

IIT Kanpur is one of the top-rated technical institutions involved in teaching and nurturing high profile academic programs in engineering, science and humanities. The various academic programs are:

Undergraduate Programs:

4-year B. Tech and 5-year Integrated M. Sc.

The first component in these degrees is the core program common to all students and is carefully planned to give the students a strong base of general education in pure and engineering sciences, technical arts, and humanities and social sciences. The second component of the undergraduate program includes professional courses and a project in the chosen branch of specialization.

Two-year M. Sc.

Candidates are also admitted to two-year M. Sc. program in the disciplines of Chemistry, Mathematics, Statistics and Physics.

Postgraduate Programs:

B. Tech. dual degree, M. Tech., MBA, M. Des., Ph.D.

The goals of these programs are development of the highest quality of scientific and engineering manpower to cater to the needs of Industry, R & D organizations and educational institutions who shall have a broad grasp of the fundamental principles of sciences and the scientific method, deep understanding of their area of specialization, innovative ability to solve new problems, and the capacity to interact with multidisciplinary groups.

The Institute also offers cutting edge short-term courses in emerging areas for teachers/professionals working in engineering institutions, researchers working in R&D organizations and engineers working in industries.

All interested are requested to contact the following for further information.

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A Workshop on

A Perspective of International Collaboration

on the occasion of

P K Kelkar Birth Centenary

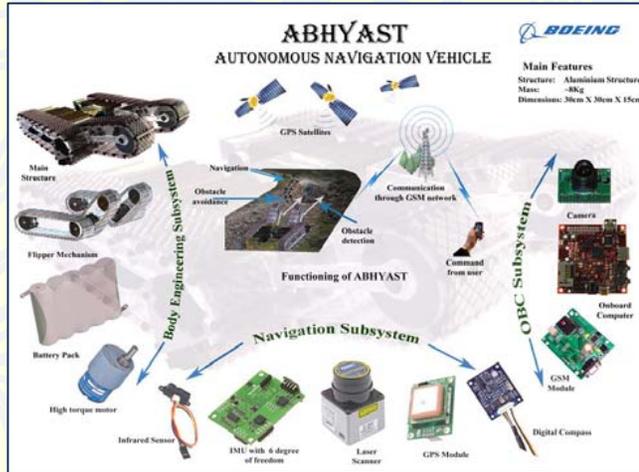


Professor Purushottam Kashinath Kelkar, the founder Director of Indian Institute of Technology Kanpur, was a great visionary leader who made a distinct contribution to the technical education in the country. He championed the cause of international collaboration at IIT Kanpur since its inception. Under his able leadership, the Institute benefited from the Kanpur Indo-American Program (KIAP) in the days of its infancy. In recent times, the international cooperation is on the rise given the current competency of IIT Kanpur in academics and research.

IIT Kanpur carries out original research of significance and technology development at the cutting edge. It imparts training for students to make them competent, motivated engineers and scientists. The Institute not only celebrates freedom of thought, cultivates vision and encourages growth, but also inculcates human values and concern for the environment and the society.

This one-day perspective workshop intends to honor Prof. Kelkar in his Centenary year and seeks to provide a platform to our faculty and foreign dignitaries for a dialog, in order to strengthen the ongoing research partnerships and inculcate future interactions. This meeting will provide a window to the visitors about our expertise in niche areas of cutting edge research and high quality academic programs.

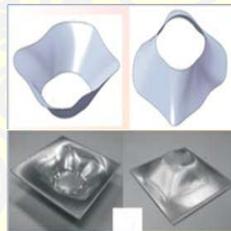
The Institute encourages research investigations in basic and applied areas of science and technology such as Energy, Environment, Health, Computing, Manufacturing, Simulation, Materials, Telecommunication, and Infrastructure, in the form of sponsored projects. There has been a constant increase in the quantum of funding, interdisciplinary research as well as international projects. The scope of research and cooperation is driven by technology missions, technology transfers and IPRs.



Under the Boeing-IIT Kanpur cooperation, the students will endeavor to design and build an autonomous navigation vehicle (ABHYAST).

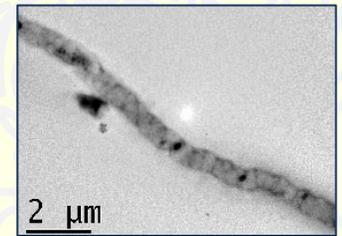
INDO-US Center for Research Excellence in Fabricionics is supported by the Indo-US Science and Technology Forum. This Center is a consortium of

Indian researchers from IITK, IITKgp, BESU and CMRI, collaborating with University of Illinois at Urbana-Champaign, University of Illinois at Chicago and Northwestern University. This research addresses the issues related to materials and fabrication for energy storage devices, biomedical devices, micro/nano fabrication and microfluidics. The collaborative research is driven by a two-way exchange of Ph.D. students and faculty, as well as research workshops.



A project dedicated to *Modeling the Supply chains of Special Economic Zones (SEZs) in India* will identify the key issues in the supply chains of emerging SEZs, by developing mathematical models to determine logistics, inventory and pricing decisions in multi-echelon environment of SEZs. This project is a joint collaboration between the Department of Industrial & Management Engineering at IIT Kanpur, and School of Mechanical & Aerospace Engineering, at Nanyang Technological University, Singapore.

Diseases such as Parkinson's, Alzheimer's, and Huntington's exhibit some association with defective iron regulation in the brain. The project *Novel Metal Clusters in Protein Clefts*, funded by the European Commission, has demonstrated that transferrin, the blood protein responsible for iron transport, can assemble into protein fibers that contain bits of biomineralized iron particles. Possible role of transferrin aggregation in abnormal accumulation of iron in the brain is being studied.



UKIERI has funded project titled *Mathematical and Experimental Modeling of the Animal Stress Response Network* is collaboration between IITK, Nottingham University and Indian Institute of Toxicology Research. The project aims at integrating data of gene expression profiles of different model organisms, such as nematode (*C. elegans*) and fly (*Drosophila*) following their exposure to environmental stress or physiological stress, such as carcinogenesis. These data would then be collated to build a gene regulatory network with reference of stress response.

Indo-US Joint Center on Biomaterials for Health Care has been established with a funding from Indo-US Science and Technology Forum. The research activities are in the areas of metals, ceramics and polymer based hard tissue replacement materials, polymer based scaffold materials for tissue engineering and strategies based on novel manufacturing routes. IIT Kanpur is the nodal institute with other participants from India and USA.

A UKIERI funded project *River Dynamics and Hazard Assessment in the Himalayan Foreland* is testing the hypothesis that both landslide and flood hazards are intimately linked to erosion and deposition of sediment along the Himalayan front, which in turn is driven by local base level changes, and is highly variable in space and time. The research will result in the first coherent overview of the causes and timing of erosion and deposition across this region, as well as an integrated regional hazard assessment.



Doon Valley

Pictures: Satellite image of Doon Valley (left) and an actively eroding river in Himalayas (right).

