Annual Report 2003-04

Director's Report

It is indeed a privilege for me to present the Director's Report for the year 2003-2004 including the major events and performance of the Institute.

Many of you would already be aware that *India Today* survey for this year shows IIT Kanpur as the best Institution for technical education in the country. Regaining this pre-eminent position by the Institute has been largely made possible by the dynamic leadership provided by the Chairman, Board of Governors and the tireless efforts of all the members of the IITK fraternity.

I am happy to share with you the good news that Mr. Karan Malhotra, a first-year undergraduate student (who will soon move into his second year) of Electrical Engineering Department, has been chosen for the prestigious Lucent Scholarship in recognition of his outstanding all-round qualities among all the undergraduate students in the country. The Bell Labs in New Jersey has invited him along with selected students from across the globe for visiting various laboratories and meeting scientists including some Nobel Laureates. Our hearty congratulations to Karan! It is people like Karan who keep IITK flag flying high.

ACADEMIC ACTIVITIES

The academic year 2003-2004 has had a successful run. The number of graduating students both at the undergraduate (B.Tech-337, M.Sc. (5 year Integrated)-27, M.Sc. (2 year)-47, Total = 411) as well as postgraduate (M.Tech-113, MBA-28, Ph.D-45, Total = 186) level shows a fairly satisfactory trend. The M. Tech. programme has become a four- semester programme. Hence the actual number of students receiving the degree in this Convocation has decreased somewhat. The enrolment in the Doctoral programme as well as the publication record of the faculty and students for the academic year 2003-2004 has improved considerably.

The year 2003-2004 was in a sense special in the history of IIT Kanpur. On the first of October 2003, the then Prime Minister Shri Atal Bihari Bajpai inaugurated the state-of-the–art building for the new department of biological sciences and bio-engineering. Many of you may recall that the new initiative in biological sciences and bio-engineering and the building and the equipment therein were made possible owing to the generous support from the then Honorable Minister for Communication and Information Technology, Shri Arun Shourie, who donated his MPLAD funds. I am happy to mention here that we have been able to put together a team of young and energetic scientists and engineers in this fledgling department. The quality of research carried out there is already being recognized through liberal grants from the Wellcome Trust to Drs K Subramaniam and Balaji Prakash.I must also mention

here that yet another young faculty member Dr Debabrata Goswami of Chemistry department has also been conferred the Wellcome Trust grant.

AWARDS AND HONORS

The faculty and the students of IITK continue to break new grounds in the forefront of research. This has been duly recognized in the form of various Awards and Honors to the faculty and best paper awards to the students. This year's Bhatnagar Prize went to Dr Manindra Agrawal in the area of Mathematical Sciences and to Dr V. Chandrasekhar in the area of Chemical Sciences. I am proud to add that Dr G. Ravi Kumar, a former Ph.D student of Physics at IITK, also received the Bhatnagar Prize for Physical Sciences for the year 2003. While Dr Manindra Agrawal and Dr Debashish Choudhury were elected Fellows of the Indian Academy of Sciences, Bangalore, Dr Ashutosh Sharma was elected a Fellow of the Indian National Science Academy, New Delhi. Drs Gautam Biswas, C. Venkatesan, Ashutosh Sharma and Manindra Agrawal were elected Fellows of the Indian National Academy of Engineering. Dr Pankaj Jalote was elected a Fellow of IEEE, USA. Drs V. Shankar and Anish Upadhyaya have been chosen for the Young Scientist Award of the Indian National Science Academy, New Delhi. Drs Sanjay Mittal of Aerospace Engineering and F.A. Khan of Chemistry department have been conferred the Swarna Jayanti Fellowship for 2003. The list of Awards and Honors being long, I am including it as an addendum to my report.

Thanks to the generosity and thoughtfulness of our Chairman, we have been able to institute a CNR Rao Lecture Series. This recognizes an outstanding researcher from within the Institute and this year such an honor is bestowed on Dr Ashutosh Sharma of Chemical Engineering Department.

I would like to mention here that IIT Kanpur continues to provide leadership in both technical education and also in research and development in the country. While Dr Krishna Kumar of Aerospace Engineering has been appointed the Director of MNNIT, Allahabad, Dr T. K. Chandrashekar of Chemistry Department has been appointed Director of Regional Research Laboratory, Thiruvananthapuram.

RESEARCH & DEVELOPMENT

IIT Kanpur faculty have undertaken a large number of sponsored projects. 326 new projects worth Rs 45 crore have come in the last year. The Institute has received approval for the Technology Mission on Rail Safety from the Government of India. Railways, MHRD and IIT Kanpur will participate in the scheme along with the industry. IIT Kanpur will co-ordinate the entire programme worth Rs 30 crore.

With the aim of bringing the benefits of information and communication design technologies to farmers and traders of agriculture commodities in this region, the Kanpur- Lucknow hub of Media Lab Asia has established a Digital Mandi and an experimental wireless VOIP phone based PCO extension counter at a nearby village. Technology developed at the Resource Center for Indian Languages has been transferred to eight centers for machine aided translation from English to Oriya, Bengali, Marathi, Assamese, Manipuri, Konkani, Urdu, Punjabi, Malayalam and Sanskrit. Software code compliance tool and software test coverage analyzer developed at the Department of Computer Science and Engineering have been commercialized by the Center for Reliability, Chennai, a laboratory of Ministry of Communication and Information Technology. A range-sensing, indoor, mobile robot equipped with micro-controller sub-system, laser range finder and wireless connectivity sub-system has been developed for BARC. This robot is capable of real time surveillance in hazardous environments. The Department of Mathematics has developed a video re-focusing technology through digital mathematical processing which compensates for the physical limitation of a camera. The processed images and video are quite crisp, live, non-straining to the eye and retain the scientific details necessary for technical work. This technology is expected to bring about a significant change in different kinds of video communication. Many companies including *Zee Television* have evinced interest in this technology. The work done on nano-sciences in the department of chemistry has been duly recognized through the Global Indus Technovator Award 2003 given by India Business Club of Massachusetts Institute of Technology, USA.

We continue to interact vigorously with industry. General Motors has sponsored a project for studying the galvanic corrosion behaviour of specific combination of light metal alloys. IIT Kanpur is conducting a study for gas phase nitration of organic and inorganic substances for Jubilant Organosys Ltd. Web-based energy audit and accounting software and trouble call management software for power distribution utilities developed at the Department of Electrical Engineering have been commercialized by Interra (India) Pvt.Ltd. Our faculty members are regularly providing consultancy services to major organizations such as TISCO, TELCO, Gas Authority of India Ltd., Hindustan Levers Limited, and Hindustan Aeronautics Limited, among others.

As in the past, this year also we have undertaken projects with direct societal relevance. The Department of Physics has designed a number of innovative, unconventional and exciting experiments for changing the present blackboard-intensive Physics education at school level by do-it-yourself methodology. To disseminate quality education to all, e-classrooms have been established at Raipur and Bilaspur and training of forty five teachers has been completed under the IIT Kanpur- Government of Chattisgarh collaboration. Under the IIT Kanpur – Khadi and Village Industries Commission collaboration, two projects on design, development and fabrication of bio-gas filling pilot plant and design and development of a bio-diesel pilot plant have been initiated. IIT Kanpur has embarked on a unique project of developing and applying point cloud technology and rapid proto-typing methodology for the three dimensional digital recording of the landmark monuments and other culturally

significant artifacts of the National Heritage of India. A new electro-thermally heated jacket with immense importance for defence personnel is being developed.

With the growing awareness of the importance of protecting intellectual property, the number of patent applications has increased to fifteen as compared to the ten filed the previous year. Some of these include a process for controlled synthesis of high molecular weight micron sized polymers, design of a high efficiency rotating packed bed suitable for distillation and absorption, and a tubular microwave sintering furnace with controlled atmosphere. IIT Kanpur has recently been awarded a U.S. patent for magneto-conductive polymer composites. These polymer blends have potential applications in avionic tubes and as flexible magnetic sensors. Another U.S. patent has been filed on polynomial time deterministic method for testing primality of numbers. This has wide ranging applications in cryptology.

IIT Kanpur participated in the one day workshop on nano-sciences and nano-technology held on April 29, 2004 at Rashtrapati Bhavan. The Institute is planning a major research initiative in this area. One proposal has been submitted to DST and another is being submitted to DRDO. Several activities are being envisaged under the new initiative in this area.

RESEARCH INFRASTRUCTURE DEVELOPMENT

To strengthen the research infrastructure, the Institute has procured a large number of new equipment: laser scattering particle size analyzer, coincidence Doppler positron annihilation radiation system; drill core scanner for magnetic susceptibility & natural gamma ray measurements; high pressure thin layer chromatography system; optical spectrum analyzer; 3-D surface profilometer to characterize material surfaces; gas chromatograph-mass spectrometer system equipment and an affymetrix scanner. FEI Quanta 200HV Scanning Electron Microscope with EDS and EBSD attachment. The electron paramagnetic resonance system procured last year under FIST from the Department of Science and Technology has been commissioned. As a recent initiative, the Institute has set-up a new `4i Laboratory with the objective of facilitating design evolution into complete products. This facility is equipped with a CNC vertical milling center, CNC turning center, fused deposition modeling, rapid prototyping, and abrasive water jet cutting machine. The SIDBI center for incubation is already operational. The SAMTEL R & D building is now fully functional.

FINANCIAL POSITION

The Institute has had a satisfactory financial year during 2003-04. The total non-plan grant(s) from MHRD was Rs 68 crore and that from the total plan funds was Rs 20 crore. The Institute received a grant of Rs. 3 crore (approximately) for various schemes like R & D, thrust area and laboratory modernization. MHRD has switched over to formula-based

funding and the Institute effectively strives to re-position itself in order to meet the challenges posed by this new funding pattern. I am sure with the able guidance of our Chairman and the support of the alumni and other well wishers of the Institute, we will rise to the occasion.

Thanks to the alumni living abroad, we have received Rs 65 lacs through the IIT Kanpur Foundation USA. We have also received Rs 43 lacs from the 1979 batch, Rs 2.86 lacs from the 1968 batch, Rs 10.37 lacs from the 1969 batch and Rs 8.62 lacs from the 1990 batch. In addition we have received liberal donations from various alumni towards establishing different lecture series in different departments (Arindam Bose, Rs 2.35 lacs for BSBE; Umang and Ruth Gupta, Rs 6.76 lacs for Alumni Lecture Series; Rakesh Pandey, Rs 4.5 lacs for Mechanical Engineering department; R. Ram Kumar, Rs 5 lacs for E. C. Subarao Lecture Series in MME department; Vijay Vittal, Rs 4.5 lacs for Department of Electrical Engineering and Computer Science & Engineering; Rajesh Gopakumar, Rs 45,000/- for Physics Department). We have also received from Ajit Gill Rs 13.54 lacs for the BSBE department and from Dr G. S. Kainth Rs 1 lac towards the establishment of Dr Gurcharan Singh Kainth Scholarship. The alumni continue to support the Institute morally, physically and financially. I wish to place on record our gratitude to all of them on behalf of the faculty, staff and students of IITK and on my own.

STUDENT ACTIVITIES

IIT Kanpur continually strives to encourage an equitable balance between academics and extra-curricular engagements among the students. The intention is to create future leaders in their chosen fields and not just technically accomplished individuals. The Institute strongly believes that a deep and abiding social and humane commitment is the hallmark of its students. In order to foster such an engagement, the Institute provides adequate support to the various social, cultural and sport activities pursued by the Student Gymkhana and other student groups.

A whole range of activities are pursued by the 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 involved plays. Other technically oriented student groups are engaged throughout the year in pursuing special interests like robotics, electronic aids, animation, aero-modeling and astronomy, to name a few.

Large scale events like Antaragni (Cultural), Udghosh (Sports), Techkriti (Science and Technology), Megabucks (Business Club), Umang (SFS) are also organized by the students. Here there is an emphasis on outside participation to facilitate a dynamic and broadly networked spectrum of social and professional discourses. The Gymkhana Festivals have

seen vastly improved participation levels, both from within the institute and also from students from other Indian and International Institutes. The revenue generated from the conduct of these well-organized festivals registered a dramatic growth this year and ably testifies to the managerial and logistical skills of our students. Certain new initiatives effected this year include 'Index', an Industrial Exhibition organized as part of Techkriti. It is designed to provide a platform for student- industry interface. The Students Film society, in association with the Japanese Consulate, organized a Japanese Film Festival providing a forum for cultural exchange of ideas. The Japanese Consul and other Diplomatic Staff were special invitees to the event.

In the arena of sports, IIT Kanpur put up a creditable performance in the inter IIT sports meet held at IIT Bombay. The team finished fourth in the General championship and had a number of podium performances both in the team and individual events. To strengthen the sports culture, an inter-hall games event called JOSH was organized, and this event witnessed mass participation from the students.

Other activities like Nature trails, trekking, and mountaineering are being taken up actively by students. The NCC unit in addition to maintaining a commendable track record in the group also organized a para-sailing camp in the Institute this year. Student interest in hobbies like Photography and Music is also being actively encouraged, and the Institute provides the enthusiasts of these and other clubs with the requisite funds and equipment.

Discussion and debate in the student community is being sustained by both the general interest student magazine 'Meander and the Campus News reportage of 'Spark'. These journalistic endeavors have been successful in cultivating a broad awareness in the student community of certain problems. They facilitate an active personal engagement in the system of redressal and also act as a sounding board for student opinion.

The placement scenario this year has witnessed a positive upswing with almost 84% of the B.Tech and 57% of the M. Tech students registered with the student placement office getting offers. Invitations had been sent out to nearly 700 public and private organizations and the response from various National and International business majors has been encouraging. Many companies of repute also registered for the on campus recruitment program for the first time. With an improved facilitation and response system in place, we earnestly hope that the coming year would see increased participation of companies and industrial organizations for placement and industrial training programs for the students, respectively.

Hostel infrastructure has registered a marked improvement with the renovation of facilities in the respective halls. Hall-7 is fully functional and capacity is being added in the form of Hall-8 with 484 seats, which is nearing completion and due for occupation by the next semester. We are happy to note that the sanctioned increase in strength does not pose a constraint as the infrastructural plans of the institute keep pace with the proposed increase.

CLOSING REMARKS

I heartily congratulate all the graduating students. This campus has given you the knowledge as well as a unique value system. We all fervently hope that you would excel in your professional career. It is time for you to get prepared to see a globally competitive world. Some of you will choose to work in the industry, some of you will choose to go in for higher studies, some of you will opt for a career in management, and some of you will prefer to serve the society as civil servants. Whatever be your chosen profession, please remember that innovation and integrity should remain your guiding principles. You are the one whom the world needs to provide novel solutions for its complex problems. As you step into the real world, be ready to face situations that will repeatedly challenge your values. You will need to stand firm and face such situations bravely. At best, this Institute has provided you an environment that has helped you internalize several principles, acquire some skills, and gain knowledge of several fields. All this translates into the basic capital of your life. While the journey ahead constitutes the real learning for you, be assured that the spirit of IITK which you have imbibed will act as your conscience and help you to negotiate the crises and perils of this journey. You are now our alumni. We are proud of you. We also hope that from now on you will play the role of a trustee for the Institute. Your contributions will enrich the heritage of IITK. Wherever you are, we will always be happy and proud to hear about your success. If you need guidance, please feel free to seek the help of your alma mater. Our relationship thus far as teacher and the taught now graduates to that of mutual friends. This new relationship is a most beautiful gift that your teachers have given you today. I'm sure you will cherish it as your lifelong treasure.

Sanjay G Dhande

AWARDS AND HONOURS

Dr. Manindra Agarwal, Professor in the Department of Computer Science and Engineering, has received this year's Bhatnagar Award in Mathematical Sciences.

Dr. V. Chandrasekhar, Professor in the Department of Chemistry, has received this year's Bhatnagar Award in Chemical Sciences.

Dr Sanjay Mittal, Professor in the Department of Aerospace Engineering, has been selected for the Swarnajayanti Fellowship 2003.

Dr F. A. Khan, Associate Professor in the Department of Chemistry, has been selected for the Swarnajayanti Fellowship 2003.

Dr. Ashutosh Sharma, Professor in the Department of Chemical Engineering, has been elected a Fellow of the Indian National Science Academy.

Dr. Gautam Biswas, Professor in the Department of Mechanical Engineering, Dr. C. Venkatesan, Professor in the Department of Aerospace Engineering, Dr. Ashutosh Sharma, Professor in the Department of Chemical Engineering and Dr. Manindra Agarwal, Professor in the Department of Computer Science and Engineering, have been elected Fellows of the Indian National Academy of Engineering.

Dr. Pankaj Jalote, Professor in the Department of CSE, has been elected a Fellow of IEEE, USA

Dr. D.Chowdhury, Professor in the Department of Physics, has been elected a Fellow of the Indian Academy of Sciences, Bangalore.

Dr. Rajiv Sinha, Associate Professor in the Department of Civil Engineering, has been selected for the National Mineral Award 2002.

Dr K. Subramaniam, Assistant Professor in the Department of BSBE, has been chosen for the Wellcome International Senior Research Fellowship.

Dr Vinod K. Singh, Professor in the Department of Chemistry, has been chosen as the recipient of the Bronze Medal of the Chemical Research Society of India for the year 2003.

Dr T. K. Chandrashekar, Professor in the Department of Chemistry, has been chosen the Professor Priyadaranjan Ray Memorial Awardee of the Indian Chemical Society for the year 2002.

Dr Anish Upadhyaya, Assistant Professor in the Department of MME, has been invited to serve as the Editorial Advisory Board member for the Journal, Transaction of the Indian Ceramic Society.

Dr. G. Ravindra Kumar, former Ph.D. student under Professor K. K. Sharma in the Department of Physics at IIT Kanpur, has been chosen for this year's Bhatnagar Award in Physical Sciences.

Dr. Neeraj Mishra, Associate Professor in the Department of Mathematics, has been selected as a recipient of the C.L. Chandna Award for Distinguished and Outstanding Contributions to Mathematics Research and Teaching in India for the year 2003.

Dr. H. Ila, Professor in the Department of Chemistry, has been chosen the C.J. Ghosh Memorial Lecturer for the year 2002 by the Indian Chemical Society. Dr. Ila and her husband Professor Junjappa have received this year's Chairman's Award of Astrazeneca Research Foundation of India.

Dr. S. Sundar Manoharan, Associate Professor in the Department of Chemistry, has been conferred the Global Innovator Award during November 2003 at MIT.

Dr. S.P. Das, Associate Professor in the Department of Electrical Engineering, and Dr. Bhaskar Dasgupta, Assistant Professor in the Department of Mechanical Engineering, have been chosen for the Young Engineer Awards (2003).

Dr. Krishna Kumar, Professor in the Department of Aerospace Engineering and presently Director of MNNIT, Allahabad, has been chosen for this year's Excellence in Aerospace education award by Aeronautical Society of India.

Dr. Avinash Agarwal, Assistant Professor in the Department of Mechanical Engineering, has been invited to join the Editorial Board of Journal of Automobile Engineering, a journal published by the Institution of Mechanical Engineers, U.K.

Dr. Bikramjit Basu, Assistant Professor in the Department of Materials and Metallurgical Engineering, has been chosen for this year's RL Thakur Memorial Award of the Indian Ceramic Society. He has been chosen for the award in recognition of his valuable contributions in the field of Materials Science.

Dr. T.K. Chandrashekar, Professor in the Department of Chemistry and presently Director of RRL, Trivandrum, has been chosen for this year's CHEMITO award.

Dr. D.P. Mishra, Assistant Professor in the Department of Aerospace Engineering, has been elected a member of the executive committee of Combustion Institute (IS).

Dr. V.K. Singh, Professor in the Department of Chemistry, has been chosen for the "Goyal Prize for Young Scientist" in Chemistry.

Dr S. S. Katiyar, former faculty in the Department of Chemistry, has been re-appointed as Vice-Chancellor of CSJM University Kanpur for a period of 3 years w.e.f. 25-07-2003.

In the recently held 6th National Symposium of the Chemical Research Society of India, the following awards went to the faculty and students of the Chemistry Department:

Young Chemist award to Professor J.N. Moorthy

Two of the 6 best poster awards to Madhavaiah (a Ph.D student working under the guidance of Dr. S. Verma) and Hare Krishnan (a Ph.D student working under the guidance of Dr. R. Gurunath).

BOOKS PUBLISHED

Dr. TVS Ramamohan Rao, Professor in the Department of HSS, has written a book entitled CONTRACT ECONOMICS with QIP funds. This book is published by New Age International (P) Limited, India.

Dr. S.D. Joglekar, Professor in the Department of Physics, has written and submitted a manuscript of Mathematical Physics, Volume II with QIP funds.

Dr. Gautam Biswas, Professor in the Department of Mechanical Engineering, has released the second edition of the book, "Introduction to Fluid Mechanics and Fluid Machines. This book is published by Tata McGraw-Hill.

Dr. V.K. Jain, Professor in the Department of Mechanical Engineering, has been appointed a member of the Editorial Board of the International Journal of Manufacturing Technology and Management being published by Inderscience Publishers (UK).

The Text book of Ordinary Differential Equations, 2nd Edition authored by Dr. V. Raghavendra, Professor in the Department of Mathematics and published by Tata McGraw-Hill has undergone 4th reprint.

MAJOR SPONSORED RESEARCH PROJECTS

WELLCOME TRUST

Project Title	Amount (in Lakhs)
Identification and characterization of genes involved in germ cell development in caenorhabditis elegans	152.34

DEPARTMENT OF BIOTECHNOLOGY

Project Title	Amount (in Lakhs)
Cancer genomics in drosophila: areal time expression profilling of cancers of diverse genetic origin	167.4

Organisation

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

THE IITS COUNCIL

Chairman
Dr. Murli Manohar Joshi
Minister of Human Resource Development
New Delhi-110 001

Chairmen of the Seven Institutes (Ex-officio)
Shri Sanjeev Goenka
Chairman, Board of Governors, IIT Kharagpur
RPG Group of Companies
Coat Ltd. 463, Dr AB Road
Mumbai-400025

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

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

Shri Hari S Bhartia (Upto-11.06.2003)
Chairman, BOG IIT Kanpur
Plot No. I-A, Sector 16-A
Industrial Area
Noida-201301

Prof. C.N.R. Rao (From 12.06.2003)
Chairman, BOG IIT Kanpur
Linus Pauling Research Profesor & Honorary President
Jawaharlal Nehru Centre for Advanced Scientific Research
P.O. Jakkur
Bangalore-560064

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

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

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

Directors of Institute (Ex-Officio)

Prof. S K Dube	Kharagpur
Prof. Ashok Misra	Bombay
Prof. M S Ananth	Madras
Prof. SG Dhande	Kanpur
Prof. RS Sirohi	Delhi
Prof. Gautam Barua	Guwahati
Prof. PremVrat	Roorkee

Other Members (Ex-Officio)

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

Dr. RA Mashelkar
Director General
Council of Scientific & Industrial Research
Anushandhan Bhawan, Rafi Marg, New Delhi

Dr. Raja Ramanna
Chairman, Council of IISc Bangalore
National Institute of Advance Studies
Indian Institute of Science, Bangalore-560012

Prof. Goverdhan Mehta
Director
Indian Institute of Science, Bangalore-560012

Nominees of the Central Goverrnment
Shri VS Pandey
Jt. Secretary
Ministry of Human Resource Development
Government of India
Department of Secondary Education and Higher Education
Shastri Bhawan
New Delhi-110001

Shri VK Pipersenia
Financial Adviser
Government of India
Ministry of Human Resource Development
Department of Education
Shastri Bhawan
New Delhi-110001
Shri S K Tripathi
Secretary
Department of Secondary Education & Higher Education
Government of India
Ministry of Human Resource Development
Shastri Bhawan
New Delhi-110001

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

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

Nominee of All-India Council for Technical Education
Prof. R Natarajan
Chairman
AICTE

Nominee of the Visitor
Shri N R Narayan Murty
Chairman
Infosys Technologies Ltd.
Bangalore

Dr. R. Chidambaram
Principal Scientific Adviser
to the GOI
New Delhi

Prof. P V Indiresan,
Former Director,
IIT Madras

Shri L M Thapar
Chairman
Ballarpur Industries

Three Members of the Parliament (two from Lok Sabha and one from Rajya Sabha)
Shri Prithviraj D Chavan
Member of Parliament (Lok Sabha)
C-12, Humayun Road
New Delhi-110003

Shri MA Kharabela Swain
Member of Parliament
166 North Avenue
New Delhi-110001

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

Secretary
Shri VS Pandey
Jt. Secretary (Technical)
Ministry of Human Resource Development
Government of India
Department of Secondary Education and Higher Education
Shastri Bhawan
New Delhi-110001

THE BOARD OF GOVERNORS

Chairman
Shri Hari S Bharatia (Upto 11.06.2003)
Chairman & Managing Director
Vam Organic Chemicals Limited
Plot No. 1A, Sector 16-A
Industrial Area
Noida-201301

Prof. C.N.R. Rao (From 12.06.2003)
Linus Pauling Research Profesor & Honorary President
CISR Centre of Excellence in Chemistry
Chemistry & Physics of Materials Unit
Jawaharlal Nehru Centre for Advanced Scientific Research
P.O. Jakkur
Bangalore-560064

Members
Four Members of the Council of IITs (From 01.02. 2001)
Prof. G K Mehta (Upto 07.02.2004)
Vice Chancellor (Renominated w.e.f. 08.02.2004)
University of Allahabad, Allahabad-211001

Dr. Paul Ratnaswamy (Upto 07.02.2004)
Director
National Chemical Laboratory, Pune 411 008

Prof. D.P.Singh
Vice Chancellor
UP Rajasrshi Tandon Open University
17, Maharashi Dayanand Marg
(Thornhill Road), Allahabad-211 001

Prof. S.Lele (From 08.02.2004)
Director
Institute of Technology,
Banaras Hindu University,
Varanasi-221005

Shri Anil Ambani (From 08.02.2004)
Vice-Chairman & Managing Director
Reliance Industries Limited
Makers Chambers- VI, Nariman Paoint
Mumbai-400021

Shri V S Pandey
Joint Secretary (Technical)
Government of India
Department of Secondary Education and Higher Education
Ministry of Human Resource Development
Shastri Bhawan,
New Delhi-110001

The nominees of the concerned State Government

Prof. P B Sharma (From 06.03.2002)
Principal
Delhi College of Engineering
(Govt. of National Capital Territory of Delhi)
Bawana Road,
Delhi-110042

Prof. S S Katiyar (Upto 24.04.2004)
Vice-Chancellor (Renominated w.e.f. 12.05.2004)
Chhatrapati Sahuji Maharaj University
Kanpur-208024

Shri Rakesh Bhan (From 17.4.2002)
Adviser to the Chief Minister
Chattisgarh Bhawan
7 Sardar Patel Marg
New Delhi-110022

Director (Ex-officio)
Prof. S G Dhande

Two Nominees of the Senate
Prof. Sarvesh Chandra (Upto 31.12.2003)
Department of Civil Engineering
IIT Kanpur

Prof. V. Bansal (From 01.01.2004)
Department of Materials & Metallurgical Engineering
IIT Kanpur

Prof. Binayak Rath (Upto 31.12.2003)
Department of Humanities and Social Sciences (Re-nominated from 01.01.2004)
IIT Kanpur

Secretary
Professor NK Sharma
Professor Incharge (Admin)
and Secretary, Board of Governors
IIT Kanpur

THE FINANCE COMMITTEE
Shri Hari S. Bhartia (Upto 11.06.2003)
Chairman & Managing Director
Vam Organic Chemicals Limited
Plot No. 1-A, Sector 16-A
Institutional Area, Noida-201301

Prof C.N.R. Rao (From 12.06.2003)
Research Professor & Honorary President
CISR Centre of Excellence in Chemistry
Chemistry & Physics of Materials Unit
Jawaharlal Nehru Centre for Advanced Scientific Research
P.O.Jakkur, Bangalore-560 064

The Nominees of the Central Government
Shri V K Pipersenia
Financial Advisor
Ministry of Human Resource Development Government of India
Department of Education
Shastri Bhawan, New Delhi-110001

Shri V S Pandey
Joint Secretary (T)
Ministry of Human Resource Development
Government of India
Department of Secondary Education and Higher Education
Shastri Bhawan
New Delhi-110001

Nominees of the Board

Prof. G K Mehta (Upto 07.02.2004)
Vice Chancellor (Renominated from 08.02.2004)
University of Allahabad
Allahabad-211001

Prof. Binayak Rath (Upto 31.12.2003)
Department of Humanities and Social Sciences (Re-nominated from 01.01.2004)
IIT Kanpur

Director (Ex-Officio)
Prof. S G Dhande

Secretary
Professor N K Sharma
Professor Inchage (Administrtion)
and Secretary, Finance Committee
IIT Kanpur

THE BUILDING AND WORKS COMMITTEE

Chairman
Prof. S G Dhande
Director
IIT Kanpur

Members
Shri S P Singh
Chief Engineer (Northern Zone)
Central Works Department
Uttaranchal-2 Sector H
CGO Complex 3rd Floor
Lucknow-226024

Shri P B Vijay
M-21, Greater Kailash-II
New Delhi-110067

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

Prof. Sarvesh Chandra (Upto 31.12.2003)
Depatment of Civil Engineering
IIT Kanpur

Prof. V. Bansal (From 01.01.2004)
Department of Materials & Metallurgical Engineering
IIT Kanpur

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

Professor Kripa Shanker
Deputy Director
IIT Kanpur

Professor NK Sharma
Professor Incharge (Administrtion)
and Secretary, Building and Works Committee
IIT Kanpur

SENATE
[From 01.04.2003 to 31.03.2004]

Director & Chairman Senate:
Prof. Sanjay Govind Dhande

Deputy Director:
Prof. Kripa Shankar

Members of the Senate :

AEROSPACE ENGINEERING (AE):

Prof. NGR Iyengar	
Prof. AK Gupta	[Upto 20.06.2003]
Prof. Krishna Kumar	
Prof. Vijai Gupta	
Prof. SC Raisinghani	[Upto 08.03.2003]
Prof. Kunal Ghosh	
Prof. RK Sullery	
Prof. Dayanand Yadav	
Prof. E Rathakrishnan	
Prof. C. Venkatesan	
Prof. T.K. Sengupta	
Prof. Sanjay Mittal	[From 14.10.2003]
Prof. Sudhir Kamle	[From 14.10.2003]
Prof. Kamal Poddar	[From 14.10.2003]
Dr. C S Upadhyay	[From 01.10.2003]

BIOLOGICAL SCIENCES & BIO-ENGINEERING (BSBE):

Prof. Pradip Sinha

CHEMICAL ENGINEERING (CHE):

Prof. DN Saraf	[Upto 30.06.2003]
Prof. MS Rao	
Prof. SK Gupta	
Prof. Anil Kumar	
Prof. Deepak Kunzru	
Prof. JP Gupta	
Prof. YV Chalapati Rao	
Prof. DP Rao	
Prof. RP Singh	
Prof. PK Bhattacharya	
Prof. RP Chhabra	
Prof. Ashok Khanna	
Prof. Ashutosh Sharma	

CHEMISTRY (CHM):

Prof. SK Dogra

Prof. N Sathyamurthy
Prof. S Sarkar
Prof. BD Gupta
Prof. YD Vankar
Prof. TK Chandrashekar
Prof. V Chandrasekhar
Prof. RN Mukherjee
Prof. Parimal K Bhardwaj
Prof. (Ms) H Ila
Prof. N.S. Gajbhiye
Prof. P. Gupta Bhaya
Prof. Amalendu Chandra
Prof. Veejendra K Yadav
Prof. Vinod K Singh
Prof. S. Manogaran
Dr. R. Gurunath [From 01.12.2002]

CIVIL ENGINEERING (CE):
Prof. NSV Kameswara Rao [Upto 30.06.2003]
Prof. MR Madhav [Upto 30.06.2003]
Prof. Ashwini Kumar
Prof. Malay Chaudhari
Prof. BC Raymahashay
Prof. B.R. Marwah
Prof. Umesh Dayal [Upto 31.01.2004]
Prof. T. Gangadhariah [Upto 30.06.2003]
Prof. PK Basudhar
Prof. Sudhir K Jain
Prof. Sarvesh Chandra
Prof. Bithin Datta
Prof. Vinod Tare
Prof. Ramesh Pratap Singh
Prof. Vinay Kumar Gupta
Prof. S.K. Chakrabarti
Prof. CVR Murty [From 14.10.2003]
Prof. Mukesh Sharma [From 14.10.2003]
Dr. Rajiv Sinha [Upto 30.09.2003]
Dr. Purnendu Bose [From 01.10.2003]
Dr. Onkar Dikshit [From 01.12.2003]

COMPUTER SCIENCE & ENGINEERING (CSE):
Prof. RMK Sinha
Prof. Somnath Biswas

Prof. HC Karnick
Prof. Pankaj Jalote
Prof. TV Prabhakar
Prof. Sanjeev Kumar Aggarwal
Prof. Sanjeev Saxena
Prof. Rajat Moona
Prof. Manindra Agrawal
Prof. Amitabha Mukherjee
Prof. Dheeraj Sanghi [From 14.10.2003]
Prof. Phalguni Gupta [From 14.10.2003]
Prof. R.K. Ghosh [From 14.10.2003]
Prof. Ajai K Jain [From 14.10.2003]

ELECTRICAL ENGINEERING (EE):
Prof. GK Dubey [Upto 11.01.2004]
Prof. S Kar
Prof. Vishwanath Sinha
Prof. PK Chatterjee [Upto 30.06.2003]
Prof. SR Doradla
Prof. KE Hole
Prof. Avinash Joshi
Prof. Ravindra Arora
Prof. Sanjay K Bose [Upto 24.12.2003]
Prof. KR Srivathsan
Prof. GC Ray
Prof. Arindam Ghosh
Prof. Sachchidanand [Upto 15.07.2003]
Prof. M Sachidananda
Prof. SC Srivastava
Prof. Anjan Kumar Ghosh
Prof. Prem Kumar Kalra
Prof. Shafi Qurreshi
Prof. Sumana Gupta
Prof. Utpal Das
Prof. Govind Sharma
Prof. Aloke K Dutta
Prof. Joseph John [From 14.10.2003]
Prof. Pradip Sircar [From 14.10.2003]
Prof. Animesh Biswas [From 14.10.2003]
Dr. A.K. Chaturvedi [From 01.12.2003]

HUMANITIES & SOCIAL SCIENCES (HSS):
Prof. PP Sah [Upto 30.06.2003]

Prof. TVS Ramamohan Rao
Prof. BN Patnaik
Prof. RS Mishra [Upto 30.06.2003]
Prof. (Ms) Lilavati Krishnan
Prof. NK Sharma [Upto 13.10.2003]
Prof. Binayak Rath
Prof. AK Sharma
Prof. KK Saxena
Prof. AK Sinha
Prof. Amit Ray
Prof. BH Boruah
Prof. (Ms) Raka Sharan
Prof. Binay Kumar Pattnaik
Prof. G. Neelakantan [From 14.10.2003]
Dr. Surajit Sinha [Upto 30.09.2003]

INDUSTRIAL & MANAGEMENT ENGINEERING (IME):
Prof. AK Mittal
Prof. Tapan P Bagchi
Prof. Kripa Shanker
Prof. Arun P Sinha
Prof. R.R.K. Sharma
Prof. Jayanta Chatterjee
Prof. NK Sharma [From 14.10.2003]

MATERIALS & METALLURGICAL ENGINEERING (MME):
Prof. A. Ghosh
Prof. G.S. Upadhyaya
Prof. SP Mehrotra
Prof. RK Ray
Prof. NK Batra [Upto 06.09.2003]
Prof. RC Sharma
Prof. Shant P Gupta
Prof. RK Dube
Prof. Brahma Deo
Prof. SC Koria
Prof. Sanjeev Bhargava
Prof. N Chakraborti
Prof. Dipak Mazumdar
Prof. Virendra Bansal
Prof. V.S.R. Murthy
Prof. Sandeep Sangal
Prof. Rajiv Shekhar
Prof. Barada K Mishra

Prof. R. Balalsubramaniam

MATHEMATICS (MTH):

Prof. PC Das	[Upto 30.06.2003]
Prof. SK Gupta	[Upto 30.06.2003]
Prof. UB Tewari	
Prof. MR Sridharan	
Prof. PC Joshi	
Prof. (Ms) Prabha Sharma	
Prof. GK Shukla	[Upto 30.06.2003]
Prof. RKS Rathore	
Prof. (Ms) Manjul Gupta	
Prof. MK Kadalbajoo	
Prof. MC Bhandari	[Upto 31.07.2003]
Prof. Prawal Sinha	
Prof. GP Kapoor	
Prof. Peeyush Chandra	
Prof. V Raghavendra	
Prof. ID Dhariyal	
Prof. (Ms) Shobha Madan	
Prof. Debashis Kundu	
Prof. Pravir Kumar Dutt	

MECHANICAL ENGINEERING (ME):

Prof. Amitabha Ghosh	
Prof. GK Lal	[Upto 30.06.2003]
Prof. SN Bandyopadhyay	
Prof. B Sahay	
Prof. AK Mallik	
Prof. Ashok Sengupta	
Prof. Prashant Kumar	
Prof. BP Singh	
Prof. Manohar Prasad	
Prof. BN Banerjee	
Prof. MS Kalra	
Prof. SG Dhande	
Prof. VK Jain	
Prof. NN Kishore	
Prof. Himanshu Hatwal	
Prof. PM Dixit	
Prof. Keshav Kant Saxena	
Prof. K Muralidhar	
Prof. Gautam Biswas	

Prof. Prabhat Munshi
Prof. BP Pundir
Prof. S.K. Chaudhury
Prof. N.S. Vyas
Prof. V. Eswaran
Prof. Kalyanmoy Deb
Prof. P.S. Ghoshdastidar
Dr. Bishakh Bhattacharya [From 01.12.2002]

MATERIALS SCIENCE PROGRAMME (MSP):
Prof. DC Agarwal
Prof. Jitendra Kumar
Prof. KN Rai

PHYSICS (PHY):
Prof. SC Agarwal
Prof. K. Banerjee
Prof. AK Majumdar
Prof. SD Joglekar
Prof. Keshawa Shahi
Prof. Vijai A Singh
Prof. Rajendra Prasad
Prof. Debashish Chowdhury
Prof. RC Budhani
Prof. Y.N. Mohapatra
Prof. Avinash Singh
Prof. KK Sharma [Upto 30.06.2003]
Prof. Deshdeep Sahdev
Prof. V.N. Kulkarni
Prof. Manoj K Harbola [From 14.10.2003]
Prof. Satyendra Kumar [From 14.10.2003]
Prof. V Ravishankar [From 14.10.2003]
Prof. Pankaj Jain [From 14.10.2003]
Prof. H C Verma [From 14.10.2003]

LASER TECHNOLOGY PROGRAMME (LTP):
Prof. RK Thareja

LIBRARIAN **:** Dr. Bhooshan Lal

Secretary, Senate **:** **Prof. NK Sharma**

THREE NOMINEES OF THE CHAIRMAN, BOARD OF GOVERNORS (from 01.11.2002 To 31.10.2003):

Prof. J. Patterson (Science Discipline)
104, Ashray Apartment
7/115, Swaroop Nagar
Kanpur – 208002

Prof. K.P. Singh (Engineering Discipline)
Director
H.B.T.I.
Kanpur - 208002

Prof. V.N. Seth (Humanities Discipline)
17/3, Mall Road
Kanpur – 208001

SENATE STANDING COMMITTEES :
[From 01.10.2002 To 30.09.2003]

(1) SENATE EDUCATIONAL POLICY COMMITTEE :

(a) MEMBERS (EX-OFFICIO) :

1. Chairman, Senate	:	Prof. SG Dhande: Chairman
2. Chairman, SPGC	:	Prof. Binayak Rath, HS
3. Chairman, SUGC	:	Dr. Sanjay Mittal, AE

(b) SENATE NOMINEES :

1. Dr. R.N. Mukherjee	CHM	: Convener
2. Dr. S. Bhargava	MME	
3. Dr. B. N. Patnaik	HSS	

(c) STUDENTS' SENATE NOMINEES :

1. Sushank Vasistha	99393	G-210/1
2. Sharad Gupta,	9810982	C-208/4

(2) SENATE ELECTIONS COMMITTEE :

SENATE NOMINEES :

1. Dr. S. Umesh	EE

2. Dr. N.V. Reddy	ME	
3. Dr. Surajit Sinha	HSS	**: Chairman**

(3) SENATE LIBRARY COMMITTEE :

(a) LIBRARY :

Librarian

(b) SENATE NOMINEES :

1. Dr. R.K. Bansal	EE	
2. Dr. Y.D. Vankar	CHM	
3. Dr. A.K. Majumdar	PHY	
4. Dr. A.K. Mallik	ME	

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :

1. Dr. T.K. Sengupta	AE	
2. Dr. R. Sankararamakrishnan	BSBE	
3. Dr. N. Verma	CHE	
4. Dr. T. Chakravorty	CHM	
5. Dr. Rajiv Sinha	CE	: Chairman
6. Dr. Sanjeev Saxena	CSE	
7. Dr. Sanjay K. Bose	EE	
8. Dr. Suchitra Mathur	HSS	
9. Dr. Anoop Singh	IME	
10. Dr. Anjan K. Ghosh	LTP	
11. Dr. A. Sengupta	ME	
12. Dr. R.K. Dube	MME	
13. Dr. Y.N. Mohapatra	MSP	
14. Dr. V. Raghavendra	MATH	
15. Dr. Ashok Sengupta	NET	
16. Dr. R. Prasad	PHY	

(d) STUDENTS' SENATE NOMINEES :

1. Jitin Arora	98167	E-106/1
2. Vaibhav Krishna	Y111128	E-203/4

(4) SENATE POST-GRADUATE COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Dr. Binayak Rath, HSS : Chairman

(b) SENATE NOMINEE :

1. Dr. N.S. Vyas : ME

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :

1. Dr. Ashish Tewari	AE
2. Dr. S. Ganesh	BSBE
3. Dr. Gautam Deo	CHE
4. Dr. K. Srihari	CHM
5. Dr. Animesh Das	CE
6. Dr. Mukesh Sharma	EEMP
7. Dr. Somenath Biswas	CSE
8. Dr. S.P. Das	EE
9. Dr. Shikha Dixit	HSS
10. Dr. R.R.K. Sharma	IME
11. Dr. Y.N. Singh	LTP
12. Dr. P.M. Dixit	ME
13. Dr. S. Sangal	MME
14. Dr. K.K. Kar	MSP
15. Dr. A.K. Maloo	MATH
16. Dr. P. Munshi	NET
17. Dr. V. Ravishankar	PHY
18. Dr. Prashant Kumar	M.Des.

(d) STUDENTS' SENATE NOMINEES :

1. Sharad Gupta	9810982	C-208/4
2. Brajesh Pandey	Y120963	H-218/4
3. P. Gopalakrishnan	Y112510	D-107/4
4. Ramesh Kumar Sonkar	Y110451	A-210/4

(5) SENATE RULES COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Parliamentarian of the Senate

(b) SENATE NOMINEES :

1. Dr. R.C. Budhani	PHY: Chairman
2. Dr. C. Venkatesan	AE
3. Dr. B.K. Pattnaik	HSS

(6) SENATE SCHOLARSHIPS & PRIZES COMMITTEE :

(a) MEMBERS (EX-OFFICIO) :

Head, Institute Counselling Service
Chairman, APEC

Representative of COW
Dean of Students' Affairs

(b) SENATE NOMINEES:

1.	Dr. Prabha Sharma	MTH
2.	Dr. Purnendu Bose	CE
3.	Dr. A.M. Raina	HSS
4.	Dr. Manohar Prasad	ME : Chairman

(c) STUDENTS' SENATE NOMINEES :

1. Ashish Gupta	99091	G-218/1
2. Mrinal Vikram	99226	G-115/1
3. Prathmesh Kant	99279	E-101/1

(7) SENATE STUDENTS' AFFAIRS COMMITTEE :

(a) MEMBERS (EX-OFFICIO) :

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

(b) SENATE NOMINEES:

1.	Dr. C.S. Upadhyaya	AE
2.	Dr. H. Karnick	CSE
3.	Dr. Sumana Gupta	EE

(c) STUDENTS' SENATE NOMINEES :

1. Prathmesh Kant	99279	E-101/1
2. Yogesh Verma	98419	E-209/1
3. Subhashish Banerjee	98374	H-115/4
4. Abhay Agarwal	99004	F-311/1

(8) SENATE UNDERGRADUATE COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Dr. Ajai Jain CSE

(b) SENATE NOMINEE :

1. Dr. B.N. Banerjee ME

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :

1. Dr. S. Mittal AE : Chairman

2. Dr. K. Subhramanium	BSBE
3. Dr. R.P. Singh	CHE
4. Dr. F.A. Khan	CHM
5. Dr. Vinay Kumar Gupta	CE
6. Dr. Malay Chaudhuri	EEMP
7. Dr. Manindra Agrawal	CSE
8. Dr. A.K. Chaturvedi	EE
9. Dr. B.H. Boruah	HSS
10. Dr. Sanjeev Swami	IME
11. Dr. Asima Pradhan	LTP
12. Dr. B.P. Singh	ME
13. Dr. R.K. Ray	MME
14. Dr. K.N. Rai	MSP
15. Dr. G. Santhanam	MATH
16. Dr. M.S. Kalra	NET
17. Dr. G. Sengupta	PHY
18. Dr. Prashant Kumar	M.Des.

(d) STUDENTS' SENATE NOMINEES :

1. Yogesh Verma	98419	E-209/1
2. Parth Sarathi Mukherjee	99259	B-202/1
3. Jayesh Gaur	Y0149	250/2
4. Kumar Kapil	Y1189	355/3

SENATE STANDING COMMITTEES :
[From 01.10.2003 To 30.09.2004]

(1) SENATE EDUCATIONAL POLICY COMMITTEE :

(a) MEMBERS (EX-OFFICIO) :

1. Chairman, Senate : Chairman

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

3. Chairman, SUGC : Dr. CS Upadhyay, AE

(b) SENATE NOMINEES :

1. Dr. S. Biswas CSE

2. Dr. R.K. Thareja	PHY	: Convenor
3. Dr. L. Krishnan	HSS	

(c) STUDENTS' SENATE NOMINEES :

1. Ms. Karishma Jain	(Y0160), G-216/GH
2. Mr. Gajera C Ravjibhai	(Y211805), H-306/IV

(2) SENATE ELECTIONS COMMITTEE :

SENATE NOMINEES :

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

(3) SENATE LIBRARY COMMITTEE :

(a) LIBRARY :

Librarian

(b) SENATE NOMINEES :

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

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :

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

16. Dr. R. Prasad PHY

(d) STUDENTS' SENATE NOMINEES :

1. Ms. Karishma Jain (Y0160), G-216/GH
2. Mr. Rohit Khare (Y1303), A-121/VI

(4) SENATE POST-GRADUATE COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Dr. Binayak Rath, HSS

(b) SENATE NOMINEE :

1. Dr. U. Das EE

(c) NOMINEES OF DEPARTMENTS/PROGRAMMES :

1. Dr. R.K. Sullerey AE
2. Dr. S. Ganesh BSBE
3. Dr. Y.V.C. Rao CHE : Chairman
4. Dr. T. Chakraborty CHM
5. Dr. Saumyen Guha CE
6. Dr. Mukesh Sharma EEMP
7. Dr. Somenath Biswas CSE
8. Dr. Laxmidhar Behra EE
9. Dr. M. Jha HSS
10. Dr. Sanjeev Swami IME
11. Dr. Harshwardhan Wanare LTP
12. Dr. N.V. Reddy ME
13. Dr. D. Gupta MME
14. Dr. K.N. Rai MSP
15. Dr. A.K. Maloo MATH
16. Dr. P. Munshi PHY
17. Dr. Prashant Kumar DES

(d) STUDENTS' SENATE NOMINEES :

1. Mr. Brajesh Pandey (Y120963), H-218/IV
2. Mr. Ambarish Kunwar (Y110961), E1-314/IV
3. Mr. Gaurav Sharma (Y210409), E-203/VII
4. Mr. Ramesh Kumar Sonkar (Y3104118),A-209/V

(5) SENATE RULES COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Parliamentarian of the Senate : Dr. Peeyush Chandra, MTH

(b) SENATE NOMINEES :

1. Dr. V. Bansal	MME	
2. Dr. J. Kumar	MSP	: Chairman
3. Dr. P. Chandra	MATH	

(6) SENATE SCHOLARSHIPS & PRIZES COMMITTEE :

(a) MEMBERS (EX-OFFICIO):

Head Institute Counselling Service:		Dr. Onkar Dikshit, CE
Chairman, APEC	:	Dr. RC Sharma, MME
Dean of Students' Affairs	:	Dr. C Venkatesan, AE

(b) SENATE NOMINEES:

1.	Dr. Manohar Prasad	ME	
2.	Dr. D. Gupta	CSE	
3.	Dr. P.K. Bhattacharya	CHE	
4.	Dr. P. Bose	CE	: Chairman

(c) STUDENTS' SENATE NOMINEES :

1. Ms. Karishma Jain	(Y0160), G-216/GH
2. Mr. Vyom Kr. Gupta	(Y1409), 162/II
3. Mr. Sandeep Gupta	(Y1316), 162/II

(7) SENATE STUDENTS' AFFAIRS COMMITTEE :

(a) MEMBERS (EX-OFFICIO) :

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

(b) SENATE NOMINEES:

1.	Dr. A. Chaturvedi	EE
2.	Dr. N. Mishra	MATH
3.	Dr. B.N. Banerjee	ME

(c) STUDENTS' SENATE NOMINEES :

1. Ms. Karishma Jain (Y0160), G-216/GH
2. Mr. Rahul Luthra (Y0255), B-101/I

3. Mr. Aditya Kumar (Y0022), A-115/I
4. Mr. V. Shrreeniwas Iyer (Y211128), E-115/IV

(8) SENATE UNDERGRADUATE COMMITTEE :

(a) MEMBER (EX-OFFICIO) :

Dr. Sanjay Mittal, AE

SENATE NOMINEE :

1. Dr. B. Datta	CE

NOMINEES OF DEPARTMENTS/PROGRAMMES :

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

STUDENTS' SENATE NOMINEES :

1. Mr. Harish Awasthi	(Y2163), 351/II
2. Mr. Ravi Kumar	(Y1287), A-119/VI
3. Mr. Rahul Luthra	(Y0255), B-101/I
4. Mr. Pradeep Kumar	(Y2516), E-103/V

The Faculty

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

The faculty strength of the Institute as on March 31, 2004 was 304. Out of these 18 are shared by two departments on a half time basis. There were also 44 Research Engineers/ Scientific Officers and Design Engineers, who are treated at par with faculty, on March 31, 2004. 22 faculty members retired/resigned/expired during the period. The Institute also had a number of Visiting Faculty members : 10 Visiting Faculty and 2 Adjunct Faculty joined and 5 left during the year. The Visiting/Adjunct Faculty contribute significantly and they also get an opportunity to know the Institute. In general the channel of having Visiting Faculty has been appreciated.

Two Research Associates were appointed during the year. The Research Associates stay for a period of six months to two years. The presence of Research Associates, who are young and have obtained Ph.D degree in the recent past, is an asset to the departmental research activities.

AEROSPACE ENGINEERING DEPARTMENT

SANTIONED STRENGTH : 20
EXISTING STRENGTH : 18

PROFESSOR (Rs.18400-500-22400)

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

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

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

ASSISTANT PROFESSOR (Rs.12000-420-18300)

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

BIOLOGICAL SCIENCE & BIO-ENGINEERING

SANTIONED STRENGTH :
EXISTING STRENGTH : 06+1

PROFESSOR (Rs.18400-500-22400)

1. 4959 Pradip Sinha

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. *4876 R Gurunath
2. 5005 R Sankararamakrishnan
3. 5009 K Subramaniam
4. 5020 Subramaniam Ganesh
5. 5023 Balaji Prakash
6. 5090 Sandeep Kumar

CHEMICAL ENGINEERING DEPARTMENT

SANTIONED STRENGTH : 32
EXISTING STRENGTH : 17

PROFESSOR (Rs.18400-500-22400)

1. 3113 S K Gupta
2. 2432 Anil Kumar
3. 3314 Deepak Kunzru
4. 3064 J P Gupta
5. 2006 Y V Chalapati Rao
6. 3604 D P Rao
7. 1197 R P Singh
8. 3754 P K Bhattacharya
9 4244 R P Chhabra
10. 4045 Ashok Khanna
11. 4562 Ashutosh Sharma

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4750 Goutam Deo
2. 4794 Nishith Verma

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. 5011 V Shankar
2. 5016 Nitin Kaistha
3. 5021 Sanjeev Garg
4. 5064 Rajdip Bandyopadhyaya

CHEMISTRY DEPARTMENT

SANTIONED STRENGTH : 30
EXISTING STRENGTH : 26+1

PROFESSOR (Rs.18400-500-22400)

1. 3827 N Sathyamurthy
2 3791 S Sarkar
3. 3990 B D Gupta
4. 4008 Y D Vankar
5. 4325 T K Chandrashekar
6. 4394 V Chandrasekhar
7. 4448 R N Mukherjee
8. 4462 P K Bharadwaj
9. 4724 (Ms) H Ila
10. 4047 N S Gajbhiye
11. 3112 P Gupta Bhaya
12. 4460 S Manogaran
13. 4583 Veejendra K Yadav
14. 4596 Vinod K Singh
15. 4676 Amalendu Chandra

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

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

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1. *4876 R Gurunath
2. 5024 Manas Kumar Ghorai
3. 5038 Jitendra K Bera
4. 5056 M L N Rao

LECTURER

1. 5091 Anantharaman Ganapathi

CIVIL ENGINEERING DEPARTMENT

SANTIONED STRENGTH : 33
EXISTING STRENGTH : 28

PROFESSOR (Rs.18400-500-22400)

1. 2309 M Choudhuri
2. 1984 B R Marwah
3. 3462 Ashwini Kumar
4. 4068 P K Basudhar
5. 4209 Sudhir K Jain
6. 4399 Sarvesh Chandra
7 4546 Bithin Datta
8. 4295 Vinod Tare
9. 4303 Ramesh P Singh
10. 4586 V K Gupta
11. 4464 S K Chakrabarti
12. 4799 Mukesh Sharma
13. 4657 C V R Murty

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

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

ASSISTANT PROFESSOR (Rs.12000-420-18300)

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

LECTURER
1. 5037 Nihar Ranjan Patra

COMPUTER SCIENCE & ENGINEERING

SANTIONED STRENGTH : 18
EXISTING STRENGTH :19 + 2 HT

PROFESSOR (Rs.18400-500-22400)
1. *3858 S G Dhande
2. *3541 R M K Sinha
3. 3972 Somenath Biswas
4. 4297 H C Karnick
5. 4540 Pankaj Jalote
6. 4370 T V Prabhakar
7. 4563 S K Aggarwal
8. 4490 Sanjeev Saxena
9. 4628 Rajat Moona
10 4754 Manindra Agrawal
11. 4627 Amitabha Mukerjee
12. 4300 Ratan Kumar Ghosh
13. 4385 Phalguni Gupta
14. 4645 Ajai K Jain
15. 4668 Dheeraj Sanghi

ASSOCIATE PROFESSOR (Rs.16400-450-20000)
1. 5010 Shashank K Mehta
2. 4722 Deepak Gupta
3. 4934 Anil Seth

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. 4762 Sumit Ganguly
2. 5051 Bhaskaran Raman
3. 5081 Pabitra Mitra

ELECTRICAL ENGINEERING

SANTIONED STRENGTH : 53
EXISTING STRENGTH: 32 + 2 HT

PROFESSOR (Rs.18400-500-22400)
1. 2391 Vishwanath Sinha
2. 3742 S R Doradla

3.	*3541	R M K Sinha
4.	3927	Avinash Joshi
5.	3199	Ravindra Arora
6.	4046	K R Srivathsan
7.	4292	G C Ray
8.	4293	Arindam Ghosh
9.	4326	M Sachidananda
10.	4495	S C Srivastava
11.	4667	Anjan Kumar Ghosh
12.	4486	Prem Kumar Kalra
13.	4691	Shafi Qureshi
14.	3873	(Ms) Sumana Gupta
15.	4372	Govind Sharma
16.	*4687	Utpal Das
17.	4566	A K Dutta
18.	3999	Joseph John
19.	4652	Animesh Biswas
20.	4478	Pradip Sircar

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1.	4489	R K Bansal
2.	4670	Baquer Mazhari
3.	4745	S Umesh
4.	4827	A K Chaturvedi
5.	5003	S N Singh
6.	4776	Shyama P Das

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1.	4771	Yatindra N Singh
2.	4833	K S Venkatesh
3.	4935	Motwani Ravi Hiranand
4.	4938	K Vasudevan
5.	4988	Laxmidhar Behera
6.	5012	Parthasarathi Sensarma
7.	5013	A R Harish
8.	5015	(Ms) Nandini Gupta

HUMANITIES & SOCIAL SCIENCES

SANTIONED STRENGTH : 31
EXISTING STRENGTH : 21+1

PROFESSOR (Rs.18400-500-22400)

1.	2278	T V S Ramamohan Rao

2. 3838 (Ms) Lilavati Krishnan
3. 3989 Binayak Rath
4. 3983 A K Sharma
5. 4373 K K Saxena
6. 4016 A K Sinha
7. 3837 Amit Ray
8. 4375 B H Boruah
9. 4791 B K Pattnaik
10. 4729 G Neelakanthan

ASSOCIATE PROFESSOR (Rs.16400-450-20000)
1. 4488 Surajit Sinha
2. 4700 (Ms) Achla M Raina
3. 4702 (Ms) Shikha Dixit

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. 4773 Munmun Jha
2. 4774 C A Tomy
3. 4927 (Ms) Mini Chandran
4. 4957 (Ms) Suchitra Mathur
5. 5075 P M Prasad
6. 5076 T Ravichandran
7. 5078 Sanjay Kumar Singh

LECTURER (Rs.10000-325-15200)
1. 4976 Satyaki Roy
2. 5077 Amman Madan

INDUSTRIAL & MANAGEMENT ENGINEERING

SANTIONED STRENGTH : 10
EXISTING STRENGTH : 14

PROFESSOR (Rs.18400-500-22400)
1. 3432 A K Mittal
2. 3977 N K Sharma
3. 4380 T P Bagchi
4. 3792 Kripa Shanker
5. 4042 Arun P Sinha
6. 4525 R R K Sharma
7. 4961 Jayanta Chatterjee

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1. 4701 Rahul Varman

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. 4830 Sanjeev Swami
2. 4865 (Ms) Veena Bansal
3. 4968 Anoop Singh
4. 5018 Rohit Varman
5. 5031 Parthasarathy Ramachandran
6. 5073 Raghu Nandan Sengupta

MATERIALS & METALLURGICAL ENGINEERING

SANTIONED STRENGTH : 32
EXISTING STRENGTH: 21 + 1 HT

PROFESSOR (Rs.18400-500-22400)
1. 1932 S P Mehrotra
2. 3752 R K Ray
3. *3545 K N Rai
4. 3845 R C Sharma
5. 3846 Shant P Gupta
6. 3763 R K Dube
7. 4182 Brahma Deo
8. 4245 S C Koria
9. 4524 S Bhargava
10. 4382 Dipak Mazumdar
11. 3195 Virendra Bansal
12. 4625 V S R Murthy
13. 4565 Rajiv Shekhar
14. 4597 Sandeep Sangal
15. 4571 R Balasubramaniam
16. 4665 Barada K Mishra

ASSOCIATE PROFESSOR (Rs.16400-450-20000)
1. 4790 Deepak Gupta
2. 4796 (Ms) Monica Katiyar

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. 4919 Anish Upadhyaya
2. 4977 Bikaramjit Basu
3. 5034 Ashish Garg
4. 5072 Gauthama

MATHEMATICS DEPARTMENT

SANTIONED STRENGTH : 36
EXISTING STRENGTH : 32

PROFESSOR (Rs.18400-500-22400)

1.	2078	U B Tewari
2.	3419	M R Sridharan
3.	2153	P C Joshi
4.	2395	(Ms) Prabha Sharma
5.	3407	R K S Rathore
6.	3772	(Ms) Manjul Gupta
7.	3739	M K Kadalbajoo
8.	3773	Prawal Sinha
9.	3776	G P Kapoor
10.	4058	Peeyush Chandra
11.	4074	V Raghavendra
12.	3824	I D Dhariyal
13.	4290	(Ms) Shobha Madan
14.	4584	Debasis Kundu
15.	4449	Pravir Kumar Dutt

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1.	1642	Ashvini Kumar
2.	4707	B V Rathish Kumar
3.	4782	D Bahuguna
4.	4726	Neeraj Misra
5.	4656	P Shunmugaraj
6.	4734	Arbind Kumar Lal
7.	4751	Srikanth K Iyer

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1.	4537	(Ms) Aparna Dar
2.	4781	(Ms) Mohua Banerjee
3.	4803	Alok Kumar Maloo
4.	4822	G Santhanam
5.	4832	(Mrs) Rama Rawat
6.	4870	S Ghorai
7.	4930	Swagato Kumar Ray
8.	5029	Joydeep Dutta
9.	5036	Shalabh
10.	5053	Rukmini Dey

MECHANICAL ENGINEERING

SANTIONED STRENGTH : 42
EXISTING STRENGTH : 30 + 3 HT

PROFESSOR (Rs.18400-500-22400)

1.	2217	S N Bandyopadhyay
2.	2265	A K Mallik
3.	*3665	Ashok Sengupta
4.	*3858	S G Dhande
5.	3764	Prashant Kumar
6.	3759	B N Banerjee
7.	3862	M S Kalra
8.	4093	V K Jain
9.	4224	N N Kishore
10.	4286	Himanshu Hatwal
11.	4210	P M Dixit
12.	1531	K K Saxena
13.	4398	K Muralishar
14.	4560	Gautam Biswas
15.	4061	Prabhat Munshi
16.	4810	B P Pundir
17.	4452	S K Choudhury
18.	4459	N S Vyas
19.	4482	Vinayak Eswaran
20.	4650	Kalyanmoy Deb
21.	4288	P S Ghoshdastidar

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

1.	4788	Subrata Sarkar
2.	4801	P K Panigrahi

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1.	4779	Bhaskar Dasgupta
2.	4823	V Venkata Reddy
3.	4890	Bishakh Bhattacharya
4.	4931	Avinash Kumar Agarwal
5.	4956	Anupam Saxena
6.	5014	Sumit Basu
7.	*4928	Kamal K Kar
8.	5022	Ashish Datta
9.	5054	P Venkitanarayanan
10.	5074	J Ramkumar

PHYSICS

SANTIONED STRENGTH : 38
EXISTING STRENGTH : 29 + 1 HT

PROFESSOR (Rs.18400-500-22400)

1.	3498	S C Agarwal
2	3980	R K Thareja
3.	4019	S D Joglekar
4.	4064	Keshawa Shahi
5.	4184	Vijay A Singh
6.	4254	Rajendra Prasad
7.	4642	Debashish Chowdhury
8.	4688	R C Budhani
9.	4559	Y N Mohapatra
10.	4651	Avinash Singh
11.	4315	V N Kulkarni
12.	4527	Deshdeep Sahdev
13.	4504	V Ravishankar
14.	4552	Satyendra Kumar
15.	4708	Pankaj Jain
16.	4723	H C Verma
17.	4881	M K Harbola

ASSOCIATE PROFESSOR (Rs.16400-450-20000)

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

ASSISTANT PROFESSOR (Rs.12000-420-18300)

1.	4755	V Subrahmanyam
2.	4797	Gautam Sengupta
3.	4893	Harshwardhan Wanare
4.	4964	V V Sreedhar
5.	5028	(Ms) Sutapa Mukherjee
6.	5035	S Sivaprakasam
7.	5040	S Anantha Ramakrishna
8.	5041	Amit Dutta
9.	5046	Anjan Kumar Gupta

MATERIALS SCIENCE PROGRAMME

SANTIONED STRENGTH : 06
EXISTING STRENGTH : 02 + 2 HT

PROFESSOR (Rs.18400-500-22400)

1.	*	3545	K N Rai

2 3771 D C Agrawal
3. 3762 Jitendra Kumar

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. *4928 Kamal K Kar

LASER TECHNOLOGY PROGRAMME

SANTIONED STRENGTH :
EXISTING STRENGTH : + 02 HT

PROFESSOR (Rs.18400-500-22400)
1. *4687 Utpal Das

ASSISTANT PROFESSOR (Rs.12000-420-18300)
1. *4679 (Ms) Asima Pradhan

NUCLEAR ENGG & TECHNOLOGY PROGRAMME

SANTIONED STRENGTH :
EXISTING STRENGTH: + 1 HT

PROFESSOR (Rs.18400-500-22400)
1. 3665 Ashok Sengupta

DESIGN PROGRAMME

SANTIONED STRENGTH
EXISTING STRENGTH : +1 HT

1. 4976 Satyaki Roy

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

LIST OF ACADEMIC STAFF AS ON MARCH 31, 2004

S.No.	Name & Designation (Ms./Shri/Dr)	Department/Programme
1.	Chaturi Singh, Research Engineer Gr-II	NWTF
2.	Alok Gupta, Research Engineer Gr-II	A E
3.	K K Soundra Pandian, Research Engineer Gr-II	M E
4.	Rajeev Gupta, Senior Research Engineer	A E (NWTF)
5.	Sushmit Sen, Senior Research Engineer	Robotics

6.	M N Mungole, Senior Research Engineer	M M E
7.	Ram Prakash Gupta, Senior Research Engineer	E E
8.	Raghuvir S. Anand, Senior Research Engineer	E E
9.	Anjali V Kulkarni, Senior Research Engineer	Mechatronics
10	Aurobinda Chatterjee, Senior Research Engineer	M E
11	Amitabha Roy, Principal Research Engineer	E E
12	Vishal Saxena, Principal Research Engineer	E E
13	Brajesh Chandra, Principal Research Engineer	A E (NWTF)
14	V Raghuram, Principal Research Engineer	M E
15	Shobhit Das, Chief Engineer	A E
16	J Narayan, Chief Research Engineer	E E
17	A L Bhavsar, Scientific Officer Gr.I	CHEM
18	K K Bajpai, Senior Scientific Officer	C E
19	K V Rao, Principal Scientific Officer	ACMS
20	Sanjay Gupta, Chief Scientific Officer	ACMS
21	Bansi Lal, Chief Scientific Officer	PHY/LTP
22	Prem Chand, Chief Scientific Officer	EPR/PHY
23	Leela Iyengar, Chief Scientific Officer	Chemistry
24	H P S Parihar, Computer Engineer Gr.II	CC
25	Sanjeev Shukla, Computer Engineer Gr.II	CC
26	Md K Ahmad, Computer Engineer Gr.I	CC
27	Anju Tewari, Computer Engineer Gr.I	CC
28	Shikha M Jalote, Senior Computer Engineer	CC
29	Navpreet Singh, Senior Computer Engineer	CC
30	B M Shukla , Senior Computer Engineer	CC
31	Md Aftab Alam, Senior Computer Engineer	CC
32	Brajesh Pande, Senior Computer Engineer	CC
33	Gopesh Tewari, Senior Computer Engineer	CC
34	Soma Sengupta, Senior Computer Engineer	CC
35	R Tewari, Operation Manager	CC
36	Y D S Arya, Principal Computer Engineer	CC
37	N P Roberts, Principal Computer Engineer	CC
38	K S Singh, Principal Computer Engineer	CC
39	Umesh Chandra, Senior Pilot Instructor	AE
40	Vipul Mathur, Aircraft Maintenance Engineer	AE
41	Dr. Bhooshan Lal, Librarian	P K Kelkar Lib
42	Mr. S K Srivastava, Deputy Librarian	P K Kelkar Lib
43	Mr. Rajeshwar Misra, Deputy Librarian	P K Kelkar Lib
44	Mr. S K Bose, Deputy Librarian	P K Kelkar Lib

AWARDS AND HONOURS FOR THE YEAR (APRIL 01, 2003 TO MARCH 31, 2004)

Dr R N Mukherjee, Professor, Department of Chemistry has been elected a Fellow of the Royal Society of Chemistry.

Dr K Subramaniam, Assistant Professor, Department of BSBE has been chosen for the Wellcome International Senior Research Fellowship.

Dr Vinod K Singh, Professor, Department of Chemistry has been chosen as the recipient of the Bronze Medal of the Chemical Research Society of India for the year 2003.

Dr T K Chandrashekar, Professor, Department of Chemistry has been chosen the Professor Priyadaranjan Ray Memorial Awardee of the Indian Chemical Society for the year 2002.

Dr Sanjay Mittal, Associate Professor, Department of Aerospace Engineering has been selected for the Swarnajayanti Fellowship 2003.

Dr F A Khan, Associate Professor, Department of Chemistry has been selected for the Swarnajayanti Fellowship 2003.

Dr Anish Upadhyaya, Assistant Professor, Department of MME has been invited to serve as the Editorial Advisory Board member for the Journal, "Transaction of the Indian Ceramic Society."

Dr S S Katiyar has been re-appointed as Vice-Chancellor of CSJM University Kanpur for a period of 3 years w.e.f. 25-07-2003.

Dr. Manindra Agarwal, Professor in the Department of Computer Science and Engineering has received this year's Bhatnagar Award in Mathematical Sciences

Dr. V. Chandrasekhar, Professor in the Department of Chemistry has received this year's Bhatnagar Award in Chemical Sciences.

Dr. G. Ravindra Kumar, former P.D. student of Professor K.K. Sharma in the Department of Physics at IIT Kanpur has been chosen for this year's Bhatnagar Award in Physical Sciences.

Dr. Neeraj Mishra, Professor in the Department of Mathematics has been selected as a recipient of the C.L. Chandna Award for Distinguished and Outstanding Contributions to Mathematics Research and Teaching in India for the year 2003.

Dr. Rajiv Sinha, Associate Professor in the Department of Civil Engineering has been selected for the National Mineral Award 2002.

Dr. H. Ila, Professor in the Department of Chemistry has been chosen the C.J. Ghosh Memorial Lecturer for the year 2002 by the Indian Chemical Society. Dr. Ila and her husband Professor Junjappa have received this year's Chairman's Award of Astrazeneca Research Foundation of India.

Dr. Ashutosh Sharma, Professor in the Department of Chemical Engineering has been elected a Fellow of the Indian National Science Academy.

Dr. Gautam Biswas, Professor in the Department of Mechanical Engineering, Dr. C. Venkatesan, Professor in the Department of Aerospace Engineering, Dr. Ashutosh Sharma, Professor in the Department of Chemical Engineering and Dr. Manindra Agarwal, Professor in the Department of Computer Science and Engineering have been elected the Fellow of the Indian National Academy of Engineering.

Dr. S. Sundar Manoharan, Associate Professor in the Department of Chemistry has been chosen for the Global Innovator Award which will be presented to him in MIT by the end of November.

Dr. S.P. Das, Associate Professor in the Department of Electrical Engineering and Dr. Bhaskar Dasgupta, Assistant Professor in the Department of Mechanical Engineering have been chosen for the Young Engineer Awards (2003).

Dr. Krishna Kumar, Professor in the Department of Aerospace Engineering and presently Director of MNNIT, Allahabad, has been chosen for this year's Excellence in Aerospace education award by Aero. Society of India.

Dr. Avinash Agarwal, Assistant Professor in the Department of Mechanical Engineering has been invited to join the Editorial Board of Journal of Automobile Engineering, a journal published by the Institution of Mechanical Engineers, U.K.

Dr. Pankaj Jalote, Professor in the Department of CSE has been elected a Fellow of IEEE, USA

Dr. Bikramjit Basu, Assistant Professor in the Department of Materials and Metallurgical Engineering has been chosen for this year's "RL Thakur Memorial Award" of the Indian Ceramic Society. He has been chosen for the award "in recognition of his valuable contributions in the field of Materials Science".

Dr. T.K. Chandrashekar, Professor in the Department of Chemistry and presently Director of RRL, Trivandrum, has been chosen for this year's CHEMITO award.

Dr. D.Chowdhury, Professor in the Department of Physics for being elected a Fellow of the Indian Academy of Sciences, Bangalore.

Dr. D.P. Mishra, Assistant Professor in the Department of Aerospace Engineering has been elected as a member of the executive committee of Combustion Institute (IS).

Dr. V.K. Singh, Professor in the Department of Chemistry for being chosen for " Goyal Prize for Young Scientist" in Chemistry.

In the recently held 6th National Symposium of the Chemical Research Society of India, the following awards went to the faculty and students of the Chemistry department :
Young Chemist award to Professor J.N. Moorthy, 2 of the 6 best poster awards to Madhavaiah (a Ph.D student working under the guidance of Dr. S. Verma) and Hare Krishnan (a Ph.D student working under the guidance of Dr. R. Gurunath.

BOOKS PUBLISHED

Dr. TVS Ramamohan Rao, Professor in the Department of HSS has written a book entitled CONTRACT ECONOMICS by using QIP funds. This book is published by New Age International (P) Limited, India.

Dr. S.D. Joglekar, Professor in the Department of Physics has written and submitted a manuscript of Mathematical Physics Volume II by using QIP funds.

Dr. Gautam Biswas, Professor in the Department of Mechanical Engineering has released the second edition of the book, " Introduction to Fluid Mechanics and Fluid Machines". This book is published by Tata McGraw-Hill.

Dr. V.K. Jain, Professor in the Department of Mechanical Engineering has been appointed as a member of the Editor Board of the International Journal of Manufacturing Technology and Management being published by Inderscience Publishers (UK).

The Text book of Ordinary Differential Equations, 2nd Edition authored by Dr. V. Raghavendra, Professor in the Department of Mathematics and published by Tata McGraw-Hill has undergone 4th reprint.

Academic Programme

EDUCATIONAL GOALS

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

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

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

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

TEACHING PROGRAMMES

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

Undergraduate Programme

The four-year undergraduate programme consists of two parts having a 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 from among the following disciplines.

i) Aerospace Engineering
ii) Chemical Engineering
iii) Civil Engineering
iv) Computer Science & Engineering
v) Electrical Engineering
vi) Mechanical Engineering
vii) Materials and Metallurgical Engineering

In addition, the Institute offers M Sc (Integrated) programme of five year duration including two years of core programme common to all undergraduate students in the following disciplines:

i) Chemistry
ii) Mathematics & Scientific Computing
iii) Physics

The course structure in the Core Curriculum consists of large lecture classes, with tutorial and laboratory sessions in smaller sections. The professional programme is a bit more flexible and culminates in a project involving application of analysis and design techniques.

Most of the departments organize educational tours and training during the professional part of the programme.

Two-Year M.Sc. Programme
A limited number of admissions are made to the Two-Year M.Sc. programme in the disciplines of Chemistry, Mathematics, Physics and Statistics. These are open to candidates with a B.Sc. degree in the relevant disciplines.

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. Scheduled Caste / Scheduled Tribe candidates, who have passed the basic qualifying degree are eligible to apply and are considered for admission. Their admission, however, is made on the basis of their performance at the written test/interview, as usual. Their performance is not compared with the general category candidates for the purpose of admission.

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

Design Programme
The Institute offers inter-disciplinary programme in Design leading to the Master of Design degree. The M.Des. programme culminates in a dissertation submitted in partial fulfilment of the requirements for the degree.

Master of Technology (M.Tech.)
The Institute offers programmes leading to the Master of Technology (M.Tech.) degree in Aerospace Engineering, Biological Sciences & Bio Engineering, Chemical Engineering, Civil Engineering, Computer Science & Engineering, Electrical Engineering, Industrial and Management Engineering, Materials and Metallurgical Engineering, Mechanical Engineering, and in the inter disciplinary programmes of Materials Science, Nuclear Engineering, Laser Technology and Environmental Engineering & Management, M.B.A. (IME).

The M.Tech. programme culminates in a dissertation submitted in partial fulfilment of the requirements for the degree.

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

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

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 2003-2004 were made by the Joint Admission Committee for all IITs and IT-BHU. The channels open for admission were:

a) Joint Entrance Examination 2003

The Joint Entrance Examination (JEE) was held on May 25, 2003. In the Northern Zone (B): IIT Kanpur, candidates had registered.
The following offers of admission were made from IIT Kanpur:

Department/Disciplines	Total Number of Candidates-Direct Admission		
PROGRAMMES	**JEE-2003**	**PreparatoryCourse-2002**	

	Gen	SC	ST	PH	SC	ST	Total
B.Tech.							
Aerospace Engg.	19	04	00	00	00	00	23
Chemical Engg.	31	01	00	00	00	00	32
Civil Engg.	42	00	00	00	09	00	51
Computer Sc. & Engg.	26	05	03	01	00	00	35
Electrical Engg.	49	10	05	01	01	01	67
Mechanical Engg.	38	07	00	01	01	00	47
Materials & Met. Engg.	48	00	00	00	02	00	50
M.Sc. INTEGRATED							
Chemistry	12	00	00	00	00	00	12
Mathematics and Scientific Computing	18	00	00	00	00	00	18
Physics	15	00	00	00	00	00	15
Total	298	27	08	13	01	03	350
B.Tech. – M.Tech. (Dual Degree)							
Aerospace Engg.	06	00	00	00	00	00	06
Chemical Engg.	09	00	00	00	02	00	11
Computer Sc. & Engg.	13	02	01	00	00	01	17
Electrical Engg.	09	02	00	00	00	01	12
Mechanical Engg.	13	02	00	00	00	00	15
Total	50	06	01	00	02	02	61

Two-Year M.SC. Programe

Admissions to the 2-year M.Sc. and M.Sc.-Ph.D. (Dual Degree) programmes were made, as usual, on the basis of written test and interview. The department/discipline wise admissions were made only in the 1st Semester. Admission statistics for the M.Sc.(2-year) and M.Sc.-Ph. D. (Dual Degree) Physics programmes during 2003-2004 are as under:

Sl. No.	Department / Group	Numbers of Admissions Offered	Actual Number of Students Joined
	M. Sc. (2 – Year)		
1	Chemistry	30	22
2	Mathematics	19	17

3	Physics	30	18
4	Statistics	21	12
	Total:	100	69
	M. Sc. – Ph. D. (Dual Degree		
1	Physics	08	08
	Total:	08	08

Post Graduate

The number of students admitted to the Postgraduate Programme in the First and Second Semesters 2003-2004 is given below:

ENGINEERING

	First Semester			Second Semester		
Department / Group	**M.Tech.**	**Ph.D.**	**Total**	**M.Tech.**	**Ph.D.**	**Total**
Aerospace Engg.	38	06	44	00	03	03
B.S.B.E.	11	05	16	00	06	06
Chemical Engg.	35	09	44	00	01	01
Civil Engg.	54	09	63	00	03	03
Computer Sc. & Engg.	52	02	54	00	00	00
Design (M.Des.)	11	--	11	00	00	00
Electrical Engg.	105	16	121	00	04	04
Mechanical Engg.	66	10	76	00	06	06
Materials & Met. Engg.	23	10	33	16	04	20
I.M.E.	12	01	13	00	01	01
Laser Technology	08	00	08	00	00	00
Material Science	06	01	07	06	01	07
N.E.T.	03	00	03	10	00	10
E.E.M.	14	00	14	00	00	00
D.I.I.T. (EE)	00	00	00	02	00	02
M.B.A. (IME)	30	00	30	00	00	00
Total:	468	69	381	32	29	63

SCIENCES

	First Semester			Second Semester		
Department / Group	**M.Tech.**	**Ph.D.**	**Total**	**M.Tech.**	**Ph.D.**	**Total**
Chemistry	00	28	28	00	17	17
Mathematics	00	15	15	00	06	06
Statistics	00	01	01	00	01	01
Physics	00	07	07	00	03	03

M. Sc. – Ph. D. (Dual Degree) in Physics	00	01	01	00	05	05
H.S.S.	00	06	06	00	02	02
Total:	00	58	58	00	33	33
Grand Total:	468	127	595	32	62	101

The total department/programme wise strength of the Post Graduate students during the year 2003-2004 is given below:

ENGINEERING

	First Semester			Second Semester		
Department / Group	**M.Tech.**	**Ph.D.**	**Total**	**M.Tech.**	**Ph.D.**	**Total**
Aerospace Engg.	50	27	77	42	28	70
B.S.B.E.	22	09	31	21	15	36
Chemical Engg.	69	33	102	67	28	95
Civil Engg.	97	37	134	87	34	121
Computer Sc. & Engg.	82	10	92	79	08	87
Electrical Engg.	145	35	180	129	38	167
Design (M.Des.)	21	00	21	21	00	21
Mechanical Engg.	109	43	152	99	44	143
Materials & Met. Engg.	71	25	96	75	28	103
I.M.E.	29	10	39	27	08	35
Laser Technology	14	00	14	12	00	12
Material Science	21	09	30	23	10	33
N.E.T.	11	03	14	23	03	23
E.E.M.	29	00	29	28	00	28
D.I.I.T. (EE)	02	00	02	00	00	00
M.B.A. (IME)	60	00	60	59	00	59
Total:	832	241	1073	789	244	1033

SCIENCES

	First Semester			Second Semester		
Department / Group	**M.Tech.**	**Ph.D.**	**Total**	**M.Tech.**	**Ph.D.**	**Total**
Chemistry	00	116	116	00	127	127
Mathematics	00	50	50	00	51	51
Statistics	00	03	03	00	03	03
Physics	00	44	44	00	43	43
M. Sc.–Ph.D. (Dual Degree) in Physics	00	07	07	00	12	12
H.S.S.	00	33	33	00	37	37
Total:	00	253	253	00	273	526
Grand Total:	832	494	1326	789	517	1559

Strength of Undergraduate and Postgraduate Students during 2003 – 2004 – 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	90	15	00	00	50	27	00	182
B.S.B.E.	00	00	00	00	22	09	00	031
Chemical	157	22	00	00	69	33	00	281
Chemistry	51	00	35	00	00	116	00	202
Civil	158	00	00	00	97	37	00	292
C.S.E.	169	46	00	00	82	10	00	307
Design (M.Des).)	00	00	00	00	21	00	00	021
E.E.	301	33	00	00	145	35	00	514
H.S.S.	00	00	00	00	00	28	00	028
Math.	78	00	34	00	00	50	00	162
Statistics	00	00	22	00	00	03	00	025
M.E.	238	46	00	00	109	43	00	436
M.M.E.	188	00	00	00	71	25	00	284
Physics	55	00	34	13	00	44	07	153
I.M.E.	00	00	00	00	29	10	00	039
Laser Tech.	00	00	00	00	14	00	00	014
M.S.P.	00	00	00	00	21	09	00	030
N.E.T.	00	00	00	00	11	03	00	014
E.E.M.	00	00	00	00	29	00	00	029
D.I.I.T. (E.E.)	00	00	00	00	02	00	00	002
M.B.A. (I.M.E.)	00	00	00	00	60	00	00	060
Total:	1485	162	125	13	832	494	07	3118

GRADUATION

During the year 2003-2004, 597 students completed the requirements for the award of B.Tech., M.Sc., D.I.I.T., M. B. A., M.Tech. and Ph.D. degrees as detailed below:

B.Tech.	337
M.Sc.(2 year & 5-year) 27 & 47	74
M.B.A.	28

M.Tech.	113
Ph.D.	45
D.I.I.T.	02
Total :	**597**

COURSES OF STURY

The following Table gives a picture of the courses offered during 2003-2004 at the undergraduate as well as postgraduate level:

UNDERGRADUATE LEVEL

Core Curriculum / Department Courses	**First Sem.**	**Second Sem.**	**Summer**	**TOTAL**
Core Courses run by various departments	29	22	06	57
Aerospace Engineering	08	12	00	20
B.S. B. E.	01	01	00	02
Chemical Engineering	08	12	00	20
Civil Engineering	12	14	00	26
Computer Science & Engineering	08	13	01	22
Electrical Engineering	11	10	01	22
Mechanical Engineering	11	15	01	27
Materials & Metallurgical Engineering	15	12	01	28
Chemistry	11	10	00	21
Mathematics	28	33	05	66
Physics	19	16	00	35
Humanities & Social Sciences	15	18	02	35
Industrial & Management Engineering	00	00	00	00
Nuclear Engineering & Technology	00	00	00	00
Materials Science Program	00	00	00	00
Laser Technology Program	00	00	00	99

POSTGRADUATE LEVEL

Core Curriculum / Department Courses	**First Sem.**	**Second Sem.**	**TOTAL**
Aerospace Engineering	12	18	30
Chemical Engineering	12	12	24
Civil Engineering	17	16	33
Computer Science & Engineering	14	11	25
Design (M.Des.)	05	03	08

Electrical Engineering	24	28	52
Environmental Engg. & Management	05	06	11
Mechanical Engineering	18	23	41
Materials & Metallurgical Engineering	19	13	32
Chemistry	13	15	28
Mathematics / Statistics	14	21	35
Physics	10	16	26
Humanities & Social Sciences	21	18	39
Industrial & Management Engineering	08	07	15
Materials Science Program	07	06	13
Nuclear Engineering & Technology	04	06	10
Laser Technology Program	03	03	06

UNDERGRADUATE

The following statement shows promotion and detention of B.Tech., M.Sc. (Integrated) and B.Tech.-M.Tech. (Dual Degree), students in the academic year 2003-2004 (upto May, 2004):

S.N	CONTENTS	1ST Year	2nd Year	3rd Year	4th Year	5th Year	TOTAL
1	Students strength at the beginning of the session	405	410	375	364	093	1647
2	Students strength at the beginning of the 2nd semester	404	406	375	364	070	1619
3	Students joined in 2nd semester on migration	000	000	000	000	000	0000
4	Number of students withdrawn or on leave on medical ground in 1st and 2nd semesters	002	002	003	005	001	0013
		001	003	000	000	000	0004
5	Number of students graduated	000	000	000	258	078	0336
6	Number of students dismissed due to poor performance in 1st and 2nd semesters	000	000	001	002	000	0003
		000	003	000	000	000	0003

The following statement shows promotion and detention of M.Sc. (2-year) and M.Sc. (Dual Degree) students in the academic year 2003-2004 (upto May, 2004):

S.N.	CONTENTS	1ST Year	2nd Year	TOTAL
1	Students strength at the beginning of the session	74	64	138
2	Students strength at the beginning of the 2nd sem.	73	57	130
3	No. of students dismissed in 1st semester	00	00	000

	No. of students dismissed in 2nd semester	00	00	000
4	No. of students graduated in 1st semester	00	05	005
	No. of students graduated in 2nd semester	00	42	042
5	Number of students dismissed due to continued absence from the programme	00	00	000

Following is the department-wise break-up of students who were awarded the degree at XXXVI Convocation held on 28.05.2004. Dr. Anil Kakodkar Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy, Govt. of India was the Chief Guest at the Convocation:

DEPARTMENT / DISCIPLINE	**B.Tech**	**M.Sc 5-Yr**	**M.Sc 2-Yr**	**DIIT**	**MBA**	**M.Tech**	**Ph.D**	**TOTAL**
Aerospace Engg.	17	00	00	00	00	02	01	20
Chemical Engg.	45	00	00	00	00	10	03	58
Civil Engg.	31	00	00	00	00	17	05	53
Comp. Sc. & Engg.	51	00	00	00	00	05	01	57
Electrical Engg.	77	00	00	02	00	13	02	92
Env. Engg. & Management	00	00	00	00	00	12	00	12
Mechanical Engg.	70	00	00	00	00	10	06	86
Mat. Sc. & Met. Engg.	46	00	00	00	00	26	01	73
Industrial Management & Engg.	00	00	00	00	28	02	02	32
Materials Science Prog.	00	00	00	00	00	06	00	06
Nuclear Engg. & Tech. Prog.	00	00	00	00	00	09	00	09
Laser Technology Prog.	00	00	00	00	00	01	00	01
Chemistry	00	07	12	00	00	00	12	31
Mathematics	00	00	14	00	00		02	16
Maths. & Scientific Computing	00	13	00	00	00	00	00	13
Physics	00	07	13	00	00	00	05	25
Statistics	00	00	08	00	00	00	01	09
Humanities & Soc. Sciences	00	00	00	00	00	00	04	04
TOTAL	337	27	47	02	28	113	45	597

Research & Development

As in the previous years, the Institute has maintained a healthy growth rate in research and development activities. 326 new projects for sponsored research, consultancy and testing have been awarded with a total funding commitment of Rs. 4500 lakh - an increase of almost 32% from the previous year.

IIT Kanpur has been entrusted to act as nodal agency for Technology Mission on rail safety initiated by the Ministry of Railways with a budget of Rs. 3300 lakh , in collaboration with Ministry of Human Resource Development and a consortium comprising of (i)academic and research institutions (ii) railways organizations and (iii) industry Technology development in the areas of traction and rolling stock, tracks and bridges, signals and communications and fog vision instrumentation have been identified as the mission programs.

With the aim of bringing the benefits of information and communication design technologies to farmers and traders of agriculture commodities in this region, the Kanpur-Lucknow hub of Media Lab Asia has established a Digital Mandi and an experimental wireless VOIP phone based PCO extension counter at a nearby village. Technology developed at the Resource Center for Indian Languages has been transferred to eight centers for machine aided translation from English to Oriya, Bengali, Marathi, Assamese, Manipuri, Konkani, Urdu , Punjabi, Malayalam and Sanskrit. Software code compliance tool and software test coverage analyzer developed at the Department of Computer Science and Engineering have been commercialized by Centre for Reliability, Chennai, a laboratory of Ministry of Communication and Information Technology. A range-sensing , indoor, mobile robot equipped with micro-controller sub-system, laser range finder and wireless connectivity sub-system has been developed for BARC. This robot is capable of real time surveillance in hazardous environment.

The Department of Mathematics has developed a video re-focusing technology through digital mathematical processing, which compensates for the physical limitation of a camera. The processed images and video are much more crisp, live, non-straining to the eye and regain the scientific details necessary for a technical work. This technology is expected to make a significant change in different kinds of video communication. Many companies including Zee Television have shown interest in this technology.
The work done on nano-sciences at the Department of Chemistry has been recognized for the Global Indus Technovator Award 2003 given by India Business Club of Massachusetts Institute of Technology , USA.

Our faculty members are regularly providing consultancy services to major organizations such as TISCO, TELCO, Gas Authority of India Ltd., Hindustan Levers Limited, Hindustan Aeronautics Limited etc. In the year 2003-2004 interaction with the industry has increased

and many more industries have been added. General Motors has sponsored a project for studying the galvanic corrosion behavior of specific combination of light metal alloys. IIT Kanpur is conducting a study for gas phase nitration of organic and inorganic substances for Jubilant Organosys Ltd. Web-based energy audit and accounting software and trouble call management software for power distribution utilities developed at the Department of Electrical Engineering have been commercialized by Interra (India) Pvt. Ltd.

Many projects with direct relevance to society have been initiated. The Department of Physics has designed a number of innovative, unconventional inspiring experiments for changing the present blackboard-intensive Physics education at school level by do-yourself methodology. To disseminate quality education to all, e-classrooms have been established at Raipur and Bilaspur and training of forty five teachers has been completed under the IIT Kanpur- Government of Chattisgarh collaboration. Under the IIT Kanpur – Khadi and Village Industries Commission collaboration, two projects on design, development and fabrication of bio-gas filling pilot plant and design and development of a biodiesel pilot plant have been initiated. IIT Kanpur has embarked on a unique project to develop and apply point cloud technology and rapid proto-typing methodology for the three dimensional digital recording of the landmark monuments and other culturally significant artifacts of the National Heritage of India. A new electro-thermally heated jacket is being developed with immense importance for defense personnel.

With the awareness of the importance of protecting intellectual property, the number of patent applications have increased to fifteen as compared to ten patents filed in the last year. Some of these include a process for controlled synthesis of high molecule weight micron sized polymers, design of a high efficiency rotating packed bed suitable for distillation and absorption, and a tubular microwave sintering furnace with controlled atmosphere. IIT Kanpur has recently been awarded a US patent for magneto conductive polymer composites. These polymer blends have potential applications in avionic tubes and as flexible magnetic sensors. Another U.S. patent has been filed on polynomial time deterministic method for testing primality of numbers. This has wide ranging applications in cryptology.

For strengthening collaborations with the academic and research institutes as well as industries, IIT Kanpur has signed a number of MoUs with international and national bodies. Noteworthy of them are with: BARC, Mumbai and Board of Research in Nuclear Sciences of Department of Atomic Energy, Govt. of India with the main objective for development of a robust general purpose CFD code; the University of Allahabad for collaboration in areas related to cultural resource management; General Motors India Private Limited, Bangalore for conducting research and providing other services; Neurogen Corporation, USA with the objective of synthesizing complex organic chemicals. IIT Kanpur has signed MoUs with Yokohama National University, Japan, National University of Singapore, Mazandaran University of Science and Technology, Iran and Le Group Ecoles Des Mines (GEM), France for academic collaboration in different areas of science and engineering

To strengthen the research infrastructure, the Institute has procured the following new equipment: laser scattering particle size analyzer; coincidence doppler positron annihilation radiation system; drill core scanner for magnetic susceptibility & natural gamma ray measurements; high pressure thin layer chromatography system; optical spectrum analyzer; 3-D surface profilometer to characterize material surfaces; gas chromatograph-mass spectrometer system equipment and an affymetrix scanner. The electron paramagnetic resonance system procured last year has been commissioned. As a recent initiative, the Institute has set-up a new '4i lab' with the objective of facilitating design evolution into complete products. This facility is equipped with a CNC vertical milling center, CNC turning center, fused deposition modeling, rapid prototyping, and abrasive water jet cutting machine.

MAJOR SPONSORED PROJECTS

COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

Project Title	Amount (Lakhs)
A novel strategy for the site-specific generation of 4-keto abasic site in dna oligonucleotide	10.46
Multi-site coordination ligands supported on acyclic and cyclic-p-n compounds	12.46
Design & development of new multicomponent coupling reaction	15.00

DEPARTMENT OF ATOMIC ENERGY

Project Title	Amount (Lakhs)
Software for calculation of probability density function of the performance function using the advanced mean value methods	11.68
Intrinsic fluorescence of tissues for diagnosis of cancer	22.97
Development and characterisation of tib2 based materials for high temperature application	26.37

DEPARTMENT OF INFORMATION TECHNOLOGY

Project Title	Amount (Lakh)
Development of photonic devices based on single crystal fibers	20.04
Pick packet v2-a gigabit network monitoring tool	60.00

DEFENCE RESEARCH & DEVELOPMENT ORGANIZATION

Project Title	Amount (Lakh)
Measurement of refractive index of turbid suspensions: design of a refractometer using optical fiber as sensor	15.00
Spintronics in magnetic thin films of transition metal oxides	19.59

Synthesis and measurement of optical non-linearity of organic and organometallic compounds	26.84
Multilayered electroceramic thin films	27.10
Uv laser and band gap engineered sensors based upon zno	41.46

DEPARTMENT OF SCIENCE & TECHNOLOGY

Project Title	Amount (Lakh)
Molecular genetics analyses of lafora's progressive myoclonus epilepsy in indian population	10.08
Development of toughened zirconia ceramics for tribological applications	10.51
Reinforced-hydroxyapatite coating on ti6a14v by sol-gel technique	10.86
Structural investigations of short telomeric dna stretches	11.68
Control of superheat in continuous casting molds through a hollow jet nozzle/a physical and mathematical model investigation	11.71
Investigations into mangetic abrasive finishing of plane surfaces	12.57
Study of potential fluctuations in amorphous silicon	12.97
Gene expression profiling & gene network analysis using mathematical programming	16.36
Development of anisotropic ceramic dielectric resonator for miniature microwave circuit applications	17.74
Aziridine: a versatile building block in organic synthesis	21.98
Cyclopropanes as surrogates to molecules of potential interest. Application to selected natural products synthesis	22.57
Functional mimicry of copper oxidases: c-h bond activation by bioinspired nucleobase polymeric templates	24.00
Development of a humaniod robot for hazardous applications	24.06
Excess protons,electrons and metal atoms in hydrogen bonded nanoclusters: studies of structural, dynamical and electronic aspects through ab-initio molecular dynamics	24.48
Modular synthesis of cryptand-based nano structures	28.57
The role of reduced iron in contaminant transport, transformation & degradation in engineered & natural subsurface environments	29.82
Design and synthesis of organic photochromic systems, nlo and led materials	33.45
Gps measurements around bundelkhand cartonic block	40.17
Equipment for pseudo-dynamic facility	90.00
Tetrahalobicyclo [2.2.1] heptone & tetrahalobicyelo [2.2.2] octone devivatives: stereoselective inextricable templates in natural product & designed target synthesis	96.60
Investigation of instalities in unsteady bluff body flows	98.20
Fist program-2003	160.00

KHADI VILLAGE INDUSTRY COMMISSION

Project Title	Amount(Lakh)
Establishment of technical interface	50.00

MEDIA LAB ASIA

Project Title	Amount(Lakh)
Diesel engine misturning director	15.40
E-pop everbody's platform for information processing	32.40

MINISTRY OF HUMAN RESOURCE DEVELOPMENT

Project Title	Amount (Lakh)
Activated carbon fibers (acf) for the removal of co2 nox and sox by adsorption	11.00
Design and synthesis of novel glycopeptides and peptidomimetics as potentially therapeutic agents	11.00
Dr. Spintronics in nanostructured junctons of magnetic thin films	12.00
Modernization & upgradation of art & design studio for undergraduate curriculum development	12.00
Rainbow schlieren tomography measurements during Combustion of alternative gaseopus fuels such as Hydroge	14.00
Synthesis and characterization of nanopolymer (low density polyethylene)	15.00
Aluminium shear-link for passive control of seismic response of structure	15.00
Earthquake disaster mitigation	15.00
Membrance based effluent treatment process	15.00
Custom power and improvement of power quality at critical load centres in the distribution network	15.00
Dsm generation using high altitude satellite photos for identification and mapping of active tectonic landforms related to paleo-earthquake in kumaon himalaya	15.00
Structural investigation on bex, a gtp binding protein from bacillus subtilus	15.00
Modeling of human perception through eye-movement metrices and visual-motor control	15.00
Development of magnetic nano-structures using e-beam deposition for sensors	15.00

Parallel synthesis of functional monomers and polymers: applications in catalysis and electrical conductance studies	15.00
Modernisation of sedimentological research facility	15.00
Band gap engineered sensors and uv laser	16.00
Development of capacitance based micro-sensor for oil film thickness measurements	16.00
Establishing an instructional laboratory for the courses entitled "high performance polymers and composites ms 616 and composite materials-me 727"	17.00
An experimental study of low emission energy efficient burner	19.00
Processing and characterisation of polymer nano-particulate composites	19.00
Development of facility for materials and interfaces for gan based high temperature-high power electronic devices	20.00
Intitation grant-railway technology mission.	20.00
Production of hydrogen for fuel cells by auto-thermal reforming of ethanol	20.00
Turning 802.11 inside-out: wireless networking for rural india	20.00
Laboratory for chemical process synthesis, design and plantwide control	20.00
Modernisation of ug laboratories of aerospace engg.	20.00
Spectroscopic studies of inorganic, organic, organometallic and biological molecules and materials in the near and far ir region	20.00
Flow of non-newtonian liquids in micro-channels and metallic foams	21.00
Understanding and characterisation of nano scale forces in thin polymer films and particle adhesion/detachment	23.00

WELLCOME TRUST

Project Title	Amount (Lakh)
Identification and characterization of genes involved in germ cell development in caenorhabditis elegans	152.34

NAVAL RESEARCH BOARD

Project Title	Amount (Lakh)
Active flow control by dynamic obstacles in propulsion applications	34.086

MINISTRY Of INFORMATION TECHNOLOGY

Project Title	Amount (Lakh)
Integrated English to Hindi machine aided translation system	75.00

NEUROGEN INC.

Project Title	Amount (Lakh)
Synthesis of fragments (us$-157500)	72.00

GUJARAT STATE DISASTER MANAGEMENT AUTHORITY

Project Title	Amount (Lakh)
Review of building codes and preparation of commentary and hand books for gsdma gandhinagar	95.91

MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY

Project Title	Amount (Lakh)
SIIC-Electronic & Animation Cells	10.00
Development of content delivery tools to enhance the existing experimental educational technology service	32.89
Multipurpose multimodal biometri systems for human identification	43.13

DEPARTMENT OF BIOTECHNOLOGY

Project Title	Amount (Lakh)
Cancer genomics in drosophila: areal time expression profilling of cancers of diverse genetic origin	167.4

Alumni Association Activities

The Alumni Association of IIT Kanpur organizes a number of activities for the present students and the Alumni. The activities for the Year 2003-04 are summarized here:

NOSTALGIA
The Alumni Association organized Nostalgia - 2003 on April 18, 2003 to bid farewell to the graduating students. The programme included a farewell speech by the Director and the Secretary of Alumni Association, presentation of mementoes, group photographs and a farewell dinner. The Student Gymkhana partially supported the activity.

YEAR BOOK
The graduating batch compiled a Year Book containing detailed information about their batch-mates. The Alumni Association contributed to the publication of the year book.

ANNUAL CONVENTION & SILVER JUBILEE REUNION OF THE CLASS-OF-79
The Annual Convention of Alumni Association and the Silver Jubilee Reunion of the Class-of-1979 were organized from January 4 to January 5, 2004. Over 150 alumni from all over the world, attended the annual convention with enthusiasm and nostalgia. The visiting alumni interacted with the students and the faculty, both formally and informally, and also visited the various Institute facilities and departments. The Class-of-1979 has committed to generate funds and the purpose is to be decided in due course of time. Like every year, the Director hosted a lunch in honour of the visiting alumni at his residence. The Institute also presented seven Distinguished Alumnus Awards to alumni who have excelled in their respective fields.

DISTINGUISHED ALUMNUS AWARD
Dr S G Dhande, Director IIT Kanpur constituted the following Distinguished Alumnus Award Evaluation Committee for the year 2003- 04:

Professor S G Dhande, Director, IIT Kanpur	Chairman
Prof SS Katiyar, Vice-Chancellor, CSJM University, Kanpur	Member
Mr Sanjiv Shriya,	Member
Dr R K Thareja, Professor of Physics, IIT Kanpur	Member
Dr C Venkatesan, Dean of Students Affair, IIT Kanpur	Member
Dr Sanjeev Bhargava, Secretary, Alumni Association	Member- Secretary

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

- **Mr Suresh Pandey** (BT/MME/65) Managing Director, Bokaro Steel Plant, Bokaro *for his outstanding and all round contributions to the Steel Industry of India.* 2004

- **Mr Amitabh Srivastava** (BT/EE/79) Microsoft Distinguished Engineer, Microsoft Corporation, USA f*or his outstanding and phenomenal contributions towards software development recognized by the international community.* 2004
- **Satyendra K Dubey** (BT/CE/94) Deputy General Manager/ Project Director, Koderma Project Implementation Unit, National Highway Authority of India, awarded posthumously *in recognition of his honesty, integrity, dedicated service and upright behavior in public life.* 2004

Mr Suresh Pandey, Mr Dhananjay Dubey (Brother of Mr Satyendra K Dubey) received the award in person on January 4, 2004 during the Annual Alumni Convention while Mr Amitabh Srivastava could not attend the ceremony due to some other commitments.

ANNUAL GENERAL BODY MEETING

The Annual General Body Meeting (AGBM) was held in L-1 on January 4, 2004 at 16:00 Hrs. The meeting was chaired by Dr Sanjeev Bharagva, Secretary and he presented the annual report and Dr Sanjeev Swami, Treasurer presented the statement of accounts. The Elections for the New Executive Committee were also held.

The Executive Committee for the year 2004- 06 constituted as follows:

President: Mr Atul Garg (BT/EE/79; CTO, Proactivenet)
Vice President: Mr Anurag Goel (BT/ME/71, Company Secretary, Anurag Goel & Associates) **Secretary:** Prof Ashok Khanna (BT/CHE/69; Professor, CHE, IIT Kanpur)
Treasurer: Prof Vinayak Eswaran (BT/ME/80; Professor, ME, IIT Kanpur)
Members
Mr Hemant Shah (BT/CHE/79; CEO, Uni-Design Jewellery India Pvt Limited)
Mr Yogesh Dayal (BT/EE/79; Vice President, IBM Global Services Limited)
Mr Ananta P Mukerji (BT/EE/80; CEO, Aviana Global Technologies)

Co-opted Member
Prof Sanjeev Bhargava (BT/ MME/75; Immediate Past Secretary AA, Professor & Head, MME, IIT Kanpur).
Mr Sanjiv Sahay (BT/EE/77; Immediate Past President AA, CEO, Asquare Inc.).

35th YEAR REUNION OF THE CLASS-OF-69

The reunion of the batch which completed thirty five years of graduation was held on December 27-28, 2003. Forty five alumni along with their family members came from all over the world to attend the reunion. The visiting alumni interacted with the students and the faculty and also visited various institute facilities and academic departments. Class-of-69 committed to contribute to the Institute in various ways. Like every year, the Director IIT Kanpur hosted a lunch in honour of the visiting alumni.

Several former faculty members were also invited for the occasion. They enjoyed the interaction with their former students. The programme included organization of an Alumni Archival Exhibition and Panel discussion.

UMANG GUPTA DISTINGUISHED ALUMNI LECTURE SERIES

Umang Gupta (BT/CHE/71) CEO Keynote Systems Inc. USA had give an endowment of US$ 15000 for starting the 'Umang Gupta Distinguished Alumni Lecture Series'. Its inaugural lecture was delivered by Umang Gupta himself on December 15, 04 on 'Road Less Traveled – the Journey of a Silicon Valley pioneer. On this occasion he received the Distinguished Alumnus Award which was conferred on him in the year 1997.

KANPUR CHAPTER GET-TOGETHER

IIT Kanpur Alumni Associaton Kanpur chapter get-together was also held on December 15, 03 around fifty alumni with their family members attended the get-together in which Mr Umang Gupta (BT/CHE/71; CEO, Keynote Systems Inc., USA) also joined in with the Prof S G Dhande, Director, IIT Kanpur, Prof G K Lal Director of Alumni Relations and many other distinguished alumni.

NEWSLETTER

The Alumni Association started an e-version of its Newsletter from the month of August which is being bimonthly mailed to all alumni via email. Till now 5 issues have been mailed and an overwhelming response has been received on it.

Central Facilities

P.K. KELKAR LIBRARY

P.K. Kelkar Library is housed, with all modern amenities, in a magnificent three-storied, separate building covering an area of approximate 6873 square meters. With the growth in the collection, the library is bursting at its seams. There is no scope for further addition and hence additional space is needed. A proposal for an Annex to the library has been approved. Its constructions is scheduled to start soon. Meantime, basement of the library, hitherto held by Graphic Arts has been made available to the library and we are shifting part of our collection there. P.K. Kelkar Library has been rendering essential support to the academic, research and development programmes of the Institute. The library remained open, as usual, on 358 days of the year, from 8: 00 a.m. to 12:00 midnight on all working days; 9. a.m. to 12 midnight on Saturday; 9 a.m. to 5.30 p.m. on Sundays and Gazetted holidays, and for 24 hours during the three examinations each semester.

NEW ADDITIONS

A total number of 7998 volumes including 3741 books, 4257 bound volumes of journals were added to the collection during 2003-2004. A budget of Rs. 100 lakhs was fully utilized for purchase of books.

SUBSCRIPTION TO PERIODICALS AND BINDING

The Priodicals budget for 2003-2004 was Rs. 5.5 crores with additional grant of Rs.18.5 lacs made available by NBHM. The library subscribed to 1541 current periodicals for the year 2004. Of these 714 are print version, whereas 817 are print plus on-line and ten on-line only. The library added 4042 bound volumes to its periodicals holdings. Besides, 1541 books and old periodicals were also bound.

The grant of Rs. 18.5 lacs from National Board for Higher Mathematics was utilized towards subscription of periodicals for 2004 to meet the information needs in the area of Mathematics. Twenty periodicals titles are subscribed out of this budget.

CIRCULATION

During the year 2003-2004, 62156 publications were circulated for home study. As usual, a large number of books and journals from Reference, Text Book, Science & Technology, Humanities and Social Sciences areas were consulted by users within the library.

LIBRARY AUTOMATION

iitKLAS: The User Services module of the iitKLAS (IIT Kanpur Library Automation System) has been re-engineered from Oracle Forms to Web-based platform. Now the catalogue search, current contents, journal subscription queries can be accessed through web. Other modules of iitKLAS are being rewritten. Two modules (Lekhya & Suchi) of iitKLAS

have been re-engineered; rest are under process. Now our library is also accessible to outside community through web: http://www.library.iitk.ac.in/

ON-LINE CATALOGUE OF BACK VOLUMES OF PERIODICALS

An exercise for creating on-line catalogue of back volumes of journals is still under way. A retrospective data file is being created for the purpose.

DOCUMENT DELIVERY SERVICES & EXTERNAL USER MEMBERSHIP

Inter-Library Loan (ILL) services, as usual, are extended free to sister IITs, IISc, TIFR, BARC; whereas other institutions are charged for Document Delivery Service (DDS). During 2003-2004, photocopies of various documents comprising of 4605 pages have been provided. Complimentary copies of CAS services, departmental work, etc. accounted for 1,62,806 xerox copies.

Individual and institutional membership of the library was made available to 1568 external users.

COMPUTER CENTRE

Computer Centre at IIT Kanpur is a central facility that caters to the computing needs of the faculty members and the students for their research and teaching. It has a users base of about 4500.

Computer Centre has a number of state of the art systems like Sun Enterprise 10000, SGI Origin 3400, IBM-SP, and, Compaq 8 way server. It has about 250 PCs running Linux or window 2000 Operating System. All the computers in the Centre are connected through a 100 Mbps switched network.

Computer Centre supports an institute-wide 6000 points, 100 Mbps, fiber optic network that connects all academic departments, central library, student hostels, RE hostel, Visitors' Hostel, Lecture halls and administrative departments. Internet and email services are provided to all the users through dedicated two 2 Mbps internet links. Connectivity to faculty residences is provided through ADSL. For other residential users, both inside and outside the campus, dialup service is provided.

Computer Centre provides computational, email and web access facilities to all its users. Faculty members have access to the computing facilities for the life time.

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

HARDWARE IN THE COMPUTER CENTRE

Computers in the Centre have broadly been divided in various categories based on the activity supported by them. The broad categories and servers with configuration in each of the categories, are listed below (number in the bracket indicates number of machines):

Central File Server		
	Sun Enterprise 3500	6Sparc II processors, 6 GB RAM, 2.9 TB HDD in Raid arrays with automated backup facility.
Compute Servers		
	SGI Origin 3400	16 MIPS R12000 processors, 8 GB RAM, 108 GB HDD, Graphic brick for virtual Reality lab.
	Sun Enterprise 10000	15 Spare II processors, 8 GB RAM, 108 GB HDD.
	IBM SP	15 Power 3 processors, SP switch, 8 GB RAM, 9 GB internal HDD per node, 90 GB external HDD on SSA.
	Param 10000	4 dual Sparc II CPUs Sun E250 nodes, Param Net switch, 4 GB RAM, 108 GB HDD
	Compaq Server	8 PIII Xeon processors, 4 GB RAM, 108 GB HDD.
	Sun Enterprise 450	4 Sparc II processors, 2 GB RAM, 40 GB HDD.
	SGI Origin 200 (2)	4 MIPS R12000 processors, 1 GB RAM, 30 GB HDD.
	Linux Cluster	16 nodes each with PIII 800 MHz processor, 128 MB RAM, 20 GB HDD.
	HP9000/L-3000	4 CPU, 2 GB RAM, 108 GB HDD.
	IBM RS-6000/270	4 CPU, 2 GB RAM, 108 GB HDD.
	ES40 Compaq Alpha	4 CPU, 2GB RAM, 108 GB HDD
Application/Interactive/Print Servers		
	SGI origin 200(2)	2 MIPS R 12000 processors, 8 GB RAM, 15 GB HDD.
	HP B-1000(3)	PA-RISC 8500@360Mhz CPU, 256 MB RAM, 9 GB HDD.
	Sun E250 (2)	Spare II Processors, 1 GB RAM, 36 GB HDD.
NIS, Mail, News, Internet, NT Servers		
	www, Proxy, vsnl proxy	HCL P-IV, Xeon @ 2GHz CPU, 1GB RAM, 2 X 36 GB Disk.
	Home, Students, home, web	Compaq P-IV,114 GHz CPU, 512 MB RAM, 20 GB Disk.
	NIS	Compaq DW 300 WS P-IV, 1.7 GHz CPU, 256 MB RAM, 40 GB Disk.
	Mail 2	P-IV 1.6 GHz CPU, 256 MB RAM
	NS1, ernet proxy	Compaq P-IV, 1GB RAM, 80 GB HDD.
	Antivirus	Sun E250, 400 MHz CPU, 512 MB RAM, 8 GB Disk
	Qasid	P-IV Dual Processor Xeon @ 2 GHz, 1GB RAM.
	News	Sun Ultra 10 WS, 256 MB RAM, 9 GB Disk..
	Zenith NT Server	2 Pentium- Pro processors, 1 GB RAM,12 GB Disk.

	Compaq Proliant 1500 NT Server.	2 Pentium-Pro processors, 128 GB RAM,8 GB Disk.
	Xeon based NT Server	2 Xeon 2.8 GHz processor, 4 GB RAM, 2 X 36 GB Disk.
Servers for Office/Library/Digital Library Automation		
	HP L-1000	PA-RISC 8500@360 MHz, 512 MB RAM, 27GB HDD
	SUN E-450 (OA, Digital Lib.)	Four sparc @ 400 Mhz, 2GB RAM,36 GB HDD one 1000 storage with 12 X 18 GB.
	Zenith One up (NT server)	2 Pentium-Pro processors, 1 GB RAM, 12 GB HDD.
	PCs (150) in admin sections	486 Pentiums with varying configurations.
	Sun E250 (data vault)	2 Spare II Processor, 1 GB RAM, 216 GB HDD in RAID.
	Compaq ML 530 server	Server for thin clients.
	Compaq thin clients	125 thin clients for Office Automation.
Front-end Work Stations		
	Sun Ultra 10(10)	Ultra Sparc II 360 MHz, 256 MB RAM, (9+40) GB Disk, Elite 3D Graphics.
	Linux PCs (153)	P- IV 1.5/2 GHz Processor,, 256, MB RAM, 20/40 GB Disk, 17" Monitor.
	NT PCs.	(i) P-4, 2GHz processor, 256 MB RAM, 40 GB Disk.
		(ii)35 P-III, 800 MHz/1 GHz processor, 256 MB RAM, 20 GB Disk.

OTHER EQUIPMENT

Computer Centre also supports two high speed line printers (1000lpm), one post script laser printers, one deskjet color plotter, one A3 size scanner, and network equipment like switches.

SOFTWARE IN THE CENTRE

Database packages- Oracle, Ingress, Visual FoxPro
CAD/CAM and solid modeling package-I-Deas, Autocad
FEM Packages-Nastran, MSC Mark
CFD Packages-Fluent
Tool to solve symbolic mathematical equations-Mathematica, Matlab, Math Cad
Simulation- Arena, Solversuite, Gams, Cplex
Chemical Process modeling – Aspen plus
Molecular modeling- MSI
Statistical Analysis Packages- Statistica, SPSS, SAS
Numerical Libraries – NAG

Graphic Presentation – Tecplot, Origin
Deform-3D
Atila, Maple, Adobe Digital video studio, Macromedia Director, Macromedia dream viewer, 3D studio Max 5.1
Katia, Toleran, checkpoint flow, Chemcad
Autocad 2002, Mechanical desktop, Land Desktop
GE04, Magic RP

Most flavours of Unix operating systems-AIX, Solaris, Irix, HP-UX, True64 Unix, Linux, Sun Filer
Windows 98 and Windows NT environments,
Office Suites- Applixware, Staroffice, Office 2000, Mathype
Compilers-NAG HPF Compiler, Fujitsu Fortran Compiler, Visual Studios (C, C++, Pascal, Ada, Fortran-77, Fortran-90, Java, etc.)
Most of the popular Microsoft Products-Front Page, Back Office, Project, etc.
Abaqus 6.4
All the softwares which come with RedHat/Mandrake Linux distributions
Anti Virus-Norton, Dr. Solomon's Home Guard, Symantec Antivirus for mail gateway

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

(1) Acrobat 6.0 Win 50 users license.
(2) Protector Plus Antivirus 3000 user license.

CENTRE FOR DEVELOPMENT OF TECHNICAL EDUCATION

The Centre for Development of Technical Education continued its multifaceted activities. Under Quality Improvement Programme (QIP) 07 candidates in M.Tech. and 08 in Ph.D. are admitted to various departments. The Curriculum Development Cell (CDC) approved 07 text book writing proposals in addition to the 21 projects which had been sanctioned earlier. The work for both proposals is under progress. During the last financial year 04 book writing projects have been completed (See Annexure-I).

Through the Continuing Education Programme numerous short term courses, conferences and workshops were organized. A List of all short term courses (Annexure-II) and workshops/conferences/seminars (Annexure-III) is enclosed herewith.

LIST OF CONDUCTED SHORT TERM COURSES (APRIL 1, 2003 - MARCH 31, 2004)

S.N.	Title of the Short Term Course	Coordinator	Department	Duration	Status
1.	Training Programme for Kerala Entrance Examination (Through Remote Education)	Dr.N.K. Sharma	Humanities and Social Sciences	April 04-06, 2003	STC
2.	Data Structures and Algorithms	Dr. S.K. Aggarwal	Computer Science & Engg.	May 8 – June 07, 2003	STC
3.	Summer Camp 2003 for Civil Engg. Undergraduate	Drs. Bharat Lohani & CVR Murty	Civil Engineering	June 06-July 05, 2003	STC
4.	Principles and Application of GSM	Dr. Dheeraj Sanghi	Computer Science & Engg.	June 24-25, 2003	STC
5.	NBHM Nurture Programme 2001	Drs. S. Madan & U.B. Tewari	Maths	June 23 – July 12, 2003	STC
6.	Advanced Workshop on Oracle9i DBA	Mr. Khaleeq Ahmad	Computer Centre	June 26-30, 2003	STW
7.	Curricula Development for Self-Computing	Dr. P.K. Kalra	Elect. Engg.	July 05-06, 2003	STC
8.	Robotics and Automation	Dr. Bhaskar Das Gupta	Robotics	July 07-18, 2003	QIP/ STC
9.	Computational Neuro-Science	Dr. P.K. Kalra	Electrical Engg.	July 07-18, 2003	STC
10.	On-line Signal Processing and Neural Computations Using DSP Work Stations	Dr. G.C. Ray	Elect. Engg.	July 07-19, 2003	QIP/ STC
11.	Recent Trends in Bituminous Mix Design	Dr. Animesh Das	Civil Engg.	July 10-12, 2003	STC
12.	CAD of Thermal Systems	Dr. P.K. Panigrahi	Mech. Engg.	July 14-19, 2003	QIP/ STC
13.	Electric Power System Operation and Management in Restructured Environment	Dr. S.N. Singh	Elect. Engg.	July 21-25, 2003	QIP/ STC

14.	Introduction to Earthquake Engineering	Drs. CVR Murty & Durgesh C. Rai	Civil Engg.	July 21-25, 2003	STC
15.	Earthquake Engineering to be held at Ahemedabad	Dr. CVR Murty	Civil engg.	July – Dec. 2003	STC
16.	Introduction to Earthquake Engineering	Dr. Duresh C Rai	Civil Engg.	Aug. 04-09, 2003	STC
17.	Power Reform	Dr. P.K. Kalra	Electrical Engineering	Sept. 03-07, 2003	STC
18.	Trends in Techniques and Practices in Sensors and Instrumentation	Drs. P. Gupta – Bhaya & Anjan K. Ghosh	Chemistry	Sept. 08-12, 2003	STC
19.	Latest Development in Physics	Dr. Prem Chand	Physics	Sept. 15-19, 2003	STC
20.	Renewable Energies and Alternative Fuels	Drs. A.K. Agarwal, K. Ghosh and M. Prasad	Mechanical Engg. Aerospace Engg. Mechanical Engg.	Dec. 01-05, 2003	STC
21.	Modelling of Turbulent Flows for Heat and Mass Transfer Applications to be held at Jamshedpur	Dr. G. Biswas	Mechanical Engg.	Dec. 11-20, 2003	STC
22.	Frontiers in Inorganic Chemistry	Dr. R.N. Mukherjee	Chemistry	Dec. 18-31, 2003	STC
23.	Laboratory Practical for Students of Royal Bhutan Institute of Technology, Bhutan	Dr. K. K. Bajpai	Civil Engineering	Jan. 06-27, 2004	STC
24.	Materials Testing	Dr. S.C. Koria	Materials & Metallurgical Engg.	Jan. 19-23, 2004	STC
25.	International Conference on Mathematical Biology	Drs. Peeyush Chandra & B.V. Rathish Kumar	Maths	Feb. 18-22, 2004	STC
26.	Computerized Tomography (CT 2004)	Dr. Prabhat K. Munsi	Mechanical Engg.	Feb. 12-16, 2004	STC

27.	Communication Skills	Drs. Achla M Raina & G. Neelakantan	Humanities & Social Sciences	One-week	QIP/ STC
28.	Latest Development in Chemistry	Dr. R N Mukherjee	Chemistry	Feb. 25-28, 2004	IRDT
29.	Combustion-generated Emission and Its Control	Dr. D.P. Mishra	Aerospace Engg.	Mar. 01-05, 2004	QIP/ STC
30.	Recent Trends in Construction & Rehabilitation of Buildings	Shri Santosh Kumar	IWD	Mar. 02-04, 2004	STC
	Latest Development in Mathematics	Dr. D. Bahuguna	Maths	Mar. 08-12, 2004	STC

LIST OF WORKSHOPS/CONFERENCES/SEMINARS (APRIL 1, 2003 - MARCH 31, 2004)

Sl. No.	Title of the Conference/ Workshop/ Symposium	Coordinator(s)	Department(s)	Duration	Status
1.	Computer-based Data Acquisition and Control for Automation of Civil Engg. Labs	Dr. K.K. Bajpai	Civil Engg.	April 07-08, 2003	W
2.	CASMIT"03 (Competitive Advantage Through Strategic Management of Information & Technology)	Dr. Jayanta Chaterjee	Industrial & Management Engg.	April 10-12, 2003	W
3.	Advanced Welding Technology-2003	Dr. B. Deo	Materials & Met. l Engg.	April 24-26, 2003	W
4.	Review Workshop for Resource Material in EQ Engg. Education	Dr. K.K. Bajpai	Civil Engg.	May 19-24, 2003	W
5.	Workshop for Earthquake Engg. Curriculum in Polytechnics	Drs. D C Rai & Sudhir K. Jain	Civil Engineering	July 29-30, 2003	W

6.	Workshop on Curriculum Development for Geoinformatics	Dr. Onkar Dikshit	Civil Engineering	July 14 & 15, 2003	W
7.	Teaching of Earthquake Engineering to Civil Engg. Students	Drs. Sudhir K. Jain & CVR Murty	Civil Engg.	Aug. 22-23, 2003	W
8.	Workshop on Seismic Design Code: IS:1893-2002 to be held at Hyderabad	Dr. CVR Murty	Civil Engg.	Aug. 01-02, 2003	W
9.	Indo-Italian Joint Workshop on Organic Semiconductors	Drs. Satyendra Kumar & Deepak Gupta	Physics Materials & Metallurgical Engg.	Oct. 14-17, 2003	W
10.	Workshop on New Avionies Technologies to be held at HAL, Korwa.	Dr. Bansi Lal		Nov. 14-15, 2003	W
11.	IIT Kanpur String Theory Workshop	Dr. Gautam Sengupta	Physics	Dec. 07-22, 2003	W
12.	International Workshop on "Mathematics and Physics of Complex and Nonlinear Systems"	Drs. A. Sengupta, A. Mookerjee & S.N. Bose	Mechanical Engineering	Nov. 30-Dec.14, 2003	IW
13.	Workshop on "Indo-US workshop on Futuristic Manufacturing: Generative Manufacturing, Self Assembly and MEMS"	Dr. Amitabha Ghosh	Mechanical Engg.	Jan. 06-09, 2004	W
14.	Project Methodology Workshop during	Dr. A K Sharma	Humanities & Social Sciences	Feb. 01-03, 2004	W

15.	International Conference on Mathematical Biology	Dr. Piyush Chandra & B V Rathish Kumar	Maths	Feb. 18-22, 2004	C
16.	IIT Kanpur Hackers' Workshop 2004	Drs. Dheeraj Sanghi & Deepak Gupa	Computer Science & Engg.	Feb. 23-24, 2004	W
17.	Joint Indo-US Workshop on Futuristic Manufacturing	Dr. Amitabha Ghosh & Dr. S G Kapoor	Mechanical Engg.	Mar. 22-24, 2004	W
18.	First Workshop on Anglobharati Technology	Dr. Ajai Jain	Computer Science & Engg.	Mar. 29-Apr.03, 2004	W

LIST OF QIP COURSES

Sl. No.	**Title of the Course**	**Coordinator (s)**	**Dept.**	**Duration**
1.	Communication Skills	Drs. Achla M Raina & G Neelakantan	HSS	One Week
2.	Combustion-generated Emission and Its Control	Dr. D.P. Mishra	AE	One Week
3.	Robotics and Automation	Dr. Bhaskar Dasgupta	Robotics	Two weeks July 07-18, 2003
4.	Electric Power System Operation and Management in Resturcutred Environment	Dr. S.N. Singh	EE	One Week May 12-17, 2003
5.	Trends in Display Technologies: 2003	Dr. B. Mazhari	EE	One Week May, 2003
6.	Renewable Energies and Alternative Fuels	Drs. A.K. Agarwal, K. Ghosh & M. Prasad	ME AE ME	One Week Dec. 08-12, 2003
7.	Cad of Thermal Systems	Dr. P.K. Panigrahi	ME	One Week July 21-26, 2003
8.	On-line Signal Processing and Neural Computations Using DSP Work Stations	Dr. G.C. Ray	EE	Two weeks May – June, 2003

LIST OF ICSSR COURSES

l. Environmental Economics and EIA, Dr. Binayak Rath, HSS, June 26 - July 5, 2003

BOOK WRITING PROJECT

a)	Book writing projects continued	21
b)	Proposal approved during the year 2003-04	07
c)	Book writing Projects completed	04

CENTRE FOR CREATIVE WRITING AND PUBLICATION

The Centre organized the following activities during April 2003 to March 2004

- Seminar entitled "Remembering Said" on October 27, 2003.
- General Discussion on "Language and Cognition" with Professor Jens Allwood on Jan 13, 2004.
- Seminar by Professor Jens Allwood on "Language, Culture and Communication" on Jan 14, 2004.
- Seminar by Professor Ramarajan Mukherjee on "Indian Culture: Projections and Premises" on March 5, 2004.
- General Discussion with Professor Ramarajan Mukherjee on March 6, 2004.
- Several group discussions on various literary topics.

Some activities of Professor B.N. Patnaik during the year :

Listed in the annual Report of the HSS Department for the period under reference.

STAFF DEVELOPMENT & COORDINATION CENTRE

The Staff Development Coordination Centre oversee the smooth progression of all the staff members in their career advancement, and to develop abilities of an individual to satisfy current and future manpower needs of the Institute.

The non-teaching staff is an important component in the institute and they must be taken along the journey of excellence. This centre is committed to design to meet the challenges in terms of high qualities of training of Human Resources in the Institute. The staff members whole heartedly participated in the learning activities to acquire new knowledge, skills attitude and change habits.

The centre has celebrated the Diamond Jubilee of Training programmes in March, 2003.

The following training programmes were organized during the financial year 2003-2004:

S.N.	Training Programme	No.of days	No. of partici -pants	Type of participants
1.	Supervisory Value added Development	One-day 28.04.2003	30	Group A&B
2.	Administrative Management	One-day 03.05.2003	50	Group C
3.	Safety Management	One-day 09.05.2003	54	Group C
4.	Records & File Management	One-day 12.07.2003	38	Group B & C Technical
5.	Induction programme	03 days 04.08.2003 to 08.8.2003	20	Group B&C
6.	Role of ISCC Members	03 days 11.11.2003 to 14.11.2003	08	ISCC members
7.	Energy Conservation Technologies	02 days 16.1.2004 to 17.1.2004	20	Technical staff
8.	Store Purchase Management	02 days 13.1.2004 to 14.1.2004	21	B & C
9.	Human Resource	One-day 21.1.2004	22	Group B

SC/ST and OBC CELL

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

IMPLEMENTATION OF RESERVATION ORDERS

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

MAINTENANCE OF ROSTERS/ PERCENTAGE OF RESERVATION

The Board of Governors had approved, in its meeting held on July 27, 1995, maintenance of 120* points vacancy-based roster for Group A (other than exempted posts) & B posts and 100♦ points roster for Group C & D posts for direct recruitment at the Institute. On the basis of Judgement passed by the Constitution bench of Supreme Court, the Government of India, Department of Personnel & Training., 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 1997/5th meeting held on December 05, 1997 for maintenance of post-based rosters.

* Points reserved in favour of OBCs-31, SCs-20, STs-9

♦ Points reserved in favour of OBCs-27, SCs-21, STs-1

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

CONCESSIONS/ RELAXATIONS

a. There is no upper age bar in the Institute for any post for any community. In case any age limit is prescribed due relaxation of 5 years in upper age is made available for SC/ST candidates and of 3 years to OBCs.
b. SC/ST are fully exempted from payment of application and registration fees:
c. To and fro TA is being paid to the candidates of all categories out of Kanpur to attend the test and interview [For Group-A : 1st class and for Group B, C & D : 2nd class rail fare];
d. Experience requirement is relaxable at the discretion of competent authority.
e. In addition to relaxation of experience requirement, higher initial pay is given to exceptionally qualified and deserving candidates. During the period of report, higher initial pay was given to the following employee:

Two additional increments in the pay scale of Rs.3050-75-3950-80-4590 were given to Shri Suresh Babu Bharati (SC), Mechanic, Dept. of Aero. Eng.

I. Two additional increments in the pay scale of Rs.3050-75-3950-80-4590 were given to Shri Mahesh Kumar (SC), Mechanic, Dept. of Mech. Engg.
II. Two additional increments in the pay scale of Rs.4500-125-7000 were given to Shri Sanjeev Kumar Verma (OBC), TA, Dept. of Mech. Engg.
III. Two additional increments in the pay scale of Rs.4500-125-7000 were given to Mrs. Sandhya Kumari (OBC), Nurse, Health Centre
IV. One additional increment in the pay scale of Rs. 3050-75-3950-80-4590 was given to Shri Radha Saran Satsangi (SC), LDC, Dept. of IME
V. One additional increment in the pay scale of Rs.3050-75-3950-80-4590 was given to Shri Rajneesh (SC), LDC, Accounts Section.
VI. One additional increment in the pay scale of Rs.3050-75-3950-4590 was given to Shri K Nageswara Rao (OBC), Asstt. Care Taker, PK Kelkar Library
VII. One additional increment in the pay scale of Rs.5000-150-8000 was given to Shri Rajendra Kumar Bharti (SC), Technical Assistant (Lib), PK Kelkar Library.
VIII. Two additional increments in the pay scale of Rs.5000-150-8000 were given to Shri Noufal. PP (OBC), Technical Assistant (Lib), PK Kelkar Library

EMPLOYMENT NOTIFICATIONS

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

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

Advt. No.	Name of Post(s)	Pay Scale	No. of Vacanices				Total	Published in
			SC	ST	OBC	UR		
3/2003	Assistant Registrar	8000-13500	-	-	1	1	2	Circulated within Institute vide No. RA/Advt.1/2003-IITK/844 dated 10.12.03
4/2003	Medical Officer	8000-13500	-	-	-	1	1	HT(Lko-edn.) and Jagran (Kanpur edn.)
1/2004	R&D Officer AR&D Officer Chief Security Officer	12000-18300 8000-13500 10000-15200	- - -	- - -	- - 1	 1 -	1 1 1	All edns. of Dainik Jagran, HT & University News (Delhi)
Total			-	-	2	4	6	

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

INCLUSION OF SC/ST MEMBER

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

For Selection: Total 21 Selection Committee meetings:
06 S/C meetings, wherein SCT representative included.
11 S/C meeting, wherein SCT/OBC representative included.
04 S/C meeting, wherein OBC representative included.

For Assessment: 01 Asmt. Committee meeting held, wherein SCT representative included.

CALL LETTERS FOR INTERVIEWS/ APPOINTMENT LETTERS

I. To ensure that the interview/ appointment letters are received by the candidates (including reserved category candidates) well in time – the interview/ appointment letters are being sent through UPC and registered post to ensure delivery.

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

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

Type of house	**Houses allotted to**			
	SC/ST		**GEN**	**Total**
	As per Reservation	As per Seniority		
Type-IA (Single room)	02	02	09	13
Type-1A (Double room)	02	02	09	13
Type-I	02	02	15	19
Type-II	02	02	11	15
Type-III	-	-	40	40
Type-IV	-	-	15	15

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

COMPLAINTS/ GRIEVANCES

No letter received for redressal of grievance of a SC/ST employee.

Any **Caste falsification** brought to notice is also followed up by the Cell. No new case, one old case of caste falsification in which the correspondence with the concerned District Magistrate was on w.e.f. December 1999 for verification of caste status, the concerned employee resigned from the Institute w.e.f 16.12.2003, and hence the chapter is closed for ever.

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	-	-	-	36	36
Retirement	-	-	-	16	16
Deaths	-	-	-	02	02
Resignation	-	-	-	03	03
V/Retirement	-	-	-	01	01
C/Retirement	-	-	-	-	-
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-

B. Non-Academic

Area(s)	SC	ST	OBC	GEN	TOTAL
Appointments		-	-	-	-
a) On permanent basis (Through open Recruitment)	-	-	-	-	-
b) On compassionate grounds	-	-	-	-	-
c) On deputation basis	-	1	7	26	42
d) On contract for 3 yrs	8				
Total	8	1	7	26	42
Retirement	10+3•	1	-	55	66+3•
Deaths	1	-	-	5	6
Resignation	2	-	2	3	7
V/Retirement	-	-	-	-	-
C/Retirement	-	-	-	-	-
SVRS	6+30•	-	-	27	33+30•
Deputationists repatriated	-	-	-	-	-
Termination	-	-	-	-	-
Dismissal	-	-	-	-	-
Total	19+33•	1	2	90	112+33•

• Cleaners

Assessment (Non-Vacancy linked personal promotion)
No orders issued for non-academic staff (Min.+Tech.)

Pay-scale		SC	ST	OBC	GEN	TOTAL
From	To					
-	-	-	-	-	-	-

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

A. Existing Strength of Academic Staff (Teaching/Non-teaching) as on 01.04.2004:

Recruited through DOFA Office

Academic	SC	ST	OBC	GEN	Total
Teaching	3	-	-	301	304
Non-Teaching	-	-	-	44	44
Total	3	-	-	345	348

B. Existing Strength of Non-Academic Staff as on 01.04.2004:

Recruited through Recruitment Section

Group	SC	ST	OBC	GEN	Total
A	4	-	3	31	38
B	22	1	4	165	192
C	81	5	40	301	427
D	66+28*	-	7	198	271+28*
Total	173+28*	6	54	659	928+28*

*** Cleaners, not counted towards reservation**.

C. Existing Strength of Account-II Employees as on 01.04.2004:
Recruited Through DORD Office

Group	SC	ST	OBC	GEN	Total
B	-	-	-	2	2
C	1	-	1	18	20
D	4	1	7	3	15
Total	5	1	8	23	37

D. Existing Strength of Mess Employees as on 01.04.2004:
Recruited through COW Office

Group	SC	ST	OBC	GEN	Total
B	-	-	1	4	5
C	-	-	1	4	5
D	15+8*	-	50	67	132+8*
Total	15+8*	-	52	75	142+8*

*** Cleaners, not counted towards reservation**

E- The data as available for showing the **representation of SCs/STs related to the students admitted in the 1st Semester 2003-04** in various programmes/discipline at the Institute is given below:

Prgrammes	**Registration Data in the 2003-2004 (I Semester)**			
B.Tech	**SC**	**ST**	**GEN**	**TOTAL**
Aero. Engg.	15	-	75	90
Chem. Engg.	23	4	130	157
Civil Engg.	16	4	138	157
Comp. Sc & Engg	25	15	129	169
Elect. Engg.	44	24	233	301
MME	13	1	174	188
Mech. Engg.	35	8	195	238
Total	171	56	1074	1301

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
M.Sc (5yrs. Integrated)	SC	ST	GEN	Total
Chemistry	-	-	51	51
Mathematics	-	-	78	78
Physics	1	-	54	55
Total	1	-	183	184

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
B-Tech-M-Tech (Dual Degree)	SC	ST	GEN	Total
Aero. Engg.	2	-	13	15
Chem. Engg.	3	-	19	22
Comp. Sc & Engg	6	2	38	46

Elect. Engg.	5	-	28	33
Mech. Engg.	6	-	40	46
Total	22	2	138	162

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
M.Sc-Ph. D (Dual Degree)	SC	ST	GEN	Total
Physics	-	-	13	13
Total	-	-	13	13

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
M.Sc (2 yrs.)	SC	ST	GEN	Total
Chemistry	2	-	33	35
Mathematics	-	-	34	34
Statistics	3	-	19	22
Physics	-	-	35	35
Total	5	-	121	126

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
M-Tech	SC	ST	GEN	Total
Aero. Engg	9	-	41	50
Chem. Engg.	5	-	64	69
Civil Engg.	4	-	93	97
Com. Sc. & Engg	3	-	79	82
Elect. Engg.	9	-	136	145
Mech. Engg.	10	4	95	109
MME	6	-	65	71
MSP	3	-	18	21
IME	1	-	28	29
NET	-	-	11	11
LTP	1	-	13	14
EEM	2	-	27	29
BSBE	3	1	18	22
M.Des	3	-	18	21
DIIT	-	-	2	2
MBA	10	2	48	60
Total	69	7	756	832

Prgrammes	Registration Data in the 2003-2004 (I Semester)			
Ph.D	SC	ST	GEN	Total
Aero. Engg.	4	-	23	27
Chem. Engg.	4	-	29	33
Civil Engg.	-	-	37	37
Comp. Sc & Engg	-	-	10	10
Elect. Engg.	1	-	34	35
Mech. Engg.	1	-	42	43
MME	3	-	22	25
MSP	-	-	9	9
IME	-	-	10	10
NET	-	-	3	3
CHM	6	-	110	116
MTH	-	-	50	50
PHY	-	-	44	44
M.Sc-Ph.D Dual Degree	1	-	6	7
HSS	-	-	33	33
STAT	-	-	3	3
BSBE	-	-	9	9
Total	20	-	474	494

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 and Research and Academic Activities.

Rajbhasha Prakostha was established in the Institute in September 1986. It has got its own office which is equipped with two bilingual personal computers for smooth and efficient working. It is managed by a Liaison Officer, a Hindi Officer, a senior Stenographer (Hindi) and a Technical Assistant (Translation). The Rajbhasha Prakostha is effortive in creating awareness of Hindi among the Institute employees. "Sansthan Rajbhasha Karyanvayan Samiti'' constituted by the Director monitors and provides guidance to the Rajbhasha Prakoshtha in its planning and performance. The Rajbhasha Prakostha performs various activities like organising of Hindi Diwas and holds meetings for promoting the atmoshphere 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 in Hindi.
3. All routine forms and the headings of Registers have been printed bilingually in most of the departments of the Institute.
4. The name plates, office stamps, signboards, letter heads, and envelopes etc have been made bilingual. 13 LDCs/UDCs have been trained in Hindi type under the Hindi training programme organised by the Hindi Shikshan Yojana Kanpur. Similarly 6 stenographers have been trained in Hindi Stenography under the scheme.
5. Regular classes of Prabodh, Praveen & Pragya for the Non-Hindi speaking employees have already been started. 6 Non-Hindi speaking employees have been trained in Prabodh, Praveen and 6 trained in Pragya.

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

The Annual Report of the Institute for the year 2002-2003 and the Audit Report received from the AG, UP were translated into Hindi and fair copies typed for submssion to the Ministry.

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

In compliance to the directives of Official Language Department, New Delhi, Hindi week was observed by conducting various competitions and on 26.09.2003 Hindi Diwas samaroh was held in the Lecture Hall complex, in which the winners of various competitions were honoured with suitable cash awards.

Following competitions were held on 22.09.2003 to 26.09.2003 to :

a) Hindi Dictation Competition (Forth class employees)
b) Debate Competition
c) Noting & Drafting Competition
d) Poetry recitation competition

Winners of the above competitions were as under :
Hindi Dictation Competition

1.	Shri Arvind Pandey	Ist
2.	Smt. Pramod Tripathi	IInd
3.	Shri Om Prakash	IIIrd

Debate Competition

1.	Smt. Malni Sinha	Ist

2.	Shri K.K. Tiwari	IInd
3.	Shri K.V. Satyamurti	IIIrd

Noting & Drafting Competition

1.	Mohd. Nijam Khan	Ist
2.	Shri J.P. Kanoujia	IInd
3.	Shri Ghanshyam Rao Hosing	IIIrd

Poetry recitation competition

1.	Km. Jaya Jha	Ist
2.	Shri Praveen Chaturvedi	IInd
3.	Dr. O.P. Misra	IIIrd

During the year 2003-2004 about 67 letters from Directorate, 89 letters from Registrar's office, 252 letters/circulars alongwith Hindi translation from Administration Section and 155 letters from others were issued in Hindi.

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

TELEVISION CENTRE

During the year under review, as many as 324 indents were accommodated besides the regular lecture schedule at the lecture hall complex audio-visual facilities were provided at the Western Lab., Tutorial Complex, Visitors' Hostel and Pioneer batch building, mainly for academic purposes.

Preservation of celluloid films in the TV Centre library was becoming extremely difficult because of the aging phenomena. Therefore, under a special drive, the 300 celluloid films were transferred on to videotape as well as CD. This ensures not only longevity but more convenience also.

The continuous use of the main hall in the Pioneer batch building and sometimes in great hurry, necessitated the permanent installation of the public address system and projection screen. The effort has made it convenient for the operational staff.

Finance Plan

The Government of India, Ministry of Human Resources & Development (MHRD) notified in October 1994, revised norms for release of Non Plan Grant in new funding scheme and fixed Rs.2222.00 lakh per annum as Non-Plan Grant to the Indian Institute of Technology, Kanpur for the duration of four years from 1993-94 to 1996-97. >From the year 1997-98 to 2001-02 MHRD, Govt. of India had released Grant-in-aid under Non Plan on ad-hoc basis. The new revised pattern of funding known as 'Formula Based Funding' has been introduced from the year 2002-03 where cost per student is the base for deciding the Non Plan grant and the difference, if any, between the grant calculated on the basis of 'new formula' and actual released grant in previous year will be given as 'Transitional grant' subject to its adjustment in subsequent years.

The MHRD has released Rs.6800.00 lakh as Non-Plan Grant in the financial year 2003-2004.

NON-PLAN

The total receipt under Non-Plan during the financial year 2003-2004 from Ministry of Human Resource & Development, Government of India is Rs.6800.00 lakh. The Institute has also generated its own Internal Receipts of Rs.1469.71 lakh, which includes Rs.715.01 lakh as Student fees, Rs.466.80 lakh interest earned on investments/bank balances and Rs.287.90 lakh as other misc. income.

The Institute has also withdrawn an amount of Rs. 240.00 lakh from the Endowment fund account of the Institute for Non Plan activities during the financial year 2003-04.

The total Non Plan expenditure during the financial year 2003-2004 comes out to Rs. 8535.67 lakh against the total earnings of Rs. 8509.71 lakh. The excess expenditure of Rs. 25.96 lakh has been met out from the unspent carried over balance of previous financial year.

PLAN

Total receipts under Plan during the financial year 2003-2004 is Rs.3147.32 lakh which includes 2068.00 lakh grant-in-aid under Plan from the Ministry of Human Resource & Development (MHRD), Government of India, Rs.1060.00 lakh from the Endowment Fund Account of the Institute and Rs.19.32 lakh from other sources.

The total expenditure under Plan has been restricted to Rs.3147.32 lakh. This expenditure includes Rs.1521.36 lakh on Building & Works, Rs.27.71 lakh on Central Air-conditioning Facilities, Rs.1498.25 lakh on Non-consumable purchases including Equipment, furniture & fixtures etc. and Rs.100.00 lakh on Library Books.

PROJECTS UNDER EMERGING AREAS AND EXPANSION OF EXITING FACILITIES

The Institute has received grant-in-aid of Rs.3060.87 lakh under various Research Projects sponsored by Govt. of India, MHRD, AICTE, DST etc., Rs.189.78 lakh grant-in-aid under various Research Projects sponsored by State Government, Rs. 594.76 lakhs from other sponsored projects for Consultancy and Rs. 38.37 lakh for Testing work done by IIT, Kanpur during the financial year 2003-2004.

An expenditure of Rs.3588.38 lakh has been made in the same year on the Government Sponsored Projects and Other Projects including Consultancies/Testing etc.

INCOME AND EXPENDITURE UNDER MAJOR HEADS

Sl.No.	Particulars	Income (Rs. In lakh)	Expenditure (Rs. In lakh)
1.	Non-Plan	8509.71	8535.67
2.	Normal Plan	3147.32	3147.32
3.	**Other Operational Funds :**		
	GPF/CPF	1003.77	894.74 (Non Plan)
	JEE	301.71	295.97 (Non Plan) 3.04 (Plan)
	GATE	151.14	82.43 (Non Plan) 0.09 (Plan)
	GATE (JMET)	6.26	5.82 (Non Plan)
	Research & Development	387.18	256.27 (Non Plan) 35.38 (Plan)
	Deans Capital Fund	47.35	39.81 (Non Plan)
	Hall Management	219.03	260.29 (Non Plan)
	Fund Hall management	70.83	63.94 (Non Plan)
	Pension Hall Management	121.07	129.29 (Non Plan)
	Student Gymkhana	26.46	20.29 (Non Plan)
	Visitors Hostel	50.45	46.96 (Non Plan)
	Endowment Fund	1162.80	1113.87 (Non Plan)

Donations received from 01-04-2003 to 31-03-2004

1.	The Institute received a donations of US dollar through IITK Foundation USA	$ 1,43,543.49 (Rs. 6506109.00)
2.	Donations received from 1979 SJR Fund	Rs. 43,04,036.00
3.	Donations received from 1968 batch.	Rs. 2,86,000.00
4.	Donations received for Building Project from 1969 batch	Rs. 12,92,500.00
5.	Donation received from 1976 batch.	Rs. 5,000.00
6.	Donation received from 1977 batch.	Rs. 4,73,394.00
7.	Donations received from 1980 batch	Rs. 55,000.00
8.	Donations received from 1990 batch.	Rs. 8,62,471.00
9.	Prof. Arindam Bose has donated the amount for Distinguished Lecture Series in Bio-Science-Bio Engineering Department.	Rs. 235300.00
10.	Mr. Umang & Ruth Gupta has donated the amount for Distinguished Alumni Lecture Series at IIT Kanpur	Rs. 675900.00
11.	Mr. Rakesh Pandey has donated the amount for Distinguished Lecture Series in the Department of Mechanical Engineering	Rs. 450615.00
12.	Dr G.S. Kainth has donated the amount for Instituting “Dr. Gurcharan Singh Kainth Scholarship”.	Rs. 100000.00
13.	Mr. Sreechand Boppudi has donated the amount for P K Kelker Library.	Rs. 45060.00
14.	Mr. Rajiv Singh has donated the amount for Mechanical Engineering Department	Rs. 13518.00
15.	Mr. Ajit Gill has donated the amount for Bio-Science-Bio Engineering Department. (BSBE)	Rs. 1354745.00
16.	Mr. Gaurav Shukla has donated the amount for 1999 batch fund	Rs. 4328.00
17.	Mr. R. Ram Kumar has donated the amount for EC Subbarao Distinguished Lecture Series in Metallurgical Engineering Department.	Rs. 500000.00
18.	Mr. Rajesh Gopakumar donated the amount for Distinguished lecture Series in Physics Department	Rs. 45000.00
19.	Prof. Vijay Vittal has donated the amount for Distinguished Lecture Series in Aero Engineering Department Department.	Rs. 450618.00
20.	Dr. Vijai Mahajan has donated amount for Vijay Mahajan Gold Medal Award	Rs. 125000.00

Facilities to Students

RESIDENTIAL ACCOMMODATION FOR STUDENTS

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

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

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

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

Single Bed Room Apartments (SBRAs)

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

FINANCIAL ASSISTANCE TO STUDENTS

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

SCHOLARSHIPS

Undergraduate Students

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

In addition, several students of the B.Tech./M.Sc.(Int.) and M.Sc. (2 yrs) programmes are in receipt of the financial assistance through scholarships, stipends and grants from Central and State Governments, Directorate of Education and other organizations. Table-I shows various scholarships awarded to undergraduate students during 2003-2004.

TABLE I (A) SCHOLARSHIPS FOR B.TECH. / M. Sc. (INT.) 2003-2004.

Undergraduate Scholarships	B.Tech./M.Sc. (Int.)				
	I	II	III	IV	V
MCM @ Rs.500/- p.m. with Freeship	93	82	91	88	4
Freeship	-	15	15	7	1
Free Basic mess plus Pocket Allowance @ Rs.125/-p.m. (For SC/ST)	17	24	13	13	13
NTS Scholarships	11	18	13	6	1
Punjab Education Board	-	1	-	-	-
SBI Scholarships	2	5	4	2	1
Lalit Narain Das Memorial Scholarships	-	-	-	1	-
Kinra Scholarships	1	1	1	1	-
IWA Bonn Scholarships	-	1	1	1	-
Neeraj Kapoor Memorial Scholarships	-	-	-	1	-
RRMES Scholarships	3	-	-	-	-
Pt.Balajee G Hardiker Scholarships	1	-	-	-	-
Post Matric Scholarships (A P)	1	-	1	-	-
PNB Scholarships	-	3	1	1	-

CSIR Scholarships	-	-	-	1	-
ACC Scholarships	-	-	-	1	-
Coal India Scholarships	-	-	-	1	-
Dr. V.Rajaraman Scholarships (2) Rs. 1000/- p.m.	-	-	-	1	-
Tata Iron Steel Co. Ltd. (TISCO)	2	-	2	3	-
BSNL	3	3	-	2	-
Indian Oil Scholarships	2	-	-	-	-
KVPY Scholarships	3	3	5	5	-
Central Coal fields	-	-	-	1	-
Govt. of Rajasthan	-	1	-	-	-
Govt .of UP	1	-	-	-	-
Dr. D. R. Bhagat Scholarship Rs. 2000/- pm for 10 Months	-	-	2	-	-
A. K. Vasudev Scholarship Rs. 2000/- pm for 10 Months	1	-	-	-	-
Govinda & Indira Srikanth Schol.Rs.2000/-pm for 10 Months	-	-	1	-	-
Anil and Reshma Nigam Schol Rs. 2000/- pm for 10 Months	1	-	-	-	-
Anurag Bartaria Scholarship Rs. 500/- pm for 9 Months	1	-	-	-	-
Pratibha Scholarship (Govt. of Andhra Pradesh)	19	1	4	1	-
Prof. Netar Lal Kapur Scholarships	-	-	1	-	-
Govt. of Maharashtra	-	1	-	-	-

TABLE 1 (B) : SCHOLARSHIPS FOR M.Sc.(2 years) 2003-2004

Undergraduate Scholarships	**M.Sc. (2 years)**	
	I yr.	**II yr.**
MCM @ Rs.500/- p.m. with Freeship	17	16
Freeship	-	3
Free Basic Mess Plus Pocket Allowance @ Rs.125/- p.m.	-	3
Dr. R.C.Shrivastava Memorial Scholarships	-	1

Student's Benefit Fund (SBF) also provides scholarships of the value of Rs.400/- p.m. to the needy students. 37 scholarships from the SBF were provided during the year 2003-2004.

Postgraduate Students

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

EDUCATIONAL GRANTS TO POSTGRADUATE STUDENTS

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

Table II: Amount of Educational Grants given to Postgraduate Students

Sl.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	750.00

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

Ten students were provided Short Term Loan out of the Students' Benefit Fund during the 2003-2004 and eighteen students were provided reimbursement of medical expenses who were hospitalized during 2003-2004.

SPECIAL ASSISTANCE TO SC/ST STUDENTS

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

In addition, SC/ST students are also selected from among the list of students who do not qualify for the admission for a one year preparatory course scheme. 36 candidates belonging to the SC/ST category were granted admission for the one year preparatory course out of which 22 took admission at the Institute during 2003-2004.

All the SC/ST category students get tuition freeships irrespective of their parent's income. Concession of free messing (basic menu only) plus pocket allowance of Rs.125/- p.m. and room rent exemption are admissible to these SC/ST category students whose parents income does not exceed Rs. 1,00,000/- p.a, in the previous financial year.

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

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

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

AWARDS AND PRIZES TO MERITORIOUS STUDENTS

The students at IIT Kanpur are engaged throughout their programme in various academic, co-curricular and extracurricular activities. The outstanding students are given various awards and prizes for their achievements in their activities. Table III shows the awards and prizes given during 2003-2004. In addition, 7% students in order of merit in each year are given a Certificate of Merit and a Notional prize of Rs. 400/-

Table Ill: Awards And Prizes (2003-2004)

Sl. No.	Awards and Prizes	B. Tech./ M. Sc. (Intg.)	M. Sc. (2 Yrs.)
1.	President Gold Medal	1	-
2.	Directors Gold Medal	1	-
3.	General Proficiency Prize (Silver Medal)	11	4
4.	Proficiency Prize (Best Project)	25	2
5.	Cadence Gold Medal	1	-
6.	Cadence Silver Medal	1	-
7.	Prof. Adidam S. R. Sai Memorial Gold Medal	1	-
8.	Prof. Adidam Sri Ranga Sai Memorial Medal	1	-
9.	Ratan Swarup Memorial Prize Rs. 400/-	1	-
10.	Banco Foundation Prize (ME) Rs. 500/-	1	-
11.	Mars G. Fontana Prize (MME) Rs. 400/-		-
12.	Sridhar Memorial Prize (EE) Rs. 600/-	2	-
13.	Ajai Agarwal Memorial Prize (ME) Rs. 1000/- Share	1	-
14.	Tata Consultancy Services Prize Rs. 5000/- each Dept. share	2	-
15.	Jayesh Memorial Award Rs. 30000/-	1	-
16.	Aditya Birla group of Industries Scholarship of Rs. 65000/- each student.	10	-
17.	Dr.Sangeeta Goel Memorial Award	1	-
18.	Prof.Bal Deva Upadhayaya Memorial Gold Medal	1	-
19.	Notional Prizes	77	6
20.	O. P. Bajaj Memorial Award	1	-
21.	Amit Saxena Memorial Award	1	-

ACTIVITIES OF STUDENTS' GYMKHANA

As mentioned above, academic activities are only one facet of student's life at IIT Kanpur. Our students actively participate in various extra and co-curricular activities focussed towards the holistic development of their mind and body. The year 2003-2004 also saw a very active calendar in the form of various games and cultural events.

Games & Sports Activities

In the arena of sports IIT Kanpur came up with a creditable show in the inter IIT sports meet held at IIT Bombay. The team finished fourth in the General championship and had a number of podium performances both in the team and individual events.To strengthen the sports culture ,an inter-hall games event called JOSH was also organized which witnessed mass participation from the students .

The Nature Club organized several Bird Watching expeditions, and to the surprise of many found out very rare species of birds in our own IIT Campus. The Club also organized tree-labeling Campaigns. The Club also started on a new activity which is Insect Study which has now many enthusiastic participants.

The Tae-kwon-do Club is growing slowly but steadily. The Club has now more than two hundred members who come regularly. The Club is also taking out students to take part in the District Championships where the students performed credibly.

UDGHOSH, the Annual Inter Collegiate Sports Festival of IIT Kanpur, Udghosh 2003, was held from 6th to 9th of November 2003. The Festival witnessed a healthy participation form eminent Colleges from all over India.

This year we had 368 participants (excluding home team) from 13 different Institutes from all over India. They are:

1. Rajlakshmi Engineering College, Chennai
2. Dr B R Ambedkar N I T, Jalandhar
3. MNNIT, Allahbad
4. Bhilai Institute Of Techonology, Durg
5. Assam Engineering College, Guwahati
6. Jaypee Institute Of Information Technology, Noida
7. L. E. College, Morbi
8. Canning Institute, Lucknow
9. Institute Of Engineering & Rural Technology Allahabad
10. It Bhu, Varanasi
11. Marine Engg And Research Institute, Kolkata
12. G.H. Patel College Of Engg. & Tech, Anand
13. Birla Vishwkarma Mahavidyalaya Engg. College, Anand

The following games were held:

Athletics	Tennis
Cricket	Football
Basketball (M/W)	Hockey
Badminton (M/W)	Volleyball
Table Tennis (M/W)	

Director, IIT Kanpur, inaugurated the function. The inauguration ceremony was highlighted by Air Show, which included Aero-Tow glider and all composite aircraft Hansa. All major games were held in floodlights – Football, Basketball and Lawn Tennis. Badminton and Table Tennis were organised till late night in the indoor stadium. Festival witnessed little less participation in Women events, where as registrations for Men events were surplus. The festival was organised within constraint financial limits and the conduction throughout was smooth without any disciplinary problems. IIT Kanpur had the highest total number of points, but the General Championship was given to Dr. B. R. Ambedkar N.I.T. Jalandhar.

Cultural Activities

ANTARAGNI - The year 2003-04 witnessed one of the better editions of Antaragni, the all India inter collegiate cultural festival of IIT Kanpur. It was held in the beautiful IIT Kanpur campus from 30th October to 2nd November 2003. This year we had the maximum number of students participating in Antaragni as compared to its previous editions. The number of participants increased to 750 from 40 different colleges which is more than double as compared to previous year.

To name a few colleges we had participants from MNIT Jaipur, MBM Engg. College Jodhpur, Jesus and Mary College New Delhi, JSS Noida, Miranda House Delhi, Patna Women's College Patna, IIT Guwahati, IIT Delhi, IT BHU, Wigan & Leigh College Bangalore, SVNIT Surat, Indraprastha College Delhi, IT College Lucknow, Prestige Institute of Management Indore, IIM Lucknow, Lady Irwin College Delhi, Era Medical College Lucknow and Dehradun Institute of Technology Dehradun.

Antaragni was inaugurated in Auditorium on 30th October. Deputy Director IIT Kanpur, Dr.Kripa Shanker was the chief guest for the opening ceremony. It was followed by the IIT Kanpur show wherein entire IIT campus combined to deliver some outstanding performances in dance, musical and dramatics events.

There were events and competitions in various categories like fine arts, literary competitions, quiz, dance, music, drama, fashion and personality. Photography competition was

reintroduced in Antaragni. It had sub categories like nature, portrait, digital photography, fashion and photo journalism. The structure of personality competition was changed. This time only one best personality was chosen among boys and girls and was given the title "El Major – the best one". No separate titles were given for boys and girls. Synchronicity – the Rock Night saw some of the best bands in the country battling it out to prove their superiority. Apart from these highly participated and enthusiastically witnesses events we had some professional nights as well. Mr. Balkrishna Sharma from AIR Lucknow and his group gave a brilliant performance in Dadra, Thumri, Kathak and Jugalbandi of Sarod and Tabla as part of the Classical Night. Two very famous POP bands of the country Aryans and Euphoria casted their spells on a gathering of 5000 people in the Auditorium grounds on evenings of 1st and 2nd November respectively. With the Euphoria Night, Antaragni ended on a very high note.

This year we introduced a running trophy in Antaragni. Points were awarded to teams for winning any event. Points tally was maintained and displayed in SAC throughout Antaragni. Based on this tally Patna Women's College won the First Antaragni trophy. The trophy was awarded by the Festival Chairman, Dr. Somenath Biswas, on the final day. The home team IIT Kanpur was not considered for the Antaragni trophy.

It would not have been possible to organize an event of this scale without the financial aids provided by the Institute and the sponsors. The festival fee that was collected along with the registration fee from the students was very helpful in initial stages. It ensured that there was no financial shortage at any stage. Our major sponsors were *Bajaj Almond Drops Oil* and *Hameed Media Pvt. Ltd.*

The feedbacks for Antaragni were very positive. The feedback forms collected from the visiting teams were very encouraging for the organizing team. The student and campus community seemed very much satisfied with the conduction of the festival.

In nutshell Antaragni was successful in all terms. It was financially disciplined, witnessed heavy participation and had more than 50 events in various categories. The organizing team feels contended with its efforts. It was definitely in matching with the stature of IIT Kanpur, which always inspires us to achieve excellence and perfection in work.

UMANG - IIT Kanpur celebrated the New Year with a festival of films that promises to bring the best from the world of lights and sounds. This year Umang, the film festival of IIT Kanpur was held from 14th January 2004 to 18th January 2004. The weeklong event provides wholesome entertainment to all movie buffs.

The 2004 edition of Umang brought to the campus five days of non stop movie fun, movies spanning the wide panorama of English, Hindi, Regional and foreign language films and ranging from all time classics to the most cherished pieces of cinema. The purpose was to promote and nourish the spirit of meaningful cinema. A total of 11 widely acclaimed movies

of all times covering a wide genre were screened in a span of five days. Bringing the best movies to audience is the aim of this event and it never disappoints the people.

Apart from movie shows, various workshops and competitions were held. There was a film quiz for people fond of movie trivia. Quizzing is a popular activity in IIT Kanpur and 'Umang' caters to the taste of these individuals with the quiz. The quiz attracted a huge participation and after the elimination round, the quiz became really tough. There were also audience prizes in the form of chocolates that adds interest for those who could not make the cut in the elimination round.

A film festival is incomplete without the extremely popular pastime of India, 'Antakshari'. A contest that was thoroughly enjoyed by the participants, the audience, and the comparer, made it a necessary part of the festival.

A very major part of the festival was the movie-making contest, termed 'Director's Cut', which gave an opportunity to the amateur moviemakers to express their creativity by producing a 20-minute film. Equipment required for the making of the film was provided and within a stipulated amount of time, the 'Directors' had to submit the completed work. The submitted movies were shown during the interval of the movies screened as part of the festival. It was an activity that was enjoyed by many as it introduced them to the technical aspect of film making and being students of a technical institute they enjoyed it a lot.

This year, a new event was introduced, 'Brio – The Animation Workshop'. Animation movies today are extremely popular. Earlier, it was a purely artistic work but these days, with the advent of computers and modeling softwares, they have become really technical. The workshop was aimed at introducing animation enthusiasts to the techniques in this field.

In nutshell Umang was successful in all terms. It was financially disciplined and witnessed heavy participation. The organizing team feels contended with its efforts. The feedbacks for Umang were very positive and encouraging for the organizing team. The student and the campus community seemed very much satisfied with the conduction of the festival.

TECHKRITI was held from 26th Feb to 29th Feb 2004. The aim of the festival this year was to motivate the participation of a general student and break the hype that participation and winning in technical festivals is beyond the scope of an average student. However this was not achieved at the cost of the level of difficulty of problems or the standard of participation. We introduced some new events wherein an average student can participate and hence can associate himself with the festival. As far as the participation is concerned, we witnessed an immense increase in participation as compared to last year. Moreover with the introduction of International Online Programming Contest, Techkriti 2004 witnessed international participation for the first time since its inception.

Techkriti was inaugurated by Director, IITK Dr. Sanjay Govind Dhande. The inauguration ceremony was also attended by Dean Students' Affairs, Dr.C.Venkatesan, Festival Chairman Dr. Shyama Prasad Das and General Secretary Science and Technology, Mr. Amit Bansal.

This year a new event "IndEx-the industrial exhibition" was introduced to give a platform to industries to interact with students and encourage product based research amongst students. Companies like Tata Motors, Sans Motors, Ford, Whirlpool, and Philips participated in this event

This year Techkriti witnessed a record participation of 510 students from 77 engineering colleges and 11 schools across the country. In our endeavour to connect the entire campus community with Techkriti, we introduced three innovative events:

a) **Laser Show**: In this show, laser technology was used to display the synchronization of laser beams with music.
b) **Hypnotic Show**: In this show, hypnotism was demonstrated as a science along with a lecture on hypnotism by Dr.V.Nagesh (a leading Indian hypnotist with numerous records in his name).
c) **Aeromodelling Workshop**: This workshop was conducted by Mr. P. Eswar from Bangalore. Nine groups were trained to make manual and autonomous aircraft models for a period of 3 days and these models were then displayed to the entire campus community on the closing day of the festival as a show which was enjoyed and appreciated by all.

Such shows helped immensely to free Techkriti from an image in which it was considered to be a festival meant only for exceptional students.

The major event in Techkriti this year was "Endeavour – the functional model contest". Around 25 teams exhibited their models in which they displayed the latest developments in the field of science and technology. Other events included competitions in robotics, coding, hacking, circuitry, paper presentation, quizzes and model making contests. In all the events, there was an enormous participation from outside as well as from the students of IIT Kanpur. We were able to motivate a larger chunk of the campus community to participate and witness the events.
We were able to collect sponsorship to the tune of Rupees 15 lakhs apart from the grant provided by the institute. The major sponsors in Techkriti were Sun Microsystems, Tata Motors Limited, Trilogy, Juno Online, NIIT, ACM, State Bank of India and Union Bank of India. Adequate funds at our disposal enabled us to distribute a record prize amount of Rupees 4 Lakhs with a motive to enable the winning participants to go for a further development in their projects. We also spent a substantial amount in improving the infrastructural base of our events which is usually found to be lacking in the institute festivals. Thus lucrative prizes and good infrastructure enabled us to increase the popularity and relevance of the events.

All the events in Techkriti were conducted smoothly and feedback received from the participants was very encouraging. The quality of food and hospitality were praised by all.

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 1st 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)

It is a matter of grate 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.

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 the 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 stands 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.

With above aims, like in previous year, the NCC unit at IIT, Kanpur endeavored to carry out the 'Grooming Tomorrows Leaders' during 01April, 2003 to 30 June, 2004 by conducting the following important activities :-

- Van Mahotsav. The unit organized a tree plantation programme to celebrate 'Van Mahotsav' in Augest 2003. About 150 enthusiastic cadets were involved in planting approximately 100 saplings of neem, jamun, mahua etc. Professor of Economics, Dr. Binayak Rath was invited to give a talk to the students on the importance of tree plantation. The cadets wee greatly motivated by the talk and were encouraged to look after the plants during their stay at the institute.
- Cancer Awareness Programme.The Ncc cadets organized a cancer awareness programme in November 2003 at the Nankari village near IIT, Kanpur. Help of doctors from the JK Cancer Hospital, Kanpur was taken for conduct of the event. Approximately 400 men, women and children from nearby villages attended the programme. The programme was conducted with an aim of spreading awareness and knowledge about cancer amongst the poor villagers.
- Rock Climbing Course. During the ensuring period a total of 74 NCC Cadets of IIT, Kanpur underwent short Basic Climbing Course, in two batches. Besides, the students also visited the nearby areas of naintal for the purpose of nature study and to gain knowledge about the local flora and fauna.
- Para Sailing.NCC Cadets underwent a para sailing camp for two days in March 2004. The activity was conducted to instill a sense of confidence in the cadets a part from inculcating such qualities as camaraderie and a spirit of adventure, which are so essential in life. A total of 115 cadets participated. A total of 197 para sailing launches were achieved in the two days.
- Motivational Lecture. Vetran freedom fighter, Capitan Laxmi Sehegal. Padma Vibhushanb, visited the NCC unit in April' 2004 and delivered a lecture to the cadets. She captivated the audience with here energy and an inspiring talk. She called upon the young cadets to root out corruption from the society and to lead simple and harmonius life.
- Small Arms Firing. It is one of the most important aspects of training of NCC cadets. It is ensured that all NCC cadets are put through rifle firing. During the period a total 144 of cadets of IIT, Kanpur were made to fire rifles.
- Participation in Independence Day & Republic Day Parades. Every year approximate;u 60 NCC cadets take part in Independence Day and Republic Day parades that are held at the Indian Institute of Technology (IIT), Kanpur.
- Anti Dowry Pledge. On joining the NCC, each cadet is made to undertake a Anti-Dowry Pledge. The importance of his pledge and the negative aspects of a social evil like Dowry is explained to each cadet on joining the NCC. During the period all 161 cadets took the above pledge.

National Service Scheme (NSS)

The Scheme provides the most diversified opportunities to the students to upgrade their personality through social add 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 2003-2004 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. A total of 58 students registered for this stream in the year 2003-2004. It was found to be extremely popular.

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.

STUDENTS' PLACEMENT

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

Invitation letters were sent to about 700 Industrial Organizations, both in Public and Private Sectors, for visiting our campus for recruitment of students. About 90 organizations participated in *On-Campus-Recruitment-Programme* during the academic year 2003-2004

either by sending their top ranking executives to the campus or by calling the students to their Head Office for the interviews.

This year some organizations like Yasu Technologies, TVS Electronics, Skytech, American Express, Market Rx, Citifinancial, Tavant Technologies, Maharashtra Academy, Cendura Software, Transversal e-Network, First Global, Pressure Equipment, ANZ Information Technology, Computer Associates, Epiance Software, Inductis, Verizon, General Motors, Johnson Mattheyu, Asian Paints, and Teng & Associates Inc. have recruited for the first time through On-Campus-Recruitment-Program. The employment scenario during this year has improved to a great extent in comparison with the last two years.

A total number of about 485 offers of appointment have been made till 18.06.2004 to the students by various employers through Students' Placement Office. A total of 72.01% of the students registered with SPO have received job offers so far. The placement for our B.Tech. students has crossed 83.53% mark this year whereas for M.Tech. students, it was 58.37%.

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

With regard to the In-Plant-Training-Programme during summer vacation for the pre-final-year students, the Students' Placement Office offered assistance to students of all the engineering departments. About 25 paid Summer Training seats were offered to our students. Statement showing the number of students registered for availing placement assistance and those who received job offers through Students' Placement Office are given in Table I to V.

About five organizations are in the process to schedule their placement activities in the month of July 2004.

TABLE I: JOBS OFFERED TO STUDENTS GRADUATING IN THE B.TECH PROGRAMME- 2003-2004

S.N	Discipline	Students Registered	No. of Students Offered One Job - Two Jobs		Total Job Offered
1	Aerospace Engg.	21	15	--	15
2	Chemical Engg.	43	33	01	34
3	Civil Engg.	31	28	04	32
4	Electrical Engg.	75	60	04	64
5	Mechanical Engg.	71	58	02	60
6	Mat. Met. Engg.	44	39	03	42
7	Comp. Sci. & Engg.	49	46	01	47
	Total	334	279	15	294

TABLE II: JOBS OFFERED TO STUDENTS GRADUATING IN THE M.TECH PROGRAMME – 2003-2004

S.N	Discipline	Students Registered	No. of Students Offered One Job - Two Jobs		Total Job Offered
1	Aerospace Engg.	10	05	--	05
2	Chemical Engg.	32	16	--	16
3	Civil Engg.	35	16	01	17
4	Electrical Engg.	26	20	02	22
5	Mechanical Engg.	35	26	--	26
6	Mat. Met. Engg.	19	04	--	04
7	Comp. Sci. & Engg.	28	27	--	27
8	IME	13	10	01	11
9	Mat. Sci. Prog.	07	01	--	01
10	Nuclear Engg.	--	--	--	--
11	Envr. Engg. & M.	13	04	--	04
12	Laser Technology	03	--	--	--
	Total	221	129	04	133

TABLE III: JOBS OFFERED TO STUDENTS GRADUATING IN THE M.Sc. (5yrs.) PROGRAMME – 2003-2004

S.N	**Discipline**	**Students Registered**	**No. of Students Offered**		**Total Job Offered**
			One Job	**Two Jobs**	
1	Physics	05	04	--	04
2	Chemistry	09	07	--	07
3	Mathematics	13	09	01	10
	Total	27	20	01	21

TABLE IV: JOBS OFFERED TO STUDENTS GRADUATING IN THE M.Sc. (2yrs.) PROGRAMME – 2003-2004

S.N	**Discipline**	**Students Registered**	**No. of Students Offered**		**Total Job Offered**
			One Job	**Two Jobs**	
1	Physics	01	--	--	--
2	Chemistry	05	02	--	02
3	Mathematics	14	05	--	05
4	Statistics	09	05	--	05
	Total	29	12	--	12

TABLE V: JOBS OFFERED TO STUDENTS GRADUATING IN THE MBA, M.Des. & B.S.B.E. PROGRAMME – 2003-2004

S.N	Discipline	Students Registered	No. of Students Offered One Job - Two Jobs		Total Job Offered
1	M.B.A.	30	24	-	24
2	M.Des	10	03	-	03
3	B.S.B.E	11	--	-	--

JOB POSITION FOR THE YEAR 2003-2004
(From Aug.01 to June 2004 as on June 22, 2004)

Programme	No of students Enrolled	No. of Students registered in Students' placement office	No. of students placed
B.Tech			
Aerospace Engg.	23	21	15+1$
Chemical Engg.	45	43	33(1)*
Civil Engg.	38	31+3	28(4)*
Computer Sc.	52	49	46(1)*
Elect. Engg.	92	75	60(4)*+2$
Mech. Engg.	84	71+3	58(2)*
M.M.Engg.	48	44	39(3)*
Total	382	334+(6 Winter batch)	279(15)*+3$
M.Tech.			
Aerospace Engg.	12	10	05
Chemical Engg.	34	32	16+1$
Civil Engg.	43	35(1)*	16(1)*
Computer Sc.	30	28	27
Elect. Engg.	40	26	20(2)*
Mech. Engg.	43	35	26
M.M.Engg.	48	19+16 (Winter batch)	04
Envr. Engg.& Mgmt	15	13	04
I.M.E.	17	13	10(1)*
Laser Tech	06	03	00
Material Sc.	15	07+07 (Winter batch)	01
Nuclear Tech.	08	07 (Winter batch)	00
Total	311	221+(30 Winter batch)	129(4)* +1$

M.Sc (Int. 5 year)			
Chemistry	08	09	07
Physics	09	05	04
Maths & Science Computing	15	13	09+(1)*
Total	32	27	20(1)*
M.Sc.(2 year)			
Chemistry	12	05	02
Physics	17	01	00
Maths	17	14	05
Statistics	10	09	05
Total	46	29	12
Grant Total	771	611+(36 Winter batch)	440(20)*+4$
M.B.A.	30	30	24
M.Des	10	10	03
Biological Sc & Bio-Engineering	11	11	00
Total	51	51	27
		Total offers	465+(20)*=485

Note: *double job offer = 20
$(Scholarship in abroad) =4
B.Tech=279/334=83.53%, M.Tech =129/221=58.37%,M.Sc.(Int) –20/27=74.07%,
M.Sc(2 Yr)-12/29=41.37% ,M.Des=03/10=30.% , BSBE=00/11+Nil,M.B.A.24/30=80%
Grant Total +440/611=72.01%(B.Tech+M.Tech+M.Sc)

COUNSELLING SERVICE

Counselling Service is an organization made up of student volunteers, faculty members and staff who offer help and guidance to students on the academic, emotional and financial fronts. During the session April 2003-March 2004, the Counselling Service had two UG coordinators, one PG Coordinator, assisted by 5 UG assistant coordinators and 3 PG assistant coordinators and a team of nearly 73 UG student guides and 23 PG student guides.

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

A common Orientation Programme for the new UG and PG students (for 5 days) was organized for the first time during which they were shown around the campus and informed about the various facilities available to them. They were assisted in opening up new bank accounts and were guided through all the official processes of making I-Cards, health booklets, cc logins and the final registration. The Counselling Service also organized a bank presentation where the new students got to know about the various educational loan schemes of the different participating banks. Lectures by the Head, Computer Center and the Games Counsellor were also included.

A Link structure was also formed after the commencement of the academic session in August to take care of academically deficient students. The team consisted of 22 link students and 14 link faculty members associated with every department. Regular meetings were organized to monitor their academic performance. A total of 6 meetings (3 in each semester) were held to discuss the issues related to these students. During the session 2003-04 (I), 58 students were on Academic Probation list and 54 students on Warning. 71 students came out of the list after this semester. A total of 190 students were on AP/ Warning during the 2003-04 II sessions.

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

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

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

A Student Faculty Open House Discussion on the Academic Issues concerning the students was organized in the 2003-04 (II) Session. The forum witnessed active participation from both student and faculty communities and it was realized that more of such sessions should be organized to enhance student-faculty interaction and discussion of academic concerns of mutual interest.

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

Like every year, Counselling Service appointed a professional psychiatrist who visited the campus on alternate Saturdays to resolve various psychological problems of the students and an assistant counsellor to support the various activities of the service. A total of 80 students consulted the psychiatrist. In addition to this, psychiatric help was also available outside the campus in cases of emergency through the Counselling service. A proactive initiative by the assistant counsellor motivated students to come forth for guidance in personal and emotional issues. A total of 60 students met her during the period from August 2003- April 2004.

On the financial front, students were provided assistance through SBF scholarships. Around 37 students could avail this facility. Loans were provided to students facing acute financial problems.

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

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

FACULTY INCHARGES STUDENTS'S AFFAIRS

Dean, Students Affairs	Dr. C. Venkatesan	From 01-01.2003
Head, Counselling Service	Dr. Amit Ray	Upto 27-04-2003
	Dr. Onkar Dixit	From 28-04-2003
Chairman, Council of Wardens	Dr. D. Bahuguna	Upto 31.01.2004
	Dr. Munmun Jha	From 01.02.2004
Vice-Chairman, Council of Wardens	Dr. Munmun Jha	Upto 31.01.2004
	Dr. Utpal Das	From 01.02.2004

COUNSELLORS, STUDENTS'GYMKHANA

Chief Counsellor	Dr. C. Venkatesan
Cultural Counsellor	Mr. Satyaki Roy
Games Counsellor	Dr. C. S. Upadhyay
Films Counsellor	Dr. Sanjay Mittal
Science & Technology Counsellor	Dr. P. Munshi
Treasurer	Dr. S. Sangal
Foreign Students' Advisor	Dr. Prabha Sharma
Chairman Students Benefit Fund	Dr. Onkar Dixit
Chairman Students' Placement Committee	Dr. Ravindra Arora
Faculty Advisor, NSS	Dr. V.Subrahmanyam / Dr.H.Verma
Chairman, Swimming Pool Management Committee	Dr. P. Shunmugaraj

Faculty Advisor, Yoga	Dr. B.R.Marwah
Faculty Advisor, Tae-kwon-do	Dr. Vijay Singh / Dr. Satyendra Kumar

WARDENS

HALL OF RESIDENCE No. I
Dr. R.K. Sullerey, Warden-in-Charge
Dr. Rajesh Srivastava, Warden
Dr. F.A.Khan, Warden

HALL OF RESIDENCE No. II
Dr. M.K. Harbola , Warden-in-Charge
Dr. Satyaki Roy, Warden
Dr. B.V. Rathis Kumar warden

HALL OF RESIDENCE No. III
Dr. P. S. Ghoshdastidar, Warden-in-Charge
Dr. D. P. Mishra, Warden
Dr. A. K. Lal, Warden

HALL OF RESIDENCE No. IV
Dr. V.Eswaran, Warden-in-Charge
Dr. Deepak Gupta, Warden
Dr. Animesh Biswas, Warden

HALL OF RESIDENCE No. V
Dr. P.M.Dixit, Warden-in-Charge
Dr. N.V.Reddy, Warden
Dr. G.Santhanam. Warden

HALL OF RESIDENCE No. VI
Dr. P. Munshi, Warden-in-Charge
Dr. C.A. Tomy, Warden

HALL OF RESIDENCE No. VII

Dr. A. K. Chaturvedi, Warden-in-Charge
Dr. Deepak Gupta, Warden
Dr. S. Manoharan, Warden

HALL OF RESIDENCE No. VIII

Dr. V.Ravi Shanker, Warden-in-Charge
Dr. A.R.Harish, Warden
HALL OF RESIDENCE- GH

Dr.Brahma Deo, Warden-in-Charge
Dr. Achla Raina ,Warden
Dr. Asima Pradhan ,Warden

SBRA
Dr. Onkar Dikshit, Warden-in-Charge
Mr. K. D.Yadav, Convener

STUDENTS' GYMKHANA EXECUTIVE

The philosophy followed at this Institute is to involve students at various decision-making levels. The President, Students' Gymkhana and the Convener, Students' Senate are special invitees to the Senate. Students' Senate also sends its nominees for various standing committees of the senate namely EPC, SPGC, SUGC, SSAC, SLC, SSPC and various other users committees. The following list gives the names of students holding various posts of the executive wing of students' Gymkhana.

President - Mr. Udai Singh Pawar/ Ms. Karishma Jain (upto Feb. 2004) Mr. Abhishek Chaudhary (From Feb. 2004.)

Convenor, Students Senate - Mr. Rahul Luthra (Upto Feb. 2004) Mr. Joe Vanghese Yeldho (From Feb. 2004)

General Secretary (Cultural) - Mr. Abhishek Singh/ Mr.Deepak Garg (Upto Feb. 2004) Mr.Mukul Tulli (From Feb. 2004)

General Secretary (Games) - Mr. Nikhil Singh (Upto Feb. 2004) Mr. Mrityunjay Panda (From Feb. 2004.)

General Secretary (Films) - Mr. Anshul Agarwal (Upto Feb. 2004) Mr. Ravi Kumar (From Feb. 2004)

General Secretary (Science & Technology) - Mr. Amit Bansal (Upto Feb. 2004) Mr. Saurabh Nanda (From Feb. 2004)

Services/ Amenities

INSTITUTE WORKS DEPARTMENT

Institute Works Department (IWD) is primarily responsible for the maintenance of capital assets and for providing the following utility services to the resident community:

i. Civil, electrical and air-conditioning maintenance services
ii. Water supply and sewage disposal
iii. Power transmission and distribution
iv. Estate Management
v. Sanitation and upkeep
vi. Horticulture development & Maintenance
vii. Furniture repairs
viii. Roads

In addition to above, IWD also execute the development projects from concept to commissioning. It comprises the following units for facilitating operation & maintenance of services and the construction activity:

S.N.	Unit	Responsibility	Unit-in-charge
1	Civil Division - I	Development Works	Executive Engineer
2.	Civil Division - II	Maintenance & up-gradation works. ii) Water supply, furniture roads.	Executive Engineer
3.	Electrical Division	i) Electrical Maintenance ii) Domestic/ Central AC maintenance	Sr. Electrical Engineer
4.	Horticulture	Development & maintenance	
5.	Estate	Estate management & sanitation	Estate officer

During the financial year 2003-2004, IWD has undertaken the following major development works:

Sl. No.	Name of work	Plinth area (sqm)	Capacity	Value of work (in lacs)	Date of start	Date of completion	Remarks
1	Biological Sciences & Bio Engineering Dept. Bldg.	5942	Basement + 3 floors (16 labs.)	550	March' 02	Oct.-03	Commissioned by Hon'ble Prime Minister on 01.10.03
2	Hall of Residence for Boys No. - VIII	12850	489	805	Jan.'03	June'04	Work is nearly completed. Four blocks were commissioned in Jan.-04.
3	Shifting and modification of sub-station No.-IV.	-	4 MVA	153	March'02	April '03	Work completed and commissioned.
4	Installation of new sub-station no.-V.	-	2000 KVA	90	March'02	April '03	Work completed and commissioned.
5	300 KL capacity overhead tank	50	300 KL	46	March' 02	July'03	-Do-
6	RA Hostel (Ph.-II)	2750	60	166	Jan.'03	April'04	Work is in final stage of completion.
7	Two additional blocks in GH	2054	100	106	Sept.'02	June'03	Work completed & occupied.
8	8 nos. Type-A & 4 nos. Type-B residences for Visiting Faculty	1379	12	100	Nov.'02	Dec.'03	-Do-
9	Development of concrete road for new hostels		3 Km	30	01.04.03	31.03.04	All routes completed.
10	Development of		22,000	35	01.07.03	15.03.04	Works

	the site of Hall-IX		Sqm				completed
11	Modernization of dining facility in Hall-I & II	1200	---	200	10.05.03	31.10.03	Works completed
12	Upgradation of hostels	----	----	110	01.04.03	31.03.04	Works completed
13	Media Lab.	---	---	70	25.07.02	09.03.04	Works completed
14	Horticulture Projects			20	01.04.03	31.03.04	Works completed
15	Solar water heating systems	---	6 KL	10	05.09.03	03.03.04	Works completed
16	Augmentation of external power supply for Hall-II, III & IV	---	---	6	23.01.03	22.07.03	Works completed
17	200 KL capacity O/H Tank for Type-I		200 KL	20	30.03.03	18.02.04	Works completed
18	Development of 4i lab.	---	---	8	07.08.03	09.03.04	Works completed
19	Renovation of Health Centre	---	---	25	25.07.02	11.01.04	Works completed
20	Renovation of residences	---	---	14	01.04.03	31.03.04	Works completed
21	Water proofing works	---	---	5	01.04.03	31.03.04	Works completed
22	Air conditioning works	---	---	32	10.09.03	24.12.03	Works completed
23	Cable TV Network	---	20 Km	42	17.04.03	30.09.03	Works completed
24	External supply & modification of switch in Hall-II	---	----	20	23.01.03	22.07.03	Works completed

Following new projects are at different stages of planning:

Extension of Library

i) Hall of Residence for Boys No.-IX (480 capacity).

ii) Building for JEE/ GATE

STORES AND PURCHASE SECTION

The Stores and Purchase Section is an important service unit to cater to the needs of departments/units for purchase of various equipment, 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 Section handles customs clearance of all foreign consignments and matters relating to Import Licenses/Duty Exemption Certificates and other certificates from Government of India. The re-export of consignments to the suppliers for repairs is also done through this section.

During the year 2003-2004the Purchase Section places 1471 orders valued Rs.27,60,02,294=64 which includes import order numbering 371 costing Rs.16,04,81,169=27.The items order of various categories are as follows:

Central Store procures 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 nature like stationery, hardware, and liveries etc. The Central Store has two units, namely Receipt Unit and Issue Unit. This section is headed by a professionally competent Deputy Registrar (Materials) and he is also assisted by a professionally competent team of 22 personnel.

The store also handles disposal of unusable and scrap materials. Clearance of parcels and dispatch of rejected materials to both local and foreign firms for repairs/replacements is also done by this section. It assists the departments in areas like transportation, procurements of furniture etc.

Stores Accounts maintain the expenditure details under working expenses and stationery grants sanctioned to Department/Section etc.

We have been successful in computerizing the transaction both in Purchase, Stores & Import Section. We are processing all Indents through the software developed by Automation Division and each and every function of Stores & Purchase is automated in this financial year. We can generate report as per our requirements as and when needed. We have full connectivity in Central Store through LAN/WAN for complete automation. Maximum correspondence is done by e-mail where it is available keeping in view the speedy action for the

procurement. Store and Purchase is now connected with main frame computer of Computer 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 postal, so that department can send electronic indent directly to Central Store and check the status of this indent/Purchase Order/Sanction Sheet on the monitor.

Sr.	Category	No. Of Purchase Order	Amount (in Rs.)
(1)	Import (Institute)		
a	Consumable	52	33,64,804=29
b	Non Consumables	63	3,46,53,397=63
	Total (a&b)	115	3,80,18,201=92
	Import (Project)		
a	Consumable	83	62,61,011=05
b	Non Consumable	173	11,62,01,956=30
	Total (a&b)	256	12,24,62,967=35
	Total Imports	371	16,04,81,169=27
(2)	Indigenous (Institute)		
a	Consumable	311	1,06,12,728=51
b	Non Consumable	339	3,88,65,451=39
	Total (a&b)	650	4,94,78,179=90
	Indigenous (Project)		
a	Consumable	93	4,764,639=89
b	Non Consumable	357	6,12,78,305=58
	Total (a&b)	450	6,60,42,945=47
	Total Indigenous	1100	11,55,21,125=37
	Total (1&2)	1471	27,60,02,294=64

SECURITY UNIT

The security unit of this institute has been in existence its inception and the Institute is situated in the outskirts of Kanpur city .The major responsibility of security unit is to guard and protect the institute property besides human life. In addition security cover is also provided to residential area of the institute campus during night and with limited patrolling during day time. This unit is also responsible for fire fighting, traffic control, maintenance of peace and order on the campus, collection of intelligence reports, investigation of various incidents and other miscellaneous duties pertaining to security assigned by the institute authorities from time to time.

Apart from the officer in charge, Head of the unit, remaining staff include 3 Assistant Security officers, 1 Acting security supervisor, and 13 security guards including 5Armed

Guards.(including one on contractual basis) This unit is holding one jeep and two motor cycles for campus patrolling and other emergency duties round the clock basis. To meet the deficiency of manpower additional security commitments, the Institute has engaged one Assistant Security Officer, one S.I.-8 S/S 5 Armed Guards and 110 Security Guards from SIS Patna (Security and Intelligence Service (India) Ltd.) On contractual basis, but the deficiency of manpower still exists due to regular depletion of permanent Security Staff of the Institute .The SIS unit at this Institute is also holding one jeep for campus patrolling and other emergency duties besides wireless network for better communication.

All possible efforts have been taken to check the thefts/burglary particularly in the field of prevention of crime surveillance over bad characters/trespassers, maintenance of Peace and order successfully on the campus .Some incidents of theft have been reported.

In the residential area, Hall of residences, and in academic area. Some incidents of fire have also been reported in residential and in Academic area, but due to quick information to the security unit fire was controlled/ extinguished by security personnel saving life and property .In some cases of theft the culprits have been apprehended red handed by the security staff and handed over to police for legal action against them. Inspite of many of the maladies and variance the over all performance of this unit has been satisfactory during the year.

ESTATE OFFICE

The Institute has a sprawling area of 960 acres having total population around ten thousand. Being a residential campus with 1034 houses in various categories far away from the heart of the city, the Institute had to create its own infrastructure and civic amenities such as sanitation, water supply, sewage disposal and shopping complexes and such facilities which are required for day to day living.

The Estate Office is entrusted with various kind of activities including house allotment, commercial shops management, tendering process of unserviceable materials, eviction of unauthorized occupants, realization of license fee/electric charges from shopkeepers & house allotee's, estate management and civic amenities.

The Institute has various types of residential accommodation, ie. Type- IA, IB, I, II, III, IV and V out of which type III & above are allotted to Faculty members, Scientists, Research Engineers, group a officers and rest is allotted to other staff. We have mainly four shopping complexes at various locations i.e. one in the heart of campus called as shopping complex and other at Type-II complex, third one at security crossing & forth one at Type-I area consisting of various kinds of 98 shops, which fulfill the basic needs of the residents.

Besides the above shopping complexes, we have 8 hostels for student's accommodation out of which seven for the boy's students and one for girl's students. One new ninth hostel is under construction to meet the demand of student accommodation. Every hostel has a barber

shop, washerman shop, tailoring shop which mainly fulfills the immediate needs of the students. As per demand, we have already been started the operation of the PCOs in most of the hostels.

A new state-of-art building of Biological Sciences and Bio-Engineering department has commenced in operation with approximately 64,000 Sq.feet area. Also the construction of twelve nos residences for visiting faculty completed and used for accommodation.

Looking from the hygienic point of view in the campus, the Estate Office has been operating cleaning, sweeping & up-keeping work in the campus, which has been appreciated by the campus community. The above job is attended by private contractors under supervision of the office.

Further a cable T.V. Network is also being operated 24 hours round the clock by the Institute to provide entertainment to the entire campus community.

Besides, the Estate Office is managing all the activities related to the estate very successfully and cautiously by way of taking all the precautions to solve all types of problems satisfactory. During the financial year 2003-04, the office has realized about **Rs. 85, 06,746.00** from the different sources.

MOTOR TRANSPORT SECTION

The Motor Transport Section of the Institute was established in the year 1962 with a fleet of 4 vehicles. Since then this Section has grown, and now it manages a fleet of 21 vehicles of different types.

A Senior Technical Assistant (SG) and a small team of operation and maintenance staff runs the Section effectively.

As the Institute is situated 16 KM away from the main city, the Motor Transport Section of the Institute has to shoulder the responsibility of providing transport facilities to the Employees and the Campus Community. The main services provided are:

1. Various Transport needs of Institute Department's student and employees.
2. Carriage of materials to and from various places for Institute work.
3. Transporting school/college-going wards of employees to city for their education and bringing them back.
4. Bringing office and technical staff from city to the Institute and taking them back after work.
5. Providing light vehicles for trips to Railway Station/Airport etc.
6. Educational trips to places of interest.
7. Marketing trips to city for the campus community.

A team of qualified technicians is attending major and minor repairs including maintenance of vehicles. As a result of preventive maintenance measures adopted, the number of breakdowns during the year has been minimized. In order to bring in effectiveness and desired optimal economic benefits, an exercise to re-structure and down size the section is under progress.

Petrol Pump

An Indian Oil Petrol outlet is being financed and run by the Institute under the control of the Motor Transport Section. Apart from providing petrol to Institute vehicles, it also provides petrol to private vehicle owners in and around the Campus.

CAMPUS SCHOOL

Campus school since its inception in the year 1964 has been providing the best possible elementary education to the wards of faculty & employees of the Institute There are 428 students on roll, 28 highly qualified teachers, 18 supporting staff and the Principal. The infrastructure, easy accessibility, democratic set up and transparency in the school, besides Love and care, safety and security of kids that one finds here may not easily be available in other educational institutions at this level. The school is well equipped with PA system, open shelf library, computers, games and sports, dance & music facilities and above all qualified and devoted teachers.

ACTIVITIES

To uphold socio-cultural heritage of our country different activities, functions, festivals & celebrations are arranged & organized throughout the year. Our kids have ever been equally good in curricular & co-curricular activities & brought many laurels to the school in inter-school competitions. Results speak the truth. They did extremely well in quiz competition, essay competition, art competition, group dance & group song competitions etc. during "Wild Life Week Celebrations" and won the 'Championship trophy'. Local newspapers as well as the organiser - the Director, Zoological Garden, Kanpur were very appreciative of their performance.

We have introduced "evening co-curricular activities in games & sports" in which 120 students registered their participation. We organised very recently an 'Inter - school cricket Tournament ' at elementary Level in which 12 teams of different schools like D.P.S., Mantora, Sir Padampat Singhania, Grunanak, Bright Angles, Opportunity, K.V. IIT Kanpur etc. participated. I am pleased to inform you that the 'Campus School Cricket team' won the running trophy of the Tournament besides bagging man of the series award. I am thankful to the Dy. Director who allowed seven Instt. Cricketers to officiate in the tournament as officials and gave away the prizes.I am equally thankful to the Heads of the Deptts. Concerned for their support and co-operation. Our young & energetic P.T.I. Mr. Vikas Victor worked hard with the students day & night to make the tournament successful.

Congratulations to him & his team. Construction of school boundary wall has started and on its completion we may introduce few more activities in the evening with your help, support & co-operation.

You will be happy to know "Dental Health Education Camp" was arranged & organised in the school on 10th & 11th Nov. '03, with the help of the Deptt of Community & Preventive Dentistry of Rama Deintal College- Hospital & Research Centre, Kanpur. Posters, models video-show & dental check up of children were carried out in the camp. On the same dates Dr. Sujata Gupta carried out "Eyes Testing" of our children solely on social & honorary basis. I express my sincere thanks to all concerned.

Following mega evens were also celebrated with great zeal and enthusiasm:
(a) ANNUAL SCIENCE DAY: Sept. 27, 2003
Chief Guest: Prof Gautam Biswas, Dean of Academic Affairs, IIT/Kanpur.

(b) TEACHERS DAY: Sept. 5, 2003 in memory of Sarvapalli Radha Krishnan.
Chief Guest: Prof. Kripa Shankar , Dy.Director of the Institute

(c) INDEPENDENCE DAY: Aug. 15, 2003

(d) REPUBLIC DAY: Jan. 26, 2004

After the main functions (with ref. to c & d) were over at the stadium, short programmes were organised in the school followed by sweet distribution.

(e) CHILDREN'S DAY (Baal Diwas) : Nov.19,2003 in memory of Pt. Jawahar Lal Nehru

A short programme followed by Art competition. The Principal gave away small gifts all the students of the school .

(f) ANNUAL CONCERT 2003-2004: Dec. 12, 2003
Venue : Instt. Auditorium.

Chief Guest : Prof. Kripa Shankar Dy.Director of the Instt.

It was very colourful & successful event appreciated & applauded by all. We are really thankful to the Instt. for live telecast of the programme.

The programme of the day was geared round our dance teacher cum cultural Sec. Mrs. Neeta Agnihotri. I am pleased to inform you that she is awarded Ph.D. Degree in Kathak Dance. My heartiest congratulations!

Following staff members retired from their services:

1. Mrs. M. Rolston Teacher, by virtue of superannuation
2. Mrs. K. Singh, Teacher, by virtue of superannuation
3. Mrs. M. Chatterjee, Teacher, V.R.S.
4. Mrs. M. Katyal, Teacher, V.R.S.
5. Mr. Sone Lal, Cleaner, V.R.S.

A party was arranged to bid them farewell in which their sincere & valuable services were recalled.We wish them very happy, prosperous & peaceful long life.

I express my sincere thanks to all concerned- the parent organisation, its different deptts. & units, parents & well wishers, colleagues & Staff members for their co-operation & support to make all the events successful.

HEALTH CENTRE

Health Centre had been established with the objective of addressing health needs of the Institute Community. Health Centre provides services round the clock to meet out this objective. Health Centre is manned by 9 Medical Officers and Medical Advisor of the Institute. Apart from the Medical Officers, it is equipped with a Pathology& Biochemistry lab, X-Ray Unit, Dressing Unit, Pharmacy and Nursing Station.

The details of the Health Centre services provided for the period with effect from 1.4.2003 to 31.03.2004 is as follows:

Sl. No.	Annual Performance	Number
1.	Number of Patients treated in OPD	64210
2.	Number of Student treated	9713
3.	Number of Patients treated in Indoors	1195
4.	Number of Patients treated in Homeopathy OPD	4814
5.	Number of Surgical Operation (Minor)	47
6.	Number of Deliveries	20
7.	Number of Plastering	99
8.	Number of Surgical Dressing	8191
9.	Number of Injections	28387
10.	Number of Pathology Test and Bio-Chemistry Test	33965
11.	Number of Family Planning Operation (Tubectomy)	Nil
12.	Number of E.C.G.	676
13.	Number of Babies attended in Well Baby Clinic	1061
14.	Number of Measles Vaccine give	110
15.	Number of BCG given	Nil
16.	Number of X-Ray done	3040
17.	Number of Hepatites B vaccine given in Baby Clinic	134

18.	Number of babies in National Pulse Polio Programme	1181

Immunization are done round the year in the Health Centre for protection against Typhoid, Cholera, Tuberculosis, Deptheria, Pertussis Totanus, Polio and Measles. Facilities for maternity management, family Planning Counselling and Tubectomy Operation are also available.

VISITORS' HOSTEL

Housed in an imposing double storied building and located at a central place, the Visitor's Hostel provides boarding and lodging facilities for the guests newly appointed faculty/staff members and delegates/participants attending various conferences, seminars symposia and workshop.

The Visitor's Hostel can accommodate 170 persons in 70 single rooms (Twin Bed) and 15 double rooms. Out of 70 single rooms, 40 are air-conditioned and out of 15 double rooms, 10 are air-conditioned. All the rooms have attached bath rooms (W.C.). It has 2 dining halls of which one is air-conditioned and a Recreation Room with W.C. facilities attached with this. It also has an air-conditioned Conference Room.

Recently facilities and services have been improved at a professional level, which has increased occupancy rate and messing by about 10% thus increasing in revenue.

A Pioneer Batch Continuing Education Centre Building has also been attached with the Visitor's Hostel. This has one air-conditioned Conference Room. 2 Class Room, Waiting Lounge Pantry and an Ante Room.

Books and Book-Chapters Published

CENTRE FOR LASER TECHNOLOGY

1. Second harmonic generation in nanocrystalline ZnO films in Perspectives in Modern Optics and Optical Instrumentation, Editors J Joseph, A Sharma, and V K Rastogi published by Anita Publication, New Delhi, R. K. Thareja.

2. Synchronisation of chaos, chapter in the book, External feedback effects on semiconductor lasers, (D. Kane and K. A. Shore (eds)), John Wiley and Sons, 2004, S. Sivaprakasam and C. Masoller.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Developed module 1 (of three lectures) for NPTEL, on Finite Elements Methods being currently aired on Eklavya Channel, C.S. Upadhyay.

2. Developing the web-based course on "Finite Element Methods" along with Prof. P.M. Dikshit (ME), C.S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Fluid mechanics and heat transfer with non-Newtonian liquids in mechanically agitated vessels, Advances in Heat Transfer, 37, 2003, 77-178, R. P. Chhabra.

2. Mathematical Methods in Chemical and Environmental Engineering, Thomson Learning, Singapore, 2004, 689 pages, A. K. Ray and S. K. Gupta.

3. Fundamental of Polymer Engineering, Marcel Dekker, New York, 2003, A. Kumar and R.K. Gupta.

4. An Introduction to Thermodynamics;, Universities Press, Hyderabad, 2003, Y.V.C. Rao.

5. Engineering Thermodynamics Through Examples, Universities Press, Hyderabad, 2003, Y.V.C. Rao.

6. Mathematical Methods in Chemical and Environmental Engineering, Thomson Learning, Singapore, 2004, 689 pages, A. K. Ray and S. K. Gupta.

7. Fundamental of Polymer Engineering, Marcel Dekker, New York, 2003, A. Kumar and R.K. Gupta.

8. An Introduction to Thermodynamics, Universities Press, Hyderabad, 2003, Y.V.C. Rao.

9. Engineering Thermodynamics Through Examples, Universities Press, Hyderabad 2003, Y.V.C. Rao.

10. Oxidative Dehydrogenation of Propane over Metal Oxide Catalysts in Metal Oxides: Chemistry and Applications, Marcel Dekker Inc., In Press, Book Chapter, Goutam Deo, Maymol Cherian and T.V. Malleswara Rao.

DEPARTMENT OF CIVIL ENGINEERING

1. LiDAR Remote Sensing For Forest Eco-System Studies, Geoinformatics for Tropical Ecosystems, Asian Association of Remote Sensing, Japan, 2003, Book Chapter, Roy, P.C., Joshi, P.K., and Lohani, B.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Mobile commerce, Allied Publisher, ISBN 81-7764-553-6, December 2003, R.K Ghosh, - collection edited jointly with H. Mohanty.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Parametric Optimization of a Fuzzy Logic Controller for Nonlinear Dynamical Systems using Evolutionary Computation, in New Optimization Techniques in Engineering, Springer Verlag, 2004, Chapter 19, pp. 479-500, Laxmidhar Behera.

2. Lecture Notes on Digital Switching – Electronic Book distributed via Web, Y.N. Singh.

3. Physics and Technology of High-K Gate Dielectrics -II, PV 2003-22; The Electrochemical Society Proceedings Series, Pennington, NJ, 2003, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Contract Economics, New Age International, New Delhi, 2004, T. V. S. Ramamohan Rao.

2. Development and Human Rights, Project for Economic Education, Mumbai, 2003, Munmun Jha (ed.).

3. Optimality of Language Design, O.N. Koul and Imtiaz Hasnain (eds.), Linguistics: Theoretical and Applied (A festschrift for Ruqaiya Hasan), Indian Institute of Language Studies, Creative Books, Delhi, 2004, Achla M. Raina.
4. Ancient Indian and Modern Generative Linguistics: Some Comparative Observations, O.N. Koul and Imtiaz Hasnain (eds.) Linguistics: Theoretical and Applied (A festschrift for Ruqaiya Hasan), Indian Institute of Language Studies, Delhi, 2004, B. N. Patnaik.

5. Human Development Research in India, A. Agarwal and A. K.Saxena (eds.), Psychological Perspectives in Environmental and developmental issues, Concept Publishing Company, New Delhi, 2003, pp.203-209, Lila Krishnan,.

6. Attitudes, Social Cognition and Justice, J. Pandey (ed.), Psychology in India revisited – Development in the Discipline, Volume 3, Applied Social and Organizational Psychology, Sage Publications, New Delhi, 2004, Lila Krishnan.

7. Social Aspects of Development: Some Issues, Munmun Jha (ed.), Development and Human Rights, Project for Economic Education, Mumbai, 2003, A. K. Sharma.

8. Economic Rights: Objectives, Instruments and Achievements, Munmun Jha (ed.), Development and Human Rights, Project for Economic Education, Mumbai, 2003, T. V. S. Ramamohan Rao.

9. The Scope of Judicial Reforms in Rehabilitation and Resettlement of Project Affected Persons, Munmun Jha (ed.), Development and Human Rights, Project for Economic Education, Mumbai, 2003, Binayak Rath.

10. People's Participation for Efficient and Accountable Management of Irrigation System, India Infrastructure Report – 2003, Oxford University Press, New Delhi, pp 243-246, 2003, Rath B.

11. Technological Advancement as a Threat to Human Value System, In DM Mohapatra (Ed) Technology, Evnrionment and Human Value: A Metaphysical Approach to Sustainable Development, Concept Publishing Company, New Delhi, pp 27-38, 2004, Rath B.

12. The Burial of the Dead and other Intertextual Connections in Arundhati Roy's The God of Small Things, Farhat Ullah Khan & Mohd. Asim Siddique, (eds.), Tradition and Modernity: Essays on Indian Writing in English, Department of English, Aligarh Muslim University, Aligarh, April 2003, pp.37-56, T. Ravichandran.

13. Determining the Indeterminate: The Polysemy of Postmodernism, K. S. Iyer (ed.), New Directions in American Literature, New Delhi: Prestige Books, 2003, pp. 52-59, T. Ravichandran.

14. Cybernetic Identity in Thomas Pynchon: From V To V-2, Mohit Ray (ed.), Studies in English Literature: Vol. V, Atlantic Publishers and Distributors, New Delhi, 2003, pp. 164-173, T. Ravichandran.

15. Postmodern Identity: De/Construction Versus Performativity, Kailash C. Baral & Prafulla C. Kar (eds.), Identities: Local and Global, Pencraft's International, Delhi, 2003, pp.112-119, T. Ravichandran.

16. Anita Desai's Cry, the Peacock: A Male Point of View, Mohit K. Ray & Rama Kundu (eds.), Studies in Women Writers in English, Atlantic Publishers & Distributors, Delhi, 2004, pp. 159-166, T. Ravichandran.

17. Entrapments at Home and Abroad in Anita Desai's Fasting, Feasting, Mohit K. Ray & Rama Kundu (eds.), Studies in Women Writers in English, Atlantic Publishers & Distributors, Delhi, 2004, pp. 188-197, T. Ravichandran.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Information Technology for Management, School of Management Studies, Indira Gandhi National Open University, 2004, V. Bansal.

2. Information Systems for Managers, School of Management Studies, Indira Gandhi National Open University, 2004, V. Bansal.

3. Chapter in the Book - Innovation, Flexibility and Technology Transfer, Information, Communication & E-Marketing to rural India, Editor- Dr. Abid Haleem, Jamia Millia Islamia University, Publisher- Tata McGraw Hill, , 2004, pp 57-56, Jayanta Chatterjee.

DEPARTMENT OF MATHEMATICS

1. Text Book of Ordinary Differential Equations, 2nd Edition, 5th reprint, 2003, Deo, S.G. Lakshmikantham, Raghavendra, V.

2. Algebras from Rough-Neuro Computing: Techniques for Computing with Words, Eds. Pal, S.K., Polkowski, L. and Skowron, A., Springer-Verlag, Berlin, 2004, pp. 157-184. Banerjee, M., Chakraborty, M.K.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. The Qutub Complex, Aryan Books International, New Delhi, 2004. (In Press), R. Balasubramaniam.

2. Structure and Properties of Engineering Materials, Tata McGraw-Hill, New Delhi, 2003 (ISBN 0-07-048287-X), V.S.R. Murthy, A.K. Jena, K.P. Gupta and G.S. Murthy.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Computational Fluid Flow and Heat Transfer, published as a part of the IIT Kanpur Series (580 pages) by Narosa Publishers, N. Delhi, ISBN: second edition:; [International edition distributed by Alpha Science, London], July 2003, K. Muralidhar and T. Sundararajan, Editors.

2. Introduction to Fluid Mechanics and Fluid Machines, Second Edition, Tata McGraw Hill Publishing Company, New Delhi, 2004, S.K. Som and G. Biswas.

3. Two Chapters in Computational fluid Flow and Heat Transfer, Narosa, India (1995), Revised Edition, 2003, Dr. V.Eswaran, Edited by K. Muralidhar and T. Sundararajan under the auspices of IIT Kanpur Series.

4. Heat Transfer, Book Completed by using QIP Funds, P.S. Ghoshdastidar.

5. Electrochemical Machining, Electrochemical Machining, Published by American Society of Metals, Columbus, Ohio, U.S.A., ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and Protection, 2003, V.K.Jain.

6. Electrochemical Allied Processes, Published by American Society of Metals, Columbus, Ohio, U.S.A, ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and protection, 2003, V.K.Jain.

7. Electrochemical Hybrid Processes, Published by American Society of Metals, Columbus, Ohio, U.S.A., ASM Handbook, Vol. 13A, Corrosion: Fundamentals, Testing and Protection, 2003, V.K.Jain.

8. An introduction to genetic algorithms for engineering optimization. In G. C. Onwubolu and B. V. Babu (eds.) New Optimization Techniques in Engineering (NO TIE), Springer, 2003, pp. 13-51, Deb, K.

9. The Good of the Many Out- weights the Good of the One: Evolutionary Multiobjective Optimization, IEEE Newsletter: connections, 1(1), 2003, pp. 9-13, Corne, D.W., Deb, K., Fleming, P.J., Knowles, J.D.

10. Proceedings of the Second Evolutionary Multi-Criterion Optimization (EMO-03 Conference (Lecture Notes in Computer Science (LNCS) 2632), Heidelberg: Springer, 2004, Fonseca, C., Fleming, P., Zitzler E., Deb, K., and Thiele, L.
11. Multi-objective evolutionary algorithms: Introducing bias among Pareto-optimal solutions. In A. Ghosh and S. Tsutsui (Eds.) Advances in Evolutionary Computing: Theory and Applications, Chapter 10. London: Springer-Verlag, 2003, pp. 263-292, Deb, K.

12. Biofuels, Chapter in Handbook Waste to Wealth, being published by Tata Energy Research institute, Delhi, 40 Pages, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Small Hydrogenated Silicon Clusters in Disordered Materials, 2003, Editors: S. Prakash, N. Goyal, K. Tripathi, R. Prasad, Narosa Publishing House.

2. Ground State Structures of Si_2H_n clusters by D. Balamurugan and R. Prasad, in Disordered Materials, Editors: S. Prakash, N. Goyal and K. Tripathi, Narosa Publishing House, 2003, R. Prasad.

3. Oscillating exchange coupling in Fe/Nb multilayers, In Disordered Materials, Editors: S. Prakash, N. Goyal and K. Tripathi, Narosa Publishing House, New Delhi, 2003, N.N. Shukla and R. Prasad.

4. Chapter 19: Light and Thermally Induced Metstabilities in Nanocrystalline Silicon, In Advances in Nanoscience and Nanotechnology NISCAIR. N.P. Mandal and S.C. Agarwal.

5. Second harmonic generation in nanocrystalline ZnO films in Perspectives in Modern Optics and Optical Instrumentation, Anita Publication, New Delhi, R.K. Thareja, Editors, J. Joseph, A. Sharma and V. K. Rastogi.

6. Proceedings of the workshop QCD 2002, published by PRAMANA, Indian Academy of Sciences, Journal of Physics, Vol 61, No. 5, Nov., 2003, P. Jain along with S.D. Joglekar and V. Ravishankar acted as guest editors.

7. Synchronisation of chaos, chapter in the book, External feedbackeffects on semiconductor lasers eds. D. Kane and K.A. Shore, John Wiley & Sons, 2004, S. Sivaprakasam and C. Masoller.

Research Papers Published in Journals and Conference Proceedings

CENTRE FOR LASER TECHNOLOGY

1. Emission spectroscopy of laser ablated Si plasma related to nanoparticle formation, Appl. Surf. Sci., 222, 2003, 382, V. Narayanan and R. K. Thareja.

2. Simplified model to account for dependence of ablation parameters on temperature and phase of the ablated material, Appl. Surf. Sci 222, 2003, 293, Sushmita R Franklin and R K Thareja.

3. Photo-excited photonic characteristics of ZnO thin films deposited by laser ablation method, Elect Eng Japan 144, 2003, T. Ohshima, T. Ikegami and K. Ebihara, R.K. Thareja.

4. Preparation of ZnO thin films on various substrates by pulsed laser deposition, Surf. Coating Tech. 169/170, 2003, 517, T. Ohshima, R. K. Thareja, T. Ikegami and K. Ebihara.

5. Synthesis of p-type ZnO thin films using co-doping techniques based on KrF excimer laser deposition, Thin Solid Films 435, 2003, 49, T. Ohshima, T. Ikegami, K. Ebihara, J. Asmussen and R. K. Thareja.

6. Dependence of ablation parameters on temperature and phase of the ablated material, J. Appl. Phys. 93, 2003, 5763, S. Franklin and R. K. Thareja.

7. Photoluminescence from Silicon nano-particles synthesized by pulsed laser ablation Mod. Phys. Lett. B 17, 2003, 121, V. Narayanan and R. K. Thareja.

8. Ulrike Willer and Wolfgang Schade, 'Phase transformation in room temperature pulsed laser deposited TiO_2 thin films' Appl. Surf. Sci, 206, 2003, 137, A. K. Sharma, R. K. Thareja.

9. Pulsed laser deposited ZnO films for UV laser and nonlinear medium, ISRAPS Bull.13, 03, 2003, R. K. Thareja and A. Mitra.

10. Effect of NO and ozone on electrical conductivity of ZnO thin films by pulsed laser deposition, 3rd International Workshop on Basic Aspects of Non-equilibrium Plasma

Interacting with Surfaces, P-9, Feb 7-9, 2003, Awaji, S Korea, Paper: T. Ohshima, P. K. Shin, I. Kawashima, K. Ebihara, T. Ikegami, and R. K. Thareja.

11. National Symposium on Engineering Optics, Merrut Univ, April 7, 2003, Mirorless Lasers, Paper: R. K. Thareja.

12. Visualization of the convective field above a heated cylinder by a laser schlieren technique, accepted for publication in International Communication in Heat and Mass Transfer, 2004, Atul Srivastava, P.K. Panigrahi and K. Muralidhar.

13. Buoyancy-driven convection in superimposed fluid laters in an octagonal cavity, accepted for publication in International Journal of Thermal Sciences, 2004, Sunil Punjabi, K. Muralidhar and P.K. Panigrahi.

14. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, accepted for publication in Optics and Lasers in Engineering, 2004, A. Srivastava, A. Phukan, P.K. Panigrahi and K. Muralidhar.

15. Comparison of interferometry, schlieren and shadowgraph for visualizing convection duirng the growth of a KDP crystal from its aqueous solution, accepted for publication in Journal of Crystal Growth, 2004, Srivastava, K. Muralidhar and P.K. Panigrahi.

16. Interferometric Study of Buoyancy-driven Convection in a Differentially Heated Circular Fluid Layer, accepted for publication in Heat and Mass Transfer, 2004, A. Srivastava, P.K. Panigrahi and K. Muralidhar.

17. Buoyancy-driven convection in superposed air-water layers: numerical and experimental study, Institution of Engineers India Journal, Mechanical Engineering Division, Vol. 84, pp 31-35, 2003, A. Sethia, Sunil Punjabi and K. Muralidhar.

18. Numerical simulation and optical visualization of solute transport during the initial stages of crystal growth from its solution, presented at National Laser Symposium, IIT Kharagpur, December 2003, Sunil Verma, A. Srivastava, V. Prabhakar, K. Muralidhar and V.K. Wadhawan.

19. Convection during the growth of KDP crystals: Flow visualization and modeling, presented at the 4th Asian Meeting of Ferroelectrics AMF-4, IISc Bangalore, December 2003, Sunil Verma, K. Muralidhar and V.K. Wadhawan.

20. Beam hardening in X-ray CT, Proceedings of the National Seminar on Non-destructive Testing, held in Thiruvananthapuram, 11-13 December, 2003, pp. 183-

188, Mishra, K.K., Quraishi, A.M., Mishra, S., Kumar, A., Srivastava, A., Muralidhar, K. and Munshi, P.

21. Synchronization regimes in chaotic optical communication systems“, IEE Proc. Optoelectronics , 150, 191-198, April 2003, I. Pierce,I, A. Valle, S. Sivaprakasam, P. Rees, P. S. Spencer and K. A. Shore.

22. Nullified time-of-flight lead-lag in synchronisation of chaotic external cavity laser diodes, Optics Letters, 28, 1397-1399, August 2003, S.Sivaprakasam, J.Paul, P.S.Spencer, P.Rees and K.A.Shore.

23. Anticipated chaos in a nonsymmetric coupled external-cavity-laser system, Phys.Rev. A., 68, Art. No. 033818, September 2003, Paul Rees, Paul S. Spencer, Iestyn Pierce, S. Sivaprakasam and K.A.Shore.

24. Comparison of closed-loop and open loop feedback schemes of messave decoding using chaotic laser diodes, Optics Letters, 28, 2168-2170, Nov. 2003, M.W.Lee, J.Paul, S.Sivaprakasam and K.A.Shore.

25. Polarisation resolved relative intensity noise measurements of a vertical cavity surface emitting laser subjected to strong optical feedback , IEEE Photonics Tech Letters, 16, 9-11, January 2004, S. Sivaprakasam, S. Bandyopadhyay, Y.Hong, P.S. Spencer And K. A. Shore.

26. Dual-channel chaotic optical communications using external-cavity semiconductor lasers, J. Opt Soc America, 21, pp. 514-521, March 2004, J. Paul, S. Sivaprakasam and K. A. Shore.

27. Analysis of Implantation Induced Bragg Gratings in Quantum Wells, pp - Proceedings of CODEC - 04, Jan. 01-03, 2004, Kolkata, Imdia, R. K. Sonkar and U. Das.

28. Parametric Study of Pellets for Elemental Analysis with Laser Induced Breakdown Spectroscopy, Hongbo Zheng, Fang-Yu Yuh and Jagdish P. Singh, Applied Optics, Vol 43, p 1-6 2004, Bansi Lal.

29. In-situ Monitoring of Glass Batch Composition Using Laser Breakdown Spectroscopy, Proc 105th Annual Meeting & Exposition, April 27-30, 2003, Nashville, Tennessee, USA, Bansi Lal, Fang-Yu Yueh, Jagdish P. Singh and William G. Ramsay.

30. Optimization of Laser Ablative Propulsion Parameters: A Proposal, in Beamed Energy Propulsion, pp.251-254, Ed Andrew V. Pakhomov AIP Conference Proceedings, 664, 2003, Bansi Lal, Fang-Yu Yueh and Jagdish P. Singh.

31. Wavelet Transform of Breast Tissue Fluorescence Spectra: A Technique for Diagnosis of Tumors, , IEEE JSTQE, Vol. 9, No. 2, March/April 2003, Nidhi Agarwal, Sharad Gupta, Bhawna, Asima Pradhan and K. Vishwanathan, Prasanta K. Panigrahi.

32. Recovery of Turbidity Free Fluorescence from Measured Fluorescence: An Experimental Approach, Optics Express, Vol. 11, No. 24, 3320-3330, 2003, N. C. Biswal, S. Gupta, N. Ghosh and Asima Pradhan.

33. Experimental and Theoretical Investigation of Fluorescence Photobleaching and Recovery in Human Breast Tissues and Tissue Phantoms, Applied Optics, Vol. 43, No. 5, Feb. 2004, S. Gupta, Bhawna, Pallab Goswami, Asha Agarwal and Asima Pradhan.

34. Detection of milk adulteration using fluorescence spectroscopy: Proc. Nat. Laser Symp. 2003, Sharad Gupta, N. C. Biswal and Asima Pradhan.

35. Extraction of biochemical information form intrinsic fluorescence: Proc. Nat. Laser Symp. 2003, N. C. Biswal, Sharad Gupta and Asima Pradhan.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Proposed Hill Council for Kargil: A Shadow of Breakdown of Syneretic Kashmiriyat in Valley, Mainstream, New Delhi, Feb. 15, 2003, p.13-16, Kunal Ghosh & Vikas Kumar.

2. Presentation of Ahmadiyas in Islamic Pakistan & Secular India, Mainstream, New Delhi, July 12, 2003, p.6, Kunal Ghosh.

3. Israel's Secret Agenda: Road Map Must Lead to Temple Mount, Mainstream, New Delhi, Sept. 6, 2003, p 19-22 & 28, Kunal Ghosh.

4. A C^o element for free vibration of composite plates with uncertain material properties, Advanced Composite Materials, Vol 11, No. 2003, B.N. Singh, D. Yadav and NGR Iyengar.

5. Nonlinear Response Statistics of Composite Laminates with Random Material Properties under random Loading, Composite Structures, 60 2003, 375-383, Amit K. Onkar and D. Yadav.

6. K. Ghosh, I.V.S. Sridhar, A. Singhal and Om Prakash, Estimation of Drag Coefficient from Radar Tracked Trajectory Data of an Artillery Shell, Journal of Aerospace Sciences & Technologies, Vol. 56, No. 1, Feb., 2004.
7. K. Ghosh, I.V.S. Sridhar, A. Singhal and Om Prakash, Trajectory Modelling of an Artillery Shell using Feed Forward Neural Networks, Journal of The Institution of Engineers India, Vol. 84, November, 2003, pp. 47-49.

8. K. Ghosh, A. Jha and A. Singhal, Neural Models for Predicting Trajectory Performance of an Artillery Rocket, Journal of Aerospace Computing, Information and Communication, June, 2003 Accepted.

9. J.Ed Akin, T. Tezduyar, M.Ungor, S.Mittal, Stablilization Parameters and Smagorinsky Turbulence Model, Journal of Applied Mechanics, Transactions of the ASME, 70, 2003, 2-9.

10. S.Mittal, B. Kumar, Flow Past a Rotating Cylinder, Journal of Fluid Mechanics, 476, 2003, 303-334.

11. S.P. Singh and S.Mittal, Simulation of drag crisis in flow past a circular cylinder using 2D computations, Journal of Aerospace Sciences & Technologies, 55, 2003, 56-62.

12. S.Mittal, Effect of aslip splitter plate on vortex shedding from a cylinder, Physics of Fluids, 3, 2003, 817-820.

13. S.Mittal, Flow Control Using Rotating Cylinders: Effect of Gap, Journal of Applied Mechanics, ASME, 70, 2003, 762-770.
14. S.Mittal and V. Kumar, Vortex induced vibrations of a pair of cylinders at Reynolds number 1000, International Journal of Computational Fluid Dynamics, 2003.

15. S.Mittal, Three-dimensional instabilities in flow past a rotating cylinder, Journal of Applied Mechanics, ASMe, 71, 2004, 89-95.

16. S.P. Singh and S.Mittal, Role of shear layer instability in the transition of boundary layer on a bluff body, Journal of Visualization, 7, 2004, 107.

17. Ahmad N.S., Upadhyay C.S. and Venkatesan C., Actuation, Sensing and Shape Control of a art Beam Using a General Electro-thermo-elastic formulation, 11th AIAA/ASME /AHS Adaptive Structures Conference, AIAA-2003-1637, Norfolk, Virginia, USA, April 2003.

18. Ahmad N.S. Upadhyay C.S. and Venkatesan C., Linear and Nonlinear Analysis of a Smart Beam Using General Electrothermoelastic Formulation, AIAA Journal, Vol. 42, No.4, April 2004.

19. P.M. Mohite and C.S. Upadhyay, Focussed adaptivity for laminated plates, Computers and Structures, 81 2003, pp 287-298.

20. Effects of initial temperature on the structure of laminar CH_4- air premixed flames emission, Fuel, 82, 2003, 1471-1475, D. P. Mishra

21. An experimental study of flammability limits of LPG/air mixtures, Fuel, 82, 2003, 863-866, D. P. Mishra & A. Rahman

22. An experimental study of lean premixed combustor, International Journal of Turbo & Jet Engines, 20, 2003, 245-253, D. P. Mishra & R.Khanna.

23. An experimental determination of stability limits of CNG-Air premixed flame, proceedings of the xviii National Conference on IC Engines & Combustion, December 17-19, 2003, Combustion Institute Indian Section IITM Chennai, 355, D. P. Mishra.

24. Emission studies of Impinging premixed flames, proceedings of the xviii National Conference on IC Engines & Combustion, December 17-19, 2003, Combustion Institute Indian Section IITM Chennai, 361, D. P. Mishra.

25. Experimental Investigation of lean premixed swirl burner, 18th Engineering Congress, December, 2003, R.Kannan & D. P. Mishra.

26. Wind Tunnel and Open Air Tests of Vertical Axis Wind Turbine Model, 26th National Renewable Energy Convention of Solar Energy Society of India & International Conference on New Millennium, Coimbatore, Jan. 17-19, 2003, p. 386-391., Kunal Ghosh, B.Chandra, V.Johar, M.Sathyakan & Vivek.

27. Experiments on Vinh-Houmaire Turbine, 17th Canadian Congress of Applied Mechanics CANCAM 03, Univ. of Calgary, Alberota, Canada, June 1-6, 2003, p 408-409, Vol. II, Kunal Ghosh, B.Chandra, V.Johar, Sathyakan & Vivek.

28. Religio-Linguistic Political Phenomena of Indian North-East: Roman Versus Devnagari Versus Bengali-Assamese Script, Social Science Abstracts, Vol. XXVII, 2003, Session: Linguistics, Proceedings of 27th Indian Social Science Congress, Dec. 03-07, 2003, IIT Kharagpur, p.235, Kunal Ghosh.

29. Creation of a Separate Hill Council for Kargil and the Decaying Kashmiri Ehtos : Language is the Common Denominator, Social Science Abstracts, Vol XXVII, 2003, Session:Linguistics, Proceedings of 27th Indian Social Science Congress, Dec. 03-07, 2003, IIT Kharagpur, p.235, Kunal Ghosh & Vikas Kumar.

30. Numerical and Experimental Investigation of Impact on Skewed I-Section Bracket. IMPLAST-03, 8th International Symposium on Plasticity and Impact Mechanics, Vigyan Bhawan, New Delhi, 16-19 March 2003. Phoenix Publishing House Pvt. Ltd. 1084-1091, N.G.R.Iyengar, N.N.Kishore, Prashant Kumar, Abhishek K Singh, and Bhanu kishore.

31. Dynamic Response of composite panels with random Material Properties and Random Loading, IMPLAST-03,8th International Symposium on Plasticity and Impact Mechanics, Vigyan Bhawan, New Delhi, 16-19 March, 2003. Phoenix Publishing Pvt. Ltd. 110001110, Bhrigu N Singh, Dayand Yadav and N.G.R.Iyengar

32. Laser Based Ultrasonics LBU for automated Inspection of composite specimens 2003 SEM Conference, Proc. Society for experimental Mechanics,USA, Charlotte, North Carolina USA, June 2-4,2003,Session 16, Paper 9, N.N.Kishore, N.G.R.Iyengar and P.S.Sarin.

33. Development of Graded Barium Titanate Patches for Dynamic Applications, 2003 SEM Conference,June 2-4,2003, Session 46, paper 30, V.R.Rao,S.Kamle and N.G.R.Iyengar.

34. Stability analysis of composite laminates Using Simple Higher Order Theory, Proc. ISAMPE National Conference on Composites & National Seminar On Aerospace Structures, Spet. 5-6,2003,375-381, N.G.R.Iyengar & Arindam Chakraborty.

35. A C° Element for Free Vibration of Composite Plates with Uncertain Material Properties., Advanced Composite materials, Vol. 11, 2003, 331 - 350, Singh, B.N, D. Yadav and N.G.R.Iyengar.

36. Loads and vibration in helicopters: Status and future directions, Invited paper: International Seminar – Aero India 2003, Bangalore, 2003, Venkatesan, C.

37. Actuation, sensing and shape control of a smart beam using a general electro-thermo-elastic formulation, 11-th AIAA/ASME/AHS Adaptive Structures Conference, Norfolk, Virginia, April 2003, Nazir, S.A., Upadhyay, C.S., and Venkatesan, C.

38. Secondary Flows and Separation in S-duct Diffusers - Their Detection and Control, FEDSM 2003-45109, Proceedings of the 4th ASME/JSME Joint Fluids Engineering Conference, 2003, Honolulu, Hawaii, USA, Sullerey, R.K. and Pradeep A.M.

39. Performance Comparison of Air Turborocket Engine with Different Fuel Systems, AIAA 2003-4417, 39th AIAA/ASME/SAE /ASEE Joint Propulsion Conference, Huntsville, Alabama, USA, 2003, Sullerey, R.K., Pradeep, A.M. and Mayank Kedia.

40. Pradeep, A.M. and Sullerey, R>K., 2003, Wall Shear Stress Measurements in Pressure Gradients, Proceedings of the 30th National Conference on Fluid Mechanics and Fluid Power FMFP, December 11-13, National Institute of Technology, Suratkal, Karnataka, India.

41. Sullerey, R.K. and Pradeep, A.M., 2003, Flow Control in Rectangular to Circular Transitioning S-duct Diffusers, Proceeding of the 13th National Conference of the Indian Society of Mechanical Engineers, December 30-31, Indian Institute of Technology Roorkee, India.

42. Pradeep A.M. and Sullerey, R.K., 2003, A Displacement Based Wall Shear Stress Sensor, Journal of Institution of Engineers, India, Vol. 84, pp. 27-31.

43. Pradeep, A.M., and Sullerey, R.K., 2004, Application of Shear Sensitive Liquid Crystals in Flow Visulization & Skin Friction Estimation, Optical Diagnostics in Engineering, 7, pp. 1-9.

44. Sullerey, R.K., and Pradeep, A.M., 2004, Secondary Flow Control using Vortex Generator Jets, accepted for publications in Trans. ASME, Journal of Fluids Engineering.

45. Secondary flow Control in a Circular S-duct Diffuser Using Vortex Generator Jets, AIAA2004-2615, to be presented at the AIAA 2nd Flow Control Conference, Portland, Oregon, USA, 2004, Pradeep, A.M. and Sullerey, R.K.

46. Neural Models for Predicting Trajectory Performance of an Artillery Rocket, AIAA Atmospheric Flight Mechanics Conference, Austin, Texas, USA, Aug. 11-15, 2003, Paper No. 2003-5471, A. K. Ghosh and Om Prakash.

47. Study of Flow in a Supersonic Mixed-Compression Inlet, Proceedings of the 6th Annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August 11-13, 2003, Manish Kumar Jain and S.Mittal.

48. Finite Element Computation of Fluid Flows, in Abstracts of the International Indian-Russian, Workshop, High Performance Computing in Science and Engineering, HPC SE 2003, Moscow, Russia, 2003, S.Mittal.

49. Shear Layer Instability and Drag-crisis for flow past a Cylinder, in Abstracts of the Seventh U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, S.Mittal and S.P. Singh.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. A gene mutated in juvenile myoclonic epilepsy encodes a protein regulating $Ca_v2.3$ channel. Nature Genetics in press, 2004, Suzuki T, Delgado-Escueta AV, Aguan K, Shi J, Alonso ME, Hara J, Nishida M, Numata T, Takeuchi T, Morita R, Medina MT, Bai D, Ganesh S, Sugimoto Y, Inazawa J, Bailey JN, Ochoa A, Jara-Prado A, Rasmussen A, Ramos-Peek J, Cordova G, Rubio-Donnadieu F, Inoue Y, Osawa M, Kaneko S, Oguni H, Mori Y, and Yamakawa K.
2. The carbohydrate-binding domain of Lafora disease protein targets Lafora polyglucosan bodies. Biochemical and Biophysical Research Communications 31, 1101-1109, 2004, Ganesh S, Tsurutani N, Suzuki T, Hoshii Y, Ishihara T, Deldago-Escueta AV, and Yamakawa K.
3. Recent developments in the quest for myoclonic epilepsy genes. Epilepsia 44, 13-26, 2003, Delgado-Escueta AV, Perez-Gosiengfiao KB, Bai D, Bailey J, Medina MT, Morita R, Suzuki T, Ganesh S, Sugimoto Y, Yamakawa K, Ochao A, Jara Prado A, Rasmusse A, Ramos-Peek J, Cordava S, Rubio-Donnadieu F and Alonso ME.
4. The Lafora disease gene product laforin interacts with HIRIP5, a phylogenetically conserved protein containing a NifU-like domain. Human Molecular Genetics 12, 2359-2368, 2003, Ganesh S, Tsurutani N, Suzuki T, Ueda K, Agarwala KL, Osada H, Delgado-Escueta AV, and Yamakawa K.

5. Surface tension parameterization in molecular dynamics simulations of a phospholipid-bilayer membrane: Calibration and effects, J. Phys. Chem. B in press, 2004, R. Sankararamakrishnan and H. Weinstein.

6. Structure and Regulation of the cAMP binding domains of Epac2, Nature. Struct. Biol, 2003, 10, 26-32, Balaji Prakash, Holger Rehmann, Eva Wolf, Alma Rueppel, Johan de Rooij, Johannes. L. Bos & Alfred Wittinghofer. Cover Article

7. Identification of residues in the human guanylate-binding protein 1 critical for nucleotide binding and co-operative GTP hydrolysis. J. Mol. Biol, 2004, in press, Gerrit J. K. Praefcke, Stephan Kloep, Hauke Lilie, Balaji Prakash, & Christian Herrmann.

8. Short C=O...C intermolecular contacts for molecular assembly. Accepted by royal society journal CrystEngg Comm. in press, Gitalee Bhattacharjee, G. Savitha and Gurunath Ramanathan.

9. The Leucine Zipper Motif of the Drosophila AF10 Homologue Can Inhibit PRE-Mediated Repression: Implications for Leukemogenic Activity of Human MLL-AF10 Fusions Molecular and Cellular Biology 23:119-130, 2003, Perrin, L.; Bloyer, S. ; Ferraz, C.; Agrawal, N.; Sinha P. and Dura, J.M.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Pervaporation of Hydrazine Hydrate: Separation characteristics of memberanes with hydrophilic to hydrophobic behaviour, J. Membrane Sci. in press, S.V. Satyanarayana, P.K. Bhattacharya.

2. Composite membranes for hydrophobic pervaporation: Study with toluene-water system, Chem. Eng. J. in press, S.V. Satyanarayana, A. Sharma and P.K. Bhattacharya.

3. Pervaporation from a dense membrane: Role of permeant-membrane interactions, Kelvin effect and membrane swelling, Langmuir in press, S.V. Satyanarayana, A. Sharma and P.K. Bhattacharya.

4. Removal of Aniline from Awueous Solution in a Mixed Flow Reactor using Emulsion Liquid Membrane, J. Membrane Sci., 226, 185-201, 2003, S. Datta, P.K. Bhattacharya and N. Verma.

5. Real Coded Genetic Algorithm for Optimization of Pervaporation Process Parameters for Removal of Volatile Organics from Water:, Ind. Eng. Chem. Res., 42133118-3128, 2003, S. V. Satyanarayana and P.K. Bhattacharya.

6. A note on wall effect on the terminal falling velocity of a sphere in quiescent Newtonian media in cylindrical tubes, Powder Technol., 129, 53-58, 2003, R. P. Chhabra, S. Agarwal and K. Chaudhary.

7. A note on pressure drop for the cross-flow of power-law liquids and air/power law liquid mixtures past a bundle of circular rods, Chem. Eng. Sci., 58, 1365-1372, 2003, T.V. Malleswara Rao and R.P. Chhabra.

8. Hydrodynamic behaviour of an ensemble of encapsulated liquid drops in creeping motion: A fluid-mechanic based model for liquid membranes, Fluid Dynamics Research, 32, J. 201-215, 2003, M. Ferreira, A.A. Soares and R.P. Chhabra.

9. Two-dimensional steady flow of a power law fluid past a square cylinder in a plane channel: Momentum and heat transfer characteristics, Ind. Eng. Chem. Res., 42, 5674-5686, 2003, A.K. Gupta, A. Sharma, R.P. Chhabra and V. Eswaran.

10. Power law fluid flow past a square cylinder: Momentum and heat transfer characteristics, Chem. Eng. Sci., 58, 5315-5329, 2003, B. Paliwal, A. Sharma, R.P. Chhabra and V. Eswaran.

11. Convective heat transfer for power law fluids in packed and fluidised beds of spheres, Chem.Eng. Sci. 59, 645-659, 2004, Rupali Shukla, S.D. Dhole, R.P. Chhabra and V. Eswaran.

12. Propane Dehydrogenation over Alumina Supported Chromia Catalysts, Bulletin of the Catalysis Society of India, 2, 29, 2003, S. Thapliyal and G. Deo

13. Effect of Oxide Support, Loading and Surface Area on the Kinetic Parameters for Propane ODH over Supported Vanadium Oxide Catalysts, Chemcon-2003, IIChe Annual Meeting, Bhubaneswar, December, 2003, K.K. Routray and G. Deo.

14. In situ UV-vis-NIR Diffuse Reflectance and Raman Spectroscopy and Catalytic Activity Studies of Propane ODH over CrO_3/ZrO_2 catalysts, Chemcon-2003, IIChe Annual Meeting, Bhubaneswar, December, 2003, T.V.M. Rao, J.-M. Jehng, I.E. Wachs and G. Deo.

15. Oxidative Dehydrogenation of Propane using Phosphorous modified 3% V_2O_5/TiO_2 and 3% Cr_2O_3/TiO_2 Catalysts, Chemcon-2003, IIChe Annual Meeting, Bhubaneswar, December, 2003, R.P. Singh, P. Singh and G. Deo.

16. Chemical characterization of supported rhenium oxide catalyst using LPG oxidation reaction, Chemcon-2003, IIChe Annual Meeting, Bhubaneswar, December, 2003, G. Manik and G. Deo.

17. Transesterification of vegetable oils for biodiesel production: engine testing for performance and emissions. Proceedings of the XVIII National Conference on IC engines and combustion, College of Engineering, Thiruvananthapuram, Kerala, India. December 17-19, 2003.571-580. AK Agarwal, S Garg, N Kaistha and S Sinha.

18. Calculation of Fire & Explosion Index F&EI Value for the Dow Guide taking credit for the Loss Control Measures', Journal of Loss Prevention in the Process Industries, 16 4, 235-241, 2003, J.P.Gupta, G. Khemani and M.S. Mannan.

19. Real Cost of Process Safety – a Clear Case for Inherent Safety, Trans IChemE U.K. Process Safety and Environmental Protection, Vol. 81 B, 406-413, 2003, J.P. Gupta, D.C. Hendershot and M.S. Mannan.

20. Hydroxylamine Production: Will a QRA Help You Decide, Reliability Engineering and System Safety, 812, 215-224, 2003, M. S. Mannan, W.J. Rogers, J. T. Baldwin, J.P.Gupta, Y. Wang, S.R.Saraf, and K. Krishna.

21. A simple graphical method for measuring inherent safety, Journal of Hazardous Materials, 104 issues 1-3, 15-30, 2003, J.P.Gupta and D.W. Edwards.

22. Bhopal: Eighteen, going on Nineteen and Fading?, Invited Guest Editorial, Trans. IChemE U.K., Process Safety and Environmental Protection, 81 B, 227-228, 2003, J. P. Gupta.

23. Use of failure rate databases and process safety performance measurements to improve process safety, Journal of Hazardous Materials, 104, 75-93 2003, N. Keren, H.H. West, W.J. Rogers, J.P. Gupta, M.S. Mannan.

24. 20 years after Bhopal – Effects on Process Safety, Proceedings of Process Safety and Industrial Explosion Protection, Session 1, International ESMG Symposium 2004, Nurnberg, Germany, March 16-18, 2004, J. P. Gupta.

25. Inherent Safety Measurement Indices, Proceedings of Process Safety and Industrial Explosion Protection, Session 4, International ESMG Symposium 2004, Nurnberg, Germany, March 16-18, 2004, J. P. Gupta.

26. Multi-objective Optimization of an Industrial Fluidized-bed Catalytic Cracking Unit FCCU using Genetic Algorithm GA with the Jumping Genes Operator, Comp. Chem. Eng., 27, 1785-1800, 2003, R. B. Kasat and S. K. Gupta.

27. Multi-objective Optimization of Venturi Scrubbers Using a 3-D Model for Collection Efficiency, J. Chem. Tech. Biotech., 78, 308-313, 2003. G. Ravi, S. Viswanathan, S. K. Gupta and M. B. Ray.

28. Dynamic Model of an Industrial Steam Reformer and its Use for Multiobjective Optimization, Ind. Eng. Chem. Res., 42, 4028-4042, 2003, A. D. Nandasana, A. K. Ray and S. K. Gupta.

29. Applications of Genetic Algorithm in Polymer Science and Engineering, Materials and Manuf. Processes, 18, 523-532, 2003, R. B. Kasat, A. K. Ray and S. K. Gupta.

30. Applications of the Non-Dominated Sorting Genetic Algorithm NSGA in Chemical Reaction Engineering, Intern. J. Chem. Rxn. Eng., 1, R2, 1-16, 2003, A. D. Nandasana, A. K. Ray and S. K. Gupta.

31. Multi-objective Optimization of Semi-batch Copolymerization Reactors using Adaptations of Genetic Algorithm GA, Macromolecular Theory Simulation, 13, 73-85, 2004, A. Nayak and S. K. Gupta.

32. Simulation and Multiobjective Optimization of the Continuous Tower Process for Styrene Polymerization, J. Appl. Polym. Sci., in press. R. Sharma and S. K. Gupta.

33. Multiobjective Optimization of an Industrial Crude Distillation Unit using the Elitist Non-dominated Sorting Genetic Algorithm, Chem. Eng. Res. Des., 00, 0000-0000, 2004, S. V. Inamdar, S. K. Gupta and D. N. Saraf.
34. Genetic Algorithm GA and Multiobjective Optimization with the Jumping Gene Transposon Adaptation—a Primer, 2004, S. K. Gupta and S. Bhatt.

35. Selection of Mass Transfer Correlations for Rate Based LLX Model, Korean J. Chemical Eng., 204, 609-616, 2003, Debjit Sanpui and Ashok Khanna.

36. Closure Equations in the Estimation of Binary Interaction Parameters, Korean J. Chemical Engineering, 204, 736-744, 2003, Syed Akhlaq Ahmad and Ashok Khanna.

37. Estimation for LLE of PIONA families and Its Validation, Computers and Chemical Engineering, Debjit Sanpui, Manish K Singh and Ashok Khanna.

38. Estimation of LLE for PIONA families in Sulfolane and Its Validation, Fluid Phase Equilibria, 2152, 2004, Ashok Khanna, Manish K Singh, Saurabh Bajpai and Debjit Sanpui.

39. Rate Based Non-Isothermal LLX Model – Its Experimental Validation, AIChE J, 502, 2004, Debjit Sanpui, M K Singh and A Khanna.

40. Ternary Mass Transfer Stdies in Bench Scale LLX Column and Its comparison with Simulations, Korean J. Chemical Eng., Debjit Sanpui, Manish K Singh, Ashok Khanna.

41. Synthesis and Characterization of Metallocene Catalysts – Cocatalysts, Proc. of Indian Chemical Eng. Congress 2003 CHEMCON 2003, 19-20 December, 2003, Bhubaneswar, CHM 290 – 234, S. Kumar, V. Katiyar and A. Khanna.

42. Thermodynamic Equilibrium of Ionic Liquids: A Brief Review, Proc. of Indian Chemical Engineering Congress 2003 CHEMCON 2003, 19-22 December 2003 Bhubaneswar, CHM-077, p. 263, T. Banerjee, S. Kumar and A. Khanna.

43. Thermodynamics of Ionic Liquids – A Review, Proc. of International Conference on Chemical Engineering 2003 ICChE 2003 December 29-30, 2003, Dhaka, Paper No. 9, p. 45-49, T. Banerjee, M. K. Singh, A. Agarwal and A. Khanna.

44. HDPE Polymerization using Synthesized Metallocenes and Cocatalysts, Proc. of International Conference on Chemical Engineering 2003 ICChE 2003, December 29-30, 2003, Dhaka, Bangaladesh Paper No. 34, p. 149-153, S. Kumar, V. Katiyar and A. Khanna.

45. HDPE Polymerization using synthesized metallocenes and cocatalysts, Indo-US Conference on Recent Advances in Organo metallic Catalysis and Olefin Polymerization at IIT Madras, Chennai, December 10-12, 2003, P. 28, p51-52, Vimal Katiyar, Sushil Kumar and Ashok Khanna.

46. Liquid phase oxidation of n-octane catalyzed by silica gel supported vanadium VO_2^+ complex using molecular oxygen, React Kinet Catal L, 802, 223-231, 2003,. G.S. Mishra, A. Kumar.

47. Synthesis and characterization of a nanofiltration carbon membrane derived from phenol-formaldehyde resin, Carbon, 4115, 2961-2972, 2003, N. Kishore, S. Sachan, K.N. Rai, Anil Kumar.

48. Oxidation of cyclohexane with molecular oxygen using a Schiff base cobalt complex bonded to carbamate-modified silica gel, Transit Metal Chem, 288, 913-917, 2003, A. Kumar, G.S. Mishra and Anil Kumar.

49. Covalently bonded Schiff base cobalt complex catalyst for the selective oxidation of linear alkanes using molecular oxygen, J. Mol. Catal. A- Chem, 2011-2, 179-188, 2003, A. Kumar, G.S. Mishra and Anil Kumar.

50. Preparation of high capacity weak base polymethyl methacrylate-ethylene glycol dimethylacrylate copolymer anion exchange resin by modification using NO_x, J. Appl. Polym. Sci., 897, 1991-1999, 2003, S. Sinha, N. Jayaswal, Anil Kumar.

51. Silica gel supported [1,4-bissalicylidene amino-phenylene] vanadium oxo complex catalyst for the oxidation ofn-heptane using molecular oxygen, J. Mol. Catal. A-Chem., 1921-2, 275-280, 2003, G. S. Mishra and Anil Kumar.

52. Study of Carbon Nanotubes Prepared by Chemical Vapor Deposition using Transmission Electron Microscopy, XXVI Annual Conference on Electron Microscopy and Applied Fields, Shimla, April 16-18, 2003, Malladi V. Pawan Kumar, Gouthama and D. Kunzru.

53. Spectrophotometric Determination of Phosphorus in Aqueous and Organic Phases obtained on Pyrolysis of Naphtha, Asian J. of Chem., 2, 930-931, 2003, D. Kunzru.

54. Effect of Molybdenum on V-Mg-O Catalysts During the Oxidative Dehydrogenation of Propane, CHEMCON-2003, Bhubaneswar, Dec. 19-22, 2003, D. Kunzru.

55. Oxidative Dehydrogenation of Propane on V_2O_5-ZrO_2 Catalysts, Catalyst Letters in press, Mahuya De and D. Kunzru.

56. Process Intensification in Rotating Packed Beds HIGEE: An Appraisal, I&EC research43, 1150-1162, 2004, Rao D. P., A. Bhowal, and P. S. Goswami.

57. Niobium oxide as support material for the oxidative dehydrogenation of propane, Catalysis Today, 78, 397-409, 2003, M. Cherian, M.S. Rao and G. Deo.

58. Arresting photodegradation of porous silicon by a polymer coating, Solid State Communications 129, 183, 2004, Mandal N. P., Sharma A. and Agarwal S. C.

59. Instability, morphology and dynamics of thin slipping films, Langmuir 20, 244, 2004, Kajari K., Sharma A. and Khanna R.

60. Many paths to dewetting of thin films: anatomy and physiology of surface instability, Euro. Phys. J. E 12, 397-408, 2003, Sharma A.

61. Instability and dynamics of thin slipping films, Applied Phys. Lett. 83, 3549-3551, 2003, Sharma A. and Kargupta K.

62. Surface instability of soft films with coupled tension-shear interactions, J. Applied Phys. 94, 6376-6385, 2003, Shenoy V. and Sharma A.

63. Self-destruction and dewetting of thin polymer films: the role of interfacial tensions, J. Phys. -Cond. Matter 15, 331-336, 2003, Reiter G., Khanna R. and Sharma A.

64. Thin liquid films on chemically heterogeneous substrates: self-organization, dynamics and patterns in systems displaying a secondary minimum, Physica A 318, 262-278, 2003, Sharma A., Konnur R. and Kargupta K.

65. Spontaneous surface roughening induced by surface interactions between two compressible elastic films, Phys. Rev. E 67, 031607, 2003, Sarkar J., Shenoy V. and Sharma A.

66. Mesopatterning of thin liquid films by templating on chemically patterned complex substrates, Langmuir 19, 5153-5163, 2003, Kargupta K. and Sharma A.

67. Instability of viscoelastic plane Couette flow past a deformable wall, J. Non-Newtonian Fluid Mech, 116, 371- 393, 2004, V. Shankar and S. Kumar.

68. Instability of the interface between thin fluid films subjected to electric fields, J. Colloid Interface Sci, In Press, 2004, V. Shankar and A. Sharma.

69. Stability of two-layer viscoelastic plane Couette flow past a defonnable solid layer, J. Non-Newtonian Fluid Mech, In Press, 2004, V. Shankar.

70. Removal of Aniline from Aqueous Solution in a Mixed Flow Reactor using Emulsion Liquid Membrane, J. Membr.Sci. 226, 185-201, 2003, Datta, S., P. K. Bhattacharya and N. Verma.

71. SO2 Breakthrough Analysis during Adsorption over Zeolites, Chem. Engg. Process. 43, 9-22, 2004, Gupta, A., Gaur, V. and Verma, N.

72. SO2 Breakthrough and Sulfate Conversion Analysis during Sorption by Ca-based Sorbents, Can. J. Chem. Eng. 811, 53-62, 2003, Dasgupta, K., Rai, K.N. and N. Verma.

73. Counter current multi-stage fluidized bed column for removal of dissolved anions from waste water, IICHE Proceedings, 15-19 December 2003, Bhubaneswar, Kishore, K., A. Verma, A. Agrawal, and N. Verma.

74. Computational fluid dynamics analysis of heat transfer in a packed bed, IICHE Proceedings, 15-19 December 2003, Bhubaneswar, Maheshwari, A., and N. Verma.

75. Synthesis and Characterization of Activated Carbon Fiber for the Removal of SO2, NOx, and CO2, AIChE Proceedings, 21-25 November 2003, San Francisco, US. Gaur, V., R. Ashthana, and N. Verma.

DEPARTMENT OF CHEMISTRY

1. Conformationally induced vibronic transitions in $S_0 \leftarrow S_1$ spectra of n-propylbenzene, J. Chem. Phys. 119, 2003, 9486-9490, S. S. Panja and T. Chakraborty.

2. Discrimination of Rotational Isomers of 2-Phenylethanol by Dispersed Fluorescence Spectroscopy in Supersonic Jet, J. Phys Chem A 107, 2003, 10984-10987, S. S. Panja and T. Chakraborty.

3. Conformations of indan and 2-indanol: A combined study by UV laser spectroscopy and quantum chemistry calculation, J. Chem. Phys. 119, 2003, 2523-2530, A. Das, K. K. Mahato, S. S. Panja and T. Chakraborty.

4. Structure and electronic spectroscopy of naphthalene-acenaphthene van der Waals dimer: Hole-burning, dispersed fluorescence, and quantum chemistry calculations, J. Chem. Phys. 118, 2003, 9589-9595, A. Das, C. K. Nandi and T. Chakraborty.

5. Conformational Stability of Allylbenzene: A combined study by dispersed fluorescence spectroscopy and quantum chemistry calculation, J. Chem. Phys. 118, 2003, 6200-6204, S. S. Panja and T. Chakraborty.

6. Photochemistry in Supersonic jet-cooled molecular clusters, ISRAPS Bulletin, 13, 2003, 28-32, T. Chakraborty.

7. Dynamical behavior of anion-water and water-water hydrogen bonds in aqueous electrolyte solutions: A molecular dynamics study, J. Phys. Chem. B, 2003,107, 3899-3906, A. Chandra.

8. Hydration structure and diffusion of ions in supercooled water: Ion size effects, J. Chem. Phys. 118, 2003, 9719-9725, S. Chowdhuri and A. Chandra.

9. Structure and dynamics of hydrogen bonds in liquid water and aqueous solutions, Proc. Ind. Nat. Sci. Acad. A, Invited article, 69, 2003, 49-59, A. Chandra.

10. Dynamics of water molecules at liquid-vapour interfaces of aqueous ionic solutions: Effects of ion concentration, Chem. Phys. Lett. 373, 2003, 87-93, S. Paul and A. Chandra.

11. Pressure effects on the tracer diffusion and orientational relaxation of hydrogen bonding solutes in ambient and supercooled water, Chem. Phys. Lett. 373, 2003, 79-86, S. Chowdhuri and A. Chandra.

12. A Temperature of maximum density in soft sticky dipole water, Chem. Phys. Lett. 376, 2003, 646-652, M. L. Tan, J.T. Fischer, A. Chandra, B.R. Brooks and T. Ichiye.

13. From ab initio quantum chemistry to molecular dynamics: The delicate case of hydrogen bonding in ammonia, J. Chem. Phys. 119, 2003, 5965-5980, A.D. Boese, A. Chandra, J.M.L. Martin and D. Marx.

14. Tracer diffusion of ionic and hydrophobic solutes in water-dimethyl sulfoxide mixtures: Effects of varying composition, J. Chem. Phys. 119, 2003, 4360-4366, S. Chowdhuri and A. Chandra.

15. Liquid-vapor interfaces of simple electrolyte solutions: Molecular dynamics results for ions in Stockmayer fluids, J. Phys. Chem. B 107, 2003, 12705, S. Paul and A. Chandra.

16. Hydrogen bond dynamics at air-water and metal-water interfaces, Chem. Phys. Lett. 386, 2004, 218-224, S. Paul and A. Chandra.

17. A Novel and Expeditious Approach to Unusual Spiro Lactam Building Blocks, J. Org. Chem., 2003, 68, 4556, F. A. Khan, J. Dash.

18. Chemoselective reduction of aromatic nitro and azo compounds in ionic liquids using zinc and ammonium salts, Tetrahedron Lett. 2003, 44, 7783-7787, F. A. Khan, J. Dash, Ch. Sudheer and R. K. Gupta.

19. Truncated thioredoxin (Trx80) exerts unique mitogenic cytokine e¡ects via a mechanism independent of thiol oxido-reductase activity, Klas Pekkari, Javier Avila-Cariño, Åsa Bengtsson, Annika Scheynius, Arne Holmgren, FEBS Lett. (2003), 539, 143-148, Ramanathan Gurunath.

20. 1-Bis(methoxy)-4-bis(methylthio)-3-buten-2-one: Useful Three Carbon Synthon for Five and Six Membered Heterocycles with Masked (or Unmasked) Aldehyde Functionality P. K. Mahata, U. K. Syam Kumar, V. Sriram, H. Junjappa Tetrahedron, 59, 2631, 2003, H Ila.

21. Heteroaromatic Annulation of 2-Methyl/2-Cyanomethyl Benzimidazole Dianions with α-Oxoketene Dithioacetals: A Highly Regio-Specific Synthetic Protocol for 1,2- and 2,3-Substituted / Annulated pyrido[1,2-a]benzimidazoles Kausik Panda, J. R. Suresh, H. Junjappa J. Org. Chem. 68, 3498, 2003, H Ila.

22. Reaction of α-Oxoketene-N,S-arylamino acetals with Vilsmeier Reagents : An Efficient Route to Highly Functionalized Quinolines and Their Benzo/Hetero- Fused Analogues. P. K. Mahata, C. Venkatesh, U. K. Syam Kumar, H. Junjappa J. Org. Chem. 68, 3966, 2003, H Ila.

23. Aza-Annulation of Tetrahydroisoquinoline Derived Enamines: Efficient and Convergent Routes to Novel Functionalized Benzo[a]quinolizin-4-ones and Pyrimido[6,1-a]isoquinoline Derivatives. S. Chakrabarti, Manish C. Srivastava, H. Junjappa Synlett 2369, 2003, H Ila.

24. Heteroannulation of 3-Bis(methylthio) acrolein with Aromatic Amines: A Convenient Highly Regioselective Synthesis of 2-(Methylthio)quinolines and their Benzo/Hetero Fused Analogs: A Modified Skraup Quinoline Synthesis. Kausik Panda, Iffat Siddiqui, H. Junjappa Synlett 449, 2004, H Ila.

25. Palladium Catalyzed Enantioselective Transformations L. F. Tietze, H. Bell Chemical Review, 2004, in press, H Ila.

26. α-Oxoketene Dithioacetal Mediated Heteroaromatic Annulation Protocol for Benzoheterocycles. An Efficient Regiocontrolled Synthesis of Highly Substituted and annulated Indazoles S. Peruncheralathan, T. A. Khan, H. Junjappa Tetrahedron 60, 3457, 2004 , H Ila.

27. α-Oxoketene Dithioacetal Mediated Aromatic Annulation: Highly Efficient and Concise Synthetic Routes to Potentially Carcinogenic Polycyclic Aromatic Hydrocarbons S. Nandi, Kausik Panda, J. R. Suresh, H. Junjappa Tetrahedron 60, 3663, 2004 , H Ila.

28. Domino Carbocationic Rearrangement of α-[Bis(methylthio) methylene]alkyl-2 (heteroaryl)cyclopropyl Ketones. S. Peruncheralathan, V. Sriram, H. Junjappa Tetrahedron 000, (2004) (accepted for publication), H Ila.

29. Magnetic disorder induced enhanced magnetoresistance$La_{0.5}Sr_{0.5}Co_{1-x}Ru_xO_3$, Solid State communications, 125, 103 (2003, S. Sundar Manoharan, R. K. Sahu, D. Elefant and C. M. Schneider.

30. Magnetic and electronic phase diagram of a ferromagnetic $La_{0.6}Pb_{0.4}Mn_{1-x}Ru_xO_3$, Solid State Sci., 5, 549, (2003, Ranjan K. Sahu and S. Sundar Manoharan.

31. Magneto resistance in sonochemically prepared Nano Co_{100-x} Cr_x alloys ($0 \leq X \leq 40$), Solid State Sci. 5, 821, (2003, Manju Lata Rao and S. Sundar Manoharan.

32. Magnetism and Magneto transport studies in sonochemically prepared amorphous $Co_{100-x}Pt_x$ nano alloys, Solid State Commun. 129, 781, 2004, Manju Lata Rao, S. Sundar Manoharan.

33. Magnetism and magneto transport properties in sonochemically $Co_{100-x}Pt_x$ nano alloys, J. Nano Science and Nanotechnology, In Print, Manju Lata Rao, S. Sundar Manoharan, D. Elefant and C. M. Schneider.

34. Sonochemical synthesis of Nano materials, Review chapter in Encyclopedia of Nano Science and Nano Technology, H. S. Nalwa, Ed., American Scientific Publishers, 2004. In print, S. Sundar Manoharan and Manju Lata Rao.

35. Plasmid relaxation induced by copper metalated diglycine conjugates under heterogeneous reaction conditions. Bioorg. Med. Chem. Lett. 2003, 13, 923-926, Madhavaiah, C., and Verma, S.

36. Reusable photonucleases: Plasmid scission by uranyl ion impregnated homopolymer in the presence of visible light and sunlight, Chem. Commun. 2003, 800-801, Madhavaiah, C., and Verma, S.

37. Heterogeneously active nucleolytic reagents: Flexible design of reusable catalysts for nucleic acid scission, Catal. Commun. 2003, 4, 237-241, Madhavaiah, C., Srivatsan, S. G., and Verma, S.

38. DNA strand scission by a Cu(I) adenylated polymeric template: Preliminary mechanistic and recycling studies, Bioorg. Med. Chem. Lett. 2003, 13, 2501-2504, Verma, S., Srivatsan, S. G., Claussen, C. A., and Long, E. C.

39. Surface trapping and AFM detection of DNA topological intermediates generated from an oxidative chemical nuclease, Biochem. Biophys. Res. Commun. 2003, 308, 165-169, Mukhopadhyay, R.*, Srivatsan, S. G., Verma, S.

40. Adenine-copper coordination polymer as an oxidative nucleozyme: Implications for simple prebiotic catalytic units, J. Inorg. Biochem. 2003, 97, 340-344, Srivatsan, S. G., Parvez, M., Verma, S.

41. Metalated hybrid polymers as catalytic reagents for phosphate ester hydrolysis and plasmid modification, Bioorg. Med. Chem. Lett. 2004, 14, 1559-1562, Chandrasekhar, V., Deria, P., Krishnan, V., Athimoolam, A., Singh, S., Madhavaiah, C., Srivatsan, S. G., Verma, S.

42. Self-aggregation of reverse bis peptide conjugate derived from the unstructured region of the prion protein, Chem. Commun. 2004, 638-639, Madhavaiah, C. and Verma, S.

43. Bioinspired grafting of polystyryl matrix: Single-step evolution to a moderately conducting polymer, Chem. Lett. 2004 (under revision), Saxena, A., Srivatsan, S. G., Saxena, V., Verma, S.

44. ATCUN-like metal binding motifs in proteins: Identification and characteri-zation by crystal structure and sequence analysis, Proteins: Structure, Function, and Bioinformatics, 2004, submitted Sankararamakrishnan, R., Verma, S., Kumar, S.

45. Redox reaction between $[Bu_4N]_2[Mo^{VI}O_2(mnt)_2]$ and thiophenol in relevance to the authoreduction in the crystallization process of oxidized form of sulfite oxidase, Pradeep K. Chaudhury, Kowliki Nagarajan, Anil Kumar, Rabindranath Maiti[c], Samar K. Das & Sabyasachi Sarkar, Indian Journal of Chemistry, Vol. 42A, Sept. 2003, pp. 2223-2227, S. Sarkar.

46. Maiti Ravindranath, Nagarajan Kowliki, Sarkar Sabyasachi, 2003, Synthesis and structure of [L][MoIVO(mnt)2] {L = [(C2H5)4]+ , [C5H5NH]+ , [(C2H5)3NH]+, [lysinium]2+, and (mnt2- + 1,2- dicyanoethylenedithiolate)} in relevance to molybdenum cofactor of diverse class of molybdoenzymes, J. Mol. Structure, 656, 169-176, S. Sarkar.

47. A Model synthetic Approach towards the Furanacetal Compenent of Azadirachtin: A Potent Insect Antifeedant, Arkivoc 2003, VI, 16, Invited article in honor of Dr. Sukh Dev's 80th birthday, S. Raina, B.A. Bhanu Prasad, and V.K. Singh.

48. A Ring Closing Metathesis Approach towards Synthesis of (+)-Diplodialide A, J. Org. Chem. 2003, 68, 3356, R. Vijaya Anand, S. Baktharaman, and V. K. Singh.

49. Total Synthesis of (+)-Boronolide, (+)-Deacetylboronolide, and (+)-Dideacetylboronolide, Musti Chandrasekhar, Kusum Lata Chandra, and V. K. Singh J. Org. Chem. 2003, 68, 4039.

50. Enantioselective phenylacetylene addition to aldehydes induced by Cinchona alkaloids, Tetrahedron Lett. 2003, 44, 5347, Rajesh M. Kamble and Vinod K. Singh.

51. Do aziridines require Lewis acids for cleavage with ionic nucleophiles? Tetrahedron Lett. 2003, 44, 5839, Alakesh Bisai, Ghanshyam pandey, Manoj K. Pandey and Vinod K. Singh.

52. Mercuric Triflate Catalyzed Hydroxylative Carbocyclization of 1,6-Enymes, Org. Letts. 2003, 5, 1609-1611, M. Nishizawa, Veejendra K. Yadav, M. Skwarczynski, H. Takao, H. Imagawa, T. Sugihara.

53. Efficient Solution Phase Combinatorial Access to a Library of Pyrazole- and Triazole-Containing Ligands, Chem. 2003, 5, 375-378, R. Touzani, S. Garbacia, O. Lavastre, Veejendra K. Yadav, B. Carboni J. Combinat.

54. Bicyclo[2.1.1]hexan-2-one as a New Probe for the Study of □-Facial Selectivity in Nucleophilic Additions, A comment Tetrahedron Lett 2003, 44, 6617-6619, Veejendra K. Yadav, K. Ganesh Babu, Rengarajan Balamurugan.

55. AcCl-EtOH Brings About a Remarkably Efficient Conversion of Allyl Acetates into Allyl Chlorides, Tetrahedron 2003, 59, 9111-9116, Veejendra K. Yadav, K. Ganesh Babu.
56. Diastereoselective Aldol Reactions of Enolates Generated from Vicinallly Substituted Trimethylsilylmethyl Cyclopropyl Ketones, Org. Lett. 2003, 5, 4281-4284, Veejendra K. Yadav, Rengarajan Balamurugan.

57. Mercuric Triflate-$(TMU)_3$-Catalyzed Cyclization of □-Arylalkyne Leading to Dihydronaphtalenes, Org. Lett. 2003, 5, 4563-4565, Mugio Nishizawa, Hiroko Takao, Veejendra K. Yadav, Hiroshi Imagawa, Takumichi Sugihara.

58. Reactions on solid surface. A simple, economical and efficient acylation of alcohols and amines over alumina, J. Org. Chem. 2003, 68, 577-580, Veejendra K. Yadav, K. Ganesh Babu.

59. Formal [3+2] Addition of Acceptor-Substituted Cyclopropylmethylsilanes with Arylacetylenes, Veejendra K. Yadav, V. Sriramurthy, Angew Chem 2004 (in press).

DEPARTMENT OF CIVIL ENGINEERING

1. Modeling of Beams on a Geosynthetic- Reinforced Granular Fill-Soft System subjected to moving loads, Geosynthetic International, Maheshwari P., Chandra S. and Basudhar, P.K.

2. Analysis of Beams on Reinforced Granular Beds, Geosynthetic International, In Press, Maheshwari P., Chandra S. and Basudhar, P.K.

3. Generalized solution procedure for automated slope stability analysis using inclined slices, Geotechnical and Geological Engineering, An International Journal, Vol.21, Issue 3, 2003, Patra, C.R. and Basudhar, P.K.

4. Effect of Depth of placement of reinforcement on settlement response of reinforced beds, Accepted for presentation and publication in the proceeding of National Symposium on Advances in Geotechnical Engg., NSAGE-2004, IISc., Bangalore, July, 2004, Maheshwari P., Basudhar, P.K. and Chandra S.

5. Monitoring Slope Movements and Early Warning systems, Proceedings of one day International Seminar on Disaster Mitigation in Nepal, Kathmandu, pp.1-7, organized by Nepal Engg. College, Ehjnu University, Japan, Nov. 2003, Basudhar, P.K. and Chandra S.

6. Behavior of Steel Plate-Concrete Interface in tension, Bridge and Structural Engg., ING-IABSE, Vol.34, No.1, March 2004, Chakrabarti, S.K., Chaturvedi, P.K. and Basu, P.C.

7. Behavior of Embedded Steel Plates in Reinforced Concrete : New Design Basis, Proc. of the 2003 American Society of Mechanical Engineers, Pressure Vessels & Piping Conference, Cleveland, Ohio, USA, July 2003, Chakrabarti, S.K.

8. Effect of Orientation of Reinforcement on Strength of Reinforced Soil, Proc. Indian Geotechnical Conference, IGC-2003, Roorkee, Dec.2003, Chandra, S., Singh D.K., Maheshwari, P. and Das S.K.

9. An Experimental Study on Reinforced Flyash, Proc. 19th International Conference on Solid Waste Technology and Management, March 2004, Philadelphia, USA, Chandra S., Ranjan, S.C.

10. On pavement roughness indices, Journal of Civil Engineering, Institution of Engineers India, Vol. 84, May, 2003, pp.33-37.

11. Manish, K., Maheshwari, N. and Das, A. Backcalculation of pavement layer moduli from FWD data using Genetic Algorithm, International Journal of Pavement Engineering & Asphalt Technology, Volume 4 2, pp. 32-43, 2003, Awasthi, G., Singh, T., and Das, A.

12. Perpetual pavements, Proceedings of National Conference on Modern Cement Concrete and Bituminous Roads, GITAM, Visakhapatnam, 18-20th December, 2003, Vol.II, pp.35-39, Das, A.

13. Mode acceleration approach for generation of floor spectra including soil-structure interaction, ISET Journal of Earthquake Technology, Vol. 40, 2003, No. 2-4, Ray Chaudhuri, S. and Gupta, V.K.

14. Explaining the Internal Behavior of Artificial Neural Network River Flow Models, Hydrol. Processes, 1184, 2004, 833-844, Sudheer, K.P. and Jain, A.

15. Identification of Physical Processes inherent in Artificial Neural Network Rainfall Runoff Models?, Hydrol. Processes, 118 3, 2004, 571-581, Jain, A., Sudheer, K.P., and Srinivasulu, S.

16. Comparative Analysis of Event based Rainfall-Runoff Modeling Techniques-Deterministic, Statistical, and Artificial Neural Networks, ASCE J. Hydrol. Engg., 8 2, 2003, 93-98, Jain, A., and Indurthy, S.K.V.P.

17. Comparative Analysis of Training Algorithms for ANN Rainfall-Runoff Models, Proc. IICAI2003: First Indian Intl. Conf. on Artificial Intelligence, December 18-20, 2003, Hyderabad, India, Srinivasulu, S. and Jain, A.

18. Estimation of Unknown Flow and Transport Parameters in Groundwater using Artificial Neural Networks, Proc. WE2003: Intl. Conf. on Water and Environment, December 15-18, 2003, India, Singh, R.M., Datta, B., and Jain, A.

19. Calibration of Infiltration Parameters using Artificial Neural networks, Proc. IICAI2003: First Indian Intl. Conf. on Artificial Intelligence, December 18-20, 2003, Hyderabad, India, Jain, A. and Kumar.

20. Systems Theoretic Approach to Modeling Rainfall-Runoff Process with Conceptual Component, Proc. River Basin Management 2003: Second Intl Conf. on River Basin Mgmt., 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Srinivasulu, S. and Jain, A.

21. Optimal Unit Hydrograph using Genetic Algorithm, Proc. River Basin Management 2003: Second Intl Conf. on River Basin Mgmt., 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Srinivasulu, S. and Jain, A.

22. Guest Edited a Special Issue on Earthquake Engienering: Some Recent Trends, The Indian Concrete Journal, Vol. 77, No. 11, November 2003, Jain, S.K.

23. Effectiveness of Reinforcement Details in Exterior Reinforced Concrete Beam-Column Joints for Earthquake Resistance, ACI Structural Journal, Vol 100, No. 2, March-April 2003, pp. 149-156, Murty C V R, Rai D C, Bajpai K K, Jain S. K.

24. Dynamics of a Class of Horizontal Setback Buildings, Journal of Engineering Mechanics, ASCE, Vol. 129, No. 9, September 2003, pp. 1092-1103, Jain S. K and Jain C. K.

25. Some Innovative Education and Outreach Projects in India for Earthquake Risk Reduction, Seismological Research Letters, Vol. 74, No. 5, September / October 2003, pp. 545 – 551, Jain S K and Murty C. V. R.

26. Earthquake Risk Reduction: Status Report for India, Proceedings of the Workshop on Seismic Risk Management for Countries of the Asia Pacific Region, Bangkok, December 2003, World Seismic Safety Initiative, Jain S. K.

27. Some Capacity Building Initiatives in India on Earthquake Risk Reduction, Proceedings of the World Congress on Natural Disaster Mitigation, New Delhi,

February, World Federation of Engineering Organisations, Vol. 1, February 2004, pp. 217-222, Jain S. K. and Murty C. V. R.

28. Introducing Earthquake Engineering in Civil Engineering Curriculum, The Indian Concrete Journal, Vol 78, No. 2, February 2004, pp. 110-116, Murty CVR, Rai DC, Gupta A, Jain S.K.

29. Some Thoughts on School Seismic Safety Programmes in Developing Countries Proceedings of the Ad Hoc Experts' Group Meeting on Earthquake Safety in Schools, Paris, France, February 2004, pp. 114-119, Jain S. K.

30. Analysis of Data from Structural Response Recorders in North and North East Indian Earthquakes,, Transactions of the 17th International Conference on Structrural Mechanics in Reactor Technology SMIRT 17, Prague, Czeck Republic, August 2003, Paper no K03-3, Roshan A D, Jain S K and Basu P C.

31. Postbukling Reponse of Square laminates with a Central Square/Elliptical Cutout, Composite Structures, Vol 65, 2004, 179-185, Payal Jain and Ashwini Kumar.

32. Semi-automatic Multi-Level Approach for Extraction of Tidal Channels from Aerial Photographs and Hyperspectral Data, Proc. of Map India 2004, 28-30 January 2004, New Delhi, Lohani, B., Mason, D.C., Bist, H.S.,.

33. Development of a Simulator for Airborne Altimetric LiDAR, Proc. of Map India 2004, 28-30, January, New Delhi, Agrawal, N., Agrawal, N., Lohani, B.,

34. Airborne Altimetric LiDAR-Where does India stand?, GIS@development, 75, May 2003, Lohani, B., and Flood, M.

35. Spatial Information Policy in India, GIM-International, 176, June 2003, Spikes, J., and Lohani, B.

36. Active faults and related Late Quaternary deformation along the northwestern Himalayan Frontal Zone, India. Annals of Geophysics. 465, 2003, 917-936, Malik, J. N., and Nakata, T.

37. Preliminary observations from trench near Chandigarh, NW Himalaya and their bearing on active faulting. Current Science. 8512, 2003, 1793-1799, Malik, J. N., Nakata, T., Philip, G., and Virdi, N. S.

38. Towards a Model Code for Concrete Structures in Asia – Role of the ICCMC, Seisan Kenkyu Journal of the Institute of the Industrial Science, University of Tokyo, Volume 55, No. 2, 2003, pp 75-79, Misra, S.

39. Behavior of repaired RC beams under cyclic loading, Seisan Kenkyu Journal of the Institute of the Industrial Science, University of Tokyo, Volume 55, No. 4, pp 45-48, 2003, Misra, S., Sooriyaarachchhi, H.P., Nishimura, T., and Uomoto, T.

40. Parameters affecting steel anchorages under shear, Proc. of the 25th Annual Meeting of the Japan Concrete Institute, July 2003, Bishnoi, S., Singh, A. and Misra, S.

41. Nondestructive evaluation of concrete structures, – A case study in detailed inspection using 24-year-old reinforced concrete –, Proc., Intl Symp. on Non-destructive Testing in Civil Engineering NDT-CE, Berlin, September 2003, Watanabe, S. Misra, S. and Uomoto, T.

42. A case report on quality control in concrete construction, Proc. of the 2nd Intl Symp. on New Technologies for Urban Safety, Intl Center for Urban Safety, Institute of Industrial Science, Univ. of Tokyo, Japan, Oct 2003, Misra, S. and Krishnamurthy, P.

43. Maintenance of concrete structures – Recent efforts in Japan, Proc., 9th East Asia Structural Engineering Conference, Bali, Indonesia, Dec 2003, Uomoto, T. and Misra, S.

44. Provisions relating to concrete durability in Indian and some other specifications, Proc. of the National Seminar on Advances in Building Construction and Rehabilitation Technology, Organized by the Institute Works Department, IIT Kanpur, March 2nd – 4th, 2004, Misra, S.

45. Numerical Solution of Boussinesq Equations to Simulate Dam-Break Flows, Jl. of Hydraulic Engineering, ASCE, Vol 130, No. 2, 2004, 156-159, Mohapatra, P. K. and Chaudhry, M. H.

46. Flow analysis in stenosed arteries by using transfer matrix method, International Conference on Biological Mathematics, Feb 19 – 21, 2004, IIT Kanpur, Mohapatra, P. K., Chaudhry, M. H., Kassem, A. A. and Moloo, J.

47. Mathematical Modeling of Dam-Break Flow on a Mobile Bed, Paper ID: 54-NUM-M153, 2nd International Conference on Scouring and Erosion ICSE-2, Nanyang Technological University Singapore, November 14-17, 2004, Mohapatra, P. K.

48. Effectiveness of Reinforcement Details in Exterior RC Beam-Column Joints for Earthquake Resistance, ACI Structural Journal, Vol.100, No.2, pp 149-156, March 2003, Paper No. 100-S16, Murty, C.V.R., Rai, D.C., Bajpai, K.K., and Jain, S.K.

49. Improved Truss Model for Design of Welded Steel MRF Connections, Journal of Structural Engineering, American Society of Civil Engineers, Vol. 130, No.3, March 2004, pp 498-510, Arlekar,J.N., and Murty,C.V.R.

50. Seismic Shear Design of RC Bridge Piers: Part I – Review of Code Provisions, The Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.6, June 2003, pp 1127-1133, Goswami, R., and Murty,C.V.R.

51. Seismic Shear Design of Bridge Piers: Part II – Numerical Investigations of IRC Provisions, The Indian Concrete Journal, The ACC Limited, Thane Vol.77, No.7, July 2003, pp 1217-1224, Goswami,R., and Murty,C.V.R.

52. Seismic Shear Design of RC Structural Walls: Part I – Review of Code Provisions, Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.11, November 2003, pp 1423-1430, Dasgutpa,K., and Murty,C.V.R.

53. Seismic Shear Design of RC Structural Walls: Part II – Proposed Improvements in IS:13920 Provisions, Indian Concrete Journal, The ACC Limited, Thane, Vol.77, No.11, November 2003, pp 1459-1468, Dasgutpa, K., and Murty, C.V.R.

54. Introducing Earthquake Engineering in Civil Engineering Curriculum, Indian Concrete Journal, The ACC Limited, Thane, Vol.78, No.2, February 2004, pp 110-116, Murty, C.V.R., Rai, D.C., Gupta, A., and Jain, S.K.

55. Seismic Strengthening of Gravity Load Designed RC Frame Buildings, Proceedings of the Fourth International Conference on Seismology and Earthquake Engineering, 12-14 May 2003, Tehran, Islamic Republic of Iran, CDROM Paper No.VR12, Mahashabde, A.V., Dasgupta, K., and Murty, C.V.R.

56. Capacity Design of Welded Steel MRF Connections, Proceedings of the Fourth International Conference on Behaviour of Steel Structures in Seismic Areas STESSA 2003, 9-12 June 2003, Naples, Italy, Arlekar, J.N., and Murty,C.V.R.

57. Quantitative Seismic Retrofitting of Open ground Storey RC Frame Buildings, Proceedings of the Workshop on Retrofitting of Structures, Roorkee, India, 10-11 October 2003, pp 186-196, Dasgupta, K., and Murty, C.V.R.

58. Seismic Design Provisions for Earthen Structures in Indian Seismic Code, Proceedings of National Workshop on Current Practices and Future Trends in Earthquake Geotechnical Engineering, 23-24 December 2003, IISc Bangalore, civil.iisc.ernet.in / ~cpftege / proceedings .html, 15 December 2003, Murty, C.V.R.

59. Seismic Strengthening of Urban RC Multistorey Buildings: A Technological Challenge, Civil Engineering & Construction Review, New Delhi, October 2003, pp 50-59, Murty, C.V.R. and Dasgupta, K.

60. Challenges before construction Industry in India, Proceedings of the National Seminar on Advances in Building Construction and Rehabilitation Technology, 2-4 March 2004, IIT Kanpur, pp 1-22, Laskar, A., and Murty, C.V.R.

61. Uplift Capacity of Pile Groups in Sand, The Electronic Journal of Geotechnical Engg., Vol.8, Bundle B, 2003, Patra, N.R. and Pise, P.J.

62. Pullout Capacity of Anchor Piles, IGC-2003, Geotechnical Engg. For Infrastructural Development, Dec., pp.141-144, Patra, N.R., Deograthias, M. and James, M.

63. Data Requirements for Geomorphological Studies of Rivers and their Significance, Jour. of Applied Hydrology, v. XVI 2, 2003, 18-42, Jain V. & Sinha, R.

64. Geomorphological controls on hydrological response and its significance in flood management: a case study from a 5^{th} order Himalayan river system. Water Resources Management, v.17, 2003, 355-375, Jain V. & Sinha, R.

65. Geomorphological manifestations of the flood hazard: a remote sensing based approach. Geocarto International, V.18 4, 2003, 51-60, Jain V. & Sinha, R.

66. Evaluation of geomorphic control on flood hazard through GIUH. Current Science, v. 85 11, 2003, 1596-1600, Jain V. & Sinha, R.

67. Fluvial dynamics of an anabranching river system in Himalayan foreland basin, north Bihar plains, India, Geomorphology, 60/1-2, 2004, 147-170, Jain V. & Sinha, R.

68. Evaporite mineralogy and geochemical evolution of the Sambhar Salt Lake, Thar Desert, Rajasthan, India. Sedimentary Geology, 166, 2004, 59-71, Sinha, R. & B.C. Raymahashay.

69. The arsenic cycle in late Quaternary fluvial sediments mineralogical considerations, Current Science, Vol.84, pp.1102-1104, Raymahashay, B.C. and A.S. Khare.

70. Geochemical techniques for evaluation of groundwater quality, Indo-French Seminar on Emerging Trends for Water and Wastewater Management, New Delhi 9-12, 2004, Abstract Vol.. pp. 149-151, Raymahashay, B.C.

71. Aquifer response to linearly varying Stream Stage, Journal of Hydraulic Engg., ASCE, 86, 2003, 361-64, Srivastava, R.

72. Reactive solute transport in macroscopically homogeneous porous media: analytical solutions for the temporal moments, Journal of Contaminant Hydrology, 69112, 2004, 27-43, Srivastava, R., Sharma, P.K. and Brosseau, M.L.

73. Air Quality Monitoring Network Design using Information Theory, International Journal of Environmental Systems, accepted for publication, 2004, Jain Vineet and Sharma Mukesh.

74. Process improvements in Khandsari (cottage sugar industry) India. International Sugar Journal, February 2004. Agarwal Avinash, Sharma Mukesh and Tewari L. P.

75. Investigations into Formation of Atmospheric Sulfate under High PM10 Concentration, Atmospheric Environment, 37, 2003, 2005-2017, Sharma M., Kiran YNVM and Shandilya, K.

76. Design of a Website for Dissemination of Air Quality Index. Journal of Environmental Software and Modeling, 18, 2003, 405-411, Sharma M, Maheshwari M., Sengupta B., and Shukla B.P.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Distributed Algorithms for Finding and maintaining a k-Tree Core in a Dynamic Network, Information Processing Letters, Vol 88, No. 4., pp 187-194, R.K Ghosh and Saurabh Srivastava.

2. Modeling fault coverage of random test patterns, Journal of Electronic Testing: Theory and Applications, Vol 19, No. 3, pp 271-284, S K Mehta, S Seth, H. Cui.

3. Local Nature of Brooks, Colouring for degree 3 Graphs, Graph and Combinatorics, 19, 2003, 551 - 565, DOI: 10.1007/s00373-002-0520-x, G. Sajith and Sanjeev Saxena.

4. Fast Parallel Edge Colouring of Graphs J. Parallel and Distributed Computing, 63, 2003, 775-785, DOI: 10.1016/S0743-73150300115-1, Sajith G. and S. Saxena.

5. A Framework to Generate Code Optimizers automatically, International Conference CST 2003, Mexico, May 2003, 71-76, Karuri K, Sanjeev K Aggarwal.

6. Optimized Code Generation for Adaptive Irregular Problems, High Performance Computing in Science and Engineering, Moscow, June 2003, Vyas, Ashutosh, Sanjeev K Aggarwal.

7. Test Coverage Analysis: A Method for Generic Reporting, Seventh Conference on Software Engineering and Applications LosAngeles, Nov2003 Khan G M, Sanjeev K Aggarwal.

8. A Technique for Extracting Grammar from Legacy Programs" 22nd International Conference on Applied Informatics 2004 SE 2004 Innsbruck, Austria, Feb 2004, Biswas Shiladitya, Sanjeev K Aggarwal.

9. Primality and Identity Testing via Chinese Remaindering Journal of the ACM, Vol.50, No.4, pp.429 – 443, July 2003, Manindra Agrawal and Somenath Biswas.

10. A Hybrid Approach To Model Workflow In Business Process, CIT 2003, December 2003, K Ghosh, S. Patnaik and H. Mohanty.

11. Location Management by Movement Prediction Using Mobility Patterns and Regional Route Maps, IWDC 2003, December 2003, R.K Ghosh, S. Royanchu and H. Mohanty.

12. A Routing Algorithm for Multi-Hop Mobile Ad Hoc Network Using Additively Weighted Delaunay Triangulation, CIT , December 2003, R.K Ghosh, G. Gupta and S. V. Rao.

13. Chit Htay Lwin and H. Mohanty, A Survey on Event Notification Service System, CIT, December 2003, R.K Ghosh.

14. Mobichart For Modeling Mobile Computing Tasks, IEEE TENCON 2003, October 2003, R.K Ghosh, H. Mohanty, S. Acharya and R. K. Shyamsunder.

15. Trends in Mobile Commmerce, In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.

16. Data Management, Transaction Models and Enabling Technology for Mobile Commerce, In Mobile Commerce, Allied Publishers, December 2003, R.K Ghosh, H. Mohanty, S. Sonti.

17. Ensuring Atomic Uses of E-Tickets by Mobile Users: A Security Mechanism in Mobile Commmerce,In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.

18. Smart Card Based Protocol for Secure Access of Mobile Host in IPv6 Foreign N/W, In Mobile Commerce, Allied Publisher, December 2003, R.K Ghosh and H. Mohanty.

19. Web Ticker: An Adaptable, News-based Information Retrieval Tool for WEB Navigator, IEEE TENCON 2003, October 2003, R.K Ghosh, G. Das, H. Mohanty and S. Gurumurthy.

20. Two Distributed Alogrithms for E-Ticket Validation Protocols for Mobile Clients' in Proceedings of 2003 IEEE CEC'03, pp 223-230, June 2003, R.K Ghosh,T. Suman Reddy, Hrushiksha Mohanty and Sanjay Madria.

21. A Server Side Caching Scheme for CORBA, Proc. 24th International Conference on Distributed Computing Systems ICDCS, Tokyo, Japan, March 2004, Kumar A., P. Jalote, and D. Gupta.

22. Simplifying CORBA security service to support service level access control. Workshop on Metadata for Security WMS, OTM 2003, Catania, Sicily, Italy, LNCS-2889, November 3-7, 2003, Kumar A., P. Jalote, and D. Gupta.

23. Stochastic Image Compression using Fractals Co-authors: A.Kapoor, K.Arora and G.P. Kapoor, International Conference on Information Technology Coding and Computing ITCC 2003, April 28-30, 2003, Las Vegas, USA, Ajai Jain.

24. AnglaHindi: An English to Hindi Machine Translation System, IX Summit on Machine Translation, New Orleans, USA, Sep. 23-27, 2003, Ajai Jain.

25. Nonparametric classifier for unsegmented text, IS\&T/SPIE 16th Annual Symposium on Electronic Imaging, San Jose, January 2004, S K Mehta, G Nagy, S Seth, M Krishnamoorthy, Y Lin, D Lopresti.

26. A New Algorithm for Universal Groebner Basis for Toric Ideals, 6th International Conference of the Association of Asia Pecific Operational Research Societies, New Delhi, December 2003, S K Mehta.

27. Indirect symbolic correlation approach to unsegmented text recognition, Workshop on document analysis and information retrieval, Madison, June 2003, S K Mehta, G Nagy, S Seth, Y Lin.

28. Artificial ontogenesis of controllers for robotic behavior using VLG GA IEEE International Conference on Systems, Man and Cybernetics, Washington DC, p. 3376-3383, Oct 5-8, 2003, Abhishek V, Mukerjee A, and Karnick H.

29. Universal Networking Language - A Tool for Language-Independent Semantics Proceedings Convergences 03, International Conference on the Convergence of Knowledge, Culture, Language and Information Tech, Library of Alexandria,

Dec2003, Alexandria, Egypt, Amitabha Mukerjee, Achla M Raina, Kumar Kapil, Pankaj Goyal, and Pushpraj Shukla.

30. A surveillance system with human action recognition, Seventh International Conference on Pattern Recognition and Information Processing PRIP 2003, May 21-23, 2003, Minsk, Belarus, Abhinav Gupta and Amitabha Mukerjee and Prahari.

31. Applying real coded genetic algorithms to Gabor filter bank design for supervised texture classification and segmentation, Seventh International Conference on Pattern Recognition and Information Processing PRIP 2003, May 21-23, 2003, Minsk, Belarus, Prithwijit Guha and Amitabha Mukerjee.

32. BRICS: An Indian Experiment, In Educational Robotics International Conference on Engineering in Education, ICEE, Valencia Spain July 2003, Amitabha Mukerjee, Nikhil Sinha, Sarala Verma.

33. Development of An Intelligent Statically Stable Humanoid Robot Proceedings, National Conference Advance Manufacturing and Robotics, NCAMR04, 10th & 11th January 2004 CMERI Durgapur, V. Abhishek, Prasas Kulkarni, Ashish Dutta and Amitabha Mukherjee.

34. Novel Approaches To Vision And Motion Control For Robot Soccer, Proceedings, National Conference on Advance Manufacturing and Robotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Manu Chhabra, Anusheel Nahar, Amitabha Mukerjee and Apurva Mathad.

35. Textured 3d Reconstruction of Prismatic Worlds And Extraction of Scene Information, Proceedings, National Conference on Advance Manufacturing andRobotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Manu Chhabra, Amitabha Mukherjee and Apurva Mathad.

36. Build Robots Create Science BRiCS - Digital Learning Tools without a Computer International Seminar on Downsizing Technology for Rural Development ISDTRD Bhubaneswar, Oct 2003, Amitabha Mukerjee, Sarala Verma and Rituraj Singh,.

37. Vision Based interfaces through virtual touch screen and mouse, CODIS Jan 2004, Calcutta, India, Shireesh Agrawal, Prithwijit Guha, Piyush Kumar Rai and Amitabha Mukerjee.

38. Vision based Interfaces for Virtual Touch Screen and Mouse CODIS Jan 2004, JU, Calcutta, S. Aggarwal, P. Guha, P. Rai and A. Mukerjee,.

39. Interactive Shape Optimization for Aesthetics using Genetic Algorithms EDS-PLM User's Conference Pune, Maharashtra, 13-14 Nov 2003, Hemant Muley, Sarvana Kumar and Amitabha Mukerjee.

40. A Cost-effective Multiple Camera Vision System using Firewire Cameras and Software Synchronization, 10thInternational Conference on High Performance Computing HiPC 2003 Dec. 17-20, 2003, Hyderabad, India, Piyush Rai, Kamal Tiwari, Prithwijit Guha, Amitabha Mukerjee.

41. Semantic Role tagging Using FrameNet, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, p. 51-54, Ankit Anand, Gaurav Pandey, Amitabha Mukerjee, and Achla M Raina.

42. Multilingual Question Answering, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, p. 99-102, Pushparaj Shukla, Pankaj Goyal, Kumar Kapil, Amitabha Mukerjee, and Achla M Raina.

43. Pointing Gesture Detection. Indian International Conference on Artificial Intelligence IICAI, Hyderabad, Dec 18-20, 2003, Amit K. Mondal, Dipak K. Maji, Koushik Pal and Amitabha Mukerjee.

44. A Frame-Semantic Approach for Tagging Hindi and Bangla Sentences, Proceedings SIMPLE'04, IIT Kharagpur, March 2004, Pankaj Goyal, Ankit Soni, Deepak Sharma, Amitabha Mukerjee and Achla M Raina.

45. A Bilingual Parser for Hindi, English and Code-Switching Structures,10th Conference of the European Chapter of the Association for Computational Linguistics EACL03 April 12-17, 2003, Budapest, P Goyal, Manav R Mital, A Mukerjee, Achla M Raina, D Sharma, P Shukla, and K Vikram Saarthaka.

46. Robust Facial Expression Recognition using Spatially Localized Geometric Model, International Conference on Systemics, Cybernetics and Informatics ICSCI 2004, Hyderabad, India, Feb 2004. vol. 1, pp 124-129, Ashutosh Saxena, Ankit Anand and Amitabha Mukerjee.

47. Real-Time Robot Navigation With Optical Flow: Handling Undulating Motion and Noisy Computation, Proceedings, National Conference on Advance manufacturing and Robotics, NCAMR04, 10th & 11th January, 2004, CMERI Durgapur, Adnan Bohori , K S Venkatesh, Vivek Kumar Singh, and Amitabha Mukherjee.

48. Turning 802.11 Inside Out, Second Workshop on Hot Topics in Networks HotNets-II, Cambridge, MA, USA, Nov 20-21 2003, Pravin Bhagwat, Bhaskaran Raman, and Dheeraj Sanghi.

49. Turning 802.11 Inside-Out 2nd Workshop on Hot Topics in Networks HotNets-II, Cambridge, MA, USA, November, 2003.Also published in ACM/SIGCOMM Computer Communication Review, Vol. 34, No. 1, pp. 33-38, January, 2004, P Bhagwat, B Raman, and D Sanghi.

50. On Reciprocal Altruism and its Application to Qo, In Proc. of 6th IFIP/IEEE Int'l Conf. on Management of Multimedia Networks and Services MMNS 2003, Belfast, UK, September, 2003, S.N. Kothari, V. Bhandari, and D.Sanghi.

51. Ulysses - A New Approach to Maintaining Connectivity In Proc. of Int'l Conf. on Information Technology ITPC 2003, Kathmandu, Nepal, May, 2003, M. R. Mital, K. Vikram, A. Gupta, and D. Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Unambiguous range extension by overlay reduction in staggued PRT Techniques Journal of Amorphic and occionic Technology, Vol. 20, May 2003, pp. 673-684, M. Sachidananda and D.S. Zrnic.

2. Jr. of Synthetic Metals, vol. 139, 2003, pp. 751-753, Satyendra Kumar, AK Biswas, VK Shukla, A. Awasthi, RS Anand & J. Narain.

3. Power Sector Development in India with CO_2 Emission Targets: Effects of Regional Grid Integration and the Role of Clean Technologies, International Journal of Energy Research, Vol. 27, 2003, pp. 671-685, A.K.Srivastava, Ram M.Shrestha, S.C.Srivastava, Rabin Shrestha, and Dharam Paul.

4. A Zonal Congestion Management Approach Using Real and Reactive Power Rescheduling, IEEE Trans. on Power Systems,Vol.19,No.1, Feb.2004, pp. 554-562, Ashwani Kumar, SC Srivastava and SN Singh.

5. Available Transfer Capability Assessment in a Competitive Electricity Market using Bifurcation Approach, Accepted for publication in the IEE Proceedings Part-C on 'Generation, Transmission and Distribution' Vol.151, Issue 02, March 2004, Ashwani Kumar, SC Srivastava and SN Singh.

6. On spatial consensus formation: Is the Sznajd model different from a voter model, Int. Journal of Modern Physics, Part C, 1410, 2003 http://arxiv.org/abs/condmat/0306576, Laxmidhar Behera and Frank Schweitzer.

7. Query based model learning and stable tracking of a robot arm using radial basis function network, Computers and Electrical Engineering 29 2003 553-573, Laxmidhar Behera.

8. Control schemes for equalization of capacitor voltages in neutral clamped shunt compensator, IEEE Trans. Power Delivery, Vol. 18, No. 2, pp. 538-544, 2003, M. K. Mishra, A. Joshi and A. Ghosh.

9. A novel placement strategy for FACTS controllers, IEEE Trans. Power Delivery, Vol. 18, No. 3, pp. 982-987, 2003, N. K. Sharma, A. Ghosh and R. K. Varma.

10. Torsional interaction studies on a power system compensated by SSSC and fixed capacitor, IEEE Trans. Power Delivery, Vol. 18, No. 3, pp. 988-993, 2003, G. N. Pillai, A. Ghosh and A. Joshi.

11. Load compensating DSTATCOM is weak ac systems, IEEE Trans. Power Delivery, Vol. 18, No. 4, pp. 1302-1309, 2003, A. Ghosh and G. Ledwich.

12. Design of a capacitor supported dynamic voltage restorer DVR for unbalanced and distorted loads, IEEE Trans. Power Delivery, Vol. 19, No. 1, pp. 405-413, 2004, A Ghosh, A. K. Jindal and A. Joshi.

13. New parallel converter scheme for high power active power filters, To appear in the coming issue of IEE Proceedings, In Press,M. Basu, S. P. Das, and G. K. Dubey.

14. A Practical Approach to Teach Power System Transients into the Electrical Engineering Curriculum, International Journal of Electrical Engineering Education, UK, Vol. 40, No.2, April 2003, pp. 144-157, SN Singh.

15. Congestion Management in Dynamic Security Constrained Open Power Markets, International Journal of Computer and Electrical Engineering, Vol. 29, No. 5, July 2003, pp. 575-588, SN Singh and AK David.

16. Parallel Self-Organising Hierarchical Neural Network based Estimation of Degree of Voltage Insecurity, International Journal of Computer and Electrical Engineering, Vol. 29, No. 5, July 2003, pp. 589-602, L Srivastava, SN Singh and J Sharma.

17. Fast Voltage Contingency Screening using Radial Basis Function Neural Network, IEEE Trans. on Power Systems, Vol. 18, No. 4, November 2003, pp. 1359-1366, T Jain, L Srivastava and SN Singh.

18. Technology Development for Power Distribution Automation, BEACON, IEEE Delhi Section Journal, Vol. 21, No. 1, P. 26, June 2002, Sachchidanand and R. P. Gupta.

19. The Radiation of Light from Laser Machined Taps on Optical Fibers, IETE Journal of Research, vol. 49, pp. 359-364, Nov.-Dec. 2003, Anjan K. Ghosh and Kopinesh Patil.

20. Numerical Simulation of primary cluster formation in silane plasmas, Jr. of Physics D: applied Physics, 362003, pp. 837-841, Nandini Gupta, WW Stoffels and G. Kroesen.

21. A new negative feedback based Poly-Silicon AMOLED pixel circuit with highly linear transfer characteristics,' proceedings, 10th International Display workshops, Fukuoka, 2003, B. Mazhari and Yogesh S. Chauhan.

22. Design of current programmed amorphous silicon AMOLED pixel circuit,' proceedings, 8th Asian Symposium on information display, Nanjing, China, 2004, B. Mazhari and Yogesh S. Chauhan.

23. Crosstalk in passive matrix OLED displays with single integrated organic FET ,' proceedings, 8th Asian Symposium on information display, Nanjing, China, 2004, B. Mazhari and M. Tewari.

24. A new approach to topology selection for cell level analog circuits,' proceedings, 17th International conference on VLSI design, Mumbai, 2004, S. Nagar and B. Mazhari.

25. A Fuzzy Logic Based Load Frequency Controller petitive Electricity Environment, Proc. Of the IEEE Power Engineering Society General Meeting 2003, Toronto Canada, 13-18 July, 2003, Barjeev Tyagi and S.C. Srivastava.

26. Zonal Congestion Management using Phase Angle Regulators, Proc. of the International Conference on 'Intelligent System Application to Power Systems ISAP2003', Lemnos, Greece, 1-5 August 2003, Ashwani Kumar, S.C. Srivastava and S.N. Singh.

27. Voltage Stability Based Contingency Ranking Considering Post-Contingency Var Requirement, Proc. of the IASTED International Conference on 'European Power & Energy Systems Euro-PES 2003, Marbella, Spain, 3-5 September 2003, M.K. Varma and S.C. Srivastava.

28. Automated Versus Conventional Distribution System, Proc. of the IASTED International Conference on 'European Power & Energy Systems Euro-PES 2003, Marbella, Spain, 3-5 September 2003, R.P. Gupta, Sachchidanand and S.C. Srivastava.

29. Impact of FACTS Controllers on System Loadability and Transmission System Available Transfer Capability, Accepted for presentation and publication in the Proc. of Int. Conference on 'Electric Supply Industry in Transition: Issues and Prospects for Asia' at Asian Institute of Technology, Thailand, 14-16 January 2004, N.Satish and S.C. Srivastava.

30. Optimal Control Strategy Using Pseudo-Decentralization for Coordination of Power System Stabilizer and FACTS in a Multi-machine System, Accepted for presentation and publication in the Proc. of Int. Conference on 'Electric Supply Industry in Transition: Issues and Prospects for Asia' at Asian Institute of Technology, Thailand, 14-16 January 2004, B. Kalyan Kumar, S.N. Singh and S.C. Srivastava.

31. Recurrent quantum Neural Networks – A New Approach to Cognitive Modeling, Int Conf Systemics, Cybernetics and Informatics, ICSCI-04, Feb, Hyderabad, Laxmidhar Behera and Indrani Kar.

32. Adaptive control of robot manipulators using Quantum neural networks, International Conference on Intelligent Signal Processing and Robotics, ISPR-04, Feb, Allahabad, Indrani Kar and Laxmidhar Behera.

33. A novel learning algorithm for feedforward networks using Lyapunov function approach, Proceedings Int. Conf. Int. Sensors and Inf. Processing, ICISIP-2004, Chennai, 277-282, Laxmidhar Behera, Swagat Kumar and Awhan Patnaik.

34. Stochastic filtering and and Speech Enhancement using a Recurrent Quantum Neural Network, Proceedings Int. Conf. Int. Sensors and Inf. Processing, ICISIP-2004, Chennai, 165-170, Laxmidhar Behera and Bharat Sundaram.

35. Macroscopic analysis of stochastic cellular automata, Proceedings, Int. Conf on information Technology, 2003, 267-274, Bhubaneswar, Laxmidhar Behera.

36. A Quantum Clustering algorithm for Visual motor coordination, Proceedings, ICAPR, 2003, Calcutta, Nimit Kumar and Laxmidhar Behera.

37. Approaches to fragment assembly for DNA sequencing, Proceedings, HiPC Workshop on Soft Computing, 2003, 116-131, Hyderabad, Debashis Dash, Rishi Dhingra and Laxmidhar Behera.

38. Speech enhancement using a recurrent quantum neural network, Proceedings, Indian International Conference on Artificial Intelligence, IICAI-2003, Hyderabad, India, Laxmidhar Behera, Bharat Sundaram and Gaurav Singhal.

39. Identification of non-linear dynamical systems using recurrent neural networks, TENCON, 2003, Bangalore, Laxmidhar Behera, Swagat Kumar and Subhas Das.

40. Operation and control of a DSTATCOM in the presence of non-integer harmonics, Proc. IEEE Asia-Pacific Region-10 Conference TENCON, pp. 43-47, Bangalore, October 2003, A. Ghosh, A. K. Jindal and A. Joshi.

41. Inverter control using output feedback for power compensating devices, Proc. IEEE Asia-Pacific Region-10 Conference TENCON, pp. 49-52, Bangalore, October 2003, A Ghosh, A. K. Jindal and A. Joshi.

42. The operation of dynamic voltage restorer DVR using output feedback control, Proc. 27th National Systems Conference NSC-2003, pp. 319-323, IIT Kharagpur, December 2003, A. Ghosh, A. K. Jindal and A. Joshi.

43. Predictive Iterative Decoding of Turbo Codes in Coloured Gaussian Nouis, Proc. NCC'04, pp. 308-312, K. Vasudevanand BK Rai.
44. A Novel Soft-Switching Quasi-Resonant Inverter for Variable Power Factor Load, Conf. Proceeding of National Power Electronics Conference NPEC 2003, IIT Bombay, pp. 246-252, Oct. 2003, S. Behera, S. P. Das, and S. R. Doradla.

45. An Improved DVR with Optimum Series Voltage Injection for Minimum VA Requirement of UPQC, Conf. Proceedings of National Systems Conference NSC 2003, IIT Kharagpur, pp. 324-327, Dec. 2003, Y. Y. Kolhatkar and S. P. Das.

46. Feature Selection Techniques for Voltage Contingency Ranking using RBFN, Proceedings of Conference on Services through I.T. Enabled Systems SITES-2003 Gwalior, April 19-20, 2003, pp 175-180, T. Jain, L. Srivastava and S.N. Singh.

47. Voltage Security Assessment Unsupervised and Unsupervised Learning, Proceedings of All India Jamia Electrical Conference 2003, Jamia Millia Islamia, New Delhi, August 16-17, 2003, T. Jain, L. Srivastava and S.N. Singh.

48. Optimal Power Flow Control Using Generalized Unified Power Flow Controller, National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, pp. 89-97, JG Singh and SN Singh.

49. Future of FACTS Controllers in Restructured Power System, National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, pp. I-XI, SN Singh.

50. Fast Voltage Estimation Using Parallel Radial Basis Function Neural Network, International Conference on Electric Supply Industry in Transition: Issues and

Prospect for Asia, during 14-16 January 2004, AIT Bangkok, pp. 8-10:8-18, T Jain, L Srivastava and SN Singh.

51. Simulink Based d-q Axis Model of Unified Power Flow Controller, National Conference on Control, Communication and Information Systems CCIS2004, Goa, January 23-24, 2004, S.K Srivastava, K. G. Upadhyay, S. Khalid and S.N. Singh.

52. Extraction of the Capacitance of Ultrathin High-K Gate Dielectrics, IEEE Trans. Electron Devices 50, pp. 2112-2119, 2003, S. Kar.

53. Experimental Values of a Quantization Index of the Accumulation Layers of Different High-K Gate Dielectrics, in Physics and Technology of High-K Gate Dielectrics - II, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors, PV 2003-22, The Electrochemical Society Proceedings Series, Pennington, NJ 2003, pp. 143-151. Also presented at the Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues, Orlando, Florida, 12-16 Oct 2003, T. Kachru, R. Singh, M. Bhagat, and S. Kar.

54. Extraction of the High-K Gate Dielectric Parameters from the Capacitance Data, in Physics and Technology of High-K Gate Dielectrics - II, S. Kar, M. Houssa, H. Iwai, D. Landheer, M. Morais, R. Singh, and D. Misra, Editors, PV 2003-22, The Electrochemical Society Proceedings Series, Pennington, NJ 2003, pp. 373-384. Also presented at the Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues, Orlando, Florida, 12-16 Oct 2003, S. Kar.

55. Extraction of Parameters of High-K Garte Dielectrics, in Physics of Semiconductor Devices, K. N. Bhat and A. DasGupta, Editors, IWPSD-2003, pp. 414-419, Narosa Publishing House, New Delhi 2003. Also presented at the Twelfth International Workshop on the Physics of Semiconductor Devices, Chennai, 16-20 Dec 2003, S. Kar.

56. Propagation measurements and characterization for wireless LAN applications, National Symposium on advances in microwaves and lightwares, Oct. 2003, New Delhi, pp.41 – 44, A.R. Harish and T. Mittal.

57. Neural network based yield prediction of microwave filters, Asia-Pacific Conference on Applied Electromagnetics APACE, Kuala Lumpur, Maylasia, Aug 2003, A.R. Harish.

58. Compact tapered slot antenna, Proceedings of International radar symposium India 2003, Bangalore, India, 02-05 Dec 2003, A.R. Harish and M. Sachidananda.

59. Effect of Multiple Transmitters on the Power Distribution in Indoor Optical Wireless Systems, Proceedings of the Tenth National Conference on Communications NCC-2004, Jan 30-Feb 1,2004, Indian Institute of Science, Bangalore, pp.572-576, A. Sivabalan, Joseph John,.

60. Experimental Realization of DPPM for Power Efficient Optical Wireless Systems, Proceedings of the Tenth National Conference on Communications NCC-2004, Jan 30-Feb 1,2004, Indian Institute of Science, Bangalore, pp.336-340, R. Tripathi and Joseph John,.

61. Power Distribution of Diffuse Indoor Optical Wireless Systems Considering Multiple Sources and Multiple Reflections, , Second International Conference on Optical Communications & Networks, ICOCN 2003 Bangalore, India, October 20-22, 2003, Paper ID:2041, A.Sivabalan and Joseph John.

62. Modeling and Simulation of Indoor Optical Wireless Channels: A Review, , Convergent Technologies for the Asia-Pacific, IEEE TENCON 2003, Bangalore, India, Oct.14-17, 2003, A.Sivabalan, Joseph John.

63. High-Capacity Indoor Optical Wireless LAN Architecture, Convergent Technologies for the Asia-Pacific, IEEE TENCON 2003, Bangalore, India, Oct.14-17, 2003, Chaturi Singh, Joseph John, Y.N.Singh, K.K.Tripathi.

64. Optical processing of signals in surface plasmon resonance based opticalbio-sensors, in Proc. Of SPIE, vol. 5202 Optical Information Systems, edited by B. Javidi & D. Psaltis, SPIE, Bellingham, WA, USA, 2003, pp. 192-200, Anjan K. Ghosh.

65. Effects of Misalignments in Packaging of Array based Optical Interconnects and Processors, Proc. Of SPIE, vol. 5202 Optical Information Systems, edited by B. Javidi & D. Psaltis, SPIE, Bellingham, WA, USA, 2003, pp. 276-286, Anjan K. Ghosh.

66. Surface Plasmon resonance based optical biosmors invited talk in National symp. On Engineering Optics, Meerut, April 2003, Paper appears in Perspectives in Engg. Optics, ed. Kehar Singh and VK Rastogi, Anita Pubnlications, New Delhi, pp. 57-65, April, 2003, Anjan K. Ghosh.

67. Establishing Chip Design Activities in Malaysia : Role of Malaysian Universities, Proceedings of Engineering Technology Conference, EnTech 2003 held on July 31-Aug 2003, Kuching, Malaysia, S. Qureshi & M.K. Suaidi.

68. Novel Software Architecture for Power Distribution Automation, Proceedings of IEEE Power Engineering Society General Meeting, Toronto, Ontario, Canada, July 13-17, 2003, R. P. Gupta, Sachchidanand and R. K. Varma.

69. Web Based Energy Audit and Accounting Software for Power Distribution Utilities, Proceedings of the International Conference on Electric Supply Industry in Transition: Issues and Prospects, Asian Institute of Technology, Thailand, January 14-16, 2004, pp. 9/26-37, R. P. Gupta, and A. Khastagir.

70. Substation Automation Communication Protocol, Proceedings of the International Conference on Systemics, Cybernetics and Informatics ICSCI-2004, Pentagram Research Center Pvt. Ltd., Hyderabad, India, February 12-15, 2004, pp. 499-503, R. P. Gupta, and N. Srivastava.

71. A Comparative Study of IEC61850 Communication Protocol with DNP3.0 and UCA2.0, Proceedings of National Workshop on Communication Protocol for Power System Automation, Central Power Research Institute, Bangalore, India, January 22-23, 2004, pp. IV / 1-6, R. P. Gupta and Mitali Pandey.

72. Web Based Monitoring of Power Distribution System, Proceedings of Seminar on Power System Data Repository and Load Research, Organized by Central Power Research Institute, Bangalore, India, November 20-21, 2003, pp. TS-V / 42-48, R. P. Gupta and A. Singh.

73. Development of Power Distribution Automation System, Proceedings of Seminar on Power System Data Repository and Load Research, Organized by Central Power Research Institute, Bangalore, India, November 20-21, 2003, pp. TS-V / 34-41, R. P. Gupta and S. C. Srivastava.

74. Remote Terminal Units RTU and Data Communication for Distribution Automation System, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.

75. Master Distribution Automation Software and Open Architecture, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.

76. Sensors and Instrumentation for Distribution Automation System, Proceedings of Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, R. P. Gupta.

77. Power Distribution Automation Developed at IIT Kanpur, Proceedings of Workshop-cum-Technology Dedication of Power Distribution Automation, Indian Institute of Technology Kanpur, India, February 22-23, 2003, R. P. Gupta.

78. Substation Automation: Data Communication Issues, The International Conference on Planning and Operation of Reliable Distribution Systems, Organized by Council of Power Utilities, Delhi, India, April 15-16, 2004 communicated, R. P. Gupta.

79. Acoustic Echo Cancellation using Multiple Sub-Filters, Proceedings IEEE TENCON 2003, pp. 393-396, Oct 2003, Bangalore, RN Sharma, AK Chaturvedi, and G Sharma.

80. A Novel Interleaver Design for Use in Turbo-SPC Codes, Proceedings Tenth National Conference on Communications, pp. 313-316, Jan 2004, IISc, Bangalore, R Subudhi and AK Chaturvedi.

81. A Simulation Study on Modeling the MIMO Propagation Channel Using the 3GPP/3GPP2 Spatial Channel Model, Proceedings Tenth National Conference on Communications, pp. 390-394, Jan 2004, IISc, Bangalore, R Agarwal, AK Chaturvedi, F Tufvesson and P Almers.

82. A Novel Scheme for Capacity Enhancement in DS-CDMA Systems, 2003 WNCG Wireless networking Symposium Oct 2003, University of Texas, Austin, K Mehrotra, A Jindal and AK Chaturvedi.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Beast in Chicago: Saul Bellow's Apocalypse in The Deans's December, International Fiction Review, Vol.30, 2003, pp. 67-76, G. Neelakantan.

2. Philip Roth's Apocalypse in American Pastoral, Philip Roth Newsletter, Vol.1, No. 2, 2003, pp. 9-10, G. Neelakantan.

3. Gender Inequality in Work Environment at Institutes of Higher Learning in Science and Technology in India, Work, Employment and Society, Vol.17, No.4, 2003, pp. 597-616, Namrata Gupta and A. K. Sharma.

4. Issues in Sustainable Development in India, Proceedings of International Conference on Population, Development and Environment, BITs Pilani, India, 2003, A. K. Sharma and P. Vigneswara Illawarsan.

5. Voluntary Development Organisations: Mission, Vision, and Reality, Gandhi Marg, Vol.23, No.1, 2003, pp.5-20, A. K. Sharma and Shailendra Kumar Dwivedi.

6. Complexities, Ambiguities and Conflicts in Voluntary Sector: A Study of Two Voluntary Development Organisations, Guru Nanak Journal of Sociology, Vol. 23, No.2, 2002, pp.11-26, Shailendra Kumar Dwivedi and A. K. Sharma. Published in 2003.

7. Power, Pluralism and Equality in India: A Sociological View, http://www.sammaditthi.com Online Journal of Sammaditthi Social Sciences Research, 3 November 2003, A. K. Sharma.

8. Comments on the Book Cities Transformed: Demographic Change and its Implications in the Developing World, Population Review, Vol. 43, Nos. 1-2, Section 3, 2004, A. K. Sharma.

9. On the Revival of Magical Practices in the Indian Systems of Medicine with Special Reference to Gandhi, Gandhi Marg, Vol. 25, No.4, 2004, pp. 435-445, A. K. Sharma.

10. Association for Protection of Human Rights: The First Two Decades, Indian Journal of Human Rights, Vol.5, Nos.1 and 2, 2001, pp.171-186, Munmun Jha.

11. Nehru and Civil Liberties in India, International Journal of Human Rights, Vol. 7, No. 3, 3003, pp. 103-115, Munmun Jha.

12. Effect of Financial Constraint on Inventory Investment, Indian Development Review, Vol.1, 2003, pp.1-25, T.V.S. Ramamohan Rao.

13. Vulnerability, Networking and Organization, Indian Journal of Economics, Vol. 84, 2003, pp.17-28, T.V.S. Ramamohan Rao.

14. An Approach to Sustainable Development, Indian Journal of Economics, Vol. 85, 2003, pp. 333-342, T.V.S. Ramamohan Rao.

15. A Unified Computational Lexicon for Hindi-English Code-Switching, Proceedings of the 20th International Conference on Computational Linguistics, University of Geneva, Switzerland, August 2004, Forthcoming Achla M Raina, Amitabha Mukerjee, Pankaj Goyal, Pushpraj Shukla.

16. Towards a Language Independent Encoding of Documents : A Novel Approach to Multilingual Question Answering, Proceedings of the International Workshop on Natural Language Understanding and Cognitive Science NLUCS-04, Portugal, April 2004, Prateek Jain, Manav Mittal, Sumeet Kumar, A Mukerjee, Pushpraj Shukla, Pankaj Goyal, Kumar Kapil, A Mukherjee, Achla M Raina.

17. Anaphora Resolution in Multi-Person Dialogue, Proceedings of the 5thSIGdial Workshop on Discourse and Dialogue, Boston, April 2004, Achla M Raina.

18. Semantic Role Tagging Using FrameNet, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Ankit Anand, Gaurav Pandey, Amitabha Mukerjee, Achla M Raina.

19. Multilingual Question Answering, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Pushparaj Shukla, Pankaj Goyal, Kumar Kapil, Amitabh Mukerjee, Achla M Raina.

20. A Frame-Semantic Approach for Tagging Hindi and Bangla Sentences, Proceedings of SIMPLE'04, IIT Kharagpur, March 2004, Pankaj Goyal, Ankit Soni, Deepak Sharma, Amitabha Mukerjee and Achla M Raina.

21. Universal Networking Language - A Tool for Language-Independent Semantics?, T. Della Senta, G. Falquet, & E. Tovar eds., Convergences '03: International Conference on the Convergence of Knowledge, Culture, Language and Information Technologies, Library of Alexandria, Alexandria, Egypt, December 2003, Amitabha Mukerjee, Achla M Raina, Kumar Kapil, Pankaj Goyal, Pushpraj Shukla.

22. Saarthaka: A Bilingual Parser for Hindi, English and Code-Switching Structures, 10th Conference of the European Chapter of the Association for Computational Linguistics EACL03, Budapest, Hungary, April 2003, P Goyal, Manav R Mital, A Mukerjee, Achla M Raina, D Sharma, P Shukla, K Vikram.

23. Old and New Dilemmas in Indian Civic Education, Economic & Political Weekly, Vol. 38, No.44, Nov.1, 2003, pp. 4655-4660, Amman Madan.

24. Education as Vision for Social change, Review of Elementary Education for the Poorest and Other Disadvantaged Groups: The Real Challenge of Universalisation, by Dhir Jhingran and Jyotsna Jha, 2002, Economic & Political Weekly, Vol. XXXVIII, No. 22, May 31, 2003, pp 2135-2136, Amman Madan.

25. Culture as Learnable: A Cognitive Perspective, SARMAC News, Spring 2003, pp.3-5, Shikha Dixit.

26. Environmental Protection: The Role of Liability System in India, Economic and Political Weekly, Vol. 39, No.3, 2004, pp. 257-269, P. M. Prasad.

27. Hedging Judicial Risks: An Application to US versus Microsoft, Northeast Business & Economic Association NBEA, Montclair State University, Montclair, New Jersey,

USA. October 3-4, 2003, NBEA, pp. 174-177, Dr. Manoj Dalvi, Dr. P. Murali Prasad, and Dr. Blaine Walgren.

28. Aspect of Changes in the Technological Regime in India under Globalization, N.K. Gouraha and Diwakar Sharma eds., Development in India for Whom and Where, Book City Publication, New Delhi, 2004, pp.54-67, B. K. Pattnaik.

29. Scientific Productivity: Sociological Explorations in Indian Academic Science, Sociological Bulletin, Vol. 52, No.2, 2003, pp. 198-220, B. K. Pattnaik.

30. Comparing Efficiency across State Transport Undertakings: A Production Frontier Approach, Indian Journal of Transport Management, Vol. 27, No. 3, 2003, pp. 374-391, S. K. Singh and V. Anand.

31. The Cognitive Content of Psychology in India, Psychological Studies, Vol. 48, No. 3, 2003, pp. 17–22, Lila Krishnan.

32. Ingestion, Digestion and Revulsion of Food and Culture in Anita Desai's Fasting, Feasting Lucknow Journal of Humanities, Vol. 1, No. 1, Jan-June 2004, pp. 21-30, T. Ravichandran.

33. Whose Untouchable is Bakha Anyway? Appropriating the Alien Sensibility in Mulk Raj Anand's Untouchable, Readings, Vol. 1, No. 2, Oct. 2003, pp. 22-29, T. Ravichandran.

34. Project Planning & Project Appraisal vis-à-vis our Approaches towards Sustainable Development, Orissa Economic Journal, VOl. XXV, No. 1 & 2, pp. 33-45, 2003, Rath B.

35. Post Structural Reform Growht Patterns in Orissa & Their Implications for Future Development of the State, Orissa Economic Journal, VOl. XXV, No. 1 & 2, pp. 117-128, 2003, Rath B & Jena P R.

36. Export and Growth Causality: An Indian Experience in the Post Liberalisation Period, Vision, Vol. XXII, No. 1-2, pp 1-12., 2004, Rath B. & N. C. Sahu.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Relating objectives to nanufacturing decisions in dynamic environments: Implications of an exploratory study to Indian and German manufacturing firms, International Journal of Manufacturing Technology and Management, V 5, Nos 5/6, 2003, pp. 472 – 491, Sharma, R.R.K., Seliger, G. Eggenstein, M., Shrotriya, S. and Behera. A.

2. Diffusion of Product with Limited Supply and Known Expiration Date, Marketing Letters, V 14, No. 1, 2003, pp. 33-46, Sanjeev Swami & Pankaj J. Khairnar.

3. Contradictions of Democracy in workers' co-operative. Organization studies, 25, 2, 183-208, 2004, Varman, Rahul & Chakrabarti, Manali.

4. Nature of Trust in Small Firm Clusters. International Journal of Organization Analysis, 11, 2003, 93-104, Dwivedi, Mridula, Varman Rahul & Saxena, KK.

5. Workers' Struggles in the Time of Globalization: A Critique of Trade Unions in Historical Perspective, Indian Journal Of Labour Economics. 46, 4, 2003, 667-684, Varman, Rahul & Chakrabarti, Manali.

6. Investigating the Influence of Information Technology on Decision Making, Journal of Advances in Mgmt. Research, I, 2003, 74-87, Awasthi, Anjali & Varman, Rahul.

7. Bases of Power as function of organization type and managerial level. Behavioural Scientist, 42, 2003, 73-78, Gupta, B., & Sharma, N.K.

8. A Generative Process Planning System for Cold Extrusion International Journal of Production Research, Vol. 41 No. 2 pp 269-295, 2003, Santosh Kumar, Kripa Shanker, and GK Lal.

9. A decision-Making Framework for IT Outsourcing using the Analytic Hierarchal Process, International Conference on Systems Cybernetis and Informatics 2004, Feb. 10 – 14, Pandey Vivek and V. Bansal.

10. Multi-Machine Scheduling Problem for a General Class of Job Value Deterioration Function, ICOR, January 8-10, 2004, ISI, Kolkata, India, Sanjeev Swami and Sumit Rout.

11. Channel Contracts in the Movie Industry: Show Me the money, Proceedings from the Third and Fourth Business and Economics Scholars Workshop Summit in Motion Picture Industry Studies, Florida Atlantic University, USA, 2003, Sanjeev Swami, Eunkyu Lee and Charles Weinberg.

12. Sequential Estimation under Linex Loss in Rergression Model, International Statistical Institute ISI, 54^{th} session under Statistical Inference, Estimation and Tests IV, 13^{th}-20^{th} August, Berlin, Germany, 2003, Chattopadhyay S. and Sengupta R.N.

13. Dynamic Optimal Pricing Policies in Yiels Management: A Markov Decision Process Approach, Proceeding of International Conference of the APORS under IFORS, New, Delhi, India, 2003, Sanjeev Swami and Anand Sabale.

14. Psychological perspectives on creativity. National Seminar on Creativity and Cognitive Science Sponsored by DST/ICPR, Department of Philosophy, University of Hyderabad, February, February 26-28, 2004, Rastotgi, and Sharma, N. K.

DEPARTMENT OF MATHEMATICS

1. A model for Fishery resource with reserve area, Non-linear Analysis: Real World Applications, Vol. 4, 625-637, 2003, Dubey, B., Chandra, P., Sinha, Prawal.

2. On the influence of wall properties in the peristaltic motion of Micropolar fluids, Vol. 452, 245-260, 2003, Muthu, P., Rathish Kumar B.V., Chandra P. in ANZIAM.

3. Modelling and analysis of the spread of carrier dependant infectious diseases with environmental effects, J. Biological Systems, Vol. 11, No. 3, 325-335, 2003, Shikha, S., Chandra, P., Shukla, J.B.

4. Unsteady state laminar flow of viscoelastic gel and air in a channel: application to mucus transport in a cough machine simulating trachea, Mathematical and Computer Modelling, Vol. 38, 63-75, 2003, Satpathy, D.K., Rathish Kumar, B.V., Chandra, P.

5. Effect of elastic wall motion on oscillatory flow of micropolar fluid in an annulus, Archive of Applied Mechanics, Vol. 73, 481-494, 2003, Muthu, P., Rathish Kumar B.V., Chandra, P.

6. Consistent estimation of coefficients in measurement error models under non-normality, J. of Multivariate Analysis, Vol. 86, No.2, 227-241, 2003, Shalabh.

7. Singularly perturbed problems in partial differential equations: a survey, Applied mathematics and computations, Vol. 134, 371-429, 2003, Patidar, K.C., Kadalbajoo, M.K.

8. Experimentally fitted spline in compression for the numerical solution of singular perturbation problems, Computers and Maths with Applications, Vol. 46, 751-767, 2003, Patidar, K.C., Kadalbajoo, M.K.

9. An uniform fitted operator method for solving boundary value problems for singularly perturbed delay differential equations: layer behaviour, International J. Computer Mathematics, Vol. 80, No. 10, 1261-1276, 2003, Patidar, K.C., Kadalbajoo, M.K.

10. Exponentially fitted spline approximation method for solving self-adjoint singular perturbation problems, IJMMS, Vol. 3873-3891, 2003, Patidar, K.C., Kadalbajoo, M.K.

11. Variable mesh spline in compression for the numerical solution of singular perturbation problems, International J. Computer Mathematics, Vol. 80, No.1, 83-93, 2003, Patidar, K.C., Kadalbajoo, M.K.

12. The Helgason-Fourier transform for symmetric spaces II, J. of Lie Theory, Vol. 14, 227-242, 2004, Mohanty, P., Ray, S.K., Sarkar, R.P., Sitaram, A.

13. On stochastic properties of m-spacings, Journal of statistical planning and inference, 1152, 683-697, 2003, Misra, N., Van der Meulen.

14. Reliability properties of reversed residual lifetime, Communications in Statistics – Theory & Methods, 3210, 2031-2042, 2003, Misra, N., Nanda, A.K., Singh, H., Paul, P.

15. On estimating the mean of the selected normal population, Under the LINEX Loss Function, Metrika, 582, 173-183, 2003, Misra, N., Van der Meulen.

16. Stochastic comparison of poisson and binomial distributions with their mixtures, Statistics & Probability Letters, 654, 279-290, 2003, Misra, N.

17. Reliability properties of reversed residual lifetime, Communications in Statistics – Theory & Method, 334, 991-992, 2004, Misra, N.

18. An efficient algorithm for estimating the parameters of superimposed exponential signals, Journal of Statistical Planning and Inference, Vol. 110, No. 1-2, 23-34, 2003, Kundu, D., Bai, Z.D., Rao, C.R., Chw, M.

19. Discriminating between the Weibull and the GE Distributions, Computational Statistics and Data Analysis, Vol. 43, 179-196, 2003, Kundu, D.,Gupta, R.D.

20. Estimating the number of components by a data independent penalty function approach, Journal of Statistical planning and inference, Vol. 116, No.2, 437-450, 2003, Kundu, D., Nandi, S.

21. Modified moment estimators for the two-parameter Birnbaum-Saunders distributions, Computational Statistics and Data Analysis, Vol. 43, 283-298, 2003, Kundu, D., Ng, H.K.T., Balakrishnan, N.

22. Exact likelihood inference based on type-II hybrid censored samples from the exponential distribution, Annals of the Institute of Statistical Mathematics, Vol. 55, No. 2, 319-330, 2003, Kundu, D., Childs, A., Chandrasekar, B., Balakrishnan, N.

23. Determination of discrete spectrum in a stationary random field, Statistica Neerlandica, Vol. 57, No.2, 258-184, 2003, Kundu, D., Nandi, S.

24. Analysis of incomplete data in presence of dependent competing risks, Recent Advances in Statistics and Probability, Editors: N. Balakrishnan, N. Kannan and M.R. Srinivasan, Narosa, New Delhi, 313-322, 2003, Kundu, D., Basu, S.S.

25. Closeness of gamma and generalized exponential distribution, Communications in Statistics – Theory and Methods, Vol. 32, No.4, 705-721, 2003, Kundu, D., Gupta, R.D.

26. Estimating the parameter of the fundamental frequency model, Statistical Methods and Applications, Vol. 12, No.3, 341-360, 2003, Kundu, D., Nandi, S.

27. The Weierstrass-Enneper representation using hodographic coordinates on a minimal surfaces, Proceedings of Indian Academy of Sciences – Math. Sci. Vol. 113, No. 2, May 2003, Dey, R.

28. Summability kernels for L^p multipliers, Journal of Fourier Analysis and Applications, Vol. 9, 101-114, 2003, Mohanty, P., Madan, S.

29. Large classes of minimally supported frequency wavelets of L^2R and H^2R, Journal of Geometric Analysis, Vol. 13, #4, 557-579, 2003, Arcozzi, N., Behera, B., Madan, S.

30. Wavelet subspaces invariant under groups of translation operators, Pro. Indian Academy of Sciences, Vol. 113, 171-178, 2003, Behera, B., Madan, S.

31. Extensions of weak-type multipliers, Studia Mathematica, Vol. 158, 1-10, 2003, Mohanty, P., Madan, S.

32. Method of Semi-discretization in time for quasi-linear integro-differential equations, International Joural of Mathematics and Mathematical Sciences, Vol. 9, 469-478, 2004, Shukla, R., Bahuguna, D.

33. Approximations of solutions to second order semi-linear integro-differential equations, Numerical Functional Analysis and Optimization, Vol. 24, 365-390, Shukla, R., Bahuguna, D.

34. Approximations of solutions to nonlinear Sobolev type evolution equations, Electronic Journal of Differential Equations, Vol. 2003, 1-16, 2003, Shukla, R., Bahuguna, D.

35. A non stationary subdivision scheme for generalizing trigonometric spline surfaces to arbitrary meshes Computer Aided Geometric Design, Vol. 20, 61-77, 2003, Shunmugaraj, P., Jena, M.K., Das, P.C.

36. A non stationary subdivision scheme for curve interpolation, ANZIAM, Vol. 44, E216-E235, 2003, Shunmugaraj, P., Jena, M.K., Das, P.C.

37. Stochastic image compression using fractals, information, technology, computers & communications, IEEE Proceedings, 574-579, April 2003, Kapoor G.P., Kapur A., Arora K., Jain A.

38. Hidden variable bivariate fractal surfaces, Fractals, Vol. 113, 277-288, 2003, Kapoor, G.P., Chand, A.K.B.

39. Improved genetic algorithm for permutation flowshop scheduling problem, Computers and Operations Research, Vol. 314, 593-606, 2003, Iyer, S.K., Saxena, B.

40. A simple estimate of the index of stability for symmetric stable distributions, Stochastic Modelling & Applications, Vol. 61, 9-19, 2003, Iyer, S.K., Jammalamadaka.

41. Correlated bivarate sequences using linear structures for queueing and reliability applications, Communications in Statistics, Vol. 332, 331-350, 2004, Iyer, S.K., Manjunath, D.

42. Convexifactors, generalized convexity and vector optimisation, Optimization, Vol. 53, 77-94, 2004, Dutta, J., Chandra, S.

43. On optimality criteria in set optimization Journal of Australian Mathematical Society, Vol. 75, 221-232, 2003, Dutta, J., Lalitha, C.S., Govil., M.

44. A Study of 3D unsteady flow dynamics in anarterial vessel with multiple aneurysms, Computational Mechanics Vol. 321-2, 16-28, 2003, Rathish Kumar, B.V.

45. Natural Convection thermally stratified wavy vertical enclosure, Numerical Heat Transfer, Vol.7, 753-776, 2003, Rathish Kumar, B.V., and Shalini.

46. Free convection in a non-Darcian wavy porous enclosure, Int. J. Engineering Science, Vol. 4116, 1827-1848, 2003, Rathish Kumar, B.V., and Shalini.

47. Krylov Subspace solvers in parallel numerical computation of Solutions to PDEs modelling heat transfer applications, Numerical Heat Transfer-AApplications: Vol.

45, 1-25, 2004, Rathish Kumar, B.V., Bipin Kumar, Shalini, Manimehra, Peeyush Chandra, Raghavendra, V., Singh, R.K., Mahendra, A.

48. Non-Darcy free convection induced by a vertical wavy surface to a thermally stratified porous medium, IJHMT, Vol. 47, 2353-2363, 2004, Rathish Kumar, B.V. and Shalini.

49. A Combinatorial Arc Tolerance Analysis for Network Flow Problems, Journal of Applied Mathematics and Decision Sciences, Vol. 72, 1-10, 2003, Sharma, P., Sokkalingam, P.T.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Dhar iron pillar, Bulletin of Metals Museum, 36, 2003, 23-44, R. Balasubramaniam.

2. Electrochemical behaviour of sintered, yttria reinforced ferritic stainless steels, Powder Metallurgy, 46, 2003, 25-29, J. Shankar, A. Upadhyaya, R. Balasubramaniam and A.V. Ramesh Kumar

3. Finite element evaluation of hydrogen solubility enhancements due to thermal residual stresses in palladium-alumina composites, Journal of Alloys and Compounds, 356-357, 2003, 9-12, P.M. Dixit, R. Balasubramaniam and T. B. Flanagan.

4. The interaction of hydrogen with internally oxidized Pd alloys as illustrated by Pd-Fe alloys, Journal of Alloys and Compounds, 356-357, 2003, 3-8, D. Wang, T.B. Flanagan and R. Balasubramaniam.

5. Phosphoric irons for concrete reinforcement applications, Current Science, 85, 2003, 9, R. Balasubramaniam.

6. Alloy design of ductile phosphoric iron: ideas from archaeometallurgy, Bulletin of Materials Science, 26, 2003, 483-492, Gouthama and R. Balasubramaniam.

7. On the origin of non-uniform surface electrochemical potentials on the Delhi iron pillar, Current Science, 85, 2003, 378-382, R. Balasubramaniam.

8. Corrosion resistance of the Dhar iron pillar, Corrosion Science, 45, 2003, 2451-2465, R. Balasubramaniam and A.V. Ramesh Kumar.

9. Influence of manufacturing methodology on the corrosion resistance of the Delhi iron pillar, Indian Journal of History of Science, 38, 2003, 195-214, R. Balasubramaniam.

10. Metallurgical investigations on a chalcolithic copper nail from Balathal, Man and Environment, 28, 2003, 33-40, A. Srivastava, R. Balasubramaniam and V.N. Misra.

11. Some metallurgical aspects of Gupta period gold coin manufacturing technology, Indian Journal of History of Science, 38, 2003, 331-349, R. Balasubramaniam and N. Mahajan.

12. Material characterization of ancient Indian copper, Bulletin of Materials Science, 26, 2003, 593-600, A. Srivastava and R. Balasubramaniam.

13. Forging and corrosion resistance of the Delhi iron pillar, Bulletin of Jnana Pravaha, 6, 2003, 61-72, R. Balasubramaniam.

14. Electrochemical behavior of sintered oxide dispersion strengthened stainless steels, Corrosion Science, 46, 2004, 487-498, J. Shankar, A. Upadhyaya and R. Balasubramaniam.

15. A marvel of medieval Indian metallurgy: Thanjavur's forge-welded iron cannon, Journal of Metals, 56[1], 2004, 17-23, R. Balasubramaniam, A. Saxena, T.R. Anantharaman, S. Reguer and P. Dillmann.

16. High temperature environmental interactions in carbon-alloyed iron aluminide of low Al content, Materials Science and Engineering A, 368, 2004, 48-55, A. P. Singh, R. Balasubramaniam and R.G. Baligidad.

17. Characterization of rust on ancient Indian iron, Current Science, 85, 2003, 1546-1555, R. Balasubramaniam, A.V. Ramesh Kumar and P. Dillmann.

18. Hydrogen bronze formation within Pd/MoO_3 composites, Journal of Physical Chemistry B, 108, 2004, 310-319, H. Noh, D. Wang, S. Luo, T.B. Flanagan, R. Balasubramaniam and Y. Sakamoto.

19. Insights into internal oxidation of binary and ternary Pd alloys using hydrogen isotherms, Journal of Alloys and Compounds, 364, 2004, 105-112, D. Wang, T.B. Flanagan and R. Balasubramaniam.

20. Long term corrosion behavior of copper in soil: a study of archaeological analogues, Materials and Corrosion, 55, 2004, 194-202, R. Balasubramaniam, T. Laha and A. Srivastava.

21. On the role of environment on the corrosion resistance of the Delhi iron, Pillar, Current Science, 86, 2004, 559-566, S. Halder, G.K. Gupta and R. Balasubramaniam.

22. Corrosion behavior of sintered oxide dispersion strengthened stainless steels, Journal of Materials Science Letters, 39, 2004, 1815-1817, J. Shankar, A. Upadhyaya and R. Balasubramaniam.

23. Estimation of the original erection site of the Delhi iron pillar at Udayagiri, Indian Journal of History of Science, 39.1, 2004, 51-74, M.I. Dass and R. Balasubramaniam.

24. Fretting wear behaviour of advanced ceramics and cermet against alumina, Journal of Materials Research, 18[6], 2003, 1314-1324, B. Basu, J. Vleugels and O. Van Der Biest.

25. Friction and wear mechanism of sialon ceramics under fretting contacts, Materials Science & Engineering, A 359, 2003, 228-236, B. Basu, J. Vleugels, M. Kalin and O. Van Der Biest.

26. Fretting Wear of TiCN-Ni cermet: Influence of secondary carbide content, P/M Science and Technology Briefs, 5, 2003, 5-11, D. Sarkar, S.Ahn, S.Kang and B. Basu.

27. Development of ZrO_2-TiB_2 Composites: role of residual stress and starting powders, Journal of Alloys and Compounds, 365, [1-2], 2004, 266-270, B. Basu, J. Vleugels and O. Van Der Biest.

28. Transformation behaviour of tetragonal zirconia: role of dopant content and distribution, Materials Science & Engineering, A 366, [2], 2004, 338-347, B. Basu, J. Vleugels and O. Van Der Biest.

29. Microstructure-toughness-wear relationship of tetragonal zirconia ceramics, Journal of the Europeon Ceramic Society, 24, [7], 2004, 2031-2040, B. Basu, J. Vleugels and O. Van Der Biest.

30. Development of WC-ZrO_2 nanocomposites by spark plasma sintering, Journal of the American Ceramic Society, 87, [2], 2004, 317-319, B. Basu, Jong-Heun Lee and Doh-Yeon Kim.

31. Process control and optimization of AOD process using genetic algorithm, Materials and Manufacturing Processes, 18, [3], 2003, 401-408, B. Deo and V. Srivastava.

32. Slag droplet model, a dynamic tool to simulate and optimize the refining conditions in BOF, Steel Research, 74, 2003, 125-130, E. Graveland-Gisolf, P. Mink, A. Overbosch, R. Boom, G. de Gendt and B. Deo.

33. Optical characterization of polysilane thin films, Synthetic Metals, 139, 2003, 835-837, A. Sharma, Deepak, S. Kumar, M. Katiyar, A. K. Saxena, A. Ranjan and R. K. Tiwari.

34. Effect of prior β processing steps on microstructural refinement during thermomechanical processing of a two phase α+β titanium alloy, Materials Science and Technology, 19, [12], 2003, 1688-1696, K. Mallikarjun, Satyam Suwas, S. Ghosh Chowdhury and S. Bhargava.

35. Effect of prior β processing on superplasticity of α+β thermomechanically treated Ti-632Si alloy, Journal of Materials Processing Technology, 134, 2003, 35-46, K. Mallikarjun, Satyam Suwas and S. Bhargava.

36. Microstructural evolution during β processing of the α+β titanium alloy, Ti-6Al-3.2Mo-1.8Zr-0.3Si, Practical Metallography, Vol. 41, [1], 2004, 8-21, K. Mallikarjun, Satyam Suwas and S. Bhargava.

37. Fabrication and characterization of a monolithic thin film edge emitter device with zinc oxide tungsten based thin-film phosphor, Journal of Vacuum Science and Technology, B 22, 2004, 165 - 170, V. Bhatia, L. K. Karpov, and M. H. Weichold.

38. Studies on metal build up on atomisers during free fall gas atomisation of liquid metals, Powder Metallurgy, 46 [2], 2003, 181, D. Singh, R.K. Dube and S.C. Koria.

39. Development of operating pressure diagram for free fall gas atomisation of liquid metals, ISIJ International, 43 [12], 2003, 2067, D. Singh, R.K. Dube and S.C. Koria.

40. Orientation dependence of ferroelectric properties of pulsed laser ablated, $Bi_{4-x}Nd_xTi_3O_{12}$ films, Applied Physics Letters, 86 [12], 2003, 2414-2416, A. Garg, A. Sneedon, P. Lightfoot, M. Dawber, J.F. Scott and Z.H. Barber.

41. Ferroelectric soft mode and central mode in $SrBi_2Ta_2O_9$ Films, Journal of Physics C: Condened. Matter, 15, 2003, 8095–8102, M. Kempa, P. Kuzel, S. Kamba, P. Samoukhina, J. Petzelt, A. Garg and Z. H. Barber.

42. Prospects and problems of using TEM in analyzing cavitation during superplastic deformation, EMSI Bulletin, 3, 2002, 12-18, Gouthama and K.A. Padmanabhan.

43. Transmission electron microscopic evidence for cavity nucleation during superplastic deformation, Scripta Materialia, 49, 2003, 761-766, Gouthama and K.A. Padmanabhan.

44. Superior low cycle fatigue behaviour of multiphase microstructure of medium C microalloyed steel processed through rolling, Scripta Materialia, 49, 2003, 503-508, S. Sankaran, V. S. Sarma, Gouthama, and K.A. Padmanabhan.

45. Effect of uncertainty in formation energies of defects in calculations for carrier concentrations in semi-insulating GaAs, Materials Science & Engineering B, 100 [1], 2003, 102-105, Deepak.

46. Variations in first principles defect energies in GaAs and their effect on practical predictions, Bulletin of Materials Science, 26 [10], 2003, 169-173, Deepak, D. Balamurugan and K. Nandi.

47. Transient flow in ladles during initial and post gas injection periods, ISIJ International, 43, 2003, 132-134, D. Mazumdar, D. Steingard, C. Seybert and J.W. Evans.

48. Development of a three dimensional turbulent flow calculation procedure and its application to ladles stirred with dual porous plug, Transactions of IIM, 56 [2], 2003, 95-107, P. Mitra, D. Mazumdar, A. Tamrakar, G. Gupta and J. Mandal.

49. Some considerations concerning empirical correlations for plume spout eye area in slag covered metallic melts, ISIJ International, 43, 2003, 2076-2078, D. Mazumdar, and J.W. Evans.

50. Macroscopic models for gas stirred ladles: a review, ISIJ International, 44, 2004, 447-461, D. Mazumdar, and J.W. Evans.

51. A model for estimating exposed plume eye area in Steel refining, ladles covered with thin slag, Materials and Metalllurgical Transactions, B, 35B, 2004, 400-404, D. Mazumdar, and J.W. Evans.

52. A review of computer simulation of tumbling mills by DEM - Part I, Contact mechanics, International Journal of Mineral Processing, 71 [1-4], 2003, 73-93, B. K. Mishra.

53. A review of computer simulation of tumbling mills by DEM - Part II, Practical Applications, International Journal of Mineral Processing, 71 [1-4], 2003, 73-93, B. K. Mishra.

54. Interfaces in ceramic matrix composites, Ann. Chim. Sci. Mater. 27 [S1], 2002, S113-S128, V.S.R. Murthy.

55. Electroremediation of CrVI contaminated soils: kinetics and energy efficiency, Colloids and Surfaces A: Physicochemical and Engineering Aspects, 222, 2003, 253-259, K. Sanjay, A. Arora, R. Shekhar and R.P. Das.

56. Electrochemical cleaning of soil contaminated with a dichromate lixiviant, International Journal of Mineral Processing, 72, 2003, 401-406, M. Manna, K. Sanjay and R. Shekhar.

57. Microstructural evolution of 434L ferritic stainless steel with copper and boride addition, Transaction PMAI, 29, 2003, 45-50, A. Chakraborty, A. Upadhyaya and R. K. Ray.

58. P/M processing of high-density ferritic stainless steel with boron additive for automotive application, Transactions Indian Institute of Metals, 56, 2003, 205-213, A. Chakraborty, A. Upadhyaya, and R.K. Ray.

59. The knoop hardness yield locus of Ti-24Al-11Nb alloy, Materials Letters, 57, 2003, 3251-3256, S. Suwas, I. Lahiri, R.K. Ray and S. Bhargava.

60. Recrystallization behaviour of a heavily cold rolled $N1_3Al$ B,Zr alloy, Metallurgical and Materials Transactions A, 35A, 2004, 71-81, B. Bhattacharya and R.K. Ray.

61. Low cycle fatigue behavior of a multiphase medium carbon microalloyed steel processed through rolling, Scripta Materialia, 49, 2003, 503-508, S. Sankaran, V. Sarma, Gouthama, S. Sangal and K.A. Padmanabhan.

62. Automated dihedral angle measurement in liquid phase sintered tungsten heavy alloy, Zeitschrift für Metallkunde, 95 [1], 2004, 3-7, P. Chhillar, S. Sangal, and A. Upadhyaya.

63. Microwave and conventional sintering of premixed and prealloyed, Cu-12Sn bronze, Science of Sintering 35 2003 49-65. G. Sethi, A. Upadhyaya, and D. Agrawal.

64. Powder injection molding PIM and sintering of austenitic stainless steel for automotive applications, Indian Journal of Engineering & Materials Sciences, 10, 2003, 306-313, A.K. Mishra, S. Paul, A. Upadhyaya, T. Barriere and J.C. Gelin.

65. Effect of Fe on the constitution of Cu-W alloys at 1200°C, Journal of Alloys and Compounds, 361, 2003, 222-226, V. Gauthier, F. Robaut, A. Upadhyaya and C.H. Allibert.

66. Effect of powder milling on microstructural evolution in liquid phase sintered W-Ni-Fe heavy alloys, Transactions of PMAI, 29, 2003, 38-44, A. Shrivastava and A. Upadhyaya.

67. Automated dihedral angle measurement in sintered heavy alloys, Transactions of PMAI, 29, 2003, 51-53, P. Chhillar, K. Chattopadhyay, P. Mishra, A. Upadhyaya, and S. Sangal.

68. Effect of activators on sintering of W-Cu and W-Bronze alloys, Transactions of PMAI, 29, 2003, 54-60, M. Debata, C. Ghosh, and A. Upadhyaya.

69. Microstructural and microhardness studies of microwave sintered Cu-12Sn bronze alloys, Transaction of PMAI, 29, 2003, 61-65, N. Agarwal, G. Sethi, A. Upadhyaya, D. Agarwal and R. Roy.

70. Effect of boron addition on sintering of tungsten heavy alloys, Journal of Materials Science, 39, 2004, 2539-2541, M. Debata and A. Upadhyaya.

71. Effect of yttria and YAG on sintered 434L and 316L P/M stainless steel, Materials Letters, 58, 2004, 2037-2040, J. Jain, A.M. Kar, and A. Upadhyaya.

72. Microstructural characterization of ancient Indian iron, Annual Meeting of the Electron Microscopy Society of India, Shimla, April 16-18, 2003, R. Balasubramaniam, Gouthama and P. Dillmann.

73. Delhi iron pillar: ideas for heat treatments and surface coatings, Keynote lecture, International Conference on “Advances in Surface Treatments 2003”, International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, R. Balasubramaniam.

74. Effect of saccherine addition on the direct and pulsed electrodeposition of nanocrystalline nickel, International Conference on “Advances in Surface Treatments 2003”, International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, Rajiv Mishra, S. Sankaran and R. Balasubramaniam.

75. Electrodeposited Ni-WC composite coatings, International Conference on “Advances in Surface Treatments 2003”, International Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, M. Surender, B. Basu and R. Balasubramaniam.

76. Some studies on electrodeposited nanocrystalline chromium surface coatings, International Conference on “Advances in Surface Treatments 2003”, International

Advanced Research Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, V. Jaju, S. Pal and R. Balasubramaniam.

77. Wear behaviour of electrodeposited Ni-WC composite coatings, 17th National Convention of Metallurgical and Materials Engineers and National Seminar on Emerging Materials for Wear Applications, Bhopal, October 11-12, 2003, M. Surender, R. Balasubramaniam, B. Basu and M.N. Mungole.

78. The corrosion resistance of the 1600 year-old Delhi iron pillar, CORCON 2003 International Conference on Corrosion, Mumbai, December 1–4, 2003, R. Balasubramaniam.

79. Electrochemical behavior of Ti-based alloys in simulated human body fluid environment, BIMAO 2003, XIV National Conference on Biomaterials and Artificial Organs, Mumbai, December 1-3, 2003, Animesh Choubey, B. Basu, R. Balasubramaniam.

80. Tribological behavior of Ti-Based alloys in simulated body fluid solution at fretting contacts, BIMAO 2003, XIV National Conference on Biomaterials and Artificial Organs, Mumbai, December 1-3, 2003, Animesh Choubey, B. Basu, R. Balasubramaniam.

81. Metallurgy of ancient Indian iron, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.

82. The story of the Delhi iron pillar, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.

83. Metallurgy of ancient Indian coinage, Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.

84. Microstructural and electrochemical characterization of ancient bloomery iron, Annual Meeting of the Materials Research Society of India, Varanasi, February 9-11, 2004, R. Chaturvedi, D. Neff, R. Balasubramaniam and A.K. Gupta.

85. Development of nanocrystalline nickel coating of low co-efficient of friction, Annual Meeting of the Materials Research Society of India, Varanasi, February 9-11, 2004, R. Mishra, B. Basu and R. Balasubramaniam.

86. TEM study of the role of precipitate particles in a quasi-single phasesuperplastic alloy
EMSI-2003, CPRI, Shimla, April, 2003, Gouthama, R.K. Ray and K.A. Padmanabhan.

87. Study of carbon nanotubes prepared by chemical vapor deposition using transmission electron microscopy EMSI-2003, CPRI, Shimla, April, 2003, Malladi V Pavan Kumar, Gouthama, Deepak Kunzru.

88. Microstructural Evolution by Severe Plastic Deformation MRSI-2004, BHU, Varanasi, February, 2004 S. Giribaskar, Gouthama and R. Prasad

89. Fretting behaviour of Mg-SiC_p composite materials, 15th AGM-MRSI symposium, Banaras Hindu University, Varanasi, February, 2004, B.V. Manoj kumar, Bikramjit Basu, V.S.R. Murthy and M. Gupta.

90. In vitro reactivity of selected bio-ceramic galsses, 57th Annual technical meeting of IIM, Kolkata, December 14-16, 2003, A. Srivastava, Debdas Roy and V.S.R. Murthy.

91. Recent advances in powder metallurgy processing of materials, Proceedings of International Conference on Advances in Materials & Processes for Industrial Applications, P.S. Subramaniam Ed., ASM International, Pune, 2003, pp. 224-233, A. Upadhyaya.

92. TEM studies on the matrix structure refinement in thermoechanically treated tungsten heavy alloys, Proc. XXVI Annual Conference on Electron Microscopy and Allied Fields, Electron Microscopy Society of India, 2003, pp. 202-203, A. Upadhyaya, Gouthama, and P.P. Bhattacharya.

93. Sintering of Metal Ceramic Particulate Composites IIM awardee lecture, 57th Annual Technical Meeting of The Indian Institute of Metals NMD-ATM 2003, November 14-16, 2003, Kolkata, A. Upadhyaya.

94. Improvement of toughness of Y-ZrO2: role of dopant distribution, 8th International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 29, 2003,. Bikramjit Basu.

95. Processing of nanoceramics and nanoceramic composites: new results, 8th International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 30, 2003, Bikramjit Basu.

96. Degradation in a methyl-phenyl co-polymeric polysilane for LED applications," Materials Research Society Spring Meeting, April 21-25, 2003, San Francisco. A. Sharma, Deepak, M. Katiyar, S. Kumar, V. Chandrasekhar, K. Saxena, A. Ranjan and R. K. Tiwari.

97. Polysilanes for light emitting diodes, Indo-Italian Workshop on Organic Semiconductors, October 14-17, 2003, Samtel Centre for Display Technologieas & Indian Institute of Technology Kanpur, India. Asha Sharma, U. Lourderaj, Deepak, N.Sathyamurthy and Monica Katiyar

98. Thermal oxidation of GaN: Determination of the optical constants of the oxide and their correlation with the quality of the oxide, ICMAT 2003, December 7-12, 2003 Singapore, S.K. Srivastava, S. Kumar, Deepak, M. Katiyar, S. Tripathy, S.J. Chua.

99. Effect of Substrate on Phase Transformation Kinetics of WSi_x films, ICMAT 2003, 7-12 December 2003, Singapore, S. Bharat, P.K. Sahoo, M. Katiyar.

100. Control of radiative processes using surface plasmon resonances in metal nanostructures, Excited State Processes in Electronic and Bio nanomaterials 2003, August 11-16, Los Alamos National Laboratory, USA A. Mikhailovsky, J. Ostrowski, M. Katiyar, G. Bazan.

101. Thermo-mechanical processing of Tungsten dispersed copper strips via a powder metallurgy route, International conference on 'Advances in Powder Metallurgy and Particulate Materials' M.P.I.F, Las Vegas, U.S.A. June 12, 2003, R.K. Dube and Rajesh Sharma.

102. Modelling of some fundamental and applied problems in iron and steel making, Indo-US workshop on Intelligent Processing of Metallic Materials, Goa, March 22-24, 2004, D. Mazumdar.

103. Experimental study of fused deposition through electrochemical discharge, Proceedings of the 7th Japan-India Joint seminar, Tokyo, Japan, February 19-21, 2004, pp 111-118. Madhuri Karnik, R. Shekhar and A. Ghosh.

104. Automated Dihedral Angle Measurement in Liquid Phase Sintered Alloys, 3rd International Conference on Science, Technology, and Application of Sintering SINTERING2003, State College, PA, USA September 15-17, 2003, P. Chhillar, S. Sangal, A. Upadhyaya.

105. Effect of beta grain size on tensile behaviour and ductile fracture toughness of a metastable β titanium alloy, Ti-10V-2Fe-3Al, Presented in the ATM of IIM, Calcutta, November 2003, A Bhattacharjee, V.K.Verma, S.V. Kamat, AK Gogia and S. Bhargava.

106. Microwave and conventional sintering of premixed and prealloyed bronze, 3rd International Conference on Science, Technology, and Application of Sintering

SINTERING2003, State College, PA, USA September 15-17, 2003, G. Sethi, A. Upadhyaya, D. Agarwal.

107. Effect of YAG addition on sintering of stainless steel, 3rd International Conference on Science, Technology, and Application of Sintering SINTERING2003, State College, PA, USA Sep 15-17, 2003, J. Jain and A. Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Development Of Rubber Pressure Molding Technique To Fabricate Reinforced Plastic Components XII National Seminar on Aerospace Structures, September 2003, Bangalore, pp 258-264, Prashant Kumar with Tinku K.Saha, Suraj K Behera, S D Sharma and K. K. Kar.

2. Fracture Toughness of Adhesively Bonded FRP Laminates Under Static and Dynamic Loading XII National Seminar on Aerospace Structures, September 2003, Bangalore, pp 100-107, Prof. Prashant Kumar With R. K. Singh and Yekabbara Rao Allanki.

3. Control Scheme of a Two - finger Gripper for Emulating Human Characteristics in Cooperative Tasks', Life Support, Vol. -15, No.2, 2003, pp 5-12, Goro Obinata and Ashish Dutta.

4. 'Development of an intelligent statically'stable humanoid Robot', Proceedings of the National Conference on Advanced Manufacturing and Robotics, CMERI, Durgapur, Jan. 10-11, 2004, In Press, P. Kulkarni, A. Dutta, V. Abhishek, A. Mukerjee, Ashish Dutta.

5. 'Development of an Advanced Telemanipulator using an Exoskeleton, FES and Vision System', Proceedings of the National Conference on Advanced Manufacturing and Robotics, CMERI Durgapur, Jan 10-11,2004 In Press M. Maheswari, A. Sharma, S.K. Dube, P. Guha , Prof. Ashish Dutta.

6. ‘Processing and Mechanical Characterization of Lightweight Polyurethane Composites, Journal of Material Science, 38:8, April, 2003, pp. 1631-1643, Chalivendra, V. B., Shukla, A. Bose, P.Venkitanarayanan and A.V. Parameswaran.

7. Quasi-Static Stress Fields for a Crack Inclined to the Property Gradation in Functionally Gradient Materials, Acta Mechanica, 162, May, 2003, pp. 167-184, Chalivendra, V. B., Shukla,. P.Venkitanarayanan and A.V. Parameswaran.

8. Dynamic Out of Plane Displacement Fields for an Inclined Crack in Graded Materials, Journal of Elasticity, 69, 2002, but published in Aug 2003 due to issue

back log, pp. 99- 119, Chalivendra, V. B., Shukla, P.Venkitanarayanan and A. V. Parameswaran.

9. An Experimental Investigation of Dynamic Crack Propagation in a Brittle Material Reinforced with a Ductile Layer, Optics and Lasers in Engineering, 40:4, October, 2003, pp.289-306, Singh R. P., P.Venkitanarayanan and Parameswaran V.

10. Photoelastic Investigation of Interfacial Fracture Between Orthotropic and Isotropic Materials, Optics and Lasers in Engineering, 40:4, October, 2003, pp. 307-324. Shukla, A., Chalivendra, V. B., Parameswaran, V. and Dr. P. Venkitanarayanan Lee, K. H.

11. Simulation Of Asphalt Materials Using a Finite Element Micromechanical Model With Damage Mechanics, Transportation Research Record 1832, Journal of Transportation Research Board, USA, December, 2003, pp. 86-95, Sadd, M., H., Dai, Q., Parameswaran, V., and Dr. P.Venkitanarayanan Shukla, A.

12. Heat Transfer enhancement in cross-flow heat exchangers using oval tubes and multiple delta wings, Int. JI of Heat and Mass Transfer 46:2841-2856, 2003, Dr. V.Eswaran, S. Tiwari, D. Maurya, G. Biswas, and V. Eswaran.

13. Numerical Prediction of Heat Transfer in a Channel with a Built-in Oval Tube and Various Arrangements of Vortex Generators, Numerical Heat Transfer Part A, 44:315-333, 2003, V. Eswaran, V. Prabhakar, G. Biswas and V. Eswaran.

14. Two-dimensional steady flow of a power-law liquid past a square cylinder in a plane channel: momentum and heat transfer characteristics, Ind. & Eng. Chem. Res. Am. Chemical Soc. Journal, 42:5674-5686, 2003, V.Eswaran, A.K. Gupta, A.Sharma, R.P. Chhabra and V. Eswaran.

15. On the Diffusion-Wave Model for the Spread of Modem Humans, V. Eswaran, reply to O. M. Pearson and A. C. Stone, Current Anthropology, 44, No 4, pp 559-560, 2003.

16. Power-law flow past a square cylinder: momentum and heat transfer characteristics, Chem. Eng.Sci., 58:5315- 5329, 2003, B. Paliwal, A.Shanna, R.P. Chhabra and V. Eswaran.

17. A comparative study of Dirichlet and Neumann conditions for path planning through harmonic functions, Future Generations Computer Systems, Special issue: Selected numerical algorithms - Edited by Jerzy Wasniewski, Jack Dongarra, Kaj Madsen, Vol 20/3, pp 441-452, 2003, M. Karnik, B. Dasgupta and V. Eswaran.

18. Numerical Modelling of Atmospheric Pool Boiling by the Coupled Map Lattice Method, Journal of Mechanical Engineering Science, Proc. IMechE Part CU.K., Vol.218, pp.195-205, 2004, P.S.Ghoshdastidar, S.Kabelac and Aurovinda Mohanty.

19. Planar Simulation of Bubble Growth in Film Boiling in Near-Critical Water Using a Variant of the VOF Method, Journal of Heat Transfer ASME 019403JHR, to appear in June 2004, D. Agarwal, S.W.J. Welch, G. Biswas, and F. Durst.

20. Backward-Facing Step Flows for Various Expansion Ratios at Low and Moderate Reynolds Numbers, Journal of Fluids Engineering A SME, 6185G, to appear in May, 2004, G. Biswas, M. Breuer and F. Durst.

21. Investigation of two-and Three Dimensional Models of Transitional Flow Past a Square Cylinder, Journal of Engineering Mechanics ASCE, Vol. 129, pp. 1320-1329, 2003, A. K. Saha, K. Muralidhar and G. Biswas.

22. Numerical Prediction of Flow and Heat transfer in a Rectangular Channel with a Built-in Circular Tube, Journal of Heat Transfer ASME, Vol. 125, pp. 413-421, 2003, S. Tiwari, G. Biswas, P.L.N. Prasad and S. Basu.

23. A Numerical Study of Heat Transfer in Fin-Tube Heat Exchangers using Winglet-Type Vortex Generators in Common-Flow-Down Configuration, Progress in Computational Fluid Dynamics, Vol. 3, pp. 32-41, 2003, S. Tiwari, P.L.N. Prasad and G. Biswas.

24. Prediction of Heat Transfer from Impinging Knife-Jets Using a Dynamic Subgrid Stress Model, Progress in Computational Fluid Dynamics, Vol. 3, pp. 22-31, 2003, T. Cziesla, H. Chattopadhyay, N.K. Mitra and G. Biswas.

25. Heat Transfer Enhancement in Crossflow Heat Exchangers using Oval Tubes and Multiple Delta Winglets, International Journal of Heat and Mass Transfer, Vol. 46, pp. 2841-2856, 2003, S. Tiwari, D. Maurya, G. Biswas and V. Eswaran.

26. Numerical Prediction of Heat Transfer in a Channel with a Built-in Oval Tube and Various Arrangements of the Vortex Generators, Numerical Heat Transfer, Part A, Vol. 44, pp. 315-333, 2003, V. Prabhakar, G. Biswas and V. Eswaran.

27. Effect of Thermocapillary Convection in an Industrial Czochralski Crucible: Numerical Simulation, International Journal of Heat and Mass Transfer, Vol. 46, pp. 1641-1652, 2003, V. Kumar, G. Biswas, G. Brenner and F. Durst.

28. Winglet- Type Vortex Generators with Common-Flow-Up Configuration for Fin - Tube Heat Exchangers, Numerical Heat Transfer, Part A, Vol. 43, pp. 201-219, 2003, A. Jain, G. Biswas and D. Maurya.

29. Three-dimensional Study of Flow Past a Square Cylinder at Low Reynolds Numbers, Int. J. Heat and Fluid Flow, Vol. 24, pp. 54-66, 2003, A. K. Saha, G. Biswas, and K. Muralidhar.

30. Nonisothermal Oil-water Flow and Viscous Fingering in a Porous Medium, Int. J. Thermal Sciences, Vol. 42, pp 665-676, 2003, Tanuja Sheorey and K. Muralidhar.

31. Visualization of the convective field above a heated cylinder by a laser schlieren technique, accepted for publication in International Communication in Heat and Mass Transfer, 2004, Atul Srivastava, P.K. Panigrahi and K. Muralidhar.

32. Buoyancy-driven convection in superimposed fluid laters in an octagonal cavity, accepted for publication in Inter- national Journal of Thermal Sciences, 2004, Sunil Punjabi, K. Muralidhar and P.K. Panigrahi.

33. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, accepted for publication in Optics and Lasers in Engineering, 2004, A. Srivastava, A. Phukan, P.K. Panigrahi and K. Muralidhar.

34. Comparison of interferometry, schlieren and shadowgraph for visualizing convection during the growth of a KDP crystal from its aqueous solution, accepted for publication in Journal of Crystal Growth, 2004, A. Srivastava, K. Muralidhar and P.K. Panigrahi.

35. Interferometric Study of Buoyancy- driven Convection in a Differentially Heated Circular Fluid Layer, accepted for publication in Heat and Mass Transfer, 2004, A. Srivastava, P.K. Panigrahi and K. Muralidhar.

36. Modeling of Transport Phenomena in a Low Pressure CVD Reactor, accepted for publication in Journal of Crystal Growth, 2004, A.K. De, K. Muralidhar, V. Eswaran and V.K. Wadhawan.

37. Influence of the Orientation of a Square Cylinder on the Wake Properties, Experiments in Fluids, Vol. 34, pp 16-23, 2003, Sushanta Dutta, K. Muralidhar and P.K. Panigrahi.

38. Three dimensional study of flow past a square cylinder at low Reynolds numbers, International Journal of Heat and Fluid Flow, Vol. 24, pp 54-66, 2003, A.K. Saba, G. Biswas and K. Muralidhar.

39. Investigation of Two and Three Dimensional Models of Transitional Flow past a Square Cylinder, ASCE Journal of Engineering Mechanics, Vol. 12911, pp 1320-1329, 2003, A.K. Saba, K. Muralidhar and G. Biswas.

40. Heat Transfer from an Array of Cylinders in Oscillatory Flow, accepted for publication in International Journal of Heat Exchangers, 2004, K. Muralidhar and K. Suzuki.

41. Comparison of I-equation and 2-equation models for Convective Heat Transfer in Saturated Porous Media, Journal of the Institution of Engineers India, Vol. 84, pp. 104-113, 2003, Chanpreet Singh, R.G. Tathgir and K. Muralidhar.

42. Buoyancy-driven convection in super- posed air-water layers: numerical and experimental study, Institution of Engineers India Journal, Mechanical Engineering Division, Vol. 84, pp 31-35, 2003, A. Sethia, Sunil Punjabi and K. Muralidhar.

43. Effect of Radiation Losses in the Growth of Optical Crystals by the Czochralski Process, Journal of Scientific and Industrial Research, Vol. 62, pp. 1164-1175, 2003, Rajneesh Bharadwaj, Jyotirmay Banerjee and K. Muralidhar.

44. On Multistage Deep Drawing of Axisymmetric Components, ASME Journal of Manufacturing Science and Engineering, V125, 352-362, 2003, Sonis, P., Reddy, N. V., and Lal, G. K.

45. Ductile Fracture Prediction in Axisymmetric Upsetting using Continuum Damage Mechanics, Journal of Materials Processing Technology, V141, 256-265, 2003, Gupta, S., Reddy N. V., and Dixit, P. M.

46. Slicing Procedures in Layered Manufacturing: A Review, Rapid Prototyping Journal., V9,274-288, 2003, Pandey, P. M., Reddy, N. V., and Dhande, S. G.

47. Prediction of limiting drawing ratio in first draw of the flat bottom axi-symmetric components, 1h Indo-Japan Seminar on Advanced Manufacturing Systems, March 15-22, 2003, Tokyo, Japan, On Invitation, P. V. Vijaykumar, Reddy, N. V.

48. Determination of Best Pair of Parting Directions for Mould Design, 2nd Asia Youth Forum in Advanced Manufacturing, Tokyo, Japan, February 15-19, 2004, On Invitation, Pritam Chakraborty and Reddy, N. V.

49. Ductile Fracture Prediction in Open Die Forging, Proceedings of3rd JSTP International Seminar on Precision Forging 3rd JSTP ISPF, Organized by Japan

Society for Technology of Plasticity, Nagoya JAPAN, 6 pages., March 14-19, 2004, On Invitation, Bhanu Kishore, B., and Reddy, N. V.

50. Comparison of interferometry, schlieren and shadow graph for visualizing convection around a KDP crystal, Journal of Crystal Growth, Accepted, 2004, Srivastava, A., Muralidhar, K., and Panigrahi, P. K.

51. Imaging of a convective field in a rectangular cavity using interferometry, schlieren and shadowgraph, Optics and Laser in Engineering, In Press, 2004, Srivastava, A Phukan, A., Panigrahi, P. K. and Muralidhar, K.

52. Buoyancy-driven convection in differentially heated superposed fluid layers in a circular cavity, International Journal ofTheffi1al Sciences, In Press, 2004 Punjabi, S., Muralidhar, K., and Panigrahi, P. K.

53. Laser schlieren measurement of vortical flow past a heated horizontal circular cylinder, International Communications in Heat and Mass Transfer, In Press, 2003, Srivastava, A., Dutta, S Panigrahi, P, K, & Muralidhar, K.

54. Multi-modal forcing of the turbulent separated shear flow past a rib, ASME Journal of Fluids Engineering, Vol. 126, 1-10, 2004, Panigrahi, P. K. & Acharya, S.

55. Variation of Activation Volume with Temperature for Fe, Si and Ge Journal: Materials Letters Volume: 57 Year: 2003, pp 4319-4322, K. K. Mani Pandey, Om Prakash, B. Bhattacharya.

56. X-ray and ultrasonic tomography, Insight, 452003, pp 47-50, P. Munshi.

57. A new tomographic reconstruction method for isotropic materials, Nondestructive Testing and Evaluation, 18, 2003, 171-182, S.K. Rathore, P. Munshi, N. N. Kishore.

58. An improved method for ray tracing through curved inhomogeneities in composite materials Journal of Nondestructive Evaluation, 22, 2003, 1-9, S.K. Rathore, N.N. Kishore, P. Munshi.

59. Experimental Investigation into Cutting Forces and Active Grain Density during Abrasive Flow Machining, Int. J. Machine Tools and Manufacture, Vol. 44, 2004, pp.201-211, V.K.Gorana, V.K.Jain and G.K.Lal.

60. Finite Element Simulation of Abrasive Flow Machining, Proc. Inst. Mech. Engrs. England, 217 Part 8, J. Engineering Manufacture, 2003, pp. 1723-1736, R.K. Jain and V.K.Jain.

61. Process selection Methodology for Advanced Machining Processes, Journal of Advanced Manufacturing Systems, Vol. 2, June 2003, pp. 5-45, N.K. Jain, V.K. Jain.

62. An integrated and automated process planning system for Advanced Machining Environment, International Journal of Industrial Engineering, Vol. 10, June 2003, pp. 98-106, N.K.Jain, V.K.Jain.

63. Experimental Investigation into Magnetic Abrasive Finishing of Alloy Steel, Proceedings of Precision Engineering Conference held at Niigata Japan, 3-6 Nov., 2003 pp. 403-408, Dhirendra K.Singh, V.K.Jain, V. Raghuram.

64. Presented two contributed papers at Int. Symposium on Electromachining held at Edinburgh U.K. 31 March to 4 April. on:
    i. Electrochemical deep hole drilling in superalloys for turbine application by D.S.Bilgi, V.K.Jain, R.Shekhar
    ii. Parametric study of magnetic abrasive finishing MAF process by D.K.Singh, V.K.Jain, V.Raghuram

65. Vehicular Emissions and Management: status and Issues, Invited. Paper, Indian Journal of Transport Management, No. I, Vol. 28, Jan.-Mar., 2004, B. P. Pundir.

66. Emission Reduction in Small SI Engine Generator Sets, SAE Paper 2004-01-1089, SAE SP-1863, 2004 SAE World Congress, Detroit, Michigan, March 8-11, 2004, B. P. Pundir.

67. Control of Diesel Vehicle Emissions: Experiences in India and Bangladesh, Better Air Quality BAQ 2003 International Conference, Manila, Philippines, Dec. 17-19, 2003, B. P. Pundir.

68. Trends In De-carbonisation of Transport Fuels, SAE Paper No 2004- 28-0015, Proc. Third SAE India Mobility Conference, New Delhi, Jan. 16-18, 2004, B. P. Pundir.

69. Fuels for Heavy Duty Vehicles:Emission Standards and Future Trends - An Invited Paper, 18th National Conference on IC Engines and Combustion, Trivandrum, Dec. 17 - 19, 2003, B. P. Pundir.

70. Finite element evaluation of hydrogen solubility enhancements due to thermal residual stresses in palladium-alumina composites, J Alloy Compd, Vol. No. 356, 2003, Page Nos. 9-12, R. Balasubramaniam & T .B. Flanagan.

71. Ductile fracture prediction in axisymmetric upsetting using continuum damage mechanics, J Mater Process Tech, Vol. No. 1412, 2003, Page Nos. 256-265, S. Gupta & N.V. Reddy.

72. Residual stresses in cold axisymmetric forging, J Mater Process Tech, Vol. No. 1421, 2003, Page Nos. 256-266, M.P. Mungi & S.D. Rasane.

73. Unveiling innovative design principles by means of multiple conflicting objectives. Engineering Optimization, 355, 445-470, 2003, Deb, K.

74. Classification of two-class cancer data reliably using evolutionary algorithms. BioSystems, 721-2, 2003, 111-129, Deb, K. and Reddy, A. R.

75. Multi-speed gearbox design using multi-objective evolutionary algorithms. ASME 1ransactions on Mechanical Design, 1253, 2003, 609-619, Deb, K. and Jain, S.

76. Optimal scheduling of casting sequence using genetic algorithms. Journal of Materials and Manufacturing Processes, 183, 2003, 409-432, Deb, K., Reddy, A. R. and Singh, G.

77. Process Improvements in Khandsari Cottage Sugar Industry in India, International Sugar Journal, Volume CVI, Issue No. 1262, February 2004, pp 94-100, Avinash Kumar Agarwal, Mukesh Sharma and L P Tewari.

78. Wear Assessment In Biodiesel Fuelled Compression Ignition Engine, Journal Of Engineering For Gas Turbine And Power ASME journal, Volume 125, Number 3, pp 820- 826, July 2003, Avinash Kumar Agarwal, Jayashree Bijwe, L M Das.

79. Effect of Biodiesel Utilisation On Wear Of Vital Parts In Compression Ignition Engine, Journal Of Engineering For Gas Turbine And Power ASME journal, Volume 125, Number 2, pp. 604-611, April 2003, Avinash Kumar Agarwal, Jayashree Bijwe, L M Das.

80. Experimental Investigations on the Effect of Liner Surface Properties on Wear in Non-Firing Engine Simulator', SAE 2004- 01-0605, SAE World Congress 2004 and SAE Special Publication SP.1820, Dhananjay Kumar Srivastav, Avinash Kumar Agarwal.

81. Published a paper in the special issue of Journal of Materials Processing Technology on Tool Wear Prediction in Turning co-authored by P. Srinivas Detailed version of the paper presented in the conference.

82. The Effect of Additives on Condensation Evaporation and Absorption Processes in LiBr-H_2O Refrigeration System, Proceedings of 3rd International Conference on Cryogenics and Refrigeration ICCR 2003, Hangzhou, China, Pise, 2003, A.T., Devotta, S., and Kant, K.

83. Effect of Additives on Flow Patterns In Horizontal Tube Falling Film Absorber of A LiBr-H_2O Refrigeration System, 2nd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 24-26, 2003,Victoria Falls, Zambia. Pise, A.T., Devotta, S., and Kant, K.

84. Heat And Mass Transfer Studies In A Horizontal Tube Falling Film Absorber, Proceedings of 21st IIR, International Congress of Refrigeration 2003, Washington USA, ICR0563, 2003, pp. 1-9, Pise, A.T., Devotta, S., and Kant, K.

85. Quantification of Surfactant by Evaporation in Absorption Chillers, 3rd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 22-24, Cape Town, South Africa. accepted, 2004, Pise, A.T., Verma, P., Devotta, S., and Kant, K.

86. Effect of Additives on Departure Site Spacings in a Horizontal Tube Falling Film Absorber, 3rd International Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, June 22-24, Cape Town, South Africa. accepted, 2004, Pise, A.T., Kant, K., and Devotta, S.

87. Ranges for Heat Flux and Temperature in Vertically Oriented PCBs Subjected to Natural Convection Cooling in Air 2nd International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, 23–26 June 2003, Victoria Falls, Zambia, Yadav, Rajiv Pandit and Keshav Kant.

88. Average Nusselt Number in Natural and Mixed Convection Heat Transfer Over Vertically Oriented PCB Sixth ISHMT- ASME Heat and Mass Transfer Conference, 2004, Yadav, Rajiv Pandit and Keshav Kant.

89. A Homogeneous Flow Model for Spiral Capillary Tubes, Proc. Int. Conf. on Air-conditioning and Refrigeration ACRECONF 2003, New Delhi, pp.344-356, 2003, H.K. Paliwal, R.K. Singh, and K. Kant.

90. A Flow model for Spiral Capillary Tubes for Refrigeration Systems Proc. Int. Conf. on on Multiphase Flow Yokohama, Japan aceepted, H.K. Paliwal, R.K. Singh, and K. Kant.

91. Heat Transfer Intensification in a Regenerator Using a Moving Port System, Submitted to HEFAT 2004, 3rd Int. Conf. on Heat Transfer, Fluid Mechanics and

Thermodynamics to be held in Cape Town, South Africa from 21-24 June accepted, D.S. Murthy, S. Kumar, K.Kant and D.P. Rao.

92. Process Intensification in a Simulated Moving Bed Heat Regenerator, submitted to the ASME Heat Transfer/Fluids Engineering Summer Conf. to be held at Charlotte, N.C., USA, from July 11-15, 2004 accepted, D.S. Murthy, S.V. Sivakumar, Keshav Kant and D.P. Rao.

93. Variational Approach for Singularity-free Path-planning of Parallel Manipulators – Int. Journal of Mech. and Mach. Theory Vol. 38 2003 pp 1165-1183. S.Sen, B.Dasgupta and A.K.Mallik.

94. An Improved Method for ray tracing through curved In homogeneities in composite Materials, J. of Non destructive Evaluation, V.22, n1, March 2003, P1-8, Rathore, S.K., Kishore, N.N., Munshi, P.

95. Ballistic Performance of Surface. Modified Ceramic Body Armor Material, Society of Experimental Mechanics SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Charlotte, NC, USA, June 2-4, 2003, Shukla, A, Parameswaran, V., and Kovolyan, E., J.

96. Effect of Confinement on the Forced Convection Heat Transfer from a Heated Square Cylinder in Crossflow, Sixth ISHMT/ASME Joint Heat and Mass Transfer Conference, Kalpakkam, India, pp. 80-85, 2004, Atul Sharma and V. Eswaran.
97. Effect of Buoyancy on the Vortex Shedding from a Heated/Cooled Square Cylinder in Crossflow, Proc. 6th Annual CFD Symposium, Bangalore, India, CP-ll, 2003, Atul Sharma and V. Eswaran.

98. Computer Simulation of Quenching of Steel Cylinders, Proc. 17th National/6th ISHMT -ASME Heat and Mass Transfer Conference, Kalpakkam, January 5-7, 2004, Taliwal and P.S. Ghoshdastidar.

99. Numerical simulation and optical visualization of solute transport during the initial stages of crystal growth from its solution, presented at National Laser Symposium, IIT Kharagpur, December 2003, Sunil Verma, A. Srivastava, V. Prabhakar, K. Muralidhar and V.K. Wadhawan.

100. Convection during the growth of KDP crystals: Flow visualization and modeling, presented at the 4th Asian Meeting of Ferroelectrics AMF-4, IISc Bangalore, December 2003, Sunil Verma, K. Muralidhar and V.K. Wadhawan.

101. Beam hardening in X-ray CT, Proceedings of the National Seminar on Non-destructive Testing, held in Thiruvananthapuram, 11-13 December, 2003, pp.183-

188, Mishra, K.K., Quraishi, A.M., Mishra, S., Kumar, A., Srivastava, A., Muralidhar, K. and Munshi, P.

102. Effect of Orientation of a Square Cylinder on Wake Properties at Low Reynolds Numbers, Proceedings of the 30th National Fluid Mechanics and Fluid Power Conference, held at NITK Surathkal, December 2003, pp. 455-462, S. Dutta, P.K. Panigrahi and K. Muralidhar.

103. Interaction of Buoyancy, Thermo-capillarity and Crystal Rotation on Melt-Crystal Interface Shape during Czochralski Growth of Oxide Crystals, HMT-2004-C147, pp. 884-889, Proceedings of the 4th ASME-ISHMT Heat Transfer Conference held at Kalpakkam India in January 2004, J. Banerjee and K. Muralidhar.

104. Heat transfer and flow characteristics of a flat surface with solid and slit ribs, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam, January 5-7, 2004, Tariq, A. and Panigrahi, P. K.

105. Optical measurement of the convective field around a crystal growing from its aqueous solution, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam , January 5-7, 2004, Srivastava, A. and Panigrahi, P. K.

106. Numerical prediction of flow and heat transfer past a circular tube with integral splitter plate, Sixth ISHMT - ASME Heat and Mass Transfer Conference, Kalpakam, January 5-7, 2004, Chakraborty, D., Tiwari, S., Biswas, G. and Panigrahi, P. K.

107. Effect of orientation of a square cylinder on wake properties at low Reynold number, Effect of orientation of a square cylinder on wake properties at low Reynolds number, FMFP Conference Surathcal, 11th to 13th December, 2003, Dutta, S., Panigrahi, P. K. and Muralidhar, K.

108. Heat transfer and flow characteristics of a rib with a slit, ASME International Mechanical Engineering Congress and R & D Expo, Washington, D.C., USA, November 15-21, IMECE2003 – 41352, 2003, Tariq, A. and Panigrahi, P. K.

109. Numerical prediction of flow and heat transfer past a circular tube with annular fins, ASME International Mechanical Engineering Congress and R & D Expo, Washington, D.C., USA, November 15-21, IMECE2003 – 42872, 2003, Chakraborty, D., Biswas, G. and Panigrahi, P. K.

110. Superfinishing of alloy steels using magnetic abrasive finishing process, Proceedings of Precision Engineering c,,~' Conference held at Oregon U.S.A., 26-31 October, 2003, Dhirendra. K. Singh, V.K. Jain, V. Raghuram.

111. Cutting forces and surface roughness during abrasive flow machining, Proceedings of Precision Engineering Conference held at CMTI Bangalore, pp. 298-305, 2003, V.K.Gorana, V.K.Jain, G.K.Lal.

112. On the performance of abrasive flow finishing process, Proceedings of Precision Engineering Conference held at CMTI Bangalore, pp. 216-223, 2003, Sunil Jha, V.K. Jain, S.K. Choudhury.

113. Effects of Operating Parameters on the Performance of Abrasive Flow Machining Process, Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 224-229, 2003, R. K. Jain, V. K. Jain.

114. Shaped Tube Electrochemical Machining of Cooling Holes in Inconel for Turbine Applications Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 236- 241, 2003, D. S. Bilgi, V. K. Jain, R. Shekhar, S. Mehrotra.

115. Temperature Determination on the Workpiece Surface During Diamond Surface Grinding: FEM Approach, Proceedings of 2dh AIMTDR conference held at Birla Institute of Technology, Mesra Ranchi, pp 187-194, 2003, Vinod Yadav, V. K. Jain and P.M. Dixit.

116. Large-Scale Scheduling of Casting Sequences Using a Customized Genetic Algorithm. Proceedings of the 6th International Conference on Artificial Evolution EA-2003. Marseille, France, 2003, pp. 248-259, Deb, K. and Reddy, A. R.

117. Computationally effective search and optimization procedure using coarse to fine approximations. Proceedings of the Congress on Evolutionary Computation CEC-2003, Canberra, Australia, pp. 2081-2088, 2003, Nain, P. K. S. and Deb, K.

118. Revealing useful design principles by means of multiple conflicting objectives. International Congress on Evolutionary Methods for Design, Optimization and Control with Applications to Industrial Problems EUROGEN 2003. Barcelona, Spain, 2003, Deb, K., Chaudhuri, S., Jain, P., Naveen, G., and Maji, H.

119. Robust estimation of aerospace propulsion parameters using optimization techniques based on evolutionary algorithms. 54th International Astronautical Congress of the International Astro- nautical Federation, the International Academy of Astronautics, and the International Institute of Space Law, Bremen, Germany, 2003, Meena, B. R., Gupta, H., Bandyopadhyay, P., Deb, K. and Adimurthy, V.

120. Distributed Computing of Pareto-Optimal Solutions Using Multi-Objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion

Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 535-549. Also Lecture Notes in Computer Science LNCS 2632, 2003, Deb, K., Zope, P. and Jain, A.

121. Towards a quick computation of well-spread Pareto-optimal solutions. Proceedings of the Second Evolutionary Multi- Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 222-236. Also Lecture Notes in Computer Science LNCS 2632, 2003, Deb, K., Mohan, M. and Mishra, S.

122. Identification of Multiple Gene Clusters Using Multi- Objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-03 Conference, 8-11 April, Faro, Portugal. 623-637. Also Lecture Notes in Computer Science LNCS 2632, 2003, Reddy, A. R. and Deb, K.

123. Performance Scaling of Multi-objective Evolutionary Algorithms. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-O3 Conference, 8-11 April, Faro, Portugal. 376-390. Also Lecture Notes in Computer Science LNCS 2632, 2003, Khare, V., Yao, X. and Deb, K.

124. Dynamic multiobjective optimization problems: Test cases, approximation and applications. Proceedings of the Second Evolutionary Multi- Criterion Optimization EMO-O3 Conference, 8-11 April, Faro, Portugal. 310-324. Also Lecture Notes in Computer Science LNCS 2632 2003, Farina, M., Deb, K., and Amato, P.

125. Searching under multi-evolutionary pressures. Proceedings of the Second Evolutionary Multi-Criterion Optimization EMO-O3 Conference, 8-11 April, Faro, Portugal. 391-405. Also Lecture Notes in Computer Science LNCS 2632, 2003, Abbass, H. and Deb, K.

126. Numerical Investigations of Piston Cooling Using Oil Jet, SAE Paper No. 2004.28.0061, Presented in SAE 2004 India Mobility Conference, held in New Delhi, India and published in the Proceedings of Third International Conference on Synergy of Fuel and Automotive Technology for a cleaner Environment Allied Publishers, India, Mani Bijoy Varghese, Avinash Kumar Agarwal.

127. Development and Characterization of Biodiesel from Non-edible Vegetable Oils of Indian Origin, SAE Paper No. 2004.28.0079, Presented in SAE 2004 India Mobility Conference, held in New Delhi, India and published in the Proceedings of Third International Conference on Synergy of Fuel and Automotive Technology for a cleaner Environment Allied Publishers, India, Shailendra Sinha, Avinash Kumar Agarwal.

128. Transesterification of Vegetable Oils for Biodiesel Production: Engine Testing for Performance and Emissions, presented and published in the proceedings of XVIII National Conference on I C Engines and Combustion organized by Combustion Institute India Section, PP 571-580, Avinash Kumar Agarwal, Sanjeev Garg, Nitin Kaistha, Shailendra Sinha.

129. Characterisation and utilisation of Biodiesel as an Alternative Fuels for Diesel Engines, presented and published in the proceedings of A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation meeting on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Banglore, Avinash Kumar Agarwal, Sanjeev Garg.

130. Transesterification of Vegetable oils for Biodiesel Production: Process considerations, Present status and Future Challenges, presented and published in the proceedings of A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation meeting on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Banglore, Sanjeev Garg, Avinash Kumar Agarwal.

131. Lubrication Oil Tribology Of A Biodiesel-Fuelled CI Engine presented and published in the Proceedings of ASME.ICED, 2003, Spring technical conference, May 2003, Salzburg, Austria, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Cluster formation and anomalous fundamental diagram in an ant trail model, K. Nishinari, Phy. Rev. E, 67, 036120-1, 2003, D. Chowdhury and A. Schadschneider.

2. Dietrich Stauffer: unconventional in science and life, Physica Scripta, T106, 7, 2003, D. Chowdhury.

3. Traffic flow of interacting self-driven particles: rails and trails, vehicles and vesicles, Physica Scripta, T106, 13, 2003, D. Chowdhury.

4. Food-web-based unified model of macro- and microevolution, Phy. Rev. E, 68, 041901-1, 2003, D. Stauffer.

5. Unified micro- and macro- evolution of eco-systems: Self-organization of a dynamic network, Physica A, 336, 102, 2004, D. Stauffer and D. Chowdhury.

6. Magnetic scattering in Fe-Cr multiplayer in the ferromagnetic state at low temperatures, R.S. Patel, J. Appl. Phys. 93, 7684, 2004, A.K. Majumdar, A.F. Hebard and D. Temple.

7. Further evidence of electron-electron interaction in $Ni_{0.5}Zr_{0.51-x}Al_x$ amorphous alloys, J. Magn. Mater., 263, 26, 2003, A.K. Majumdar.

8. Coexistence of glassy antiferromagnetism and giant magnetoresistance in Fe/Cr multilayer structures, J. Magn. Mater., 263, 32, 2003, N. Theodoropoulou, A.F. Hebard, M. Gabay, A.K. Majumdar, C. Pace, J. Lannon, and D. Temple.

9. Extraordinary Hall effect in Fe-Cr giant magnetoresistive multilayers, Phys. Rev. B 68, 144405, 2003, P. Khatua, A.K. Majumdar, A.F. Hebard and D. Temple.

10. Divalent dopant criterion for suppression of JT distortion, Phys. Rev. B68, 012101, 2003, R. Prasad, R. Benedek et al.

11. Symmetry breaking and structural distortions in XH_4, Phys. Rev. A69, 033201, 2004, D. Balamurugan, M.K. Harbola and R. Prasad.

12. Potential Fluctuations and metastabilities in hydrogenated amorphous silicon, J. Mater. Sci.: Mater. Electr., 14, 703 2003, S.C. Agarwal.

13. Surface effects in nanocrystalline silicon, J. Mater. Sci.: Mater. Electr., 14, 797, 2003, N.P. Mandal and S.C. Agarwal.

14. Light and Thermally induced metstabilities in nanocrystalline silicon, Mater. Res. Soc. Symp. Proc., 762, Spring 2003, San Francisco, N.P. Mandal and S.C. Agarwal.

15. Influence of surface treatments on nanocrystalline silicon, thin Solid Films, 451-452, 357, 2004, N.P. Mandal, S. Dey and S.C. Agarwal.

16. Arresting photodegradation of porous silicon by a polymer coating, Solid State Communications, 129, 183, 2004, N.P. Mandal, Ashutosh Sharma and S.C. Agarwal.

17. Additional considerations in the definition and renormalization of non-covariant gauges, Mod. Phys. Lett. A 18, 843-852, 2003, S.D. Joglekar.

18. Some observations on Interpolating and non-covariant gauges, J. Phys. 61, 949, 2003, S.D. Joglekar, Pramana.

19. Causality violation in non-local quantum field theory, , Int. J. Mod. Phys. A 19, 2004, A. Jain and S.D. Joglekar.

20. Axial and other non-covariant gauges and FFBRS transformations, , Proc. XIV DAE Symp. 100-113, 2003, S.D. Joglekar.

21. Absence of non-local counterterms in the gauge-boson propagator in the Axial-type gauges, , Proc. XIV DAE Symp. 151-154, 2003, S.D. Joglekar.

22. Variable-frequency EPR study of Mn^{2+}-doped $NH_4Cl_{0.9}I_{0.5}$ single crystal at 9.6, 36 and 249.9 GHz: Structural phase transition, J. Magn. Reson. 160, 131, 2003, S.K. Misra, S.I. Andronenko, G. Rinaldi, P. Chand, K.A. Earle and J.H. Freed.

23. Effect of Bi_2O_3 on EPR, optical transmission and DC conductivity of vanadyl doped alkali bismuth borate glasses, J. Phys. Chem. Solids 64, 2281, 2003, A. Agarwal, V.P. Seth, P.S. Gahlot, S. Khasa and P. Chand.

24. Electron paramagnetic resonance, optical spectra and DC conductivity studies of vanadyl doped Bi_2O_3-BaO-B_2O_3 glasses, Rad. Eff. & Def. Solids 158, 655, 2003, P.S. Gahlot, V.P. Seth, A. Agarwal, S. Khasa and P. Chand.

25. Effect of Bi_2O_3 on electron paramagnetic resonance, optical transmission and DC conductivity in vanadyl doped Bi_2O_3-K_2O-B_2O_3 glasses, Materials Chem. & Phys. 85, 215, 2004, A. Agarwal, V.P. Seth, P.S. Gahlot, S. Khasa and P. Chand.

26. Field theoretic calculation of energy cascade rates in nonhelical magnetohydrodynamic turbulence, Pramana – J. 577, 2003, M.K. Verma.

27. Energy fluxes in helical magnetohydrodynamics and dynamo action, Pramana – J. 61, 707, 2003, M.K. Verma.

28. Wavelet transform of breast tissue fluorescence spectra: A technique diagnosis of tumors, IEEE JSTQE, 92, March/April 2003, Nidhi Agarwal, Shard Gupta, Bhawna, Asima Pradhan, K. Vishwanathan and P.K. Panigrahi.

29. Recovery of turbidity free fluorescence from measured fluorescence: An experiental Approach, Optics Express, 11, 24, 3320-3330 2003, N.C. Biwal, S. Gupta, N. Ghosh and Asima Pradhan.

30. Experimental and theoretical investigation of fluorescence photobleaching and recovery in human breast tissues and tissue phantoms, Applied Optics, 43, 5 2004, S. Gupta, Bhawna, Pallab Goswami, Asha Agarwal and Asima Pradhan.

31. Detection of milk adulteration using fluorescence spectroscopy, Proc. Nat. laser. Symp. 2003, Sharad Gupta, N.C. Biswal and Asima Pradhan.

32. Extraction of biochemical information from intrinsic fluorescence, Proc. Nat. Laser Symp. 2003, N.C. Biswal, Sharad Gupta and Asima Pradhan.

33. Microstructure of N^+ ion beam induced epitaxial crystallied Si, Nucl. Instr. And Meth. B216, 313, 2004, P.K. Sahoo, S. Gupta, A. Pradhan and V.N. Kulkarni.

34. Sequential pulsed laser deposition of $Cd_xZn_{1-x}O$ alloy thin films for engineering ZnO band gap, Appl. Phys. A 78, 37, 2004, P. Misra, P.K. Sahoo, P. Tripathi, V.N. Kulkarni, R.V. Kandedkar and L.M. Kukreja.

35. Co-doped $La_{0.5}Sr_{0.5}TiO_3$ A d: Diluted magnetic oxide system with high Curie temperature, Appl. Phys. Lett. 83, 2199, 2003, Y.G. Zhao, S.R. Shinde, S.B. Ogale, J. Higgins, R.J. Choudhary, V.N. Kulkarni, R.L. Greene, T. Venkatesan, J.P. Buban, N.D. Browning, S. Das Sarma and A.J. Millis.

36. High temperature ferromagnetism with a giant magnetic moment in transparent Co-doped SnO_2, , Phy. Rev. Lett. 91, 077205, 2003, S.B. Ogale, R.J. Choudhary, J.P. Buban, S.E. Lofland, S.R. Shinde, S.N. Kale, V.N. Kulkarni, J. Higgins, C. Lanci, J.R. Simpson, N.D. Browning, S.D. Sarma, H.D. Drew, R.L. Greene and T. Venkatesan.

37. Pulsedelectron-beam deposition of transparent conducting SnO_2 films and study of their properties, R.J. Choudhary, S.B. Ogale, S.R. Shinde, V.N. Kulkarni, T. Venkatesan, K.S. Harshavardhan and M. Strikovski B. Hannoyer, Appl. Phys. Lett. 84, 1483, 2004.

38. Emission spectroscopy of laser ablated Si plasma related to nanoparticle formation, Appl. Surf. Sci. 222, 382, 2003, V. Narayanan and R.K. Thareja.

39. Simplified model to account for dependence of ablation parameters on temperature and phase of the ablated material, Appl. Surf. Sci. 222, 293, 2003, Sushmita R. Franklin and R.K. Thareja.

40. Photo-excited photonic characteristics of ZnO thin films deposited by laser ablation method, Elect. Eng. Japan 144, 1, 2003, T. Ohshima, T. Ikegami, K. Ebihara and R.K. Thareja.

41. Preparation of ZnO thin films on various substrates by pulsed laser deposition, T. Ohshima, Surf. Coating Tech. 169/170, 517, 2003, R.K. Thareja, T. Ikegami and K. Ebihara.

42. Synthesis of p-type ZnO thin films using co-doping techniques based on KrF excimer laser deposition, Thin Solid Films, 435, 49 2003, T. Ohshima, T. Ikegami, K. Ebhihara, J. Asmussen and R.K. Thareja.

43. Dependence of ablation parameters on temperature and phase of the ablated material, J. Appl. Phys. 93, 5763, 2003, S. Franklin and R.K. Thareja.

44. Photoluminescence from silicon nano-particles synthesized by pulsed laser ablation, Mod. Phys. Lett. B17, 121, 2003, V. Narayanan and R.K. Thareja.

45. Phase transformation in room temperature pulsed laser deposited TiO_2 thin films, Appl. Surf. Sci. 206, 137, 2003, A.K. Sharma, R.K. Thareja, U. Willer and W. Schade.

46. Pulsed laser deposited ZnO films for UV laser and nonlinear medium, ISRAPS Bull. 13, 03, 2003, R.K. Thareja and A. Mitra.

47. Two Graviton Production at e+e- and Hadron Hadron Colliders in the Randall-Sundrum Model, Journal of High Energy Physics, 0403, 011, 2004, P. Jain and S. Panda.

48. QCD form-factors and hadron helicity nonconservation, , Physical Review D 69, 053008, 2004, J. P. Ralston and P. Jain.

49. Large scale alignment of optical polarizations from distant QSOS using coordinate invariant statistics, Monthly Notices of the Royal Astronomical Society 347, 394, 2004, P. Jain, G. Narain and S. Sarala.

50. Brane-production and the neutrino-nucleon cross section at ultrahigh energies in low scale gravity models, International Journal of Modern Physics D, 129, 1593, 2003, P. Jain, S. Kar and S. Panda.

51. The proton electromagnetic form-factor F2 and quark orbital angular momentum, Pramana – J. 61, 987, 2003, P. Jain and J. P. Ralston.

52. Rotating Bose-Einstein condensates with a large number of vortices, Phys. Rev. A67, 035601, 2003, V. Subrahmanyam.

53. Domain-wall dynamics of Ising spin chain in a transverse magnetic field, Phys. Rev. B68, 212407, 2003, V. Subrahmanyam.

54. Entanglement Sharing in one-particle states, Phys. Rev. A67, 052304, 2003, A. Lakshimnarayan and V. Subrahmanyam.

55. Quantum Entanglement in Heisenberg antiferromagnets, V. Subrahmanyam, Phys. Rev. A69, 022311, 2004, V. Subrahmanyam.

56. Entanglement dynamics and quatum state transport in spin chains, V. Subrahmanyam, Phys. Rev. A69, 034304, 2004, V. Subrahmanyam.

57. Synchronization regimes in chaotic optical communication systems, IEE Proc. Optoelectroincs, 150, 191-198, 2003, I. Pierce, I.A. Valle, S. Sivaprakasam, P. Rees, P.S. Spencer and K.A. Shore.

58. Nullified time-of-flight lead-lag in synchronization of chaotic external cavity laser diodes, Optics Letters, 28, 1397-1399, 2003, S. Sivaprakasam, J. Paul, P.S. Spencer, P. Rees and K.A. Shore.

59. Anticipated chaos in a nonsymmetric coupled external-cavity-laser system, Phys. Rev. A 68, 033818, 2003, P. Rees, P.S. Spencer, I. Pierce, S. Sivaprakasam and K.A. Shore.

60. Comparison of closed-loop and open loop feedback schemes of messave decoding using chaotic laser diodes, Optics Letters, 28, 2168-2170, 2003, M.W. Lee, J. Paul, S. Sivaprakasam and K.A. Shore.

61. Polarisation resolved relative intensity noise measurements of a vertical cavity surface emitting laser subjected to strong optical feedback, IEEE Photonics Tech Letters, 16, 9-11, 2004, S. Sivaprakasam, S. Bandyopadhyay, Y. Hong, P.S. Spencer and K.A. Shore.

62. Dual-channel chaotic optical communications using external-cavity semiconductor lasers, J. Opt. Soc. America, 21, 514-521, 2004, J. Paul, S. Sivaprakasam and K.A. Shore.

63. Transport studies on Mechanochemically synthesised AgI-Ag_2O-CrO_3 superionic system, Solid State Ionics 159 [3-4] 369-379, 2003, A. Dalvi and K. Shahi.

64. Characterization and electrochemical cell characteristics of mechanochemically synthesized AgI-Ag_2O-MoO_3 amorphous superionic system, J. Phys. Chem. Solids 64[5], 813, 2003, A. Dalvi and K. Shahi.

65. Black holes in braine worlds, Pramana – J. 62, 707, 2004, M.S. Modgil, S. Panda and G. Sengupta.

66. Many-electron problem in terms of the density: from Thomas-Fermi to modern density-functional theory, Chem. 2, 301, 2003, M.K. Harbola and A. Banerjee, J. Theoret. And Comp.

67. Helium-like impurities in semiconductor quantum-dots, J. Phys.: Condensed Matter 16, 1679, 2004, R.K. Pandey, M.K. Harbola and V.A. Singh.

68. To scale or not to scale: self-capacitance, Hubbard U and quantum dot size? Indian J. Phys. PT-A, 78A, 61, 2004, V.A. Singh, R.K. Pandey and M.K. Harbola.

69. Symmetry breaking and structural distortions in charge XH_4 X = C, Si, Ge, Sn and Pb molecules, Phys. Rev. A69, 033201, 2004, D. Balamurugan, M.K. Harbola and R. Prasad.

70. Exchange-correlation potentials in ground and excited-state Kohn-Sham theory, Phys. Rev. A69, 042512, 2004, M.K. Harbola.

71. Gain without population inversion in V-type system driven by a frequency modulated field, Phys. Rev. A65, 033417-033428, 2003, H. Wanare.

72. Driven diffusive system with nonlocal perturbation, Journal of Physics A: Math. Gen. 37, 51, 2004, Sutapa Mukherjee.

73. Influence of surface states on the photoluminescence from Silicon nanostructures, J. Appl. Phys. 93, 1753, 2003, Md. N. Islam, Satyendra Kumar.

74. Application of spectroscopic Ellipsometry to probe the environmental and photo-oxidative degradation of poly p-phenylenevinylene PPV, Synthetic Metals, 139, 751, 2003, Satyendra Kumar, A.K. Biswas, V.K. Shukla, A. Awasthi, R.S. Anand, and J. Narain.

75. Optical characterization of polysilane thin films, Synthetic Metals, 139, 835, 2003, A. Sharma, Deepak, Satyendra Kumar, M. Katiyar, A. K. Saxena, A. Ranjan and R. K.Tiwari.

76. Degradation in a Methyl-phenyl Co-Polymeric Polysilane for LED Applications, Mat. Res. Soc. Symp. Proc. 769, 2003, Asha Sharma, Deepak and Monica Katiyar, Satyendra Kumar, V. Chandrasekhar, A. K. Saxena, A. Ranjan and R. K. Tiwari.

77. Anodization time dependent photoluminescence intensity of porous silicon, Mat. Res. Soc. Symp. Proc. 797 w5.20.1 , 2004, Md. N. Islam and Satyendra Kumar.

78. Stress on Porous Silicon Layers attached to Silicon Substrtaes, in Physics of Semiconductor Devices IWPSD-2003 Eds K.N. Bhat and A. DasGupta, Narosa New Delhi, p 289-291, 2004, M.N. Islam and Satyendra Kumar.

79. Effect of Porosity on Photoluminescence Intensity from Porous Silicon Layers, M.N. Islam and Satyendra Kumar, in Physics of Semiconductor Devices IWPSD-2003 Eds, Narosa New Delhi, p 950-952, 2004, K.N. Bhat and A. DasGupta.

80. Coulomb gap in one-dimensional disordered electronic systems, D. Sen, Phys. Rev. B 69, 132416, 2004, A. Dutta, L. Fritz.

81. Enhancement of ferromagnetism and metallicity in Ru-doped layered manganite system $La_{1.2}Ca_{1.8}Mn_{2-x}Ru_xO_7$ x = 0, 0.1, 0.5, 1.0, Journal of Applied Physics, 93, 8331, 2003, N. Sudhakar, K.P. Rajeev and A.K. Nigam.

82. Single photon signals of warped quantum gravity at a high energy e+e- collider, , Journal of High Energy Physics, 310, 20, 2003, Santosh Kumar Rai, Sreerup Raychaudhuri.

83. Bhabha Scattering with Radiated Gravitons at a Linear Collider, Physical Review D 68, 95005, 2003, Sukanto Dutta, Partha Konar, Biswarup Mukhopadhyaya and Sreerup Raychaudhuri.

84. Working group report: Beyond the Standard Model, Journal of Physics, 60, 395, 2003, Biswarup Mukhopadhyaya and Sreerup Raychaudhuri, Pramana.

85. Influence of hydrogen plasma treatment on boron implanted junctions in silicon, J. Vac. Sci. Technol. B 21, 781, 2003, Sanjay Rangan, Mark Horn, S. Ashok and Y. N. Mohapatra.

86. Spectroscopic Photovoltage Characterization of PPV Thin Films Suitable for PLED Applications, Mat. Res. Soc. Proc. Vol. 771, p L7.4.1., 2003, G.S.Samal, A.K.Biswas and Y.N.Mohapatra.

87. Temperature Dependence of Photoluminescence Spectra of PPV and CN-PPV Thin Films, Proceedings 2^{nd} International conference on materials for advanced technologies & IUMRS-International conference in Asia 2003 December 7-12, Singapore, G.S.Samal, A.K.Biswas, Y.N.Mohapatra.

88. Laser Induced degradation Studied of PPV and CN-PPV Thin Films using Photoluminescence, Proceedings International conference on materials for advanced technologies & IUMRS-International conference in Asia 2003 December 7-12, Singapore, D. Ghosh, G.S.Samal, A.K.Biswas, Y.N.Mohapatra.

89. Internal Electric Field and Contact Potential in Polymer Light Emitting diode structure studied by Electroabsorption Spectroscopy, Proceedings Twelfth International Workshop on The Physics of Semiconductor Devices, Indian Institute

of technology Madars, Chennai, India. December 16-20, 2003, G.S.Samal, Subhadip Mitra, Rahul Dubey, and Y.N.Mohapatra.

90. DLTS studies of localized states in organic – inorganic semiconductor heterostructures, Proceedings Twelfth International Workshop on The Physics of Semiconductor Devices, Indian Institute of technology Madars, Chennai, India. December 16-20, 2003, Samarendra P. Singh, Y. N. Mohapatra, Q. Mohammad, and S. S. Manoharan. Awarded the Best Poster Prize at the Conference.

91. Metastability and Non-Debye Relaxation Phenomena due to defect clusters and disorder in semiconductors, Proceedings of ICCES 2003, Advances in Computational and Experimental Engineering and Sciences, 2003, Y.N. Mohapatra, Samarendra P. Singh, P.K. Giri and Vineet Rao.

92. Anolamous density of states in a metallic film in proximity with a superconductor, Phys. Rev. B 69, 10514 , 2004, Anjan K. Gupta, L. Cretinon, N. Moussay, B. Pannetier and H. Courtois.

93. STM spectroscopy of the local density of states in hybrid normal metal-superconductor bilayers, Physica C 404, 103, 2004, L. Cretion, Anjan Gupta, B. Pannetier and H. Courtois. Proc. Third European Conf on Vortex Matter in Superconductors at Extreme Scales and Conditions – Edited by V.V. Moshchalkov, E.H. Brandt and A.S. Alexandrov.

94. A controlled process to synthesize nanocrystaline zinc ferrite of desired crystallite size, Powder Technology, 132, 131, 2003, A. Kundu, S. Anand and H.C. Verma.

95. Mossbauer and positron annihilation studies in plastically deformed $Fe_{72-x}Al_{28}ti_x$ x=0,2,9 alloys, J. Mag. Magn. Mater., 263, 307, 2003, B. Pandey, P.M.G. Nambissan, S. Suwas and H.C. Verma.

96. Systematics of Mossbauer absorption areas in ordinary chondrites and applications to a newly fallen meteorite in Jodhpur, India, Meteoritics and Planetary Science, 38, 963-967, 2003, H.C. Verma, Kavi Jee and R.P. Tripathi.

97. Magnetic properties of partially inverted zinc ferrite synthesized using a new coprecipitation technique using urea, Phys. Letters 311, 410 , 2003, A. Kundu and H.C. Verma.

98. Positron lifetime spectroscopic studies of nanocrystalline $ZnFe_2O_4$, P.M.G. Nambissan, J. Appl. Phys. 93, 6320 , 2003, C. Upadhyay and H.C. Verma.

99. Mossbauer studies of Fe-Cu alloys prepared by electrodeposition, J. Magn. Magn. Mater., 270, 186-193 , 2004, M.K. Roy and H.C. Verma.

100. Identification of positron trapping sites in nanocrystalline $ZnFe_2O_4$ by coincidence Doppler broadening measurements, Mater. Sci. Forum, 445-446, 162-164, 2004, P.M.G. Nambissan, C. Upadhyay and H.C. Verma.

101. Perpendicular-to-plane magnetoresistance in $La_{0.7}Ca_{0.3}MnO_3/LaNiO_3$ superlattices: The effects of interfacial disorder and spin diffusion on charge transport, Mod. Phys. Lett. B 17, 1517-1526 , 2003, P. Padhan and R.C. Budhani.

102. Miniature Hall sensor based ac susceptometer for measurements of vortex and superfluid dynamics in superconducting films, Rev. Sci. Instru. 751: 141-145, 2004, K. Senapati, S. Chakrabarty S, L.K. Sahoo and R.C. Budhani.

103. Overdamped interlayer exchange coupling and disorder-dominated magnetoreistance in $La_{0.7}Ca_{0.3}MnO_3/LaNiO_3$ superlattices, Europhys. Lett. 635: 771-777, 2003, P. Padhan, R.C. Budhani and R.P.S.M. Lobo.

104. Spherical perfect lens: Solutions of Maxwell's equations for spherical geometry, Phys. Rev. B 69, Art. No. 115115, 2004, S.A. Ramakrishna and J.B. Pendry.

105. Ferromagnetism in a dilute magnetic semiconductor: Generalized RKKY interaction and spin wave excitations, Phys. Rev. B 68 23, Art. No. 235208, 2003, A. Singh, A. Datta and S.K. Das.

106. To scale or not to scale: self-capacitance, Hubbard U and quantum dot size? Indian J. Phys. PT-A, 78A1, 61-65, 2004, V.A. Singh, R.K. Pandey and M.K. Harbola.

107. Phase space description of the production of quark gluon plasma in heavy-ion collisions, Pramana – J. Physics 61, 1045, 2003, A. Jain and V. Ravishankar.

108. Production mechanism of quark-gluon plasma in heavy-ion collisions, A. Jain and V. Ravishankar, Phys. Rev. Lett. 91, Art. No. 112301, 2003,

109. Special isse: Proceedings of the Workshop on Quantum Chromodynamics QCD 2002, Pramana – J. Phys. 61, 785, 2003, P. Jain, S.D. Joglekar and V. Ravishankar.

Conferences Attended Outside IIT Kanpur

CENTRE FOR LASER TECHNOLOGY

1. Nullified time-of-flight lead-lag in synchronization of chaotic external cavity laser diodes', National Laser Symposium, Dec. 22-24, IIT – Kharagpur, S. Sivaprakasam, J.Paul and K.A.Shore.

DEPARTMENT OF AEROSPACE ENGINEERING

1. 27th Indian Social Science Congress, I.I.T. Kharagpur: presented a Contributed paper, Dec. 03-07, 2003, Ghosh Kunal.

2. Global Convention on Peace and Non-Violence, Organised by Gandhi Smriti & Darshan Samiti, New Delhi, at the invitation/hospitality of the Samiti, Jan. 31-Feb.01, 2004, Ghosh Kunal.

3. 17th Canadian Congress of Applied Mechanics, CANCAM-03, The Univ. of Calgary, Alberta, Canada presented a contributed paper, June 1-6, 2003, Ghosh Kunal,

4. SEM Conference Charlotte, Baorth Carolina, USA, presented two contributed papers, June 2-4, 2003, Iyengar N.G.R.

5. IMPLAST 2003, 8th International Symposium on Plasticity and Impact, Mechanics, Vigyan Bhawan, presented an invited Paper and also Chaired a session, March 16-19, 2003, Iyengar N.G.R.

6. ISAMPE National Conference on Composites and National Seminar on Aerospace Structures, Bangalore. Presented a technical Paper and Chaired a session, Sept.5-6, 2003, N.G.R.Iyengar

7. 11-th AIAA/ASME/AHS Adaptive Structures Conference, Norfolk, Virginia, USA, April 2003, C.Venkatesan.

8. Invited talk: 15-th Annual General Meeting of Materials Research Society of India, BHU, Feb. 2004, C.Venkatesan.

9. ASME/JSME Joints Fluids Engg., Conference, Honolulu, Hawaii, USA, July 2003, R.K. Sullerey.

10. 30th National Conf. On Fluid Mechanics & Fluid Power (FMFP), National Institute of Technology Suratkal, India Dec., 11-13 2003, R.K. Sullerey.

11. 6th Annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August, 11-13, 2003, S.Mittal.

12. International Indian-Russian Workshop, High Performance Computing in Science and Engineering, HPC SE 2003, Moscow, Russia, 2003, S.Mittal.

13. Seventh U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, S.Mittal.

14. Academic Summit, Microsoft Research, Bangalore, India, 2004, S.Mittal.

15. High Performance Computing, Cornell Theory Center, Cornell, USA. Jan.28-29, 2004, S.Mittal.

16. 18th National Conference on IC Engines & Combustion, Chairing a session & Contributing two papers, December, 17-19, 2003, D. P. Mishra.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Attended the sixth national symposium in Chemistry at IIT Kanpur Feb 6-8, 2004, R. Gurunath.

2. Attended the symposium on "Molecules, Machines and Networks" organized by the National Centre for Biological Sciences (NCBS), Bangalore from Jan 2004 5th to 9th, R. Sankararamakrishnan.

3. Attended short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash.

4. National Symposium on Expanding Horizons, New Delhi, organized by Delhi University in Oct. 2003, B. Prakash.

5. CSIR Expert committee meeting scheduled on 14th & 15th May for interviewing SRFs/RAs invited by Rajesh Luthra, Head, H.R.D. Group,Council of Scientific & Industrial Research, CSIR Complex, Library Avenue, Pusa, New Delhi 110 012, B. Prakash.

6. Poster presented at the Annual meeting of the International Senior Research, Fellows organized by the Wellcome Trust at NCBS. Date: March 25-28, 2004, K. Subramaniam.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Overview of membrane Technology for Effluent Treatment, Indo-French Seminar of Emerging Technologies for water and waste water management, 9-12 February, 2004 at India Habitat Centre, New Delhi, P.K. Bhattacharya.

2. Reuse of FDM Components by Solution-Casting Technique, International Symposium on Rapid-Prototyping & Tooling, HAL, Bangalore, 6-7 June, 2003, K. Siva Prasad, S.V. Satyanarayana, P.K. Bhattacharya and S.G. Dhande.

3. Workshop on Biodiesel Fuels, SuTRA, IISc Banglore (funded by DST, Government of India), August 30-31, 2003, Presented contributed paper, S. Garg.

4. 'Process Safety and Industrial Explosion Protection', Nurnberg, Germany, March 16 – 18, 2004. Presented two invited papers, J.P. Gupta.

5. Chaired one session: IIChE Annual Meeting (Chemcon 2003), RRL Bhubaneswar, Dec 2003, S.K. Gupta.

6. National Conference on Carbon 2003, Nov. 20-21, 2003, DMSRDE, Kanpur, D. Kunzru.

7. CHEMCON-2003, Bhubaneswar, Dec. 19-22, 2003, Chair of one session, contributed paper, D. Kunzru.

8. 53rd Canadian Chemical Engineering and PRES'03 Conference, Hamilton, Ontario, Canada, October 26-29, 2003. Presented paper entitled Process Intensification in a Trickle-bed Reactor, V. Verma, D.P. Rao and M. S. Rao.

9. CHEMCON-2003, Bhubaneshwar, Dec. 19-22, 2003, presented paper entitled Effect of Ga, Al and Cr on Si-supported V-MgO Catalysis during oxidative dehydrogenation of propane by B. Ravi Kumar and M. S. Rao.

10. Self-Organized patterning of soft materials, National Seminar on Science and Technology of Nanomaterials, Central Glass and Ceramic Research Institute, Kolkata, 2003, A. Sharma.

11. Self-organization in thin films of soft materials, Symposium on Some Novel Trends in Chemistry Teaching and Inorganic Chemistry Research, University of Rajasthan, Jaipur, 2003, A. Sharma.

12. Self-organized patterns in confined films, JSPS-DST Symposium on Surfaces and Interfaces for Nanostructured Materials, University of Tokyo, 2003, A. Sharma.

13. Self-organized patterns in thin soft films, Symposium on Surface Phenomena and Free Surface Flows, Tel Aviv, Israel, 2003, A. Sharma.

14. Self-organized patterns in thin soft films, International Conference on Nano Science and Technology, ICONSAT 2003, Kolkata, 2003, A. Sharma.

15. Adhesion and Debonding of elastic films: Patterns, forces and metastability, India-Japan Workshop on Surfaces and Interfaces, Saha Institute, Kolkata, 2003, A. Sharma.

16. Self-organization in Soft Nanosystems, 91st Indian Science Congress, Chandigarh, 2004, A. Sharma.

17. Indo-US Workshop on Futuristic Manufacturing, IIT Kanpur, 2004, A. Sharma.

18. Indo-US Workshop on Nanoscale Materials, Puri, April 2004, A. Sharma.

DEPARTMENT OF CHEMISTRY

1. Delivered an invited lecture at the meeting `Physics at the interface of Chemistry and Biology', held at S N Bose Centre, Kolkata, on December 08, 2003, A. Chandra.

DEPARTMENT OF CIVIL ENGINEERING

1. The 2003 American Society of Mechanical Engineers Pressure Vessels and Piping Conference, Attended, Cleveland, Ohio, USA, July 2003, Chakrabarti, S.K

2. The 19th International Conference on Solid Waste Technology and Management, Philadelphia, U.S.A., Session Chairman and paper presentation by Chandra, S.

3. Estimation of parameters in groundwater using Artificial Neural Networks, Proceedings, International Conference on: Water and Environment, Planning, Development, Utilization, Conservation and Management, Bhopal, December 15-18, 2003, Singh, R.M., Datta B., and Jain, A.

4. First Indian International Conference on Artificial Intelligence: IICAI03, December 18-20, 2003, Hyderabad, India, Presented Two Contributed Papers, Jain, A.

5. One Day Workshop on Bridge Scour, River Training, and Protection Works (WOBSRIT-PROW-03), Organized by IIT Roorkee, October 11, 2003, New Delhi, India, Jain, A.

6. River Basin Management 2003: Second Intl Conf. on River Basin Management, 28-30 April 2003, Las Palmas, Gran Canaria, Spain, Presented Two Contributed Papers, Jain, A.

7. Workshop on Seismic Risk Management for Countries of the Asia Pacific Region, Bangkok, December 2003, World Seismic Safety Initiative, Jain, S.K.

8. Ad Hoc Experts' Group Meeting on Earthquake Safety in Schools, Organization for Economic Cooperation and Development (OECD), Paris (France), February 2004, Jain, S.K.

9. Indo German Workshop on Earthquake Engineering, IIT Madras, 15 – 16 February 2004, Jain, S.K and Murty C.V.R.

10. Map India – 2004, Taj Palace New Delhi, 28-30 January 2004, paper presentation by Lohani B.

11. National Workshop on Earthquake Risk Reduction – The Gujarat Experience, 31 January 2004, Ahmedabad, Murty, C.V.R.

12. Geotechnical Engg. For Infrastructure Development, IGC-2003, Roorkee, Dec.18-20, 2003, Patra N.R.

13. 3rd Latin American Congress of Sedimentology, June 8 - 11, 2003, Belém - Pará – Brazil, Sinha Rajiv.

14. XVI INQUA Congress, July 23-30, 2003, Reno, USA, Sinha Rajiv.

15. Panelist for Group Discussion Indo-French Seminar on Emerging Trends in Water and Wastewater Management, New Delhi, 12 Feb., 2004, Raymahashay, B.C.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. High Performance Computing in Science and Engg, Moscow, Russia, June 2003, Contributed Paper and Session Chair, S.K Aggarwal.

2. Sun HPC Consortium Forum on High Performance Computing, Heidelberg, Germany, June 2003, S.K Aggarwal.

3. International Supercomputing Conference, Heidelberg, Germany, June 2003, S.K Aggarwal.

4. Microsoft Faculty Research Summit, Seattle, USA, July 2003, S.K Aggarwal.

5. Intel Asia Academic Forum, Shenzhen, China, Oct 2003, S.K Aggarwal.

6. Software Engineering 2004, Innsbruck, Austria, Feb 2004, Contributed Paper and Session Chair, S.K Aggarwal.

7. HP Consortium for Advanced Scientific and Technical Computing, Brisbane, Australia, March 2004, S.K Aggarwal.

8. Foundations of Software Technology and Theoretical Computer Science, IIT Bombay, December 2003, Attended, S.Biswas.

9. CIT 2003, Bhubaneswar, Dec 2003, Contributed papers, R.K Ghosh.

10. International Workshop on Mobile Commerce, Bhubaneswar, Dec 2003, Contributed presentations, R.K Ghosh.

11. IWDC 2003, Kolkata, Dec 2003, Contributed paper, R.K Ghosh.

12. IX Summit on Machine Translation, New Orleans, Sep 2003, Attended, Ajai Jain.

13. Indo-German Workshop on Language Technology, Chennai, Feb 2003, Attended, Ajai Jain.

14. ArchCon Satyam Annual Conference on Architecture, June 2003, Conference Chair, T.V Prabhakar.

15. Asian'03, Bombay, Dec 2003, Attended, Anil Seth.

16. FSTTCS 2003, IIT Bombay, Dec 2003, Attended, Anil Seth.

17. TECS Week, TRDDC Pune, Jan 2004, Attended, Anil Seth.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. National Power Electronics Conference, NPEC, Mumbay, October, 2003. Chaired a Session, P. Sensarma.

2. Signal Processing Approach to Brain and Consciousness (invited paper), International Conf. On Intelligent Signal Proc. And Robotics, Indian Institute of Information Technology, Allahabad, Feb. 2023, 2004, G.C. Ray and Gautam Das.

3. International Workshop on Physics of Semiconductor Devices 2003, IIT Madras, Chennai, Dec. 16-20, 2003, R.S. Anand.

4. Int. Conference on Electric Supply Industry in Transition: Issues and Prospects for Asia, Asian Institute of Technology, Thailand, 14-16 January 2004, S.C. Srivastava.

5. 'POWERFEST 2003' conference at NIT Kurukshetra during 28-29 November 2003, S.C. Srivastava.

6. International Conference on Advanced Pattern Recognition, ICAPR-03, ISI, Calcutta, 10-13, December, Contributed one Paper, Laxmidhar Behera.

7. Indian International Conference on Artificial Intelligence, IICAI-03, Hyderabad, 18-20, December, Contributed one Paper, Laxmidhar Behera.

8. International Conference on Information Technology, CIT-03, Bhubaneswar, 21-24, December, Contributed one paper and delivered an invited talk, Laxmidhar Behera.

9. International Conference on Intelligent Sensors and Information Processing, ICISIP-04, Chennai, 4-7 January, Contributed two papers and Chaired one session, Laxmidhar Behera.

10. International Conference on Intelligent Signal Processing and Robotics, ISPR-04, IIIT, Allahabad, 20-23 February, Invited Lecture, Laxmidhar Behera.

11. Attended IEEE Asia-Pacific Region-10 Conference TENCON, Bangalore, October 2003. He chaired a session in the conference, A. Ghosh.
12. Attended 27th National Systems Conference (NSC-2003), IIT Kharagpur, December 2003. He chaired two sessions in the conference, A. Ghosh.

13. Presented contributed paper at NCC'04, IISc Bangalore, K. Vasudevan.

14. Attended National Power Electronics Conference (NPEC), IIT Bombay 17-18 Oct. 2003, S.P. Das.

15. Chaired the technical session on Resonant Converters in National Power Electronics Conference (NPEC 2003), Oct. 16-17 2003, IIT Bombay, S.P. Das.

16. Presented a contributed paper A Novel Soft-Switching Quasi-Resonant Inverter for Variable Power Factor Load, S.P. Das.

17. Dissemination workshop on GHG mitigation, May 9, 2003, New Delhi, Invited in Discussion, S.N. Singh.

18. National Workshop on Custom Power Devices, 13th June 2003, Invited in Discussion, S.N. Singh.

19. International Conference on Intelligent system Application in Power Systems (ISAP03) Greece, 31st August- 3rd September 2003, Contributed paper, S.N. Singh.

20. National Conference on Modern aspect of FACTS and its Applications at Coimbatore, August 29-30, 2003, Keynote speaker, S.N. Singh.

21. The Second International Symposium on High Dielectric Constant Materials: Materials Science, Processing, Manufacturing, and Reliability Issues', Orlando, Florida, 12-16 Oct 2003, Organising Chair, SN Singh.

22. The Twelfth International Workshop on the Physics of Semiconductor Devices, Chennai, 16-20 Dec 2003, Attended, S. Iyer and RS Anand.

23. Second International Conference on Optical Communications & Networks, (ICOCN 2003) Bangalore, India, October 20-22, 2003, Attended, Joseph John

24. The Workshop on Modelling of Power Devices with PSPICE, CPRI, Bangalore, June 2003, Attended, Nandini Gupta.

25. Presented papers in a conference on Optical Information Systems, organized by SPIE in San Diego, CA, USA in Aug. 2003, Chaired one session in this conference, Anjan K. Ghosh.

26. Presented invited paper in National Symposium on Engineering Optics in Meerut, Apr 2003, Chaired one session in this conference, Anjan K. Ghosh.

27. The Tenth National Conference on Communications, Jan 30- Feb. 2, 2004, IISc, Bangalore, Chaired a session, A.K. Chaturvedi.

28. Presented contributed paper in Engineering and Technology Conference, EnTech 2003, held in Kuching, Malaysia, July 31-Aug 2, 2003, S. Qureshi.

29. IEEE Power Engineering Society General Meeting, Toronto, Ontario, Canada, July 13-17, 2003 and contributed paper Novel Software Architecture for Power Distribution Automation, Attended, R.P. Gupta.

30. Workshop on Demand Side Management and Distribution Automation, Asian Institute of Technology, Bangkok, Thailand, August 20-22, 2003, Attended, R.P. Gupta.

31. The International Conference on Systemics, Cybernetics and Informatics (ICSCI-2004), Pentagram Research Center Pvt. Ltd., Hyderabad, India, February 12-15,

2004. and Chaired a Tech. Session and Contributed Paper:Substation Automation Communication Protocol, Attended, R.P. Gupta.

32. Workshop on Distribution System Upgrades and Modernization, Center for Management Education, Administrative Staff College of India (ASCI), Hyderabad, India, February 16-20, 2004, Attended, R.P. Gupta.

33. National Workshop on Communication Protocol for Power System Automation, Central Power Research Institute, Bangalore, India, January 22-23, 2004. Invited Paper: A Comparative Study of IEC61850 Communication Protocol with DNP3.0 and UCA 2.0, Attended, R.P. Gupta.

34. The Seminar on Power System Data Repository and Load Research, Central Power Research Institute, Bangalore, India, November 20-21, 2003 and Invited Papers: Development of Power Distribution Automation System Web Based Monitoring of Power Distribution System, Attended, R.P. Gupta.

35. Workshop on Development of Strategy for a Model 33 kV Substation at Institute of Engineering and Technology, Lucknow, India, September 5, 2003. Invited Lecture: IT Solution in Power Distribution Sector, Attended, R.P. Gupta.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. English as Second Language. Session Chairperson. Teaching English through Technology, 35 Annual Conference of ELTAI and British Council, Hall of Guinness, Anna University, Chennai, 4-6 P.M., February 6, 2004, G. Neelakantan.

2. Teaching English to Disadvantaged Learners at IIT Kanpur 35 Annual Conference of ELTAI, Anna University, Chennai, 9-10 A.M., February 7, 2004, G. Neelakantan.

3. Re-Visioning Science, Re-Thinking Positivism: The Politics of Gender in Indian English Science Fiction. International Conference on Women & Science, Organised by NISTADS, New Delhi, March 8- 10, 2004, Suchitra Mathur.

4. Caught between the Goddess and the Cyborg: Third World Women and the Politics of Science in Indian English Science Fiction, presented at the Utopia & Dystopia Seminar, Organized by the Department of English, Jadavpur University, March 24-27, 2004, Suchitra Mathur.

5. Perspectives on Health, Illness and Well being: An Agenda for Future Research, National Seminar on Dimensions of Health, Centre for Behavioural and Cognitive Sciences, Allahabad University, Allahabad, April 10- 12, 2003, A. K. Sharma.

6. Health and Illness Among Tribes: A Quick Survey of Two Blocks of District Raigarh, Regional Conference of Indian Association for the Study of Population (IASP), Sponsored by United Nations Population Fund, Population Research Centre, Department of Economics, Lucknow University, November 13- 14, 2003, A. K. Sharma and Rita Singh.

7. Indian Systems of Medicine: Commodification of Health and Marginalization of Tradition, National conference on Traditional Knowledge Systems of India, January 9-11, 2004, Department of Humanities and Social Sciences, IIT Kharagpur, A. K. Sharma.

8. Chaired Sessions on Indian Systems of Medicine and Pharmacology-4, and Philosophy of Traditional Knowledge Systems-1, National Conference on Traditional Knowledge Systems of India, January 9-11, 2004, Department of Humanities and Social Sciences, IIT Kharagpur, A. K. Sharma.

9. Chaired Session on Socio-Political Dimensions and Indian Youth, National Symposium on Construction and Reconstruction of Indian Youth, Sri Jai Narain Snatkottar Mahavidyalaya, Lucknow, January 27, 2004, A. K. Sharma.

10. Triple Burden on Women in Science at the Reputed Institutes of Higher Education in Science and Technology, National Seminar on Women in Science: Is the Glass Ceiling Disappearing? March 8- 10, 2004, NISTDS, New Delhi, Namrata Gupta and A. K. Sharma.

11. Studying Globalization in Sociology: Some Issues, National Conference on Social Change in Global India, Ethnographic and Folk Culture Society, NEDA Complex Lucknow, March 12- 14, 2004, A. K.Sharma.

12. Population and Development: Participatory Perspective, National Seminar on Socio-economic Development and Resource Dynamics in India: Implications for Human Resource Development, Department of Social Work, Lucknow University, March 19- 20, 2004, A. K. Sharma.

13. Participated in discussion on Rapid Evaluation of ISRHHD and SAY Schemes-Approval of Tabulation Plan, Ministry of Rural Development, Department of Rural Development, Krishi Bhavan, New Delhi, November 6, 2003, A. K. Sharma

14. Participant, National Conference on, Social Change in Global India, Organized by Ethnographic and Folk Culture Society, NEDA Complex, Lucknow, March 12-14, 2004, Mummun Jha.

15. Sharing Fixed Costs in Franchise Contracts, 40th Annual Meeting of the Indian Econometric Society, Institute of Social and Economic Change, Bangalore, February 13-15, 2004, T.V.S. Ramamohan Rao.

16. Some Aspects of Stochastic Economics, a la Tintner Invited Lecture at the 40th Indian Econometric Society Meetings, Institute of Social and Economic Change, Bangalore, February 13-15, 2004, T.V.S. Ramamohan Rao.

17. Financial Constraints, Inventory Investment, and Fixed Capital, 6th Money and Finance Conference, Indira Gandhi Institute of Development Studies, Mumbai, March 25-27, T.V.S. Ramamohan Rao.

18. Quest for Space: A Study of Two Novels. Colloquium on Language and Space, CIIL Mysore, March 29, 2004, B. N. Patnaik.

19. Computational Linguistics for Indian Languages Symposium on Indian Morphology, Phonology and Language Engineering, IIT Kharagpur, March 18 – 20, 2004, B. N. Patnaik.

20. On the Choice of an Appropriate Framework for Computational Linguistic Research on Indian Languages. SCALLA 2004, Working Conference Kathmandu, January 5 – 7, 2004, B. N. Patnaik.

21. Dissenter as Communicator. Special Lecture at International Seminar on Applied Linguistics in a Global World, Delhi University, December 12 – 14, 2003, B. N. Patnaik.

22. Oriya as Typologically Disturbed Language and Some Related Matters, Endowment Lecture at DLA Conference, June 19 – 21, 2003, B. N. Patnaik.

23. The Common Conceptualization of Mental Health: A Qualitative Investigation of Categories of Meaning, National Seminar on Social Dimensions of Health, Organized by UGC Centre of Behavioural and Cognitive Sciences, University of Allahabad, Allahabad , April 10-12, 2003, Shikha Dixit.

24. Changes in Cultural Beliefs Regarding Health and Illness among Bondos: A Qualitative Study, National Conference on Social Change in Global India, Organized by Ethonographic and Folk Culture Society, NEDA Complex, Lucknow, March 12-14, 2004, Mamta Misra and Shikha Dixit.
25. Environment Protection: The Role of Liability System in India, Berlin Conference 2003 on Governance for Industrial Transformation, Berlin, Germany, December 5-6, 2003, P. M. Prasad.

26. Plenary Talk Delivered and Chaired a Technical Session at the Vth Andhra Pradesh Sociological Conference held at the University of Osmania, Hyderabad, August7-8, 2003, B. K. Pattnaik.

27. Plenary talk Delivered and Chaired a Technical Session at the 24th All India ISSA Conference, Organised by the Department of Sociology, H.S.Gour University, Sagar, January 23-25, 2004, B. K. Pattnaik.

28. Language and Democracy in India: A Linguistics Point of View, All India Social Science Congress, IIT Kharagpur, December 3-7, 2003, B. N. Patnaik.

29. English in the Indian Context, Chief Guest's address at the Workshop on the Effective Use of Materials, AMU, Aligarh, December 14 – 16, 2003, B. N. Patnaik.

30. Alienation as Comedy in Upamanyu Chaterjee's English, August, Sixth International Conference: Rethinking Modernity, the Department of English, University of Rajasthan, Jaipur in collaboration with the Forum on Contemporary Theory, M. S. University, Baroda and Louisiana State University, Shreveport, U. S. A., 14-17 December, 2003, T. Ravichandran.

31. Participant, the 21st Annual Convention of SIS and Conference on New Challenges in Information Management and e-learning in the age of Globalisation—Issues and Opportunities organised by the Central Library, IIT Roorkee and Society for Information Science, 9-11 April, 2003, T. Ravichandran.

32. Project Planning and Project appraisal vis-a'-vis Our Approaches Towards Sustainable Development, 35th Annual Conference of the Orissa Economic Association, held at SVM College, Jagatisingpur, Orissa, February 15-16, 2003, Rath B.

33. Growth Determinants of Orissa and Their implications for Future Development of the State, 35th Annual Conference of the Orissa Economic Association, held at SVM College, Jagatsingpur, Orissa, February 15-16, 2003, Rath B. & P. K. Jena.

34. Post-Evaluation of Environmental Abatement Measures of Kanpur Nagar Nigam (KNN) with Respect to Solid Waste Management, National Conference on Environmental Pollution Prevention and Control held at University Polytechnic, AMU, Aligarh, UP, June 5, 2003, Rath B. & Agarwal S.

35. Trade-off Between Delta Area Development vis-à-vis Watershed Area Development of a River for Sustainable Development: A Case Study fothe Mahanadi River Basin, Orissa, India". 13th Stockholm Water Symposium, Stockholm, Sweden, August 11-14, 2003, Rath B.

36. Scope of Integrated Resource Management for Power Generation: with Reference to Generation of Power form Municipal Solid Waste, Workshop on Power Reforms: Technological and Financial, IIT Kanpur, September 4-5, 2003, Rath B.

37. Management of Water Resources Projects in India: Pitfalls, Problems and Prospects. Workshop on Overcoming Water Scarcity and Quality Constraints, Organized by Eco Friends at the St Mary Convent School, Kanpur, September 26-27, 2003, Rath B.

38. Environmental Impact of Outsourcing of Service Sector Activity in PSUs & Autonomous Institutions, 45th Annual Conference of the Indian Society of Labour Economics, Jadavpur University, Kolkata, Dec. 15-17, 2003, Rath B.

39. Revitalisation/Rennovation of Common Property Resource (CPR) Potentials as an Alternative Means to Improve the Economy of Orissa, National Workshop on Reviving Orissa Economy: Opportunities and Areas of Action, Utkal University, Bhubaneswar, January 17-18, 2004, Rath B. & N. C. Sahu.

40. Export and Growth Causality: An Indian Experience in the Post Liberalisation Period, 36th Annual Conference of the Orissa Economic Association, held at Bhubaneswar, Orissa, February 21-22, 2004, Rath B. & N. C. Sahu.

41. Role of Youth in Water Purification and Water Conservation, Workshop organized by the Eco Friends, Kanpur on the eve of the World Water Day, March 22, 220, 2004, Rath B.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. APORS 2003: International Conference held on December 8-11, 2003, New Delhi, India, Swami Sanjeev.

2. Sixth International Convention on Quality Circles, Lucknow, 16-19th Dec. 2003, A.K. Mittal.

3. APORS 2003 Dec. 8-10, 2003, New Delhi, A.K. Mittal.

4. BHEL Inter Unit Quality Convention Haridwar July 19, 2003, A.K. Mittal.

5. 14th Kanpur Convention on Quality Circles, KCCQC 2003, Agra 12-13 September 2003, A.K. Mittal.

6. Elitex 2003 Exhibition 28 April 2003 New Delhi (Patent Technology Mapping) Demonstration, A.K. Mittal.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Annual Meeting of the Electron Microscopy Society of India, Shimla, April 16-18, 2003, R. Balasubramaniam.

2. International Conference on Advances in Surface Treatments 2003, International Advanced Research, Centre for Powder Metallurgy & New Materials, Hyderabad, November 3-6, 2003, R. Balasubramaniam.

3. General Motors Research and Development Conference, Bangalore, November 9, 2003, R. Balasubramaniam.

4. CORCON 2003 International Conference on Corrosion, Mumbai, December 1–4, 2003, R. Balasubramaniam.

5. Workshop on History of Indian Science and Technology, New Delhi, December 11-15, 2003, R. Balasubramaniam.

6. Annual Meeting of the Materials Research, Society of India, Varanasi, February 9-11, 2004, R. Balasubramaniam.

7. 17th National Convention of Metallurgical and Materials Engineers and National Seminar on Emerging Materials for Wear Applications, Bhopal, India, September 11-12, 2003, Bikramjit Basu.

8. 8^{th} International Conference and Exhibition of European Ceramic Society held in Istanbul, Turkey, June 29, 2003, Bikramjit Basu.

9. Materials Research Society Spring Meeting, April 21-25, 2003, Monica Katiyar.

10. International conference on 'Advances in Powder Metallurgy and Particulate Materials' Las Vegas, U.S.A. June 8-12, 2003, R. K. Dube.

11. Conference on 'Electron Microscopy and Allied Fields', EMSI, Central Potato Research Institute, Shimla, 2003, Gouthama,

12. Materials Research Society Spring Meeting , 21-25 April 2003, Deepak Gupta.

13. NMD-ATM, 2003 at Calcutta November14-16, 2003, Dipak Mazumdar.

14. Fluent CFD conference at Pune, November 17-19, 2004, Dipak Mazumdar.

15. Indo-US workshop on 'Future trends in intelligent processing of Metallic materials', Goa, India, Dipak Mazumdar.

17. International Symposium on 'Transformation and Deformation Mechanisms in Advanced High Strength Steels', Canadian Institute of Mining and petroleum, Vancouver, Canada, August 2003, R. K. Ray.

18. 3rd International Conference on Science, Technology, and Application of Sintering (SINTERING 2003), State College, PA, USA,September, 14-17, 2003.

19. International Conference on Advances in Materials & Processes for Industrial Applications, September 25-17, 2003, Pune, Anish Upadhyaya.

20. 57th Annual Technical Meeting of The Indian Institute of Metals NMD-ATM November 14-17, 2003, Kolkata, Anish Upadhyaya.

21. Indo-US Workshop on Futuristic Manufacturing, March 2004, Anish Upadhyaya.

DEPARTMENT OF MATHEMATICS

1. Synthesizing the Classical and Inverse Methods in Linear Calibration, at the 54th session of International Statistical Institute at Berlin, Germany in August 2003, Shalabh.

2. Consistent Estimation of Coefficients in Measurement Error Models with Replicated Observations at the Seminar on Multivariate Analysis and its Applications, Calcutta University, Calcutta in March 2004. Invited talk, Shalabh.

3. Annual Conference of Bharat Ganita Parishad Nov. 15, 16, 2003, Chief Guest and invited lecture 'On Multipliers of vector valued function spaces'. (Lucknow University), Tewari, U.B.

4. Joint India – AMS meeting, Dec. 17-20, 2003, Invited lectures on 'Isometric multipliers of L^p - spaces' at IISc Bangalore , Tewari, U.B.

5. 11th Ramanujan Sumposium on Recent trends in operator theory and Banach Algebras March 3-5, 2004. Key note address and also invited lecture on 'Vector-Valued Multipliers and Operator Valued measures' organised at The Ramanujan Institute of Mathematics, University of Madras, Tewari, U.B.

6. Mathematical methods and applications, IIT, Chennai, Dec, 22, 2003. Presented a paper and chaired a session, Shunmugaraj.

7. Delivered an invited lecture at the International Conference on Differential Equations, Dynamical systems and applications from 19.5.2003 to 24.5.2003 Atlanta, U.S.A. Title of talk: Resonance problems for Hardy-Sobolev operator with indefinite weights, Raghavendra, V.

8. An invitation to Monotonic Analysis, Asia-Pacific Conference on Operations Research-2003 (APORS-2003), New Delhi, 8th to 11th December, Dutta, J.

9. National Workshop on Logic and Artificial Intelligence, Department of Pure Mathematics, University of Calcutta, October 13-16, 2003, Delivered invited lectures on Paraclassical Logics and Non-monotonicity, Banerjee, M.

10. CIT 2003, 6th International Conference on Information Technology, Bhubaneswar, India, December 22-25, 2003. Delivered advanced tutorial on Rough Set Theory, Banerjee, M.

11. Analysis of Hybrid Censored Competing Risks Data, International Conference on Recent Developments in Theoretical and Applied Statistics, held at the University of Tamsui, Taiwan, during December 15-16, 2003, (Invited Speaker), Kundu, D., Kannan, N., Balakrishnan, N.

12. Application of method of semidiscretization to nonlinear functional differential equation with nonlocal history condition, Paper presented in National Conference on Wavelets and its Applications, Bhubaneshwar, 7-11 Feb. 2004, S. Agarwal., Bahuguna, D.

13. Modelling the depletion of resources by population pressure augmented industrialization: Its effects on population, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Sharma, S., Shukla, J.B.

14. Modelling the survival of a biological species affected by toxicants (pollutants) emitted from external sources as well as formed by its precursors, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Sharma, S., Shukla, J.B.

15. Modelling the spread of a carrier-dependent infectious disease: Effect of migration from environmentally degraded habitat, presented at the American Mathematical Society – Mathematical Association of America, Jt. Mathematical Meeting held at Phoenix, Arizona, U.S.A. Jan. 7-10, 2004, Sinha, Prawal., Ghosh, M., Chandra, P., Shukla, J.B.

16. A thermohydrodynamic analysis of a fitted pad slider bearing with heat conduction to the pad and slider, Presented at 2004 Hawaii International Conference on Sciences, held at Honolulu, HI U.S.A., during Jan. 15-18, 2004, Sinha, Prawal., Rao, P.S., Rathish Kumar B.V.

17. Wavelets in Sparse Matrix Computation, in Orissa Mathematical Society Annual Conference, Feb 7-11, Bhubaneswar, 2004, Rathish Kumar, B.V.

18. A Wavelet Taylor Galerkin Method for Advection-Diffusion Problems, in Orissa Mathematical Society Annual Conference, Feb 7-11, Bhubaneswar, 2004, Rathish Kumar, B.V., & Manimehra.

19. On the development of parallel CGM solver for CFD computations on Anu-Cluster, presented in 14th Int. Conf. Of the Jangjeon Mathematical Society, Univ. Mysore, India, Dec. 22-24, 2003, Rathish Kumar, B.V., Kumar, B.

20. Convection in Corrugated Porous Enclosures, in Proceedings of 48th congress of ISTAM, 44-53, held at BITS, MESRA, Ranchi, India, Dec. 18-21, 2003, Rathish Kumar, B.V. & Shalini.

21. Multilayer Taylor Wavelet Galerkin method for parabolic and hyperbolic partial differential equations, presented in 48th congress of ISTAM, held at BITS, MESRA, Ranchi, India, Dec. 18-21, 2003, Rathish Kumar, B.V., & Manimehra.

22. Numerical simulation of load carrying mechanism in high speed titled pad slider bearing lubrication, presented in 14th Int. Conf. of the Jangjeon Mathematical Society, Univ. Mysore, India, Dec. 22-24, 2003. Rao, P.S., Rathish Kumar, B.V., Sinha, Prawal.

23. Effect of fluid inertia on titled pad slider bearings with heat conduction to the stationary pad, in National Conference on Fluid Flow and Control, UGC DRS Center, Bharathiar University, Coimbatore, March 28-29, 2003, Rao, P.S., Rathish Kumar, B.V., Sinha, Prawal.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Aerospace Manufacturing & Value Engineering Panel meeting at Hyderabad Manufacturing of Polymer Composite Products using Rapid Tooling, March, 2004, Prashant Kumar.

2. National Conference on Advanced Manufacturing and Robotics, CMERI, Durgapur, Jan 10-11, 2004, Presented two papers, Ashish Dutta.

3. Prediction and Analysis of the Bubble Formation in Film Boiling, INVITED TALK, FLUENT CFD Conference for India and South East Asia, Pune, India, November 18-20, 2003, G.Biswas.

4. Some Aspects of Mathematical Models of Turbulent Flows, Invited Talk at the 6th CFD Symposium (In honour of Prof. S.M. Deshpande), Bangalore, India, August 11-13, 2003,.G. Biswas.

5. Participated in the First General Motors R&D Symposium, India Science Laboratory, Bangalore, November 10,2003,.N.V.Reddy.

6. 7th Indo-Japan Seminar on Advanced Manufacturing Systems, March 15-22,2003, Tokyo, Japan, N.V.Reddy.

7. JSME workshop on Advanced Manufacturing Systems for the members of Asian Youth Forum on Advanced Manufacturing, Tokyo, February 15 - 19, 2004, Core member of the A YFAM organized by JSME, Japan, N.V.Reddy.

8. 3rd JSTP International Seminar on Precision Forging (3rd JSTP ISPF, Organized by Japan Society for Technology of Plasticity), Nagoya (JAPAN), March 14-19, 2004, N.V.Reddy.

9. Indo-USA Collaboration on Futuristic Manufacturing, N.V.Reddy.

10. Better Air Quality (BAQ) 2003 International Conference, Manila, Philippines, Dec. 17-19, 2003, B.P.Pundir.

11. Third SAE India Mobility Conference, New Delhi, Jan. 17-19, 2004. Chairman of a Technical Session, B.P.Pundir.

12. 2004 SAE World Congress, Detroit, Michigan, March 8-11, 2004, B.P.Pundir.

13. The Second Evolutionary Multi-Criterion Optimization (EMO-03) Conference, 8-11 April, 2003, Faro, Portugal. Presented a keynote lecture, chaired a session, and made three oral paper presentations, K. Deb.

14. 54th International Astronautical Congress of the International Astronautical Federation, the International Academy of Astronautics, and the International Institute of Space Law, 29 September-03 October 2003, Bremen, Germany. Presented a paper, K. Deb.

15. 17 August, 2003: Invited to present a tutorial during 'Multi-disciplinary International Scheduling Conference (MISTA)' under the theme 'Tutorials in Modern Optimization Methods' at the University of Nottingham, UK, K. Deb.

16. 17 September, 2003: Invited to present a keynote lecture lecture entitled' An Introduction to Multi-Objective Evolutionary Optimization' during EUROGEN-2003 held in Barcelona, Spain, K. Deb.

17. 26-28 October, 2003: 6th International Conference on Artificial Evolution (EA-2003). Marseille, France, K. Deb.

18. 9 December, 2003: Invited to present a keynote lecture entitled 'Challenges to Multi-Objective Evolutionary Optimization' during Congress on Evolutionary Computation (CEC- 2003) held in Canberra, Australia, K. Deb.

19. A National Consultative Workshop On Scientific Strategies For Production Of Non-Edible Vegetable Oils For Use As Biofuels Policy document preparation Conference on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, IISc Banglore, Presented two Invited Papers, Avinash Kumar Agarwal.

20. XVIII National Conference on I C Engines and Combustion organized by Combustion Institute (India Section), College of Engineering, Trivendrum, December 15-18th, 2003, Presented one contributed paper and chaired one session, Avinash Kumar Agarwal.

21. ASME-ICED 2003 Spring technical conference, Salzburg, Austria, 11-14th May 2003, Presented a contributed paper, Avinash Kumar Agarwal.

22. SAE 2004 India Mobility Conference, New Delhi, January 12-15th, 2004, Presented two contributed papers and chaired one session, Avinash Kumar Agarwal.

23. SAE World Congress 2004, Cobo Center, Detroit, March 8-12th, 2004, Presented one contributed paper, Avinash Kumar Agarwal.

24. Attended an International Conference on Advances in Materials and Processing Technology held during 8-11 July, 2003 at Dublin City University, Dublin, Ireland, S.K.Choudhury.
    a) Presented a paper on Tool Wear Prediction in Turning co-authored by P. Srinivas in the conference.
    b) Chaired two sessions on Machining during the conference.

25. 21st IIR International Congress of Refrigeration 2003 held at Washington (USA), Aug 17-12, 2003, Contributed Paper, Keshav Kant.

26. Sixth ISHMT-ASME Heat and Mass Transfer Conference held at Kalpakkam, India Jan 05-07, 2004, Contributed paper, Keshav Kant.

27. Int. Conference on Air-conditioning and Refrigeration (ACRECONF 2003) held at New Delhi, Sept. 10-12, 2003, Contributed Paper, Keshav Kant.

28. Delivered Keynote address in National Symposium on Mechanisms & Design, IISc, Bangalore July 25, 2003, Dr.A.K.Mallik.

29. NDE 2003, Thiruvananthpuram, 11-13, Dec 2003, Dr.N.N.Kishore.
    a) Chaired a session
    b) Presented a paper on, Ray bending consideration of ultrasonic Tomographic Reconstruction of Defects.

DEPARTMENT OF PHYSICS

1. Invited talk at the International Conference on Unconventional Applications of Statistical Physics, SINP, Kolkata, 2003, D. Chowdhury.

2. Invited talk at the National Conference TP2003, IACS, Kolkata, 2003, D. Chowdhury.

3. Physics and techniques below 20K IISc Bangalore, Feb. 16-18, 2004, A.K. Majumdar.

4. Physics of novel materials, S.N. Bose Centre, Kolkata, Jan. 5-10, 2004, R. Prasad.

5. IIT Roorkee, April 6-8, 2003, S.C. Agarwal.

6. MRS Symposium, San Francisco, April 21-25, 2003, S.C. Agarwal.

7. XIX Main SERC School in Theoretical High Energy Physics, Univ. of Rajasthan, Jaipur, Feb. 9-28, 2004, 9 Invited Lectures, S.D. Joglekar.

8. National Conference on Nonlinear Systems and Dynamics, Kharagpur, M.K. Verma.

9. ICTP-INFM Summer School on Transport, Reaction and Propagation in Fluids, ICTP, Italy, September 2003, M.K. Verma.

10. Kolmogorov's Legacy in Physics: One Century of Chaos, Turbulence and Complexity, ICTP, Italy, September 2003, M.K. Verma.

11. 16th Int. Conf. of Ion Beam Analysis, Albuqurque New Mexico, July 25-30, 2003, V.N. Kulkarni.

12. Workshop on High Energy Astrophysics, IIT Kharagpur, 23-25 February 2004, invited talk and chaired a session, P. Jain.

13. National Laser Symposium, IIT Kharagpur, 22-24 Dec. 2003, S. Sivaprakasam.

14. Indo-French Workshop on Organic Photonic Components and Processes, Feb. 2-6, 2004, Kochi, Invited Talk, S. Kumar.

15. Indo-Japanese Meeting on Linear Colliders, Centre for Advanced Technology, Indore, April 17-18, 2003, Invited Speaker, S. Raychaudhuri.

16. 6th Meeting of Asian Collaboration for Accelerators, Tata Institute of Fundamental Research, December 15-17, 2003, Invited Speaker & Session Chair, S. Raychaudhuri.

17. 8th Workshop on High Energy Physics Phenomenology, IITB, Mumbai, January 4-16, 2004, Invited Speaker & Member, National Organising Committee, S. Raychaudhuri.

18. 17th SERC School in High Energy Physics, University of Rajasthan, Jaipur, February 18-28, 2004 Guest Faculty, S. Raychaudhuri.

19. Advances in Computational & Experimental Engineering & Sciences (ICCES'03), 24-29 July 2003, Corfu, Greece.

20. Twelfth International Conference on Physics of Semiconductor Devices (IWPSD 2003) held at IIT Madras Chennai, December 16-20, 2003, Y.N. Mohapatra.

Seminars Presented

CENTRE FOR LASER TECHNOLOGY

1. Mirorless Lasers National Symposium on Engineering Optics Merrut Univ April 7, 2003, R. K. Thareja.

2. Member National Advisory Committee National Symposium on Atomic, Molecular Structure, Interactions and Laser Spectroscopy. B H U, March 14-15, 2004, R. K. Thareja.

3. Member National Organizing Committee,National Conference on Lasers and Their Applications (NCOLA-2004) Amravati University (Maharashtra) Jan 28-30, 2004, R. K. Thareja.

4. Member National Advisory cum Organizing Committee of the Symposium, National Laser Symposium-2003, IIT Khargpur Dec. 22-24, 2003, R. K. Thareja.

5. Symposium Advisory committee, National Symposium on Engineering Optics Merrut Univ April 7, 003, R. K. Thareja.

6. Fifth National Symposium on Radiation and Photochemistry IIT Kanpur, March 3-5, 2003, R. K. Thareja.

7. Application of Inverse Techniques in Engineering, presented at Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, 12th September, 2003, K. Muralidhar.

8. Flow Visualization using Optical Measurement Techniques, presented at Department of Aerospace and Mechanical Engineering, University of Oklahoma, Norman, 2nd October, 2003, K. Muralidhar.

9. Optical Measurement Techniques for Buoyancy-Driven Flows, presented at Department of Mechanical Engineering, Louisiana State University, Baton Rouge, 24th October 2003, K. Muralidhar.

10. Simulation of Convection and Experiments on the Growth of Optical Crystals, presented at Department of Mechanical and Materials Engineering, Florida International University, Miami, 7th November, 2003, K. Muralidhar.
11. Imaging of Convection in Crystal Growth from an Aqueous Solution using Interferometry, Schlieren and Shadowgraph, presented at Department of Mechanical

Engineering, University of Minnesota, Minneapolis, 9th December, 2003, K. Muralidhar.

12. Diode Lasers and its applications, Condensed Matter Workshop, organized by Department of Physics, IIT – Kanpur, 14th February 2004, S. Sivaprakasam.

DEPARTMENT OF AEROSPACE ENGINEERING

1. Stability analysis of composite laminates using higher order deformation theory for initial stability and nonlinear vibration, Motilal Nehru National Institute of Technology, Allahabad, May 10, 2003, N.G.R.Iyengar.

2. Stability analysis and interaction curves for composite laminates using higher order shear deformation theory, Dept. of Mechanical Engg. Univ. of Rhode Island, USA, July 3, 2003, N.G.R.Iyengar.

3. Analytical modeling of smart structures and application to helicopters, Invited talk: 15-th Annual General Meeting of Materials Research Society of India, BHU, Feb. 2004, C.Venkatesan.

4. Modeling of effect of wind using Six-degree-of-freedom trajectory formulation for wrap around fin stabilized rocket, ARDE, Pune, A. K. Ghosh.

5. Finite Element Computation of Fluid Flow, International Indian-Russian Workshop, High Performance Computing in Science and Engineering, HPC Se 2003, Moscow, Russia, 2003, Sanjay Mittal.

6. Shear Layer Instability and Drag-crisis for flow past a Cylinder, in Seventh U.S.National Congress on Computational Mechanics, Albuquerque, New Mexico, USA, 2003, Sanjay Mittal**.**

7. Study of Flow in a Supersonic Mixed-Compression Inlet, 6th annual CFD Symposium of CFD Division of the Aeronautical Society of India, Bangalore, India, August 11-13, 2003, Sanjay Mittal**.**

8. High Performance Computing in Fluid Mechanics, Academic Summit, Microsoft Research, Bangalore, India, 2004, Sanjay Mittal**.**

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Genetics of Epilepsy – Impact on clinical management: Invited talk delivered in the Intensive National Program on Epilepsy, organized by the Department of Neurology, G.B. Pant Hospital and Maulana Azad Medical College, New Delhi, 29th February, 2004, S. Ganesh.

2. Concepts of Human Genetics: Invited talk delivered in the Short term workshop in genetics and molecular biology, Indian Institute of Technology, Kanpur, 18th to 25th October, 2003, S. Ganesh.

3. From Genes to Genome: Invited talk delivered in the Short term Course in Computational Neuroscience, Indian Institute of Technology, Kanpur, 7 to 18th July, 2003, S. Ganesh.

4. Pattern searching in protein and DNA sequences in the workshop Statistical methods in Bioinformatics held in Banaras Hindu University in Nov. 2003, R. Sankararamakrishnan.

5. Drosophila Genome: What do you learn from bioinformatics? in the short-term workshop on Genetics and Molecular Biology organized by the National Facility for Drosophila Repository and Research at IIT-Kanpur held during Sep/Oct 2003, R. Sankararamakrishnan.

6. Understanding proteins functions: Bioinformatics approaches. Inaugural lecture as part of the distance learning programme for Chattisgarh Government on Aug 15th 2003, R. Sankararamakrishnan.

7. Neuroinformatics: Databases, issues and challenges in the short-term workshop jointly organized by the National Brain Research Centre and Department of Electrical Engineering, IIT Kanpur in July 2003, R. Sankararamakrishnan.

8. Special Lecture: Introduction to Proteomics in short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash, R. Sankararamakrishnan.

9. Special Lecture: Structural Biology and Drug Design in short-term training programme on Bioinformatics, organized by Institute of Himalayan Bioresource Technology, Palampur, H.P. June 2003, B. Prakash.

10. Techniques in Modern Biology. Invited lecture as part of the distance learning programme for Chattisgarh Government on Aug 23th 2003, B. Prakash.

11. Invited Talk on Structural Biology and Drug Design In the National Symposium on Expanding Horizons, New Delhi, organized by Delhi University in Oct. 2003, B. Prakash.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Transesterification of Vegetable Oils for Biodiesel Production: Engine Testing for Performance and Emissions, XVIII National Conference on I C Engines and Combustion organized by Combustion Institute (India Section), December 17-19, 2003, K Agarwal, S Garg, N Kaistha, S Sinha.

2. Characterisation and utilisation of Biodiesel as an Alternative Fuels for Diesel Engines, presented and published in the proceedings of A national consultative workshop on scientific strategies for production of non-edible vegetable oils for use as biofuels Policy document preparation workshop on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, SuTRA, IISc Banglore, A K Agarwal, S Garg.

3. Transesterification of Vegetable oils for Biodiesel Production: Process considerations, Present status and Future Challenges, presented and published in the proceedings of A national consultative workshop on scientific strategies for production of non-edible vegetable oils for use as biofuels Policy document preparation workshop on Biodiesel Fuels by DST, Government of India, August 30-31, 2003, SuTRA, IISc Banglore, A K Agarwal, S Garg.

4. Modifying Dow Fire & Explosion Index, Department of Chemical Engineering, ETH, Zurich, Switzerland, March 19, 2004, J.P. Gupta.

5. Inherently Safer Design, a set of lectures, Department of Chemical Engineering, Helsinki University of Technology, Helsinki, Finland, March 22-26, 2004, J.P. Gupta.

6. CSIR Diamond Jubilee Lecture, National Metallurgical Laboratory, Jamshedpur: Genetic Algorithm (GA) and its use in the Multi-objective Optimization of Industrial Processes, July 2003, S.K. Gupta.

7. Process Intensification in a Trickle Bed Reactor – Experimental Studies, Dept. of Chemical Engineering, Howard University, Washington, D.C., October 30, 2003, D.P. Rao.

8. Self-organized thin films, Tata Research Design and Development Centre, Pune, A. Sharma.

9. Patterning of soft materials, National Chemical Laboratory, Pune, A. Sharma.

10. Instability of thin elastic films in adhesion, Lehigh University, A. Sharma.

11. Stability of single layer and two-layer viscoelastic plane Couette flow past a definable solid layer, Seminar given at the National Chemical Laboratory, Pune, February 2004, V. Shankar.

DEPARTMENT OF CHEMISTRY

1. Invited Lecture series (4 lectures) on February 14 & 15, 2003 at Department of Chemistry, Gulbarga University, Gulbarga, F. A. Khan.

2. Invited Lecture at the Department of Chemistry, May 5, 2003, IIT Guwahati, F. A. Khan.

3. Invited lecture in NOST-2003, October 29-November 2, 2003, Goa, F. A. Khan.

4. T. R. Seshadri Memorial Lecture, University of Delhi, February 2003, H. Ila.

5. Invited lecture at Boehringer Ingelha, Germany, June 2003, H. Ila.

6. Astrazeneca Research Foundation, Bangalore, July 2003, H. Ila.

7. IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications, University of Delhi, January 2004, H. Ila.

8. National Symposium on Organic Chemistry and Natural Product Chemistry, Manipur University, March 2004, H. Ila.

9. Invited Lecture at Advanced Photon Source, Argonne National Laboratory, USA, S. Sundar Manoharan.

10. Invited Lecture in International Conference in composites and Nano engineering, New Orleans July 2003, S. Sundar Manoharan.

11. Invited lecture at UGC refresher course held at Bharadidasan University, Trichy, Tamil Nadu, S. Sundar Manoharan.

12. Invited lecture at Mitsubishi Electronics at Boston, USA, Nov 2003, S. Sundar Manoharan.

13. Invited lecture at National seminar on Energy trends in Technology held at Karunya Institute of Technology, Cimbatore, Tamil Nadu, January 2004, S. Sundar Manoharan.

14. Invited lecture on nanomaterials at Lucknow University, Feb 2004, S. Sundar Manoharan.

15. Invited lecture on while light LED at the Indo-Italian workshop at IIT Kanpur , S. Sundar Manoharan.

16. Invited lecture on Nanomaterials at North Eastern Hill University Shillong, March 2003, S. Sundar Manoharan.

17. Bioinspired copper binding peptide conjugates from prion octarepeat and serum albumin. 10th National Organic Symposium Trust (NOST) Meeting, October 29-November 3, 2003, Goa, Verma S.

18. Modeling prebiotic catalysis: Uranyl ion impregnated adenine homopolymer as a reusable photonuclease. 3rd Trivandrum International Symposium on Recent Trends in Photochemical Sciences, January 5-7, 2004, Trivandrum, Madhavaiah, C., and Verma S.

19. Reverse tandem peptide conjugates as models for prion protein aggregation. Current Trends in Drug Discovery Research-2004, February 17-20, 2004, Lucknow, Verma S., Madhavaiah, C., Prasad, K. K.

20. Invited Lecture on August 10, 2003 at Dept. of Chemistry, Univ. of Nebraska, U.S.A., Vinod K. Singh.

21. Invited Lecture on August 13, 2003 at Dept. of Chemistry, Ohio University, Athens, U.S.A. , Vinod K. Singh.

22. Invited talk in a India-Korea seminar during July 27-31, 2003 at Yonsei University, Seoul, Korea, Vinod K. Singh.

23. Invited lecture at post-NOST symposium on Nov. 2, 2003, held at NCL Pune, Vinod K. Singh.

24. Invited Lecture at an Indo-US workshop on Organometalics during Dec. 9-11, 2003 held at IIT Chennai, Vinod K. Singh.

25. Osaka University, Osaka, JAPAN, 2003, Veejendra K. Yadav.

26. Osaka City University, Osaka, JAPAN, 2003, Veejendra K. Yadav.

27. Osaka Prefecture University, Osaka, JAPAN, 2003, Veejendra K. Yadav.

28. Nagoya University, Nagoya, JAPAN, 2003, Veejendra K. Yadav.

DEPARTMENT OF CIVIL ENGINEERING

1. Emerging Construction Materials, Short term course on building material testing laboratory, Institute of Research Development and Training, UP, Kanpur, 25th June, 2003 and 5th November, 2003, A. Das.

2. Interlinking of rivers in India : A Challenge ahead, World Environment Day, The Institution of Engineers (India), Kanpur Local Centre, June 5, 2003.

3. Precautions for Safe Recharge to Groundwater, Awareness and Training Workshop on Rain Water Harvesting, Housing and Urban Planning Deptt., Govt. of U.P., August 22, 2003, Lucknow.

4. Rain Water Harvesting and Artificial Recharge, Kanpur Development Authority, June 2003.

5. Airborne Altimetric LiDAR, IIRS Dehradun, 30 Sept. to 1 Oct., 2003, B. Lohani.

6. Capacity Design of Welded Steel MRF Connections, Presented at the Second Indo-German Workshop on Seismic Safety of Structures, Risk Assessment and Disaster Mitigation, 15-16 February 2004, IIT Madras, Arlekar, J.N, and Murty, C.V.R.

7. Durability based design of concrete structures National seminar on Use of Concrete in construction of infrastructural facilities for the development of nation, Concrete Day celebrations organized by the Indian Concrete Institute, UP Allahabad Chapter, September 7th, 2003, Misra Sudhir.

8. Northeast of India At Risk from earthquakes: Its Time…, National Workshop on Earthquake Risk Reduction – The Gujarat Experience, 31 January 2004, GSDMA, Ahmedabad, Murty,C.V.R.

9. Geomorphic evolution and stratigraphic development of the Quaternary alluvial plains of the Gangetic rivers, India, 3rd Latin American Congress of Sedimentology, June 8 - 11, 2003, Belém - Pará – Brazil, Sinha, R., Jain V., Gibling, M.R. & Tandon, S.K.

10. Quaternary palaeoclimatic reconstruction from mineralogy and geochemistry of the Sambhar lake playa sediments, Thar desert, India, XVI INQUA Congress, July 23-30, 2003, Reno, USA, Sinha, R., Smykatz-Kloss, W., Stueben, D., and Berner, Z.

11. Interfluves of the southern Ganga plains, India: attached and detached floodplains in the late Quaternary, XVI INQUA Congress, July 23-30, 2003, Reno, USA, Gibling, M.R, Tandon, S.K., Sinha, R., and Jain, M.

12. Hydrological Variability and Landscape Evolution in alluvial river system: An example from the Ganga plains, India**.** XVI INQUA Congress, July 23-30, 2003, Reno, USA, Jain V. & Sinha, R.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. Universal Relations (two lectures) Ann. Symp. Calcutta Logic Circle October, 2003, Somenath Biswas.

2. Smart Card Based Protocol for Secure Access of Mobile Host in IPv6 Foreign N/W, KIIT, Bhubaneswar, December 2003, R.K Ghosh.

3. Machine-aided Translation: How to translated unconstrained text, Sept. 29, 2003. University of Texas, Austin, Ajai Jain.

4. IIIT Trivandrum, Large Circuit Testing, May 22, 2003, Ajai Jain.

5. Machine Aided Translation, Dec. 16, 2003 Jadavpur University, Calcutta, Ajai Jain.

6. IPv6: An Introduction IPv6 Forum of India seminar series, New Delhi September 2003, Dheeraj Sanghi.

7. Turning 802.11 Inside Out CSI Seminar, Lucknow, November, 2003, Dheeraj Sanghi.

8. Lambda calculus and games semantics, Calcutta University, October 2003, Anil Seth.

9. Games semantics, IMSC Chennai , March 2004, Anil Seth.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Harmonic Currents in a Distribution system, National Workshop on Custom Power, IISc. & ERDC(I), June 13, 2003, P. Sensarma.

2. Reverse Leakage Current in Polymer Light emitting Diodes, Workshop on Organic Electronics held at IIT Kanpur, Oct. 14-17, 2003, R.S. Anand.

3. Resource person to the workshops organized at AIT Bangkok, Thailand on Demand Side management and Distribution Automation, during 20-22 August 2003, S.C. Srivastava.

4. A training programme on Power System Operation Automation & Management, AIT Bangkok ,1-19 December 2003, S. C. Srivastava and S. N. Singh.

5. Delivered invited lectures in the POWERFEST 2003 conference during 28-29 November 2003 at National Institute of Technology Kurukshetra on Power System Restructuring, S. C Srivastava.

6. Evolution of Neural Networks from Artificial to Real, Invited Talk, International Conference on Information Technology, CIT 2003, Bhubaneswar, Laxmidhar Behera.

7. Recurrent Quantum Neural Networks – A New Approach to Cognitive Modeling, Invited Lecture, International Conference on Intelligent Signal Processing and Robotics, ISPR-04, IIIT, Allahabad, Laxmidhar Behera.

8. Presented a ten and a half hours lecture series titled Power Electronics Applications in Power Systems during June 23-26, 2003, as a part of the prestigious Grainger Lecture Series at the University of Illinois at Urbana-Champaign in cooperation with the Power Systems Engineering Research Center, University of Wisconsin at Madison. The lecture slides and audio can be obtained from the web site, Arindam Ghosh.

9. Presented a seminar on Optimal Predictive Iterative Decoding of Turbo Codes in Coloured Gaussian Noise invited by IETE on 29.02.2004 at IIT Kanpur, K. Vasudevan.

10. Presented a seminar on RF MOSFET, I.I.T. Kanpur, October 20, 2003, Aloke Dutta.

11. Presened a seminar on Overview of RF Circuit Design, IIT Kanpur, Feb. 19, 2004, Aloke Dutta.

12. Delivered an invited lecture Modern Trends in Power Electronics in HBTI, Kanpur, Feb. 2004 during TechEra 2004, S.P. Das.

13. Delivered a seminar entitled UPQC-Q for Power Distribution System on 13th Dec. 2003 at IIT Madras, Chennai, S.P. Das.

14. Presented the seminar of Rural Elect and Distributed Gen. for Sustainable Development (Four lectures), AIT Thailand, July 9-10, 2003, S. N. Singh.

15. Presented the seminar of Power System Restructuring: An Introduction, PSG Tech. Coimbatore, August 28, 2003, S. N. Singh.

16. Presented the seminar of Future of FACTS Controllers in Restructured Power System, KCT, Coimbatore, August 29, 2003, S. N. Singh.

17. Presented the seminar of Challenges for Electricity Generating Utilities in the Context of Restructuring, IIM Lucknow, Sept. 29, 2003, S. N. Singh.

18. Presented the seminar of Fundamental of Power System Deregulation, BVCOE, Pune Oct. 16-17, 2003, S. N. Singh.

19. Presented the seminar of Role of FACTS Controllers in Competitive Power Market, BVCOE, Pune, Oct. 16-17, 2003, S. N. Singh.

20. Presented the seminar of Power System Operation, Automation & Deregulation (15 Lectures), AIT Bangkok, Nov. 29-Dec. 19, 2003, S. N. Singh.

21. Presented the seminar of Artificial Neural Network: An Introduction, MITS, Gwalior, January 19, 2004, S. N. Singh.

22. Power System Restructuring: An Introduction, MITS, Gwalior, January 19, 2004, S. N. Singh.

23. Presented the seminar of Evolutionary Computation, MITS, Gwalior, January 19, 2004, S. N. Singh.

24. Delivered a seminar on Packaging considerations in array based optical interconnects in Nov. 2003, IIT Kanpur sponsored by IEEE UP section, Anjan K. Ghosh.

25. Delivered a seminar on Technical Writing in Feb. 2004 during Techkriti-04, Anjan K. Ghosh.

26. Delivered a talk on Fiber optic sensors in march 2004 in BHEL R&D Centre, Hyderabad, Anjan K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. The Politics of Saul Bellows Apocalypse in The Deans December. IIT Delhi, September 16, 2003, G. Neelakantan.

2. Lectures on Issues in Sampling and Qualitative Methods, UGC Refresher Course, Staff College, Banaras Hindu University, Organized by Department of Sociology, Varanasi, January, 17, 2004, A. K. Sharma.

3. Social Dynamics of Indian Society: Felicitation Seminar In Honour of Professor J.S. Gandhi, Centre for the Study of Social Systems, School of Social Sciences, Jawaharlal Nehru University, New Delhi, April 2- 3, 2003, Munmun Jha.

4. A Cognitivist Approach to Creativity in DST/ICPR sponsored National Seminar on Creativity and Cognitive Science, University of Hyderabad, February 26 – 27, 2004, C. A. Tomy.

5. Lexical Underdetermination: A Case for Default Semantics, National Seminar on Lexical Semantics, Osmania University, Hyderabad, February 2004, Achla M Raina.

6. Transforming the Educational System: Lessons from the Eklavya Experience Tata Institute for Fundamental Research, Mumbai, December 19, 2003, Amman Madan.

7. Invited Talk, Stress: Its Psychological Aspects, Seminar on Stress Management, Dayanand Academy of Management Studies, Kanpur, May 17, 2003, Ulhas Banquet Hall, Rave 3, Kanpur, 2003, Lila Krishnan.

8. Invited Talk, Interpersonal Communication, Department of Psychology, Lucknow University – May 21, 2003, Lila Krishnan.

9. Invited Talk, Thinking Styles: Foundations of Effective Team Building, Senior Managers, Industrial Electronics, Kanpur (a subsidiary of LML), June 25, 2003. Lila Krishnan.

10. Invited Talk, Justice: A Social Psychological Analysis, Department of Psychology, Government Nutan Girls College, Kila Maidan, Indore-December 19, 2003, Lila Krishnan.
11. Two Talks (For CA trainees of Institute of Chartered Accountants of India, Kanpur, Interpersonal Skills and Group Behaviour I - Feb. 1, 2004, Interpersonal Skills and Group Behaviour II - February 10, 2004, Lila Krishnan.

12. Talk Rethinking Language, given to postgraduate students of HSS Department, IIT Madras, July 3, 2003.

13. Three lectures on the theme of Paradigms in the Sociology of Development, at UGC National Refreshers Course, Department of Sociology, Varanasi, January 12- 14, 2004, B. K. Pattnaik.

14. Role of Educational Institutions/Students in Promoting Sustainable Development" Lecture to NCC Cades, IIT Kanpur, August 23, 2003.

15. Management of Water Resources Projects in India: Pitfalls, Problems and Prospects, Inaugural Address in the workshop on Overcoming Water Scarcity and Quality Constraints, organized by Eco Friends at the St Mary Convent School, Kanpur, September 26-27, 2003.

16. Leadership Crises in our Country and the Challenges before the Youth, NSS Camp held at Narshingpur College, Utkal University, December 24, 2003.

17. 3Ps of Water Resource Management in India, Centre for Policy Research, New Delhi, January 12, 2004.

18. Problems and Prospects of Industrial Development in Uttar Pradesh, Valedictory Address in the seminar on Economic Development in UP: Problems and Prospects, sponsored by ICSSR, Armapore P.G. College, Armapore Estate, Kanpur, March 1, 2004.

19. "Globalisation and its impact on the consumer market", Kanpur, March 15, 2004

20. EIA Aspects of various Development Projects in India, four lectures delivered in the Refresher's Course on Environmental Sciences, BHU, Varanasi, March 18-20, 2004.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Invited Talk on Entrepreneurship and Marketing at Gaur Hari Singhania Institute of Management and Research, Kanpur, March 2004, Swami, S.

2. Evaluation of IT System: A case study, IIIT Hyderabad, Feb. 13, 2004, V. Bansal, and Himanshu Sadana.

3. Evaluation, Rating and Certification of Online Documents, IIIT Hyderabad, Faculty Workshop SAP, Bangalore Feb. 23-27, SAP Lab India, V. Bansal and Mayank.

4. Issues in forecasting Electricity Demand in South Asian Countries SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.

5. Forecasting Electricity Demand in South Asian Countries – Results SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.

6. Emerging Competitive Scenario in Indian Power Sector, Seminar at Indira Gandhi Institute of Development Research (IGIDR), Mumbai, 12th Dec. 2003, Anoop Singh.

7. Regulatory Issues in Power Sector Restructuring and Power Sector Scenario of India; delivered two lectures at IIM, Lucknow for Training Program on General Management for NTPC Managers, 14th April 2003.

8. Regulatory & Policy Developments in Indian Power Sector lecture in QIP sponsored short-term course on Electric Power System Operation and Management Restructured Environment, July 21-25, 2003, Anoop Singh.

9. Economics of Regulation, Guest Lecture, Dept. of Electrical Engg., IITK, 9th April 2003, Anoop Singh.

10. Invited lecture at National University of Singapore, Information systems Dept, 26/12/03 on New research directions for KM in the social sector-Knowledge exchange experience at Digital Mandi, Jayanta Chatterjee.

11. Invited lecture at Conference of Agricultural extension officers organized by National Institute of Agricultural Marketing, manage.com –10th Oct, 03, Jayanta Chatterjee.

12. Invited talk at Dept of Biotechnology on Business Incubation at biotechnology Parks. – 18th July, 03, Jayanta Chatterjee.

13. Appointed Lead researcher of The School of Organizational learning and transformation, at the Global Institute of Flexible Systems Management, Jayanta Chatterjee.

14. Awarded a 500 $ prize for the Best paper published in the Flexible Systems Journal at the 3rd GLOGIFT conference, March 2004.

15. Retention in the Times of Downsizing and Restructuring: End of HRM? Seminar On Talent Hunt & Retention Strategies – Indian Experiences GHSIMR & NIPM, Kanpur, Feb. 15,2004, Rahul Varman.

16. Organised workshop: One-Day Workshop on Learning by Doing Engineering, Design, & Management Education IIT Kanpur, August 9, 2003, A.P. Sinha.

DEPARTMENT OF MATHEMATICS

1. Consistent estimation of regression coefficient in ultrastructural model with replicated observations at IIT Kharagpur in March 2004, Shalabh.

2. Completeness of small translates on spaces at ISI Calcutta, Ray, S.K.

3. A series of 8 lectures on Fourier Analysis on at ISI Bangalore between February 2004 to April 2004, Tewari, U.B.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Recent discovery of the original erection site of and original image atop the Delhi iron pillar, Indian Institute of Advanced Studies, Shimla, April 17, 2003, R. Balasubramaniam.

2. Delhi iron pillar: new insights, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, June 11, 2003, R. Balasubramaniam.

3. The story of the Delhi iron pillar, Rishi Valley School, Madanapalle, June 23, 2003, R. Balasubramaniam.

4. Metallurgy in India: past, present and future, Rishi Valley School, Madanapalle, June 24, 2003, R. Balasubramaniam.

5. Mysteries of the Delhi iron pillar unraveled, General Motors Research and Development Center, Warren, MI, USA, October 9, 2003, R. Balasubramaniam.

6. Astronomical significance of the Delhi iron pillar, Indian Institute of Science, Metallurgy Department, Bangalore, November 10, 2003, R. Balasubramaniam.

7. Relevance of Delhi iron pillar to modern technology, General Electric Corporate Research and Development, Bangalore, November 24, 2003, R. Balasubramaniam.

8. Recent advances in chromium coatings: Nanocrystalline Coatings and Composite Coatings, Shiram Pistons Pvt. Limited, Ghaziabad, january 31, 2004, R. Balasubramaniam.

9. Fundamentals of electrochemical coatings, Defence Metallurgical Research Laboratory Hyderabad, February 4, 2004, R. Balasubramaniam.

10. Corrosion resistance of the Delhi iron pillar, Defence Metallurgical Research Laboratory, Hyderabad, February 4, 2004, R. Balasubramaniam.

11. Toughness tailoring of zirconia ceramics (Invited), School of Materials Science, University of Leeds, May 2003, Bikramjit Basu.

12. Phosphor Characterization and Radiometry, Colorimetry, and Photometry, Short term course as a part of Samtel Research Center, April 2003, IIT Kanpur, Vasuda Bhatia.

13. AI techniques and their applications in steel making (Invited), Visakhapatnam Steel Plant, February 18, 2004, B. Deo.

14. New control paradigms in steel making (Invited), Bokaro Steel Plant February 26, 2004, B. Deo.

15. Industrial Grinding Practice, TEGA Industries, Calcutta, 29-31 May, 2003, B. K. Mishra.

16. Science and Technology of Particulate Materials, SAMTEL Ltd. Ghaziabad, 7-8 July, 2003, B. K. Mishra.

17. Application of Orientation imaging microscopy (OIM) for evaluation of grain boundary microstructure in structural ceramics, Indian Institute of Science, Bangalore, March 22, 2004, V. S. R. Murthy.

18. Fracture behaviour of fibre reinforced ceramic matrix composites : the role of interface microstructure *(Invited),* In workshop on 'Fracture behaviour of advanced materials : present status and future projections, Defence Metallurgical Research Laboratory, Hyderabad, December 19, 2003, V. S. R. Murthy.

19. Grain Boundary Engineering in Materials, General Motors Research and Development Center, Bangalore, January 16, 2004, V. S. R. Murthy.

20. Supersolidus Sintering- Process and Fundamentals (invited), Centre Des Materiaux, Ecole National Supérieure des Mines de Paris-ARMINES, France July 2003, Anish Upadhyaya.

21. TLP and SLP sintering of ferrous and non-ferrous systems (invited), IFAM, Bremen, Germany, July 2003, Anish Upadhyaya.

22. Recent advances in P/M processing of materials (Invited), International Conference on Advances in Materials & Processes for Industrial Applications, American Society of Metals, Pune Chapter, September 2003, Anish Upadhyaya.

23. Microwave Processing of materials, Solid State Physics Laboratory (SSPL), New Delhi, October 2003, Anish Upadhyaya.

24. Sintering of W-Cu alloys, Modison Metals Ltd., Vapi, December 2003, Anish Upadhyaya.

25. Vacuum interrupters through liquid phase sintering, Crompton Greaves Ltd, Mumbai, December 2003, Anish Upadhyaya.

26. Sintering of refractory metals, Nuclear Fuel Complex (NFC), Hyderabad December 2003, Anish Upadhyaya.

27. Supersolidus sintered bronze and stainless steels, Advanced Research Center for Powder Metallurgy and Advanced Materials (ARCI), Hyderabad, December 2003, Anish Upadhyaya.

28. Sintering of particulate MMCs, Corporate R&D, Bharat heavy electrical limited (BHEL), Hyderabad, December 2003, Anish Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Functioning, Style and Focus of some Design Institution of World - A Perception, July 2003, ISC Bangalore, Prashant Kumar.

2. Design of Robots for Interaction with Humans, Symposium on Medical Science and Technology for Population Welfare, IIT Kharagpur, Oct. 27-29, 2003, Ashish Dutta.

3. Fracture of Functionally Gradient Materials, Defense Materials Research Laboratory, DRDO, Hyderabad, December 19, 2003, P.Venkitanarayanan.

4. Application of Inverse Techniques in Engineering, presented at Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, 12th September, 2003, K.Muralidhar.

5. Flow Visualization using Optical Measurement Techniques, presented at Department of Aerospace and Mechanical Engineering, University of Oklahoma, Norman, 2nd October, 2003, K.Muralidhar.

6. Optical Measurement Techniques for Buoyancy-driven Flows, presented at Department of Mechanical Engineering, Louisiana State University, Baton Rouge, 24th October 2003, K.Muralidhar.

7. Simulation of Convection and Experiments on the Growth of Optical Crystals, presented at Department of Mechanical and Materials Engineering, Florida International University, Miami, 7th November, 2003, K.Muralidhar.

8. Imaging of Convection in Crystal Growth from an Aqueous Solution using Interferometry, Schlieren and Shadowgraph, presented at Department of Mechanical Engineering, University of Minnesota, Minneapolis, 9th December, 2003, K.Muralidhar.

9. Finite Element Applications in Metal Forming, TATA STEEL, September 28-October 4,2003, N.V.Reddy.

10. Overview of Smart Sensors; Modern Trends in Sensors and Actuators Organization: I I T Kanpur, September 2003, B. Bhattacharya.

11. Hybrid damping of flexible link manipulator; Annual Technical symposium of AR&DB Structures Panel Organisation: I I T Kanpur, March 2004, B. Bhattacharya.

12. Computerized Tomography in NDT, QNDE-2004, National Metallurgical Laboratory, Jamshedpur, Jan 2004, Invited Lecture, P. Munshi.

13. International Symposium of Electromachining held at University of Edinburgh, Scottland, U.K., V.K.Jain.

14. Various Keynote addresses, V.K.Jain.

    a. CA/CAPP/CAM presented during MECHADAY at R.K.D.F. Institute of Science and Technology, Bhopal, March 16, 2004.

    b. Face to Face - A dialogue with young Technocrats during the Annual program DIKSHA at MANIT Bhopal, March 12, 2004.

    c. Understanding Advanced machining Processes, National conference on Engineering and Technology organised by Hitkarini College of Engineering and Technology, Jabalpur (M.P.) during Feb. 20-21, 2004.

    d. Micro- to Nano-finishing, G.C.Sen Memorial Lecture, at the 18th National Convention of Production Engineering of The institution Of Engineers (India) held at Jabalpur on December 27-28, 2003.

    e. Advances in Advanced Machining Processes, National Conference on Advances in Manufacturing Systems held at Jadavpur University, Kolkata during 2003, pp.23-41.

    f. Advanced Manufacturing Technologies, 0 YNA MECH, 2003 held at H.B. T.I. Kanpur during April 5-6, 2003.

15. Micro-sensors for IC Engine Applications, Center for High Technology, Ministry of Petroleum, Government of India, Delhi, April 2003, Avinash Kumar Agarwal.

16. Development of Micro-sensors based on capacitance probes and fiber optical probes for internal combustion engine applications, Indian Oil Corporation (R&D Center), Faridabad, 9th May 2003, Avinash Kumar Agarwal.

17. Development of Biodiesel and Status in India, Diesel Locomotive Workshop, Varanasi, 8th January, 2004, Avinash Kumar Agarwal.

18. Invited Lecture, Cooling of Electronic Components, Anand Engineering College Agra, Feb. 24, 2004, Dr.Keshav Kant.

19. Modelling of Non-linear Vibration Isolators, RCI, DRDO, Hyderabad, Nov.19, 2003, Dr.A.K.Mallik.

DEPARTMENT OF PHYSICS

1. Nuclear Science Centre, New Delhi, September 2003, A.K. Majumdar.

2. IIT Kharagpur, December 2003, A.K. Majumdar.

3. 2 seminars at IIT Madras, February 2004, A.K. Majumdar.

4. Jahn-Teller Distortion in clusters and lithiated manganese oxides, IIT Roorkee, April 2, 2004, R. Prasad.

5. Statistical Theory of MHD Turbulence, Observatories de Nice, June 2003, M.K. Verma.

6. Statistical Theory of MHD Turbulence, Univ. of Brussels, June 2003, M.K. Verma.

7. Statistical Theory of MHD Turbulence, Nordit, Copenhagen, June 2003, M.K. Verma.

8. Energy cascase in MHD, IIT Kharagpur, December 2003, M.K. Verma.

9. Is there a preferred direction in the Universe, IIT Kanpur, February, 2004, P. Jain.

10. Is there a preferred direction in the Universe, Invited talk presented at the Workshop on High Energy Astrophysics, IIT Kharagpur, 23-25 February 2004, P. Jain.

11. Is there a preferred direction in the Universe, SN Bose National Center, Kolkata, 27 February 2004, P. Jain.

12. Diode Lasers and its applications, Condensed Matter Workshop, IIT Kanpur, Feb. 14, 2004, S. Sivaprakasam.

13. Godel Universe, Black Holes and String Theory, Institute of Physics, Bhubaneswar, June 2003, G. Sengupta.

14. Invitation to String theory, Institute of Physics, Bhubaneswar, June 2003, G. Sengupta.

15. Godel Universe, Time Machines and String Theory, IIT Kanpur, G. Sengupta.

16. Optical properties of small molecules for OLED, Invited talk at Indo-French Workshop on Organic Photonic Components and Processes, Feb. 2-6, 2004, Kochi, S. Kumar.

17. Electron transport in nanocrystalline silicon films, Laboratories PICM, Ecole Polytechnique, France, September 4, 2001, S. Kumar.

18. Electroweak Physics at a Linear Collider: The Indian Connection, Indo-Japanese Meeting on Linear Colliders, Centre for Advanced Technology, Indore April 17-18, 2003, S. Raychaudhuri.

19. Do we Really Live in Three Dimensions? IIT Kanpur, December 15-17, 2003, S. Raychaudhuri.

20. Extra Dimensions and Exotica at a Linear e+e- Collider, 6th Meeting of Asian Collaboration for Accelerators, Tata Institute of Fundamental Research, December 15-17, 2003, S. Raychaudhuri.

21. Status Report on Braneworld Phenomenology, 8th Workshop on High Energy Physics Phenomenology IITB, Mumbai, January 4-16, 2004, S. Raychaudhuri.

22. Living on the Edge: The Search for a Multi-dimensional World, Institute Lecture, Tata Institute of Fundamental Research, March 10, 2004, S. Raychaudhuri.

23. Brane World Phenomenology (3 lectures), Theoretical Physics Seminar, Tata Institute of Fundamental Research, March 9-12, 2004, S. Raychaudhuri.

24. Monitoring Fields and Charges in OLEDs, Invited Lecture at Indo-Italian Workshop on Organic Semiconductors held at IIT Kanpur from October 14-17, 2003, Y.N. Mohapatra.

25. A Metastability and Non-Debye Relaxation Phenomena due to defect clusters and disorder in semiconductors, Invited Lecture at ICCES 2003, Advances in Computational and Experimental Engineering and Sciences, 2003 Corfu, July 24-29, Greece, Y.N. Mohapatra.

26. Understanding Charge Processes in PLED and OLED, Invited Lecture at IWPSD03, IIT Chennai December 16-30, 2003, Y.N. Mohapatra.

Other Activities

(A) TECHNOLOGY DEVELOPED

DEPARTMENT OF AEROSPACE ENGINEERING

1. Wind Turbine Battery Charger Almost Ready for Transfer, Ghosh Kunal.

2. Technology to produce Nano-material by flame synthesis. Technology to produce Nano-material by flame synthesis (We are the first to produce nanomaterials by flame synthesis in India), D. P. Mishra.

DEPARTMENT OF CHEMICAL ENGINEERING

1. Higee distillation: Ready for transfer; Further development also needed, D.P. Rao.

2. Adsorptive separation of gas mixtures: Ready for transfer; Further development is also needed, D.P. Rao.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. AnglaBharti Technology Transfered to CDAC Pune, JNU, IIT Bombay, Utkal University, IIT Guwahti, CDAC Calcutta, TIET Patiala and CDAC Trivandrum, Ajai Jain.

2. Organized workshop on AnglaBharti Mission, March 28-30, 2004 at IIT Kanpur, Ajai Jain.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Anaesthesia Monitor: This equipment has been developed by GC Ray and Gautam Das. It is a complete product and ready for transfer.

2. Developed the Polymer Light Emitting Diode (PLED) technology of ITO/PEDOT/MEHPPV/Ca/Al and achieved 912 Cd/m^2 for the devices, which were test operated for more than 44 hours, first ever done in India. Further development for commercialization is required, R.S. Anand.

3. PLED devices have been made on thin plastic sheet, first ever in India. Further development for commercialization is required, R.S. Anand.

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4. Led the efforts on Technology Development on Power Distribution Automation hardware and software including, R.P. Gupta and S.C. Srivastava.

- Automation software to enable remote monitoring, alarm generation and remote control
- Remote terminal unit (RTU)
- Remotely operable load break switches suitable both for HV and LV side of distribution transformer
- Client-Server data communication link over dialup network
- System instrumentation
- Automation protocols
- Distribution automation simulator (a scaled down model of a real-life automated distribution network) to provide a test bed for a comprehensive testing of the developed technology, components and software.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Development of simulator for a Plasma Display Panel (PDP) cell, Samtel Center, Deepak Gupta

DEPARTMENT OF MECHANICAL ENGINEERING

1. Effect of Surfactant on Heat and Mass Transfer Enhancement, Dr. Keshav Kant.

2. Simulated Moving Bed Heat Regenerator, Dr. Keshav Kant.

DEPARTMENT OF PHYSICS

1. Room Temperature STM, Anjan K. Gupta.

(B) SOFTWARE DEVELOPED

DEPARTMENT OF AEROSPACE ENGINEERING

1. Generic Model to Estimate Parameter from Flight data of an Artillery Shell, Delivered, A. K. Ghosh.

2. Six degree of model to evaluate dynamic stability boundaries of an wrap around rocket at supersonic speed, Delivered, A. K. Ghosh.

3. Computer Program for structural optimization. Product is ready for transfer to VSSC (Trivandrum), C. S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. JAVA implementation of Adaptive Centroid Algorithm for Gene Expression Profiling. JB Singh (B Tech student) and S. Garg.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Monitoring and Control Software for Power Distribution Automation, R. P. Gupta.

2. Server Software for Remote Terminal Unit, R. P. Gupta.

3. Application Software for Remote Terminal Unit, R. P. Gupta.

4. Energy Audit and Accounting Software for Power Distribution Utilities, R. P. Gupta.

5. Trouble Call Management Software for Power Distribution Utilities, R. P. Gupta.

6. Dynamic Interaction Study Program for Small Signal Stability Analysis, R. P. Gupta.

7. Developed FDTD code for characterizing inhomogeneous dielectric resonator and also, code developed for generalized filter theory, Animesh Biswas.

8. Brihaspati, Brihaspati Synch. (Ready for transfer), Y.N. Singh.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Closed from analysis of hybrid damping in Smart Structures: Software for simple boundary Conditions have been developed - currently the extension in going on for free-free structures, Dr. Bishakh Bhattacharya.

2 High precision finite element analysis of laminated composite plates: Software for composite plates with embedded sensors and actuators have been developed - closed loop controller design is in progress, Dr. Bishakh Bhattacharya.

3 Hybrid Controls of Flexible Arm Manipulator Software developed for single link manipulator with linearised model; further research is going on to take into account multiple link and nonlinear hiearchic control scheme, Dr. Bishakh Bhattacharya.

4. Modeling of an Annular Combustor, Dr. Bishakh Bhattacharya. (being used by GTRE, Bangalore)

Industry Visited

CENTRE FOR LASER TECHNOLOGY

1. 'Ring Laser Gyro', delivered two talks in the 'Workshop on new avionics technologies' at H.A.L, Korwa, U.P, on 14th and 15th November 2003, S. Sivaprakasam.

DEPARTMENT OF AEROSPACE ENGINEERING

1. NAL Bangalore, 27 Oct. 2003. Kunal Ghosh.

2. Coordinated HAL Training Programme for HAL Management Trainees (Technical) from August4- Nov.28,2203 and also delivered Lectures organized at IIT Kanpur, N.G.R. Iyengar. NAL, Bangalore, Instrumentation of HANSA Aircraft, August 2003, A K Ghosh.

3. BEL, Bangalore for Handing over of deliverables August 2003, A K Ghosh.

4. CABS, Bangalore, Review Meeting on Financial grant (ARDB) for Flight Experiments October 2003, A K Ghosh.

5. ARDE, PUNE, Development of Neural Model November, 2003, A K Ghosh.

6. ARDE, Pune, Expert member for joint development of Glide bomb by South Africa and India -Peer Review, January 2004, A K Ghosh.

7. ARDE, Pune, Experts member for Joint Development of TCS for unguided rocket in collaboration with Israel Feb 2004, A K Ghosh.

8. HEMRL, IAT, Pune and RRL Bhubaneswar, To discuss about collaborating research work in the field of combustion & allied fields, To discuss about collaborating research work in the field of combustion & allied fields, D. P. Mishra.

DEPARTMENT OF CHEMICAL ENGINEERING

1. IIT Powai, Mumbai. DST PAC meeting. Research Project awarded for Rs. 16,36,800/=, S. Garg.

2. KVIC annual review meeting, Mumbai, January 16-17, 2004. (Ongoing funded research project), S. Garg.

3. BARC, ongoing project, June 3 & 4th, 2003, A. Khanna and P. Munshi.

4. Indo Gulf Fertilizer, Sultanpur for prospective project on Ammonia Plant Simulation, February 13th, 2003, A. Khanna.

5. GAIL, PATA, June 2003, D. Kunzru.

6. DRDL, Hyderabad, Feb. 2004, D. Kunzru.

7. National Chemical Laboratory, Pune; Visited for one week during February 2004 and gave a series of lectures on 'Introduction to polymer physics', V. Shankar.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. Invited by CEO for a technical, discussion, ESSPL, Bhubaneswar, Dec 2003, R.K Ghosh.

2. Satyam Computer Sevices, Hyderabad, May-June 2003, T.V Prabhakar.

3. IIT Delhi, Oct 2003, Dheeraj Sanghi.

4. IIT Chennai, Sep 2003, Dheeraj Sanghi.

5. IISc Bangalore, Sep 2003, Dheeraj Sanghi.

6. TIFR Mumbai, Jan 2004, Dheeraj Sanghi.

7. IIIT Allahabad, Sep 2003, Dheeraj Sanghi.

8. IIIT, Hyderabad, Aug 2003, Dheeraj Sanghi.

9. SAII, Hyderabad, Aug 2003, Dheeraj Sanghi.

10. Dheeraj Sanghi, AK College of Engineering, Oct 2003 Srivilliputur TN CDAC, Hyderabad July 2003,CDAC Pune July 2003, Dheeraj Sanghi.

11. Dheeraj Sanghi, Wibhu Networks Pune, July 2003 Intel Delhi Dec 2003, EdCIL Noida Mar 2004 , Dheeraj Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. CAT, Indore, for DGFS Student and exploring possible avenues for collaboration, December, 2003, P. Sensarma.

2. Visited Asian Institute of Thailand during 20-22 August 2003 and 1-19 December 2003 to deliver invited lectures in the short term course on 'Demand Side

management and Distribution Automation' and 'Power System Operation Automation & Management', respectively. Also visited this institute during 24-26 September 2003 and 14-16 January 2004 to attend a project review meeting and attend an International conference, respectively, S.C. Srivastava.

3. Visited IOE Tribhuvan university, Nepal during 27th Sept. to 1st Oct. 2003 to deliver invited lectures to their Masters students in the Electrical Eng. Department, S.C. Srivastava.

4. Visited NIT Kurukshetra on 28th November 2003 to deliver invited lectures during 'POWERFEST 2003' conference, S.C. Srivastava.

5. Visited Indian Institute of Science, Bangalore in Aug. 2003 as an examiner of MSc (Engg.) Thesis, S.P. Das.

6. Visited General Electric, Bangalore in Aug. 2003. To have general interaction. Indian Institute of Science, Bangalore in Jan. 2004 as an examiner of Ph.D. Thesis, S.P. Das.

7. Visited BHEL, Hyderabad in Nov. 2003 as the Chairman, Preliminary Design Review and Critical Design Review Committees (May 2001 and Nov. 2003) for review of ADA, Bangalore sponsored project to BHEL, Hyderabad. The project was on The development of compact 40 kVA, 400 Hz generator for Light Combat Aircraft, S.P. Das.

8. ADE, Bangalore in Jan. 2004 to have general discussion, S.P. Das.

9. Visited Power Grid Corporation of India, Bhauti, Kanpur with UG/PG Students (EE330, EE630, EE632), S.N. Singh.

10. Visited Centre of Advanced Technology, Indore (6/2/2004) for discussion related to projects, S.N. Singh.

11. Visited Department of Electrical and Computer Engineering, Clemson University, Clemson, South Carolina, USA. To carry out research activities under the ongoing Indo-US collaborative project sponsored by DST and NSF [DST/EE/20000160]. 07-12 October 2003, S. Kar.

12. Visited to SAMTEL factory in Ghaziabad in connection to CRT Tubes, Nandini Gupta.

13. Visited M/s Wibhu Technologies, Pune in March 2004 to deliver a talk on antenna for wireless LAN applications, A. R. Harish.

14. Visited AICTE, New Delhi as an expert on making the syllabus for AMIE courses on Electrical Engineering, Nov. 2003, Anjan K. Ghosh.

15. Visited HBTI Kanpur as an AICTE expert for evaluating AICTE proposals, Dec. 2003, Anjan K. Ghosh.

16. Visited UP Tech University, Lucknow to attend a seminar organized by AICTE on evaluating Technical Colleges, Dec. 2003, Anjan K. Ghosh.

17. Visited BHEL R&D Centre in Hyderabad in March 2004, Anjan K. Ghosh.

18. Visited, Faculty of Engineering, University of Malaysia, Sarawak, December 15, 2003-December 26, 2003, Dr. S. Qureshi.

19. Visited Interra IT Pvt. Ltd., Noida several times during Feb. 2003 to Feb. 2004, R. P. Gupta.

20. Visited M/s Cypress Semiconductor Inc., Bangalore, from June 2003-July 2003, Animesh Biswas.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Invited Talk on Entrepreneurship and Marketing at Gaur Hari Singhania Institute of Management and Research, Kanpur, March 2004, S.Swami.

2. Evaluation of IT System: A case study, IIIT Hyderabad, Feb. 13, 2004, V. Bansal, and Himanshu Sadana.

3. Evaluation, Rating and Certification of Online Documents, IIIT Hyderabad, Faculty Workshop SAP, Banglore Feb. 23-27, SAP Lab India, V. Bansal and Mayank.

4. Visited BILT, Gurgaon and Siemens Pvt. Ltd. to study their ERP implementations, V. Bansal.

5. Issues in forecasting Electricity Demand in South Asian Countries SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.

6. Forecasting Electricity Demand in South Asian Countries – Results SARI/E Workshop on Advanced Demand Forecasting and Modeling Techniques, Pokhra, Nepal, 5 - 9 Jan. 2004, Anoop Singh.

7. Emerging Competitive Scenario in Indian Power Sector, Seminar at Indira Gandhi Institute of Development Research (IGIDR), Mumbai, 12th Dec. 2003, Anoop Singh.

8. Regulatory Issues in Power Sector Restructuring and Power Sector Scenario of India; delivered two lectures at IIM, Lucknow for Training Program on General Management for NTPC Managers, 14th April 2003, Anoop Singh.

9. Regulatory & Policy Developments in Indian Power Sector lecture in QIP sponsored short-term course on Electric Power System Operation and Management Restructured Environment, July 21-25, 2003, Anoop Singh.

10. Economics of Regulation, Guest Lecture, Dept. of Electrical Engg., IITK, 9th April 2003, Anoop Singh.

11. Invited lecture at National University of Singapore, Information systems Dept, 26/12/03 on New research directions for KM in the social sector-Knowledge exchange experience at Digital Mandi, Jayanta Chatterjee.

12. Invited lecture at Conference of Agricultural extension officers organized by National Institute of Agricultural Marketing, manage.com –10th Oct, 03, Jayanta Chaterjee.

13. Invited talk at Dept of Biotechnology on Business Incubation at biotechnology Parks. – 18th July, 03, Jayanta Chatterjee.

14. Demonstrated the software and transaction technologies developed for Medialab Asia KL hub at www.digitalmandi.net (i) 'Web and IVR/CTI based agro-commodity trading with integrated back end system' (ii)'Platform independent web to mobile SMS based bi-directional knowledge exchange using adaptable business rules' (iii) User co-creation of electronic content for rural development applications. 5(c)-Industries and organizations visited on professional engagement: Larsen & Tubro, Indian Airlines, NAFED, CII, Hughes ECL, Siemens Ltd, Lego-serious play APAC (Singapore), Jayanta Chatterjee.

15. Institute Visited: National University of Singapore, Hong Kong Poly University, Nangyang Technical University, Jamia Milia Islamia University, UP state Institute of Rural development, Jayanta Chatterjee.

16. Appointed Adjunct Professor at the Industrial Systems Engineering Dept. of Hong Kong, Poly University and on the International Research Advisory body of the KM laboratory at National University of Singapore and International Advisory body of Institute of Information and knowledge Management, Straits Knowledge, Singapore, Jayanta Chatterjee.

17. Appointed Lead researcher of The School of Organizational learning and transformation, at the Global Institute of Flexible Systems Management, Jayanta Chatterjee.

18. Awarded a 500$ prize for the Best paper published in the Flexible Systems Journal at the 3rd GLOGIFT Conference, March 2004.

19. Three short term (6days) courses organized for 110n L&T Senior Managers on 'Competitive advantage creation through Technology and Innovation' as part of the Technology Leadership Program, Jayanta Chatterjee.

20. One day workshop for Block development and Mandi Parishad officers of UP on Information design for electronic trading and NGT for Action Planning, Jayanta Chatterjee.

21. Retention in the Times of Downsizing and Restructuring: End of HRM? Seminar On Talent Hunt & Retention Strategies – Indian Experiences GHSIMR & NIPM, Kanpur, Feb. 15,2004, Rahul Varman.

22. Organised workshop: One-Day Workshop on Learning by Doing Engineering, Desing, & Management Education IIT Kanpur, August 9, 2003, A.P. Sinha.

DEPARTMENT OF MATHEMATICS

1. Visited the Institute of Statistics, Munich University, Germany in May 2003, in connection with his research activities, Shalabh.

2. Meeting of the International Statistical Institute (The Netherlands) at Berlin Germany in August, 2003, Shalabh.

3. Visited Katholieke University Leuven, Belgium in December 2003, for collaborative research, Misra, N.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Indian Institute of Advanced Studies, Shimla, 17 April 2003, R. Balasubramaniam.

2. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, June 11-12, 2003, R. Balasubramaniam.

3. Rishi Valley School, Madanapalle, June 23-24, 2003, R. Balasubramaniam.

4. General Motors Research and Development Center, Warren, MI, USA, October 9-10, 2003, R. Balasubramaniam.

5. Indian Institute of Science, Metallurgy Department, Bangalore, November 10, 2003, R. Balasubramaniam.

6. General Electric Corporate Research and Development, Bangalore, November 24, 2003, R. Balasubramaniam.

7. Shiram Pistons Pvt. Limited, Ghaziabad, January 31, 2004, R. Balasubramaniam.

8. Defence Metallurgical Research Laboratory, Hyderabad, February 4, 2004, R. Balasubramaniam.

9. University of Leeds, UK, May 2003, Bikramjit Basu.

10. University of Warwick, UK, May-July, 2003, Bikramjit Basu.

11. University of Cambridge, UK, June 2003, Bikramjit Basu.

12. University of Oxford, July 2003, Bikramjit Basu.

13. A&T North Carolina State University, Greensboro, North Carolina, May 2003, Monica Katiyar and Deepak Gupta.

14. Visiting Faculty, Center Des Materiaux, Ecole des Mines de Paris, July 2003, Anish Upadhyaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Visited on August 2003 to December 2003, Adjunct Professor, Mewbourne School of Petroleum and Geological Engineering and Department of Aerospace and Mechanical Engineering, University of Oklahoma, USA, K.Muralidhar.

2. Visited TAT A STEEL, Jamshedpur during September 28 - October 4,2003, N.V.Reddy.

3. AVL Research and Development Center, Graz, Austria, 15th May, 2003, Avinash Kumar Agarwal.

4. Mahatma Ghandhi Institute of Rural Industrialization, Wardha, July 2003, Avinash Kumar Agarwal.

5. Khadi and Village Industries Commission, Mumbai, January 2004, Avinash Kumar Agarwal.

6. General Motors Global Research and Development Center, Warren, Detroit, 12th March, 2004, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Samtel Technology Lab, Ghaziabad, S. Kumar.

(D) PATENTS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Applied for Tandoor Chulla, D. P. Mishra

DEPARTMENT OF CHEMICAL ENGINEERING

1. Pressure swing adsorption; Patent No. 705/DEL/2003, D.P. Rao.

2. A novel rotating bed contactor, Patent No. 356/DEL/2004, D.P. Rao.

DEPARTMENT OF CHEMISTRY

1. Method of preparing magneto-conducting polymer material composites with magnetic and electrically conducting features. Indian Patent No. 859/Del/(2000). Granted US Patent No: 6,627,101 B2, dated Sep.30, 2003, S. Sundar Manoharan and Manju Lata Rao.

2. Magnetoresistive CrO_2 – Polymer Composite Blends, Indian Patent file No. 934/Del/(2000) also as, US Patent file No. 09/829414 Granted, S. Sundar Manoharan.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Anaesthesia Monitor: Provisional Patent No. 167/DEL/2004, G.C. Ray.

2. Application with TIFAC, Y.N. Singh.

DEPARTMENT OF MECHNICAL ENGINEERING

1. Rubber pressure molding, Accepted, Prashant Kumar with K.K. Kar

(E) AWARDS AND HONOURS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Fellow of Indian National Academy Engineering, C.Venkatesan.

2. Swarnajayanti Fellowship, 2003, DST, Sanjay Mittal.

3. Member of the Organising Committee of the Indo-US Frontiers of Science Symposium to be Conducted in January 2005 by the Indo-US Forum, DST, Sanjay Mittal.

4. Aerospace Divisional Award from Institution of Engineering, Chandra Shekhar Upadhyay

DEPARTMENT OF CHEMICAL ENGINEERING

1. Fellow, Indian National Science Academy (elected in 2003), A. Sharma.

2. Fellow, Indian National Academy of Engineering (elected in 2003), A. Sharma.

3. Herdillia Award of the Indian Institute of Chemical Engineers for excellence in basic research (2003), A. Sharma.

4. Shanti Swarup Bhatnagar Prize in Engineering Sciences (received in July 2003), A. Sharma.

DEPARTMENT OF CHEMISTRY

1. Awarded Swarnajayanti Fellowship, F. A. Khan.

2. Astrazeneca Technology Innovation Award, H. Ila.

3. Acharya J. C. Ghosh Memorial Lecture and Medal by Indian Chemical Society, H. lla.

4. Global Indus Techno-innovators award for research contributions in Nanomaterials and devices, instituted by Indian Business club at Massachusetts Institute of Technology, Boston USA, November 2003, S. Sundar Manoharan.

5. JWT Jones Fellowship, Royal Society of Chemistry (2004), Sandeep Verma.

6. CRSI Medal (Bronze) 2003, Prof. Vinod Kumar Singh.

7. Chairperson "Women Scientist Scheme", (Chemical Science), Department of Science and Technology, New Delhi, H. Ila.

8. Nominated as member of Science and Engineering Research Cell (SERC), Department of Science and Technology, New Delhi, March 2004-2007, H. Ila.

9. Member of CSIR Committee for Chemical Science, H. Ila.

DEPARTMENT OF CIVIL ENGINEERING

1. G. jointly award IGS – Shri R.N. Prasad Biennial prize for the best paper on Slope Stability and Land Slides for their paper published in Indian Geotechnical journal in Dec. 2003 at the IGS Annual Conference held in Roorkee, Basudhar, P.K. and Bhattacharyya.

2. Nominated as Associate Editor of ASCE Journal of Structural Engineering effective from June, 2004, Gupta, V.K.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. R.K Ghosh, Associate Editor of International Journal on Education and Information Technologies (JEIT), ISSN 1548-3401, Jan 2004 http://itpublish.org/.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Awarded a cash prize of Rs.1000/- and a Certificate for the Best Poster Paper entitled Effect of the CN-PPV Layer on the performance of PPV/CN-PPV Polymer LED at IWPSD 2003 held at IITM from 16 – 20 Dec 2003, R.S. Anand, A. Awasthi, J. Narain.

2. Invited to join Editorial Board of the 'International Journal of Emerging Electric Power Systems (IJEEPS) (Berkley Electronic Press), S.C. Srivastava.

3. Invited to be an Editor of the Narosha Publisher's International Series on 'Power & Energy', S.C. Srivastava.

4. Stochastic filtering and and Speech Enhancement using a Recurrent Quantum Neural Network, **Best paper of the conference**, International Conference on Intelligent Sensors and Information Processing, ICISIP-04, Chennai, 4-7 January, Laxmidhar Behera and Bharat Sundaram.

5. Approaches to fragment assembly for DNA sequencing, **Best Student paper**, HiPC Workshop on Soft Computing, 2003, Debashis Dash, Rishi Dhingra and Laxmidhar Behera.

6. Awarded the Fulbright Scholarship by the United States Department of State for visiting the University of Illinois at Urbana-Champaign between May-July, 2003, Arindam Ghosh.

7. Won Indian National Academy Young Engineers Award 2003. Awarded by Indian National Academy, S.P. Das.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Reviewed papers for the following journals: Social Studies of Sciences, Population Review (member of Scientific Review Board), Demography India, A. K. Sharma.

2. Expert, http://www. sammaditthi.com, Online Journal of Sammaditthi Social Science Research, 2003, A. K. Sharma.

3. Member of Scientific Review Board, Population Review, http//www. populationreview.com/,20 Feb.2004, A. K. Sharma.

4. Received Distinguished Teacher Award, IIT Kanpur for the year 2003, September 5, 2003, Lila Krishnan.

DEPARTMENT OF MATHEMATICS

1. C.L. Chandana Mathematics Awards 2003 by Canadian World Mathematics Foundation, Misra, N.

2. Elected as a Fellow of the Royal Statistical Society, London in the year 2003, Kundu, D.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Editorial Board Member, International Journal of Corrosion Science, Engineering and Technology (former British Corrosion Journal), The Institute of Materials, London, R. Balasubramaniam.

2. Editorial Board Member, Indian Journal of History of Science, Indian National Science Academy, New Delhi, India, R. Balasubramaniam.

3. R. L. Thakur Memorial Award–2003 by Indian Ceramics Society, Bikramjit Basu.

4. BOYSCAST (Better Opportunities for Young Scientists in Chosen Areas of Science and Technology) fellow, Department of Science and Technology, Government of India, 2002-2003, Bikramjit Basu.

5. R.K. Ray and K.A. Padmanabhan, Gouthama.

6. TEM Study of the Role of Precipitate Particles in a Quasi-Single Phase Superplastic Alloy, Gouthama.

7. Presented at EMSI-2003, CPRI, Shimla, April, 2003, Gouthama.

8 'Best Oral Presentation Award' for the Materials Science Category at the conference from amongst 70 oral presentations, Gouthama.

9. Elected as a member of the Continuous casting operating committee (CCOC), AIST, USA, Dipak Mazumdar.

10. Elected as an Editor of The Transactions of The Indian Institute of Metals, Dipak Mazumdar.

11. Consultant to R&D division of Tata Steel (2003-2005), R.K. Ray.

12. Young Scientist Award 2003-2004 by UP Council of Science & Technology, Anish Upadhaya.

13. Young Metallurgist of the Year (2003) Award by the Ministry of Steels and Indian Institute of Metals (IIM), Anish Upadhaya.

14. TMS Foundation's R. Arora International Award-2003 for Materials Science and Engineering by The Minerals, Metals & Materials, Warrendale, USA, 2003, Anish Upadhaya.

15. Invited to serve as a member of the Editorial Advisory Board of the 'Transactions of the Indian Ceramic Society' for two years, May 2003, Anish Upadhaya.

16. Continue as member governing council of Powder Metallurgy Associate of India (PMAI), Anish Upadhaya.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Elected as the Fellow of the Indian National Academy of Engineering, G. Biswas.

2. Best Teacher Award for TA201N - Introduction to Manufacturing Processes (Institute Core Course), 2nd semester, 2002-2003, N.V.Reddy.

3. Best Tutor Award for TAI0IN - Engineering Graphics (Institute Core Course), 2nd semester, 2002-2003, N.V.Reddy.

4. Best Teacher Award for ME663 - Metal Forming (PG compulsory and UG Elective). First Semester, 2003- 2004, N.V.Reddy.

5. Humboldt Fellowship, Germany, P.K.Panigrahi.

6. Selected in the Technical Committee of IASTED, World modeling and simulation forum for 2003-04, Bishakh Bhattacharya.
7. Fellow, International Society for Genetic and Evolutionary Algorithms (ISGEC), since 2003, K.Deb.

8. Fast Breaking Paper Award in Engineering, ISI Web of Science's Essential Science Indicators (ESI), Feb 2004, K.Deb.

9. Fridrich Wilhelm Bessel Research Award, Alexander von Humboldt Foundation, Germany May - November, 2003, K.Deb.

10. Associate Editor, IEEE Transactions on Evolutionary Computation Journal, IEEE 2002-2004, K.Deb.

11. Associate Editor, Evolutionary Computation Journal, MIT Press 2002-2007, K.Deb.

12. Editorial Board Member, Engineering Optimization Journal, Taylor and Francis 2002-2004, K.Deb.

13. Editorial Board Member, Genetic Programming and Evolvable Machines, 2003-2006, K.Deb.

14. Member of The Editorial Board of International Journal of Manufacturing Technology and Management, Inderscience Publishers, U.K., V.K. Jain.

15. Member Of. The Advisory committee of International Journal of Advanced Manufacturing Technology, Springer Verlag, London (U.K.), V.K .Jain.

16. Member of the editorial board of Journal of Automobile Engineering Proceedings of IMechE, Part-D, Published by Institution of Mechanical Engineers, London, UK, Avinash Kumar Agarwal.

17. Guest Editor for a Special Issue on Alternative Fuels, for the Journal of Automobile Engineering, Published by Institution of Mechanical Engineers, London, UK, Scheduled for First Quarter of 2005, Avinash Kumar Agarwal.

18. Listed in Marquis Who's Who is Science and Engineering (2003-2004 edition), Avinash Kumar Agarwal.

19. Member of DST Expert group on Alternative Fuels and Retrofitting constituted by Government of India, Avinash Kumar Agarwal.

20. Reviewer for ASME Transactions Journal Of Engineering For Gas Turbine And Power, Avinash Kumar Agarwal.

21. Reviewer for ASME.ICED Spring and Fall Conferences 2003, Avinash Kumar Agarwal.

DEPARTMENT OF PHYSICS

1. Elected FELLOW of the Indian Academy of Sciences, Bangalore, D. Chowdhury.

2. Distinguished Teacher's Award, IIT Kanpur, 2003, H.C. Verma.

(E) CONTINUING EDUCATION ACTIVITIES

DEPARTMENT OF AEROSPACE ENGINEERING

1. Delivered Lectures in the Helicopter Technology Programme from Jan.4-April 28,2004 for HAL and Armed Forces Engineers organized at IIT Kanpur, N.G.R. Iyengar.

2. Development & Aerospace Information Panel QIP Course on "Renewable Energy & Alternative Fuels", Dec. 1-5, 2003;One of the Coordinators, Kunal Ghosh.

3. Organised the one-semester- Certificate Program on Helicopter Technology for sponsored candidates from Army, Air force and HAL. Second batch of participants successfully completed the program in April 2003, C.Venkatesan.

4. Instructor for a CEP Course titled, "Flight Identification Methods" conducted at IIT Mumbai-(19^{th} – 21^{st} January, 2004), A K Ghosh.

5. Combustion generated emission & its control, QIP, 1^{st} - 5^{th} March 2004, 28, IIT, Kanpur, D. P. Mishra.

6. HAL Management Trainee Programe, R. K. Sullerey.

7. Taught part of course on "Aircraft Structural Analysis" to the Graduate Engineering Trainees from HAL. Also taught part of course on Vibration Analysis for the "Helicopter Technology" course held from January 2004 to May 2004, C. S. Upadhyay.

DEPARTMENT OF CHEMICAL ENGINEERING

1. 'Process Safety and Inherently Safer Design', Sultan Qaboos University, Muscat, Oman May 2001, J.P. Gupta.

2. 'Inherent Safety, Health and Environment', Loughborough University, Loughborough, UK, J.P. Gupta.

DEPARTMENT OF CIVIL ENGINEERING

1. Lectured on Earthquake resistant design of steel connections in the One-Semester (31 July-5 Dec., 2003) certificate programme on Earthquake Resistant Design held in the Dept. of Civil Engg., I.I.T. Kanpur under the National Programme on Earthquake Engg. Education, Chakrabarti, S.K.

2. Recent Trends in Bituminous Mix Design, self-sponsored, IIT Kanpur, August 11-13, 2003, Numbers of participants: 31, A. Das.

3. Modern Trends in Pavement and Traffic Engineering, QIP, IIT Kanpur, March 28-31, 2004, Number of participants: 19, A.Das.

4. Organized and coordinated a Workshop on, INTERLINKING OF INDIAN RIVERS, at I.I.T. Kanpur on Sept. 20, 2003, Datta, Bithin.

5. NPEEE Supported One-Semester Certificate Programme in Earthquake Resistant Design (July – December 2003), IIT Kanpur, Jain, S.K.

6. Seismic Design of Reinforced Concrete Buildings (January 9 – 10, 2004, 140 participants, for Govt of Delhi; 2 days), Delhi, Jain, S.K.

7. Workshop on IS:13920, July 6, 2003 (one day); about 70 participants, Jain, S.K.

8. Workshop on IS:1893, Ahmedabad, Jain, S.K.

9. Training of Municipal Engineers in Review of Building Plans for Seismic Safety, (November 14-15, 2003) Ahmedabad, Jain, S.K.

10. Workshop for Earthquake Engineering Curriculum in Polytechnics of UP and Uttaranchal (29-30 July 2003), IIT Kanpur, Jain, S.K.

11. National Workshop on Introducing Earthquake Engineering in Civil Engineering Curriculum (August 22-23, 2003), IIT Kanpur, Jain, S.K.

12. Review Workshop for Resource Materials in Earthquake Engineering Education (25-29 August 2003), IIT Kanpur, Jain, S.K.

13. Curriculum Workshop for Architectural Programme in Colleges of Gujarat (October 21, 2003), Ahmedabad, Jain, S.K.

14. 'Concrete structures and durability', Invited lectures at the one-day workshop at Talcher Thermal Power Station, National Thermal Power Corporation, Talcher, Orrisa, February 19th, 2004, Misra Sudhir.

15. 'Basic concrete engineering' National Seminar on Advances in Building Construction and Rehabilitation Technology, Organized by the Institute Works Department, IIT Kanpur, March 2nd – 4th, 2004, Misra Sudhir.

16. Short Course on Introduction to Earthquake Engineering for engineering college and polytechnic teachers of State of Gujarat, Ahmedabad in July 2003, (24 participants for GSDMA), I.I.T.Kanpur in August 2003 (19 participants under NPEEE), Murty, C.V.R.

17. Taught in the AICTE_ISTE short term course on Design and Disaster Mitigation and Management of Structures conducted for teachers of engineering colleges and polytechnics by the Gandhi Institute of Technology and Management at Visakhaptanam on 15-16 April 2004, Murty, C.V.R.

18. Sensitisation of Architects of Indian Institute of Architects 06 January 2004 at New Delhi, 14 April 2004 at Jammu, Murty, C.V.R.

19. Sensitisation of Engineers of Government of NCT Delhi, 09 January 2004 at New Delhi, Murty, C.V.R.

20. Launch of Urban Earthquake Vulnerability Reduction Program, of Ministry of Home Affairs, GoI, New Delhi, 12 January 2004 in State of Maharashtra at Pune 13 January 2004 at State of Uttar Pradesh at Lucknow, Murty, C.V.R.

21. Training of Trainers by National Center for Disaster Management, New Delhi.

22. 28 July 2003 at New Delhi, 16 September 2003 at New Delhi, Murty, C.V.R.

23. Conducted Summer Camp 2003, for UG CE students from across the country, Industry sponsored, Lohani B.

24. Preparation for the Summer Camp 2004 including the followings; contacting various colleges for participation, contacting eminent persons in CE for guest speakers contacting different government and private agencies for sponsorship, Mohapatra, P.K.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. QIP Sponsored Summer School: Real-time Signal Processing and neural Computation using DSP Work Station, IIT Kanpur, July 7-19, 2003, G.C. Ray.

2. Self-sponsored, Real-time Signal Processing and neural Computation using DSP Work Station, IIT Kanpur, Sept. 29 – Oct. 4, 2003, G.C. Ray.

3. Self-sponsored course on Hands on Experience with DSP Work Station, Winter School, December 1-6, 2003, IIT Kanpur, G.C. Ray.

4. QIP Course : Recent trends in Displays : Organic Light emitting diodes, March 15-19, 2004, B. Mazhari.

5. Organized a Short term course on Electric Power System Operation and Management in Restructured Environment, QIP sponsored, IIT Kanpur, 21-25 July 2003 (Participants: Academics- 30, Industry- 23), S.N. Singh.

6. Organised Workshop-cum-Technology Dedication of Power Distribution Automation, Indian Institute of Technology Kanpur, India, February 22-23, 2003, R.P. Gupta.

7. Self sponsored short course on Trends in Techniques and Practices in Sensors and Instrumentation, Sept. 8-12, 2003, Anjan K. Ghosh.

8. Organizing committee members in Joint Indo US Science and Technology Forum on Futuristic Manufacturing, IIT Kanpur, March 2004, Anjan K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Sustainable Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26 – July 05, 2003, A. K. Sharma.

2. Social Indicators of Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 16-July 05, 2003, A. K. Sharma.

3. Role of NGOs in Improving the Environment, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26- July 05, 2003, A. K. Sharma.

4. PRA as a Tool for Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26-July 05, 2003, A.K. Sharma.

5. Delivered a lecture on A qualitative study of everyday meaning of mental health: Some insights regarding common-sense and social representations in the 9th UGC-ASC Refresher Course in Psychology on Human Behaviour: Research Issues and Insights, held at Department of Psychology, University of Allahabad from September 6-24, 2003, Shikha Dixit.

6. Organised a two day Workshop (along with Dr. K.G. Kshirsagar) on Intellectual Property Rights, Gokhale Institute of Politics and Economics, Pune, sponsored by the Ministry of Human Resource Development, New Delhi, March27-28, 2004, P. M. Prasad.

7. Lecture on Zoning Issues in Environmental Problems for the participants of UGC Refresher Course on Urban and Rural Development, Gokhale Institute of Politics and Economics, Pune, August 29, 2003, P. M. Prasad.

8. Participated in the Course Criminology and Forensic Science at National Institute of Criminology and Forensic Science, Delhi, During, September 2- 22, 2003, P. M. Prasad.

9. Organized the Linguistics Session at the 27th All India Social Science Congress, at IIT Kharagpur, December 3- 7, 2003, B. N. Patnaik.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Gave lectures of Design of Miniature Cryocoolers, Experimental Techniques, and Inverse Determination of Local Heat Transfer Coefficient, in the QIP-sponsored course entitled CAD of Thermal Systems, July 2003, K.Muralidhar.

2. Short term course on CAD of Thermal Systems, Period: 14th July to 19th July 2003, Number of participants: 45, P.K.Panigrahi.

3. Organized a five-day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 1, for TISCO Engineers, at IIT Kanpur, July 14-18, 2003, P.M.Dixit.

4. Organized a five day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 2, for TISCO Engineers, at TISCO Jamshedpur, September 29-0ctober 3, 2003, P.M.Dixit.

5. Organized a five day course (jointly with Dr. N.V. Reddy) Finite Element Applications in Metal Forming: Part 3, for TISCO Engineers, at IIT Kanpur, December 08-12, 2003, P.M.Dixit.

6. A one-week short course sponsored by Quality Improvement Program for engineering college teachers and industry entitled Renewable Energies and Alternative Fuels 1 5t to 5th December 2003, attended by 30 faculty members from engineering colleges, Dr. Avinash Kumar Agarwal.

7. Summer School at IACS, Kolkata, A.K.Mallik

8. Winter School at ISI, Kolkata, A.K.Mallik

DEPARTMENT OF PHYSICS

1. Delivered lectures on Computational Statistical Physics for nine hours at the sERC on Statistical Physics, TIFR, Mumbai (2004), D. Chowdhury.

2. Latest development in Physics IIT Kanpur Sept 15-19, 2003, P. Chand & K. Shahi.

3. Developed and taught two new courses (i) Physics of Information Processing; (ii) Nonlinear and Quantum Optics, H. Wanare.

4. Gave lectures to teachers of Kendriya Vidyalaya in Electrodynaimcs – Teaching, H. Wanare.

5. Closely involved in Restructuring of the Physics Syllabus of the CBSE, H. Wanare.

(F) PARTICIPATION IN HIGH LEVEL INDUSTRY ACADEMIA INDUSTRY INTERACTION PROGRAMME DURING SUMMER

DEPARTMENT OF AEROSPACE ENGINEERING

1. Participated in 1st AR&DB Manpower Meeting, Center for Airborne Systems (CABS), Bangalore, 27 Oct.2003, Kunal Ghosh.

2. Invited to attend and present our efforts in initiating the Helicopter Technology program at IIT Kanpur at the one-day session organized by INAE at Delhi in April 2003, C. Venkatesan.

DEPARTMENT OF ELECTRICAL ENGIEERING

1. Participated in 3G UMTS Standardization meetings representing Philips Research Labs., USA in May 2001, June 2001 and Nov. 2001, Ravi Motwani.

2. Visited Interra Software (India) Pvt. Ltd., Noida for interaction in strategic planning and technology initiatives, May – July, 2001, Sachchidanand.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Institute of Management, Patna, During Summer 2001, Sharan Raka, L.N. Mishra.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. General Motors Research and Development Symposium, November 10, 2003, Bangalore, R. Balasubramaniam.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Commercialisation of the indigenously developed Distribution Automation components under Technology Development Mission on Power Distribution Automation at IIT Kanpur is an important aspect. The above objective can be easily achieved through the demonstration project at pilot level in the utility environment. To realize the above demonstration project, while IIT Kanpur will provide its expertise to develop and integrate the system, it will take help of other industries such as Indian Telephone Industries, Raebareli and Interra Software (India), Noida for executing specific tasks in the project. These may include providing necessary components and equipments along with its installation and commissioning on the site for the implementation of the Distribution Automation project. It may be noted that the INTERRA Software (India) Limited and Indian Telephone Industry, Raebareli are already involved and signed MOU with IIT Kanpur in the automation activities of distribution system, R.P. Gupta.

(G) ANY OTHER IMPORTANT ACTIVITY NOT SPECIFIED IN ABOVE COLUMNS

DEPARTMENT OF AEROSPACE ENGINEERING

1. Co-Coordinator of "AR&DB Structures Panel Review Meeting" held at IIT Kanpur from 30/3/04 to 1/3/04, C. S. Upadhyay.

DEPARTMENT OF BIOLOGICAL SCIENCES AND BIO-ENGINEERING

1. Nominated as an expert member, Board of studies for the M.Sc. program in Biotechnology in CSJM University, Kanpur, S.Ganesh.

2. Review two research papers for the journal, Genomics (2003 and 2004) and one paper for the journal Journal of Clinical Investigations (2003), S.Ganesh.

3. My student Mr. KNK Harekrishnen won the best poster prize on peptide models for mammalian selenoproteins, Gurunath.

4. Organized Bioinformatics and Computational Biology session as part of the International Conference on Mathematical Biology in Feb 2004, along with Balaji Prakash, R. Sankararamakrishnan.

5. Member of Board of studies of Bioinformatics, Chhatrapati Shahu Ji Maharaj University, Kanpur, R. Sankararamakrishnan.

6. Reviewed manuscripts for the journals Current Science, Indian Journal of Chemistry Section A, Indian Journal of Chemistry Section B, R. Sankararamakrishnan.

7. Refresher course in Molecular & Developmental Genetics, Sponsor: Indian Academy of Sciences, Bangalore, Conducted at: Cytogenetics laboratory, Department of Zoology, Banaras Hindu University, Varanasi 221 005 Date: July 2-14, 2003, Instructor, K. Subramaniam.

8. International workshop on Cell Biology, Institute for Bioinformatics and Applied Biotechnology, Bangalore Date: February 28 – March 7, 2004, Instructor, K. Subramaniam.

9. Member of the Task Force meeting on HRD programs organized by Department of Biotechnology at New Delhi on 4th June 2003, P. Sinha.

10. Attended First Meeting of the Members of Society of Biotech Park, Lucknow held on 22nd Feb'2004 at the Biotech Park site Office, and Lucknow, P. Sinha.

11. Invited talk in seminar (Title of Talk- Growth & Potential of Biotechnology and Bioengineering Sciences) 24th April'04 at CMS-Auditorium, Lucknow, P. Sinha.

12. Organized Biotechnology Track of the TIE UP CALLING 2004 on 21st Feb'2004 at Methodist High School, 73, Cantonment, Kanpur 208004, P. Sinha.

13. Organized Short-term laboratory workshop in genetics and molecular biology at IIT Kanpur,18th to 25th October 2003, P. Sinha.

Research Grants Received at BSBE

1. Department of Science & Technology: Rs 9.69 Lacs Title: Cloning, Expression, Purification and Crystallization of Era, a GTP binding protein from Helicobacter Pylori' from 2003-2006, B.Prakash.

2. Ministry of Human Resource Development R& D grant: Rs. 15 Lacs. Title: Structural investigations on Bex, a GTP binding protein from Bacillus Subtilus' from 2003-2006, B.Prakash.

3. International Senior Research Fellowship award from Wellcome Trust, United Kingdom: Approx. Rs 1.96 Crores. Title: Structural Studies on GTPases and EDG Family G Protein-Coupled Receptor. From 2004 - 2009, B.Prakash.

4. DST-Fast Track: Molecular analysis of Lafora disease patients from Indian population, Rs. 10 lakhs, Jan 2004-Dec. 2006, Undertaken New Project S.Ganesh.

5. DBT research project Isolation and characterization of microbial strains degrading 234 nitro-toluene April 2004-March 2006. Rs. 10.14 lakhs, R. Gurunath.

DEPARTMENT OF CHEMICAL ENGINEERING

1. As AICTE expert for National Board of Accrediation to Sant Longowal Institute of Engineering & Technology Longowal, November 20th, 21st and 22nd , 2003, A. Khanna.
2. Madhav Institute of Engineering & Technology, Gwalior, December 19-21st, 2003, A. Khanna.

3. Sinhgad College of Engineering, Pune, January 23-25, 2004, A. Khanna.

4. Siddhaganga Institute of Technology, Tumkur, February 27th – 29th, 2004.D. Kunzru, Member, PAC of Chemical Engg, Dept. of Science & Technology, New Delhi, A. Khanna.

5. Member, Expert Committee for Fast Track Proposals in Engg. Science, Dept. of Science & Technology, New Delhi, D. Kunzru.

6. Member, Expert Committee in Engg. Sciences for Women Scientist Scheme, Dept. of Science & Technology, New Delhi, D. Kunzru.

7. Member, Fist Committee for Engg. Sciences, Dept. of Science & Technology, New Delhi, D. Kunzru.

DEPARTMENT OF CHEMISTRY

1. `Structure and Dynamics of Hydrogen bonds in bulk and interfacial aqueous solutions: Classical and ab initio molecular dynamics studies', funded by CSIR, started in June 2003, New Research Projects, A. Chandra.

2. 'Structure and dynamics of molecular solutions at interfaces: Theoretical studies using classical and quantum methods', funded by DST, started in April 2003, New Research Projects, A. Chandra.

3. `Excess protons, electrons and metal atoms in hydrogen bonded nanoclusters: Studies of structural, dynamical and electronic aspects

through ab initio molecular dynamics ‘, funded by DST (Nanoscience initiative), started in March 2004, , New Research Projects, A. Chandra.

4. CSIR: A New, Flexible and Stereoselective Synthesis of *trans*-Hydrindane Systems Present in Biologically Active Natural Products (2002-2005); 10.8 lakhs, Sponsored Projects, F. A. Khan.

5. Swarnajayanti (DST): Tetrahalobicyclo[2.2.1]heptane and tetrahalobic-yclo[2.2.2]-ocatne derivatives: Stereoselective inextricable templates in natural product and designed target syntheses (2003-2008); 96.6 lakhs, Sponsored Projects, F. A. Khan.

6. Selenocysteine containing peptides as models for mammalian selenoproteins 2001-2004; CSIR, Rs 11.2 lakhs, Ramanathan Gurunath.

7. Isolation and Characterization of microbial strains for the degradation of hydroxy and nitro toluenes, 2004-2006; DBT, Rs. 10. 16 lakhs, Ramanathan Gurunath.

8. CSIR project: Design and Development of New Multicomponent Couple Reactions sanctioned by CSIR (sanction no. 01(1854)/03 EMR II), Dtd. 12th March 2003, H.Ila.

9. DST project: New Synthetic Strategies for Small Molecule Heterocycles and Related Natural Products *via* Palladium (0) and Radical Mediated C-C and C-Heteroatom Bond Formation” sanctioned by DST (SP/S1/GO-05/2001) , H.Ila.

10. Astrazeneca project: Regioselective Synthesis of Substituted and Fused Quinoxalines, sanctioned by AstraZeneca Research Foundation, Bangalore, Karnataka., H.Ila.

11. Magnetoresistive Studies in Half – Metallic Ferromagnets, Collaborative Indo-German Research Project funded by Department of Science and Technology, New Delhi and BMBF, Germany, S. Sundar Manoharan.

12. Acoustic wave Stimulated Synthesis of ferromagnetic alloys and oxides” funded by Department of Atomic Energy (DAE), BRNS, Mumbai, S. Sundar Manoharan.

13. Consultancy project: Studies on Cathodo-luminescent materials for Display technology, With SAMTEL COLORS, Ghaziabad, Delhi, S. Sundar Manoharan.

14. Nerve gas inactivation by metalated polymer, Defense Materials, Stores & Research Development Establishment, DRDO, 2003-2004, Verma S.

15. Functional mimicry of copper oxidases: C-H bond activation by bioinspired nucleobase polymeric templates, SERC, Department of Science and Technology, 2003-2006, Verma S.

16. Parallel synthesis of functional monomers and polymers: Applications in catalysis and electrical conductance studies, Ministry of Human Resources Development, 2004-2007, Verma S.

17. CSIR: Osteoporosis project in collaboration with NIO Goa (2003-2004); Rs 5 lakhs, Sponsored Project, Vinod K. Singh.

18. DST: Chemistry of Aziridines (2003-2006); Rs 20 lakhs, Sponsored Project, Vinod K. Singh.

19. Neurogen Corp. USA: Synthesis of fragments (2003-2004); US$160,000/-, Consultancy Project, Vinod K. Singh.

20. Cyclopropanes as surrogates to molecules of potential interest, Application to selected natural products synthesis, 2004-2006; DST, Rs 20 lakhs, Sponsored Project, Veejendra K. Yadav.

DEPARTMENT OF CIVIL ENGINEERING

Research/Consultancy Projects

1. Visited the Department of Civil Engg., Univ. of Illinois at Urbana-Champaign, USA in July 2003, Chakrabarti, S.K.

2. Chakrabarti, S.K. completed the consultancy project, Vetling of Structural Design of 200 MLD Water Treatment Plant at Ganga Barrage (Kanpur) (sponsored by : Barrage Unit, U.P. Jal Nigam, Kanpur : Value : Rs. 3.0 lakh, Chakrabarti, S.K.

3. Worked as Vice-President, Indian Society of Earthquake Technology (ISET) in the first year of this term Gupta, V.K.

4. Worked as Editor, ISET Journal of Earthquake Technology for the consecutive sixth year Gupta, V.K.

5. Hydraulic Model Studies for River Training Works on the Ghaghra River near Kamariaghat, World Bank Project Sponsored by PCC Services, Lucknow, UP, Report Submitted September 2003, Amount Rs. 8,43,560, Jain, A.

6. Physical Modeling of Ghaghra River for the Selection of a Bridge Site near Behraich, World Bank Project Sponsored by The DHV Consultants BV, Lucknow, UP, Report Submitted June 2003, Amount. Rs. 4,76,000, Jain, A.

7. Active faults along northwestern Himalayan foothill zone: Implications to the great Himalayan earthquakes. Amount Sanctioned Rs. 402,000/=, Duration: 3 years. Funding Agency: DST, New Delhi (under fast track Young Scientist Scheme, Malik, N. Javed.

8. Malik, N. Javed, Title: DSM generation using high altitude satellite photos for identification and mapping of active tectonic landforms related to paleo-earthquake in Kumaon Himalaya. Amount Sanctioned Rs. 15,00,000/-. Funding Agency:3 years. Funding Agency:MHRD, New Delhi, Malik, N. Javed.

9. Assessment of technology for low-cost housing schemes of Govt. of India, Wizmin management consultants, Kanpur, Misra Sudhir.

10. Misra Sudhir, Assessment of quality of concrete construction, Mitsui Kensetsu India Ltd., Misra Sudhir.

11. Misra Sudhir, Inspection of RBI Buildings in Kanpur, Reserve Bank of India, Misra Sudhir.

12. Misra Sudhir, Inspection of civil works at development sites, Uttar Pradesh State Industrial Development Council (UPSIDC), Misra Sudhir.

13. MOU with Geological Survey of India (GSI), Calcutta, Patra, N.R.

14. Continuing Member, Project Evaluation Committee on Earth and Environmental Sciences, CSIR, New Delhi, Raymahashay, B.C.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

1. Member programme committee CIT Dec 2003, R.K Ghosh.

2. Resource person, International Workshop in Mobile Commerce, Dec 2003, R.K Ghosh.

3. IIT Kanpur Hackers' Workshop 2004. Feb 23-24, 2004, Deepak Gupta.

Sponsored Projects

1. E-pip – Everybosy's Platform for Information Processing, Media Lab Asia, 28 lacs, T.V Prabhakar.

2. Eclipse Innovation Grant, IBM, $15,000, T.V Prabhakar.

3. Project Monitoring Toll, MHRD, 5.00 lacs, T.V Prabhakar.

4. Technologies for Monitoring Gigabit networksDept of IT, MCIT, New Delhi, Rs. 60 lakhs, Dheeraj Sanghi.

5. Enabling IPv6 on ERNET Dept of IT, MCIT, New Delhi, Rs. 10 lakhs, Dheeraj Sanghi.

DEPARTMENT OF ELECTRICAL ENGINEERING

1. Acquisition (in process) of a high-end rapid PCB prototyping facility with scope for PTH rendering and multi-layer board fabrication, P. Sensarma.

2. Guest Researcher, Fraunhofer Institute of Autonomous Intelligent Systems, Germany, May 19 2003 – July 18 2003, Laxmidhar Behera.

3. Involved in Distance Education programme for Chattisgarh Govt., Y.N. Singh.

4. DST-Fast Track: Theoretical and experimental investigation of an artificial treechannels in high voltage polymeric insulation, Nandani Gupta.

5. MHRD-R&D: Experimental investigation into the mechanism of electrical tracing in polymeric insulation, Nandani Gupta.

6. Mentored a team of 3 students for the IEEE Computer Society International Design Competition (CSIDC). The team qualified for participation in the World Finals at Washington DC in July 2003 and won an Honorable Mention, A. K. Chaturvedi.

7. Served as a member of the Awards Committee of SPIE, the International Society of Photonics Engineering, A.K. Ghosh.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

1. Sustainable Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26 – July 05, 2003, A. K. Sharma.

2. Social Indicators of Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 16-July 05, 2003, A. K. Sharma.

3. Role of NGOs in Improving the Environment, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26- July 05, 2003, A. K. Sharma.

4. PRA as a Tool for Development, Lecture in Refresher's Course in Environment Economics & EIA, HSS Department, IIT Kanpur, June 26-July 05, 2003, A.K. Sharma.

5. Delivered a lecture on A qualitative study of everyday meaning of mental health: Some insights regarding common-sense and social representations in the 9th UGC-ASC Refresher Course in Psychology on Human Behaviour: Research Issues and Insights, held at Department of Psychology, University of Allahabad from September 6-24, 2003, Shikha Dixit.

6. Organised a two day Workshop (along with Dr. K.G. Kshirsagar) on Intellectual Property Rights, Gokhale Institute of Politics and Economics, Pune, sponsored by the Ministry of Human Resource Development, New Delhi, March27-28, 2004, P. M. Prasad.

7. Lecture on Zoning Issues in Environmental Problems for the participants of UGC Refresher Course on Urban and Rural Development, Gokhale Institute of Politics and Economics, Pune, August 29, 2003, P. M. Prasad.

8. Participated in the Course Criminology and Forensic Science at National Institute of Criminology and Forensic Science, Delhi, During, September 2- 22, 2003, P. M. Prasad.

9. Organized the Linguistics Session at the 27th All India Social Science Congress, at IIT Kharagpur December 3- 7, 2003, B. N. Patnaik.

DEPARTMENT OF INDUSTRIAL & MANAGEMENT ENGINEERING

1. Reviewer of Marketing Strategy for the Proposal: Strategy for Marketing the Energy Efficient Cupola and Pollution Control System Among Small-Scale Foundries, by Tata Energy Research Institute (TERI), New Delhi, Swami, S.

2. Session Chairman in the Technical Session on E-Commerce and Information Technology in APORS-2003 International Conference, New Delhi, India, December, 2003, Swami, S.

3. Draft Presentation for IT Policy for UP Development Council, Government of Uttar Pradesh (co-authored with Prof. S. G. Dhande, Director, IIT Kanpur, and Mr. Sanjeev Shriya, President, TiEUP, Swami, S.

4. Session Chairman in the Technical Session on Multiobjective Goal Programming in APORS-2003 International Conference, New Delhi, India, December, 2003, Sharma, RRK.

Consultancy Reports

1. Consultant to DFID, UK project on SME Development and Pro-Poor Economic Growth: Developing Financial service Markets in Asia, April-May, 2003, A.P. Sinha.

2. Interim Draft Report on Analysing barriers and policy measures to wider adoption of clean and energy efficient technologies in the power sector (ARRPEEC-III) for AIT, Thiland, Anoop Singh.

3. Consultancy report to L&T India on Strategic Management of Technology and Knowledge across Business Groups and guidance for (a) Market entry strategy for Facility Command centers- Integrated control, automation, safety and security centers in large mixed use estabilishments (b) Reegineering the L&T EBG range for rural markets-River linking project. (c) Task force agenda for Technology mapping, Jayanta Chaterjee.

4. Report on Market Survey to Access the Business Potential of Industrial Robots in India for BHEL, New Delhi, September 2003, Market Survey to Access the Business Potential of Industrial Robots in India Sponsored by Bharat Heavy Electricals Limited, Corporate Office, New Delhi. Rs. 4.94 Lakhs, Sanjeev Swami.

5. Development of a Decision Support System for Micro-scheduling at Theaters Sponsored by Pathe, The Netherlands, Rs. 3.24 Lakhs, Sanjeev Swami.

Cases Developed

1. The case of Book Stools in a Library, 2003, Rahul Varman.

Short Term Courses

1. Problem solving and Process Re-Engineering for Indian Airlines May 23-25 2003 New Delhi, A.K. Mittal.

2. Follow up Workshop on Problem Solving and Process Re-Engineering for Indian Airlines 30th August 2003 New Delhi, A.K. Mittal.

3. QFD Iran Electricity Company Sari Iran Dec. 5, 2003, A.K. Mittal.

4. Modalities of Product Patent Key note address ASSOCHAM Programme on Amendments to the Patents Act 1970, Lucknow Sep., 2003, A.K. Mittal.

5. ISO 9000:2000 and 5S Invited Lecture Quality Month Small Arms Factory Kanpur November 2003, A.K. Mittal.

6. TQM Invited Lecture Quality month Field Gun Factory Kanpur November-2003, A.K. Mittal.

DEPARTMENT OF MATHEMATICS

1. Invited to be Editorial Board Member of the Journal of Modern Applied Statistical Methods for the year 2003-2005, Kundu, D.

2. Invited to be the Editorial Board Member of the Journal Statistics and Its Applications, Kundu, D.

3. Gave a series of nine lectures in Linear Algebra, in NBHM Sponsored Nurture Program held
in IIT Kanpur in June 2003, Lal, A.K.

4. Organized 'International Conference on Mathematical Biology' Feb. 19-21'2004 at the I.I.T. Kanpur. It was participated by about 150 participants including 12 foreign delegates, Chandra, P.

5. Chaired the Environmental Science Session at the 2004 Hawaii International Conferences on Sciences held at Honolulu, HI, U.S.A. during Jan. 15-18, 2004, Sinha, Prawal.

6. Chairman for the plenary session , during the International Conference on Differential Equations, Dynamical Systems and Applications held at Atlanta. U. S.A. during May 19-May 24, 2003, Raghavendra, V.

9. Delivered 4 invited lectures at University of Allahabad, Department of Mathematics, Feb. 26-27, 2004, Kapoor, G.P.

7. Enhanced Fritz John Conditions in Nonsmooth Optimization, Institute for Optimization: University of Halle-Wittenburg, Germany, 17th June 2003, Dutta, J.

8. Regularity Conditions and Optimality in Nonsmooth Vector Optimization, 24th June 2003, Dutta, J.

9. Monotonic Analysis over Cones, Department of Operations Research and Statistics, University of Alicante, Spain, 2nd July 2003, Dutta, J.

10. A Brief Overview of Nonsmooth Optimization, Department of Operations Research and Statistics, University of Alicante, Spain, 4th July 2003, Dutta, J.

11. Visit under the Associateship Programme of the Institute of Mathematical Sciences, Chennai, from May 6-June 6, 2003, Banerjee, M.

12. On the Development of Parallel 3D Unsteady Flow Solver for Vector Parallel Processors, Institut Techno Und Wirtschafts-mathematik (ITWM), Pre-Park, Kaiserslautern, Germany May, 2003, Rathish Kumar B.V.

13. Parallel Iteratiave Solvers on Anupam Cluster, at BARC, May, 2003, Rathish Kumar B.V.

14. Wavelet based pre-conditioners in Sparse Matrix computation, at IOP, Bhuwaneshwar, Workshop on Wavelets and Applications, Feb. 7-11, 2004, Rathish Kumar B.V.

15. Introduction to numerical simulations in fluid dynamics, AICTE workshop on Simulation & Modelling at Beant College of Engineering, Gurudaspur, 15-20, March 2004, Rathish Kumar B.V.

16. Dominance Based Approach for Local Search Algorithms International Conference on OR, with Industrial and Economic Applications, Jan. 8-10, ISI Kolkata, Sharma, P.

17. XVIIIth International Symposium on Mathematical Programming, Technical University of Denmark, Copenhagen, Denmark, August 2003, Sharma, P.

18. Presented contributory paper, Chaired a session on combinatorial optimization, APORS 2003, Delhi, 7-9th Dec. 2003, Sharma, P.

DEPARTMENT OF MATERIALS AND METALLURGICAL ENGINEERING

1. Investigation of Iron pillar at Kodachadri hills, May 16, 2003, R. Balasubramaniam.

2. Investigation of forge welded iron cannon 'Dal Mardan' at Bishnupur, June 10, 2003, R. Balasubramaniam.

3. Study of bronze disease in Chola bronzes at Tiruchi Museum, Tiruchirapalli, June 19, 2003, R. Balasubramaniam.

4. Study of cast iron cannon in Krishnagiri fort, Krishnagiri, 24 June 2003, R. Balasubramaniam.

5. Investigation of material of construction of Rashtrakuta bronzes, Andhra Pradesh state archaeology department, Hyderabad, June 30, 2003, R. Balasubramaniam.

6. Investigation of iron and bronze cannons in Golconda fort, Hyderabad, November 7, 2003, R. Balasubramaniam.

7. Investigation of the characters of the Delhi iron pillar inscription, April 3, 2004, R. Balasubramaniam.

8. Nucleation of a Group for Research on Emerging Technologies for White Light Illumination, 7 April 2003, IIT Kanpur, Deepak Gupta.

9. International Indo-Italian Workshop on Organic Semiconductors, 14-17 October 2003, IIT Kanpur (with Prof. S. Kumar, Physics), Deepak Gupta.

DEPARTMENT OF MECHANICAL ENGINEERING

1. Developed a biped walking robot for the first time in India, which has possible applications in defense, nuclear, entertainment etc., Ashish Dutta.

2. Actively participated in the organization of Indo-USA collaboration on Futuristic Manufacturing, N.V.Reddy.

3. Representing IIT Kanpur in Expert group on CAD/CAM education (MHRD Initiative) , N.V.Reddy.

4. Modernization of Introduction to Manufacturing Processes Laboratory (On going activity, Institute Core Laboratory), N.V. Reddy.

5. National Symposium for IC Engines and Combustion, 2007 to be hosted at IIT Kanpur. I was responsible for bringing it to IIT Kanpur for the first time, Avinash Kumar Agarwal.

6. Organizing chairing a session on Alternative fuels for compression Ignition Engines in SAE World Congress 2005 to be held in Detroit, April 2005, Avinash Kumar Agarwal.

7. Four modules consisting of 12 lectures of Kinematics of Machines prepared under NPTEL has been delivered for broadcasting in ‘Eklavya’ channel, A.K.Mallik.

Projects

1. Principle-investigator (with Prof. K.Muralidhar CI), Research Project sponsored by Department of Atomic Energy, Computational Fluid Dynamics Analysis of a low-pressure CVD reactor, as an aid to design. Worth: Rs 14,95,000/- Duration: 2003-2005. Deliverable: Further simulations of a CVD (Chemical Vapour Deposition) Reactor, for design optimisation. V.Eswaran

2. Co-Investigator (with Prof. G.Biswas PI), Research project sponsored by BRNS(Mumbai), CFD Code for Thermal Hydraulics of Neutron Spallation Target for Accelerator Driven Sub-critical System, V.Eswaran.

3. Co-Investigator (with Prof. P .K. Panigrahi PI), Research project sponsored by Naval Research Board (NRB), Active Flow Control by Dynamic Obstacles in Propulsion Applications . Worth:Rs 34,08,600/- Duration:2004-2007, V.Eswaran.

4. New Project Design and Development of a Fire Testing Set-up for Flight Data Recorder, HAL Korwa, Rs. 6.00 Lakhs, B.P.Pundir.

5. Co-investigator, Modernization and Removal of Obsolescence Project, Sponsored by MHRD, Rs. 15 lakhs. (PI: Head, Mechanical Engineering, Co-PI's: N. V. Reddy, Avinash Agarwal and N. N. Kishore), N.V.Reddy.

6. Principal Investigator, A course on Finite Element Applications in Metal Forming for TISCO(R&D) engineers (Four weeks course), TISCO, Jamshedpur, (Rs 2 lakhs). (Prof. PM Dixit is also a Principal Investigator), N.V.Reddy.

DEPARTMENT OF PHYSICS

1. Member, Organizing Committee, International Conference on Unconventional Applications of Statistical Physics (2003), D. Chowdhury.

2. D. Chowdury – Guest EDITOR, T106 of Physica scripta (2003), Published by Royal Swedish Academy of Sciences, D. Chowdhury.

3. M.K. Verma – Educational software for middle-school children on human body, Indian rivers with a team Apne Hath se, IIT Kanpur, M.K. Verma.

4. S. Sivaprakasam – delivered two talks at HAL, Korwa, 14 and 15 Nov. 2003, S. Sivaprakasam.

5. Convener, National Workshop on String Theory 2003, IIT Kanpur, Dec. 8-21, 2003, G. Sengupta.

6. Paris-04: International Meeting on Linear Colliders, Ecole Normale Superieur, Paris, April 19-26. 2004, Joint-Convenor, Working Group on Physics Beyond the Standard Model, S. Raychaudhuri.

7. S. Raychaudhuri - Member of DST PAC on SERC Schools in Theoretical High Energy Physics (2000-2005), S. Raychaudhuri.

8. A number of refreshing Physics experiments at school level were developed. 1-day workshops were conducted at different places. About 300 physics teachers from selected schools were trained, H.C. Verma.