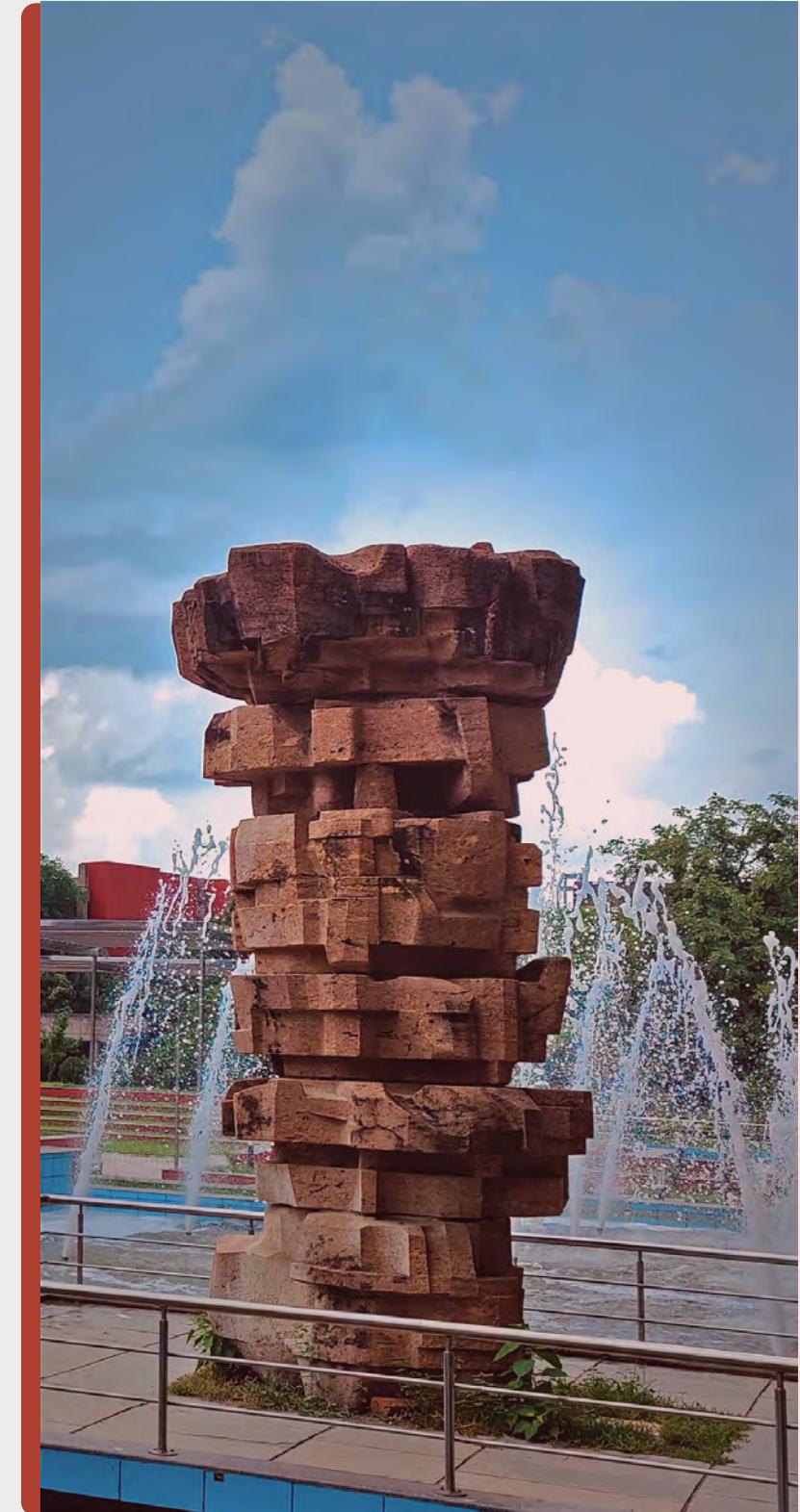


## *A brief history of Research & Innovation*

# IIT Kanpur

**Office of Dean Research & Development**  
January 2026



# Director's Message

**T**he position of Dean Research and Development (DORD) was established at IIT Kanpur in January 1966. From its inception, the Dean R&D office has played a pivotal role in the development of cutting-edge areas of science and technology at the Institute by continuously facilitating in-house grants, sponsored research projects, and research consultancies. The office has also played a key role in establishing the start-up ecosystem on the campus, encouraging both faculty members and students of IIT Kanpur.

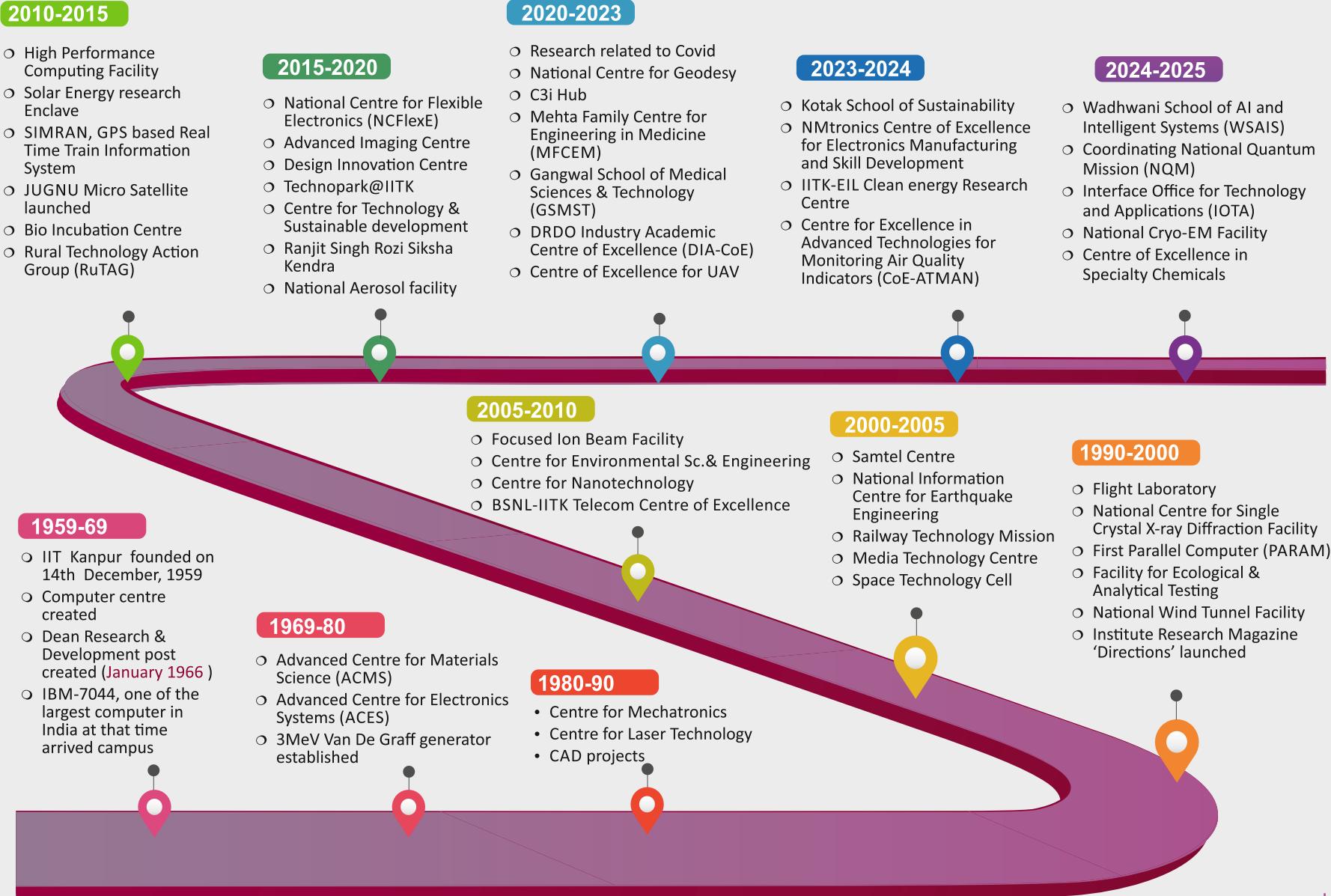
As we mark the Diamond Jubilee of the office, we look ahead with renewed purpose. In alignment with the national vision of **Viksit Bharat 2047** and **Atmanirbhar Bharat**, the Institute is committed to advancing frontier research, strengthening indigenous technological capabilities, and translating knowledge to achieve technological sovereignty. Some of the focus R&D areas of national importance are Artificial Intelligence (AI), Cybersecurity, MedTech, AgriTech, Unmanned Aerial Vehicles (UAVs), Sustainability, Semiconductor Technologies, and Quantum Technologies. Interdisciplinary research, deep-tech innovation, and effective technology transfer in these areas will remain central to the Institute's vision for the future.

This volume chronicles six decades of achievement shaped by dedicated faculty, talented students, and committed staff. While honoring this legacy, I extend my best wishes for the office to move forward and continue to shape the technological future of the Institute by facilitating research, innovation, and responsible engineering.

Jai Hind!  
**Manindra Agrawal**



# AT-A-GLANCE



# 2024 - 2025

## Centre & Facility

- ▶ Coordinating body for the National Quantum Mission
- ▶ Interface Office for Technology and Applications (IOTA) to elevate technologies
- ▶ Wadhwani School of AI & Intelligent Systems (WSAIS)
- ▶ Centre of Excellence in Specialty Chemicals
- ▶ DBT SAHAJ Centre for Biosensing Technologies
- ▶ Centre of Excellence in Antimicrobial Resistance
- ▶ National Cryo-EM Facility



**National IP Award  
2024**



*Bhu-Parikshak: Soil Nutrient Sensing Device*



*Shape-morphing Quadcopter Drone*



**Munh  
Parikshak**  
*Device for Detecting Oral Cancer*

**T**he thought of writing a few words about the Office of Dean of Research and Development brings back fond memories of the ethos of the place, crafted by several visionaries and being carefully nurtured by the R&D team. The coordinated efforts of the team, combined with empathy for all stakeholders, created a supportive and resilient environment that helped provide effective support for our research activities. Especially during the COVID-19 challenges, with severely limited access to infrastructure, the team responded to each challenge with innovative solutions. My sincere thanks and deep gratitude to the entire R&D team for its outstanding dedication. Wishing the team the momentum and success in driving our Institute's research forward.

**Prof. A.R. Harish**  
Dean Research & Development (2020 - 23)



*It is heartening to celebrate 60 years of the Office of Research and Development at IIT Kanpur. With dedicated staff managing diverse responsibilities, the division has continually evolved to support researchers, facilities, and sponsors. As faculty for over two decades and Dean of R&D, I take pride in witnessing this transformation. Serving the division has been a true privilege, and I wish it continued success in advancing research and shaping the institute's future.*

**Prof. S. Ganesh**

*Dean Research & Development (2017 - 2020)*



*Air Sampling Device*

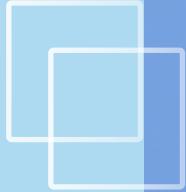


*Anālakṣhya - Advanced Stealth Technology*

# 2023 - 2024

## *School & Centre*

- Kotak School of Sustainability
- NMTronics Centre of Excellence for Electronics Manufacturing & Skills Development
- IITK-EIL (Engineers India Ltd.) Clean Energy Research Center
- Centre of Excellence for autonomous Unmanned Aerial Vehicles (UAV)
- Centre of Excellence in Advanced Technologies for Monitoring Air quality indicators (CoE-ATMAN)
- Air Sampling Device, licensed technology, launched in the market
- IIT Kanpur, IIT Madras and SAMEER Collaborate to License 5G RAN to Tejas Networks, a Tata Group Company
- India's first Hypervelocity Expansion Tunnel Test Facility



*Autonomous Unmanned Aerial Vehicles*



*Svan M2 - quadruped (four-legged) robot*



*Hypervelocity Expansion Tunnel Test Facility*

*I am very glad to learn that the R&D office is bringing out a commemorative coffee table book on the occasion of 60th anniversary of the R&D office. For me, the deanship at R&D office was a very pleasant experience. It was loaded and very hectic, still we could manage to do a lot of things without any major controversy! To recollect a few such efforts: We took up REO and PDF cadres to R&D office and carried out a large number of REO selection committee meetings, took SURGE program in its expanded form to R&D office, handled ranking exercises for QS, THE, NIRF etc., carried out a major analysis of the project situation of all 400+ faculty members, put many policy matters in place such as handling of projects by retired faculty, leave policy for Inspire Faculty Fellows, Innovation and Incubation policy document etc. It was indeed a pleasure to work with such a very dedicated team of colleagues in the R&D office. I must say that the R&D office has remained one of the best offices in the Institute.*

***Prof. Amalendu Chandra***  
*Dean Research & Development (2014 - 2016)*



*Electrochemical Sensing Strip*



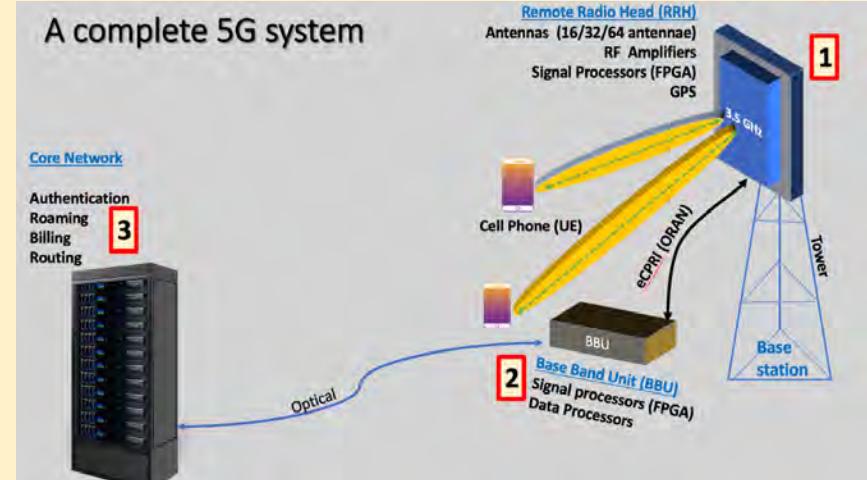
*Checko: Anti-Counterfeiting Solutions*



*SATVAM: Streaming Analytics Over Temporal Variables from Air Quality Monitoring*



*Pipe Health Monitoring Robot*



*Indigenous 5G/5Gi Network System*

# 2020 - 2023

## Centre & Facility

- ▶ Establishment of C3i Hub
- ▶ National Centre for Geodesy
- ▶ Chandrakanta Kesavan Centre for Energy Policy & Climate Solutions
- ▶ Mehta Family Centre for Engineering in Medicine (MFCEM)
- ▶ Gangwal School of Medical Sciences and Technology (GSMST)
- ▶ DRDO Industry Academia Centre of Excellence (DIA-CoE)
- ▶ Smart Grid Control Centre
- ▶ EMI/EMC & Electrical Safety Testing Facility
- ▶ Lead Integrated Clean Energy Material Acceleration Platforms (ICMAP)
- ▶ Participated at first inter IIT Research fair IIInvenTiv 2022



**National Centre for Geodesy**

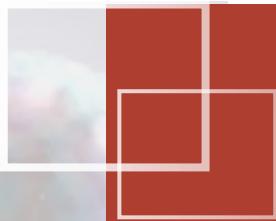


**C3i Hub**



## *Research & Innovation*

# **Covid 19**



PPE Kit, UAVs for Surveillance, Fake news verification App, Positive pressure respiratory system, Low cost invasive/non-invasive ventilator, Oxygen concentrator, Reusable N95 and N99 masks, Preventive and cost-effective coating, Chemical and thermal disinfecting system, Novel electrostatic sprayers, Solar-powered Natures Box Smart Bin system, Vaccines against Covid-19 and modelling and broadcasting Covid 19.



**Reusable N95 and N99 Masks**



**Low Cost Ventilator**



**PPE Kit**

# 2015 - 2020

## Centre & Facility

- Centre of Excellence for Large Area Flexible Electronics (NcFlexE)
- Advanced Imaging Centre
- Design Innovation Centre
- Centre for Technology for Sustainable Development
- Ranjit Singh Rozi Siksha Kendra
- National Aerosol Facility
- Integrated Computational Materials Engineering (ICME) National Hub
- Energy Analytics Lab (EAL), a CSR initiative by Indian Energy Exchange Ltd.
- Single Crystal X-Ray Diffractometer, Mass Spectrometry and a Cell Culture Facility
- Technopark@IITK formally inaugurated
- IMPRINT (IMPacting Research, Innovation and Technology) led by IIT Kanpur



*FlexE Centre*

*Initially I was reluctant to take up the position of Dean, Research and Development. The reason for the reluctance was the fact that one year of my tenure as Head of the Department of Electrical Engineering was still remaining and I felt that several more things need to be done in the department before I complete my tenure as Head. With the benefit of hindsight I must say that the R&D office provided me a ring-side view into the various aspects of academic research being carried out in government funded institutions in India. The first few months were a learning experience with the office staff hand holding me to make me understand the nuances of office work. With the help of my predecessor, moving on to the institutional stage from the Headship of a department happened smoothly. As a result, the R&D office proved to be a fertile ground for rolling out initiatives in response to the needs of faculty members and research scholars. It has been twelve years since I demitted the Deanship and I have no hesitation in saying that it provided me the right platform for the subsequent opportunities for institution building at different institutions. It is good to see that the R&D office at IIT Kanpur has never ceased to grow, may it continue to bloom in the years to come.*

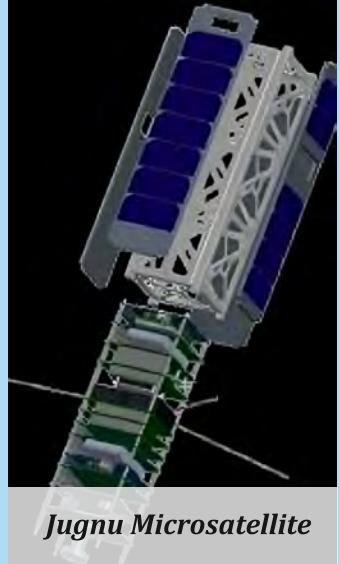
**Prof. A.K. Chaturvedi**  
Dean Research & Development (2011 - 2014)



# 2010 - 2015

## Centre & Facility

- » A time capsule was lowered down by the then President of India, Shrimati Pratibha Devisingh Patil
- » SIMRAN, a GPS-based real-time train information system jointly developed by IITK and RDSO
- » Jugnu Microsatellite launched with the PSLV C18
- » Nano-scale Imaging Facility
- » Installation of High Performance Computing (HPC) Facility
- » Solar Energy Research Enclave (SERE)
- » Photovoltaic (PV) Field Performance Test Station
- » BIRAC scheme of DBT launched Bio Incubator Centre
- » Establishment of Rural Technology Action Group (RuTAG)
- » Centre for Mathematical Sciences (CMS)
- » Formation of Ganga River Basin Management Plan
- » Zero Discharge Toilet System installed in Kumbh Mela of Prayagraj



# 2005 - 2010

- Centre for Environmental Science & Engineering
- Centre for Nanotechnology
- Centre for Uttar Pradesh Power Transmission Corporation Ltd. (UPPTCL)
- Centre for Archaeology & Cultural Resource Management
- BSNL-IITK Telecom Centre of Excellence
- Focused Ion Beam Facility, Tandem Accelerator, 500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer
- IGCAR-IITK cell

- ✓ Students launched NERD - a technical magazine
- ✓ Students regrouped into a body called POWER and enter into the domain of independent research



*Centre for Environmental Science & Engineering*

*I have delightful memories of my tenure as Dean, Research and Development, during which the institute visibly transformed itself. Research funding, collaborative projects, internationalization, major facilities, and centers of excellence showed significant growth. It was the time when patents, intellectual property, technology transfer, and start-ups took flight. Research penetrated the undergraduate space while postgraduate students organized global events, staking a claim over their future. Research management was automated, and administering projects was substantially streamlined. It was clearly the dawn of a new era.*

**Prof. K. Muralidhar**  
Dean Research & Development (2008 - 2010)



*National Aerosol Facility*

## 2000 - 2005

- » Railway Technology Mission
- » Space Technology Cell, ISRO
- » Samtel Center
- » Media Lab Asia established Digital Mandi
- » Technology developed at the Resource Center for Indian Languages transferred to eight centers for machine-aided translation from English to Oriya, Bengali, Marathi, Assamese, Manipuri, Konkani, Urdu, Punjabi, Malayalam and Sanskrit
- » Global Indus Technovator Award 2003 for the work done on nano-sciences
- » TV Center transformed into Media Technology Center
- » Prabhu and Poonam Goel Center for Internet and Computer Security
- » National Information Center for Earthquake Engineering



*Advanced Imaging Centre*



*Vibhram: Unmanned Helicopter*

# 1990 - 2000

- » National Wind Tunnel Facility (NWTF)
- » 6-seater aircraft was acquired for Flight Laboratory
- » Department of Civil Engineering developed a traffic simulation package adopted by CRRI & the Ministry of Surface Transport
- » Antenna shield for conducting SODAR experiments was installed in Antarctica
- » Department of Computer Science & Engineering developed Anusaarak, a simple machine translation system
- » CW dye laser pumped by Argon ion laser was developed for the first time in India
- » Introduction of ERNET project
- » The first parallel computer (PARAM) from CDAC Pune was introduced
- » Facility for Ecological and Analytical Testing (FEAT) laboratory
- » CARE scheme for procurement of large equipment introduced
- » First webpage of IIT Kanpur
- » 'Directions' - Institute Research Magazine launched
- » SIDBI Innovation and Incubation Center (SIIC)



*National Wind Tunnel Facility*



*PARAM Sangamak*

## 1980 - 1990

- Centre for Mechatronics
- CAD project was initiated
- Centre for Laser Technology
- MHRD provided special funding for the areas of emerging technology and modernization of Laboratories
- A group of researchers, in collaboration with Florida State University, USA develop mathematical models to study the complex monsoon phenomenon
- To ease pressure from rapid urbanization and industrialization, the Institute focused on projects aimed at developing efficient public transportation systems



# 1969-1980

- Advanced Centre for Materials Science
- Advanced Centre for Electronics System
- In the area of Nuclear Engineering and Technology, 3MeV Van De Graff generator was established. The facility was intended for training and research in Nuclear Physics and Engineering
- A stand alone R&D Office was created

First ever B.Tech Programme in Computer Science in India was launched



*Advanced Centre for Materials Science*

# 1959-1969

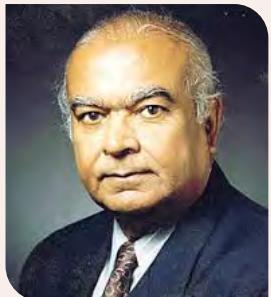
- » IIT Kanpur started on **December 14, 1959**
- » Registered as a society under the Societies Registration Act in Jan 1960
- » KIAP program was initiated
- » Engineering Science was adopted as the basis of curriculum development
- » Foundation stone was laid for the library
- » Computer Center was created
- » First solid-state computer (IBM – 1620) arrived
- » IBM-7044, one of the largest computers arrived on campus
- » TV Centre, the second biggest in India, became functional

**Post of Dean Research & Development was created (January 1966)**



*IBM 1620 arrived at IIT Kanpur*

# Meet Our Previous Deans & Associate Deans



**Prof. H.K. Kesavan**  
Electrical Engineering  
*Dean (1964-67)*



**Prof. C.N.R Rao**  
Chemistry  
*Dean (1968-71)*



**Prof. T.R. Viswanathan**  
Electrical Engineering  
*Dean (1972-73)*



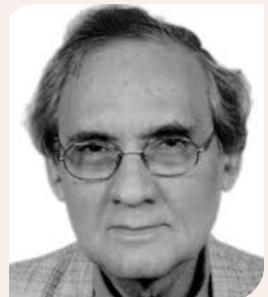
**Prof. N.C. Nigam**  
Aerospace Engineering  
*Dean (1974-75)*



**Prof. M.A. Pai**  
Electrical Engineering  
*Dean (1976-77)*



**Prof. K.R. Sharma**  
Electrical Engineering  
*Dean (1978-79)*



**Prof. D. Chakravorty**  
Metallurgical Engineering  
*Prof-in-charge (1980-81)*



**Prof. P. Dayaratnam**  
Civil Engineering  
*Dean (1982-84)*



**Prof. R.N. Biswas**  
Electrical Engineering  
*Dean (1985-87)*



**Prof. B.D. Agarwal**  
Mechanical Engineering  
*1988-90*



**Prof. A.K. Mittal**  
Industrial Management &  
Engineering  
*Dean (1991-93)*



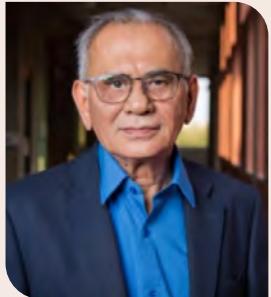
**Prof. Sachchidanand**  
Electrical Engineering  
*Dean (1994-96)*



**Prof. H.C. Karnick**  
Computer Science &  
Engineering  
*Dean (1997-98)*



**Prof. S.G. Dhande**  
Mechanical Engineering  
*Dean (1999 -2001)*



**Prof. Deepak Kunzru**  
Chemical Engineering  
*Dean (2002 - 2004)*



**Prof. S.C. Srivastava**  
Electrical Engineering  
*Dean (2005 - 2007)*



**Prof. K. Muralidhar**  
Mechanical Engineering  
*Dean (2008 - 2010)*



**Prof. A.K. Chaturvedi**  
Electrical Engineering  
*Dean (2011 - 2014)*



**Prof. Amalendu Chandra**  
Chemistry  
*Dean (2014 - 2016)*



**Prof. S. Ganesh**  
Biological Sciences &  
Bioengineering  
*Dean (2017 - 2020)*



**Prof. A.R. Harish**  
Electrical Engineering  
*Dean (2020 - 23)*



**Prof. B.V. Phani**  
Management Sciences  
Associate Dean for  
Innovation & Incubation  
*2014 - 2015*



**Prof. Sameer Khandekar**  
Mechanical Engineering  
Associate Dean for  
Innovation & Incubation  
*2015 - 2017*



**Prof. Siddhartha Panda**  
Chemical Engineering  
Associate Dean for  
Industrial Collaboration  
*2014 - 2016*



**Prof. Animangsu Ghatak**  
Chemical Engineering  
Associate Dean for  
Industrial Collaboration  
*2016 - 2019*



**Prof. Tarun Gupta**  
Civil Engineering  
Associate Dean of  
Research & Development  
*2019 - 2021*



**Prof. Jayandharan G. Rao**  
Biological Sciences & Bioengineering  
Associate Dean of  
Research & Development  
*2021 - 2024*



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**Chitralekha Bhattacharya (Design & Development)**  
**Advisors: Prof. Tarun Gupta (DORD), Prof. Raja Angamuthu (ADRD)**  
**Photo Courtesy: Girish Pant (IMOC Office)**