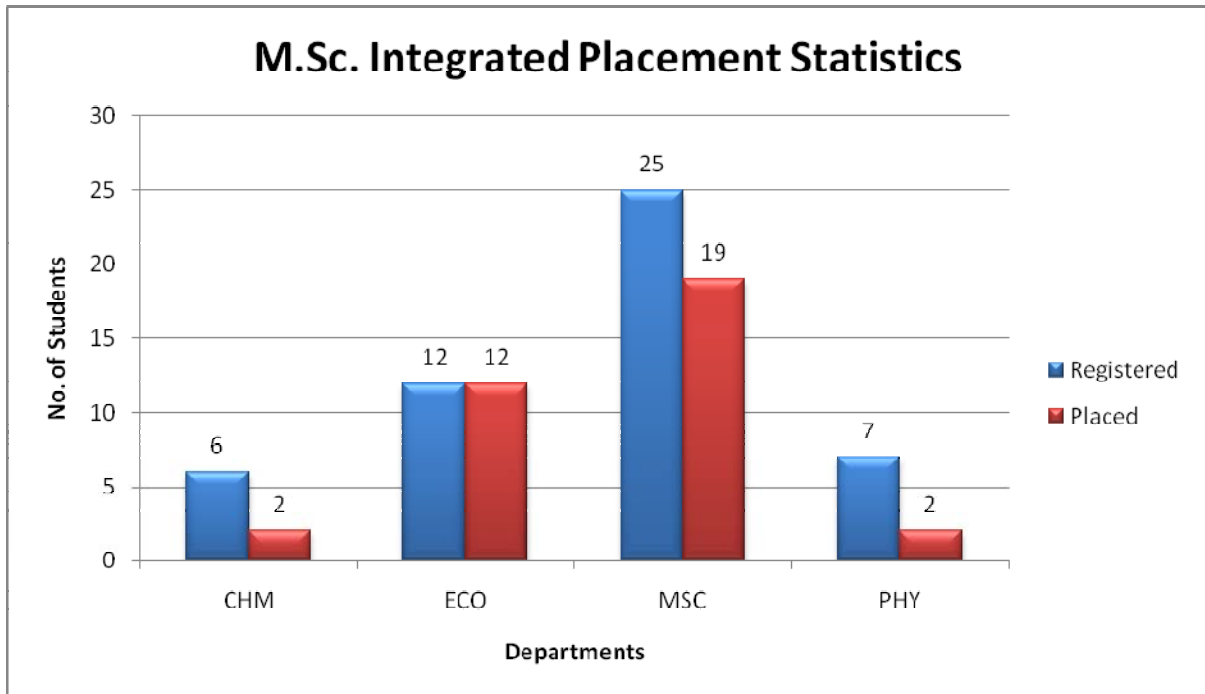


Fig. 6. M.Sc. Integrated Placement Statistics

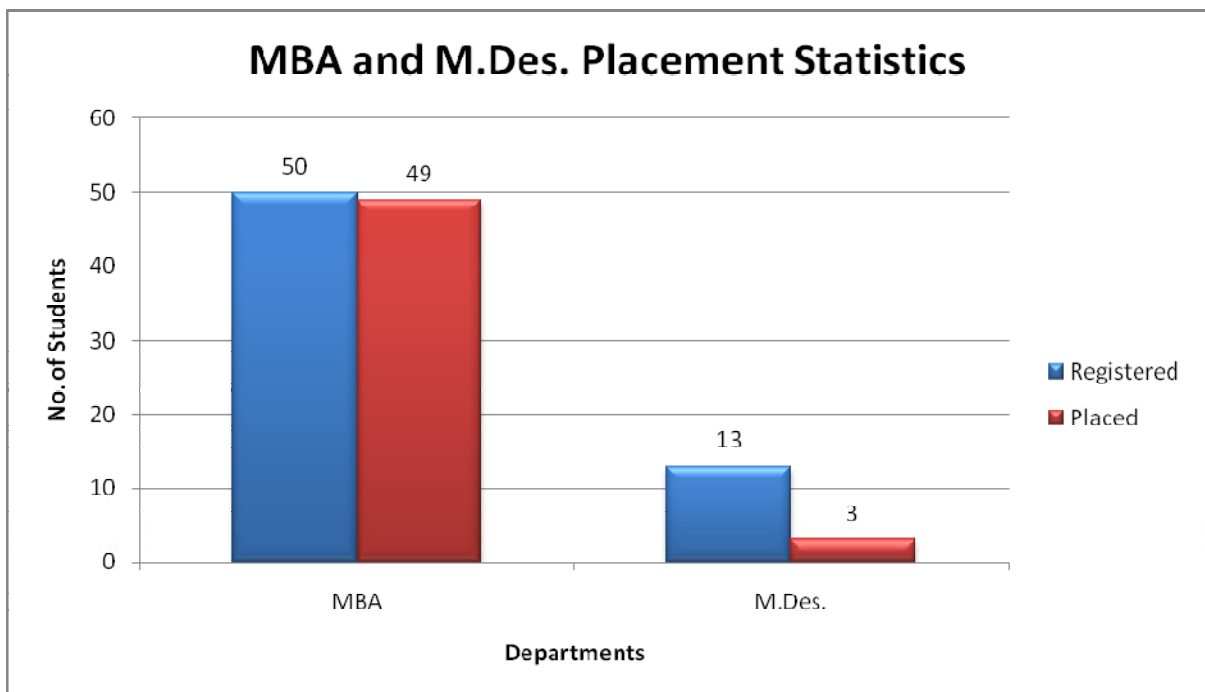


Fig. 7. MBA and M.Des. Placement Statistics

## **Roadblocks and their Solutions**

### **a) Department Related**

**Roadblock:** A number of companies have close relationships with the department but do not come to placements.

**Solution:** Closer relations with the department and the placement team. Solution could be in the form of formation of a **Governing Council** consisting of HODs from each department.

It is worth mentioning the case of Nuclear Engineering Program. They have attained 100% placements with the efforts of a department faculty. Hence it implies that there are certain companies which have interaction with the department and could be put on board by the departments for placements.

### **b) Alumni Related**

**Roadblock:** Even though the alumni are contacted each year we still believe that a lot remains to be done in the area of increasing networking of the office with the alumni.

**Solution:** Closer relationship of placement office with the alumni and DRPG office. The alumni can play a major role in creating more career awareness on campus and bridging the gap between career expectations of students and corporate reality.

A step taken by the institute towards creating more awareness is the incorporation of a career counsellor to SPO.

### **c) Accommodation Related**

**Roadblock:** An inherent location disadvantage discourages companies to recruit from IITK. The problem becomes even more acute when we are unable to provide them with accommodation in campus and even in Kanpur City.

This year the placement team faced an enormous difficulty in accommodating different companies because of Golden Jubilee Celebration and Sport Inter - IIT

**Solution:** The institute can earmark the Visitors' Hostel accommodation for placement in the month of December.

#### **d) Personnel Related**

**Roadblock:** Out of the over 1400 companies contacted by the student team; we could get only 140 to come to campus. There is obviously a problem in terms of company conversion.

The students, though motivated, are not equipped with the negotiating and convincing skills necessary to get reluctant companies to come to campus. Moreover, this is an added load on the student and is difficult to manage along with the academic load and pressure of one's own placement preparation.

**Solution:** Addition of personnel in the placement office, who are equipped with good interpersonal and communication skills who can work with the student team and help deliver better results.

#### **INITIATIVES TAKEN**

This year a number of initiatives were taken to counter the economic slump prevalent in the market. Different strategies were adopted both in contacting companies and preparing students.

##### **Networking**

Like last year, a number of companies were pushed through the alumni channel. The Board of Directors Alumni Association was approached for help in contacting more companies. Alumni Reunions was targeted for placements as well. A number of individual alumni were contacted and were requested to push their companies to recruit.

#### **PREPARATION INITIATIVES**

In the odd semester for the graduating batch **Placement Preparation Marathon** was conducted in which workshops of GD, PI and Case Study were taken. Mock Interviews were also a part of this Marathon. Apart from this 2 aptitude test, C session & Test, and a number of Departmental Tests were conducted by the office.

##### **a) Career Awareness Workshop**

Conducted in the second semester, the workshop was aimed at giving pre-final year students a comprehensive idea of different job opportunities that one has after passing out of IIT Kanpur.

**Sessions Conducted under Career Awareness Workshop are as follows:**

- Finance session
- Departmental Session by seniors
- Global Career Opportunities
- Case study Workshop
- Oil and Energy Session
- Resume making Workshop
- CSE & EE core session
- Mock Interviews for 3<sup>rd</sup> years
- Talk on Higher Study options
- A session by seniors on Higher Study Options

**b) Placement Feedback Guide**

The Placement Feedback Guide aims to be a comprehensive text for placement preparation ideas. Made department wise it allows the students of all departments to get an insight into what the placements session holds for them. It also contains a section named Companypedia that contains questions asked by the company in previous years.

**c) Internship Feedback Guide**

An initiative taken this year, the internship feedback guide aims to give the students sitting for a particular company interview an insight into what to expect in the internship process. Written by the senior batch it gives a student's perspective of things that are important and not important during an interview.

**d) Addition of Career Counselor**

A Career Counselor has now been added with the office on ad hoc basis from March this year. The initial response has been pretty strong with a large number of 2<sup>nd</sup> and 1<sup>st</sup> year students attending the formal session. In the walk-ins that take place twice every week in the evening more than 30 students have come to have one to one interaction. The number is expected to rise significantly next semester when the message percolates to the entire student community.

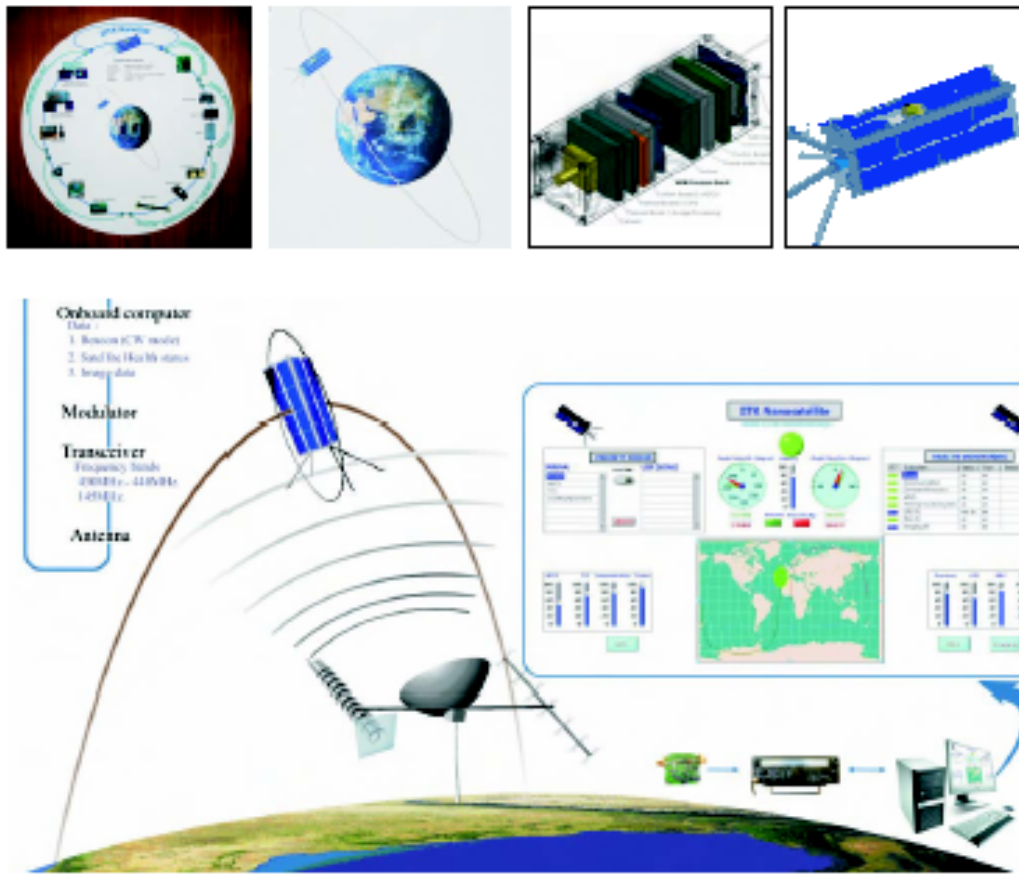
**e) Preparation Portal**

An online preparation portal has been made with an aim to provide all placement preparation related material at one place. The portal also contains department-wise forums to allow people to have informal discussions related to placements. In future

an alumni section would also be added to the portal which will allow the students to pose questions to alumni about different career options.

#### **STRATEGY**

- Since many companies were not looking at large number of students and preferred taking students from IITs that were in the same region, students were sent to Delhi and Bangalore for final interviews. Video Conferencing and Telephonic Interviews were more common this year.
- Though start ups and educational institutes did come earlier for recruitment, this year they were pursued in a big way because of the comparatively larger number of opportunities in this sector. Some of the startups that came to campus - Dhama Innovations, Infosoft, Apalya Technologies and Richcore



Nanosatellites are as efficient in discharging their duties as their larger counterparts. Space researchers have been stressing the point that microsystems technology and microelectronics can draw great advantages from pre-qualification in a real space environment. Students at IIT Kanpur have taken this lead and have embarked on a project of making a nanosatellite, all on their own. To be launched by ISRO in 2009, the nanosatellite imagined in the portraits above, will have body mounted solar panels, communication systems and on-board cameras. The nanosatellite will be used for experimental communication and earth observation applications.



## 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 the 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, under the control of the Superintending Engineer.

Sl. No.	Unit	Responsibility	Unit-in-charge
1.	Civil Division-I	Maintenance, up-gradation and development works. Water supply, furniture, roads.	Executive Engineer
2.	Civil Division-II	Maintenance & development Works	Executive Engineer
3.	Electrical & Air-conditioning Division	Electrical maintenance Domestic / Central AC maintenance	Superintending Engineer
4.	Horticulture	Development & maintenance	Superintending Engineer
5.	Sanitation Unit	House Keeping of various building	Superintending Engineer

**(A) The following works completed during 2009-2010**

Sl. No.	Name of work	Plinth Area(in Sqm)
1	Construction of New Core Lab Building.	9940
2.	Construction of Gymkhana complex (SAC & open air theatre).	2350
3.	Construction of sports complex.	4233
4.	Construction of Hall of Residence No. X for boys (Phase-I).	8680
5.	Construction of Augmentation National Wind Tunnel Facility.	2270
6.	Construction of 24 nos. Single Bed Room Apartments.	831

**(B) The following works are under execution:-**

Sl. No.	Name of work	Plinth Area(in Sqm)
1.	Construction of Hall of Residence No. X (Phase-II) for boys (3rd cluster of rooms dining and facilities blocks).	6930
2.	Construction of Multi-storied Residential Flats Block-A.	12362
3.	Extension of Research Associates Hostel.	13455
4.	Construction of 48 units Single Bed Room Apartment.	3878

**(c) The following works are under planning:-**

1. Construction of Hall of Residence for Girls (Phase-I)
2. Construction of Hall of Residence No. XI for Boys
3. Construction of Computer Science & Engineering Building extension.
4. Infrastructural work to create High performance computing set up at Computer Centre.
5. Construction of lecture Halls
6. Extension Centre of NOIDA.

### STORES & PURCHASE SECTION

The Stores and Purchase Section is an important service unit to cater the needs of departments/units for purpose of various equipments, chemicals, glassware, hardware, consumables, stationery etc. and all medicines/pharmaceutical products, industrial gases etc., for research and general purpose. The procurements are from both indigenous and foreign source.

The Import Section handles customs clearance of all foreign consignments and matters relating to Import Licenses/Custom Duty Exemption Certificate/ Excise Duty Exemption Certificate 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 2009-2010 the Purchase Section places 1658 orders valued Rs. 69,86,10,740=80 which includes import order numbering 418 costing Rs.44,58,56,785=71 and indigenous order numbering 1240 Costing 25,27,53,955=09. The purchase orders and their values under various categories are as follows.

Category	No. of P.O.	Amount( in Rs.)
<b>Import :-</b>		
<b>(A) Institute fund</b>		
Consumable	34	17,95,595=99
Non consumable	139	15,78,70,556=63
<b>(B) Project fund</b>		
Consumable	81	1,25,97,952=69
Non consumable	164	27,35,92,680=40
<b>Total Import (A&amp;B)</b>	<b>418</b>	<b>44,58,56,785=71</b>
<b>(C) Indigenous :-</b>		
<b>Institute fund</b>		
Consumable	265	1,76,79,516=61
Non consumable	566	14,55,61,414=36
<b>(D) Project fund</b>		
Consumable	125	1,20,87,730=02
Non consumable	284	7,74,25,294=10
<b>Total Indigenous (C&amp;D)</b>	<b>1240</b>	<b>25,27,53,955=09</b>
<b>Total Value</b>	<b>1658</b>	<b>69,86,10,740=80</b>

Central Stores procure highly technical items as and when required by the different departments to maintain the pace with science and technology development. It stocks some items of consumable in nature like stationary, hardware, and liveries etc. The Central Store has four units, namely Purchase Unit, Import Unit, Bill Unit and Receipt/Issue Unit. This section is headed by a professionally competent person and he is also assisted by a professionally competent team of 22 personnel.

The stores also maintained the records of disposal of unusable and scrap materials. Clearance of parcels and dispatch of rejected materials to both local and foreign firms for repair/replacement is also done by this section. It assists the department in areas like transportation, procurements of furniture etc.

This Section also started reconditioning of wooden & steel furniture. During The Financial year 2009-2010 we have reconditioned different type of furniture and issued to various departments. The details of reconditioned furniture are as follows. (1) Chair 81 nos (2) Office Table 171 nos (3) Almira 33 nos (5) Wooden Racks 13 nos. In this way we have saved lot of money of the institute.

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 & every function of Store & Purchase has been automated. We can generate reports as 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. Stores and Purchase is now connected with main frame computer of Computer Center. 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 portal, so that department can send electronic indent directly to Central Store and check the status of this indent/sanction sheet on the monitor.

## ESTATE OFFICE

The Institute has a sprawling area of 960 acres having total population around ten to fifteen 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, shopping complexes and similar other 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 (now shifted to central stores from August 2009), eviction of unauthorized occupants, realization of license fee and electric charges from shopkeepers & house allottees, estate management and civic amenities.

The Institute has various types of residential accommodation, i.e. Type-IA, IB, I, II, III, IV & V out of which Type-III & above are allotted to Faculty members, Scientists, Research Engineers, Group-A Officers and rest are allotted to other staff members. We have mainly four shopping complexes at various locations viz one in the heart of campus called as main shopping complex, second at Type-II complex, third one at security crossing, and fourth 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 11 hostels for students' accommodation out of which nine are for boys and two are for girls. Every hostel has a barbershop, washer man shop, tailoring shop which mainly fulfills the immediate needs of students. As per demand, we have already started the operation of the PCOs in most of the hostels.

Further a cable T.V. Network is also being operated round the clock by the Institute to provide entertainment to the entire campus community.

There was no decent canteen/ lounge facility available in the campus for faculty and officers and their guests. They were to go at staff canteen along with their guests. 1968 batch (Professor D Kunzru, Institute faculty and Coordinator for batch 1968) discussed with their batch mates who consented to donate their batch fund for creating a decent lounge facility in the campus, known as "Faculty Lounge". 1968 batch donated 50% cost of the lounge (Rupees twenty five lacs) and rest of the money was added by the Institute. The Faculty Lounge was inaugurated by their batch mate and present Chairman of IITK foundation at USA Mr Jeet S Bindra. AT present, the faculty lounge is running smoothly by alumni of batch 2001.

During 2009-10, the estate office has created history as the following institute properties have been free from un-authorised occupancy (various duration, few were for more than 13, 15 or 20 years) - Cattle Pond, H. Nos. 408, 210B, 198B, 99A, 70A, 183, 1075, 163-SQ at Type-3 area, 219B, 220B, 221B and 136A at different locations within the campus.

Besides, the estate office is also managing different types of activities related to the estate successfully and cautiously by way of taking precautions to solve various types of problems. During the financial year 2009-10, the office has realized about Rs.89,45,105/- (45.27% more than the FY 2007-08, and 1.78% more than the FY 2008-09) from the different sources (it is notable that the tendering process of unserviceable materials has already shifted to central stores from August 2009).

The break up of the above amount is as follows

Sl.No.	Particulars	Amount in Rs.
01	Rent from shops, canteens and houses to non-Institute employees	16,94,290.00
02	Charges for electricity from shops, canteens and houses to non-Institute employees	37,51,686.00
03	Charges for entry passes from Rickshaw Pullers, Suppliers and Vendors	65,270.00
04	Charges for temporary stalls at different shopping complexes	39,254.00
05	Charges from house allotment (temporarily allotted for different purposes and for very short duration)	49,375.00
06	Security money forfeited	16,000.00
07	Amount collected at cycle stand	2,50,788.00
08	Cost of tender documents and auction money	21,54,274.00
09	Charges on vacation of houses - on retirement/ resignation/ death/ eviction (including ordinary licence fee, water/ electricity charges and penal rent)	9,24,168.00
	Total	89,45,105.00

## CAMPUS SCHOOL

Honourable Chief Guest Prof. Dayal Saran. Ex-Director. UIET. Kanpur. Special Guest Dr.(Mrs) Medha Dhande. Prof. Sandeep Sangal chairman SMC. distinguished guests, ladies & gentlemen. It is my profound privilege to welcome all of you on the occasion of Open House of Campus School. I am personally grateful to the Hon'ble Chief Guest, who, in spite of his extremely tight schedule conceded to our request. and is present on the occasion to inaugurate the function. Sir. your presence is an honour to all of us. Thank you very much.

Now I take this opportunity to present the annual report of the school.

### **Physical Panorama:**

#### 1. School Strength:

- . Students on roll: 415
- . Teachers regular: 12 and the PrilKipal
- . Teachers contractual and others: 12
- . Supporting staff: II

#### 2. Infrastructure:

The infrastructure of the school is very strong. Its many sections have been renovated but few sections still need renovation. The school is well equipped with the Open shelf library, computer room. dance & music room. art room. science room. P.T. room for indoor games. a big playground for Basket ball. Kho-Kho. Cricket. Football Volley ball. and a play area with swings, slides. seesaw and other play equipment.

- K.G. Section is well eqllipped with material like Our games. puzzles. toys, computer. projector etc. to provide a creative & stimulating environment for the kids.
- The Art room has the latest furniture, storage cabinet, large display panels on the walls. The Library is in the process of being computerized. Maths lab is a unique feature of Campus School which is now very rich in material from Class I to V to make the mathematical concepts & operations easy & interesting.
- Many EVS projects have also been designed to make the topics more interesting and clear.
- P.T.A. meetings are scheduled on every third Saturday of the month.

Since Campus School is a community school, suggestions of parents and well wishers are always welcome. All comments are given due consideration, and all feasible suggestions that are for the betterment of the school are implemented. Parental care of the students, democratic set up. self discipline and transparency in functioning and activities make Campus School different from other educational institutions.

### 3. Activities:

To nurture the budding talents of the children. various Clubs have been introduced to carry out different activities like- Art & Craft, Maths, Science, Music, dance, Language, Theatre, sports etc. The students are given a wide range of exposure necessary for the all round development of personality.

- Morning Assembly: Story telling, quiz. news reading, book reading & poetry recitation are regular features of morning assembly.
- Festivals: Cultural programmes on different festivals & functions such, as Janamashtami, Raksha Bandhan, Gandhi Jayanti, Dussehra, Deepawali, Eid, Bal Diwas, Christmas, etc are organized in the morning assembly to acquaint the kids with the socio-cultural heritage of our country.
- Competitions: Fancy Dress, Poetry Recitation, Book Reading, Mental Maths, Mono Acting, Elocution, Debate, Singing, Art. Quiz, Handwriting competitions, etc. are organized in the school during the session.
- Inter-school Competitions: During the Hindi Week & Wild Life Week celebrations our children participated in several interschool competitions in subjunior (I to IVth) & junior (Vth to VIIIth) groups. Our class Vth students competed with class VIIIth students of the city schools in Races. Group Discussion. Essay writing. Elocution, Quiz, Art. Group song, Group dance, Casio playing, mono acting etc and brought many laurels to the school. The performance of the Campus School students was appreciated and applauded by all including the Director of the Zoo & the local daily newspapers.
- Art competitions: Two students won Silver Medals at Regional level in All India
- Camel Colour Contest & many other students won 1st. IInd & IIIrd prizes.

### 4. Mega Events Celebration:

- Independence Day: Chief Guest Prof. S. Sangal. Chairman SMC. A Short cultural programme was presented by the Children.
- Teachers' Day: Chid' Guest Dr. Rajeev Gupta. Thanks to the Institute administration for remembering and recognizing the services of the teachers.



- Children' s Day: Children presented a wonderful cultural programme. An art competition & puppet show was also organized & small gifts were distributed to all children.
- Annual Sports Day: 19th Dec.2009. Chief Guest Prof. Partha Chakraborty, DOSA. The children started the show with a welcome dance followed by March past. The students from K.G. to Class V exhibited their skills, dexterity and discipline in their Displays. Drills and formations of Lotus & Dove to spread the message of peace in the world, pyramids & Gymnastics. Parents and guests participated in the games organized specially for them like Musical Chairs & Tug of war. The Chief Guest encouraged the children by giving away prize to them.
- Republic Day: Chief Guest Prof. S. Sangal. Chairman SMC A short cultural programme was presented by the children at IIT Stadium.
- Annual Open House: 6th Feb. 2010. Chief Guest Prof. Dayal Saran. Ex-Director, UIET. Kanpur. Open House includes activities based on Language. Art & Craft, Dance & Music. Theatre, Maths & EYS. All children of the school are participating in it.

#### 5. Special Events:

A number of evening co-curricular activities are conducted under the project INDRADHANUSH. The response is quite encouraging one. The energy & vitality of the children are being channelised in a proper & positive direction under the supervision of qualified teachers through art & craft. music. language & theatre activities, science, dance. and games & sports. These activities had to be suspended due to extreme cold weather conditions & will restart from Feb.

- Mr. V.K. Trivedi. Art teacher, Mr. Maharam. Teacher Gd. I have retired on '31st Jan,2010 & Mrs. Usha Mahajan, Teacher Gd.I will retire on 28th Feb, 2010 from their services by virtue of superannuation. Their sincere, valuable & exemplary services rendered to the school are highly appreciated. We wish them a very happy. prosperous & peaceful long life.
- Dr. Neeta Agnihotri. Mrs. Y. L. Sharma. teacher Gr. I & Mrs. U. Mahajan. Teacher Gr.I and Shri Sita Ram. Attendant were honoured by the Director for their long & satisfactory services to the Institute on the occasion of Republic Day. Congrats!
- The most tragic event of the session is the sad demise of one of our colleagues Mrs. Asha Gujral & her husband in a road accident on 2nd Oct. 2009. She was to superannuate on 31st Oct. 2009. Our heartfelt shradhanjali to them and pray God to give strength & vigour to her family members to bear this irreparable loss.

- Training Programmes: The following professionals were invited to conduct teachers' training workshops.
  - . Prof. Amitabh Mukherjee from Delhi for Maths.
  - . Mrs. M.Chauhan for her valuable guidance in English teaching.
  - . Dr. Arvind Gupta a renowned toymaker/ Author for training in making small toys by paper cutting etc. My sincere thanks to them for sharing their precious time & experience with us.

We are thankful to the institute administration & its various departments like-DRPG, DR&D, IWD, M.T. SEC, Security etc for facilitating the functioning of the school.

We are grateful to the generous & progressive minded chairman, Prof S.Sangal, Ex-chairman, Prof. J.John who have worked proactively for the betterment of the school.

I am thankful to Mrs. Rita Singh. Mrs. Guhapriya & her team of volunteers from the community, Mrs. Satrupa, IIT students & Campus School alumni for extending their support and contributing actively for the school.

At last but not the least, my sincere thanks to all the parents, colleagues, office staff, supporting staff & all those who have been instrumental in making the school events & programmes successful throughout the session.

### HEALTH CENTRE

Health centre has been established with the objective of addressing health needs of the Institute community. Health Centre provides service round the clock to meet out the objective. Health centre is manned by 10 Medical Officers and a Medical Advisor of the Institute.

The details of the Health Centre services provided for the period with effect from 01.04.2009 to 31.03.2010 are as follows

Sl. No.	Particulars	Numbers
01	Numbers of patient treated in OPD	55848
02	Numbers of students treated	6755
03	Numbers of patients manually registered	1604
04	Numbers of patients admitted in Indoor	1045
05	Numbers of patients treated in Homeopathy including students	10380
06	Numbers of patients treated in Physiotherapy	2284
07	Numbers of surgical operation (Minor)	Nil
	Numbers of Tubectomy	Nil
	Number of D & C	03
08	Numbers of Deliveries	04
09	Numbers of Plasters	90
10	Numbers of surgical dressing	4616
11	Numbers of Injections	80,000
	Numbers of Tetvac	894
12	Numbers of Babies attended in Well Baby clinic	589
13	Numbers of X-Ray done	2665
14	Numbers of babies attended National Pulse Polio Programme	495
15	Numbers of Anti Rabies Injection	274
16	Numbers of ECG done	268

Immunization is 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 Counseling and Tubectomy operations are also available.

## VISITORS' HOSTEL

Housed in an imposing double storeyed building and located at a central place, Visitors' Hostel provides boarding and lodging facilities for the Institute's guests, newly appointed faculty and staff members, delegates and participants attending various conferences, seminars, symposia and workshops. The Visitors' Hostel has some allied facilities on the campus and in Chittaranjan Park Colony, New Delhi also for the benefit of the Institute's Visitors.

### Allied Facilities:

- Visiting Faculty Apartment at IIT Kanpur
- Service Apartment at Chittaranjan park , New Delhi
- VH Extension
- Outreach 69 & 80 building, IIT Kanpur
- Main Auditorium

The Visitors' Hostel and allied facilities are operated as a non-profit activity to mainly support the academic and research activity on the campus with a homely atmosphere and ambience, traditionally acclaimed for its environs of hygiene and food of homely relish and richness. The following are the various activities undertaken by the team managing the affairs of the Visitors' Hostel and allied facilities.

**Accommodation:** Visitors' Hostel has been equipped with 70 Standard rooms of which 55 are AC and 15 are Non-AC. Further there are 15 Deluxe AC rooms. It can accommodate a maximum of 170 guests at a time on twin sharing basis. All the rooms have attached bathrooms with modern amenities.

**Dining Facility:** Visitors' Hostel provides dining facilities to in-house guests of VH and Visiting Faculty Apartment and for important Institute activities. The Visitors' Hostel has 2 air-conditioned dining halls with capacity of 30 and 70 guests respectively. One of the dining halls has a well furnished sitting room attached with it.

### Conferencing Facilities:

#### A. Pioneer Batch Continuing Education Center

S. No.	Name of Facility	Max. Capacity
1	VH Lounge ( round table)	16
2	PBCEC Lawns	250

3	PBCEC Conference Room (U shaped)	18
4	PBCEC Small Class Room	36
5	PBCEC Big Class Room	65
6	PBCEC Committee Room	11

### B. Outreach 69 & 80

S. No.	Name of Facility	Max. Capacity
7	Auditorium	210
8	Seminar Room -1	40
9	Video-Conferencing Room	30

### C. Main Auditorium

S. No.	Name of Facility	Max. Capacity
10	Main Auditorium	1250

### Additional Facilities:

- Centralised booking system for all facilities at VH and Allied Services through a common requisition form. All the forms are made available in departmental offices as well as downloadable from the website of VH at <http://www.iitk.ac.in/vh>.
- All the Deluxe AC rooms have a PC.
- All the rooms, Meeting Lounge, PBCEC and Dining Hall have Wi-fi connectivity.
- DHCP: All the guest rooms have DHCP (Dynamic Host Control Protocol) for direct Internet Connection, i.e. No IP Address, no User ID or password is required for accessing the Wi-Fi enabled internet services through their laptop.
- All the rooms have cable connections with Color Television Set.
- All the deluxe rooms have a small pantry and a small refrigerator.
- Intimation of confirmation of bookings through e-mail.

Management of day-to-day hospitality service has been outsourced to a private agency. An increase in facilities, services and a more professional approach has led to more transparency in day-to-day functioning of the system and increased occupancy rate, thus achieving more financial viability in terms of operational expenditure.



Engine Research Laboratory, created in October 2005 in the Department of Mechanical Engineering, aims at conducting experiments related to Internal Combustion Engines, apart from emission and tribological investigations. The laboratory, with a world-wide reputation of excellence in research, has several fully instrumented single and multicylinder engine test benches. It has facilities for micro-sensor development, high speed photography, thermal imaging and high speed data acquisition. The laboratory has a stand-alone pilot plant for making bio-diesel.

## Publication and Outreach Activities

### BOOKS AND BOOK-CHAPTERS PUBLISHED

#### Aerospace

1. Controlled Atomization: Needs and Challenges, Combustion Science and Technology: Recent Advances, Eds., pp. 291 - 306, 2009, Narosa Publications, New Delhi, A. K. Agarwal, A. Kushari, S. K. Aggarwal and A. K. Runchal.

#### Biological Science and Bio-engineering

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## Chemistry

249. Three-dimensional image formation under single-photon ultra-short pulsed illumination, *SPIE Proc.* 7378, 737827 (2009), Arijit Kumar De and Debabrata Goswami.
250. Towards spatio-temporal control in optical trapping, D. Roy, A.K. De and Debabrata Goswami, *SPIE Proc.* 7400, 74000G, 7 pages, (2009).
251. Femtosecond spatiotemporal control, (Invited Talk, International Conference on Optics and Photonics, October 29-30, 2009), *Proc. ICOP-2009*, 4 pages (2009), Debabrata Goswami, T. Goswami, A.K. De, D. Roy, D. Das, and S.K. Karthick.

252. Spatio-temporal control in multiphoton fluorescence laser-scanning microscopy, SPIE Proc. 7569, 756972 (2010), Arijit Kumar De, Debjit Roy and Debabrata Goswami.
253. Encoding molecular fragments with chirped femtosecond pulses for quantum information processing, Asian Quantum Information Quantum Computing-2009, Nanjing, China, Aug. 21-27, 2009, Conference proceedings AQIS'09, T. Goswami, S. K. Karthick Kumar, A. Dutta, D. Goswami.
254. Decoding Femtosecond Coherent Information: Towards Quantum Information Processing, Asian Quantum Information Quantum Computing-2009, Nanjing, China, Aug. 21-27, 2009, Conference proceedings AQIS'09, I. Bhattacharrya, A. Dutta, S. Ashtekar, S.K. Maurya and D. Goswami.
255. Theory of impurity induced step pinning and recovery in crystal growth from solutions, in Recent Advances in Thermodynamic Research including Nonequilibrium thermodynamics, Proceedings of the 3<sup>rd</sup> National Conference on Thermodynamics of Chemical and Biological Systems, Nagpur, 2008, Madhav Ranganathan and John D. Weeks.

#### Mathematics and Statistics

256. A simple modal logic for reasoning about revealed beliefs. In: LNCS 5590, Proc. 10<sup>th</sup> European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2009), Verona, Italy, July, 2009, Eds. Sossai, C. and Chemello, G. (Springer-Verlag), 805-816, Mohua Banerjee, D. Dubois.
257. A logic for complete information systems: In: LNCS 5590, Proc. 10<sup>th</sup> European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2009), Verona, Italy, July, 2009, Eds. Sossai, C. and Chemello (Springer-Verlag), 829-840, M. A. Khan, Mohua Banerjee.
258. An algebraic semantics for the logic of multiple-source approximation system. In: LNCS 5908, Proc. Rough Sets, Fuzzy Sets, Data Mining and Granular Computing (RSFDGrC 2009), Delhi, India, December, 2009, Eds. Sakai, H. et al. (Springer Verlag), 69-76, M. A. Khan, Mohua Banerjee.
259. Hermite Coalescence Fractal Interpolation Function, Proceedings of International Conference on Scientific Computing, Las Vegas, USA, (2009), 53-57, #CSC5035, G.P. Kapoor, M. Sahoo.
260. Estimation of Diameter Machining of Tungsten Electrode by Micro Block EDG Process. Proceedings of IPRoMM 2009 (National Conference on Design and Manufacturing Issues in Automotive and Allied Industries), 10-11 July 2009, Chennai, India, Eds. R. Gnanamoorthy, M. Kamraj and M. Sreekumar. G. Karthikeyan, J. Ramkumar, Shalabh.

## Physics

261. Origin of time dependent effects observed in phase separated systems  
Kumar, D., Rajeev, K. P., Alonso, J.A., Martinez-Lope, M.J. 2009 Journal of Physics : Conference Series 150, p 42103 (4 pages)}
262. RBS/channeling studies of swift heavy ion irradiated GaN layers, AIP Conference Proceedings 1099 (2009) 385, N Sathish, S Dhamodaran, A P Pathak, C Muntele, D Ila, S A Khan and D K Avasthi.
263. Optimization of pulse reversal electrodeposition with fine grains and low roughness for GaAs RF MEMS structures, Proceedings of 2<sup>nd</sup> International Workshop on Electron Devices and Semiconductor Technology (2009) 5166124, G S Saravanan, K M Bhat, S D Prasad, S Chaturvedi, R Muralidharan, S Dhamodaran, N Sathish.
264. Coherent control of metamaterials, Proc. SPIE, Vol. 7392, 73921S (2009); Sangeeta Chakrabarti, S. Anantha Ramakrishna, and Harshawardhan Wanare
265. Flux penetration asymmetry and inhomogeneous pinning in  $\text{CaFe}_{1.94}\text{Co}_{0.06}\text{As}_2$ ; Proceedings of the DAE solid state physics symposium (2009) Vol. 54, 811 - 812, Pabitra Mandal, Gorky Shaw, S. S. Banerjee, Neeraj Kumar, S. K. Dhar, A. Thamizhavel.
266. Novel large amplitude low frequency velocity fluctuations in the elastic phase of driven vortex matter; Proceedings of the DAE solid state physics symposium (2009) Vol. 54, 73- 76 Proceedings of the DAE solid state physics symposium (2009) Vol. 54, 73- 76, Shyam Mohan, Jaivardhan Sinha, S. S. Banerjee, A. K. Sood, S. Ramakrishnan and A. K. Grover.
267. Visualization of flux penetration in a high- $T_c$  superconductor; Proceedings of the DAE solid state physics symposium (2009), Vol. 54, 807-808, Gorky Shaw, Pabitra Mandal, Jaivardhan Sinha and S. S. Banerjee.
268. Magneto optical imaging of laser irradiated hard magnetic material; Proceedings of the DAE solid state physics symposium (2009), Vol. 54, 1083-108, Jaivardhan Sinha, S. S. Banerjee, Subhendu Kahaly and G. Ravindra Kumar.
269. Proceedings of 23rd National Symposium on Plasma Science & Technology (PLASMA-2008), Mumbai 2008, Journal of Physics: Conference Series 208, p.012039, 2010, D. Nath, M. K. Verma, T. Lessiness, D. Carati, I. Sarris.
270. Anisotropic turbulence studies of liquid metal MHD flows using numerical simulations, in the Proceedings of 23rd National Symposium on Plasma Science & Technology (PLASMA-2008), Mumbai 2008, Journal of Physics: Conference Series 208, p. 012007, 2010, R. Kumar, M. K. Verma, and V. Kumar.



271. Impedance spectroscopy and structural studies on silver doped hydroxyapatite, Proceedings of the MRS Fall Meeting at Boston 2009, 1239, VV07-18, Rajeev Gupta, B Singh, S Kumar, B Basu.
272. Polarized Fluorescence study in human cervical tissue: Change in auto-fluorescence through different excitation wavelengths, PROC.SPIE, 7561, 75610J, 2010 San Francisco, USA, Rajbeer Singh, Krishna Kumar Singh Tomar, Meghdoot Majumdar, Prashant Shukla, Asima Pradhan, Rekha Gupta, Sonal Jain, Chayanika Pantola, Asha Agarwal and Kiran Pandey.
273. Characterizing polarized auto-fluorescence of Normal and Benign tissues using Singular Value Decomposition and Wavelet Transform, PROC.SPIE, Vol. 7563, 756308, 2010 San Francisco, USA, Anita H. Gharekhan, Siddharth Arora, Ashok N. Oza, M.B. Sureshkumar Asima Pradhan, and Prasanta K. Panigrahi.
274. A Principle component Analysis on Mueller decomposed Depolarization Power Images of Human Cervical Tissues, National Laser Symposium (NLS09), BARC Mumbai, India (2010), Prashant Shukla, Jaidip Jagtap, Prabodh Kr. Pandey, Meghdoot Majumdar, and Asima Pradhan.

## CONFERENCES ATTENDED OUTSIDE IIT KANPUR

### Aerospace

1. IISc Centenary International Conference and Exhibition on Aerospace Engineering, Bangalore 2009, Venkatesan. C.
2. Invited Speaker, Symposium on Applied Aerodynamics and Design of Aerospace Vehicles, NAL, Bangalore, 2009, Venkatesan. C.
3. AIAA Conference on Flight Mechanics, Chicago, August 2009, A. K. Ghosh.

### Biological Science and Bio-engineering

4. Fundación BBVA - IRB Barcelona BioMed Conference on Modelling Cancer in Drosophila, Barcelona, 14-16 September 2009, Pradip Sinha.
5. Emerging Concerns & Advances in Chemistry, Lady Brabourne College, Kolkata - 4th and 5th February, 2010, Amitabha Bandyopadhyay.
6. Eminent chemists from around the country attended the conference. Invited talk was presented by Amitabha Bandyopadhyay.
7. Chaired a session on Functional Genomics II in the 8<sup>th</sup> Asia-Pacific Bioinformatics Conference. Venue: Indian Institute of Science, Bangalore, 18<sup>th</sup> to 21<sup>st</sup> January 2010, R. Sankararamakrishnan.
8. Molecular Basis of Locus Heterogeneity in Lafora Progressive Myoclonus Epilepsy: Invited talk delivered in the International Conference on the Role of Genetics in Clinical Practice, organized by the Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow (March 6 to 8, 2010), Ganesh S.
9. Impact of alternative mRNA splicing in the etiology of Lafora progressive myoclonus epilepsy: Invited talk delivered in the International Conference on Genetic and Molecular Diagnosis in Modern Medicine and Biology, organized by the Yenepoya University, Mangalore, February 27, to March 2, 2010, Ganesh S.
10. Defects in proteolytic pathways underlie neuropathology in Lafora disease: Invited talk delivered in the NeuroUpdate 2010, organized jointly by the Calcutta National Medical College and the Indian Institute of Chemical Biology, Kolkata, February 14, 2010, Ganesh S.
11. Genetic diagnosis in monogenic disorders: promises, challenges and pitfalls: Invited talk delivered in the International Symposium on Molecular Pathology and Applied Genomics, organized by SRL, Global Knowledge Forum, Super Religare Laboratories Limited, Mumbai, November 6 and 7, 2009, Ganesh S.
12. Discovery of Novel Modulators of Neurotoxicity as Potential Therapeutic Interventions in Neurodegenerative Disorders: Invited talk delivered in the Translational Health Research: Pathways to Discovery, organized by the King George Medical University, Lucknow, April 28-29, 2009, Ganesh S.

13. Design of cryogel biomaterials for bioprocess and tissue engineering applications. Emerging Paradigms in Biochemical Engineering, 9-10<sup>th</sup> October, 2009. Banaras Hindu University, India - Key note talk and Session Chair, Kumar, A.
14. New design of biomaterials for biomedical applications. NFTDC, Hyderabad, 21<sup>st</sup> November, Invited Talk, Kumar, A.
15. An overview on cryogel polymeric scaffolds with special approach to cartilage tissue engineering. 8-10<sup>th</sup> July 2009, TCES meeting, University of Glasgow, Glasgow, Ireland, Kumar, A.
16. Asian Neurogastroenterology and Motility Association, Seoul, Korea, April 2009, presented two contributed papers, Anupam Pal.
17. XXVII Annual Conference of Indian Academy of Neurosciences, Jaipur, India, 2009, presented invited lecture, Anupam Pal.
18. A genetic screen to identify partners of PUF-8, a *C. elegans* member of the PUF family of RNA-binding proteins. International Worm Meeting, UCLA, Los Angeles, CA, USA2009, Subramaniam K.

#### Chemical

19. Development and Application of a Software Tool for Design of Small Interfering RNA, 1<sup>st</sup> IFIP International Conference on Bioinformatics. Sardar Vallabhbhai National Institute of Technology, Surat, March 2010, A. Chaudhary, S. Srivastava and S. Garg.
20. Time - stress and time - temperature superposition in soft glassy materials, SPS March Meeting on Soft Matter Physics, School of Physical Sciences, Jawaharlal Nehru University, New Delhi, March 2010, Y M Joshi.
21. Synthesis, fabrication and functionalities of polymeric and carbon structures on small scales: environment, energy and MEMS, 2<sup>nd</sup> International Symposium on Nano-Biotechnology, Ulsan, South Korea, March 2010, A. Sharma.
22. Steam Reforming of Ethanol over Rh/CeO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> catalysts in a Microchannel Reactor, accepted for presentation in 11<sup>th</sup> International Conference on Microreaction Technology, Kyoto, Japan, March 2010, N.R. Peela, A. Mubayi and D. Kunzru.
23. SPS March Meeting on Soft Matter Physics, School of Physical Sciences, Jawaharlal Nehru University, New Delhi, March 2010, gave an invited talk, Y M Joshi.
24. Genetic Algorithm (GA), Multi-objective Optimization (MOO) and Biomimetic Adaptations, L&T Lecture, AZeotropy 2010, IIT Bombay March 2010, S K Gupta.

25. Fluid Near Surfaces, Indo-American Frontiers of Engineering, Agra, March 2010, J.K. Singh.
26. Polymerization Reaction Engineering: a Personal Journey, Inaugural Sukrut Ozarkar Memorial Lecture, MIT, Pune, February 2010, S.K. Gupta.
27. Genetic Algorithm (GA), Multi-objective Optimization (MOO) and Biomimetic Adaptations, LIT, Nagpur, February 2010, S.K. Gupta.
28. Electrolyte-Insulator-Semiconductor Systems in Healthcare and Environmental Sensing, in a UGC sponsored conference, Chemical Sensors – an Update, PES College of Arts and Sciences, Farmagudi, Goa, January 2010, S. Panda.
29. Anomalous creep flow dynamics of aging polymer-clay nanocomposite, V<sup>th</sup> Rheology of complex fluids symposium, IIT Madras, January 2010, Y.M. Joshi.
30. Role of redox mediators in azo dye decolorization and complete mineralization of the aromatic amines in a sequential anaerobic-aerobic bioreactor. Young Reseachers' Conference (YRC) 2010. ICT Mumbai, January 2010, P Barsingh and S. Garg.
31. Versatile Nanobioengineered Materials for bioapplications presented in NATCHEE, January 2010, Agra, S. Sivakumar.
32. Preparation, surface functionalization and characterization of carbon micro/nano fibers in adsorption applications, NATCHEE 2010, Agra, January 2010, N. Verma.
33. Enzymatic conversion of lactose in to galacto-oligosaccharides, Indo-Australian workshop held at Jadavpur University, December 2009, P.K. Bhattacharya.
34. International Workshop on 'Advances in Membrane Technology for Water Treatment, Environment and Clean Energy' at Central Glass & Ceramic Research Institute (CSIR) on December 2009 as Chairman of Session on (8<sup>th</sup> December) on 'Hollow Fibre, Capillary Membranes & CO<sub>2</sub> Capture', P.K. Bhattacharya.
35. In situ Sulfiding of NiMo/Al<sub>2</sub>O<sub>3</sub> Hydrosulfurization Catalyst, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, S. Farooqui, A. Vignesh and D. Kunzru.
36. Pervaporation of methyl-ethyl ketone and water mixture: Development of concentration profiles across membrane, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, S. Ravi, T. Ravi and P. K. Bhattacharya.
37. CO<sub>2</sub> Methanation over Supported Bimetallic Co-Fe Catalysts, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, A. Banerjee, S.C. Nayak and G. Deo.
38. Determination of the optimal reduction temperature of the Ni-Al<sub>2</sub>O<sub>3</sub> catalysts used for the CO<sub>2</sub> hydrogenation reaction, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, S. Sengupta and G. Deo.

39. Transesterification of Soybean oil with Homogeneous and Heterogeneous Base Catalyst, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, A.K. Gupta, S. Garg and G. Deo.
40. In situ FTIR Investigations of CO<sub>2</sub> Methanation Reaction Activity over Supported Bimetallic Ni-Fe Catalysts, CHEMCON-2009, IChE Annual Meeting, Vishakapatnam, December 2009, D. Pandey and G. Deo.
41. Acceleration of azo dye decolorization by using redox mediators and complete biodegradation of the aromatic amines in the sequential bioreactor system, CHEMCON-2009, Annual IChE Meeting, Visakhapatnam, December 2009, P Barsingh and Sanjeev Garg.
42. Versatile Nanoengineered Materials presented in Golden Jubilee Symposium on Fabrication at Small Scale (FASS) and Indo-US conference on Fabronics: Science of Advanced Fabrication, December 2009, S. Sivakumar.
43. SERC School on Machine Learning and AI Techniques for Petroleum and Petrochemical Industry, MIT, Pune: Genetic Algorithm, Multi-objective Optimization and Applications, December 2009, S.K. Gupta.
44. Carbon nanofibers, nanoparticles, and molecular sieves in environmental remediation and pharmaceutical applications, First Asian Carbon Society, Delhi, November 2009, N. Verma.
45. Process Engineering Principles in Chemical Sensing, in Advances in Chemical Engineering, DMSRDE, Kanpur, November 2009, S. Panda.
46. Electrophoretic Transport of Nucleic Acids through Nanostructured Surfaces, AIChE Annual Meeting, Nashville, USA, November 2009, A. Ghosh, D. Singh, T.K. Patra, J.K. Singh, R. Gurunath.
47. Critical Properties of fluids in nanopores: Crossover from 3D to 2D, AIChE Annual Meeting, Nashville, November 2009, S.K. Singh and J.K. Singh.
48. Phase transitions of associating fluids near surfaces, AIChE Annual Meeting, Nashville, November 2009, S. Khan, S.K. Kwak and J.K. Singh.
49. Structure and phase behaviours of confined fluids in single walled nanotubes, AIChE Annual Meeting, Nashville, November 2009, H. Huang, J.K. Singh and S.K. Kwak.
50. Self-organized meso-fabrication and functionalities in confined soft materials, TWAS 11th General Conference & 20th General Meeting, Durban, October 2009, A. Sharma.
51. International Conference on Chemical, Biological & Environmental Engineering (CBEE 2009), Singapore Iron Doped Microporous Activated Carbon (Phenolic resin) as an Adsorbent for Arsenic Removal, October 2009, A. Sharma, N. Sankararamkrishnan, A. Sharma and N. Verma.

52. Significance of Pore Size and Porosity of Mesoporous Materials Over its Surface Area for Separation of Vegetable Oil from an Aqueous Solution, International Conference on Separation Process, Varanasi, October 2009, S.K. Singh and J.K. Singh.
53. Synthesis, surface functionalization and characterization of carbon nanofibers and nanoparticles in separation and purification applications, International Conference on Separation Processes, IT BHU, October 2009, N. Verma.
54. Three dimensional numerical modeling of horizontal axis planetary mill with variable transmission ratio, International Seminar on Mineral Processing Technology, Bhubaneswar, October 2009, A. Bhateja, P. Prakash, I. Sharma, B.K. Mishra and J.K. Singh.
55. Time-Temperature superposition in soft glassy materials, 4<sup>th</sup> Asian Particle Technology Symposium (APT2009), New Delhi, September 2009, Y.M. Joshi.
56. Washcoating of  $\gamma$ -Alumina on Stainless Steel Microchannels, 3<sup>rd</sup> International Conference on Structured Catalysts and Reactors (ICOSAR-3), Ischia, Naples, Italy, September 2009, N.R. Peela, A.Mubayi and D. Kunzru.
57. Molecular dynamics of nanoscale wetting of water on grooved patterned surfaces, 4<sup>th</sup> Asian Particle Symposium (APT 2009), Delhi, September 2009, R.C. Dutta and J.K. Singh.
58. Wetting transition and boundary tension of dimer forming associating fluids, 4<sup>th</sup> Asian Particle Symposium (APT 2009), Delhi, September 2009, S. Khan and J.K. Singh.
59. Vapor-liquid critical and interfacial properties of semi-flexible chain molecules in nanopores-A molecular modeling study, 4<sup>th</sup> Asian Particle Symposium (APT 2009), Delhi, September 2009, J.K. Singh and S.K. Singh.
60. 4<sup>th</sup> Asian Particle Technology Symposium (APT2009), New Delhi, September 2009, chaired a session and gave an invited talk, YM Joshi.
61. Critical Properties of fluids in nanopores: Crossover from 3D to 2D. Thermodynamics 2009, Imperial College London, September 2009, S.K. Singh and J.K. Singh.
62. Plasma Reaction Engineering - Silicon Etch Applications, in a DST sponsored workshop, Plasma Engineering Applications of Process Technologies, IISc Bangalore, August 2009, S. Panda.
63. Alkane ODH Reaction on  $V_2O_5/TiO_2-Al_2O_3$  Catalysts: In-situ DRIFT and Reactivity studies, 8th World Congress of Chemical Engineering, Montreal, Canada, August 2009, D. Shee and G. Deo.
64. Producing Hydrogen from Ethanol in a Microfuel Processor: Recent Developments and Challenges, paper no.RE-10, 6<sup>th</sup> International Conference on Multiphase Flow, Heat Mass Transfer and Energy Conversion, Xi'an, China, July 2009, M.K.Moharana, N.R. Peela, S. Khandakar and D. Kunzru.

65. Advances in Chemical Engineering and Process Technology, NCL Diamond Jubilee Symposium, Pune, June 2009, chaired a session and gave an invited talk, YM Joshi.
66. Time-Temperature superposition in soft glassy materials, Advances in Chemical Engineering and Process Technology (ACEPT), National Chemical Laboratory, Pune, June 2009, Y.M. Joshi.
67. Biomimetic Adaptation of NSGA-II-aJG using the Biogenetic Law of Embryology for Multi-objective Optimization, Advances in Chemical Engineering and Process Technology (ACEPT), National Chemical Laboratory, Pune, June 2009, S.K. Gupta.
68. Future directions in chemical engineering research, NCL Diamond Jubilee Symposium, Advances in Chemical Engineering and Process Technologies (ACEPT), National Chemical Laboratory, Pune, June 2009, A. Sharma.
69. Comparative Study of Monolithic Reactors with Conventional Multi-Phase Reactors, NCL Diamond Jubilee Symposium, Advances in Chemical Engineering and Process Technologies (ACEPT), National Chemical Laboratory, Pune, June 2009, M.K. Aswani and D. Kunzru.
70. Direct computation of anisotropy of crystal-melt interfacial energy of silicon by simulation, SERC Symposium: Molecular and Mesoscale Simulations, I.I.Sc. Bangalore, May 2009, P.A. Apte.
71. Delivered a lecture and tutorial session on Thermodynamic Integration Methods at the SERC School on Molecular Simulations, I.I.Sc. Bangalore, May 2009, P.A. Apte.

#### Civil

72. Moisture sensitivity study on some aggregate-bitumen mixes, Roads in high precipitation areas, Indian Roads Congress, Guwahati, February 19-20, 2010, Dhasmana, H. and Das, A.
73. Perpetual pavements: innovations in pavement design, Civil Engineering Conference - Innovations Without Limits, September 18-19, 2009, NIT Hamirpur, Hamirpur, pp. 46-48, Das, A. and Ghosh, A.
74. Key-note address, Perpetual pavements: innovations in pavement design Civil Engineering Conference - Innovations Without Limits, September 18-19, 2009, NIT Hamirpur, Hamirpur by Das A.
75. Seismic passive earth pressure with varying shear modulus: pseudo-dynamic approach. Indian Geotechnical Conference (IGC-2009) 18-20 February, R.V.R. & J.C College of Engineering, Guntur, India, 2010, Ghosh, P. and Sreevalsa. K..
76. Seismic active earth pressure with varying shear modulus in backfill - pseudo-dynamic approach. International Conference on Performance-Based Design in Earthquake Geotechnical Engineering - from case history to practice (IS-Tokyo 2009) 15-18 June, Tokyo, Japan, 2009, Sreevalsa. K. and Ghosh, P.

77. Air Pollution and Health: Bridging the Gap between Sources and Health Effects, Golden Jubilee Lecture delivered at Department of Chemistry, DBS College, Kanpur, 9<sup>th</sup> Dec, 2009, Tarun Gupta
78. Development and Performance Evaluation of an Indigenously Developed Air Sampler Designed to Collect Submicron Aerosol, INAE Annual Convention at IGCAR, Kalpakkam, 17<sup>th</sup> Dec, 2009, Tarun Gupta.
79. Exploring the Health Effects of Primary and Secondary Particles from Diesel Exhaust. Krishna Kumar Budania, Sudhir Gupta, Tarun Gupta and Avinash Kumar Agarwal, Poster presentation at the workshop on Advances in Combustion and Transportation, Energy Conclave, IIT Kanpur, (8-15<sup>th</sup> Jan, 2010).
80. Exploring the Health Effects of Primary Vs Secondary Particulate Matter Present in Diesel Engine Exhaust, Platform presentation at the workshop on Advances in Combustion and Transportation, Energy Conclave, IIT Kanpur, 8-15<sup>th</sup> Jan, 2010, Tarun Gupta.
81. Design, Development and Field Evaluation of an Air Sampler at IITK to Collect Submicron Ambient Particles. Tarun Gupta, Poster presentation, Open House, IIT Kanpur, (8<sup>th</sup> Feb, 2010).
82. Air Pollution Climate and Health: Bridging the Gap from Sources to Effects, Presentation for Pioneer Batch Golden Jubilee Reunion at IIT Kanpur, 20<sup>th</sup> Feb, 2010, Tarun Gupta.
83. Measurement and Analysis of Toxic Metals Concentrations Influencing Continental Atmosphere, National Research Conference on Climate Change, IIT Delhi, 5<sup>th</sup>-6<sup>th</sup> Mar, 2010, Tarun Gupta.
84. Development and Field Evaluation of a PM<sub>2.5</sub> Sampler, Poster presented in International Conference of Environmental Health and Technology, IIT Kanpur, 15<sup>th</sup> -17<sup>th</sup> Mar, 2010, Jaiprakash and Tarun Gupta.
85. Development of a Continuous Annular Photocatalytic Reactor for the Control of Volatile Organic Compounds using TiO<sub>2</sub> Nanoparticles., Poster presented in International Conference of Environmental Health and Technology, IIT Kanpur, 15<sup>th</sup> -17<sup>th</sup> Mar, 2010, R. Mohanan, P.K. Nagar, S. Agarwal, M. Sharma and Tarun Gupta.
86. The Lifeline Earthquake Engineering in a Multi-hazard Environment (TCLEE 2009), Oakland, California., USA, June 28 - July 1, 2009, Presenting contributed paper by Samit Ray Chaudhuri.
87. IGCP 582: Tropical Rivers: Hydro-Physical Processes, Impacts, Hazards and Management, La Plata, Argentina, Sept. 23, 2009, Sinha, Rajiv.
88. Titan Through Time, NASA Goddard Space Flight Center, Greenbelt, US, 6-8 April, 2010 by Tripathi, S.N.



## Computer Science & Engineering

89. International Conference on Algorithmic Aspects in Information and Management (AAIM 2009), San Francisco, USA, June 15-17, 2009, Sumit Ganguly.
90. International Conference on Combinatorial Optimization and Applications, (COCOA 2009), Huangshan, Yellow Mountains, China, June 10-12, 2009, Sumit Ganguly.
91. European Symposium on Algorithms (ESA 2009), Copenhagen, Denmark, September 7-9, 2009, Sumit Ganguly.
92. COMSNETS 2010, Bangalore Jan 4-8, 2010, R.K. Ghosh.
93. Computability in Europe, Heidelberg, July 2009, Invited talk Conference on Computational Complexity, Paris, July 2009, presented a paper, Manindra Agrawal.
94. India Software Engineering Conference 2010 Infosys, Mysore, India, Feb 25-27, 2010 (Programme Committee Chair), Sanjeev K Aggarwal
95. LIX Colloquium Reachability Problems'09. September 23rd-25th 2009, Ecole Polytechnique, France. Presented a contributed paper, Anil Seth.
96. Indo-French Workshop on Automata Concurrency and Timed Systems, ACTS II. Chennai Mathematical Institute, Feb. 1-3, 2010. (Type of participation: attended the workshop), Anil Seth.

## Electrical

97. Wireless VITAE, Aalborg, Denmark, May 17-20, 2009, presented contributed paper, Banerjee Adrish.
98. CROWNCOM 2009, Hamburg, Germany, June 22-24, 2009, chaired a session and presented contributed paper, Banerjee Adrish.
99. NCC 2010, Jan 29-31, 2010, Chaired a session and (student) presented a contributed paper, Banerjee Adrish.
100. Meenakshi Gupta and Laxmidhar Behera, Sensor Integration of a Mobile Robot for Obstacle Avoidance, Int Conf and Exhibition on Aerospace Engineering, IISc, Bangalore, May 2009, TAROS 2009, University of Ulster UK, Behera L.
101. Laxmidhar Behera and Premkumar P., Intelligent Visual Servoing Schemes for Redundant Manipulators, Towards Autonomous Robotic Systems - TAROS 2009, University of Ulster, UK, ICON (International Conf on Natural Language Processing) 2009, Hyderabad, Behera L.
102. Pawan Goyal, Laxmidhar Behera and T. M. McGinnity, An Information Retrieval Model Based On Semantically Adapted Vector Space Model, ICON 2009, December 14-17, Hyderabad, INDIA, Behera L.
103. Chaired a session at ICICS, Macau in Dec 2009, Chaturvedi AK.

104. XVth International Workshop on the Physics of Semiconductor Devices, New Delhi, 15<sup>th</sup> to 19<sup>th</sup> December, 2009, attendee, Ghosh B.
105. 11<sup>th</sup> International Electrical Insulation Conference, Birmingham, UK, May 2009, presented 2 contributed papers, Gupta Nandini.
106. International Photovoltaic Science and Engineering Conference-18 (PVSEC-18), Calcutta, 19-23 January, 2009, Iyer S.S.K.
107. 34th IEEE Photovoltaic Specialists Conference, 2009, June 12-19, Philadelphia, USA, Iyer S.S.K.
108. 25<sup>th</sup> International Workshop on the Physics of Semiconductor Devices (IWPSD'09), 15<sup>th</sup> -19<sup>th</sup> December 2009, Delhi, India, Iyer S.S.K.
109. Workshop on Control and Inverse Problems, 1-15 Dec 2009, organized by the IISc Mathematics Initiative, Dept. of Mathematics, Indian Institute of Science, Bangalore (Invited talk), Naik Naren
110. Session Chair, Digital Circuits and Systems, IEEE TENCON Conference, Singapore, Nov. 23-26, 2009, Qureshi S.
111. Contributed paper, IEEE TENCON Conference 2009, Singapore, Nov. 23-26 2009 Qureshi S.
112. Two contributed papers, International Semiconductor Device Research Symposium (ISDRS), University of Maryland, USA, December 7-9, 2009 Qureshi S.
113. IEEE General Meeting, July 24-28, Calgary, Canada (Panelist), Singh S.N.
114. NWPC 2009, September 10-11, Bornholm, Denmark, Singh S.N.
115. 15th International Conference on Intelligent System Applications to Power Systems (ISAP07), 8-12 November, 2009, Curitiba, Brazil, Singh S.N.
116. 20th IET Irish Signals and Systems Conference ISSC 2009, University College Dublin, Ireland, 10-11 Jun. 2009, Sircar P.
117. ACM Int. Conf. on Convergence and Hybrid Information Technology ICHIT 2009, Daejeon, Korea, 27-29 Aug. 2009, Sircar P.
118. Asia Pacific Microwave Conference-2009, Singapore in Dec 2009. (Contributed paper), Srivastava K.V.
119. Taiwan-India Bilateral Workshop on Intelligent Chip Design at National Tsing Hua University, Hsinchu, Taiwan during Nov 1 to Nov 4, 2009. (Invited paper), Srivastava K.V.
120. IEEE Electric Ship Technology Symposium (ESTS 2009) during 20-22 April 2009 at Baltimore, MD USA. Chaired a session and presented a paper, Srivastava S.C.
121. International Conference on Power Systems (ICPS 2009) held at IIT Kharagpur during Dec. 27-30, 2009. Chaired a session, Srivastava S.C.
122. Self Learning Systems for Surveillance Video Analysis, Electrical Engineering Department, IISc Bangalore, 17/06/2009, Venkatesh K.S.
123. Computer Vision Applications for Automated surveillance, Metrology and Human Computer Interaction. IRDE Dehradun, 11/01/2010, Venkatesh K.S.

Industrial & Management Engineering

124. National Conference on Techno-Lingual Communication, Pranveer Singh Institute of Technology, Kanpur, December 21-22, 2009, Chief Guest, talked on 'Technolinguistics: Integrating IT, language and human communication, N K Sharma.
125. International Conference on Marketing in Emerging Markets, Rourkela Institute of Management Studies, September 6-8, 2009, Chairing Session, N K Sharma.
126. Annual Global Conference on Entrepreneurship and Technology Innovation (AGCETI), Indian Institute of Technology Kanpur, January 16-18, 2010, Chaired a session and presented a paper titled 'Role of mentoring in enhancing entrepreneurial self-efficacy: The effect of some personality traits and learning goal orientation as antecedents', N K Sharma and Manu Kanchan.
127. IIMB Management Review Doctoral Students Conference 2009, IIM Bangalore, India, 'Customers' Service Experience and Cross-Buying Intention in Banking Service Market', November 27, 2009. S K Mishra, N K Sharma.
128. IIMB Management Review Doctoral Students Conference 2009, IIM Bangalore, India, 2009, 'The impact of perceived crowding on consumers' store patronage intentions: Moderating roles of optimal stimulation level and shopping motivation', November 27, 2009, Ritu Mehta, N K Sharma, Sanjeev Swami.
129. 8th triennial conference of Association of Asia Pacific Operational Research Societies (APORS), Jaipuria Institute of Management, Jaipur, India, 'Investigating the Relationship between Financial Risk Aversion and Demographic Characteristics of Individual Investors', December 6- 9, 2009, S Pandey, N K Sharma, A K Mittal.
130. Theme presentation on 'Problem Based Learning' at Design Innovation Education Forum, Oberoi Delhi, 16<sup>th</sup> - 17<sup>th</sup> December, 2009, J Chatterjee.
131. OPPALS Workshop on Creative Research Approaches, Salzburg University, Austria, J Chatterjee.
132. Panel Discussion on Entrepreneurial Business Strategies, TIE-UP, 14<sup>th</sup> March, 2010, J Chatterjee.
133. Keynote Speaker, ICT for Socio-Economic Development, EU-Brazil Conference, 25<sup>th</sup> m- 26<sup>th</sup> March, 2010, Aracaju, Brazil, J Chatterjee.
134. CII-NID Design Summit, New Delhi, 15<sup>th</sup> -16<sup>th</sup> December, 2009, J Chatterjee.
135. Reliability in Portfolio Optimization using Uncertain Estimates, (Rachit Seth, Raghu Nandan Sengupta and Peter Winker), 6th Computational Management Science, University of Geneva, Geneva, 1st - 3rd May, 2009; Dr. RN Sengupta.

136. Visionary Leadership for Manufacturing (VLFM): Module: Leadership and Decision Making (Module Coordinator for LDM); Topic: Data Interpretation and Decision Making, 2009, Raghu Nandan Sengupta.
137. Institute for Technology and Management, Mumbai, INDIA: (i) Risk Management, May 2009 – July 2009; (iii) Quantitative Methods - I, August 2009 - October 2009, Raghu Nandan Sengupta.
138. Indira Gandhi Institute of Development Research (IGIDR), Mumbai, INDIA: EVT and Copula Theory, 26th – 27th February, 2010, Raghu Nandan Sengupta.
139. 5th National Quality Conclave, Quality Council of India New Delhi 19-20 Feb 2010; AK Mittal.
140. QCFI Bhilai Chapter Inaugural 13 Feb 2010 Bhilai Chief Guest, Invited Talk; AK Mittal.
141. National Workshop on IPR and Patenting in Health Care; March 27-28, 2010 SGPGI Lucknow Session Chair, Resource Person; AK Mittal.
142. The New ITO/ BPO Destination 10<sup>th</sup> January 2010 MCC Kanpur, Moderator Panel Discussion; AK Mittal.
143. ICQC2009, Oct 22-24, 2009 CEBU Philippines Delegation Head QCFI; AK Mittal.
144. 2<sup>nd</sup> Learning Convention VLFM 19<sup>th</sup> Feb 2010 CII New Delhi; AK Mittal.
145. Roundtable conference with USM, Industry, IITK May 5<sup>th</sup>, 2009 Penang Malaysia; IITK Representative; AK Mittal.
146. National Seminar on Current Trends in Mathematics with OR; 28-29 March 2010 RML University Faizabad Guest of Honor, Invited Lecture; AK Mittal.
147. QCFI Annual Convention Dec18-20, 2009 Bangalore Inaugural speaker; AK Mittal.
148. APORS 2009, Triennial conf of Asia Pacific Societies December 6-9, 2009; Jaipur Organizing Chair, Invited Lecture; AK Mittal.
149. Workshp on Radically simple IT of Shinshei Bank 13 April 2009, Mumbai; Resource person; AK Mittal.
150. 13th annual conference of Society of Operations Management, Indian Institute of Technology, Madras, December 20-22, 2009; P Mehta.
151. Association of Asian Pacific Operational Research Societies (APORS), Jaipuria Institute of Management, Jaipur, December 06-09, 2009; P Mehta.
152. Workshop of Drug-discovery and development in India: challenges and opportunities, IIM Bangalore, Feb 5, 1010; P Mehta.

#### Materials Science and Engineering

153. Indian Science Congress Association, Awardee and speaker, Jan. 3-7<sup>th</sup> 2010, Trivandrum, Kantesh Balani.

154. Indian Ceramics Society Annual Meeting, Dec. 11<sup>th</sup> 2009, Awardee, Trivandrum, Kantesh Balani.
155. National Metallurgist's Day, Indian Institute of Metals Kolkata, contributed oral presentation and poster, Nov. 16-17<sup>th</sup> 2009, Kolkata, Kantesh Balani.
156. Advances in the Theory of Ironmaking and Steelmaking 2009 (ATIS-2009), IIS Bangalore, 9-11<sup>th</sup> December, 2009, David G. C. Robertson.
157. Constrained and unconstrained room temperature plasticity of metallic glass, ICSSP4, November 20-23, 2009, Chennai, K. Mondal and K. Hono.
158. Uniqueness of glassy structure on the crystallization behavior and its macroplasticity, Discussion Meeting at Coorg Feb. 21-24<sup>th</sup> 2010, K. Mondal.
159. Thermodynamics and kinetics of crystallization from undercooled liquid, 2010-Indo American Frontiers of Engineering (IAFOE) Symposium, March 11-13, Agra, K. Mondal.
160. Seminar on Management of Energy Resources - Issues and Challenges, Indian school of Mines University, Dhanbad, January 31-February 1, 2009, S.P. Mehrotra.
161. R&D for Indian iron and steel industry: Future directions, DAAD Alumni Club Symposium - ASM 2009, Puri (Orissa), March 22, 2009, S.P. Mehrotra.
162. Brainstorming on Programme on Marine Resource development and Management, IIT Kharagpur, April 14, 2009, S.P. Mehrotra.
163. International Conference Mineral Processing Technology (MPT-2009), Institute of Minerals and Materials Technology, Bhubaneswar, October 28-30, 2009, S.P. Mehrotra.
164. 4<sup>th</sup> Asian Particle Technology (APT-2009), held in New Delhi during September 14-16, 2009, S.P. Mehrotra.
165. International Conference on Advances in Electron Microscopy and Related Techniques and XXXI Annual Meeting of EMSI, BARC, Mumbai, India, March 8-10, 2010, Gouthama.
166. Structural, Magnetic and Electrical Properties of Zr-Doped BiFeO<sub>3</sub> Thin Films, Poster Presentation at MRS Fall Meeting 2009, Boston (USA), Somdutta Mukherjee, Rajeev Gupta, Ashish Garg.
167. Synthesis and Experimental Investigations on Single Crystal Gallium Ferrite, Poster Presentation at MRS Fall Meeting 2009, Boston (USA), Somdutta Mukherjee, Rajeev Gupta, Ashish Garg.
168. Mineral Characterization Using Micro X-ray Diffraction (Micro XRD), a State-of-the-art Non-destructive Technique, Presented at the Chemeca 2009, Perth (Australia), 27-30 September 2009, Oral Presentation number 120.A.122, Muthu Panniselvam, Ashish Garg, James Tardio, Stephen Grocott and Suresh Bhargava.
169. Characterization of Bauxite Pisoliths, Presented at the Chemeca 2009, Perth (Australia), 27-30 September 2009, Oral Presentation number 532.A.121, Muthu

Panniselvam, James Tardio, Ashish Garg, Frank Antolasic, Stephen Grocott and Suresh Bhargava.

## Mechanical

170. Health Monitoring of Pipes using Conduit Crawling Robot, International Symposium on Research Collaboration, Waseda University, Fukuoka, Japan, 08.03.2010, Bishakh Bhattacharya.
171. Attended Conference Turbulence and Shear Flow Phenomena, 22-24 June 2009, Seoul National University, Seoul, South Korea Venue, and presented two contributed papers, Subrata Sarkar.
172. Recent Advances in Nonlinear Mechanics, Kuala Lumpur, Malaysia, August 24-27, 2009, chairing session as well as presenting contributed papers, Pankaj Wahi.
173. Pankaj Wahi , Workshop on Thermoacoustic Instabilities, IIT-Chennai, India, January 18-22, 2010, as an expert on nonlinearity.
174. NPMASS workshop on MEMS Technology and its applications, Cummins college of Engineering, Pune, 22-24th January, 2009, S. Bhattacharya.
175. Indo-Japan Workshop, Symbiosis International University, Senapati Bapat Road- Pune, March 8-15, 2009, S. Bhattacharya.
176. Experimental and Numerical Analysis of Double Sided Incremental Forming, International Manufacturing Science and Engineering Conference MSEC - 2009, October 4-7, 2009, Indiana, USA, N V Reddy, J Cao, Y. Wang, W Wu, Y Huang.
177. Seminar in DST Nanosciences meet, Vedic village, Kolkata, 15-17th March, 2009, S. Bhattacharya.
178. BARC school on micromachining and sensing technologies, IIT Mumbai, 2-7th June, 2009, S. Bhattacharya.
179. CMERI, Durgapur, 15-16th July, 2009, S. Bhattacharya.
180. CEP on Smart Polymers for Electronic and Smart Application from 30th November - 4th December, 2009 at DMSRDE, G.T. Road, Kanpur - 208013, S. Bhattacharya.
181. MGM college of Engineering at Nanded at their annualevent VISIOTECH-2010, 20-22nd February, 2009, S. Bhattacharya.
182. Department of Chemical Engineering and technology, Punjab Engineering College, Punjab University, Chandigarh, 3-4th April, 2010 S. Bhattacharya.
183. REI 15, Padova, Italy, Aug. 30 Sept. 4 2009, Companion registration, S. Bhattacharya.
184. The 5<sup>th</sup> India-Japan Joint Seminar on Production, measurement, QC& Micro/Nano Manufacturing, Tokyo, Japan, March 15-19, 2010, presented a paper and chaired a session, N.V. Reddy.

185. 9th International ASME-ISHMT Heat and Mass Transfer Conference, Mumbai, India January 4-6, 2010, S. Khandekar.
186. Theme Meeting on Thermal Hydraulics of Nuclear Reactors - 2010, IGCAR Kalpakkam, India, February 18-19, 2010, S. Khandekar.
187. International Heat Pipe Committee Meeting, Noordwijk, The Netherlands, October 2009, S. Khandekar.
188. Fifth International Conference on Evolutionary Multi-Criterion Optimization (EMO-09), Nantes, France, April 2009. Contributed papers, chairing sessions, K. Deb.
189. Congress on Evolutionary Computation (CEC-09), Trondheim, Norway, May 2009. Tutorial speaker, contributed papers, K. Deb.
190. Multi-Criterion Decision Making (MCDM), Chengdu, China, July 2009, Keynote speaker, tutorial speaker, contributed papers, K. Deb.
191. CSIRO Workshop on Multi-Criterion Optimization, New Castle, Australia (September 2009), invited workshop speaker, K. Deb.

#### Humanities and Social Sciences

192. Chaired technical session -I in One Day Orientation Programme for Chairpersons and Heads of Institutions on Introduction of Value Education Inputs by UPTU, Raj Kumar Goel Institute of Technology, Ghaziabad, 17 May 2009 - A.K. Sharma.
193. Stigma against HIV/AIDS: A Need for Contextual Understanding. Paper presented at International Conference on Health for All: Opportunity and Challenges, India International Institute of Social Sciences (IISS), Jaipur, 21-23 September 2009 -Sonal Mobar and A.K. Sharma.
194. Social Legislation and Social Change. Paper presented at Rashtriya Vichar Gosthi on Samajik Vidhayan tatha Samajik Parivartan, A.N.D. Mahila Degree College, Kanpur, 24 October 2009 - A.K. Sharma.
195. Indian Society in 21<sup>st</sup> Century, Paper presented at International Seminar on Imagining India: Discourse of the Nation, Department of English, Banaras Hindu University, 18-19 December, 2009 - A.K. Sharma.
196. A Pilot Study of Factors Determining Maternal Health and Morbidity in Slums: An Exploratory Study of Kanpur City, Paper presented at Seventh Conference of Indian Association for Social Sciences and Health, BHU, Varanasi, 5-7 March, 2010 -Rita Singh, A.K. Sharma and Rohini Ghosh.
197. Planning for Social Development among the Tribal Communities: Understanding Social Representations of Health, Paper presented at Seventh Conference of Indian Association for Social Sciences and Health, BHU, Varanasi, 5-7 March, 2010 - A.K. Sharma and Shikha Dixit.
198. Durkheim's sociological approach to moral education. Paper presented at National conference on Education, State and Globalisation: Issues and

- challenges, Department of Sociology, Central University of Hyderabad, 5-6 March, 2010 - Amman Madan.
199. Rebuilding political education: Reflections from a case study in Central India. Paper presented at conference on Towards a Better Politics, Osmania University, 29 January 2010 - Amman Madan.
  200. Three models of merit: Some contrasting implications for pedagogy and social stratification. Paper presented at International seminar on Affirmative Action and Inequality in Education, 9-10 November, Centre for Political Studies, JNU - Amman Madan.
  201. Member of discussion panel, Linking universities and schools: towards equity and quality, 30-31 October 2009, University School Resource Network, JNU - Amman Madan.
  202. Two Versions of Oedipus in Philip Roth's *The Human Stain*. Paper presented at the Jewish- American and Holocaust Conference, Salt Lake City, Utah, USA, 12-16 September 2009 - G. Neelakantan.
  203. Experiencing Our True and Transcendental Self: Participatory Qualitative Research as a Potential Medium. Paper presented at a symposium on Perspectives on Indian Psychology at the 8th Biennial Conference of the Asian Association of Social Psychology, New Delhi, 11-14 December, 2009, Kumar Ravi Priya.
  204. Social construction of human-environment relationship facilitating disaster management and healing: Insights from natural disasters in India. Paper presented at the 8th Biennial Conference of the Asian Association of Social Psychology. New Delhi, 11-14 December, 2009, Kumar Ravi Priya.
  205. Strengths and Challenges of Using Ethnography in Studying Trauma Reactions and Healing after a Human-Made Disaster: Insights from a Study on Communal Riots in 2002 in Gujarat, India. Paper presented at the 10th International Interdisciplinary Conference - Advances in Qualitative Methods (AQM), Vancouver, British Columbia, Canada, 7-10 October, 2009. - Kumar Ravi Priya.
  206. Contextualizing trauma and healing of children affected by human-made disasters: Theoretical, methodological and policy implications. Paper presented at the National Seminar on 'Human Emotions and Well-Being: Emerging Perspectives, D. D. U. Gorakhpur University, March 21-22, 2010. - Kumar Ravi Priya.
  207. Theoretical, methodological and policy implications. Paper presented at the National Seminar on 'Human Emotions and Well-Being: Emerging Perspectives, D. D. U. Gorakhpur University, March 21-22, 2010. - Kumar Ravi Priya.
  208. Posttraumatic Stress, Suffering and Healing among Riot-Affected Internally Displaced Children of Gujarat: A Qualitative Inquiry. Paper presented at the



- 18<sup>th</sup> Annual Conference of National Academy of Psychology.t Bangalore University, Bengaluru, 6-9 March, 2010. - Kumar Ravi Priya.
209. Participant and Session Chair. Conference of the Irish Anthropological Association, Anthropological Crossings: Memory, Identity and Belonging in an Interconnected World, Queen's University, Belfast, UK, 1-2 May 2009. - Munmun Jha.
210. Participant in the Travel and Trauma Colloquium, Institute of Irish Studies, Queen's University, Belfast, UK, 17-18 April 2009. - Munmun Jha.
211. The Recognition of the Fisherman: Literary Representations of the Unnamed. Paper presented at 12<sup>th</sup> International Conference of Forum on Contemporary Theory in The Political Economy of Social Division: Race, Gender, Class and Caste as Fetishized/Fetishizing Borders, Trivandrum, December 2009 - Mini Chandran.
212. Attended National Seminar on Mind and Meaning, organized by the Department of Philosophy in collaboration with the Department of Neural and Cognitive Sciences, University of Hyderabad, March, 2010 - Mini Chandran.
213. Understanding coping pattern of Myocardial infarction patients: A Qualitative investigation. Paper presented at the Eighth biennial conference of the Asian Association of Social psychology, IIT Delhi, New Delhi, 11-14 December, 2009. - Rajbala Singh and Shikha Dixit.
214. Mental illness: Cultural context and clinical intervention. Paper presented at the Thirty sixth National Annual Conference of the Indian Association of clinical psychologists, Department of Mental health and social psychology, National Institute of Mental Health and Neurosciences, Bangalore, 1-3 February, 2010. - Shikha Dixit.
215. Social position and health: A health psychology perspective. Seventh Conference of the Indian association for social sciences and health. Centre for study of social exclusion and inclusive policy, Faculty of social sciences, Banaras Hindu University, Varanasi, 5-7 March, 2010 - Shikha Dixit.
216. Planning for social development among the tribal communities: Understanding social representations of health Seventh Conference of the Indian association for social sciences and health. Centre for study of social exclusion and inclusive policy, Faculty of social sciences, Banaras Hindu University, Varanasi, March 5-7, 2010, Contributed paper -A.K.Sharma, Shikha Dixit and Rajbala Singh.
217. Chronic illness and coping: Implications for positive intervention. Invited Paper at the National Seminar on Positive Psychology and Health: Interventions and Strategies, Department of Psychology, M.D. University, Rohtak (Haryana), 28-29 March, 2010, Shikha Dixit.
218. Participated in 5<sup>th</sup> Annual Conference on Economic Growth and Development, organized by Indian Statistical Institute at Delhi. - Sohini Sahu.

219. Invited participant in the Transforming Science from Feminist Perspective Workshop organized by IAWS in association with RCWS, SNDT, Mumbai, 15-17 Feb., 2010, Suchitra Mathur.
220. Invited participant in the Communication Skills Initiative workshop organized by IIT Gandhinagar, 20-21 Feb., 2010. - Suchitra Mathur.
221. Fairness perception in India: The role of rule combination and other situational variables, Paper presented at the 8<sup>th</sup> Biennial Conference of the Asian Association of Social Psychology, New Delhi 14-16 December 2009. - Lilavati Krishnan.
222. Science Technology and Social Inequality in India: A Socio-historical Perspective Paper presented at Annual Conference of the (4S) Society for the Social Studies of Science, (the global professional body of S&T policy researchers) at Virginia Tech Arlington, Washington DC, USA 27 Oct - 1 Nov, 2009. - Binay K Pattnaik.
223. Indigenous vision and Sustainable Development, Paper presented at the 16<sup>th</sup> World Congress of the International Union of Anthropological and Ethnological Sciences (IUAES), ( Panel: Indigenous Knowledge for Ecological Resource Management University of Yunan Kunming, China , 27-31 July, 2009 - with full financial Support from IUAES. - Binay K Pattnaik.
224. Chaired the technical session entitled: Traditional Forest related knowledge and Forest Resource Conservation, and was Discussant to the technical session: Shifting Cultivation and agricultural Production Management - Binay K Pattnaik.
225. Interdisciplinary Mathematical and Statistical Techniques. Paper presented at 18<sup>th</sup> International Conference of 'Forum for Interdisciplinary Mathematics' 2-4 August, 2009, Jaypee University of Information Technology, Wagnaghat, Dist. Solan, Himachal Pradesh, India. - Praveen Kulshreshtha.
226. Presented a paper 'Rasa Aesthetics and Interpretation' in the national conference organized by the Balvant Parekh Centre for General Semantics and the Other Human Sciences, Baroda in November, 2009. - Prashant Bagad.
227. Mixing of the mythical and the hyperreal in cyberhell: Fixing the Topology of Cybermancy in the MELOW International Conference on Literature and Culture since 1980, Panjab University, Chandigarh, 25-27 February, 2010. Presented an invited paper. - T. Ravichandran.

## Chemistry

228. Indo-French Meeting on Diffusion in nanoporous materials, held at Fortune Select JP Cosmos, Bangalore, April 2-5, 2009, A. Chandra.
229. National Conference of Shanti Swarup Bhatnagar Award Winners, held at Devi Ahilya Vishwavidyalaya, Indore, July 17-19, 2009, A. Chandra.

230. International Conference on Solution Chemistry, University of Innsbruck, Austria, August 20-25, 2009, A. Chandra.
231. Discussion Meeting on Chemical Reactions in Unusual Media, National Chemical Laboratory, Pune. October 8-9, 2009, A. Chandra.
232. 5. Supercomputing-09 and ATIP 1<sup>st</sup> Workshop on HPC in India 2009, held in Portland, USA, November 14-20, 2009, A. Chandra.
233. School and Conference on Multiscale Modeling and Simulations of Hard and Soft Materials, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, December 7-20, 2009, A. Chandra.
234. Of Molecules and Materials: A Survey of Recent Concepts, IISER Kolkata, December 27-29, 2009, A. Chandra.
235. Delivered an invited talk in the 4<sup>th</sup> Mid Year national symposium of the Chemical Research Society of India (CRSI) at SGSITS, Indore, India (July 23-24, 2009) Title: Aziridines and Azetidines: Synthetic and Mechanistic Aspects, M.K. Ghorai.
236. Probing the ultrafast solution dynamics of a cyanine dye in DCM solvent interfaced with water medium, Femtochemistry'09, Beijing, China, Aug.8-13, 2009, Poster presentation. T. Goswami, S.K. Karthick Kumar and Debabrata Goswami.
237. Femtosecond pulse induced nonlinearity and Thermal Relaxation Dynamics, Femtochemistry'09, Beijing, China, Aug. 8-13, 2009, Poster presentation, I. Bhattacharyya and Debabrata Goswami.
238. International Scientific Committee Member: Asian Quantum Information Quantum Computing-2009 (AQIS'09), Nanjing, China, Aug. 21-27, 2009, Debabrata Goswami.
239. Simultaneous effect of polarization and chirp on the control of femtosecond molecular fragmentation, Tapas Goswami, S. Karthick Kumar, Aveek Dutta and Debabrata Goswami, 6<sup>th</sup> Asian Conference on Ultrafast Phenomena ACUP-2010, Taipie, Taiwan, Jan 10-13, 2010, Poster Presentation.
240. National Laser Symposium 2009 (NLS-09), 9<sup>th</sup> DAE-BRNS National Laser Symposium, BARC, India, January 13-16, 2010, Panorama of Femtosecond Control across Various Phases, Invited Talk, Friday, Jan. 15, 2010, Debabrata Goswami.
241. Effect of polarization on molecular fragmentation of n-propyl benzene, Poster Presentation, Dipak Kumar Das, Tapas Goswami, S. K. Karthick Kumar, Debabrata Goswami.
242. Spatiotemporal Control in Laser-Scanning Fluorescence Microscopy and Optical Trapping, Oral Presentation, Jan. 15, 2010 Arijit Kumar De and Debabrata Goswami.
243. Spectrally Resolved Femtosecond Photon Echo Spectroscopy of Astaxanthin, at Spectroscopy and Dynamics of Molecules and Clusters (SDMC) Discussion

- Meeting '10, The International Center, Goa, February 18-21 (2010), Ajitesh Kumar, S.K. Karthick Kumar, T. Goswami, D. Goswami.
244. Ultrafast dynamics of femtosecond laser driven Retro-Deals-Alder Reaction of Dicyclopentadiene, Spectroscopy and Dynamics of Molecules and Clusters (SDMC) Discussion Meeting '10, The International Center, Goa, February 18-21 (2010), Dipak Kumar Das, Tapas goswami, Debabrata Goswami.
245. Revealing H-bond characteristics through Thermal-Lens Spectroscopy, Spectroscopy and Dynamics of Molecules and Clusters (SDMC) Discussion Meeting '10, The International Center, Goa, February 18-21 (2010), Pardeep Kumar, Indrajit Bhattacharyya, Debabrata Goswami.
246. NOST-OCC Conference 2009, Majorda Beach Resort Goa, Dates May 1-4 2009, presenting invited paper - Modelling the green fluorescence protein luminophore, R. Gurunath.
247. National conference on Nanotechnology organized by Bharatiyar University, Feb 2-4th 2010, Plenary lecture on Ultrathin film magnetism, S. Sundar Manoharan.
248. Invited lecture at Sri Krishnammal College for women, Coimbatore, Feb 4th 2010, on Rare Earth mangatites-Spintronics, S. Sundar Manoharan.
249. Sterically-Engineered Rigid Molecular Modules for Lattice Inclusion Cornucopia and Organic Functional Materials, NOST (National Organic Symposium Trust), Goa, May 04-09, 2009, J.N. Moorthy.
250. Exploitation of Sterics in Organic Solid State Reactivity and Molecular Organization International Symposium on Organic Chemistry: Trends in 21<sup>st</sup> Century, Kolkota, Dec 10-12, 2009, J.N. Moorthy.
251. Control of Organic Reactivity and Solid State Properties Based on Structural Attributes, Chemical Research Society of India, NSC-12 CRSI symposium, IICT, Hyderabad, Feb 6-10, 2010, J.N. Moorthy.
252. Chemical Research Society of India, Indian Institute of Chemical Technology, Hyderabad (February 5-7, 2010), R.N. Mukherjee.
253. Modern Trends in Inorganic Chemistry, Indian Institute of Science, Bangalore (December 7-10, 2009), R.N. Mukherjee.
254. 2<sup>nd</sup> CDRI-NIPER (RBL) Symposium on Medicinal Chemistry & Pharmaceutical Sciences, CDRI, Lucknow, March, Nisanth N. Nair.
255. RAMET, Kolkata, January 2010, Invited Talk, Nisanth N. Nair
256. ICMR-ICMS Winter School on Chemistry and Physics of Materials, JNCASR, December 2009, Nisanth N. Nair.
257. School on Multiscale modeling and simulation in Hard and Soft Materials. , JNCASR, December 2009, Nisanth N. Nair.
258. Modulation of Iron Displacements and Axial Ligand Orientations in a Nonplanar Porphyrinic Environment 2<sup>nd</sup> Asian Conference on Coordination Chemistry (ACCC), Nanjing, China from Nov. 1-4, 2009, S.P. Rath, (Presenting invited talk), S.P. Rath.

259. Metal Ion Displacements and Axial Ligand Orientations in a Nonplanar Porphyrinic Environment School and Symposium on Advanced Biological Inorganic Chemistry (SaBIC-2009) held at TIFR, Mumbai from Nov. 2-7, 2009, S.P. Rath (Presenting invited talk)
260. Title: Bioinspired Design of Porphyrin and Bisporphyrin based Metal Complex
261. National Symposium on Modern Trends in Inorganic Chemistry (MTIC-XIII) held at IISc Bangalore from Dec. 7-10, 2009, S.P. Rath, (Presenting invited talk)
262. Invited talk, Bangladesh Chemical Congress: Functional Models of Nitrate Reductase with Substrate Specificity Dhaka University, Dhaka, 30 January, 2009, S. Sarkar.
263. Invited talk, Bangladesh Humboldt Kolleg on 'Environmental Challenges in the New Millennium, Dhaka, 2<sup>nd</sup> February, 2009, S. Sarkar.
264. Invited talk, Gordon Research Conference, Molybdenum & Tungsten Enzymes, held at Berga, Italy, 5<sup>th</sup> -10<sup>th</sup> July, 2009, S. Sarkar.
265. Invited talk, the department of chemistry, University of Jena, July 3<sup>rd</sup> Germany, 2009, S. Sarkar
266. Invited talk the department of chemistry, University of Paderborn, 21<sup>st</sup> July,, Germany, 2009, S. Sarkar
267. Invited talk , the department of chemistry and biochemistry ,University of Duquesne, PA, USA, 8<sup>th</sup> March , 2010, S. Sarkar
268. Invited talk in Inorganic Chemistry Colloquium at Boston, department of chemistry and chemical biology, Harvard University, USA, February 27, 2010 S. Sarkar
269. Int. Sym. on Ostwald's 100 Years of Cata. in Chem. Res. Allahabad Agricultural Institute - Deemed University, Allahabad, India, November 2009, Pratik Sen.
270. International Congress of Chemistry and Environment (ICCE - 2009), Ubon Ratchathani, Thailand, January 2010, Oral presentation, Pratik Sen.
271. Total Synthesis of Bioactive Natural Products 14th International Conference Indian Society of Chemists and Biologists at Central Drug Research Institute, Lucknow, January 15 - 18, 2010, V.K. Singh.
272. Enantioselective Reactions Catalyzed by Chiral Pyridine 2,6-Bis(5',5'-diphenyloxazoline)-Cu(II) Complexes Invited talk in International Conference on Heterocyclic Chemistry at St. Johns, Newfoundland, Canada on 3<sup>rd</sup> August, 2009, V.K. Singh.
273. Enantioselective organocatalytic Aldol Reaction 2<sup>nd</sup> German-India Symposium Frontiers of Chemistry at Institut für Organische Chemie, Universität Leipzig, Leipzig, Germany, 16-19 Sept, 2009, V.K. Singh.
274. DST's Composite delegation to workout cooperation strategy and identify few themes of mutual interest, Moscow, 14-16 September, 2009, V.K. Singh.

275. Collaborative Opportunities at Indian Institute of Science Education and Research (IISER) Bhopal, India Indo-German Workshop on Collaboration Opportunities at the Frontiers of Modern Chemistry. Cologne 21, September 2009, V.K. Singh.
276. Symposium on symmetry, IISER, Mohali, K. Srihari.
277. Spectroscopy and Dynamics of Molecules and Clusters VII, Goa, K. Srihari.
278. Second German-Indian symposium on frontiers of chemistry, Leipzig, Germany, Conference on Tunneling and scattering in complex systems - from single to many particle physics, Dresden, Germany, K. Srihari.
279. A lecture entitled new Dimensions in Chemical Sciences was delivered in a one-day symposium held at P.G. College, Osmania University on January 30, 2010, Y. D. Vankar.

#### Mathematics and Statistics

280. Mathematical Models of Collective Dynamics in Biology and Evolution (MDBE 09), University of Leicester, U.K., 11-13 May, 2009, contributed paper presentation entitled "Spatial pattern formation in ratio-dependent model: moment-based analysis, Malay Banerjee.
281. International Conference on Rough sets, Fuzzy sets and Soft Computing, Agartala, Tripura, November 5-7, 2009; (i) Tutorial on "Rough Set Theory", (ii) Invited talk on "Propositional logics from rough set theory", Mohua Banerjee.
282. 12<sup>th</sup> International Conference on Rough Sets, Fuzzy Sets, Data Mining & Granular Computing (RSFDGrC 2009), December 16-18, 2009, Delhi; (i) Chaired session on "Fuzzy Set Foundations and Applications"; (ii) Presented contributed paper co-authored with Md. Aquil Khan on Algebraic semantics for the logic of multiple-source approximation systems, Mohua Banerjee.
283. 75<sup>th</sup> Annual Conference of Indian Mathematical Society, Kalasalingam, Dec. 26-30, 2009, Delivered Presidential addresses (i) General Address; Mathematics Education in India: Some observations and concerns. (ii) Technical Address: Mathematical Modeling of HIV Dynamics: in vivo; also chaired a session P. Chandra.
284. 2<sup>nd</sup> National Symposium on Modern trends in Differential Geometry and Mathematical Modeling in Biosciences, Lucknow University, Jan. 9-10, 2010, Invited talk 'Modeling the Dynamics of HIV Primary Infection'. Also chaired a session, P. Chandra.
285. International Conference on Mathematical Modeling and Non-linear Equations, BNMIT, Bangalore, Jan. 20-23, 2010, Delivered invited talk 'Mathematical Models for HIV infection in vivo- A Review', P. Chandra.
286. Invited talk at a mini symposium on Least squares methods at ICOSAHOM at Norwegian University of Science and Technology, Trier from 20-27 June, P. Dutt.

287. RMS annual conference Saturation by structural subspaces in Banach Spaces, S. Dutta.
288. Participated in Eighth Mississippi-UAB conference on Differential Equations & Computational Simulations, May 7-9, 2009 at Mississippi State University, USA. Presented an invited paper entitled "A high order parameter uniform scheme for solving singularly perturbed parabolic problems with small parameters" at the conference, M.K. Kadalbajoo.
289. Presented the Research paper 'Hermite Coalescence Fractal Interpolation Function' International Conference on Scientific Computing, Las Vegas, USA, July 13-16, 2009, G.P. Kapoor.
290. Chaired Two Technical Sessions at the above conference, G.P. Kapoor.
291. Bivariate Generalized Exponential Distribution, Presented at CMI, Pala Nov., 2009, D. Kundu.
292. Canadian Abstract Harmonic Analysis Symposium 2009 (Laufest), Edmonton, Canada, May 11-15, 2009, Contributed Paper title: Relation between bilinear 1multipliers on classical group, P. Mohanty.
293. 11<sup>th</sup> discussion meeting on Harmonic Analysis, NISER Bhubaneshwar, January 2010, P. Mohanty.
294. Delivered an invited talk on a review of Sobolev spaces and glimpses of Partial Differential Equations at symposium at the annual conference of IMS. The 75<sup>th</sup> annual conference (Platinum Jubilee Conference) of the Indian Mathematical Society (IMS) held at the The Kalasalingam University, Anand Nagar, Krishnankoil-626190, Dist. Virudunagar, Tamil Nadu, during Dec. 27-30, V. Raghavendra.
295. Delivered an invited talk on Degenerate nonlinear Elliptic Problem. Recent Advances in Mathematical Sciences and Applications (RAMSA)-An International Conference, held at GVP College of Engg. Madhurawada, Visakhapatnam, 530048, A.P. India, V. Raghavendra.
296. Free Convection in a Non-Newtonian Fluid Saturated Square porous Enclosure with an Isothermal Carrugated Wall. First International Computational Methods for Thermal September 8-10, 2009, Naples, Italy, S.V.S.S.N.V.G.K. Murthy, B.V. Rathish Kumar.
297. Darcy Mixed Convection in a Fluid Saturated Square Porous Enclosure Under Multiple Suction Effect. First International Conference on Computational Methods for Thermal Problems September 8-10, 2009, Naples, Italy, B.V. Rathish Kumar, S.V.S.S.N.V.G.K. Murthy.
298. A Keller Box Finite Difference Scheme for Double Diffusive Free Convection from a Corrugated Left Vertical Surface to Darcy Porous Medium with Dufour Effects. Indo-German Conference on PDE, Scientific Computing and Optimization in Application, October 7-9, 2009, Indian Institute of Technology, Kanpur, S.V.S.S.N.V.G.K. Murthy, B.V.Rathish Kumar, P. Chandra, V. Sangwan, M. Nigam.

299. A Review on LS-SEM for Stokes Equations, in 11<sup>th</sup> Int. Conf. of the Int. Academy of Physical Sciences, Feb. 20-22, 2010, Univ. Allahabad, Allahabad, S. Mahapatra, A. Pandey, B.V. Rathish Kumar, P. Dutt.
300. An Overview of High Performance Computing in Cardio-Vascular Modelling & Simulation. Int. Conf. on Recent Trends in Mathematical Sciences and Applications at GVP College of Engineering, 19-22, Dec. 2009, Vizag, AP. B.V. Rathish Kumar.
301. Computational Studies on turbulence in ADDS, in Int. Conf. Mathematical Modelling and nonlinear Equations, Jan. 20-22, 2010, BNMIT, Bangalore, B.V. Rathish Kumar, A. Prakash, G. Biswas.
302. Error estimates for Three-Step TGFEM for transient SPCDE, Indo-German Conference on PDE, Sci. Computing and Optimization in Applications, Oct. 7-9, 2009, IIT Kanpur, V. Sangwan, B.V. Rathish Kumar, S.K. Murthy, M. Nigam.
303. Computational Cardio-Vascular Dynamics - I & II, in National Workshop on Mathematical Models for Biofluid Flows and Applications, 22-26, Jan. 2010 at SV University, Tirupathi, AP, India, B.V. Rathish Kumar.
304. Glimpses of Mathematics at the frontiers of Science and Technology, in National Meet for Research Scholars in Mathematical Sciences, Dec. 19-23, 2009, IIT Roorkee, B.V. Rathish Kumar.
305. A look at the Spectral Element Methods in Fluid Flow Analysis, IMS 2009, Dec 27-30, 2009 at KL Univ., Maduria, Tamilnadu, B.V. Rathish Kumar, S. Mahapatra, P. Dutt.
306. Introduction to Spectral Methods, IMS 2009, Dec. 27-30, 2009 at KL Univ. Maduria, Tamilnadu. P. Dutt, B.V. Rathish Kumar.
307. 11<sup>th</sup> discussion meeting in Harmonic Analysis, NISER Bhubaneswar, Speaker, S.K. Ray.
308. Attended an Instructional and International conference on Number Theory, PDE and Geometry held at Department of Mathematics, University of Calicut during August 24-29, 2009. I presented a paper on "Obata's theorem for Kahler Manifolds, G. Santhanam.
309. APORS 2009, Jaipuria Institute of Technology, Jaipur, 6th to 9<sup>th</sup> Dec. 2009, Invited talk and chaired three sessions, P. Sharma.
310. Frontiers of Interface between Statistics and Sciences, University of Hyderabad, 30<sup>th</sup> Jan. 2010, P. Sharma.
311. 64<sup>th</sup> Dec. 2009 to 2<sup>nd</sup> Annual meeting of the stle, ORLANDO, FL, USA May 17-21 2009, Numerical Simulation of Thermal and Roughness effects on the Performance of Finite Tilted Pad Slider Bearing, P. Sinha, A. Getachew.
312. 64<sup>th</sup> Annual meeting of the stle, ORLANDO, FL, USA May 17-21 2009, A Simple Numerical Method for the Solution of Thermal Elastohydrodynamic Lubrication Problem of Infinite Line Contacts, P. Sinha, H. Khan.
313. Gave a Plenary Talk "Estimation of Entropy and Its Applications" in Eighteenth International Conference of Forum for Interdisciplinary



Mathematics on Interdisciplinary Mathematical and Statistical Techniques, Jaypee University of Information Technology, Wakanghat (HP), August 2-4, 2009, N. Misra.

## Physics

314. ICTS Condensed Matter Programme 2009, organized by ICTS, TIFR, Mahabaleswar, 5<sup>th</sup>-23<sup>rd</sup> December, 2009. Invited speaker and session chair, A. Dutta.
315. Summer college on Non-equilibrium physics from to quantum low-dimensional systems, 6<sup>th</sup>-24<sup>th</sup> July, at Abdus Salam ICTP, Trieste, Italy, A. Dutta.
316. Invited participant, International Colloquium on Perspectives in Fundamental Research, Tata Institute of Fundamental Research, Mumbai, March 3-6, 2010, D. Chowdhury.
317. Indo-Feench Workshop cum International Conference on Nano-science and Nano- Technology, Ansal Institute of Technology, Gurgaon, 12-16 Oct, 2009 (Invited Speaker), S. Dhamodaran.
318. Invited Speaker, Theme Meeting on Quantum Structures, BARC, Mumbai, 2-3, Nov 2009 (Invited Speaker & Panel Discussion), S. Dhamodaran.
319. Seminar cum workshop on First-principles Methods, Himachal Pradesh University, Simla, March 22-29, 2010, Invited Talks, R. Prasad.
320. ICOP 2009 International Conference on Optics and Photonics CSIO, Chandigarh, India, 30 Oct.1 Nov. 2009 Invited Lecture entitled Controlling metamaterial properties via imbedded resonant materials, S. Anantha Ramakrishna
321. 9<sup>th</sup> International Conference on Materials and Mechanisms of Superconductivity, M<sup>2</sup>S-IX, Tokyo 2009, 7<sup>th</sup> September to 12<sup>th</sup> September, 2009 in Keio Plaza Hotel, Tokyo Japan. Presented contributed paper, S. Banerjee
322. International conference Of Meleculed and Materials, held at IISER, Kolkata December 26-December 29, 2010 as an Invited Speaker and gave a talk on Time-independent excited-state density-functional theory. M.K. Harbola.
323. MRS Fall Meeting, Boston, November 30-December 4, 2009 presented three contributed papers. Rajeev Gupta.
324. Invited participant, Frontiers in Quantum Science, The Institute of Mathematical Sciences, Chennai, 21-22 Dec, 2009, A. Dutta
325. 12. Invited participant, Frontiers in Quantum Science, The Institute of Mathematical Sciences, Chennai, 21-22 Dec, 2009, V. Ravishankar.

## SEMINAR PRESENTED

### Aerospace

1. Computational Aeroelasticity: Prediction of Loads and Response of a Helicopter Rotor System in Forward Flight Invited Talk, Indo-German Conference on Partial Differential Equations, Scientific Computing and Optimization in Applications, IIT-Kanpur, Kanpur, Oct. 2009, Venkatesan. C.
2. Flight Dynamics of parachute ADRDE Agra, January 2010, A. K. Ghosh.
3. Combustion Dynamics in a Low Aspect Ratio Dump Combustor, International Workshop on Advances in Combustion and Transportation, Energy Conclave 2010, IIT Kanpur, Jan. 10-12, 2010, A. Kushari.
4. Numerical Studies of Trapped Vortex Combustor, Department of Mechanical Engineering, IRT, Bhubaneswar, 2010, D. P. Mishra.

### Biological Science and Bio-engineering

5. Invited speaker at the Young Investigator Meeting, Cambridge, 11<sup>th</sup>-13<sup>th</sup> Sep 2009, Pradip Sinha.
6. Yin and Yang of Skeletal Development: Gene Hunting and Genetics Central Drug Research Institute, Lucknow - 3<sup>rd</sup> September, 2009, Amitabha Bandyopadhyay
7. Developmental Metabolomics and Organogenesis: An expression screening approach Lady Brabourne College, Kolkata - 5<sup>th</sup> February, 2010, Amitabha Bandyopadhyay
8. Invited talk: Molecular modeling and simulations to understand the structure-function relationship of proteins: Aquaporins and Bcl-2 proteins. Chiang Mai University, Thailand, 8/Dec/2009, R. Sankararamakrishnan.
9. Invited talk: Methods to predict protein structures: An overview. In the Workshop on Bioinformatics: Research & Applications organized by the Department of Biochemistry, University of Lucknow, 18/Feb/2010, R. Sankararamakrishnan.
10. Molecular Basis of Locus Heterogeneity in Lafora Progressive Myoclonus Epilepsy: Invited talk delivered in the International Conference on the Role of Genetics in Clinical Practice, organized by the Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow (March 6 to 8, 2010), Ganesh S.
11. Impact of alternative mRNA splicing in the etiology of Lafora progressive myoclonus epilepsy: Invited talk delivered in the International Conference on Genetic and Molecular Diagnosis in Modern Medicine and Biology, organized by the Yenepoya University, Mangalore (February 27, to March 2, 2010), Ganesh S.

12. Defects in proteolytic pathways underlie neuropathology in Lafora disease: Invited talk delivered in the NeuroUpdate 2010, organized jointly by the Calcutta National Medical College and the Indian Institute of Chemical Biology, Kolkata, February 14, 2010, Ganesh S.
13. Genetic diagnosis in monogenic disorders: promises, challenges and pitfalls: Invited talk delivered in the International Symposium on Molecular Pathology and Applied Genomics, organized by SRL, Global Knowledge Forum, Super Religare Laboratories Limited, Mumbai (November 6 and 7, 2009), Ganesh S.
14. Discovery of Novel Modulators of Neurotoxicity as Potential Therapeutic Interventions in Neurodegenerative Disorders: Invited talk delivered in the Translational Health Research: Pathways to Discovery, organized by the King George Medical University, Lucknow, (April 28-29, 2009) , Ganesh S.
15. Invited speaker, National Science Day at IIT-Kanpur. Theme: Gender equity for prosperity with peace Title of talk: Being a woman in science,: March 30<sup>th</sup> , 2010, Jonaki Sen.
16. Designing of Supermacroporous Cryogel biomaterials for bioengineering applications The Fourth Asian Particle Technology Symposium (APT2009) Sept.14-16, 2009, New Delhi, Ashok Kumar.
17. Bioartificial Organs and Cell Therapy- Winter School, 21-23<sup>rd</sup> January 2010, Semmering, Austria, Ashok Kumar.
18. Contractility of Longitudinal Muscle in Gastroesophageal Motility, XXVII Annual Conference of Indian Academy of Neurosciences, Jaipur, India, Dec 20, 2009, Anupam Pal.
19. Biomechanics of reflux protection, Pan European Special Interest Group meeting on Dynamic Magnetic Resonance Imaging in Gastrointestinal Studies, Biomedical Research Unit, University of Nottingham, UK, February 26, 2010, Anupam Pal.
20. Development of an Image Analysis Tool for Studies of Gastrointestinal Tract in Three Dimensions from Magnetic Resonance Imaging, Division of Gastroenterology and Hepatology, University Hospital, Zurich, Switzerland, March 1, 2010, Anupam Pal.
21. Invited talk: Understanding Plant Nematode Biology using RNAi, Murdoch University, Perth, Australia, March 29, 2010, K. Subramaniam.

#### Chemical

22. Electrolyte Insulator Semiconductor based Microfluidic Biosensor for Early Disease Detection (Invited Seminar), Central Mechanical Engineering Research Institute, Durgapur, March 2010, S. Panda.
23. Probing interfacial adhesion on smooth and patterned layer of adhesive, Max-Planck-Institut für Polymerforschung, Mainz, March 2010, Ghatak A.

24. Adaptive Adhesion via Sub-surface Network of Fluid Filled microchannels, Leibniz Institute of New Materials, Saarbrücken, March 2010, Ghatak A.
25. Role of Catalysts in Petroleum Refining, Rajiv Gandhi Institute of Petroleum Technology, Rae Bareilly, March 2010, D. Kunzru.
26. Fluid near surfaces, Department of Polymer Engineering, BITS Ranchi, January 2010, Singh JK.
27. Mechanics of soft solids and adhesion, Mechanics over Micro and Nano Scales, Kolkata, December 2009, Ghatak A.
28. Comparative Study of Monolith and Conventional Multiphase Reactors, Chevron Corporation, Richmond, CA, USA, December 2009, D. Kunzru.
29. Fluid near surfaces, Department of Chemical and Biomolecular engineering, Vanderbilt University, November 2009, Singh JK.
30. Multigrain catalyst model for active matrix-zeolite FCC catalyst: modeling of riser reactor in resid cracking, Grace Chemicals, Columbia, November 2009, D. Kunzru.
31. Carbon nanofibers and nanoparticles: synthesis and applications, DMSRDE, Kanpur, November 2009, N. Verma.
32. Efficient computation of free energy of crystal phases due to external potentials by error-biased Bennett acceptance ratio method, Department of Aerospace Engineering, I. I. T. Kanpur, September 2009, P.A. Apte.
33. Ask not what you can do for the (Density functional) theory, but what the theory can do for you: How to convert a catalytic engineer to a quantum mechanic, Indian Institute of Science, May 2009, Pala RGS.

#### Civil

34. Interpretation of falling weight deflectometer data, Seloflex World Conference, New Delhi, February 5, 2010 by Das A.
35. Why roads fail?, Siddhananda Memorial Lecture, Bengal Engineering and Science University, Shibpur, December 18, 2009 by Das A.
36. Design principles for design of bituminous pavement with stabilized/cemented layer, National Workshop on Stabilization of Soil and Granular Layers for Pavements, PEC University of Technology, Chandigarh, October 24, 2009 by Das A.
37. Perpetual pavements: innovations in pavement design, (Key-note address), Civil Engineering Conference - Innovations Without Limits, September 18-19, 2009, NIT Hamirpur, Hamirpur by Das A.
38. Pavement engineering research at IIT Kanpur, NTEC, Department of Civil Engineering, University of Nottingham, July 17, 2009 by Das A.
39. Invited Talk entitled Advancements in hydrologic modeling using artificial neural networks in the Workshop on Development and Application of Advanced Soft Computing Techniques in Multidimensional Geospatial Data

- Analysis (WAST2009), 15-16 October 2009, IIT Kanpur, Kanpur, India by Jain, A.
40. Attended seminar on Seismic Analysis of Some Geotechnical Problems – Pseudo-dynamic Approach at University of Naples, Italy, 2009, Ghosh, P.
  41. Attended seminar on Seismic Response of Bridge Foundation in TRIGNO-VIII: Geotechnical Aspect at University of Molise, Italy, 2009, Ghosh, P.
  42. Attended INAE Annual Convention at IGCAR, Kalpakkam, (17<sup>th</sup> Dec, 2009), Gupta Tarun.
  43. Attended IASTA-2010, Darjeeling, (24<sup>th</sup> -26<sup>th</sup> Mar, 2010), Gupta Tarun.
  44. Attended National Research Conference on Climate Change, IIT Delhi, (5<sup>th</sup>-6<sup>th</sup> Mar, 2010), Gupta Tarun.
  45. Invited lecture on Role of basin geomorphology and application of river style framework for sustainable river management with special reference to north Bihar, Patna seminar on 'Floods: problems and challenges', 23 Feb., 2009 by Sinha, Rajiv.
  46. Invited lecture on Land degradation and drainage development: Role of geomorphology, National workshop on 'Basin wise Drainage Master Plan for Uttar Pradesh-Priorities & Actions', Lucknow, 2-3 March, 2009 by Sinha, Rajiv.
  47. Invited lecture on Sediment sourcing in the Gangetic alluvium, Himalayan foreland basin: competition between Himalayan and cratonic hinterland, CNRS Laboratory, Nancy, France, June 3, 2009 by Sinha, Rajiv.
  48. Invited lecture on The Great Kosi avulsion on 18<sup>th</sup> August, 2008, IGCP 582 meeting, La Plata, Argentina, Sept. 23, 2009 by Sinha, Rajiv.
  49. Aerosol charging in planetary atmosphere and its implication to lightning generation, Talk in Planex Seminar, Physical Research Laboratory, Ahmedabad, 10<sup>th</sup> May, 2009 by Tripathi, S.N.
  50. Optical properties of non-spherical particles, PRL Colloquium, Physical Research Laboratory, Ahmedabad, 11<sup>th</sup> May, 2009 by Tripathi, S.N.

#### Computer Science & Engineering

51. Research Promotion Workshop on Geometric and Graph Algorithms, TIFR and IT-BHU, Varanasi, January 27-29, 2010, Varanasi. Invited speaker, Sumit Ganguly.
52. Dagstuhl Seminar on Spatial Representation and Reasoning in Language: Ontologies and Logics of Space Title: Spatial Language and Grounded Ontologies [Invited presentation] Amitabha Mukerjee Dagstuhl, Germany, March 2010, Amitabha Mukherjee.
53. The Isomorphism Conjecture for NP, Invited talk at Computability in Europe conference, July 2009, Manindra Agrawal.

54. Two Problems of Number Theory, Invited talk at Kurukshetra University, Jan 2010, Manindra Agrawal.
55. The P versus NP problem, Public Lecture at JNU, Oct 2009 + invited talk at Homi Bhabha Birth Centenary conference, TIFR, Sep 2009 + talk at IIITDM, Jabalpur, Feb 2010, Manindra Agrawal.
56. Classifying Complexity of Problems Algorithmically, Talk at workshop on Complex Systems, IISc Bangalore, Jan 2010, Manindra Agrawal.
57. On Earth Mover's Distance: A Spatially Sensitive Distance Measure at the Dept. of Computer Science, Free University of Bozen-Bolzano, Italy. Dec, 2009, Arnab Bhattacharya.
58. Solution Concepts in Game Theory: An Introduction two one hour invited talks given at Formal Methods Update Meeting 2009, IIT Roorkee, 13-15 July 2009, Anil Seth.
59. Parity Games on Higher Order Multi-Stack Systems, A one hour talk delivered on 29 September 2009, at Laboratory of Computer Science (LaBRI), Bordeaux, France, Anil Seth.

#### Electrical

60. Cognitive radio, Department of Electronics & Communication Engineering, Thiagarajar College of Engineering, Madurai, April 2009, Adrish Banerjee.
61. Cognitive radio, Department of Electronics & Communication Engineering, PSNA College of Engineering and Technology, Dindigul, April 2009, Adrish Banerjee.
62. Cognitive radio, Microsoft Research Labs India, Bangalore, May 2009, Adrish Banerjee.
63. Turbo codes and its application to optical and relay channels, Dipartimento di Elettronica, Politecnico di Torino, Italy, June 2009.
64. Spectrum sensing for cognitive radio, Defense Electronics Application Laboratory, Dehradun, October 2009, Adrish Banerjee.
65. Adrish Banerjee, Turbo principle in communications, Defense Electronics Application Laboratory, Dehradun, October 2009, Adrish Banerjee.
66. Cognitive radio organized by IEEE Kolkata Section at Jadavpur University, January 2010, Adrish Banerjee.
67. Spectrum sensing for cognitive radio, Institute of Engineering & Management, Kolkata, January 2010, Adrish Banerjee.
68. Specifics of LTE-A air interface with emphasis on unique aspects: SC-FDMA and multiple antenna techniques in 3GPP long term evolution talk in A Unified Perspective of 4G: IEEE 802.16m and LTE-Advanced Workshop at IIT Madras, January 2010, Adrish Banerjee.
69. Cognitive artificial intelligence, workshop on integrating mathematics with spirituality, Dec 2009, Delhi University, Laxmidhar Behera.
70. Applications of assistive robotics in health care, Indo-French Workshop on ICT in Health Care, March 2010, Laxmidhar Behera.

71. Delivered an invited talk on, Antenna Selection and Beamforming Using Delayed CSI at ICICS, Macau in Dec 2009, Chaturvedi A. K.
72. An optimum unified power quality conditioner with minimum VA loading Netaji Subhas Institute of Technology (NSIT), New Delhi, (Organized by IEEE Delhi Section), 16<sup>th</sup> Nov. Das S.P.
73. Nano-dielectrics for the power industry at the workshop entitled Recent trends in condition monitoring of power apparatus and systems invited lecture at Department of Electrical Engineering, IIT Madras, during 26<sup>th</sup> to 30<sup>th</sup> Oct. 2009, sponsored by DST, New Delhi, Gupta Nandini.
74. Women's Participation in Science: Who benefits? Invited lecture at IIT Kanpur, at the seminar on Gender equity for Prosperity and Peace, National science Day, 30<sup>th</sup> march, 2010, Gupta Nandini.
75. Internet based experiments: exploring a new paradigm in distance education, Institute Lecture, IIT Kanpur, Oct.21, 2009, John J.
76. Virtual labs at IIT Kanpur, Invited talk, Golden Jubilee Reunion of the Pioneer Batch, Feb.21,2010, John J.
77. Role of academia and industry: experience with the technology mission project on railway safety, Brainstorming Session on health monitoring of automotives, Invited Talk, IIT Kanpur, March 10, 2010, John J.
78. Virtual lab on optical device characterization, HBTI Kanpur, March 27, 2010, John J.
79. Organic electronics, All India Council For Technical Education, Harcourt Butler Technological Institute, Kanpur, 1<sup>st</sup> January, 2009, Iyer S.S.K.
80. Solar energy research in India-a perspective DST-EPSRC Solar Energy Workshop (Indo-UK initiative), Deputy High Commissioner's residence, British High Commission, New Delhi, 22<sup>nd</sup> April, 2009, Iyer S.S.K.
81. An introduction to organic solar cells IEEE Photonics Society Seminar, Heriot-Watt University, Edinburgh, UK, 16<sup>th</sup> June, 2009, Iyer S.S.K.
82. Outlook for solar energy in India at the Workshop on 'Engineering Challenges of Deploying New Solar Energy Capacity in India' at the Royal Academy of Engineering, London, 28<sup>th</sup> September, 2009, Iyer S.S.K.
83. VLSI integrated circuit fabrication technology, Tutorial at the 15<sup>th</sup> International Workshop on the Physics of Semiconductor Devices (IWPSD '09) Jamia Millia Islamia, New Delhi, 14<sup>th</sup> December, 2009, Iyer S.S.K.
84. Improving efficiency and lifetime of organic solar cells, Invited talk at the 15<sup>th</sup> International Workshop on the Physics of Semiconductor Devices (IWPSD '09) Jamia Millia Islamia, New Delhi, 14<sup>th</sup> December, 2009, Iyer S.S.K.
85. Organic solar cells Tutorial at the International Symposium on Photovoltaic Science and Technology, IIT Kanpur, 12<sup>th</sup> January, 2010, Iyer S.S.K.
86. An IIT Kanpur perspective, Academia Workshop on Manpower Development for Photovoltaics, IIT Bombay, 30<sup>th</sup> January, 2010, Iyer S.S.K.

87. Power conversion for high performance on-board delivery system invited talk at Electrical Power Technology Lab., GE Global Research Center, March 03, 2010, S. K. Mishra.
88. Reconstruction analysis dual-grid and shape based reconstruction approaches for subsurface tomography, invited talk at the Workshop on Control and Inverse Problems, 1-15 Dec 2009, organized by the IISc. Mathematics Initiative, Dept. of Mathematics, Indian Institute of Science, Bangalore, Naik Naren.
89. Qureshi S., delivered a talk titled Recent developments in RFID tag chip design, at National Tsing Hua University (NTHU), Taiwan, November 2 - 3, 2009.
90. Course on MATLAB application to Electrical Engineering, 14-16 December 2009, KNIT Sultanpur (Guest Speaker), Singh S. N.
91. Compact matching circuit design for RFICs using composite right/left handed meta-material transmission line, in Taiwan-India Bilateral Workshop on Intelligent Chip Design at National Tsing Hua University, Hsinchu, Taiwan during Nov 1 to Nov 4, 2009, K. V. Srivastava
92. Enhancing electricity grid security through wide area monitoring and control invited talk in the ECE Department, Mississippi State University USA on 30<sup>th</sup> June 2009, Srivastava S.C.
93. Smart electric energy delivery systems: An introduction and systems perspective invited talk in the DST SERC workshop on Smart Energy Delivery Systems at IIT Kanpur on 15<sup>th</sup> January 2010, Srivastava S.C.
94. Srivastava S.C., Synchrophasors based wide area monitoring, protection and control of electricity grid invited seminar at University Sains Malaysia (USM) Penang Malaysia on 3<sup>rd</sup> March 2010, Srivastava S.C.
95. Self learning systems for surveillance video analysis, Electrical Engineering Department, IISc. Bangalore, 17/06/2009, Venkatesh K.S.
96. Computer vision applications for automated surveillance, metrology and human computer interaction, IRDE Dehradun, 11/01/2010, Venkatesh K.S.

#### Industrial Management & Engineering

97. Technical Communication (six lectures), School of Nuclear Energy, Pandit Deendayal Petroleum University, Raisan, Gandhinagar, December 05-06, 2009. N K Sharma.
98. Classroom teaching and learning in Engineering Education (Orientation Programme for the newly recruited faculty), KIIT University, Bhubaneswar, July 22, 2009. N K Sharma.
99. Combating the Challenges to Create Opportunities, Guest of Honour, 1<sup>st</sup> Convocation of Shri Ramswaroop Memorial College of Engineering and Management, Lucknow, August 11, 2009. N K Sharma.



100. Entrepreneurial Marketing Workshop, Aalto Entrepreneurship Society, Design Factory, Espoo, Finland, 15<sup>th</sup> April, 2009, J Chatterjee.
101. Multi-disciplinary Processes for Problem Based Learning of Design and Management at the MOA 2009 Seminar on Beyond Tomorrow – Responsibility for the Future at Helsinki University of Design & Art, Helsinki Finland, 18<sup>th</sup> May, 2009, J Chatterjee.
102. Modular Approach and Prototyping in Service Innovation, 2<sup>nd</sup> Annual Mod Sec Workshop, Service Factory, Helsinki School Of Economics, Helsinki Finland, 27<sup>th</sup> October, 2009, J Chatterjee.
103. User Driven ICT Enabled Service Innovations, Service Factory Summer School, Helsinki School of Economics, Helsinki Finland, 26<sup>th</sup> August, 2009, J Chatterjee.
104. An Ecosystem Approach to Service Co-Creation, Software Business & Engineering Institute, Helsinki University of Technology, Espoo Finland, 22<sup>nd</sup> October, 2009, J Chatterjee.
105. Alternative Logics for Services, Panel Discussion, Tekes-Serve Annual Seminar, Finlandia Hall, 28<sup>th</sup> May 2009, Helsinki, Finland, J Chatterjee.
106. Doctoral Students' Workshop Facilitation in the New Media Department on Prosumption Phenomena and Managing Customer Integration, 1<sup>st</sup> to 20<sup>th</sup> October, 2009, Technical University, Ilmenau, Germany, J Chatterjee.
107. Service Science Factory Seminar & Workshop, Maastricht University, Maastricht Netherlands, 29<sup>th</sup> October to 4<sup>th</sup> November, 2009, J Chatterjee.
108. Indian Institute of Management Calcutta, INDIA, Reliability in Portfolio Optimization using uncertain estimates, 17th June, 2009, Dr. Raghu Nandan Sengupta.
109. Army 515 Base Workshop, Bangalore, INDIA: Some Concepts and Use of EVT and Copula Theory in Optimization Application, 15th January 2010, Dr. Raghu Nandan Sengupta.
110. Delivered invited talk on Two Clustering of Gene expression Data at the International Conference on Bioinformatics at SVNIT, Surat, India, during March 25-28, 2010, B. Chandra.
111. Effective Learning in Context of Operations Research, Teaching Effectiveness Workshop APORS 2009 Dec7, 2009 Jaipur; AK Mittal.
112. Intellectual Property rights and OR, National Seminar RML University Faizabad 28<sup>th</sup> March 2010; AK Mittal.
113. Economics of regulations with emphasis on development of Power markets 4th Nov 2009, National Power Training Institute (NPTI), Faridabad; Anoop Singh.
114. National Conference on Cases and Research in Power and Energy Sector, as session judge, Power Management Institute, Noida, 16<sup>th</sup> Dec. 2010; Anoop Singh.
115. IEA-MNRE Workshop on Renewable Energy and Renewable Technology, New Delhi, 22-23 October 2009; Anoop Singh.

116. IIT Kanpur - Cambridge Workshop on Climate Co-benefit Policies and the Indian Power Sector: Stakeholders' Consultation, 25th May, 2009, New Delhi; Anoop Singh.
117. Reforms, Regulation and Investment in the Indian Power Sector, MDP on Infrastructure Development & Financing Institutions for the Officers of J&K Government, Indian Institute of Management Lucknow, 14<sup>th</sup> Dec. 2010; Anoop Singh.
118. Renewable Energy: Policies and Opportunities for J & K, MDP on Infrastructure Development & Financing Institutions for the Officers of J&K Government, Indian Institute of Management Lucknow, 14<sup>th</sup> Dec. 2010; Anoop Singh.
119. Reforms, Regulation and Investment in the Indian Power Sector, MDP on Infrastructure Development & Financing Institutions for the Officers of Senior Indian Economic Services, Indian Institute of Management Lucknow, 24<sup>th</sup> Jan. 2010; Anoop Singh.
120. Project Financing and PPP, Indian Railways Institute of Transport Management, 10<sup>th</sup> Dec. 2010; Anoop Singh.
121. Regulatory & Policy Developments, and Project Financing for the Indian Power Sector, IIML, 16<sup>th</sup> Oct. 2009; Anoop Singh.

#### Materials Science and Engineering

122. Invited talk "Processing-microstructure-property (physical and biological) relationship for Hydroxyapatite based Bioceramic composites for hard tissue replacement"; Department of Biomedical Engineering; University of Texas, San Antonio, USA, July 14, 2009, B. Basu.
123. Invited talk "Processing-microstructure-property (physical and biological) relationship for Hydroxyapatite based Bioceramic composites for hard tissue replacement"; Division of Engineering; Brown University, USA, July 16, 2009 B. Basu, .
124. Invited talk "Influence of electric field on cell-material interaction"; The fourth Asian Particle Technology Symposium (APT 2009), held in New Delhi during 14-16<sup>th</sup> September, 2009, B. Basu.
125. Invited talk Hydroxyapatite based bioceramic composites for hard tissue replacement and Analytical/Experimental study on cell-electric field interaction; IIM Varanasi chapter, BHU, 11<sup>th</sup> December, 2009, B. Basu.
126. Invited talk Influence of electric and magnetic field on cell-material interaction; DAV College, Kanpur, 12<sup>th</sup> December, 2009, B. Basu.

127. Secondary Steelmaking and ladle metallurgy, Mahindra Ugin Steel Industries, Khopoli, Maharashtra, 2009, D. Mazumdar.
128. Steelmaking technology National Workshop on Process Modeling in Iron Making & Steel Making, 7-8, September 2009, D. Mazumdar.
129. Physical and Mathematical Modeling : Fundamental Principles, National Workshop on Process Modeling in Iron Making & Steel Making, 7-8, September 2009, D. Mazumdar.
130. Physical and Mathematical modeling: Applications to steelmaking process analysis and design, National Workshop on Process Modeling in Iron Making & Steel Making, 7-8, September 2009, D. Mazumdar.
131. Metallic Glass and its plasticity, Aerospace lecture series, IIT Kanpur, 20<sup>th</sup> March, 2010, K. Mondal.
132. Optimal exploitation and value addition of minerals with state of the art technologies, Seminar on Management of Energy Resources - Issues and Challenges, Indian school of Mines University, Dhanbad, January 31-February 1, 2009, S. P. Mehrotra.
133. R&D for Indian iron and steel industry: Future directions, DAAD Alumni Club Symposium - ASM 2009, Puri (Orissa), March 22, 2009, S. P. Mehrotra.
134. Marine mineral resources and their processing, Brainstorming on Programme on Marine Resource development and Management, IIT Kharagpur, April 14, 2009, S. P. Mehrotra.
135. Mechanochemistry and mechanical activation of solids - trends in mineral processing and waste utilization, International Conference Mineral Processing Technology (MPT-2009), Institute of Minerals and Materials Technology, Bhubaneswar, October 28-30, 2009, S. P. Mehrotra.
136. Invited talk Diffusion bonded Metal-Intermetallic interface Characterisation; at workshop on Interfaces and mechanical behavior of materials, UGC Networking Resource Centre for Materials (NRC-M) at the Department of Materials Engineering, IISc, October, 2009, Gouthama.
137. Invited talk Polymer & Nano-Materials Characterization by SEM & EDX, at CEP Workshop on Advanced Characterisation techniques for polymers and Nano-materials, DMSDRE, Kanpur, September, 2009, Gouthama.
138. Invited talk Cross-sectional transmission electron microscopy: Diffusion bonded Interface and Waterjet Machined Sub-Surface at International Conference on Advances in Electron Microscopy and Related Techniques, BARC, Mumbai, India, March 8-10, 2010, Gouthama.
139. Tailoring of Structure and Properties in Bismuth Ferrite Thin Films and Ceramics, MRS Spring Meeting, 13-17 April 2009, San Francisco, CA, Ashish Garg.

## Mechanical

140. Simulation of Oscillatory Flow in Tubular Bifurcations on Unstructured Grids, presented at the International Workshop on New Horizons in Nuclear Reactor Thermal Hydraulics, held on 24<sup>th</sup> March 2009 at Bhabha Atomic Research Center, Mumbai (2009), K. Muralidhar.
141. Interferometry, schlieren, and shadowgraph, presented at the International Symposium on Recent Trends in Flow Visualization, held at IIT Roorkee during 29-31 December 2009, K. Muralidhar.
142. Overview of Active and Passive Vibration Control Techniques - Department of Automation and control, University of Sheffield, UK, 15.09.2009.9, Bishakh Bhattacharya.
143. Health Monitoring of Pipes using Conduit Crawling Robot, International Symposium on Research Collaboration, Waseda University, Fukuoka, Japan, 08.03.2010, Bishakh Bhattacharya.
144. Lager-Eddy Simulation for Some Flows of Engineering Interest, 11<sup>th</sup> Annual CFD Symposium, Organised by Aeronautical Society of India, Bangalore, 11-12 August 2009, S. Sarkar.
145. Instabilities and chaos in convective flows, at the Workshop on Thermoacoustic Instabilities, IIT-Chennai, India, January 18-22, 2010, Pankaj Wahi.
146. Patterns and chaos in convection through bifurcations, at the International Conference on Turbulence with a focus on MHD, Liquid metal and Dynamo, IIT-Kanpur, India, December 21-23, 2009, Pankaj Wahi.
147. Galerkin projections for delayed systems with variable delays: a state-dependent delay model for turning, at the conference Recent Advances in Nonlinear Mechanics, Kuala Lumpur, Malaysia, August 24-27, 2009, Pankaj Wahi.
148. A new approach to frictional chatter in metal cutting, at the conference Recent Advances in Nonlinear Mechanics, Kuala Lumpur, Malaysia, August 24-27, 2009, Pankaj Wahi.
149. Regenerative chatter in turning, International Seminar Series on Applied Mechanics organized at the Center for Applied Dynamics Research, School of Engineering, University of Aberdeen, Aberdeen, Scotland, United Kingdom, June 23, 2009, Pankaj Wahi.
150. Invited speaker: Structure and Mechanics of Biological Membranes, NPMASS-ISSS Workshop on Microsystems Technology, North Eastern Hill University, Shillong, 27 March, 2010, Sovan Das.
151. High-speed Experimental Mechanics, Proof & Experimental Establishment, Chandipur, Balasore, July 2009, P. Venkitanarayanan.

152. Split Hopkinson Bar: Adaptations, National Workshop on High Strain Rate Behavior of Materials, Terminal Ballistics Research Laboratory, Chandigarh, February 25-26, 2010, P. Venkitanarayanan.
153. NPMASS workshop on MEMS Technology and its applications, Cummins college of Engineering, Pune, 22-24th January, 2009, S. Bhattacharya.
154. Indo-Japan Workshop, Symbiosis International University, Senapati Bapat Road- Pune, March 8-15, 2009, S. Bhattacharya.
155. Seminar in DST Nanosciences meet, Vedic village, Kolkata, 15-17th March, 2009, S. Bhattacharya.
156. BARC school on micromachining and sensing technologies, IITMumbai, 2-7th June, 2009, S. Bhattacharya.
157. CMERI, Durgapur, 15-16th July, 2009, S. Bhattacharya.
158. SERC school on micromachining technologies, IIT Kanpur, 20-25th, July, 2009, S. Bhattacharya.
159. Organized a 3 day National programme on MEMS technologies and its applications at IIT Kanpur, September 9-12th, 2009, S. Bhattacharya.
160. CEP on Smart Polymers for Electronic and Smart Application from 30th November - 4th December, 2009 at DMSRDE, Kanpur, S. Bhattacharya.
161. Co-Organized the Golden jubilee symposium on Fabrication at small scale (FASS) and Indo-US conference on Fabrication: Science of advanced fabrication, at IIT-Kanpur between 9-13th Dec, 2009, S. Bhattacharya.
162. MGM college of Engineering at Nanded at their annual event VISIOTECH 2010, 20-21st February, 2009, S. Bhattacharya.
163. Invited QIP Lecture at IIT Kanpur in the workshop on Carbon Nanotubes and Carbon in nanotechnology, 22-23rd February, 2009, S. Bhattacharya.
164. Co-Organized the International conference on health and technology. 15-17th March, 2010, S. Bhattacharya.
165. Invited QIP Lecture at IIT Kanpur in the workshop on Micro-Nano fabrication, 22-23rd February, 2009, S. Bhattacharya.
166. Invited lecture at the Department of Chemical Engineering and technology, Punjab Engineering College, Punjab University, Chandigarh, 3-4th April, 2010, S. Bhattacharya.
167. Incremental Sheet Metal Forming, The 5<sup>th</sup> India-Japan Joint Seminar on Production, measurement, QC& Micro/Nano Manufacturing, Tokyo, Japan, March 15-19, 2010, 39-45, N V Reddy.
168. Dropwise Condensation on Textured Surfaces: Issues and Prospects, Keynote Lecture, 9th International ASME-ISHMT Heat and Mass Transfer Conference, Mumbai, India, January, 2010, S. Khandekar.
169. Learning through Real and Virtual Experiments, Institute Lecture, Rajeev Gandhi Institute of Petroleum Technology, Rai Bareilly, January 2010, S. Khandekar.

170. Internet based Real Time Experiments, Institute Lecture, IIT Kanpur, October 2009, S. Khandekar.
171. Keynote lecture at the IEEE Congress on Evolutionary Computation (CEC-2009) to be held in Trondheim, Norway entitled 'Evolution's Niche in Applied Optimization and Informatics', May, 2009, K. Deb.
172. Keynote lecture at Papermaking Research Symposium in Kuopio, Finland entitled 'Evolutionary Optimization in Practice', June, 2009, K. Deb.
173. Invited Tutorial to be delivered at CEC-2009 Conference in Trondheim, Norway entitled 'Recent Challenges to Evolutionary Multi-Criterion Optimization (EMO)', May, 2009, K. Deb.
174. Invited Tutorial to be delivered at ACM SIGEVO sponsored Genetic and Evolutionary Computation (GEC-Summit) in Shanghai, China entitled 'Evolutionary Multi-Objective Optimization: Current Approaches and Future Directions', June, 2009, K. Deb.
175. Invited Tutorial at Multiple Criterion Decision Making (MCDM) Conference in Chengdu, China entitled 'Evolutionary Multi-Criterion Optimization and Its Applications', June, 2009, K. Deb.
176. Invited CSIRO Multiobjective Optimisation Workshop entitled 'Introduction to Multi-Objective Optimization' and 'Introduction to NSGA-II' at CSIRO, New Castle, Australia, September, 2009, K. Deb.
177. Binod Sreenivasan, Constructing Earth-like dynamo models, Seminar at Aerospace Engineering Department, IIT Madras, 31/04/10.

#### Humanities and Social Sciences

178. Linguistic Impediments in the Advancement of Research Academics-An Interdisciplinary Approach - Invited seminar- Dayanand Girls College, Kanpur, 9 September 2009 - A.K. Sharma.
179. Curricular Knowledge and Indian Education: Systemic Inequality and Pathways of Hope - Invited lecture at ICICI Centre for Elementary Education, Pune, 30<sup>th</sup> November 2009, Amman Madan.
180. Education system in India: Introspection- Invited lecture at UIET, Chhatrapati Shahu Ji Maharaj University, Kanpur, 11<sup>th</sup> November 2009, Amman Madan.
181. Sectarian Identity, Sanskritization and the Question of the 'Classical/Vernacular'. Paper presented at the International Seminar on Language, Culture and Identity: Issues and Challenges, Department of Linguistics, Aligarh Muslim University in collaboration with the Central Institute of Indian Languages, Mysore. 2010, Anindita Chakrabarti.
182. Semantics of Event Causation in Hindi, ICOSAL-9, Department of Linguistics and Punjabi Lexicography, Punjabi University, Patiala, January, 2010, Achla M. Raina.

183. Contrastive Polysemy in Concept Space: Implications for Multilingual Semantic Lexicons, Fifth Global WordNet Conference, IIT Mumbai, February, 2010. - S. Banerjee, H. Karnick & Achla M.Raina.
184. Corepresentation of Linguistic Structures: A Comment, International Seminar on Language, Mathematics, Music and Society, Vidya Bhawan Education Resource Centre and VBGs Institute of Advanced Studies in Education, Udaipur, Rajasthan, February, 2010. - Achla M. Raina
185. Traditional knowledge/ practices and brain-behaviour research outcomes, Understanding the Mysterious brain, Brain Awareness Week, Indian Institute of Information Technology, Allahabad, March 14, 2010 - Braj Bhushan.
186. Correlational research using SPSS. Continuing Education programme for DRDO scientists, Defence Institute of Psychological Research, New Delhi. Feb. 19, 2010 - Braj Bhushan.
187. Understanding and Grooming the Self. School of Management Sciences, Varanasi- July 17, 2009. - Braj Bhushan.
188. Challenges Within, Challenges Outside: Understanding & Surmounting Them, School of Management Sciences, Varanasi- July 16, 2010 - Braj Bhushan.
189. Inaugural address -Workshop on Integration of Technology in Teacher Education, CSJM University, Kanpur - May 26, 2009 - Braj Bhushan.
190. Introduction to Human Rights. Orientation Programme, UGC Academic Staff College and Department of Political Science, Lucknow University, Lucknow, 21 January 2010. - Munmun Jha.
191. Human Rights Movement in India: An Overview. Anthropology and Ethnomusicology Research Seminar, School of History and Anthropology, Queen's University, Belfast, 5 May 2009 - Munmun Jha.
192. Word versus Word-meaning: A la Śābdanirnaya. Paper presented at the National Seminar on Mind and Meaning, organized by the Department of Philosophy in collaboration with the Department of Neural and Cognitive Sciences, University of Hyderabad, March 2010 - Nirmalya Guha.
193. Valedictory address, delivered at the International conference on Globalization, Society and Culture. Dept of Sociology, University of Poona, 25 Feb, 2010 - Binay K Pattnaik.
194. Globalization. ICT revolution and Socio-cultural Changes: Sociological explorations. Paper presented at the International Conference on Globalization, Society and Culture, Dept of Sociology, University of Poona, 23-25 February, 2010. Binay K Pattnaik.
195. Science and Technology in the Global South: A Perspective to Globalization. Invited lecture at the National Institute of Science Technology and Development Studies (NISTADS), CSIR, New Delhi, on 29<sup>th</sup> January, 2010 - Binay K .Pattnaik.

196. Invited talk at the Seminar on Stability of Indian Economy in Global Meltdown, Institute of Business Management, CSJM University, Kanpur, on 14 November, 2009. - Praveen Kulshreshtha.
197. Invited talk at the Seminar on Managing Across Cultures: Cultural Issues in Global HR Management, Institute of Business Management, CSJM University, Kanpur, 17 April, 2010. - Praveen Kulshreshtha.
198. Seminar on Indian Aesthetics - HSS Weekly Seminar Series: Sept -Oct 2009, Prashant Bagad.
199. Two Invited Lectures on Non-verbal Communication and Interview Skills at the MHRD/ AICTE -sponsored Summer School on Functional English for Science and Engineering Teachers , Department of Humanities and Social Sciences, Indian Institute of Technology Kharagpur, Kharagpur 14-20 July 14, 2009 - T. Ravichandran.
200. Participated in an invited Brainstorming Session on IIT Gandhinagar Communication Skills Initiative from 20 to 21 February 2010 in the Department of Humanities and Social Sciences, Indian Institute of Technology, Gandhinagar - T. Ravichandran.

#### Chemistry

201. Second Asian Conference on Coordination Chemistry, China, Nov 1-4, 2009, P.K. Bharadwaj.
202. Modern Trends in Inorganic Chemistry, IISc Bangalore, Dec. 5-9, 2009, P.K. Bharadwaj.
203. National Seminar on Contemporary Research in Materials Science and Chemical Biology, Allahabad University, Jan 31 -Feb 2<sup>nd</sup>, 2010, P.K. Bharadwaj.
204. Binuclear Water-Gas-Shift (WGS) Reactions MTIC-XIII, IISc Bangalore, December 07-10, 2009, J.K. Bera.
205. Metal-Ion Complexation and Protonation of Ferrocene-Naphthyridine Conjugates IRIS-XII, Goa, India, August 16-21, J.K. Bera.
206. Structural diffusion of protonic defects in water-filled narrow pores, Indo-French Centre for the Promotion of Advanced Research (held in Bangalore), April 03, 2009, A. Chandra.
207. Vibrational spectral diffusion in hydrogen bonded systems under normal and supercritical conditions, Devi Ahilya Vishwavidyalaya, July 19, 2009, A. Chandra.
208. Kinetics of proton transfer in aqueous systems of varying dimensions, University of Innsbruck, Austria, August 24, 2009, A. Chandra.
209. Chemical dynamics in aqueous media, Supercomputing-09, Convention Centre, Portland, USA, November 20, 2009, A. Chandra.



210. Hydration, Dynamics and Vibrational Spectroscopy of Aqueous Systems under Normal and Supercritical Conditions, National Chemical Laboratory, Pune, October 09, 2009, A. Chandra.
211. Hybrid quantum-classical simulations: An introduction to the QM/MM Method (three lectures), Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, December 9-10, 2009, A. Chandra.
212. Hydration structure and transport kinetics of protonic defects in water-filled narrow hydrophobic pores: Role of hydrogen bond fluctuations, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, December 18, 2009, A. Chandra.
213. Proton transport kinetics in hydrogen bonded networks of varying dimensions, IISER Kolkata, December 28, 2009, A. Chandra.
214. Proton transfer reactions in aqueous media, Reliance Industries Limited, Vadodara, January 04, 2010, A. Chandra.
215. 3d-4f Heterometallic Trinuclear Compounds. A New Family of Single-Molecule Magnets, An Invited Talk at the National Conference, Recent Advances in Chemical Research, Osmania University, Hyderabad, Feb 6-7, 2009, V. Chandrasekhar.
216. Single-Molecule Magnets, CNR Rao Lecture, Feb 27, 2009, IIT Kanpur, V. Chandrasekhar.
217. Star-burst-, Linear and Cross-linked Macromolecule- Metal Nanoparticle Hybrids as Efficient Recyclable Catalysts, A talk presented at the National Review and Coordination Meeting on Nanoscience and Nanotechnology (NSNT-2009), Kolkata, March 12 2009, V. Chandrasekhar.
218. Pathways to Organotin Hydroxides and -Oxides: Nanodimensional Organostannoxane Assemblies, An Invited Talk in the International Conference
219. Coordination and Organometallic Chemistry, Bharathiar University, Coimbatore, March 19 and 20 2010, V. Chandrasekhar.
220. 3d-4f Heterometallic Trinuclear Compounds. A New Family of Single-Molecule Magnets, An invited talk given at the Department of Chemistry, Jadavpur University, Kolkata, March 26 2009, V. Chandrasekhar.
221. Phosphorus-supported ligands for the assembly of multi-metallic ensembles, An Invited talk given at the conference, Emerging Trends in Chemistry, Indian Institute of Science, Bangalore, May 13-15, 2009, V. Chandrasekhar.
222. Emerging Trends in Catalysis and Bio-catalysis, An Invited Talk in the International Conference, Biocatalysis for Industry, Medicine & Environment, Sri Sathya Sai University, Prashanthi Nilayam, Puttaparthi district, Andhra Pradesh, Aug 11-13 2009, V. Chandrasekhar.
223. Nanodimensional Organostannoxane Assemblies, An Invited talk given at the International conference Inorganic Ring Systems, Goa, August 16-21 2009, V. Chandrasekhar.

224. Multinuclear Copper (II) Phosphonates Containing Ancillary Nitrogen Ligands, Invited Talk in the 2<sup>nd</sup> Indo-German Frontiers of Chemistry Symposium, University of Leipzig, 16-19 September 2009, V. Chandrasekhar.
225. Kanpur-Cologne: A bridge not too far, a lecture given at University of Cologne, Germany, 21<sup>st</sup> September 2009, V. Chandrasekhar.
226. Phosphorus-supported ligands for the assembly of multi-metallic ensembles, Invited Talk in the Indo-Russian symposium, Structure and properties of organic and organometallic crystals: From fundamental research to advanced applications, Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk, September 27-30, 2009, Novosibirsk, Russia, V. Chandrasekhar.
227. Safety in Chemistry Labs, A talk given in the conference CHEMFEST IIT Kanpur 31 Oct 2009, V. Chandrasekhar.
228. Single Molecule magnets, An Invited talk at the JNCASR sponsored conference in Tezpur University, Nov 20-22 2009, V. Chandrasekhar.
229. Unusual Main-group-containing Compounds, An Invited talk at the JNCASR sponsored conference in Tezpur University, Nov 20-22 2009, V. Chandrasekhar.
230. 3d-4f Heterometallic Trinuclear Compounds, A New Family of Single-Molecule Magnets, An Invited talk given in the conference Modern Trends in Inorganic Chemistry IISc Bangalore, 7-10 December 2009, V. Chandrasekhar.
231. Synthetic and mechanistic perspectives of Lewis acid mediated S<sub>N</sub>2 type ring-opening of aziridines and azetidines', IIT Kharagpur, November 16, 2009, M.K. Ghora.
232. From Quantum Computing to Medical Imaging with Femtosecond Spectroscopy, Department of Chemistry Seminar, Stanford University, May 8, 2009, D. Goswami.
233. Vistas of Femtosecond Control, Institute Colloquium, IISER Mohali, Chandigarh, October 31, 2009, D. Goswami.
234. Femtosecond Coherent Control Experiments: Exploring Multiple Control Knobs Simultaneously, Symposium on Time and Spatially Resolved Spectral Analysis, Advanced Centre of Research in High Energy Material (ACRHEM), University of Hyderabad, Nov.14, 2009, D. Goswami.
235. Simultaneous Effect of Control 'Knobs' for Experimental Quantum Computing, International School on Quantum and Nano Computing Systems and Applications (QANSAS-2009), Dec. 15-18, 2009, D. Goswami.
236. Remotely Sensing Liquid-Liquid Interface with Femtosecond Pump-Probe Spectroscopy, 1<sup>st</sup> Ultrafast Dynamics Symposium, National Chiao Tung University, Hsinchu, Taiwan, January 14, 2010, D. Goswami.
237. Quest for Experimental Quantum Computation: Towards Spatiotemporal Control, International Programme on Quantum Information, Institute of Physics, Bhubaneswar, Jan 18, 2010, D. Goswami.

238. The Green Fluorescence protein - From humble marine origins to a protein label- DG college Kanpur 22 Feb 2010, R. Gurunath.
239. Invited Lecture at NOST Symposium during May 1-4, 2009, Goa, F.A. Khan.
240. Invited Lecture at 2<sup>nd</sup> Indo-German symposium during September 16-19, 2009 held at University of Leipzig, Germany, F.A. Khan.
241. Understanding nanostructures, Symposium on Nanotechnology at Bharathiyar, University, Coimbatore, Feb, 02-04, 2010, S. Sundar Manoharan.
242. Magnetoresistance in perovskite oxides, Krishnamal college for women, Coimbatore, Feb 2<sup>nd</sup>, 2010, S. Sundar Manoharan.
243. Issues related to Spintronic Nanostructures: Growth mode and magnetic properties, BARC, Materials Division, Mumbai, January, 2010, S. Sundar Manoharan.
244. Sterically-Engineered Molecular Modules for Organic Nanoporous and Amorphous Functional Materials International Conference on Chemistry of Organic Solid State, ICCOSS, Sestri Levante, Italy, June 11-15, 2009, J.N. Moorthy.
245. Exploitation of Sterics in Organic Solid State Reactivity and Molecular Organization, Indo-Russia Meeting on Solid State chemistry, Novosibirsk, Russia, Sept, 2009, J.N. Moorthy.
246. University Golden Jubilee National Seminar on Chemistry Today (UGJ-NSCT) March 18-20, 2010, Department of Chemistry, The University of Burdwan, Burdwan (March 20, 2010), R.N. Mukherjee.
247. Metal-Coordinated Radicals. Bioinorganic and Inorganic Perspectives, Workshop on Frontiers in Bioinorganic Chemistry, Centre for Bioinorganic Chemistry, School of Chemistry, Bharathidasan University, Tiruchirapalli, (February 25-27, 2010), R.N. Mukherjee.
248. Metal-Coordinated Radicals. Bioinorganic and Inorganic Perspectives Modeling Phosphate Ester Hydrolysis. Phenoxo-bridged Dinuclear Co<sup>II</sup>, Ni<sup>II</sup>, and Zn<sup>II</sup> Complexes, (February 26, 2010), R.N. Mukherjee.
249. \*Two-day Seminar on Frontier Areas of Chemistry - A Modern Perspective, Department of Chemistry, Ramakrishna Mission Vidyamandir, Belur Math, Howrah - 711 202 (February 25, 2010), R.N. Mukherjee.
250. Metal-Coordinated Radicals. Bioinorganic and Inorganic Perspectives, \*National Seminar on Contemporary Research in Material Science and Chemical Biology (January 31-February 2, 2010), Department of Chemistry, University of Allahabad, R.N. Mukherjee.
251. Modelling Phosphate Ester Hydrolysis. Phenoxo-bridged Dinuclear Co<sup>II</sup>, Ni<sup>II</sup>, and Zn<sup>II</sup> Complexes, \*Workshop for 'College Chemistry Students and Teachers', Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore and Foundation for Capacity Building in Science (FCBS), Trivandrum (October 29-31, 2009), R.N. Mukherjee.

252. Bioinorganic Chemistry: Tyrosinase, Metal-Ligand Chemistry: Metal-Centered and Ligand-Centered Redox Processes, \*Symposium - VII on 'Current Trends of Chemical Research', Chemical Research Society of India (Kolkata Chapter) (August 8, 2009), R.N. Mukherjee.
253. Department of Chemistry, Ramakrishna Mission Residential College, Narendrapur, Kolkata - 700 103, R.N. Mukherjee.
254. Tyrosinase, Catechol Oxidase, and Hydrolases: Synthetic Model Studies, Refresher Course in Chemistry, UGC-Academic Staff College, School of Chemistry, The University of Hyderabad, Hyderabad (July 25, 2009), R.N. Mukherjee.
255. Bio-inorganic Chemistry: Hydrolytic Enzymes, \*School of Chemistry, The University of Hyderabad, Hyderabad (July 24, 2009), R.N. Mukherjee.
256. Metal-Ligand Chemistry: Metal-centered and Ligand-centered Redox Processes, \*Department of Chemistry, Jadavpur University, Kolkata (June 11, 2009), R.N. Mukherjee.
257. In silico drug design; new developments, Central Drug Research Institute, Lucknow, March 2010, Nisanth N. Nair.
258. Rare Events In Silico, RAMET International Conference, IACS Kolatta, January 2010, Nisanth N. Nair.
259. Simulating Rare Events In Chemistry, IISc, Bangalore, December 2009, Nisanth N. Nair.
260. Magnetic Exchange & Magnetostructural Dynamics in Ferredoxins, JNCASR, Bangalore, December 2009, Nisanth N. Nair.
261. Rare Events and Configurational Sampling by Computer Simulations, JNCASR, Bangalore, December 2009, Nisanth N. Nair.
262. Chemfest, IIT Kanpur, October 31, 2009, Madhav Ranganathan.
263. Department of Chemistry, IIT Delhi, November 10, 2009, Madhav Ranganathan.
264. Bioinspired Design of Porphyrin and Bisporphyrin based Metal Complex, Department of Chemical Sciences, TIFR, Mumbai on June 15, 2009, S. P. Rath.
265. Metal Ion Displacements in a Nonplanar Porphyrinic Environment, Department of Chemistry, IIT Bombay on June 19, 2009, S.P. Rath.
266. Invited talk, Dibrugarh University, National Chemistry Conference, 26-27 th March, 2009, S. Sarkar.
267. Invited talk, International Conference in Nanostructured Materials and Nanocomposite Synthesis, Kottaym, Kerala April 6-8, 2009, S. Sarkar.
268. Invited Talk, Chemistry Department, IIT Guwahati, 11Aug, 2009, S. Sarkar.
269. Invited talk, Department of Chemistry Jodhpur University, August, 25, 2009, S. Sarkar.
270. Invited talk, Prof. R. K. Barua Memorial Lecture, Department of Chemistry, Guwahati University, 14<sup>th</sup> September, 2009, S. Sarkar.

271. Invited talk, Advanced Symposium of Asian Biological Inorganic Chemistry in TIFR, Mumbai, 1-7 Nov, 2009, S. Sarkar.
272. Mentor, Science Pursuit for Inspired Research (INSPIRE), December 15 to 21, 2009 Indian Institute of Technology, Guwahati, S. Sarkar
273. Invited talk in 2nd National Conference on Nano Material and Nanotechnology, Department of Physics, Lucknow, December 21-23, 2009, S. Sarkar.
274. Invited Talk, Chemistry Department, Bengal Engineering and Science University, Shibpur, Howrah, 15<sup>th</sup> January, 2010, S. Sarkar.
275. Invited talk, National Seminar on Contemporary Research in Material Science and Chemical Biology, Department of Chemistry, University of Allahabad, 2<sup>nd</sup> February, 2010, S. Sarkar.
276. Invited talk, Frontiers in Bioinorganic Chemistry, Chemistry Department Bharati Dashan University, Trichi, TN, 25<sup>th</sup> February, 2010, S. Sarkar.
277. Invited talk, Frontier Areas of Chemical Sciences, Department of Chemistry St Andrews College, Gorakhpur, 20<sup>th</sup> March, 2010, S. Sarkar.
278. Hydration Dynamics in Nano and Interfacial Environment, International Congress of Chemistry and Environment (ICCE - 2009 at Thailand), 22 January 2010, Pratik Sen.
279. Symmetry in molecular structure and dynamics, at the symposium on symmetry, February 2010, IISER Mohali, K. Srihari.
280. Role of intramolecular vibrational energy flow in quantum control, at Spectroscopy and Dynamics of Molecules and Clusters VII, February 2010, Goa, K. Srihari.
281. Intramolecular vibrational energy redistribution: dynamical insights and control from a classical-quantum correspondence perspective, at the second German-Indian symposium on Frontiers of Chemistry, September 2009, Leipzig, Germany, K. Srihari.
282. Role of dynamical tunneling in the control of driven systems at the conference on Tunneling and scattering in complex systems - from single to many particle physics, September 2009, Dresden, Germany, K. Srihari.
283. Bio-inorganic Interface: Iron Mineralization in Blood Protein. Recent Trends in Inorganic and Nano Chemistry, Madurai Kamaraj University, Madurai, 2010, Sandeep Verma.
284. Silver-Adenine Frameworks: Scalable Complexity and Surface Patterns. Modern Trends in Inorganic Chemistry-XIII, Indian Institute of Science, Bangalore, 2009, Sandeep Verma.
285. Making and milling peptide-based soft structures. Winter School on the Chemistry and Physics of Materials, Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore, 2009, Sandeep Verma.

286. Peptide soft structures as ion beam fabrication platforms. 2<sup>nd</sup> Indo-German Frontiers of Chemistry Meeting, University of Leipzig, Germany, 2009, Sandeep Verma.
287. Peptide-based soft materials as delivery vehicles and fabrication platforms, Conference on Functional Materials, Goa, 2009, Sandeep Verma.
288. Peptide-based soft structures: Design, synthesis, and morphology. University of Strasbourg, France, 2009, Sandeep Verma.
289. 'Synthesis of Novel Mono- and Bicyclic Azasugars as Glycosidase Inhibitors Jubilant-Biosys, Bangalore on June 4, 2009, Y.D. Vankar.
290. Development of Newer Methodologies in Carbohydrate Chemistry en route to Some Biologically Important Molecules, Department of Organic Chemistry, IISc Bangalore, June 5, 2009, Y.D. Vankar.
291. Development of Newer Methodologies in Carbohydrate Chemistry en route to Some Biologically Important Molecules, Department of Chemistry, IIT New Delhi, February 1, 2010, Y.D. Vankar.

#### Mathematics and Statistics

292. Turing and non-Turing pattern formation in ratio-dependent predator-prey model, Department of Applied Mathematics, University of Calcutta, Malay Banerjee 25<sup>th</sup> Feb., 2010.
293. Deterministic and stochastic dynamics in mathematical ecology, Department of Mathematics, Banaras Hindu University, 24<sup>th</sup> Oct., 2009, Malay Banerjee.
294. Formulation of stochastic models in mathematical ecology, Department of Mathematics, Banaras Hindu University, 25<sup>th</sup> Oct., 2009, Malay Banerjee.
295. Numerical simulation of SDE models in mathematical ecology, 25<sup>th</sup> Oct., 2009, Malay, Banerjee.
296. Invited talk on Some set theories and algebras with their representations, Seminar on Logic and Set Theory, Department of Pure Mathematics, University of Calcutta, December 21-22, 2009, Mohua Banerjee.
297. Invited talk on Logics for some 'dynamic spaces': a study in rough set theory, Annual workshop on the Calcutta Logic Circle (CLC), IBRAD, Kolkata, September 18-20, 2009, Mohua Banerjee.
298. Invited talk 'Mathematical Models for the Dynamics of HIV primary infection', Central University, Rajasthan Jaipur, March 19, 2010, P. Chandra.
299. Invited talk at the DBS College, Kanpur, P. Chandra.
300. Local properties of Holomorphic functions, delivered lectures in the ATM Workshop on Several Complex Variables and Complex Dynamics held at IISc Bangalore during March 1-12, 2010, S Chavan.
301. Christian Womens College-An Autonomous Institution affiliated to University of Madras July 24'2009, M. K. Kadalbajoo.
302. BHU - July 3-5, 2009, (03 lectures), M.K. Kadalbajoo.

303. IIT Roorkee, December 19, 2009, M. K. Kadalbajoo.
304. NIT Nagpur December 21-23, 2009 (04 lectures), M. K. Kadalbajoo.
305. Centre of Advanced Study, Punjab University, Chandigarh December 29, 2009, M. K. Kadalbajoo.
306. Invited Lecture 'Modeling of Natural Objects With Fractal Interpolation' at Pre-International Congress of Mathematicians 2010 Workshop, Kumaun University, Nainital, India, March 26-27, 2010, G.P. Kapoor.
307. Measure Theory, Institute of Mathematics & Application, Bhubaneswar, June 2009, P. Mohanty.
308. Invited talks on Exponential of a square matrix A and applications to dynamical systems. Organization and date: DST - Center for Interdisciplinary Mathematical Sciences (CIMS), BHU (Varanasi) is organizing a training program cum workshop on Dynamical System: Analysis and Applications under India Math Year Program from 22-31 October, 2009, V. Raghavendra.
309. Delivered 4 lectures on Introduction to Ordinary and Partial differential equations Organization and date: A Refresher course for college teachers held at Pure Mathematics Department Calcutta University starting from 17 November to 8-9<sup>th</sup>, December 2009, V. Raghavendra.
310. On the behavior of Fourier transform on Harmonic NA groups, 11<sup>th</sup> Discussion meeting in Harmonic Analysis, January 6<sup>th</sup> 2010, NISER, Bhubaneswar, S.K. Ray.
311. Measurement error Models at Indian Institute of Science Education and Research (IISER), Kolkata, India in December, 2009, Shalabh.
312. Measurement Errors Models in Bioinformatics at the Seminar -cum - Workshop on Molecular Modeling, Protein-Protein Interactions and Computer Aided-Drug Design at Center of Bioinformatics, University of Allahabad, India in March 2010, Shalabh.
313. Local Search Problems can be easy as well as hard to solve, APORS2009, 6-9<sup>th</sup> Dec. 2009, P. Sharma.
314. Problems for which Local Search is Polynomial Time, CR Rao Advanced Institute of Mathematics, Statistics and Computer Science and University of Hyderabad, 30<sup>th</sup> Dec. to 2<sup>nd</sup> Jan. 2010, P. Sharma.
315. Presented a seminar On strong proximality of closed convex subsets on Feb. 25, 2010 at IIT Madras, P. Shunmugaraj.

#### Physics

316. Tunneling evidence of Polaronic carriers in Colossal Magnetoresistive Manganites, Organization: CNRS, Grenoble, 22<sup>nd</sup> June 2009, A.K. Gupta.
317. STM/S study of electronic patterns on graphite surface, Organization: CNRS, Grenoble, 22<sup>nd</sup> June 2009, A.K. Gupta.

318. Scanning Tunneling Microscopy & Spectroscopy: A tool for probing electronic inhomogeneities in correlated systems, Organization: GJ Conference, IIT Kanpur 8<sup>th</sup> Feb 2010, A. K. Gupta.
319. Scanning Probe Microscopy: A versatile tool for local surface properties, Organization: IIT Kanpur (Nano-fab school), 22<sup>nd</sup> March 2010, A.K. Gupta.
320. Tunneling evidence of Polaronic carriers in Colossal Magnetoresistive Manganites, Organization: IISc, Bangalore (Physics Colloquium), 16 Apr 2010, A.K. Gupta.
321. Defect Production in Generalized Quenching, at ICTS Condensed Matter Programme 2009, organized by ICTS, TIFR, Mahabaleswar, 5<sup>th</sup>-23<sup>rd</sup> December, 2009. A. Dutta.
322. Invited lecture series, WE-Heraeus Summer School on Steps in Evolution: 150 years after Darwin, Bremen, Germany, July, 2009. D. Chowdhury.
323. Invited speaker in the symposium on "Navigation and Communication- what we can learn from insects", Platinum Jubilee Meeting of the Indian Academy of Sciences, Bangalore, November, 2009. D. Chowdhury.
324. Invited Speaker, School of Physics, University of Hyderabad, Dec 2009. S. Dhamodaran.
325. Invited Speaker, Department of Physics, Pondicherry University, Dec 2009. S. Dhamodaran.
326. Physics Colloquium, titled Instabilities and novel dynamics in the driven vortex state HRI Allahabad, 25<sup>th</sup> Feb. 2010. S. Banerjee.
327. Invited Talk, titled Instabilities and giant velocity fluctuations in the driven state of vortex matter International conference on Interaction, Instability, Kinetics: Glassiness and Jamming (IITK:GJ), held at IIT Kanpur between 4<sup>th</sup> Feb - 8<sup>th</sup> Feb. 2010 on the occasion of the Golden Jubilee celebration of IIT Kanpur. S. Banerjee.
328. Invited talk, titled Strange magnetic properties of ferromagnetic nanowires at Mahabaleswar, in the ICTS (International center for theoretical studies of Tata Institute of Fundamental Research, Mumbai) organized condensed matter program, 2009 (ICMP09), between 5<sup>th</sup> - 23<sup>rd</sup> Dec. 2009. Talk was on 20<sup>th</sup> Dec. 2009. S. Banerjee.
329. Invited talk at the Dept. of Atomic Energy (DAE) - SSPS (solid state physics symposium), titled Novel large amplitude low frequency velocity fluctuations in the elastic phase of the driven vortex matter, Baroda on 17<sup>th</sup> Dec. 2009, at the Maharaja Sayajirao University of Baroda, Vadodara, India S. Banerjee.
330. Physics Colloquium titled Low frequency, large amplitude vortex velocity fluctuations and novel dynamics of the driven vortex state at Indian Institute of Science (IISc) Bangalore, dated 4<sup>th</sup> Dec. 2009 S. Banerjee.
331. Invited talk on Large amplitude low frequency velocity fluctuations and its evolution with different phases of the driven vortex state at the 12<sup>th</sup>



- International workshop on vortex matter in superconductors, Sept.12-16, 2009 at the Lake Yamanaka, Yamanashi, Japan S. Banerjee.
333. Invited talk on Magneto-optical imaging technique: from superconductors to plasma's at the Condensed Matter Physics Workshop held at IIT Kanpur, India from Feb. 20 - 22<sup>nd</sup>, 2009. S. Banerjee.
  334. Invited talk on Controlling magnetic and superconducting properties at extreme scales in the International symposium on clusters, cluster assemblies and nanomaterials (ISCANM 2009), held at HRI, Allahabad, India from Feb. 9 - 11, 2009 S. Banerjee.
  335. Invited talk on Controlling magnetic and superconducting properties at extreme scales in the Workshop on Magnetic Nanomaterials and their Application (MNTA), at S.N. Bose Center, Kolkata, from Jan. 27-28, 2009 S. Banerjee.
  336. Kawfest, IPR Gandhinagar, Jan. 2010, M.K. Verma.
  337. Invited talk: Frontiers in Dynamo Theory, IHP Paris, April 2009, M.K. Verma.
  338. Invited talk: Dynamo Transitions, presented in Matscience, Chennai on March 29, 2010, M.K. Verma.
  339. Invited talk: Instabilities and Turbulence in Rayleigh Benard Convection, presented in JNCSAR, Bangalore on 1 April 2010, M.K. Verma.
  340. Lectures delivered at workshop held (March 21-29, 2010) at Himachal Pradesh University, Shimla on Density Functional Theory, M.K. Harbola.
  341. Invited talk Neutrinos in Magnetic fields -Aryabhatta Research Institute of Observational Sciences - June 2009. Kaushik Bhattacharya.
  342. Invited Talk, in Dr. N.L. Singh Memorial Lecture Series at BHU, Department of Physics, 26<sup>th</sup> November, 2009, Asima Pradhan.
  343. Invited Talk, in Continuing Education Program, Smart Materials, DMSRDE, Kanpur, December 2, 2009, Asima Pradhan.
  344. Invited Talk in the Conference Discussion meeting on statistical mechanics and condensed matter physics at IIT Guwahati during 31<sup>st</sup> October-1<sup>st</sup> November, Sutapa Mukherji.
  345. Invited Talk, titled Quenching dynamics of quantum spin chains: defect generation and entropy production International conference on Interaction, Instability, Kinetics: Glassiness and Jamming (IITK:GJ), held at IIT Kanpur between 4<sup>th</sup> Feb - 8<sup>th</sup> Feb. 2010 on the occasion of the Golden Jubilee celebration of IIT Kanpur. A. Dutta.

## OTHER ACTIVITIES

### TECHNOLOGY DEVELOPED

#### Aerospace

1. Design of a novel micro-combustor, D. P. Mishra.

#### Biological Science and Bio-engineering

2. Development of neo-cartilage for osteoarthritis, Ashok Kumar.
3. Development of stem cell separation technology using supermacroporous cryogels (process and product ready for commercialization), Ashok Kumar.
4. Development of Bioartificial Liver Support using Cryogel bioreactor (preclinical testing), Ashok Kumar.
5. Development of cigarette filter accessory using supermacroporous cryogel (process and product under commercial development), Ashok Kumar.
6. Development of metal chelate affinity precipitation for protein separation, Ashok Kumar.
7. Development of disposable cryogel bioreactor for the production of therapeutics, Ashok Kumar.
8. Development of the cryogel filter for the depletion of leukocytes from blood, Ashok Kumar.
9. Antiseptic wound dressing bandage using PVP-I macroporous sheet, Ashok Kumar.
10. Polymeric macroporous scaffolds for skin tissue engineering, Ashok Kumar.

#### Chemical

11. Organic semiconductor based flexible temperature sensor (technology transferred to Intellectual Ventures), S. Panda.
12. White light emitting lanthanide-doped nanomaterials for solid-state light applications, Sri Sivakumar.
13. Nanoparticles-loaded nano/micro polymer capsules for bioimaging and drug delivery applications, Sri Sivakumar.

#### Civil

14. Developed and field tested a 15 LPM PM2.5 air sampler, Tarun Gupta.

### Electrical

15. A 30 kW power electronic interface for coupling rooftop solar panels to the grid, with Maximum Power Point Tracking incorporated. This is already commissioned and functional at WBREDA office at Salt Lake, Kolkata, Sensarma P.
16. Brihaspati-2: SCORM packager and SCORM runtime, Singh Y.N.
17. Paper Touch Pad, Paper Keypad, Venkatesh K.S.

### Mechanical

18. Pipe Crawling Robot with a novel Smart Sensor, B. Bhattacharya.
19. Power-pro- a novel energy harvesting device for low-power electronic systems jointly with MDes Student of Design Programme, B. Bhattacharya.
20. An Active Infusion Pump jointly with MDes student of Design Programme, B. Bhattacharya.
21. 2-D Solar Tracker Developed as a PTB, M.K. Das.
22. MEMS based bacterial counter, Autonomous Vehicle Technology, S. Bhattacharya.
23. Double Sided Incremental Forming Machine is under Development, N. V. Reddy.
24. Bilevel multi-objective optimization algorithm, K. Deb.
25. Multi-modal optimization using multi-objective optimization, K. Deb.

### Chemistry

26. A fast method to count and quantitate bacteria - a patent filed in February 2010, R. Gurunath.
27. Drug free polymer nanocoatings on coronary stents - Product and Process development, S.S. Manoharan.
28. Low cost nano carbon based water filter for drinking water has now been under field trial, S. Sarkar.

### Physics

29. A novel focused ion beam system capable of generating multielement focused ion beams (ME-FIB), Sudeep Bhattacharjee.

## SOFTWARE DEVELOPED

### Biological Science and Bio-engineering

1. A four dimensional reconstruction and characterization system for biomedical images, Anupam Pal.

### Chemical

2. Software Tool for Design of Small Interfering RNA, S. Garg.

### Mechanical

2. A. New Damage Detection Software for Composite Laminate using Damage Indexing, B. Bhattacharya.
3. LES Solver for Turbomachinery Application (LES-TURBO), S. Sarkar.
4. Tool Path Planning for Multistage Single Point Incremental Forming, further work is in progress, N. V. Reddy.

### Chemistry

5. Developed constraint density functional theory codes for ab initio molecular dynamics code CPMD, Nisanth N. Nair.

## INDUSTRIES VISITED

### Aerospace

1. Indian Airforce Station, Chakeri, took students for industrial tour, 1 day, R. Kitey.

### Biological Science and Bio-engineering

2. NFTDC Hyderabad- November 21<sup>st</sup>, 2009, Ashok Kumar.

### Chemical

3. Yeungnam University, South Korea on sabbatical leave, July 2009-July 2010, A. Sharma.
4. BITS Mesra, Department of polymer Engineering, to discuss collaborative research, 29<sup>th</sup> January 2010, Singh JK.
5. UIUC, Beckmann Institute, to discuss collaborative research, July 1-2, 2009, Singh JK.

6. University of California, Irvine, to attend Indo-US meeting, June 2009, Singh JK
7. Prof. Kevin Shakes Sheff, Department of Pharmacy, University of Nottingham, UK, Sri Sivakumar.
8. Prof. Rashid Bashir, University of Illinois, Urbana Champaign, USA, Sri Sivakumar.
9. Prof. Ragina Ragan, University of California, Irvine, USA, Sri Sivakumar.

#### Civil

10. Visited University of Molise, Italy Ghosh P.
11. Visited IITD for research collaboration in the field of climate change and atmospheric chemistry, Gupta Tarun.
12. Visiting Professor, School of Civil, Environmental, and Mining Engineering, University of Adelaide, Australia, May 2009-Jul 2009, Jain, A.
13. NASA Goddard Space Flight Center, Greenbelt, MD, USA, Senior Research Fellow, August 2009-July 2010, Tripathi S. N.
14. Space Application Center, Ahmedabad, Megha Tropiques CAL/VAL Finalisation, 22 May, 2009, Tripathi S. N.
15. Indian Institute of Tropical Meteorology, Pune, National Steering Committee for CAIPEX Program, 13-15 May, 2009, Tripathi S. N.

#### Electrical

16. DEAL Dehradun, October 2009, Banerjee Adrish.
17. Politecnico di Torino under ERASMUS-MUNDUS visiting professor scholarship, May-June 2009, Banerjee Adrish.
18. Coordinator of 9 member Indian delegation that visited National Tsing Hua University, Taiwan, during November 2-3, 2009 to promote Research Collaboration between India and Taiwan in the area of VLSI Design. A Joint workshop sponsored by DST and its Taiwanese counterpart NSC was conducted in Taiwan during the visit, Qureshi S.
19. Visiting Professor in the ECE Department at Mississippi State University, USA until July 2009 (for one year) on sabbatical leave from IIT Kanpur, Srivastava S.C.
20. IRDE Dehradun, Discussions for Proposals for Collaboration. 09-13/01/2010, Venkatesh K.S.

#### Industrial Management & Engineering

21. Fiskars Corporation, Hameentie, Finland, J Chatterjee
22. Kone Corporation, Espoo, Finland, J Chatterjee
23. Kone Cranes, Koneenkatu, Finland, J Chatterjee

24. Metso Corporation, Finland, J Chatterjee
25. Design Factory, Aalto University, Finland, J Chatterjee
26. Helsinki School of Economics, Finland, J Chatterjee
27. Technical University, Ilmenau, Germany, J Chatterjee
28. Maastricht University, The Netherlands, J Chatterjee
29. USM Malaysia, INTEL, MOTROLA, ALTERA, Agilant, AMD all at Penang, MIT Boston USA, AK Mittal.
30. Hitachi, Shenshei Bank, Tokyo Power, J R East Shinkasen Workshop, Mitsui Chemicals all in Japan; AK Mittal.

#### Materials Science and Engineering

10. Fomento Resources, (an iron ore mining company in Goa), to give a presentation on Alternative Processes for Iron-making, December 15, 2009, David G. C. Robertson.

#### Mechanical

31. University of Sheffield, UK September 2009 (14 days), B. Bhattacharya.
32. Waseda University, Japan, March 2010 (10 days), B. Bhattacharya.
33. NAL, HAL, S. Sarkar.
34. Pennsylvania State University, Research discussion, May 3, 2009, Sovan Das
35. Pennsylvania State University, Research discussion, October 30-31, 2009, Sovan Das
36. Cornell University, Research Discussion, November 1-2, 2009, Sovan Das
37. University of Pennsylvania, Research Discussion, November 5, 2009, Sovan Das.
38. IGCAR, Kalpakkam in March, 2010. Part of fund project, Ishan Sharma.
39. IGCAR, Kalpakkam Collaborative research project< March 12-14 2010, Pankaj Wahi.
40. Jadavpur University, Collaborative research project, March 6, 2010, Pankaj Wahi.
41. IIT-Kharagpur, Collaborative research project, March 3-5, 2010, Pankaj Wahi.
42. University of Aberdeen, Collaborative research project, 15 June 25 - July, 2009, Pankaj Wahi.
43. VSSC, Trivandrum, Lunar Rover Review Meeting, 22 Feb. 2010, Anjali V. Kulkarni.
44. DMRL, Hyderabad, January 8 -11, 2010. To finalize the project proposal (Proposal on incremental forming of Ti sheets is submitted and review is completed), N. V. Reddy.

45. Airbus company, Nantes, France (April 2009), toured the facility, K. Deb.
46. General Motors and India Science Lab, Bangalore (July 2009), delivered a lecture and discussed possible project ideas, K. Deb.
47. Volvo Powertrain, Skovde and Goteborg, Sweden (December 2009), delivered a tutorial, addressed top label managers and toured the company, K. Deb.

#### Chemistry

48. Feb-Mar 2010, INSA-JSPS sponsored Visiting professor, Osaka University, Osaka, Japan. J. N. Moorthy.

#### Mathematics and Statistics

49. Invited Professor, Institute of Logic and Cognition (ILC), Sun Yat-Sen University, Guangzhou, China, May-July, 2009, Mohua Banerjee
50. University of Iowa, under IUSSTF Fellowship for Research Collaboration, May-July 2009, S. Dutta.
51. Visited Division of Theoretical Statistics and Mathematics, Indian Statistical Institute, Kolkata, during the period June 8th -July 3rd 2009, S.K. Ray.
52. Visited Institute of Statistics, Ludwig Maximilians University, Munich, Germany in 2009 for three months, Shalabh.

#### Physics

53. Abdus Salam International Center for Theoretical Physics, Purpose: Academic Collaboration, Period: 8<sup>th</sup> June-20<sup>th</sup> July, A. Dutta.

#### **PATENTS**

##### Aerospace

1. Heat Recuperating Microcombustor, IPA No: 2257/DEL/2009, D P Mishra, and S J Swarup.
2. Low emission energy efficient gas burner, IPA No: 2347/DEL/2009, D. P. Mishra.

##### Biological Science and Bio-engineering

3. Antiseptic polymeric macroporous hydrogel based thin sheets containing iodine as wound dressing materials (Patent filed, 2009), Ashok Kumar and Era Jain.

4. Polymer Matrix Scaffold and Process for Preparation Thereof (Patent filed; IPA 3948; 2009), Ashok Kumar and Anuj Tripathi.
5. Image-based structural characterization system for fibrous materials, under filing by Intellectual Ventures, S. G. Pandya, D. S. Katti, A. Pal.
6. A four dimensional reconstruction and characterization system for biomedical images, under filing by Intellectual Ventures, A. Pal, S. Banerjee, S. Dixit.

#### Chemical

7. Process for Synthesis of Sonicated Hierarchical Web of Carbon Micro-nano Fiber and applications Thereof Indian Patent File Number: DEL/1157/2009. Inventors: N. Verma and A. Sharma.
8. A process for fabrication of an electrolyte insulator semiconductor device having multistep reservoir, 219/DEL/2010, 01-02-2010, Indian Patent, S. Panda and A. Agarwal.

#### Electrical

9. Static Camera Data Compression: 2438/DEL/2009 filing date: 26.11.09. Indian Patent Office, Venkatesh K. S.

#### Materials Science and Engineering

10. US Patent No. 7,618,582, Continuous steel production and apparatus, Awarded by the US Patent Office, November 17, 2009. Application No. 11/381,829, Date of Application 05.07.06, List of inventors: K. D. Peaslee, J. J. Peter, B. G. Thomas and L. Zhang, David G. C Robertson.
11. Tubular Microwave Sintering Furnace with Inert and Reducing Gas Flushing for Sintering Metallic Samples, (BHEL) (1147/DEL/2006 Filing Date: 9.5.2006, Publication Date: 23.11.2007), A. Upadhyaya (IIT/K) and G. Swaminathan.
12. Rare-Earth Oxide Dispersed Sintered Stainless Steels (REO-Steels), (1224/DEL/2006 Filing Date: 18.5.2006; Publication Date: 23.11.2007), A. Upadhyaya, R. Balasubramaniam, and J. Shankar.

#### Mechanical

13. Universal rotational abrasive flow finishing, J. Ramkumar, S. Ravishankar and V.K. Jain.



14. Integrated Di-electrophoresis based connection of pathogenic bacteria, Filed for Indian patent, April, 2010, S. Bhattacharya.

#### Chemistry

15. One Indian Patent filed on Removal of Mercury, P. K. Bharadwaj
16. Drug free Polymer composite Nano coated coronary stent systems (Indian patent file no: 1197/DEL/June 2009), S. Sundar Manoharan and T R Muralidharan.

#### Physics

17. Filed for a Patent with Intellectual Ventures; A non-destructive damage detecting instrument which using an alternating or direct current mode of operation sensitively images damage induced changes in the path of currents flowing through the material. Satyajit S. Banerjee, Shyam Mohan, Jaivardhan Sinha.

### **AWARDS AND HONOURS**

#### Aerospace

1. Batch of 1970 Research Fellow, IIT Kanpur (Oct. 2009 onwards), A. Kushari
2. Subject editor, International Journal of Hydrogen Energy, Elsevier Publisher, USA, 2009, D. P. Mishra.
3. Editor, 8<sup>th</sup> Asia-Pacific Conference on Combustion, 2010, D. P. Mishra.

#### Biological Science and Bio-engineering

4. Received DBT – National Bioscience Award for the year 2009, Balaji Prakash.
5. Task Force committee member of Silk Biotechnology, DBT, India, Ashok Kumar.
6. JSPS Visiting Professor Fellowship, Ashok Kumar.
7. Invitation for Chief-Editor for Frontiers of Biotechnology and Bioengineering Journal, Ashok Kumar.
8. Young Investigator Award by Asian Neurogastroenterology and Motility Association, April 2009, Anupam Pal.

#### Chemical

9. Homi J. Bhabha Award for Applied Sciences, University Grants Commission (UGC) National Hari Om Ashram Trust Awards (2007). Award for the year 2007 received in 2010, to Prof. A. Sharma.
10. L & T Chair Professor of Chemical Engineering, IIT Bombay (Dec 2009 – present), to Prof. S. K. Gupta.
11. Elected Fellow, The National Academy of Sciences, India (since Dec. 2009), to Prof. D. Kunzru.
12. Elected Fellow, Indian National Academy of Engineering, New Delhi, to Prof. S.K. Gupta. (2009)
13. Amar Dye Chem Award, Indian Institute of Chemical Engineers (IChE) (2009), to Dr. Y.M. Joshi.
14. Indian National Academy of Engineering (INAE) Young Engineer Award, 2009, to Dr. J.K. Singh.

Student awards:

15. M H Shukla 2nd Prize, IChE for the best Technical Paper presented at CHEMCON 09 to Mr. S. Kumar and Mr. S.S. Muduli.
16. Ambuja's young researcher's award for doing post graduate studies in chemical engineering after GATE presented at CHEMCON 09 to Mr. Sunil Kumar and Mr. G. Srivardhan.
17. First prize for poster presentation V<sup>th</sup> Rheology of complex fluids symposium, IIT Madras, January 2010 to Ms. A. Shahin.
18. Best Poster Award at the International Symposium of Hydrogen and Energy Storage as a part of the Energy Conclave 2010 at IITK to Mr. C.S. Sharma
19. Best IChE Chemical Weekly Award for Best Research Paper in a High Impact Factor International Journal by an Undergraduate Student for the year 2009 to Mr. A. Sinha

Civil

20. Recipient of Batch of 1970 Research Fellowship, IIT Kanpur, from October 01, 2009 for three years by Das A.
21. Awarded Endeavour Executive Award 2009 by Ministry of Education, Australia, Jain, Ashu.
22. Ghosh, P. Senate Recommendation for Best Teaching by IIT Kanpur, 2009
23. INAE Young Engineer Award (2009) by Gupta, Tarun, .
24. INDO-US Frontiers of Science Symposium Joint Research Award (2009) by Gupta, Tarun,.
25. 3<sup>rd</sup> prize for poster, IASTA, Darjeeling (2010) by Gupta, Tarun.
26. 1<sup>st</sup> consolation prize for poster, IASTA, Darjeeling (2010) by Gupta, Tarun.
27. 3<sup>rd</sup> prize for Poster, International Conference on Environmental Health and

- Technology, IITK (2010) by Gupta, Tarun.
28. 3<sup>rd</sup> prize for Poster, Energy Conclave, IITK (2010) by Gupta, Tarun.
  29. Best paper award from Indian Society of Remote Sensing (2009) by Sinha, Rajiv.
  30. NASI-Scopus Young Scientist 2009 Awarded by National Academy of Sciences India and Elsevier Pvt. Ltd. Asia-Pacific by Tripathi, S.N.
  31. NASA Senior Fellowship, National Aeronautics and Space Administration, USA by Tripathi, S.N.
  32. Sir M Visvesaraya Fellowship, IIT Kanpur by Tripathi, S.N.

#### Computer Science & Engineering

33. G B Birla Award for Scientific Research, Birla Foundation, Manindra Agrawal.
34. P C Mahanalogis Birth Centenary Award, Indian Science Congress, Manindra Agrawal.
35. Rajib Goyal Prize, Kurukshetra University, Manindra Agrawal.
36. Young Engineer Award for the year 2009 by Indian National Academy of Engineers for contribution in the field of design and analysis of algorithms, Surender Baswana.

#### Electrical

37. Paper entitled Noninvasive Procedure for Measuring the Complex Permittivity of Resins, Catalysts, and Other Liquids Using a Partially Filled Rectangular Waveguide Structure, which appeared in the February 2009 issue of IEEE Transactions on Microwave Theory and Techniques, received the CST (<http://www.cst.com>) University Publication Award 2009, Akhtar Jaleel.
38. The Computer Simulation Technology AG (CST) is a Germany based company, which is the market leader in the area of 3-D electromagnetic field simulation. The CST University publication award is given each year to few selected researchers for their original work in the field of 3-D electromagnetic field simulation, where they have made skilful usage of CST software features, Akhtar Jaleel.
39. The following paper coauthored by Dr R.S. Anand got the excellent research work certificate from the director CDRI, Lucknow: Atul Goel, Sumit Chaurasia, Manish Dixit, Vijay Kumar, Sattey Prakash, Bijayalaxmi Jena, Jai K. Verma, Mayank Jain, R. S. Anand and S. Sundar, Donor-acceptor 9-uncapped fluorenes and fluorenones as stable blue light emitters, Organic Letters, Vol.11, No.6, 1289-1292, 2009, Anand R.S.
40. Young Engineer Award, Institute of Engineers (IEI), India in area of Electronics & Communications, 2009, Banerjee Adrish.

41. Microsoft Research India Outstanding Young Faculty Award, 2009, Banerjee Adrish
42. Certificate of Merit from Institution of Engineers (India) for the paper entitled Hardware Implementation of Modified SVM Technique for Soft-switching Converter, December 11, 2009. The paper is co-authored by S. Behera, S. P. Das and S. R. Doradla and appeared in IE (I) Journal during 2008-2009.
43. Best student poster award in Photovoltaic section: Ellipsometric studies on CuPc/C60 heterojunction for solar cell applications, International Workshop on Physics of Semiconductor Devices (IWPSD)-2009, New Delhi, India, Debjit Datta, Anirban Bagui, S. Sundar K. Iyer and Satyendra Kumar.
44. Has been awarded P.K. Kelkar Chair Professor position (IIT Kanpur endowed chair position) for 3 years since Oct. 2009, Srivastava S.C.
45. Has been nominated as Member of the Central Advisory Committee of the Central Electricity Regulatory Commission (CERC) for the year 2010, Srivastava S.C.
46. K. Seethalekshmi, a Ph.D. student of our department working with Prof. SC Srivastava and Prof. S.N.Singh has been selected for the 2010 Clayton Griffin Student Paper Award in the Georgia Tech Protective Relaying Conference. The conference will be held at Atlanta, USA during May 5-7, 2010. This was a global student paper contest and carries a cash award of USD 1000. The title of her paper is SVM based Scheme to Prevent Distance Relay Mal-operation under Power Swing and Voltage Instability.

#### Industrial Management & Engineering

47. The Best Paper Award, AGCETI 2010, N K Sharma and Manu Kanchan.
48. Judged as Outstanding Management Researcher, at AIMS-7 conference, Dec 20-22, 2009; held at IIM Bangalore, India. Award was given by Prof. MR Rao (ex director IIM Bangalore and ex Dean ISB Hyderabad), R R K Sharma.

#### Materials Science and Engineering

49. R.L. Thakur Memorial Award 2009, awarded by Indian Ceramics Society on Dec. 11th 2009 at Trivandrum India, Kantesh Balani.
50. Young Scientist Award in Materials Science division, awarded by Indian Science Congress Association on Jan. 5<sup>th</sup> 2010 at Trivandrum India, Kantesh Balani.
51. GD Birla Gold medal of the Indian Institute of Metals, 2009, Dipak Mazumdar.

52. Continues to be a member of the Editorial Board of the journal Powder Metallurgy, published by the Institute of Materials, Minerals and Mining, London, R. K. Dube.
53. Lecturer Award, awarded for the Academic Year 2010/11, by AIST, the Association for Iron and Steel Technology, USA, D. G. C. Robertson, J. F. Elliott.
54. Indian Institute of Mineral Engineers Award for Best Publication on mineral beneficiation from India in any International Journal for the paper entitled Study of separation features in floatex density separator for cleaning fine coal published in International Journal of Mineral Processing, Vol. 86, 2008, 40-49, S.P. Mehrotra.
55. Metallurgist of the Year Award for the year 2009 from the Ministry of Steels November 2009, A. Upadhyaya.
56. Selected as P.K. Kelkar Research Fellow (Class of 1982 Batch), October 2009, A. Upadhyaya.
57. Australia India Science and Technology Research Award by Australian Academy of Technological Sciences and Engineering, 2009, A. Garg.

#### Student Accolades

58. Best poster award in the Materials Science category won by Ph.D student to Mr. Soumitro. Mahanty, Electron Microscopy Study on the Surface Modification of Al-SiCP MMC after Pulsed Laser Irradiation, at International Conference on Advances in Electron Microscopy and Related Techniques and XXXI Annual Meeting of EMSI, BARC, Mumbai, India, March 8-10, 2010, Co-author/Thesis supervisor: Dr. Gouthama.
59. Ms Priyanka Dash's M.Tech. thesis titled Effect of Sintering Temperature on Microstructural Evolution and Tribological Properties of Cu-Pb Alloys (supervisor: Dr. A. Upadhyaya) was awarded Professor B.D. Upadhyaya Memorial Gold Medal in Physical Metallurgy & Materials Processing, May 2009.
60. B.Tech. Project Thesis by Mr. Shobit Misra on PM Processing of High Copper Dental Amalgams (supervisor: Dr. A. Upadhyaya) was adjudged for the Best Departmental B.Tech. Project, May 2009.

#### Mechanical

61. IEL, Young engineer's award in Mechanical Engineering for the year 2009, S. Bhattacharya.
62. Certificate of Outstanding Leadership by Boeing Corporation for the year 2009, S. Bhattacharya.

63. Prof. K. N. Seetharamu Young Researcher Medal and Prize from the Indian Heat and Mass Transfer Society, 2010, S. Bhattacharya.
64. Invited to become a member of the Editorial Board of a new quarterly journal titled 'Heat Pipe Science and Technology: An International Journal' launched by Begell House, Inc. USA, S. Bhattacharya.

#### Humanities and Social Sciences

65. Our Common Future Fellowship (2010), Volkswagen Stiftung, Germany. - Bhushan, B.
66. Director's Commendation Letters for Excellence in Teaching, 2009 - Suchitra Mathur.
67. Director's commendation for excellent teaching based on SRS. The course taught was PHI 447: Ethics & Society, Semester 1 2009-10, Semester 1 2009-10. - Vineet Sahu.

#### Chemistry

68. Conference Chair, Third Asian Conference on Coordination Chemistry .
69. J. C. Bose National Fellow, DST, New Delhi, India, P. K. Bharadwaj.
70. Elected to the Academy of the Developing World, FTWAS, Trieste, Italy, V. Chandrasekhar.
71. Best Poster Award at the SPIE Photonics West 2010 at San Jose, CA on the poster: Spatio-temporal Control in Multiphoton Fluorescence Imaging, A.K. De, D. Roy and D. Goswami.
72. Best Poster Award for: Encoding molecular fragments with chirped femtosecond pulses for quantum information processing, 9<sup>th</sup> Asian Conference on Quantum Information Science (AQIS '09) organized by the Nanjing University of Posts and Telecommunication (NUPT), Nanjing, China, 26-29 Aug. 2009, D. Goswami.
73. Guide for the Best M.Sc. Project (Mr. V. Tewari, Dept. of Chemistry IITK, May 2009), D. Goswami.
74. International Council Member, Optical Society of America, USA, Jan.2010-Dec.2012, D. Goswami.
75. Associate Editor, Global Journal of Analytical Chemistry, Simplex Academic Publishers, 2010 onwards (3-year term), D. Goswami.
76. DST - Lockheed Martin Innovation Growth Program: Gold Medal For Developing Nanocoated, Coronary Stent, 2009, S. S. Manoharan.
77. Elected as fellow of the Indian Academy of Sciences (FASc), Bangalore, J. N. Moorthy.
78. Awarded Bronze Medal by Chemical Research Society of India (CRSI), J. N. Moorthy.

79. Member, Advisory Board of Dalton Transactions (2010 - 2011), Royal Society of Chemistry, UK, R. N. Mukherjee.
80. Fellow, National Academy of Sciences, India, 2010, S. Verma.
81. CDRI Award for Excellence in Drug Research, 2009, S. Verma.
82. Rajib Goyal Young Scientist Prize (2006) in Chemistry, 2009, S. Verma.
83. P. K. Kelkar Research Fellow in 2009 from IIT Kanpur, S. P. Rath.
84. Elected as a Fellow, Indian National Science Academy, New Delhi, Y. D. Vankar.

#### Mathematics and Statistics

85. Appointed Member, Editorial Board, Transactions on Rough Sets, Journal subline of the Lecture Notes in Computer Science (LNCS), Springer, Mohua Banerjee.

#### Physics

86. P. K. Kelkar Fellowship, Awarded by: IIT Kanpur, A.K. Gupta.
87. Buti Foundation Award and the Endeavour Research Award of the Australian Government, Sudeep Bhattacharjee.

### CONTINUING EDUCATION ACTIVITIES

#### Civil

1. Co-organized (with Dr. Avinash Agarwal, ME) a short-term Course on Diesel Particulate and NO<sub>x</sub> Emissions, from 14<sup>th</sup> -18<sup>th</sup> Feb, 2010. Sponsored by Quality Improvement Program, MHRD, Government of India. The school was attended by 54 participants with equal number from industry and academia by Gupta, Tarun.

#### Electrical

2. Co-organized 5 days Short Course for DoorDarshan Employees on RF and Microwaves at IIT Kanpur during Nov. 30 to Dec. 4 2009. Approximately 20 participants attended the courses from the level of Deputy Director, DoorDarshan to level of Senior Engineer, DoorDarshan, Akhtar, Jaleel and Srivastava K.V.

3. Co-organized short course (Self-financed) on Cellular Technologies: 3G and Beyond at I.I.T. Kanpur, 26th-28th December 2009 and delivered lectures on OFDM and LTE, Banerjee Adrish, Chaturvedi AK, Jaganatham Aditya
4. Gave lectures on OFDM and LTE at a workshop on Wireless Circuits and Systems jointly organized by I.I.T. Kanpur and USM Malaysia at Penang, Malaysia, December 2009 Banerjee Adrish, Chaturvedi AK, Jaganatham Aditya
5. Organic Solar Cells at the 6-14 July summer short course on Organic Electronics and Photovoltaic Systems, IIT Kanpur, 12<sup>th</sup> July, 2009. M.Tech. and PhD students as well as research scientists from industry. Course was supported by project funds, Iyer S. S. K.
6. Co-Convenor of the DST-SERC Workshop on 'Smart Energy Delivery System' held as part of Energy Conclave at IIT Kanpur on 15<sup>th</sup> Jan. 2010, Iyer S. S. K.
7. Organized (Convenor) of DST-SERC Workshop on Smart Energy Delivery Systems at IIT Kanpur on January 15, 2010, Sensarma P.
8. Organised a Course at I. I. T. Kanpur on Cadence Tool Training during June 29 - July 4, 2009 for teachers of N.I.Ts participating in SMDP-II project sponsored by MCIT, Qureshi S.
9. Attended the DST-EPSRC sponsored 2<sup>nd</sup> Indo-UK Workshop on Next Generation Systems and Services, in IIT Madras, on 1-2 Feb 2010, Vasudevan K.

#### Industrial Management & Engineering

10. Conducted a one day self financed QIP course on MRP Systems (3 OCT 2009); Venue: IIT Kanpur 208016, R R K Sharma.
11. Conducted CEP under BSNL-IITK Programme for BSNL Senior Managers on Management of Technology, 20<sup>th</sup> - 22<sup>nd</sup> November, 2009, J Chatterjee.
12. Taught Product Design & New Product Management to VLMP 2009-2010 Batch, July-August 2009, J Chatterjee.
13. Quantitative Finance Workshop jointly conducted by (i) IGIDR, Mumbai, INDIA, (ii) Indian Institute of Technology Kanpur, INDIA and (iii) Rensselaer Polytechnic Institute, USA, at IGIDR, Mumbai, INDIA, 17<sup>th</sup> - 20<sup>th</sup> December, 2009, PI, Raghu Nandan Sengupta.
14. Workshop on Record management, 2-13<sup>th</sup> August 2009 IIT Kanpur; AK Mittal.
15. Management Development Programme for DoorDarshan officer; May 23- June 07, 2009; AK Mittal.
16. Energy Conclave 2010, 8-15 Jan. 2010 (Chair of the conclave); Anoop Singh.
17. International Symposium on New Paradigms for Energy Policy and Regulation, Jan. 8, 2010; Anoop Singh.
18. 2<sup>nd</sup> Capacity Building Program for Staff of Electricity Regulatory Commissions from August 3-8, 2009; Anoop Singh.



### Materials Science and Engineering

19. Recent Trends in Surface Engineering (Self Financed) IIT Kanpur, Feb. 25-28, 2010 (planned).
20. Processing, Characterization, and Properties of Advanced Engineering Materials (QIP course) IIT Kanpur, Feb. 24-28, 2010 (planned).
21. Organic Electronics and Photovoltaic Systems (Luminescence), July 6-14, 2009, IIT Kanpur.

### Mechanical

22. Bhaskar Dasgupta, Delivered a course on "Mathematical Methods in Engg and Science" as part of the NPTEL Phase II, awaiting review.
23. J. Ramkumar, Workshop on Micro and Nano fabrication, March 22-26, 2010 at IIT Kanpur.
24. P.M. Dixit, Three-Dimensional Finite Element Formulation of Hot Rolling Process, Sponsored by Industry, IIT Kanpur, February 1-26, 2010, Tata Steel Engineers with M.Tech. Degree from IITs.

### Humanities and Social Sciences

22. Assisting Chhattisgarh Education Resource Centre, SCERT Chhattisgarh and the NCERT in the preparation of textbooks for teacher training, Amman Madan.
23. Lectured in Certificate Programme on Foundations of Education, Digantar, Jaipur, 1 - 12 July 2009. Participants were middle level staff of several NGOS working on education, Amman Madan.
24. Communication Skills workshop for L. K. Singhania Education Centre, G Rajasthan, from 7 - 11 July 2009, Suchitra Mathur & Mini Chandran.
25. Organised a three-week CDET funded workshop on Science Fiction (SF) Writing which had 16 participants from all over the country. As part of the workshop, I invited Prof. Jayant Narlikar to IIT Kanpur as a guest lecturer for this workshop; he also gave an Institute lecture while he was here for the SF workshop, Suchitra Mathur.
26. Conducted Workshops: For CA trainees of Institute of Chartered Accountants of India, Kanpur- Team Building: One session in Aug 2009, One session in January 2010, Lilavati Krishnan.
27. Course Development for NPTEL (Microeconomics: Web and Net) - Vimal Kumar.

28. Consortium Meeting (LUVIT) of the Erasmus Mundus External Cooperation Window (EMECW) India -Lot 13 and Bologna Process Workshop, during 8<sup>th</sup> - 10<sup>th</sup> February, 2010, in Lund, Sweden, P. Murali Prasad.
29. Consortium Meeting (WILLPOWER) of the Erasmus Mundus External Cooperation Window (EMECW) India -Lot 13a, during 14<sup>th</sup> - 15<sup>th</sup> December 2009, in Nantes, France, P. Murali Prasad.
30. A workshop on Applied Bologna and Steering Committee Meeting (LUVIT) of the Erasmus Mundus External Cooperation Window (EMECW) India -Lot 13, during 30<sup>th</sup> November- 4<sup>th</sup> December, 2009 in Delhi, India - P. Murali Prasad
31. EMECW (WILLPOWER) Coordination Committee Meeting during 22- 23 September, 2009, in Delhi, India, P. Murali Prasad.
32. Collaboration Between IIT Kanpur and University of Applied Sciences, Darmstadt Germany, in International Collaborations, Directons, Vol.10 No.2 2009, pp. 99-104, P. Murali Prasad.

#### Chemistry

33. Taught CHM-101 course for IIT Rajasthan in 2009-10 1<sup>st</sup> semester as a theory tutor and laboratory instructor, M. K. Ghorai.
34. Developed a web site for the students to enable information and communication technology in teaching of web courses in physics and chemistry (sponsored by MHRD). The web site is [www.ictwiki.iitk.ernet.in](http://www.ictwiki.iitk.ernet.in), R. Gurunath.

#### Mathematics and Statistics

33. Taught summer course on Rough Set Theory, Institute of Logic and Cognition (ILC), Sun Yat-Sen University, Guangzhou, China, May-July, 2009; 15 attendees undergraduate and graduate students, and faculty, Mohua Banerjee.
34. Delivered lectures on Modal Logic, Rough Sets and Rough Logics, at the MHRD/AICTE Winter School on Logic and Applications of Logic (LAAL 2009), IIT Kharagpur, December 7-18, 2009; 20 participants - graduate students, researchers and participants from industry, Mohua Banerjee.
35. Organized Pre-conference Workshop on Foundations of Rough Set Theory, prior to the 12<sup>th</sup> International Conference on Rough Sets, Fuzzy Sets, Data Mining & Granular Computing (RSFDGrC 2009), December 15, 2009, Delhi; 5 invited speakers, 40 participants - graduate students, researchers and participants from industry, Mohua Banerjee.
36. Coordinator, Workshop on Relational Structures in Reasoning with Incomplete Information, as part of Third Indian School on Logic & its Applications (ISLA 2010), January 19-22, 2010, University of Hyderabad; 2 invited speakers, about 40 participants - graduate students and researchers, Mohua Banerjee.

## Physics

38. Lectures on solid state physics to Chattisgarh students from the e-classroom at IIT Kanpur under the CHIPS programme, M. K. Harbola.

## **PARTICIPATION IN HIGH LEVEL INDUSTRY ACADEMIA INDUSTRY INTERACTION PROGRAMME DURING SUMMER**

### Aerospace

1. TIFAC-CORE, Chennai, June 2009, A. K. Ghosh.
2. Two times visited Birla Institute of Technology, Mesra (Ranchi) (August and October 2009) for holding Discussion on Modification of existing Syllabus for Associate Membership Examination in Aerospace Engineering under the auspices of Institution of Engineers, India, Kunal Ghosh.

### Humanities and Social Sciences

3. Attended a meeting with Dr. Amarjit Singh, Executive Director, Jansankhya Sthirata Kosh (JSK), National Population Stabilisation Fund, New Delhi (Website:www.jsk.gov.in) and other experts on how to stabilize population growth in India, as advisor to JSK, 16 October 2009, A.K. Sharma
4. Presented proposals on evaluation and monitoring of ABL method in primary education, Ministry of Education, Madhya Pradesh, Bhopal, 30 November 2009, Rita Singh and A. K. Sharma.
5. Conducted survey and submitted report for the NGO Eklavya, Madhya Pradesh on the academic achievement levels of children in government schools of a tribal belt in district Betul, Madhya Pradesh, Amman Madan.

### Chemistry

6. Visited National University of Singapore, Nano Science Center, July 2009, S. Sundar Manoharan.
7. Visited Prof. Dominik Marx, Ruhr-Universitaet Bochum, Germany, Nisanth N. Nair.

## ANY OTHER IMPORTANT ACTIVITY NOT SPECIFIED IN ABOVE COLUMNS

### Aerospace

1. Established a new experimental laboratory (with funding from DST) for the design, development and testing of autonomous mini helicopter, in the Department of Aerospace Engineering, IIT Kanpur. This lab is the only experimental lab on helicopters in India, Venkatesan C.
2. Member of Selection Committees for faculty at IIT's, Venkatesan C.
3. Expert Member, Selection Committee for Common-wealth scholarship, MHRD, Venkatesan C.
4. Restructured Composite Materials course (AE681) to develop experimental skills among students. The experimental projects are included for students to have an hands-on-experience of fiber composites manufacturing and their mechanical properties characterization, R. Kitey.
5. Initiated the process to build high strain rate testing facilities in Aero Structures Lab, R. Kitey.
6. Elected as an executive member of The combustion institute (India Section) for 2010-2012, D. P. Mishra.

### Biological Science and Bio-engineering

7. IIT-Kanpur designs polymer-based knee joint- October 2009, Ashok Kumar.
8. <http://www.business-standard.com/india/news/iit-kanpur-designs-polymer-based-knee-joint/374627/>
9. IIT-K develops cartilage in lab, says may help osteoarthritis, Ashok Kumar.  
<http://in.news.yahoo.com/48/20091224/1251/ten-iit-k-develops-cartilage-in-lab-says.html>  
<http://pubs.acs.org/subscribe/journals/ancham/78/i09/html/0506materialworld.pdf>
10. Nanomaterials: Possible Consequences on Human Health, Ashok Kumar.  
<http://www.iitk.ac.in/infocell/iitk/newhtml/storyoftheweek.htm>
11. Environmental Endocrine Disrupters and Human Health, Ashok Kumar.  
<http://www.iitk.ac.in/infocell/iitk/newhtml/storyoftheweek55.htm>
12. Bhat, Sumrita, Tripathi, Anuj, and Kumar, Ashok (2010). Neo-cartilage Procreation on Cryogel Matrices Sharing Characteristics to Native Cartilage as a Potential Treatment for Osteoarthritis. Available from Nature Precedings  
<http://hdl.handle.net/10101/npre.2010.4301.1> (2010)  
<http://precedings.nature.com/documents/4301/version/1>

## Chemical

13. Director, Rajiv Gandhi Institute of Petroleum Technology, Rae Bareli, an Institute of National Importance created under an Act of Parliament, J.P. Gupta.
14. Visiting Professor, MIT, Cambridge, USA, Oct-Dec. 2009, D. Kunzru.
15. Member, PAC (Chemical Engineering), DST, N.Delhi, D. Kunzru.
16. Member, Board of Governors, Rajiv Gandhi Institute of Petroleum Technology, Rai Bareli,U.P, D. Kunzru.
17. Chairman of two Advisory & Monitoring Committees of the Bioprocess and Bioproducts Programme of TIFAC, D. Kunzru.
18. Reviewer - Funding agencies (DST), Journals (Electrochemical Solid-State Letters), S. Panda.
19. Reviewed papers for Journal of Chemical Physics and Indian Chemical Engineer, P.A. Apte.

## Civil

20. Appointed examiner for Ph. D. thesis of IIT Mumbai by Tripathi, S.N.
21. AGU Publication Committee, ISPRA, EU, Milan, April 2009 by Tripathi, S.N.

## Computer Science & Engineering

22. Coordinator, International Conference on Foundations of Software Technology and Theoretical Computer Science, held at IIT Kanpur, Department of Computer Science and Engineering from Dec 13-20, 2010, Sumit Ganguly.
23. Program Committee Member, ACM International Conference on Management of Data (SIGMOD 2010). Reviewer for 10 papers, Sumit Ganguly.
24. Program Committee Member, IEEE International Conference on Data Engineering (ICDE 2010). Reviewer for 8 papers, Sumit Ganguly.
25. Program Committee Member, International Conference on Database Systems for Advanced Applications (DASFAA 2010). Reviewer for 7 papers, Sumit Ganguly.
26. Program Committee Member, International Conference on Database and Expert System Applications (DEXA 2009). Reviewer for 8 papers, Sumit Ganguly.

## Electrical

27. A new lab for the microwave imaging and material testing is currently being developed in the department, Akhtar Jaleel.

28. Organized an Indo-US workshop on System of Systems Engineering at IIT Kanpur during 26-28 October 2009, L. Behera.
29. Research Grant Obtained: PI, DST Sponsored Project on Intelligent Visual Control of Redundant Manipulator Systems for Grasping 3-D Objects, Rs 33 Lakhs, 2009, L. Behera.
30. Article for General Readership, Low Cost and Flexible Organic Solar Cells Directions, vol. 10, no. 2, December 2009, S Sundar Kumar Iyer and Satyendra Kumar.
31. During the Fall 2009 semester, he revamped the control systems experiments of EE380 with a view to making them practically useful to the students. He designed new experiments for two of the three existing hardware setups (ball & beam and inverted pendulum), and introduced four new experiments (based on DC motor control) that my students had built in the Networked Control Systems laboratory the preceding summer. Also, his team documented all the six experiments thoroughly so that other faculty and students may be able to deploy them even in their absence. These six new experiments enable the student to actually work with the software and hardware of the control systems, Potluri Ramprasad.
32. Responsible for Design and Tape out of first application specific integrated circuit (ASIC) at I.I.T. Kanpur. The tape out is due for fabrication by Europractice in Belgium. To promote design activities at other technical institutes, the Chip also has designs from three N. I. T.s which were integrated at I. I. T. Kanpur, Qureshi S.

#### Industrial Management & Engineering

33. Visiting Professor, Design Factory, Helsinki University of Technology, Espoo Finland, March to November, 2009, J Chatterjee.
34. Core Faculty at Interdisciplinary Product Development, Summer School of Helsinki University of Technology, 5<sup>th</sup> - 20<sup>th</sup> August, 2009, J Chatterjee.
35. Visiting Scholar in the department of Statistik und Ökonometrie at Justus-Liebig-Universität Gießen, Gießen, GERMANY, 4th May-12th May, 2009, Raghu Nandan Sengupta.
36. Japan Visit with VLFM second Batch 5<sup>th</sup>-18<sup>th</sup> July 2009; AK Mittal.
37. LUMS advisory Council meeting MIT Boston June 2009, AK Mittal.
38. Vice-President QCFI India; AK Mittal.
39. Centre of excellence at Penang Malaysia May 3-5, 2009; AK Mittal.
40. Draft CERC regulation for REC Framework Implementation 2009, issued by Central Electricity Regulatory Commission, Nov. 2009; Anoop Singh.
41. Member, Advisory Committee for Capacity Building of distribution Personnel under R-APDRP, Ministry of Power, Government of India; Anoop Singh.

42. Member, Research Advisory Committee, Council of Power Utilities, New Delhi; Anoop Singh.

#### Humanities and Social Sciences

43. Visiting Faculty in MA programme in Elementary Education, hosted jointly by the Tata Institute of Social Sciences, Digantar, Eklavya and Vidya Bhawan, Amman Madan
44. Member of advisory committee of Pragat Shikshan Sansthan, Phaltan, Amman Madan
45. Member of advisory committee, Vidya Bhawan Centre for Societal Studies, Udaipur, Amman Madan
46. Towards a meaningful school social science, Deccan Herald, Bangalore, 23<sup>rd</sup> April 2009, Amman Madan
47. Interview Create an India that is fearless in its search for truth, Deccan Herald, Bangalore, 8<sup>th</sup> April 2009, Amman Madan
48. Convener, Organizing Committee, National Workshop on Qualitative Research
49. Methods: Potential for the Science of Well-Being and Self-Growth at IIT Kanpur,
50. 24 - 27 February, 2010, Kumar Ravi Priya
51. Completed Initiation Grant Project 2008-09(September) (DORD, IITK) entitled, Productivity Analysis of the ICT sector and Linkage in some countries of South East Asia, Australia and New Zealand, Somesh K. Mathur
52. Consultant to National Knowledge Commission on TRIPS October, 2006 - 2008, National Knowledge Commission Report 2009, Somesh K.Mathur
53. Conducted English Skills and Active Learning Strategies Workshop for students and teachers of L. K. Singhania Education Centre, Gotan, Rajasthan, 9-10,July 2009, Suchitra Mathur
54. Visiting Faculty at IIT Gandhinagar from Feb 1, 2010 to April 30, 2010. During this period, participated in the Setting up of the counseling service, Advising for development of a communications centre, Co-teaching of a Ph.D. course in Literary Theory, Conducting a communication skills workshop for IIT Gandhinagar staff, Suchitra Mathur
55. Have been Head, Department of HSS, IIT Kanpur since May 26, 2009 (continuing), Lilavati Krishnan.
56. Coordinator of the Group on Impacts, Economics and Policy, as part of the proposed Center for Earth Systems and Climate Change Research, at I.I.T. Kanpur, Praveen Kulshreshtha.

57. Member, Solar Energy Research Enclave, at I.I.T. Kanpur, Praveen Kulshreshtha.
58. Working on an Initiation Grant Project on 'Philosophy and the Marathi Language', Prashant Bagad.
59. Cultural and Livelihood Objectives for Maintaining Sustainable Flows (Sponsored and Consultancy projects), P. Murali Prasad.

#### Materials Science and Engineering

60. Re Indian Key Leader for Indo-UK project entitled Effect of cation substitution on the structure and biocompatibility of ionomer glasses and glass ceramics with University of Birmingham, University of Warwick, University of Kent and Sree Chitra Tirunal Institute for Medical Sciences and Technology [SCTIMST, India], funded by UK-India Educational Research Initiative, January, 2009- , Dr. B. Basu.
61. Organized International Symposium on Hydrogen and Energy Storage on Jan. 14<sup>th</sup> 2010 as a part on IIT Kanpur's Golden Jubilee celebrations, K. Balani.
62. Material Advantage at IIT Kanpur, a technical student chapter in the Materials and Metallurgical Engineering Department, received award for Most Students Recruited with a cash prize of \$500.00 by Material Advantage Charter, K. Balani.
63. Delivered the GD Birla Gold medal lecture titled The knowledge based foundation of steelmaking and application in steel melt shop, Dipak Mazumdar.
64. Co-Chairman of the Organizing Committee, 4<sup>th</sup> Asian Particle Technology (APT-2009), held in New Delhi during September 14-16, 2009, S. P. Mehrotra.
65. Established a 3 kW, controlled atmosphere, microwave sintering facility by Dr. A. Upadhayay.

#### Chemistry

60. Spectrally resolved femtosecond photon-echo spectroscopy of astaxanthin, Ajitesh Kumar, S.K. Karthick Kumar, Vivek Tewari and Debabrata Goswami, Chemfest-2009, Poster Session, Dept. of Chemistry, IIT Kanpur, Oct. 31, 2009, D. Goswami.
61. Organized the fifth JNOST at IIT Kanpur under the aegis of the golden jubilee of IIT Kanpur December 2-5 2009, R. Gurunath.
62. Faculty incharge for the chatisgarh outreach lecture 2010. A set of lectures on various topics were coordinated and given in L-14, R. Gurunath.



63. Member DPGC, department of chemistry, IIT Kanpur, R. Gurunath.
64. Member, Faculty forum executive committee, IIT Kanpur ,R. Gurunath.
65. Member, executive committee, Indian peptide society, R. Gurunath.
66. SURGE-2010, Summer Undergraduate Research for Excellence, Faculty-in-charge, Madhav Ranganathan.
67. DUGC - Department of Chemistry, Department Undergraduate Committee Convener, Madhav Ranganathan.
68. Organized a satellite (SABIC, TIFR) (mini) one day symposium on bio- inorganic chemistry, in the department of chemistry, IITK , November 9, 2009, S. Sarkar.
69. Participated in the brainstorming session at IISc on the KVPY (Kishor vaygyanik prothshahan yojana) program, April 2010, K. Srihari
70. Editing a book entitled Dynamical tunneling: Theory and Experiments along with Peter Schlagheck (Belgium), to be published by Taylor and Francis/CRS press, 2010, K. Srihari.

#### Mathematics and Statistics

71. Member, Programme Committee, 12<sup>th</sup> International Conference on Rough Sets, Fuzzy Sets, Data Mining & Granular Computing (RSFDGrC 2009), December 16-18, 2009, Delhi, Mohua Banerjee.
72. Member, Programme Committee, 7<sup>th</sup> International Conference on Rough Sets and Current Trends in Computing (RSCTC 2010), June 28-30, Warsaw, Poland, Mohua Banerjee.
73. Coordinator of a Workshop for Mathematics School Teachers, Organized by the National Academy of Sciences, India at Allahabad, Sept. 19,20,2009. Resource persons included Prof. U.B. Tewari, Prof. V. Raghavendra, Prof. Neeraj Misra, Prof. D. Kundu and Prof. A.K. Lal from IIT Kanpur, P. Chandra.
74. National Workshop cum training programme on Dynamical System: Analysis and Applications, Department of Mathematics, BHU , Varanasi, Oct. 22-31,2009 – Gave two invited talks on Mathematical Modeling and epidemiology, P. Chandra.
75. National Meet of Research Scholars for Mathematical Sciences, IIT Roorkee, Dec. 19-23, 2009. Delivered an Invited talk on ‘Mathematical Writing’, P. Chandra.
76. Presided the 75<sup>th</sup> Annual session of Indian Mathematical Society, held at Kalasalingam University, Krishnankoil (TN), Dec. 26-30,2009. Delivered Presidential address – General and Technical on Dec. 26, 2009, P. Chandra.
77. Delivered two invited lectures in the DST Workshop on ‘Mathematical Models for Biofluid flows and Application’ at SV University, Tirupati, Jan. 23,24,2010, P. Chandra.

78. Member, International Scientific Committee 1st and 2<sup>nd</sup> Chaotic Modelling and Simulation International Conference, June 3-6, 2008, June 1-5, 2009, Chania, Crete, Greece, G.P. Kapoor.
79. Editorial Board Member of the Journal of Modern Applied Statistical Methods, D. Kundu.
80. DST Sponsored Serc Project Analyzing non-stationary signals Duration 3 years, Mitra.
81. Sponsored projects sponsored by/ DST, April 2009 to April 2012 Accelerated Life Testing, S. Mitra.
82. Chaired a session on fluid flow analysis in Int. Conf. Mathematical Modeling and nonlinear equations, Jan. 20-22, 2010, BNMIT, Bangalore, B. V. Rathish Kumar.
83. Chaired a student paper presentation session in National Meet for Research Scholars in Mathematical Sciences, Dec. 19-23, IIT, Roorkee, B.V. Rathish Kumar.
84. Indo-German Conference on PDES, Scientific computing and optimization in Applications. Oct 7-9, 2009, IIT Kanpur, B.V. Rathish Kumar.
85. Special session on PDEs, Scientific Computing & Applications in IMS 2009, Dec. 27-30, 2009 KL Univ, Maduria, Tamilnadu, B.V. Rathish Kumar.
86. On the Editorial Board for Journal of the International Academy of physical sciences since July 2009, B.V. Rathish Kumar.
87. Visiting faculty at Mathematics Training and Talent Search Programme (MTTS) held Mysore during May 18-June 13, 2009. I taught a course of lecture on Topology, G. Santhanam.

## Physics

88. Visiting Professor, University Joseph Fourier, Grenoble, France, 5<sup>th</sup> May 2009 - 23<sup>rd</sup> July 2009, A.K. Gupta.
89. Working on the development of a remote low temperature laboratory accessible through the internet along under MHRD's Virtual Labs project. A K Gupta and K.P. Rajeev.
90. Chair, organizing committee, ICTS program on Non-Equilibrium Statistical Physics, part of Golden Jubilee Celebration of IIT Kanpur, 30th January - 8<sup>th</sup> February, 2010, IIT Kanpur. D. Chowdhury.
91. Chair, organizing committee, International Conference on Interaction, Instability, Transport and Kinetics: Glassiness and Jamming, part of Golden Jubilee Celebration of IIT Kanpur, 4-8 February, 2010, IIT Kanpur. D. Chowdhury.

92. S.A. Ramakrishan visited IISER Mohali as an Adjunct Faculty and taught a course module on electromagnetic antennas for the M.Sc. Physics students there. (23rd Oct. 29<sup>th</sup> Oct. 2009).
93. Convenor, organizing committee, ICTS program on Non-Equilibrium Statistical Physics, part of Golden Jubilee Celebration of IIT Kanpur, 30th January - 8<sup>th</sup> February, 2010, IIT Kanpur, S. S. Banerjee.
94. Convenor, organizing committee, International Conference on Interaction, Instability, Transport and Kinetics: Glassiness and Jamming, part of Golden Jubilee Celebration of IIT Kanpur, 4-8 February, 2010, IIT Kanpur, A. Dutta.
95. Convenor, organizing committee, International Conference on Interaction, Instability, Transport and Kinetics: Glassiness and Jamming, part of Golden Jubilee Celebration of IIT Kanpur, 4-8 February, 2010, IIT Kanpur, S. S. Banerjee.
96. Convenor, organizing committee, ICTS program on Non-Equilibrium statistical Physics, part of Golden Jubilee Celebration of IIT Kanpur, 30<sup>th</sup> January - 8<sup>th</sup> February, 2010, IIT Kanpur, A. Dutta