तमसो मा ज्योतिर्गमय

Lead me from Darkness to Light
INSTITUTE'S JOURNEY

- Chemical Engineering
- Chemistry
- Electrical Engineering
- Humanities and Social Sciences
- Materials Science & Engineering
- Mechanical Engineering
- Mathematics and Statistics
- Physics

1960

1961
- Civil Engineering
- Aerospace Engineering

1964

1984
- Computer Science & Engineering

1988
- Industrial & Management Engineering

2001
- Biological Sciences & Bioengineering
- Earth Sciences

2014
- Economic Sciences

2017

2019
- Cognitive Science
- Sustainable Energy Engineering
Past two years have been trying times due to the outbreak of the Covid-19 pandemic leading to considerable disruptions in day to day activities. At the outset, I would like to express my sincere gratitude to all the faculty, students, and staff of the institute for their cooperation in academic matters and campus management activities during these difficult times. Despite all the odds, we, the IITK fraternity, stood together. With the world slowly getting back to normal, it is again the time of the year when we celebrate the foundation day of our 'alma mater.' This time we are celebrating 'The Foundation Day' in a hybrid mode, considering the travel restrictions still in place due to the pandemic.

As you all know, the Indian Institute of Technology Kanpur was established on 2nd November 1959. The strong foundation laid by the visionary leadership of Prof. PK Kelkar as the founding Director continues to guide us. Over the years, the institute has gained a legendary reputation through its academic, innovations, research and societal contributions made by the concerted efforts of our faculty, students, staff and alumni. On this momentous occasion of Foundation Day, we rededicate ourselves to the spirit of IIT Kanpur.

Irrespective of the challenging situation amidst the pandemic, several innovative research projects were undertaken to help nation in its fight against pandemic. A few of the remarkable contributions by IITK during these critical times include (1) The design, development, and large-scale production of high-end yet affordable, invasive ICU ventilators, which are now deployed in more than 3000 hospitals across the country. (2) National SUTRA model for the accurate prediction of Covid-19 spread even up to the district level. (3) Helping the Uttar Pradesh government to monitor oxygen consumption in the hospitals during the Covid-19 crisis. (4) Unmanned Aerial Vehicles (UAVs), for delivering drugs and vaccines in partnership with Indian Council of Medical Research, and (5) Creating a platform for MSMEs and startups for developing high quality and rapidly scalable oxygen generation units. Further, I am proud to mention that the technology business incubator of IIT Kanpur, Foundation for Innovation & Research in Science & Technology (FIRST), has achieved a historic milestone of crossing 100+ startups in its portfolio with a combined valuation of Rs 1000 crores.

I am also delighted to share with you that, IIT Kanpur has been ranked 5th for the first time in Overall category and 4th in Engineering category of NIRF 2021. In addition, IIT Kanpur has considerably improved its global ranking and stood 277 in QS World University Ranking.
During the past one year, several new initiatives have been undertaken to strengthen our academics and research in the long run. School of Medical Research and Technology (SMRT) is expected to bring together the expertise of technology innovations, biomedical research, and clinical set-up under a single umbrella to create a one-of-its-kind world class Medical School and to produce outstanding medical professionals trained in state-of-art engineering technologies who can meet the profound healthcare needs of our country. Our distinguished alumnus Mr. Muktesh “Micky” Pant has generously contributed towards setting up SMRT at IIT Kanpur. In addition to SMRT, Mr. Muktesh “Micky” Pant has also contributed towards setting up of the Shivani Centre for the Nurture and Re-Integration of Hindi and Other Indian Languages. Chandrakanta Kesavan Centre for Energy Policy and Climate Solutions with the generous donations from our distinguished alumnus Mr. Sudhakar Kesavan will promote and develop appropriate technology and policy solutions to help India and the world combat & address challenges in energy and climate change. The institute has also launched e-Masters programme in various disciplines for upskilling industry professionals.

I would also like to take a moment here and express my deepest condolences to those who lost their loved ones in the battle against Covid. During the second wave of the Covid, the institute had undertaken Covid-19 Relief Fundraising campaign which provided support to families of our students and campus workers. My heartfelt gratitude to all the alumni who generously donated for this good cause.

Finally, I would like to take this opportunity to congratulate the recipients of Institute Fellow, Distinguished Alumnus, Distinguished Services, Young Alumnus, and Satyendra K Dube Memorial awards. We are indeed proud of their stellar achievements in different fields which keep the IIT Kanpur flag flying high.

Best Wishes, Jai Hind!

Abhay Karandikar
MAJOR PROJECTS & INITIATIVES

Technology to combat Covid 19

SUTRA MODEL FOR COVID-19
IIT Kanpur played central role in development of SUTRA model for predicting the trajectory of the Covid pandemic.

Feasibility study of Vaccine delivery using Drones conducted by IIT Kanpur and ICMR (Indian council of Medical Research).

SIIC launched Mission Bharat O2
SIIC, IIT Kanpur launched Mission Bharat O2 to support the nation’s healthcare systems by developing oxygen plants and concentrators. SIIC will prioritize manufacturing 50 oxygen plants across India over the coming months. AqualInfra (AIPL), a SIIC incubatee, will provide the design of the plant to partner manufacturers to develop plants with capacity of 250 LPM and 500 LPM. The decentralized production will ensure rapid scale manufacturing of the plants, which would culminate in a pan India effort in response to COVID-19. Mission Bharat O2, a big step towards nurturing self-sustainable India in the healthcare sector.

OXYGEN CONSUMPTION MONITORING PORTAL
Portal developed for oxygen consumption in 56 hospitals of the UP.

Reform & Regulatory Knowledge Base for Power Sector

Artificial Intelligence (AI) driven grievance management application developed at IIT Kanpur
Hon’ble Raksha Mantri Shri Rajnath Singh launched the application on July 15, 2021. It was jointly developed by Ministry of Defense, Department of Administrative Reforms and Public Grievances(DARPG), & IIT Kanpur

An intelligent algorithm for chemical sensors to detect the freshness of perishable milk products and their degradation, developed at National Centre for Flexible Electronics has been licensed to Kalpa Innovative Solution, Gujarat.

"Air Sampling Device", a low-cost technology for efficient air sampling, for bio aerosol & particulate matter has been transferred to Airshed Pvt Ltd for commercialization.

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<td>Nano Devices with Correlated Quantum Materials</td>
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<td>Plasma Jet Printing Technology in Mold Electronics and Sensors</td>
<td>SPACE FOUNDRY INC.</td>
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<td>Geomorphic &amp; Ecological Impacts Of Sand Mining In Large Rivers as Revealed From High Resolution Historical Remote Sensing Data And Drone Surveys: Assessment, Analysis and Mitigation</td>
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<td>Uav And Soil Health Monitoring For Agriculture Applications</td>
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INSTITUTE FELLOWS
2020
**Mr. Jagjeet Singh Bindra** is a member of the Board of Directors of Lyondell Basell Industries NV as well as HPCL-Mittal Energy Ltd.

Mr. Bindra graduated from IIT Kanpur in 1969 with a B.Tech degree in Chemical Engineering. He earned his Master's in Chemical Engineering from the University of Washington, Seattle in 1970. Mr. Bindra also has an MBA (Honors) from Saint Mary's College of California. He is a Diamond Award (Distinguished Alumnus) recipient of the University of Washington College of Engineering as well as a Distinguished Alumnus of IIT Kanpur.

Mr. Bindra started his career at Chevron Corporation as a research engineer. His career at Chevron spanned over three decades during which he assumed roles of increasing responsibility. Before retiring from Chevron in 2009 he served as President, Chevron Global Manufacturing with responsibility for leading the operations of over 19 refineries across the world. His roles took him to Sudan, Russia, Kazakhstan, Australia and many other countries.

Upon his retirement Mr. Bindra served on the Board of Directors of Larsen & Toubro, Reliance Petroleum, Transfield Services Australia, Transocean, WorleyParsons Australia, GSCaltex Korea and Edison International (and Southern California Edison). Mr. Bindra also served as the Chair of IITK Foundation in the USA.

In recognition of his stellar contributions to the Institute IIT Kanpur takes great pride in honoring Mr. Jagjeet Singh Bindra as an Institute Fellow for the year 2020.
Prof. Gautam Biswas received his bachelor's degree from Calcutta University in 1979, and subsequently went on to earn his master's and doctorate degrees from IIT Kharagpur in 1981 and 1985 respectively.

Prof. Biswas is an Emeritus Fellow at the Department of Mechanical Engineering at IIT Kanpur. He has held G.D. and V.M. Mehta Endowed Chair Professorship, and served as the Dean of Academic Affairs at IIT Kanpur. In his long academic career, he has also served as the Director of the IIT Guwahati, and Director of the CSIR-Central Mechanical Engineering Research Institute (CMERI) at Durgapur. Prof. Biswas's research group at IIT Kanpur identified the phenomenon of Rayleigh-Taylor Instability during the bubble formation in film boiling. This was a significant addition to the classical theory, based on Taylor Helmholtz instability. Prof. Biswas served a full term as an Associate Editor of the Journal of Heat Transfer (Trans ASME), and was a Guest Professor at the University of Erlangen-Nuremberg in 2002. Currently, he is an Associate Editor of a well-known CFD-Journal, *Computer and Fluids*.

Prof. Biswas is a recipient of many honors and awards. He is a Fellow of the Indian National Science Academy (INSA), New Delhi, the Indian Academy of Sciences (IAS, Bangalore), the National Academy of Sciences India (NASI), the Indian National Academy of Engineering (INAE) and Institution of Engineers India (IEI). He has been awarded the esteemed J. C. Bose National Fellowship by the Science and Engineering Research Board (DST), New Delhi. He is a fellow of the Asian Union of Thermal Science and Engineering (AUTSE). Prof. Biswas was bestowed with Distinguished Alumnus Award by IIEST, Shibpur in the year 2013. He was a Humboldt Fellow in Germany from 1987-88 and JSPS invited Fellow in Japan in 1994. He is a Fellow of the American Society of Mechanical Engineers (ASME).

Prof. Biswas has been awarded the Distinguished Alumnus Award by the IIT Kharagpur in 2016. He was conferred Honorary Doctorate (Honoris Causa) by the National Institute of Technology Agartala, India, in 2017, and Honorary Doctorate by the Aristotle University of Thessaloniki, Greece, in the year 2018.

In recognition of his stellar contribution in the fields of Fluid Mechanics and Thermal Sciences, his contributions as an academic administrator and his dedicated service to the Institute, IIT Kanpur, on its Foundation Day, takes pleasure in conferring upon Professor Gautam Biswas the award of Institute Fellow for the year 2020.
**Prof. Santosh Kumar Gupta** received his bachelor’s degree in Chemical Engineering 1968 with the President’s Gold Medal from IIT Kanpur. Subsequently, he went on to earn his master’s and doctorate degrees from the University of Pennsylvania, USA, in 1970 and 1972 respectively. After a year of postdoctoral work, he joined the Department of Chemical Engineering at IIT Kanpur as a faculty member in 1973 where he served as a professor since 1980.

Professor Gupta has made outstanding theoretical and experimental contributions to the fundamental understanding in the general area of polymerization reaction engineering, and optimization using evolutionary techniques. The research in these areas has led to over 200 research papers in international, high-impact refereed journals. He has also developed experimental methodologies for the on-line state estimation and optimal control of polymerization reactors, and for the vapor-liquid equilibrium of polymerizing systems. His teaching and concern for students have led to the publication of seven well-recognized and quality textbooks for students, one research monograph (Plenum, NY), and two Conference Proceedings. In fact, he has been an inspiration and role model to generations of undergraduate and graduate students.

Prof. Gupta is the recipient of many prestigious honors and awards, such as Herdillia Award for excellence in basic research in Chemical Engineering by the Indian Institute of Chemical Engineers, the Fellow of the Indian Academy of Sciences, The National Academy of Sciences India and Indian National Academy of Engineering. For the young faculties of the department, he has set an example through his own research and teaching; in fact, he has mentored many of them to be all rounded successful academicians. As an alumnus of the Department of Chemical Engineering at IIT Kanpur, he was instrumental in establishing the Prof. CV Seshadri Chair. In addition, he set up the Prof. CV Seshadri Annual Lecture at IIT Kanpur as well as at IIT Bombay.

In recognition of his significant contribution to the cause of teaching, research, and development in the field of Chemical Engineering and a dedicated and devoted service to the Institute, IIT Kanpur, on its Foundation Day, takes pride and pleasure in conferring upon Professor Santosh Kumar Gupta the award of Institute Fellow for the year 2020.
Prof. Alak Kumar Majumdar
Former Professor
Department of Physics
Indian Institute of Technology Kanpur
Kanpur

Prof. Alak Kumar Majumdar received his bachelor’s and master’s degrees in Physics from the University of Calcutta. He subsequently earned his MS and doctorate degrees in Physics from Carnegie-Mellon University in 1971. He joined IIT Kanpur as a Lecturer in 1972, was elevated to the post of Professor in 1984 and superannuated from IIT Kanpur in 2006. He has continued to offer his academic expertise to multiple institutions including as Emeritus Professor at S. N. Bose National Centre for Basic Sciences, Kolkata, Visiting Professor at the Indian Institute of Science Education and Research, Kolkata and Ramakrishna Mission Vivekananda University, Belur Math, Howrah, and as a Visiting Professor at Harish-Chandra Research Institute (HRI), Allahabad.

Prof. Majumdar, fondly known as AKM, is a passionate teacher and an exceptional experimentalist. His most significant contribution to the institute and the Physics department was the setting up of the low temperature condensed matter experimental research program. In the early 1990s he was pioneering the low temperature physics experiments in India, and even in absence of liquid Helium he could go down to temperatures as low as 15 kelvin through closed cycle liquid Nitrogen based refrigerators. He undertook top class research work in condensed matter physics mostly in the areas of magnetism and electrical transport. He is renowned for thoroughly investigating FeNiCr alloy, one of the stainless steels. He published a large number of papers in top international journals.

Prof. Majumdar had the foresight to see that his chosen area of research thrives here at IITK, and to this end it was essential to get a liquid helium plant. Through funding from DST, he got a Helium plant installed in 1993. He also had multiple international collaborations with top universities like MIT, USA, Nuclear Research Centre, Karlsruhe, West Germany and the University of Florida, USA.

Prof. Majumdar managed to strike a balance between teaching and research, excelling in both and leaving behind a rich legacy particularly in Low Temperature Condensed Matter Research. Thus, his contributions have not only created direct impact in the fields of education, academics, industrial development, but also brought laurels and glory to the nation.

In recognition of his stellar contribution in the field of Low Temperature Condensed Matter, and as an academician, IIT Kanpur, on its Foundation Day, takes pleasure in conferring upon Prof. Alak Kumar Majumdar the award of Institute Fellow for the year 2020.
AWARDEES OF INSTITUTE FELLOWS (2005-2019)
- Prof. E.C. Subbarao
  Awarded in 2005

- Prof. F.C. Kohli
  Awarded in 2005

- Prof. K.R. Sharma
  Awarded in 2006

- Prof. A. Vasudev
  Awarded in 2007

- Prof. G.D. Agrawal
  Awarded in 2007

- Prof. G.K. Lal
  Awarded in 2008

- Prof. A.K. Mittal
  Awarded in 2009

- Prof. P.T. Narasimhan
  Awarded in 2009

- Prof. S.K. Gupta
  Awarded in 2010

- Prof. N. Sathyamurthy
  Awarded in 2013

- Prof. T.V.S. Rammohan Rao
  Awarded in 2013

- Prof. S.G. Dhande
  Awarded in 2013

- Prof. M. Anandakrishnan
  Awarded in 2014

- Prof. M. A. Pai
  Awarded in 2014

- Prof. V.K. Stokes
  Awarded in 2014

- Prof. A. Ghosh
  Awarded in 2014
Prof. D. Chakravorty
Awarded in 2014

Prof. R.N. Biswas
Awarded in 2015

Prof. A.K. Mallik
Awarded in 2015

Prof. R. Balasubramanian
Awarded in 2016

Prof. A. Kumar
Awarded in 2016

Prof. R. Sharan
Awarded in 2016

Prof. Somenath Biswas
Awarded in 2017

Prof. S.P. Mehrotra
Awarded in 2017

Prof. H.S. Mani
Awarded in 2017

Prof. Mohini Mullick
Awarded in 2018

Prof. Madhira R. Madhav
Awarded in 2018

Prof. Kripa Shanker
Awarded in 2018

Prof. Ashutosh Sharma
Awarded in 2019

Prof. Vishwanath Sinha
Awarded in 2019

Mr. Umang Gupta
Awarded in 2019