IIT KANPUR

IITK

SAMANVAY

ACCELERATING INNOVATION FOR A BETTER TOMORROW

IGNITING IDEAS.

ACCELERATING INNOVATION

REPORT 2025

OVERVIEW

IITK Samanvay 2025 lit up the IIT Kanpur campus on 2nd and 3rd September, into a dynamic arena of ideas, innovation, and collaboration, drawing together leading minds from industry, academia, and government. Under the inspiring theme “Igniting Ideas, Accelerating Innovation”, it created a unique platform where cutting-edge research met practical solutions, and visionary thinking sparked tangible action. The occasion was further elevated by the presence of the Hon’ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath Ji, whose vision for a self-reliant and technologically advanced India inspired participants to reimagine the possibilities of industry–academia collaboration. Through keynote address, insightful presentations, and dynamic discussions, attendees explored how Artificial Intelligence, Sustainability, and Cybersecurity can be harnessed to create real-world impact and improve the lives of millions.

The panel discussions and deliberations went beyond ideas, focusing on translating research into actionable solutions, reimagining CSR as a catalyst for meaningful innovation, and harnessing MSME–academia collaborations to foster a self-reliant India. Experts showcased successful pilot projects, scalable innovations, and strategies for integrating technology into real-world applications, underscoring the importance of collaboration across sectors. By enabling dialogue, networking, and knowledge exchange, IITK Samanvay 2025, illuminated by the Chief Minister’s visit, highlighted IIT Kanpur’s as a beacon of innovation and reinforced the institute’s commitment to fostering creativity, advancing technology, and building strategic partnerships that drive India’s journey toward an inclusive, technology-driven, and forward-looking future.

VISION

OF THE HON'BLE
CHIEF MINISTER OF UTTAR PRADESH

SHRI YOGI ADITYANATH JI

At IITK Samanvay 2025, Hon'ble Chief Minister of Uttar Pradesh, Shri Yogi Adityanath Ji, laid out a compelling vision for how industry–academia collaboration can address some of the most pressing challenges of our time. He began by highlighting issues that affect the safety, security, and well-being of society- Artificial Intelligence, Sustainability, and Cybersecurity, and how advancements in these areas can significantly improve the living standards of the common man.

MAKING VIKSIT BHARAT AND ATMANIRBHAR BHARAT A REALITY

Emphasizing the Prime Minister's dream of a Viksit Bharat and Atmanirbhar Bharat, he applauded IIT Kanpur's technological contributions, including its role in defense operations such as Operation Sindoor. He also spoke passionately about the youth of the country, noting how the institute has been at the forefront of nurturing their talent to address strategic challenges and strengthen national security.

SHARED VISION OF IIT KANPUR AND THE GOVERNMENT OF UTTAR PRADESH

The Hon'ble Chief Minister took pride in IIT Kanpur's pioneering spirit, recalling how it was the first institute to have a computer and offer Computer Science education in India. When the government sought leadership in Quantum Computing, IIT Kanpur stepped forward, and today, the nation is successfully navigating this cutting-edge domain with its expertise.

Recognizing that academic institutions are often seen as isolated, he reflected on how the COVID-19 pandemic changed this narrative, paving the way for deeper cooperation between the state government and IIT Kanpur. The institute's data-driven assessments and situation analysis were aligned closely with government planning, further cementing trust in its capabilities.

He also elaborated on how platforms like IITK Samanvay are instrumental in empowering individuals to realize their full potential and fostering growth.

THE WAY FORWARD

The Chief Minister's address not only celebrated IIT Kanpur's past achievements but also set a forward-looking roadmap: one where academia and industry walk hand in hand, where innovation is anchored in human values, and where shared purpose leads the way to a stronger, self-reliant, and prosperous nation.

Looking toward the future, he extended a call to IIT Kanpur to lead India's first-ever Deep Tech Summit in 2025, envisioning the institute as the nucleus for collaboration and innovation. He expressed his confidence that the institute's leadership, along with partnerships from organizations like DRDO and ISRO, will drive technological breakthroughs for the nation.

KEYNOTE ADDRESS

BY THE

CHIEF TECHNOLOGY OFFICER,
TATA CONSULTANCY SERVICES (TCS)

DR. HARRICK VIN

TECHNOLOGY SHAPING A NEW ERA OF WORK

Dr. Harrick Vin, Chief Technology Officer at Tata Consultancy Services, spoke about the transformative role of technology in shaping a future where humans and machines collaborate to create value. He highlighted how Artificial Intelligence, Quantum Computing, and other emerging technologies are enabling a hybrid workforce in which people and machines augment each other's capabilities, creating a virtuous cycle far surpassing traditional incremental improvements.

FROM BEST PRACTICES TO NEXT PRACTICES

A central theme of his address was the call to move beyond conventional "best practices" and embrace "next practices" that foster agility, continuous learning, and human–machine collaboration. With the half-life of skills shrinking from decades to just a few years, adaptability and lifelong learning have become critical. Technology, he emphasized, should not only automate tasks but also augment human expertise and unlock elite performance by design.

Disruption Across Industries

Dr. Vin outlined how these innovations are disrupting sectors such as healthcare, finance, agriculture, and energy. He pointed to opportunities in reimagining energy networks, advancing healthcare solutions, strengthening agricultural supply chains, and accelerating drug discovery. By integrating intelligence across technologies and industries, organizations can tackle long-standing inefficiencies while unlocking new opportunities for growth and impact.

The Road Ahead

While AI adoption is still in its early stages, realizing its full potential will require integrating diverse technologies and designing systems that can learn and evolve. Dr. Vin emphasized that this transformation calls for courage, resilience, and collective effort. He concluded by affirming that the future belongs to those who can anticipate disruption, adapt swiftly, and harness technology not just to optimize tasks, but to fundamentally redefine how work is done and how value is created across industries.

AN ECOSYSTEM OF INTERDISCIPLINARY TRANSLATIONAL RESEARCH

Kotak School of Sustainability (KSS)

Kotak School of Sustainability at IIT Kanpur brings together leading faculty from engineering, sciences, management, and social sciences to tackle urgent climate and sustainability challenges. With India's first M.Tech in AI for Sustainability, the school is pioneering career pathways that integrate technology, ethics, and impact-driven innovation.

Anchored by centres such as the Department of Sustainable Energy Engineering, the Ganga Initiative, and the Chandrakanta Kesavan Centre, KSS is advancing renewable energy, air quality monitoring, perovskite solar cells, earth-abundant batteries, hybrid microgrids, and hydrogen regeneration. Through global collaborations, AI-led climate risk modelling, and urban sustainability initiatives, KSS is positioning IIT Kanpur as a hub for net-zero solutions, sustainable cities, and policy-led innovation that aligns with both India's development priorities and global climate goals.

Wadhwani School of AI & Intelligent Systems

The Center for Developing Intelligent Systems, part of the Wadhwani School of AI & Intelligent Systems, is focused on translating AI/ML research into real-world, scalable solutions. Its impactful projects include the Intelligent Grievance Management System used by central government departments, AI-based fraud detection for health insurance, facial recognition systems for secure examinations, and anomaly detection in CCTV streams.

Beyond governance, CDIS has delivered digital health platforms such as the UP Health Stack and telemedicine apps, as well as AI tools for sustainable cities, education, and defense applications. With its emphasis on advancing technologies from proof of concept to deployment (TRL 4 to 7), consulting, and training, CDIS has emerged as a national leader in responsible AI, directly addressing critical needs in healthcare, governance, security, and society.

C3iHub

C3iHub (Cybersecurity and Cybersecurity of Cyber-physical Systems) at IIT Kanpur is India's foremost cybersecurity innovation hub, dedicated to safeguarding critical infrastructure and cyber-physical systems. It develops indigenous solutions in IT and OT security, blockchain, self-sovereign identity, and cryptocurrency forensics, while establishing national testbeds for power, water, and industrial automation security.

With more than 50 startups supported, 53 R&D projects executed, and skilling programs that have trained over 100,000 professionals, C3iHub has played a pivotal role in building India's cybersecurity capacity. By strengthening the ecosystem for government, defense, industry, and society, it has reinforced IIT Kanpur's leadership in advancing national cyber resilience.

Interface Office for Technology and Applications (IOTA)

Interface Office for Technology and Applications (IOTA) serves as a bridge between research and the marketplace by fostering translational R&D and industry partnerships. Its mandate includes funding projects to raise Technology Readiness Levels, serving as a nodal body for proposals, creating expert networks, and easing regulatory challenges.

Through initiatives such as IOTA Talks, exhibitions of impactful innovations, and showcasing success stories, the office promotes the journey of ideas from lab to market. In doing so, IOTA seeks to accelerate employment, economic growth, and societal benefit, while amplifying the impact of IIT Kanpur's research on the nation's development.

PANELLISTS

PANEL DISCUSSION 1

CO-INVENTING THE FUTURE: **TRANSLATIONAL RESEARCH IN AI, SUSTAINABILITY, AND CYBERSECURITY**

PROF. ASHUTOSH MODI

Associate Professor,
CSE Department, IIT Kanpur

(MODERATOR)

MR. YOGESH KUMAR

Vice President - Technology & India Engineering Center Leader,
Wabtec Corporation

MR. ABHISHEK LAHIRI

Vice President & Head,
Government Affairs, MasterCard

MR. HIRAK MITRA

Vice President and Head,
Hindalco Innovation Centre for Alumina, Hindalco Industries Ltd.

MR. ANAND KUMAR SINHA

Researcher and
Business Leader

MR. ANAND SRIVASTAVA

VP & Global Service Line
Lead for Applications,
DXC Technology

MR. PRAMOD KUMAR

General Manager,
Corporate R&D Center, Hindustan Petroleum Corporation Ltd.

MR. PARTHASARATHY BASU

Vice President and
Head Strategy and M&A,
Jubilant Ingrevia Limited

CO-INVENTING THE FUTURE:

TRANSLATIONAL RESEARCH IN AI, SUSTAINABILITY, AND CYBERSECURITY

The first panel of the day, Co-Inventing the Future: Translational Research in AI, Sustainability & Cybersecurity, explored how cutting-edge research can be transformed into real-world impact. The corporate leaders who graced the stage as speakers, brought diverse expertise across AI, Cybersecurity, Sustainability, and Industry Leadership.

Key takeaways:

- AI is moving **beyond pattern recognition** toward reasoning across text, audio, video, and scientific data, opening new opportunities for students and researchers to build ventures that tackle real societal challenges.
- Trust and security in today's digital age is critical, where principles like **"never trust, always verify"** and hardware-embedded encryption are becoming essential to protect people and systems.
- From converting crude into high-value chemicals to producing CO_2-free methane and hydrogen, the panelists showcased how innovation can be both **ecologically** responsible and **economically** viable.
- Moving from prototypes to products requires speed, manufacturability, and above all, listening to the customer. **Innovation cannot exist in silos** - it thrives when academia, industry, policymakers, and end-users co-create together.
- The future of translational research will be shaped by the **spirit of collaboration,** where discovery meets delivery and bold ideas become impactful realities.

PANELLISTS

PANEL DISCUSSION 2

PURPOSE-DRIVEN TECHNOLOGY: **USING CSR TO FUEL INNOVATION**

PROF. ASHISH GARG

HOD - Sustainable Energy Engineering, IIT Kanpur

(MODERATOR)

MR. SUBHENDU KESH

Vice President - Digital and Chief Information Officer, JK Paper Ltd.

DR. NEEPA SHARMA

General Manager and Head - CSR, CESC Limited

MR. M.S. SRIKANTH

Senior Manager - CSR, Indian Oil Corporation Limited

MR. RAMESH KD

CSR Lead, Kajaria Ceramics Limited

DR. SABINE KAPASI

CEO & Managing Director, Enira Consulting

MR. HIMANSHU SHEKHAR PANIGRAHI

Senior Manager - CSR, Hindustan Copper Limited

MS. SANCHITA VAISH

Company Secretary & CSR Lead, Baker Hughes

MR. TARA CHAND

Head – CSR, OakNorth

PURPOSE-DRIVEN TECHNOLOGY:

USING CSR TO FUEL INNOVATION

The esteemed speakers of this session examined how Corporate Social Responsibility (CSR) can evolve into a catalyst for purposeful innovation.

Key takeaways:

- While India's CSR spending is modest compared to government budgets, its strength lies in de-risking new initiatives, validating models, and enabling adoption at scale. CSR should focus on the **"missing middle"** - proofs of concept, governance frameworks, and last-mile delivery.
- Aligning CSR with AI, sustainability, and cybersecurity can make technology more inclusive and impactful. Reframing CSR as Collaborative Social Responsibility was suggested, where industry, academia, government, and communities **work together to design solutions.**
- To close the gap between research and real-world application, CSR initiatives were encouraged to meet the **"4A" criteria - Accessibility, Acceptability, Affordability, and Assimilation** - through pilots, training, system integration, and supply chain support.
- Trustworthy technology, especially in cybersecurity, was seen as **critical to protecting** vulnerable groups.
- A call for blended finance models that integrate **CSR, ESG, and public funding** under frameworks balancing social and financial returns.

PANELLISTS

PANEL DISCUSSION 3

CRAFTING THE FUTURE: **HOW MSMEs AND ACADEMIA CAN SHAPE A SELF-RELIANT INDIA**

PROF. DEEPU PHILIP

Professor In-Charge,
SIIC IIT Kanpur

(MODERATOR)

MR. GAURAV PILANIA

Director,
Hans Energy Systems,
Mars (India) Antennas & RF Systems,
Hans Geofisica Consultores

MR. B.K. SINGHAL

CEO & Director,
UY Trienviro

MR. R.K. AGARWAL

Managing Director,
Netplast Pvt. Ltd.

MR. MANISH KANKANI

CEO, Qualtech Consultants

MR. KANNAN AGARWAL

Managing Director,
Rakan Steels Limited

CRAFTING THE FUTURE:

HOW MSMEs AND ACADEMIA CAN SHAPE A SELF-RELIANT INDIA

Closing the day's discussions, this panel discussed how MSMEs and academic institutions can jointly drive India's journey toward self-reliance. They emphasized that imitation often serves as the first step toward innovation, encouraging MSMEs to adopt and refine proven technologies to accelerate time-to-market while reducing import dependence.

Key takeaways:

- True innovation emerges from a **two-way collaboration** between academic research and MSMEs' practical insights. By combining theoretical knowledge with on-ground experience, clear problem statements can be transformed into validated, market-ready solutions.
- **Skilling and upskilling** are critical to embed MSME-focused projects and apprenticeships into curricula to ensure graduates are work-ready.
- The importance of robust commercialization infrastructure, including single-window nodal cells, shared laboratories, and **strong industry partnerships,** to streamline technology transfer, pilot testing, and integration was highlighted.
- The targeted support for MSMEs can generate **substantial national benefits.** Tailored policies, problem-discovery workshops, and outcome-driven pilot programs were suggested to enhance exports, create employment, and drive GDP growth.

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RESEARCH & INNOVATION SHOWCASE

The exhibition at the event showcased IIT Kanpur's research and innovation across diverse domains. Under Sustainability, stalls such as Airawat Research Foundation, Kotak School of Sustainability, and Sustainable Energy Engineering highlighted advances in energy storage, materials, and environmental solutions.

In Healthcare, initiatives like Regenmedica Pvt. Ltd., Centre of Excellence in Neuroscience, Neurotechnology and Mental Health, Hridyantra, POCD3, and PVAD demonstrated cutting-edge biomedical devices and materials. The Centres of Excellence presented specialized research hubs including NCFlexE, DIA CoE, and Energy Regulation & Analytics Lab, bridging academia and industry.

Aerospace & UAV exhibits featured Hivion Autopilot, Drone CoE, 3D Printed Rocket Engine and Turbine, and the IITK Rocketry Team, highlighting innovation in aerospace and space sciences. Inclusion & Assistive Technologies showcased systems like VANI and support initiatives for students with disabilities, promoting accessibility and inclusion.

The exhibition successfully highlighted IIT Kanpur's interdisciplinary research, technological innovation, and societal impact, offering visitors a comprehensive view of the institute's ongoing contributions.

Other areas included Education, Skilling, and Rural Crafts, Motorsports, Incubation & Startups, Economic Sciences, and AI, Cybersecurity, and Robotics, with participants like IITK Motorsports, Glimpse Tech, Vasundhara Biofibers, Medantrik, ERA, SMILE Lab, and C3iHUB.


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