



*A quarterly newsletter of the Indian Institute of Technology Kanpur for alumni and friends*

## *Workshops and Conferences*

**Condensed Matter Physics:** The Department of Physics, IIT Kanpur, organized the VIII<sup>th</sup> workshop on Condensed Matter Physics from 20<sup>th</sup> - 22<sup>nd</sup> February, 2009. The workshop aimed at bringing together various research groups in the Institute in this area. It also aimed to acquaint students with the expertise available in the area and to familiarize them with the ongoing research. The workshop also tried to foster collaborative research. The topics covered were: Strongly correlated electronic systems, magnetism and superconductivity, nano-structured materials, interdisciplinary topics in lasers, computer science, quantum optics and biophysics, nuclear techniques in condensed matter, non-equilibrium and non-linear dynamics and graphemes.



**CivERE 2009:** The Department of Civil Engineering organized the 4<sup>th</sup> National Conference for Civil and Environmental Engineering Students, "CivERE 2009" from 20<sup>th</sup> - 22<sup>nd</sup> February, 2009. The aim of CivERE was to encourage research & education in the field of Civil Engineering. CivERE was started in 2005 as a technical paper presentation contest. Over the years it has evolved and grown, fulfilling its purpose to a large extent and showing potential of being one of the most intellectually stimulating events for students of Civil Engineering all over the country. Now it has turned into a full fledged student conference. This event brings out the hard work, dedication and perseverance of the students of civil engineering and gives them an opportunity to compete on a common platform. The conference comprised many events like the Technical Paper Presentation Contest, the Case Study Solving contest (CSS), the Knowledge Sharing Sessions (KSS), the Distinguished Lecture

Series (DLS) and the Interactive sessions with Professionals

**HACK.in 2009:** The Prabhu Goel Research Center (PGRC) of the Department of Computer Science and Engineering organized Hack.in 2009, the 3<sup>rd</sup> Hackers' Workshop on computer and network security from 17<sup>th</sup> -19<sup>th</sup> March 2009. The workshop tried to bring together researchers, practitioners, programmers, administrators, professionals and others interested in the security of computer systems and networks.



Hack.in 2009 was primarily a systems security workshop and it focused on the design and implementation of security systems including protocols and case studies. In addition to the presentation of refereed papers, the technical program of the workshop included invited talks, workshops on Wireless Security by Airtight networks and panel discussions on "Network Security and Privacy: Are we hyping it or is it for real?". Keynote talks were given by Prof. D. J. Bernstein, University of Illinois, U.S.A; Prof. Antonio Mana University of Malaga, Spain and Prof. Bimal Roy, Indian Statistical Institute, India.



**A cyber conference on Nano-Science and Nano-Technology** was organized by the University Joseph Fourier (Grenoble, France) at the institute's Outreach Centre on 30<sup>th</sup> March, 2009. This conference was particularly useful for the researchers and students of Biology, Physics, Materials and Metallurgical Engineering, Chemistry and some interdisciplinary programs. There were three talks in this cyber-conference:

- 1) "Talking to a single spin with the language of nanoelectronics" by Henri Mariette of CEA-CNRS-UJF, Grenoble, France.
- 2) "Design of new (bio)functional interfaces for research in the field of medicine and life sciences" by Pierre Labbé of UMR-CNRS-UJF, Grenoble, France.
- 3) "Micropatterning techniques reveal the physical laws of cell architecture and internal organization" by Manuel Théry of CEA, Grenoble, France.

**A Workshop on "A Perspective of International Collaboration"** was held on 21<sup>st</sup> August, 2009 to honor Prof. Kelkar in his centenary year. The workshop was organized by Prof. S. P. Mehrotra, Department of Materials and Metallurgical Engineering; Prof. K. Muralidhar, Department of Mechanical Engineering and Dr. Sandeep Verma, Department of Chemistry. Delegations of scientists and technocrats from Brazil, Malaysia, South Africa, Ethiopia, Vietnam and Israel participated in the day long workshop. Present also on this occasion were officials from the Ministry of Human Resource Development (MHRD). The aim of the workshop was to provide a platform for a dialogue to faculty members at IIT Kanpur and to foreign dignitaries from the embassies of various countries, in order to strengthen ongoing research partnerships and future interactions. This meeting provided a direct window to the visitors to see IIT Kanpur's expertise in niche areas of cutting edge research and also its high quality academic programs. The workshop had two discussion sessions dedicated to research and academics and a poster session displaying research topics of ongoing international projects. Models for international collaboration were also discussed during the workshop. In general there was an overwhelming interest from countries like Brazil, Ethiopia and Vietnam to seek IIT Kanpur as a prospective academic partner in building their academic programmes.



## *Institute Lectures*



**Prof. K. R. Srivathsan**, presently Pro-Vice Chancellor, IGNOU, New Delhi gave an Institute lecture titled "IGNOU-NPTEL Proficiency Certificate Courses and Professional Diploma Programs" on 26<sup>th</sup> February, 2009. Prof. Srivathsan obtained his Ph.D. from Queen's University, Canada, and was Professor in the Department of Electrical Engineering at IIT Kanpur till December 2000 when he became the first Director of the Indian Institute of Information Technology and Management, Kerala.



**Dr. Siva Prasad Gogineni**, of The Centre for Remote Sensing of Ice Sheets, University of Kansas gave an Institute lecture titled, "An Overview of Research and Education at the Center for Remote Sensing of Ice Sheets (CReSIS)" on 13<sup>th</sup> April, 2009. Dr. Gogineni received his Ph.D in electrical engineering from the University of Kansas in 1984. Presently he is the Deane E. Ackers Distinguished Professor in the Department of Electrical Engineering and Computer Science, University of Kansas, Lawrence, Kansas. His research interests include the application of radars to the remote sensing of the polar ice sheets, sea ice, ocean, atmosphere, and land. Prof. Gogineni is a member of URSI, the American Geophysical Union, the International Glaciological Society, and the Remote Sensing and Photogrammetry Society.



**Dr. Jayant V. Narlikar**, of the Inter-University Centre for Astronomy and Astrophysics, Pune gave a lecture titled, "The role of science fiction in the present age of science" on 24<sup>th</sup> June, 2009. Dr. Narlikar got his Ph.D in mathematics in the year 1963 from Cambridge but he has specialized in astronomy and astrophysics. He distinguished himself at Cambridge with the Smith's Prize in 1962 and the Adams Prize in 1967. Dr. Narlikar is internationally known for his work in cosmology, in championing models alternative to the popularly believed big bang model. His work has been on the frontiers of gravity and Mach's Principle, quantum cosmology and action at distance physics. He has received many prestigious awards like the Shanti Swaroop Bhatnagar Award, the M. P. Birla award, the Prix Janssen of the French Astronomical Society and he is an Associate of the Royal Astronomical Society of London. He is a Fellow of the three National Science Academies as well as of the Third World Academy of Sciences. In 1965, at the very young age of 26 years, Prof. Narlikar was decorated with the Padmabhushan; he was awarded the Padmavibhushan as well in 2004 .



**Prof. A. K. Sood**, of the Department of Physics, Indian Institute of Science Bangalore, gave a lecture titled "The rise of carbon: Nanotubes and Graphene" on 3<sup>rd</sup> August, 2009 . In his talk he explained that carbon nanotubes and graphene are the one- and two-dimensional forms of carbon discovered in the last few years. These have many fascinating physical properties translating into new devices and applications. He also explained how new science is being done with these nano-systems in the laboratory with a realizable potential for applications. Prof. Sood's research interests include the physics of nano

systems like nanotubes and graphene, strongly electron correlated systems and the physics of soft condensed matter. His work has been recognized by many honors and awards. He is a Fellow of the Indian Academy of Sciences and of the Indian National Science Academy. He is the recipient of many prestigious awards like the Shanti Swaroop Bhatnagar Award, the G. D. Birla Award, the TWAS Prize in Physics, the FICCI Prize, the Millennium Gold Medal of the Indian Science Congress and the National Award in Nanoscience and Nanotechnology.



**Prof. C. N. R. Rao Lecture Series:** Prof. V. Chandrasekhar, Head, Department of Chemistry gave a lecture on Single-Molecule Magnets on the occasion of Science Day on 27<sup>th</sup> February, 2009. Prof. Chandrasekhar obtained his Ph.D from IISc, Bangalore and did post-doctoral work at the University of Massachusetts, Amherst. Prof. Chandrasekhar's research interests are in the area of main-group organometallic chemistry. The focus of his research is on the synthesis, structure and reactivity of inorganic clusters, rings and polymers. He has also pioneered the chemistry of new inorganic-cored star-

burst molecules and ligands. Currently his group is focusing on the application of these diverse molecules in catalysis, in the stabilization of nanoparticles and in the assembly of new magnetic and optical materials. Dr. Chandrasekhar is a Fellow of the three National Science Academies. He is a recipient of the prestigious Shanti Swaroop Bhatnagar Award, the Friedrich-Wilhelm-Bessel Research Award and the J.C. Bose National Fellowship.



**E. C. Subbarao Distinguished Lecture Series:** Dr. G. Rajeswaran, CTO, Moser Baer Group gave a lecture titled, "Sustainable Technologies: Photovoltaics and organic solid state lighting" on 27<sup>th</sup> March, 2009. Dr. Raj received his Ph.D in electrical engineering from the State University of New York. From 1985 - 2007, for a period of 22 years, he was with Eastman Kodak Company (Rochester, New York) where he was initially involved in the development of compound semiconductor materials & devices (LEDs, laser diodes) for Kodak's high speed copiers. Since July 2007 he has been with Moser Baer Photovoltaic Ltd (New Delhi,

India) where he now leads the crystalline silicon, thin film amorphous silicon and concentrator photovoltaic operations and technologies.



**Dr. Devendra Shukla Distinguished Lecture:** Dr. A. Ramakrishna gave a lecture titled, "Advanced Construction with Examples of Innovative Design and Construction Technologies" on 9<sup>th</sup> April, 2009. Dr. Anumolu Ramakrishna, started his career in 1962 with the Engineering Construction Corporation Limited (ECC), then a wholly owned subsidiary of Larsen & Toubro Limited. ECC was subsequently amalgamated with the parent company and is now widely known as ECC Construction Division. Currently Dr. Ramakrishna is the President (Operations) and Deputy Managing Director, Larsen & Toubro Ltd., Chennai. He is

actively associated with many prestigious International and National bodies in the engineering field like the American Society of Concrete Contractors, the American Society of Civil Engineers, the International Federation for Structural Concrete (fib) and the Institution of Engineers (India). He has also played an important role in the founding of industry associations such as the Indian Concrete Institute and the Construction Federation of India.