भारतीय प्रौद्योगिकी संस्थान कानपुर
Indian Institute of Technology Kanpur

SAMANVAY

CORPORATE NEWSLETTER

VOLUME 2

DEAN'S MESSAGE

Dear Esteemed Readers,

It gives me immense pleasure to welcome you to this edition of our Industry Engagement Newsletter — a platform that reflects IIT Kanpur's deepening collaboration with the industry to build a more innovative, inclusive, and impactful future.

Over the past year, IIT Kanpur has continued to push the frontiers of excellence—whether through pioneering research in clean energy, AI and healthcare, or by translating deep tech innovations into scalable solutions through our world-class incubation ecosystem. From supporting students in classrooms to developing artificial hearts, our journey in translational research is guided by a singular vision: transforming knowledge into tangible societal value.

These accomplishments have only been possible because of our growing and trusted relationships with industry. Our collaborations are not just transactional—they are transformational. Together, we are building not only technologies, but also the talent that will shape the future of India and beyond.

As we look ahead, we invite you to continue this journey with us co-developing solutions, co-investing in research, and co-creating impact. Let's build a future where innovation meets implementation at scale.

With warm regards,

Prof. Amey Karkare

Dean, Resources and Alumni,
IIT Kanpur

INSTITUTE HIGHLIGHTS

WADHWANI SCHOOL OF ADVANCED ARTIFICIAL INTELLIGENCE AND INTELLIGENT SYSTEMS

IIT Kanpur and Wadhwani Foundation have partnered to establish the Wadhwani School of Advanced Artificial Intelligence & Intelligent Systems.

A historic step towards strengthening India's leadership in cutting-edge research and innovation, the launch of the Wadhwani School of Advanced Artificial Intelligence and Intelligent Systems for advanced AI, Cybersecurity, Robotics, and AI policy, will nurture interdisciplinary teams of faculty, researchers, and students in state-of-the-art laboratories.

Hon'ble Prime Minister of India
Shri Narendra Modi
graced the ceremony, congratulating all the stakeholders for this tremendous effort.

This landmark initiative, supported by the Wadhwani Foundation, promises to create world-class education and research centres on campus and empower a network of 50 partner hubs across India. It will also be a SuperHub, enabling and supporting "research capacity building" through research and innovation programs and activities at research institutes in the Wadhwani Innovation Network.

The MoU was formally exchanged between Prof. Manindra Agrawal, Director, IIT Kanpur, and Dr. Ajay Kela, President and CEO of the Wadhwani Foundation.

The school will focus on frontier areas in technology, including a Department of Intelligent Systems, and five initial research centers in the areas of:

Advanced AI | Developing Intelligent Systems | Robotics and AI Policy

Cybersecurity of Cyber-physical Systems | Outreach

The school will also launch a multi-disciplinary Department of Intelligent Systems offering BTech, MTech, PhD and postdoctoral programs.

A LANDMARK MOMENT FOR HEALTHCARE INNOVATION IN INDIA!

Prof. Manindra Agrawal, Director IIT Kanpur and Mr. Rakesh Gangwal, Co-Founder of IndiGo Airlines met Hon'ble Chief Minister of Uttar Pradesh to discuss the upcoming Gangwal School of Medical Science and Technology at IIT Kanpur.

They also presented to the CM a 3D model of Hridayantra – India's advanced heart-assist device - being developed at IIT Kanpur marking a powerful milestone in the journey of healthcare innovation.

Hridayantra – a revolutionary Left Ventricular Assist Device (LVAD) – is designed to support patients with end-stage heart failure. With a magnetically levitated motor and a novel impeller for superior blood compatibility, it represents cutting-edge Indian innovation at its finest.

Hon'ble Chief Minister of Uttar Pradesh **Shri Yogi Adityanath** promised all the support to these initiatives of IIT Kanpur and urged the institute to contribute towards development of the state.

This initiative is part of the larger vision of the Gangwal School of Medical Sciences and Technology at IIT Kanpur, which aims to:

Train the next generation of medical-tech professionals	Develop affordable and accessible healthcare solutions	Address rural healthcare needs through engineering	Drive a knowledge-based MedTech economy

Backed by IIT Kanpur's legacy of innovation and Mr. Gangwal's inspiring entrepreneurial journey, this marks a new era for India's healthcare ecosystem.

CONVOCATION 2025

The institute celebrated its 58th Convocation Ceremony on June 23, 2025, conferring degrees upon 2,848 students across a diverse range of disciplines. Addressing the graduating batch, Shri Sanjay Malhotra inspired students with reflections from his journey, underscoring the power of integrity, adaptability, and lifelong learning.

Top honours, including the President's Gold Medal, were awarded to high-achieving students, while 21 scholars received Outstanding PhD Thesis Awards for their research excellence. The event was not just a celebration of academic accomplishments, but also a tribute to IIT Kanpur's values of ethical leadership, innovation, and interdisciplinary excellence.

Chief Guest

Shri Sanjay Malhotra
(BT/CSE/1989)

Governor,
Reserve Bank of India
(RBI)

DST BACKS IIT KANPUR–JSW CEMENT PARTNERSHIP

IIT Kanpur and JSW Cement have been awarded a DST-funded project under the Academia-Industry consortia (PPP mode) to deploy CO_2 Capture & Utilization (CCU) technologies in the cement industry. Announced on National Technology Day 2025, the initiative supports five CCU test beds across India, combining premier research institutions and leading cement manufacturers. IIT Kanpur will develop a 1 TPD pilot-scale CO_2 capture and mineralization system for cement clinker plants, aiming for net-negative emissions. The project is led by Prof. Soumyabrata Roy and team, in collaboration with JSW Cement, advancing India's decarbonization goals in hard-to-abate sectors.

IIT KANPUR LAYS FOUNDATION STONE FOR KOTAK SCHOOL OF SUSTAINABILITY BUILDING

IIT Kanpur has taken a remarkable step in its sustainability journey with the foundation stone laying of the Kotak School of Sustainability (KSS) building. The ceremony was officiated by Professor Manindra Agrawal, Director, IIT Kanpur, in the presence of senior institute leadership, Kotak Mahindra Bank officials, and members of the KSS Advisory Council.

Envisioned as a LEED Platinum-certified, Net Zero Energy facility, the building will span 18,450 sq. m., housing over 25 advanced research laboratories, faculty offices, and collaborative spaces for scholars. Built with eco-friendly materials like bamboo, hempcrete, and recycled components, it will preserve the site's natural ecology, integrating sustainable design with world-class academic infrastructure.

With research spanning sustainable energy, water, climate, AI for sustainability, and policy, KSS aims to become a global centre of excellence, attracting talent from leading institutions worldwide and shaping the future of sustainability science.

GANGWAL SCHOOL OF MEDICAL SCIENCES AND TECHNOLOGY: TAKING SHAPE

The Gangwal School of Medical Sciences and Technology (GSMST) at IIT Kanpur is being developed as a next-generation academic medical institution integrating healthcare delivery, medical education, and interdisciplinary research. Conceived as a comprehensive medical ecosystem, it will feature a 500-bed hospital with super speciality services and advanced clinical infrastructure.

The project is progressing in line with its 03rd June 2026 completion target, with construction well past the core civil phase and current efforts focused on services, interiors, and systems integration to ensure operational readiness. With world-class faculty on board,

GSMST will deliver affordable, accessible super speciality care across oncology, joint replacement, cardiac surgery, endocrinology, neurosciences, and allied domains, addressing critical tertiary healthcare gaps in Uttar Pradesh.

Once operational, GSMST is expected to benefit over **12 crore people** across southern and central Uttar Pradesh, directly serving **40 lakh residents** of Kanpur city and **5.5 crore** across Central UP, with special emphasis on economically weaker sections. At optimal capacity, the hospital is projected to serve approximately **1 million** inpatients and **3.6 million** OPD patients over ten years, significantly easing the regional burden on metropolitan healthcare systems.

As a first-of-its-kind institution, GSMST is poised for transformative social, scientific, and economic impact, aligning strongly with India's Atma Nirbhar Bharat vision through indigenous healthcare innovation and long-term capacity building in the health sciences.

PARTNERSHIPS SIGNED

ICICI FOUNDATION FOR INCLUSIVE GROWTH
ICICI FOUNDATION DIGITAL HEALTH STACK

ICICI Foundation for Inclusive Growth has signed MoU towards transforming the public healthcare ecosystem in Uttar Pradesh by building an integrated, scalable, and AI-driven digital health infrastructure.

The initiative includes developing systems for telemedicine monitoring, point-of-care diagnostics, AI-based disease surveillance, and health information systems. Through data-driven workflows and seamless service delivery, the project aims to improve healthcare quality, efficiency, and accessibility across the state.

AIA ENGINEERING
CONSTRUCTION OF NEW HALL RESIDENCE FOR STUDENTS

AIA Engineering Limited has agreed to contribute with an aim to support the construction of a modern, sustainable Hall of Residence for students at IITK. The initiative seeks to enhance the campus infrastructure by creating a state-of-the-art residential facility that fosters learning, collaboration, and well-being. Through this partnership, the project will not only strengthen educational support systems but also promote social impact by enabling access to improved living conditions for students, reinforcing IITK's mission of academic excellence and inclusive growth.

PEHEL FOUNDATION
OPERATION THEATRE COMPLEX AT GANGWAL SCHOOL OF MEDICAL SCIENCES AND TECHNOLOGY

PEHEL Foundation, A CSR arm of PNB Housing Finance has agreed to provide funding for establishment of a state-of-the-art Operation Theatre Complex at IIT Kanpur's Gangwal School of Medical Sciences and Technology to enhance healthcare delivery, education, and research.

The initiative aims to address infrastructure gaps, provide affordable care, and drive innovation.

SBI FOUNDATION
SBI LEAP INNOVATORS FOR THE BHARAT

The SBI Foundation has joined hands to contribute with an aim to foster social impact by supporting early to growth-stage startups through a structured incubation program. It focuses on three key domains: Healthcare, Agri-tech and Clean-tech. The program offers continuous mentoring, facilitates socially impactful outcomes, and provides startups with access to networking platforms and follow-on investment opportunities through dedicated workshops and roadshows.

CITI BANK
SOCIAL INNOVATION LAB (3.0)

Citibank has generously agreed to provide funding for Social Innovation Lab (SIL) at IIT Kanpur, supporting a cohort of startups in AgriTech and CleanTech through a focused incubation and acceleration program. With targeted funding, mentorship, and engagement with stakeholders, the initiative promotes economic and geographic inclusivity by addressing local challenges and empowering budding entrepreneurs to build sustainable, scalable solutions that drive social impact.

PORTESCAP INDIA PVT. LTD.

IIT Kanpur has partenerd with Portescap to collaborate on pioneering medical device innovations aimed at transforming healthcare in India. These projects include the incubation of a Smart Stick with Sit-to-Stand (STS) functionality, development of a miniature rotary actuator-based Flexinol mechanism, advancement of a continuous non-invasive blood glucose monitoring device, the design of a Left Ventricular Assist Device (LVAD) to support patients with advanced heart failure, and the indigenous development of Powered Mechanical Circulatory Support Devices (P-MCSD) to revolutionize cardiovascular care. By combining IIT Kanpur's R&D expertise with Portescap's excellence in miniature motion solutions, this collaboration marks a significant stride toward next-generation, affordable healthcare technologies for India and beyond.

ANSYS SOFTWARE PVT. LTD.

IIT Kanpur has partnered with Ansys under its Corporate Social Responsibility (CSR) initiative to support meritorious postgraduate students through a dedicated research fellowship program. This collaboration is aimed at nurturing talent in six critical domains Through this partnership, Ansys has committed to funding seven M.Tech students providing monthly stipends and research grants to help them focus on innovative, high-impact research. The fellowship not only supports academic excellence but also strengthens industry-academia engagement by enabling students to address real-world challenges through advanced research.

This partnership stands as a significant step towards empowering future innovators and advancing the national agenda for research and technological development.

BALRAMPUR CHINI MILLS LTD. (BCML)

IIT Kanpur has entered into a strategic partnership with Balrampur Chini Mills to jointly develop a Mechanical Recycling Calculator (MRC) aimed at promoting circularity in plastic usage, particularly in the packaging industry.

This collaborative initiative addresses the growing environmental concerns associated with non-biodegradable polymer packaging by quantifying the potential reduction in virgin plastic use through mechanical recycling. The proposed MRC tool will incorporate parameters such as recovery rate, material degradation, contamination levels, and industrial processing capabilities to evaluate long-term sustainability outcomes. Drawing on industrial insights and data, and supported by potential collaborations with institutions like CIPET, this project is poised to contribute meaningful solutions towards reducing plastic waste and fostering sustainable practices within the manufacturing ecosystem.

HIGHER EDUCATION FINANCING AGENCY

IIT Kanpur has partnered with the Higher Education Financing Agency (HEFA). This MoU supports initiatives across technology and rural development through design and development of an AI-enabled socially assistive robotic (SAR) device for the diagnosis and therapeutic support of children with behavioral disorders such as Autism Spectrum Disorder (ASD). This pioneering effort combines artificial intelligence and robotics to provide a sensitive and effective medium for early detection and intervention in pediatric behavioral health.

MINISTRY OF DEFENCE
POWERING SELF-RELIANCE THROUGH ADVANCED DEFENCE TESTING

IIT Kanpur has partnered with the Ministry of Defence (MoD) to establish three advanced, high-precision testing facilities under the Uttar Pradesh Defence Industrial Corridor (UPDIC). Inked on July 30, 2024, the MoU will enable the creation of a Mechanical & Material (M&M) testing hub in Lucknow and two Transformative facilities in Kanpur, specialising in Unmanned Aerial Systems (UAS) and Communications. Conceived under the Defence Testing Infrastructure Scheme (DTIS) an initiative to catalyse indigenous defence manufacturing and strategic self-reliance these centres will deliver sophisticated evaluation capabilities to both governmental and private entities, further cementing IIT Kanpur's stature as a pivotal driver of innovation in India's defence and aerospace landscape.

CASTROL INDIA
PARTNERSHIP FOR SUSTAINABLE ENGINE RESEARCH

IIT Kanpur has signed an MoU with Castrol India to collaboratively advance research in cleaner and more efficient engine technologies, underscoring a shared commitment to sustainability.

The collaboration will focus on advanced research into Low-Speed Pre-Ignition (LSPI) through high-fidelity simulations, production-grade engine validation, and a modified transparent engine setup enabling real-time combustion analysis. The partnership will also explore sustainable engine performance enhancers through rheological and tribological studies across varied operating conditions, along with strengthening industry–academia engagement through mentoring, knowledge exchange, and potential policy interactions, with long-term impact on emission reduction, environmental protection, technical capacity building, and sustainability-oriented fuel and engine policies.

MICROSOFT ELEVATE
PARTNERSHIP FOR DIGITAL CAPACITY BUILDING

IIT Kanpur has formalized a strategic partnership with Microsoft through a Memorandum of Understanding under the Microsoft Elevate initiative, with a shared vision of enhancing capacity building for India's digital future.

The collaboration focuses on two key areas: upskilling K–12 educators and capacity building of government officials and policy makers, with a strong emphasis on localizing training pathways and credentials for India's context. IIT Kanpur, along with experts in education, data, and economics, will develop assessment frameworks, identify learning gaps in the AI era, and pilot training programs on its campus.

Aligned with NEP 2020, the initiative will strengthen digital literacy, AI-enabled productivity, and ethical AI usage for teachers, while equipping government officials with applied skills in data-driven decision-making, digital public infrastructure, and AI-informed governance. Through India-relevant, globally aligned credentials, the partnership aims to enable effective leadership in the AI-driven future.

GATES FOUNDATION
COLLABORATION ON AFFORDABLE DIAGNOSTIC SENSORS

A "Grant kick off" agreement was signed with the Gates Foundation, IIT Kanpur is advancing the development of a sensor-driven diagnostic solution designed to strengthen malaria surveillance and neonatal healthcare outcomes.

The collaboration focuses on designing low-cost, miniaturized biosensors that enable timely and accurate testing, particularly in low-resource and high-burden settings. By enhancing early diagnosis and accessibility of essential diagnostics, the initiative seeks to support improved clinical decision-making, reduce disease burden, and contribute to equitable healthcare outcomes for vulnerable populations.

EVENTS & OUTREACH

BRIDGING ACADEMIA AND IMPACT
CSR DIALOGUE AT DORA OPEN HOUSE

DoRA recently hosted an Open House, offering an in-depth exploration of the institute's evolving programs, alumni engagement, and philanthropic initiatives. A key focus of the event was to create awareness about CSR laws and recent amendments among internal stakeholders, while also showcasing how strategic partnerships and ongoing contributions are shaping the future of the institution and strengthening its global network.

With enthusiastic participation from 19 departments and centers across the institute, the Open House was a resounding success. DoRA extended heartfelt thanks to Dr. Surabhi Yadav for her invaluable insights and to all participants for their energy and commitment. This event marks the beginning of a journey toward stronger, purpose-driven collaborations that go beyond compliance and foster long-term impact.

Dr. Surabhi Yadav, a renowned CSR consultant, led a thought-provoking discussion on "Making Impact, Driving Change: Academia's CSR Partnership Beyond Compliance."

Her perspectives encouraged students, faculty, and dignitaries to rethink the possibilities of academia-industry collaborations in creating meaningful societal impact.

LAUNCH OF KALA GRAM

IIT Kanpur has launched KALA GRAM, a Design Development Centre at the Ranjit Singh Rozi Shiksha Kendra (RSK), aimed at preserving and revitalizing traditional crafts through innovation. The launch event featured key figures such as Prof. Manindra Agrawal, Director of IIT Kanpur, who emphasized the importance of empowering rural artisans. Other dignitaries, such as Prof. Amey Karkare, Dean of Resources and Alumni, Prof. Satyaki Roy, Department of Design; Prof. Sudhanshu S Singh, Co-PI's of the Design Project; Prof. Amarendra K. Singh, and Prof. Kallol Mandal, Department of Materials Science and Engineering, were among others.

Prof. Sandeep Sangal, Principal Investigator of the RSK project, highlighted the initiative's dual goals of providing free education and skill training to rural youth. Dr. Monika Thakur, coordinator of KALA GRAM, emphasized that the Centre will provide artisans with a space to experiment with new tools, techniques, and market trends, along with training in packaging strategies to boost product appeal. Ms. Rita Singh, Project Executive Officer of RSK, said that their goal is to revitalize these crafts by introducing new design developments, tackling the challenges artisans face, and adding fresh appeal to their products.

The Centre will focus on rejuvenating crafts like Bithoor pottery, Kalpi handmade paper, and Kanpur home furnishings through innovative design developments. This initiative, backed by CSR funds from Philip Morris International's India affiliate, IPM India Wholesale Trading Private Limited, has made a significant and positive impact on women's empowerment.

Anushree Lakshminarayanan, Director of External Affairs at IPM India, praised the project for its inspiring efforts in uplifting and empowering local artisans.

SBI FOUNDATION
SBI LEAP INNOVATORS FOR THE BHARAT

The SBI Foundation has partnered with IIT Kanpur with an aim to foster social impact by supporting early- to growth-stage startups through a structured incubation program.

It focuses on three key domains: Healthcare, Agri-tech and Clean-tech. The program offers continuous mentoring, facilitates socially impactful outcomes, and provides startups with access to networking platforms and follow-on investment opportunities through dedicated workshops and roadshows.

TECHKRITI 2025

Techkriti'25, the annual technical and entrepreneurial festival of IIT Kanpur, spotlighted India's strategic advancements in defence and space technologies through high-level keynotes, panel discussions, and exhibitions.

The newly introduced 'Rakshakriti' segment featured addresses by Air Chief Marshal Amar Preet Singh and Maj. Gen. C.S. Mann, who emphasized the importance of rapid capability enhancement technologies and industry-academia collaboration for national security.

A Space Conclave with Dr. A.S. Kiran Kumar (former ISRO Chairman) and Dr. Vinod Kumar (IN-SPACe) further explored India's growing presence in space exploration.

Chief of Defence Staff Gen. Anil Chauhan, in his keynote, underlined the future battlefield's reliance on autonomous systems and tech-driven intelligence, reinforcing the festival's relevance to national priorities. Prof. Manindra Agrawal, Director of IIT Kanpur, lauded the students for curating an event that bridges innovation with critical national needs.

Techkriti'25 also featured vibrant competitions such as CodeNCompete, Astro Quiz, Strategy Sprint, and Model UN, along with electrifying cultural evenings, including Robowars and performances by Seedhe Maut. First day included a visit to the Techkriti Expo and a live defense demonstration at IITK Airstrip, offering attendees a glimpse into cutting-edge military technologies.

Upcoming highlights include a FinTech Panel, NIMES Performance, Startup Showcase, E-Sports Arena, and workshops on AI, cybersecurity, blockchain, and robotics. With a legacy of nurturing innovation and entrepreneurship, Techkriti remains Asia's largest student-led festival, reinforcing IIT Kanpur's leadership in shaping India's technological and entrepreneurial future.

ABHIVYAKTI 2025

Abhivyakti 2025 at IIT Kanpur carried forward its legacy of innovation and entrepreneurship with an impactful three-day event that brought together startups, thought leaders, corporates, policymakers, and students. It featured a series of high-impact discussions, product launches, and startup showcases, all geared toward creating sustainable solutions and driving social impact through collaboration.

Key highlights included panels on the circular economy, disruptive healthcare innovations, agri-tech advancements, and CSR-driven funding opportunities, with participation from government officials, corporate leaders, and academic experts.

Dignitaries

Prof. Manindra Agrawal
Director, IIT Kanpur

Shri Tarun Sharma
MD, EXIM Bank,

Shri Sudatta Mandal
Deputy MD, SIDBI

Key Highlights

- **Startup Gateway for Garbage-Free Cities 2.0 Cohort**

- MoU signed between **PSIT Kanpur** and **FIRST (SIIC, IITK)** to promote startup growth.

Other highlights included collaboration from Hero MotoCorp and T-Hub, along with student-led innovations showcased by NimbleQ, featuring pre-incubated startups from grades 4 to 9—several of which are already patent-pending. Notable product demonstrations by startups incubated at SIIC highlighted solutions in autonomy, sustainability, and healthcare.

The event concluded with remarks by Prof. Deepu Philip, who emphasized Abhivyakti's role in transforming ideas into impactful ventures and reaffirmed IIT Kanpur's commitment to shaping India's entrepreneurial landscape. With active participation from corporates, academia, and government bodies, Abhivyakti 2025 successfully positioned IIT Kanpur as a hub for innovation, collaboration, and sustainable development.

ABHIVYAKTI '25
UNLEASHING EMERGING INNOVATIONS

INAUGURATION CEREMONY OF
A B H I V Y A K T I ' 2 5

IITK SAMANVAY 2025
IGNITING IDEAS, ACCELERATING INNOVATION

Centred around the theme "Igniting Ideas, Accelerating Innovation," IITK Samanvay 2025 brought together leading minds from industry, academia, and government to explore how cutting-edge research can translate into real-world impact. Along with hosting Hon'ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath Ji, and Chief Technology Officer of TCS, Dr. Harrick Vin, the event was graced by 150 corporates, 20 distinguished panellists, and more than 1,100 students.

VISION OF THE HON'BLE CHIEF MINISTER OF UTTAR PRADESH

The Hon'ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath Ji, delivered an inspiring address at IITK Samanvay 2025, envisioning a future where innovation becomes the foundation of nation-building. Emphasizing the spirit of Viksit Bharat and Atmanirbhar Bharat, he lauded IIT Kanpur's technological leadership, from its pioneering role in computer science and quantum research to its contributions in defence, sustainability, and medical technology. He acknowledged the institute's partnership with the state government in key initiatives such as the Defence Corridor and its data-driven support during the COVID-19 pandemic, which

strengthened trust in academia–government collaboration. In a forward-looking gesture, he urged IIT Kanpur to host and lead the nation's first Deep Tech Summit in 2025, reaffirming its place at the heart of India's scientific and technological renaissance.

KEYNOTE ADDRESS BY DR. HARRICK VIN
TECHNOLOGY SHAPING A NEW ERA OF WORK

In his keynote address, Dr. Harrick Vin, Chief Technology Officer at Tata Consultancy Services, offered a visionary perspective on how technology is reshaping the world of work and redefining human potential. Emphasizing the transformative convergence of Artificial Intelligence, Quantum Computing, and other frontier technologies that are enabling a future where humans and machines collaborate seamlessly to create exponential value, he called for moving beyond conventional "best practices" to adopt "next practices" that emphasize agility, lifelong learning, and purposeful innovation in a rapidly evolving landscape where the half-life of skills continues to shrink. He also urged institutions and industries to cultivate courage, adaptability, and foresight—to anticipate disruption, embrace change, and co-create the future of work.

PANEL DISCUSSIONS

Panel 1:
Co-Inventing the Future:
Translational Research in AI, Sustainability, and Cybersecurity

Panel 2:
Purpose-Driven Technology
Using CSR to Fuel Innovation

Panel 3:
Crafting the Future:
How MSMEs and Academia Can Shape a Self-Reliant

RESEARCH & INNOVATION SHOWCASE

The event also featured presentations from the Wadhwani School of AI & Intelligent Systems, The Kotak School of Sustainability (KSS), The C3iHub, and The Interface Office for Technology and Applications (IOTA), showcasing IIT Kanpur's expanding landscape of innovation and collaboration.

The accompanying exhibition brought together diverse research and technologies across sustainability, healthcare, aerospace, and inclusion. From breakthroughs in clean energy and biomedical devices to advances in drones, assistive systems, and rural crafts, the showcase reflected IIT Kanpur's commitment to interdisciplinary innovation and societal impact.

NATIONAL WORKSHOP HOSTED ON SUSTAINABILITY IN THE DIGITAL & CYBER WORLD

The Kotak School of Sustainability, IIT Kanpur, in collaboration with the Indian National Science Academy (INSA), organised a national workshop on "Sustainability of the Digital-Cyber World" , to address the environmental footprint, ethical concerns, governance frameworks, and accountability indicators for a secure and sustainable digital future. Eminent experts from academia, government, and industry explored themes such as AI-enabled decarbonization, sustainable supercomputing, digital mental health ethics, and secure data practices.

The workshop fostered an interdisciplinary dialogue that connects technology innovation with environmental stewardship and policy design, and set the stage for actionable strategies, including the launch of IIT Kanpur's M.Tech. in Artificial Intelligence for Sustainability, and strengthened national efforts towards building inclusive, energy-efficient, and culturally rooted digital ecosystems.

CELEBRATING 66 YEARS OF INSTITUTIONAL EXCELLENCE AND NATIONAL IMPACT

The Indian Institute of Technology Kanpur commemorated its 66th Foundation Day on 2nd November 2025, celebrating over six decades of shaping leadership, advancing frontier research, and driving technology-led national development.

The occasion was graced by Shri Adil Zainulbhai, Chairperson, Board of Governors, IIT Ropar and IIT Goa, as the Chief Guest.

The two-day celebration featured a cultural evening, followed by the Foundation Day ceremony honouring 21 distinguished individuals across categories such as the Institute Fellow, Distinguished Alumni, Distinguished Services, and Young Alumni Awards, recognising excellence, innovation, and contributions to institutional growth and societal advancement.

The 66th Foundation Day reaffirmed IIT Kanpur's stature as a globally respected academic institution and a trusted partner for industry, government, and society, committed to co-creating solutions for a resilient and innovation-driven future.

KEY INITIATIVES

IOTA (INTERFACE OFFICE FOR TECHNOLOGY APPLICATIONS)

Interface Office for Technology Applications (IOTA) at IIT Kanpur marks a significant step in closing the gap between academic research and real-world impact. While fundamental research contributes to expanding scientific knowledge, translational research plays a critical role in driving innovations from the lab to society.

In academic settings, technologies typically progress from Technology Readiness Level (TRL) 1 to TRL 3 or even TRL 4. Once a technology is validated and matures further, industry stakeholders often step in to advance it from TRL 7 to TRL 9, leading to large-scale deployment. However, a significant challenge exists in what is commonly referred to as the 'valley of death'—the difficult transition phase between TRL 5 and TRL 7, where promising innovations often struggle to secure the support and resources needed for further development.

Guided by NITI Aayog's recommendations, IOTA will provide structured funding, enable sustained industry collaboration, and build dedicated support teams to help faculty and students scale promising technologies.

With over 80% of its resources focused on advancing early-stage innovations from TRL 4 to TRL 9, IOTA will accelerate the transition from research to commercialization. It will streamline the process of identifying real-world challenges, connecting faculty with industry partners, and aligning institutional policies to enable time-sensitive innovation.

The Interface Office for Technology Applications (IOTA) aims to elevate translational research at IIT Kanpur through a comprehensive, large-scale, and cross-sectoral approach. Key deliverables include:

- 15 technology transfers in the first year, with a projected 20% annual growth
- 15 industry collaborations in the first year, also targeting 20% year-on-year growth
- A targeted payback period of 5 years for the total investment of ₹135 crore over three years

To achieve these ambitious goals, IOTA will implement clearly defined, time-bound strategies that accelerate the journey from research to real-world application.

This initiative will position Kanpur and Uttar Pradesh as a launchpad for scalable technological solutions, reinforcing IIT Kanpur as the national leader in applied research and innovation for the larger societal benefit.

ENGINEERING THE FUTURE OF UNMANNED AERIAL SYSTEMS IN INDIA

IIT Kanpur has earned national and international recognition for developing Unmanned Aerial Vehicles (UAVs) that seamlessly integrate advanced artificial intelligence, stealth-oriented design, and indigenous manufacturing capabilities. Platforms such as the Kamikaze Drone exemplify this approach, combining AI-enabled autonomy with precision-strike capability to support modern military operations while minimizing human risk.

The institute's impact is further amplified through deep-tech startups incubated at IIT Kanpur, notably EndureAir, which has translated over a decade of academic research into globally competitive heavy-payload and high-altitude UAV platforms. Systems such as SABAL for logistics, Vibhram for surveillance, and Alakh for specialized operational use-cases highlight IIT Kanpur's strength in moving from laboratory innovation to mission-ready aerial systems.

Collectively, these efforts extend well beyond defense transforming logistics, agriculture, surveillance, and disaster response while strengthening India's self-reliance in aerospace systems, real-time sensing, and autonomous technologies.

TRANSLATING ARTIFICIAL INTELLIGENCE INTO NATIONAL - SCALE PUBLIC SOLUTIONS

IIT Kanpur is emerging as a national leader in Artificial Intelligence, focused on translating advanced research into secure, scalable and deployable AI systems for India's public and institutional ecosystem. The institute's AI strategy prioritizes real-world impact - strengthening governance, digital public infrastructure, and service delivery through field-tested solutions.

This effort is led by the Center for Developing Intelligent Systems (CDIS), a translational R&D hub bridging academic innovation and large-scale implementation. CDIS integrates research, development, training, and consulting to rapidly convert AI/ML concepts into production-ready platforms aligned with national priorities.

CDIS has delivered several high-impact AI deployments for government institutions, including an AI-powered Intelligent Grievance Management System for the Government of India, a facial recognition solution for the National Testing Agency, and an AI-based health insurance fraud detection system developed with the National Health Authority under Ayushman Bharat (PM-JAY), and is supporting the Haryana Parivar Pehchan Authority by integrating citizen datasets to enable accurate income assessment and targeted delivery of welfare schemes.

Expected outcomes include discovery of novel drug targets, development of targeted therapies, and technology transfers to pharmaceutical industries. IIT Kanpur envisions becoming a national hub for affordable and innovative drug discovery, enhancing access to life-saving treatments, boosting local R&D, and establishing India as a global leader in pharmaceutical innovation.

This initiative will also drive economic growth and foster academia-industry collaborations in cutting-edge healthcare solutions.

DRUG DISCOVERY

India, known as the pharmacy of the world, contributes less than 5% to the $1.5 trillion global pharmaceutical market due to limited innovative drug discovery. To address this gap, IIT Kanpur aims to establish a robust, indigenous drug discovery pipeline by leveraging its interdisciplinary strengths in genetics, structural biology, biophysics, and advanced microscopy. This initiative focuses on identifying novel therapeutic targets and developing affordable, high-impact therapies for diseases such as cancer, metabolic and neurodegenerative disorders, and rare diseases especially those neglected by global pharmaceutical giants.

The proposed program will bridge fundamental research and translational development through a three-stage pipeline:

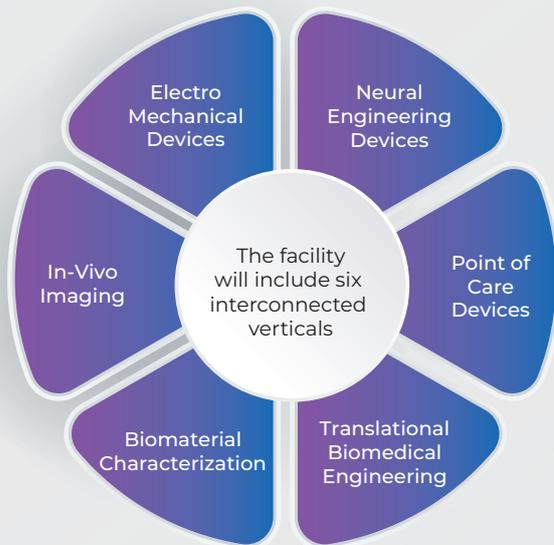**1** Understanding disease mechanisms

2 Developing therapeutic interventions

3 Evaluating efficacy using advanced imaging, screening, and animal testing platforms

It also highlights the need for specialized infrastructure, such as super-resolution microscopy, high-field NMR, mass spectrometry, and in vivo imaging systems.

MEDICAL DEVICES AND DIAGNOSTICS PROTOTYPING AND TESTING FACILITY

India's $11 billion medical devices market is projected to reach $50 billion by 2025, driven by increasing healthcare demand, a growing middle class, and supportive policies like the National Medical Device Policy (2023) and PLI scheme. Despite this growth, India remains dependent on imports for 80% of its medical devices, especially high-end equipment. IIT Kanpur proposes a state-of-the-art Medical Devices and Diagnostics Prototyping and Testing Facility to bridge critical gaps in indigenous development, manufacturing, and validation.

Electro Mechanical Devices

Neural Engineering Devices

In-Vivo Imaging

The facility will include six interconnected verticals

Point of Care Devices

Biomaterial Characterization

Translational Biomedical Engineering

By transforming IIT Kanpur into a hub of innovation and collaboration, this facility will strengthen India's capacity for affordable, high-quality medical technologies, especially in underserved regions.

POSITIONING UTTAR PRADESH AS A NATIONAL LEADER IN **MEDICAL DEVICE INNOVATION, MANUFACTURING, AND HEALTHCARE TRANSFORMATION**

These will support end-to-end innovation - from ideation and prototyping to clinical validation and market-readiness - while fostering interdisciplinary collaboration across engineering, biomedical sciences, and clinical practice. It will also provide infrastructure for regulatory compliance and clinical trials and support startups with mentorship and equipment access.

The initiative aims to reduce import dependence, accelerate commercialization, and build skilled human capital in medtech.

IMPACTFUL PROJECTS

ICICI FOUNDATION DIGITAL HEALTH STACK
TRANSFORMING HEALTHCARE DELIVERY THROUGH DIGITAL INNOVATION

Launched in 2024 by IIT Kanpur with support from the ICICI Foundation, the Digital Health Stack (DHS) project is bridging critical healthcare gaps in Uttar Pradesh through a powerful blend of telemedicine, secure data integration, and AI-led solutions. By enhancing digital platforms at primary and secondary care levels, DHS is reducing the burden on tertiary hospitals and expanding access for rural populations. The project has already influenced state policy, piloted a scalable telemedicine system, and developed a secure Health Information Exchange (HIE) aligned with the Ayushman Bharat Digital Mission. In a remarkable feat, DHS built a fully functional referral and ambulance system in just two weeks for the 2025 Maha Kumbh, benefitting thousands. With its modular design and strong collaborations with National Health Authority (NHA) and Department of Health Research (DHR), DHS stands as a replicable model for strengthening digital health infrastructure across India.
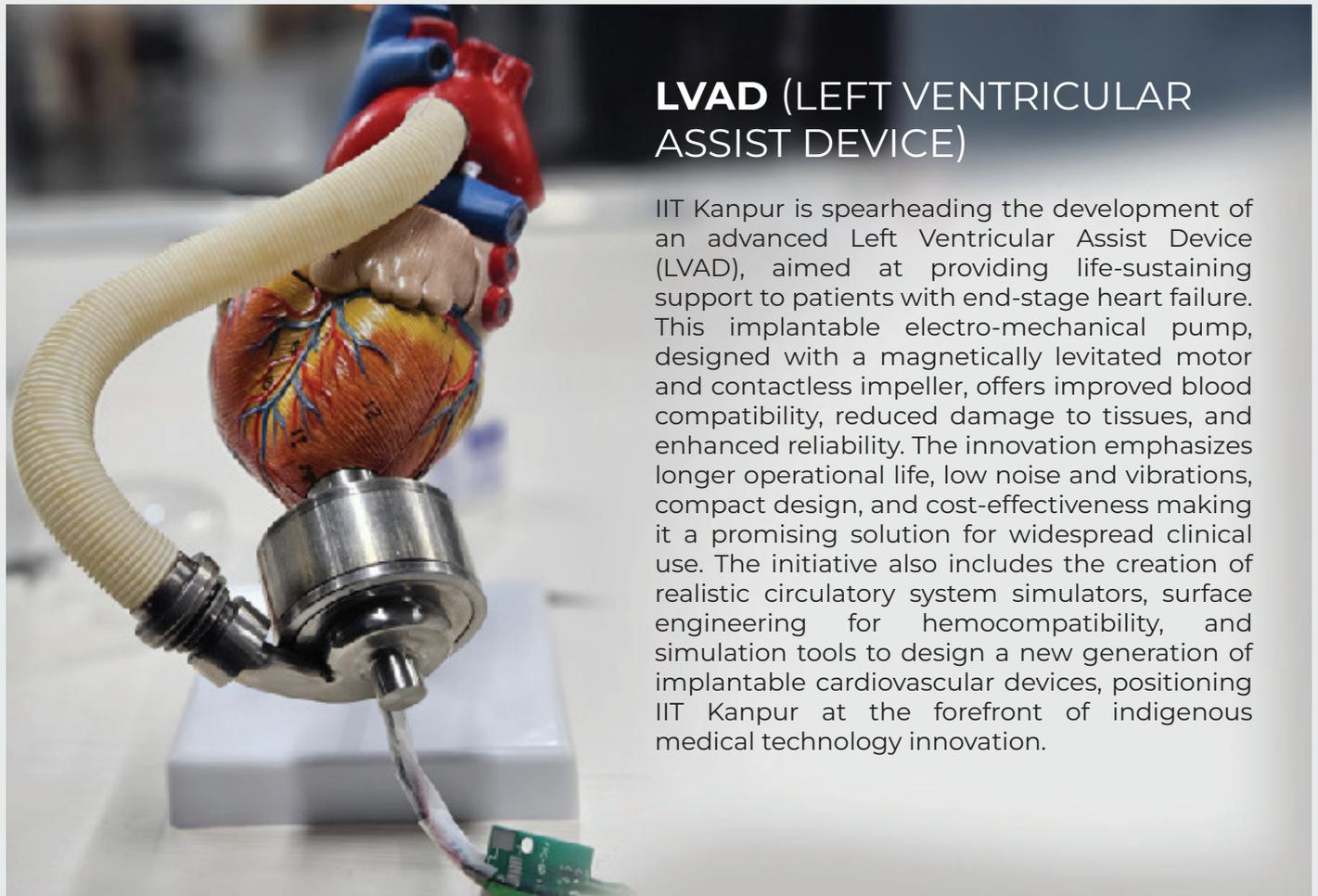
LVAD (LEFT VENTRICULAR ASSIST DEVICE)

IIT Kanpur is spearheading the development of an advanced Left Ventricular Assist Device (LVAD), aimed at providing life-sustaining support to patients with end-stage heart failure. This implantable electro-mechanical pump, designed with a magnetically levitated motor and contactless impeller, offers improved blood compatibility, reduced damage to tissues, and enhanced reliability. The innovation emphasizes longer operational life, low noise and vibrations, compact design, and cost-effectiveness making it a promising solution for widespread clinical use. The initiative also includes the creation of realistic circulatory system simulators, surface engineering for hemocompatibility, and simulation tools to design a new generation of implantable cardiovascular devices, positioning IIT Kanpur at the forefront of indigenous medical technology innovation.

MUNH PARIKSHAK

The Indian Institute of Technology Kanpur (IITK) has developed and successfully transferred a pioneering healthcare innovation, Munh Parikshak, a portable device designed for the early detection of oral cancer. Developed by Prof. Jayant Kumar Singh and his team from the Department of Chemical Engineering, the device utilizes specialized lighting and an in-built camera to examine the oral cavity and instantly analyze mouth images using advanced algorithms. Based on the analysis, the condition is categorized as normal, pre-cancerous, or cancerous, with results displayed through a user-friendly smartphone application. These results are also stored securely on cloud servers, enabling continuous updates, remote consultations, and long-term tracking. The technology has been transferred to Scangenie Scientific Pvt. Ltd. to ensure widespread adoption and commercial deployment. As oral cancer remains one of the leading health concerns in India, especially in underserved areas, Munh Parikshak offers a low-cost, scalable, and accessible solution that can be used by both healthcare professionals and individuals for self-screening. This project exemplifies IIT Kanpur's focus on socially relevant innovation and translational research, bringing life-saving technology directly to the community through effective academic-industry collaboration.

KALAGRAM
DESIGN DEVELOPMENT CENTRE AT
ROZI SHIKSHA KENDRA (RSK)

Under the Ranjit Singh Rozi Shiksha Kendra (RSK), IIT Kanpur is revitalizing traditional crafts through innovative design and rural skill development. During the Hon'ble Prime Minister Shri Narendra Modi's recent visit to Kanpur, he was personally presented with handcrafted ceramic vases by artisan Shri Shankar Prajapati and designer Ms. Shailly Sangal, created under the guidance of Prof. Satyaki Roy.

These vases, reflecting the heritage of Bithoor and the Ganga Katri region, were a collaborative effort involving potters, calligraphers, and RSK trainees, and packaged using revived Kalpi handmade paper. This initiative is part of KALA GRAM, a design development centre at RSK that supports rural artisans with modern tools, techniques, and market training. The centre also encourages experimentation in design and packaging to enhance product appeal and market reach. The project is fostering women's empowerment, artisan upliftment, and sustainable livelihoods through cultural innovation. It exemplifies IIT Kanpur's commitment to inclusive development by bridging heritage and modernity.

INDUSTRY VISITS

Tata Motors, Gates Foundation, Analog Devices, Tower Research, and PNB HFL are primarily exploring partnerships and synergies in areas such as MedTech, sustainability, energy-efficient solutions, startup incubation, student development and scholarships, as well as AI integration for solving large-scale challenges.

Their interests span collaborative research, pilot deployments, faculty-led innovation, and industry-aligned student programs. In particular, there is growing interest in leveraging IIT Kanpur's deep technological expertise and entrepreneurial ecosystem to drive scalable interventions across various fields. Through these engagements, the aim is to jointly nurture talent, accelerate go-to-market pathways for promising technologies, and create measurable impact across sectors.

INDUSTRY OPINION

"Our journey with IIT Kanpur has been very encouraging not just in terms of Scientific rigor but also the Institute's strong understanding of Industry-Academia collaboration, which has resulted in jointly achieving milestones on time and sharpening of application development outcomes. My team and I have experienced the credo of IIT Kanpur - Tamso Maa Jyotirgamaya/ Lead me from darkness to light, and we look forward to continuing our partnership on new areas of disruptive innovations."

DR. RICHARD LOBO

Global Head Business Excellence,
Innovation, R&D and
Chief Ethics Counselor,
Tata Chemicals Ltd.