FOUNDATION FOR INNOVATION
AND TECHNOLOGY TRANSFER
Indian Institute of Technology Delhi

सोच to Scale

NEWSLETTER

Quarterly Edition : July-September 2025



Theme: From Lab to Market

Building India's DeepTech & BioInnovation Flywheel

Note by Editor

Q3 2025 at FITT IIT Delhi was a season of momentum: a quarter where science met markets, researchers became founders, and bold coalitions turned prototypes into pathways. From DefenceTech showcases to BioDesign blueprints, from IP filings to investor roundtables, we saw India's innovation engine powering ahead grounded in rigorous R&D and lifted by cross border collaboration, faculty members and the entire innovation ecosystem. This editorial gathers every detail to offer a panoramic, yet intimate account of the ecosystem FITT is shaping inclusive, industrially relevant, and globally connected.

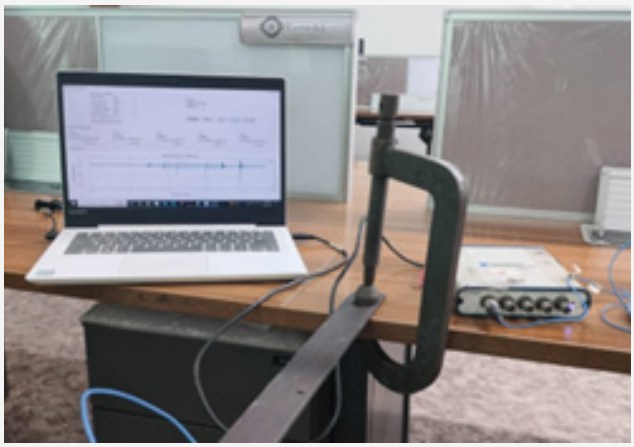
Quarter at a Glance

- **31** R&D/technology/consultancy projects led via FITT (Jul–Sep), driving **INR 20.21 Cr** in funding and industry academic impact.
- **35** IP applications filed (Q3), spanning healthcare, clean energy, AI/communications, materials, civil engineering, and more.
- **08** technology licensing deals completed—translating campus breakthroughs into commercial products and platforms.
- **Major collaborations inked** (e.g., **Bosch Global Software Technologies** (BGSW)MoU on July 22, 2025, advancing EVs, vehicle to grid, and cybersecurity with Prof. B.K. Panigrahi leading.
- **Investor & ecosystem engagements:** DefenceTech Demo Day (July 17), SIDBI event (July 18), Hyderabad Investor Roundtable with ValleyNXT (July 25), India–UAE CEPA Council MoU (Aug 4), FITT Forward 2025 (Aug 21–22), India–UAE Startup Dialogue (Sept 3]
- FITT incubated **7 new startups** across deep-tech, AI, defence, and healthcare domains, including RotoAI, Exonova Lifesciences, Divergence AI, DeepLase, Cerify, Thought2Design Systems, and Mechphy Awe Robotics. These ventures achieved notable milestones such as funding wins, defence deployments, and global collaborations, reinforcing FITT's role in driving innovation.



Newly Incubated Startups

FITT IIT Delhi welcomed several innovative startups into its incubation ecosystem during Quarter 3, each bringing cutting-edge solutions across deep-tech, AI, defence, and healthcare domains:



RotoAI Private Limited

Founders: Gyan Setu, Madhusmita Mohanta

RotoAI offers AI-driven predictive maintenance and digital-twin solutions for mission-critical assets. Their technology enables real-time condition monitoring, early fault detection, and improved reliability for defence, marine, oil & gas, and heavy industries.
(Incubated: 01 July 2025)



Exonova Lifesciences Pvt. Ltd.

Founders: Dr. Arti Kumari Pal, Mr. R.B. Singh

Exonova focuses on exosome-based cosmetics and regenerative therapeutics. Their work spans advanced exosome isolation platforms and plant-derived products for skin and joint health, aiming to make healthcare accessible and impactful.
(Incubated: 01 August 2025)



Divergence AI Private Limited

Founders: Saurabh Kumar Singh, Akhilendra Kant Singh, Ankita Sachan, Viren Inaniyan, Lucky Jain

Divergence AI pioneers next- generation AI-driven debt collection and recovery through advanced analytics and API-based Smart Collect solutions.

DeepLase Technologies Pvt. Ltd.

Founder: Prof. Deepak Jain

DeepLase develops next-gen high-power, narrow-linewidth fiber lasers using patented specialty optical fiber technology. Their indigenous laser systems cater to manufacturing, material processing, and defence applications.
(Incubated: 16 September 2025)

Cerify Auditing Solutions Pvt. Ltd.

Founders: Prof. Subodh Vishnu Sharma, Prof. Nilam Kaushik, Debashish Sakunia

Cerify revolutionizes smart contract security using neuro-symbolic AI and formal verification mathematics. It automates vulnerability detection and delivers mathematically provable audits in minutes, empowering Web3 developers with trust and speed.
(Incubated: 30 September 2025)



Mechphy Awe Robotics

Founder: Saksham Mishra

Mechphy Awe Robotics develops a laser-based tactical training simulator designed for live, on-ground military combat scenarios. The system enables soldiers to train in realistic battlefield environments with high accuracy and instant feedback. It enhances combat readiness, improves decision-making under stress, and reduces training costs through safe, repeatable simulations.

(Incubated: 09 October 2025)

Thought2Design Systems Pvt. Ltd.

Founder: Prof. Smruti Sarangi

Thought2Design is building an integrated 3D CAD platform that combines electrical (PCB) design, mechanical 3D modeling, meshing, visualization, and built-in finite element simulation. Leveraging Generative AI and supercomputing, the platform generates optimized structures for defence and aerospace applications. It aims to become the first solution offering full 3D modeling, FEM, HPC, and AI capabilities in a single package, enabling advanced, indigenous design workflows for Indian industry

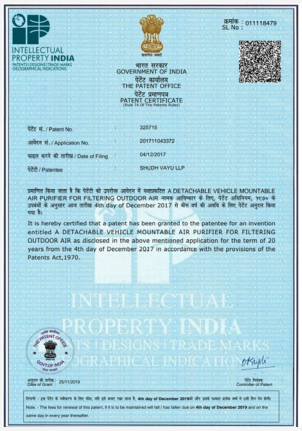
(Incubated: 05 August 2025)

Startup Achievements

Our incubated startups achieved remarkable milestones this quarter, reinforcing FITT's mission to foster innovation:

Shudhvayu Technologies Pvt. Ltd.

Developed a production-ready design for its Vehicle-Mounted Air Purifier (VMAP) and received official recognition from DPCC, with IIT Delhi and ICAT appointed for scientific evaluation.


INTELLECTUAL PROPERTY INDIA

GOVERNMENT OF INDIA

THE PATENT OFFICE

PATENT CERTIFICATE

It is hereby certified that a patent has been granted to the patentee for an invention entitled A DETACHABLE VEHICLE MOUNTABLE AIR PURIFIER FOR FILTERING OUTDOOR AIR as disclosed in the above mentioned application for the term of 20 years from the 4th day of December 2017 in accordance with the provisions of the Patents Act,1970.

Divergence AI Pvt. Ltd.

Won the Best Use Case of AI in Collection award at the Collection & Resolution Summit 2025 and moderated a session on legally sound digital collection practices.



Fruvetech Pvt. Ltd.

Raised **₹40 lakh** from angel investors, won the TATA Social Enterprise Challenge, and participated in the World Food India Grand Challenge.



Hyki Tech Pvt. Ltd.

Secured **₹3.25 lakh** in grants and successfully completed pilot testing of its turbine technology.

Kashikari Textiles Pvt. Ltd.

Converted agricultural waste into sustainable textiles, benefiting 120 farmers and introducing patent-backed fiber extraction technology for eco-friendly fabrics.



VyomOS Pvt. Ltd.

Demonstrated a custom-built drone showcasing its autonomy stack and successfully tested a radio-silent, jamming-proof "Dark Drone" for covert ISR missions

IKITES Technologies Pvt. Ltd.

Prototyped a healthcare AI agent "VITA" for clinical decision support and initiated R&D collaborations with Stanford Medical for ophthalmic imaging using multi-modal AI.

GB Texcoat Solutions Pvt. Ltd.

Demonstrated foldable fuel storage tanks for the Indian Army and secured a ₹25 lakh order from DRDO for lightweight aerostat hull material.

Thought2Design Systems Pvt. Ltd.

Building India's first integrated 3D CAD platform combining PCB design, mechanical modeling, FEM, HPC, and AI for defence and aerospace applications.

Mechphy Awe Robotics

Developing a laser-based tactical training simulator for realistic battlefield training, enhancing combat readiness and reducing costs.



Feature Story: DefenceTech & Beyond

DefenceTech & Beyond - Bridging innovators and the armed forces

Date: 11 July 2025

Hosted by FITT IIT Delhi, the forum enabled one on one engagements with the Army Design Bureau (ADB), catalyzing pathways for strategic trials and deployments. Major General C.S. Mann addressed the gathering as Chief Guest, underscoring collaboration as the lever of self reliance.



Feature Story: FITT Forward 2025

Driving India's DeepTech Momentum

Held on 21–22 August 2025 at IIT Delhi, FITT Forward 2025 stood out as a flagship platform for innovation, collaboration, and policy dialogue. The two-day conclave brought together startups, investors, policymakers, faculty members, industry leaders, and students, creating a vibrant ecosystem for ideas to scale.



Key Highlights:

- Mobility for Tomorrow: Panels explored sustainable transportation, zero-emission systems, and AI-driven infrastructure, emphasizing industry–policy–startup collaboration for future-ready mobility.
- DeepTech & Smart Manufacturing: Global investors and VCs shared insights on funding strategies and scaling deep-tech ventures, with thought leadership from Ravi Jain
- MSME & Startup Ecosystem: Dr. Subhransu Acharya (CMD, NSIC) outlined strategies to empower MSMEs and foster innovation-driven growth.
- Semiconductor Sovereignty: Launch of the Bharat Byte Program in partnership with Cadence CSR, a 2.5-year incubation model to accelerate semiconductor startups with mentorship, EDA tools, and funding support.
- Investor Connect: Practical sessions on attracting capital and building partnerships, enabling founders to navigate the investment landscape effectively.

Impact in Numbers:

- 50+ breakthrough startups and IIT Delhi innovations showcased live demos and pitches.
- Launch of the FITT–SIDBI Deeptech Accelerator, offering up to ₹1.5 Cr upfront funding, mentorship, and market access for 12 shortlisted ventures.
- Networking sessions connected entrepreneurs, corporates, and policymakers, reinforcing FITT's role as a catalyst for India's innovation economy.

Feature Story: BioInnovation in Focus

Ignite to Innovate:

Bio Entrepreneurship for Emerging Thinkers



Format: Two day online workshop | Partners: FITT × Rapture Biotech International Pvt. Ltd.
Audience: Life sciences students & researchers

What was covered:

- Bio innovation & startup landscapes
- Design thinking for translational research
- IP, tech transfer & regulatory navigation
- Grant writing & pitching fundamentals

Expert voices: From Biozazen, Tata Group, BIRAC, @Tacitmedtek, and FITT IIT Delhi, all focused on converting lab insights to real world impact.

Innovation Bootcamp:

FITT × Samsung – Igniting Ideas for Impact
FITT IIT Delhi, in collaboration with Samsung, hosted a 7-day intensive Innovation Bootcamp from September 4–11, 2025, designed to empower innovators with the tools,
mentorship, and resources to transform ideas into market-ready solutions. The bootcamp brought together 40 top teams across four critical themes:





AI for a Safer, Smarter & Inclusive Bharat

- Environmental Sustainability via Technology
- Future of Health, Hygiene & Wellbeing in India
- Social Change through Sport & Technology: For Education & Better Futures
- The program followed a structured, hands-on approach:

Day 1–3: Focused on mentorship, design thinking, advanced ideation, feasibility analysis, and market validation, complemented by expert talks and growth-hacking workshops.

Day 4–5: Teams engaged in prototyping across bio, electrical, and mechanical labs, followed by iterative development with guidance from SFT alumni mentors.

Day 6–7: Culminated in National Pitch Days, where teams showcased solutions under AI & Health tracks (Themes A & B) and Environment & SportTech tracks (Themes C & D), competing for recognition and future support.

This bootcamp exemplified FITT's commitment to fostering innovation-driven entrepreneurship and creating pathways for impactful technologies that address India's most pressing challenges.

R&D Projects & Partnerships

Project Title	PI	Department	Impact
Demonstration of Low-Cost Continuous Monoclonal Antibody Manufacturing	Anurag S. Rathore	Chemical Engineering	Affordable Healthcare & Biotech Innovation
Evaluation Study of the National Overseas Scholarship for ST Students Scheme	Sanjay Dhir	DMS	Education Equity & Social Inclusion
Scalable Model Coordination for Enhancingthe Abilities of Small Language Models	Tanmoy Chakraborty	Electrical Engineering	Artificial Intelligence
Towards the Development of a Multi-Pulse Converter for an Electrolyser	Anandarup Das	Electrical Engineering	Green Hydrogen / Clean Energy
Development of a Pediatric White Cane for Children with Visual Impairment	PV Madhusudhan Rao	Design	Assistive Technology
Solving Social Issues in the GIG Economy: Improving Safety for Last-Mile Delivery Motorbike Drivers in India	Deepty Jain	TRIPC	Social Innovation / Urban Mobility Safety
Facilitate Continuous Downstream Processing Step (CIEX) for Mabs	Anurag S. Rathore	Chemical Engineering	Biopharma Manufacturing
Evaluation Study of the Shahari Waqf Sampatti Vikas Yojana (SWSVY)	Sanjay Dhir	DMS	Urban Development
Approval of Retrofitting Plan of 240 MLD STP at Vasna, Ahmedabad	Souvik Chakraborty	Applied Mechanics	AI + Engineering Simulation
Approval of Retrofitting Plan of 240 MLD STP at Vasna, Ahmedabad	Vivek Kumar	CRDT	Environmental Sustainability / Water Infrastructure

Corporate Partners

Gates Foundation, Biocon Biologicals, BHEL, Vertiv Energy, Microsoft Research India, ABB, Bosch, DRDO–GTRE, Tejas Networks, Organica Water Solutions, Donaldson Company (USA) reflecting the breadth of sectors from bio & health to energy, electronics, and environment.

Collaboration Spotlight - BGSW × FITT

Advancing R&D, expert consulting, training, and translational pilots in mobility & industrial tech (EVs, V2G integration, cybersecurity) with Prof. B.K. Panigrahi leading the engagement.

(MoU, July 22, 2025)



IP & Tech Transfer: Protect. License. Deploy.

IP Applications Filed (Q3: 35)

S.No	Title	Inventor	Department/ Centre	Technology Area
1.	A Multimodal Electrochemical Measurement System for Energy Storage Devices	Madhusudan Singh	Electrical Engineering	Energy Management
2.	Novel Cell-Penetrating Wound Healing Peptides	Archana Chugh	Kusma School Of Biological Sciences	Healthcare
3.	A Smart Wind Turbine Blade Of Variable Chord Length	Jayanta Kumar Dutt	Mechanical Engineering	Power Generation and Distribution
4.	Battery State-Of-Power (SOP) Based Residential Electric Vechicle Charger Control	Bijaya Ketan Panigrahi	Electrical Engineering	Electric Vehicles
5.	Conjugates, Compositions and Methods for Detection Of Methylated DNA	Prashant Mishra	Biochemical Engineering and Biotechnology	Electric Vehicles
6.	A Grid Synchronization Algorithm for Rooftop Solar Inverter in Polluted Grid Environment	Santanu Kumar Mishra	Automotive Research and Tribology	Softwares

IP & Tech Transfer: Protect. License. Deploy.

IP Applications Filed (Q3: 35)

S.No	Title	Inventor	Department/ Centre	Technology Area
7.	A System and a Method for Generating a White Light	Dalip Singh Mehta	Physics	Optics And Photonics
8.	Bio-Waste Derived Sustainable and Economical Composite Cellulosic@UiO-66 Membranes for Efficient Dye Removal with Effective Reusability	Archana Samanta	Textile and Fiber Engineering	Material Science
9.	Maxillofacial Prosthetic Material Composition and Its Use Thereof	Shib Shankar Banerjee	Material Science and Engineering	Healthcare
10.	A Method, System, And Device For Calculating A Homogeneity Percentage In Fortified Rice	Hariprasad Puttaswamy	Rural Development and Technology	Others
11.	Connecting Assembly And Braced Framed Systems	Ravikrishnan Elangovan	Biochemical Engineering and Biotechnology	Life Sciences
12.	Enclosed Mass Impact-Driven Vibration Damping Device	Arnab Banerjee	Civil Engineering	Civil/Structural Engineering
13.	Impact - Based Vibration Attenuation Device	Arnab Banerjee	Civil Engineering	Civil/Structural Engineering
14.	A Hybrid Interleaved Winding Arrangement for High Frequency Transformers with High Step-Down Turns Ratio	Santanu Kumar Mishra	Automotive Research and Tribology	Power Generation and Distribution
15.	A Biodegradable Polymeric Composition and a Method for its Preparation	Rajesh Khanna	Chemical Engineering	Environment

16.	Circulating Filtering Antenna System	Kirti Dhwaj	Applied Research in Electronics	Communication
17.	A Flux Barrier and Notch Based Reduced Rare Earth Multilayer Interior Permanent Magnet Synchronous Motor	Saptarshi Basak	Automotive Research and Tribology	Machines And Machinery Processes
18.	A Combustion Burner	Snehasish Panigrahy	Energy Science and Engineering	Environment
19.	A smart material-based technology implementing ni-ti or cu or fe-based shape memory alloys for integrated prestressing synthesized with semi-active control and passive control of building structures for multi-hazard mitigation	Suresh Bhalla	Civil Engineering	Civil/Structural Engineering
20.	System And Methods of Probabilistic Pooling CNN For Enhanced Image Classification	Shiv Dutt Joshi	Electrical Engineering	Sensors And Mems
21.	A Process for Preparing a Microglow Discharge Chip	Bhaskar Mitra	Electrical Engineering	Machines And Machinery Processes
22.	System For Determining Handoffs in a Network and a Method Thereof	Manav Bhatnagar	Electrical Engineering	Communication
23.	Two-Dimensional Anti-Scratch Coating on Large-Area Glass Surfaces	Nitya Nand Gosvami	Material Science and Engineering	Material Science
24.	An Optical Fiber for Distributed Spectral Filtering and Method Thereof	Deepak Jain	Optics & Photonics	Communication
25.	A Photovoltaic Power System and a Method of Operating the Same	Subhendu Dutta	Energy Science and Engineering	Power Generation And Distribution

26.	A Method for Periplasmic or Soluble	Anurag S Rathore	Chemical Engineering	Material Science
27.	Automated Metal Powder Stacking Die	S Pradyumna	Applied Mechanics	Machines And Machinery Processes
28.	Blood Cell Biomarker Estimation	Ravikrishnan Elangovan	Biochemical Engineering and Biotechnology	Healthcare
29.	A Powder Blending Apparatus	S Pradyumna	Applied Mechanics	Machines And Machinery Processes
30.	A Three-Phase Two-Level Voltage Source Inverter (Vsi) For Electric Motor Drives	Avanish Tripathi	Energy Science and Engineering	Machines And Machinery Processes
31.	Hydrogel Delivery System and a Method of Preparation Thereof	Jayanta Bhattacharyya	Biomedical Engineering	Healthcare
32.	Injectable Bioenergetic Hydrogel Composition for Cartilage Regeneration and Tissue Engineering	Sachin Kumar B	Biomedical Engineering	Healthcare
33.	Smoke-Free Jaggery Production Using Processed Biomass-Based Heating System	Sudhir Kumar Tyagi	Energy Science and Engineering	Environment
34.	A Mosquito Repellent Detergent Formulation and Process for the Preparation Thereof	Javed Nabibaksha Sheikh	Textile And Fibre Engineering	Material Science
35.	A Fiber-Integrated Narrowband Source of Tunable Polarization-Entangled Photon Pairs for Low-QBER Quantum Communication	Joyee Ghosh	Physics	Communication

FITT facilitates the commercialization of valuable intellectual property through technology transfer and licensing agreements. FITT has successfully completed 08 technology licensing deals during this period.

1.Development of Aerogel Insulated Nonwoven Blanket for Garments

The innovative Aerogel-based thermal insulation technology involves integration of aerogel with a non-woven fabric to create a lightweight, high-performance thermal insulating material. With its low density and low thermal conductivity, it is well-suited for garments used in extreme cold conditions and offers a potential alternative to bulky insulation materials. This technology was developed by Prof. Harun Venkatesan from Department of Textile and Fibre Engineering, IIT Delhi.



Company: Raksha Kavach Tech Pvt. Ltd
Date of Licensing: 23rd July 2025

2.Fiber-optic probe-based label-free auto-fluorescence imaging and spectroscopy in-conjunction with Raman spectroscopy for fast screening of oral Cancer

The novel technology is an auto-fluorescence and fluorescence imaging, spectroscopy and videoscopy system for imaging of oral, breast and skin cancer patients. It is a cost-effective Point-of-care device used for screening and diagnosis for cancer patients. This technology was developed by Prof. Dalip Singh Mehta from the Department of Physics at IIT Delhi.

Company: Optimode Diagnostics
Date of Licensing: 22nd Aug 2025

The following three technologies were transferred to Cohere Technologies, USA. These innovative technologies were developed by Prof. Saif K Mohmmad from Department of Electrical Engineering at IIT Delhi.

3. Low Complexity Radar Processing based on the Discrete ZAK Transform (DZT)

4. Precoding of Orthogonal Time Frequency Space Signals

5. 5ZAK Transform Waveforms Compatible with Cyclic Prefix Orthogonal Frequency Division Multiplexing

The following three technologies were transferred to Gunsutra Pvt. Ltd. These innovative technologies were developed by Prof. Sandeep Jha from Centre for Biomedical Engineering at IIT Delhi.

6. Standalone portable meter and microfluidic strip and kit for multi-variate biosensing and quantitative lateral flow assay: A non-invasive device and multichannel LFA kit combination with novel paper-fluidic integration to detect multiple biomarkers involved in disease detection such as sepsis. It is also used to detect salivary glucose and correlate it with blood glucose levels.

7.Microfluidic chip-based cell sorter and enrichment device: The microfluidic device performs high-efficiency separation and enrichment of cells from blood, semen or other biological fluids, facilitating on-chip separation and post-separation platelets storage in the same buffer system. The separated platelets can be used for downstream therapeutic purposes.

8. Automated Soil Pesticide Analyzer: A portable device is developed to detect the concentration of used pesticide in the soil, also used as a pesticide analyzer. It is an automatic and cost-effective solution to analyze pesticides.
Company: Gunsutra Pvt. Ltd.
Date of Licensing: 1st Sep 2025

IP Awareness and Outreach Sessions

FITT regularly conducts knowledge sessions for various stakeholders (faculty members, research scholars, inventors, students, start-ups, etc.) from IIT Delhi as well as other organizations. Some of the sessions organized for IIT Delhi community are as below:



IP awareness session presented at the IITD orientation day



Investor Connect & Capital Pathways

- **DefenceTech Demo Day - July 17, 2025**: Curated investor founder interfaces for defence startups to present deployment ready solutions.
- **SIDBI Session - July 18, 2025:** Funding structures and seed equity pathways for deeptech/iDEX ventures.
- **Hyderabad Investor Roundtable - July 25, 2025:** 40+ capital allocators across VC/family offices exploring co investment and SIDBI backed structures.
- **India–UAE Startup Dialogue - Sept 3:** Embassy hosted exchanges on market entry and bilateral pilots.
- **Startup Showcase**: HealthTech & DeepTech Narratives



IP Awareness Session on "Securing Intellectual Property for Computer and AI-related Inventions in India held on August 28th 2025"



The stall was thoughtfully designed as an interactive space to promote awareness on Intellectual Property (IP) and Technology Transfer (TT). Visitors could engage directly with experts, clarify their queries on patents, trademarks, copyrights, and commercialization strategies, and explore how IP can safeguard innovations and enable impact.

FITT at SIDBI–SINE Dialogue: Powering Incubation with Capital

FITT IIT Delhi joined a high-impact dialogue hosted by SIDBI at SINE IIT Bombay, exploring how incubators can drive the next wave of venture capital. Our MD, Dr. Nikhil Agarwal, shared FITT's journey of transforming incubation into investable innovation through initiatives like the FITT Investment Fund, the proprietary DECIDE Tool for assessing startup investment-readiness, and ecosystem enablers such as FITT Angel Investor Network (FAIN) and the Faculty Innovation Grant Program. The session, featuring leaders from SIDBI, Michael & Susan Dell Foundation, ADB Ventures, and Infosys Innovation Fund, reinforced FITT's commitment to bridging deep-tech incubation with catalytic capital to power India's innovation economy.

Pioneering the Future of Innovation

FITT recently hosted an exclusive Startup Demo Day that brought together leading deep-tech startups, seasoned mentors, and top investors for high-impact engagements. The event featured 17 groundbreaking startups that showcased disruptive solutions through 51 closed-door pitches, creating a vibrant platform for innovation and collaboration. Founders had the opportunity to connect one-on-one with investors and mentors, unlocking strategic insights and funding pathways.

Industry perspectives were shared by Mr. Kalp Bhatt from PitchMatter, who highlighted initiatives such as Pitch XPO, CapShield, and the upcoming Pre-GITEX showcase. Selected startups will now gear up for the Dubai Pre-GITEX event scheduled for October 10–11, 2025, in collaboration with Asiarath VC Fund and 888.vc, where they will network with over 75 global investors, venture capitalists,

HNIs, and founders. Adding a global dimension, Mr. Soohyung Kim from the Asian and Pacific Centre for Transfer of Technology (APCTT) outlined strategies for scaling innovations internationally, reinforcing FITT's commitment to enabling Indian startups to thrive on the global stage.



Defence Tech Startups Demo Day - A Resounding Success!

On 17th July 2025, DSCE under FITT IIT Delhi, in collaboration with SIDBI, hosted a landmark Defence-Tech Demo Day that united India's top innovators, investors, and ecosystem enablers. The event featured a powerful welcome address by Dr. Nikhil Agarwal, highlighting the role of academic-led innovation in driving indigenous deep-tech, and a keynote by Mr. Satya Prakash Singh (SIDBI) on the strategic importance of startup-driven defence solutions.

Fourteen cutting-edge startups showcased mission-critical technologies, followed by an engaging panel discussion on "Fuelling India's Defence-Tech Ecosystem" with experts from iDEX-DIO, Jamwant Ventures, ThinKuvate, ValleyNXT Ventures, and MountTech Growth Fund – Kavachh.

FITT–SIDBI Deeptech Accelerator: A Bold Leap Forward

At FITT Forward 2025, we proudly unveiled the FITT–SIDBI Deeptech Accelerator Program—a transformative initiative designed to supercharge India's next wave of deeptech ventures.
The launch witnessed 12 cutting-edge startups pitching for a coveted spot in the cohort, aiming to access up to ₹1.5 Cr in upfront funding, alongside structured mentorship, market access, and ecosystem support. This accelerator marks a defining moment in FITT's journey—nurturing bold ideas and translating them into scalable global innovations that will shape the future of technology and enterprise.



India–UAE Startup Dialogue

FITT, along with its incubated startups, had the privilege of joining H.E. Abdulnasser Alshaali, PhD, Ambassador of the UAE to India, for an insightful dialogue at his residence in New Delhi, where 40 startups engaged in a powerful exchange on entrepreneurship, innovation, and the growing potential of the India–UAE partnership; with Dr. Nikhil Agarwal, Managing Director of FITT IIT Delhi, highlighting immense opportunities for collaboration, the session focused on scaling businesses in the UAE market, identifying the right opportunities at the right time, gaining investor confidence with Embassy support, and building pathways for global growth—marking a significant step in strengthening ties between India's vibrant innovation ecosystem and the UAE's thriving market, further reinforced by FITT's MoU with the UAE–India CEPA Council and the upcoming IIT Delhi–Abu Dhabi campus, as FITT extends gratitude to Ambassador Alshaali and applauds the innovators for making the exchange impactful and memorable.

Unnati AI: Roadshows & Accelerator (CSR partnership with Microsoft)

The Unnati AI movement drove generative AI skilling and inclusion across Indian cities, culminating in May–August roadshows with hands on workshops (Azure, Copilot, Responsible AI) and investor connects—unlocking grant opportunities and strategic investments (up to ₹2 Cr), with more than 1,000+ participants engaged nationwide.

MoU Signings:

FITT Strengthens India–Korea Startup Synergy

FITT IIT Delhi proudly represented India's vibrant deep-tech ecosystem on the global stage at an exclusive event hosted by the Seoul Business Agency (SBA), a key government body championing startups.

A major highlight was the signing of a landmark Memorandum of Understanding (MoU) on September 11, 2025, between FITT IIT Delhi, Seoul Business Agency, and Unicorn Incubator Co. Ltd. This strategic partnership aims to supercharge India–Korea startup exchanges through network building, knowledge sharing, and cross-border support for innovative ventures.

The event was graced by Mr. Nishi Kant Singh, IFS, Deputy Chief of Mission at the Embassy of India in Seoul, whose insights elevated the dialogue. Dr. Nikhil Agarwal, Managing Director of FITT, delivered a compelling presentation on FITT's initiatives and its stellar startup portfolio, sparking meaningful conversations.

Adding to the momentum, **Ms. Mahima Jinah Kim,** Managing Partner at Unicorn Incubator, emphasized the importance of India–Korea collaboration and the need for streamlined pathways for cross-border innovation.



FITT–Footwear Design and Development Institute (FDDI) MoU Signing

On 24th September 2025, FITT entered into an MoU with the Footwear Design and Development Institute (FDDI) to collaborate in R&D, consultancy activities, and knowledge transfer. This partnership is set to accelerate innovation in design, product development, and industry-focused solutions.

FITT–HS Foundation MoU Signing

On 21st August 2025, FITT signed an MoU with HS Foundation, further expanding opportunities for collaboration in innovation and entrepreneurship. This agreement strengthens FITT's mission to build impactful partnerships and foster growth across diverse sectors.

MoU with India–UAE CEPA Council

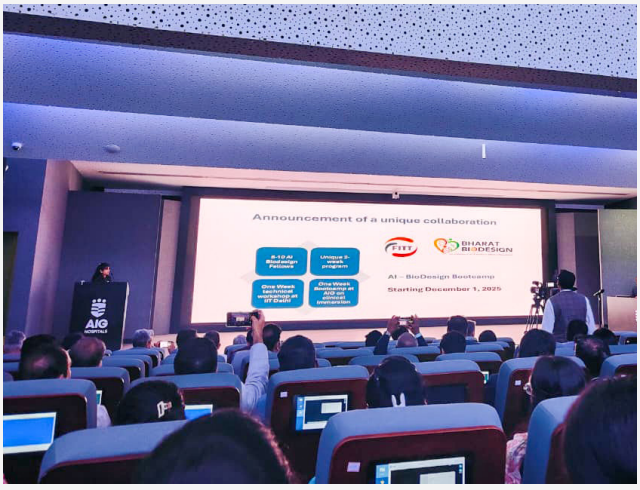
August 4, 2025: Building a structured bridge for startup dialogues, investment, and bilateral pilots.



Major Ecosystem Engagements

APAC BioDesign Innovation Summit 2025

FITT contributed to a global dialogue spanning Stanford, Japan, Singapore, Taiwan, Ireland, Australia, Israel, and India, aligning on indigenous healthcare innovation. A high point: unveiling of "Innovations for Bharat: The BioDesign Blueprint" by Sri A. Revanth Reddy Garu, Hon'ble CM of Telangana where FITT reiterated its commitment to strengthening India's MedTech innovation ecosystem.



i3 Summit "Vimarsh" by Blockchain for Impact (BFI)

FITT participated actively in the i3 Summit "Vimarsh" organized by Blockchain for Impact (BFI), where Shri Nitin Gadkari shared insightful perspectives on India's leadership in MedTech and healthcare innovation. Dr. Nikhil Agarwal, Managing Director of FITT, joined the panel discussion on "The Emerging AI Future & Its Impact on Healthcare in India," emphasizing India's strengths as a global AI testbed.

During the event, FITT formalized its collaboration with BFI through a Memorandum of Understanding (MoU) exchange, represented by Dr. Nikhil Agarwal, Dr. Ashutosh Pastor and Prachi B. Adding to the innovation showcase, Vayuguard—a FITT-incubated startup—presented its advanced air purification system to a distinguished guest speaker.



Driving Innovation at AIC IIT Delhi

This quarter marked significant strides in deep-tech incubation, strategic collaborations, and ecosystem building at AIC IIT Delhi. From onboarding new startups to forging impactful partnerships, here's a snapshot of our progress:

Startup Incubation & Achievements

7 new startups incubated, spanning diverse sectors:

- **Spolyn Ventures –** SportsTech solutions for data-driven athlete performance.
- **Darsh Dronobotics (Vjaitra Air Mobility)** – India's first hydrogen-powered VTOL air taxi for zero-carbon urban mobility.
- **OM Shiva Health Enterprise –** IoT-based surgical equipment for cleft lip and palate procedures.
- **HERDSMAN Development –** PashuDhanQR app for livestock management.
- **Raik Deftech –** Advanced exosuit platforms for defence and industrial applications.
- **QVÉY –** Athleisure innovations.
- **Anjuma TechtTex –** Advanced yarns and technical textiles.

Impact: Several incubated startups secured SISFS funding (₹160 lakhs in first tranche), including HERDSMAN, Darsh Dronobotics, and OM Shiva Health Enterprise. DeepLase Technologies and Grokalp H2CNT also received support for scaling deep-tech solutions.

Strategic Collaborations

- **MoU with P.A.R.K.** Industries to promote innovation in technical textiles and support Haryana MSMEs.
- **Partnership with NISE** for renewable energy startups, launching a joint Call for Proposals that attracted 82 applications.

Events & Ecosystem Engagement

- **Advanced Masterclass for Visionary Founders (July 24–25)** – Strengthening founder capabilities.
- **Technical Textiles Workshop with TSC & ITTA –** Empowering textile startups and MSMEs
- **Gunvatta Samriddhi Program on NABL accreditation** – Enhancing quality assurance for startups.
- **Sportscom Industry Conclave** – Connecting SportsTech startups with industry leaders.

Corporate Programs & New Initiatives

- **Bharat Byte Semiconductor Accelerator** (CSR by Cadence) – ₹1.32 Cr committed to support 15–20 startups.
- **Road Safety & Mobility Innovation Program (CSR by Honda) – ₹2.2 Cr** proposed for mobility-focused startups.

Industry – Academia expectation Mismatch: Technology Transfer Phenomenon for Resilient and Self-Reliant India

Author: Prof. (Dr.) Amit Mehndiratta, Professor of Biomedical Engineering at Indian Institute of Technology Delhi (IIT Delhi)

Educational institutions such as the IITs, IIITs, NITs, IISc, and IISERs are among India's premier centres of higher education. Recognized as Institutes of National Importance and Institutes of Eminence, they are globally acknowledged for their excellence in undergraduate and postgraduate programs across diverse engineering and science disciplines. Their reputation for high-quality teaching and training is well established and needs no introduction.

Over the past two decades, these institutions have also built a strong reputation for innovation and research. The rapid growth of India's startup ecosystem has prompted them to enhance their capacity and capabilities to support innovation through indigenous solutions, deep-tech incubation networks, and problem-solving tailored to local needs.

Healthcare has emerged as a natural focus area for innovation, driven by the growing demand for deep-tech medical devices and AI-powered healthcare solutions. In the post-COVID era, the MedTech sector has witnessed remarkable growth, with startups flourishing across these institutes. Importantly, innovation is no longer confined to biomedical engineering—it now spans multiple engineering disciplines, including biotechnology, electrical, mechanical, computer science, and even textile engineering.

Technology Readiness Level (TRL), presented in Figure 1, is an objective framework used to assess the maturity of a technology—from its inception as an idea (TRL 1) to its readiness for commercial deployment (TRL 9). Broadly, the journey from TRL 1 to 3 involves transforming an initial concept—often a diagram or sketch—into a tangible proof-of-concept (POC). TRL 4 typically marks the stage where a solution undergoes benchtop testing in controlled laboratory environments.
For medical innovations—whether drugs, implants, medical devices, or software—the progression from TRL 5 to 8 follows a more rigorously defined pathway. However, for broader understanding, we can map TRL stages to common clinical and product development milestones:

- TRL 5 corresponds to early-stage clinical studies, such as safety assessments in healthy volunteers and preliminary evaluation of potential benefits in a clinical setting.
- TRL 6 involves more advanced clinical studies with patients, akin to Phase II or early Phase III clinical trials, or pivotal studies in the case of medical devices.

To support this surge in demand for indigenous innovation, the Government of India has launched several funding schemes through national agencies such as the Department of Science and Technology (DST), Department of Biotechnology (DBT), Indian Council of Medical Research (ICMR), Biotechnology Industry Research Assistance Council (BIRAC), and most recently, the Anusandhan National Research Foundation (ANRF).

The MedTech sector's growth over the past decade has significantly contributed to the country's economic development and led to the establishment of numerous new facilities aimed at sustaining this momentum. India aspires to become self-reliant in healthcare, and progress toward this goal has been rapid. However, despite the many positive initiatives and substantial support, the number of indigenous innovations that successfully translate into commercially viable products remains limited in comparison to the volume of projects and ideas being funded.

Having been part of the healthcare and MedTech ecosystem for the past eleven years, I have closely observed this transformation. My interactions with diverse stakeholders have revealed a persistent gap in the innovation pipeline—specifically, in the effective collaboration and technology transfer between academia and industry.

- TRL 7 reflects large-scale pivotal clinical trials (similar to Phase III), demonstrating clinical efficacy, system-level benefits, and potential scalability to a wider population.
- TRL 8 represents the final pre-market stage, including completion of all regulatory compliance processes and readiness for product launch.
- TRL 9 is the point at which the technology is commercially available.

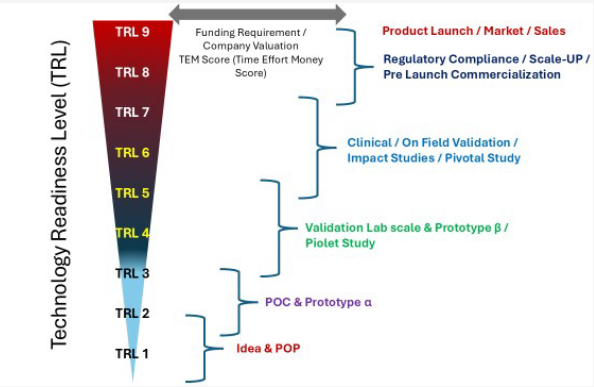


Figure 1: Technology Readiness Level (TRL) from 1 to 9.

Interestingly, a majority of academic research projects—and many startup initiatives—are able to successfully navigate the development process up to TRL 4+. This is where their core strengths lie, supported by expertise, infrastructure, and funding mechanisms that help them reach this intermediate milestone. Government and private funding initiatives are generally well-aligned to support academic innovation up to this point.

However, progressing beyond TRL 4 demands significantly greater investment—measured in **Time, Effort, and Money (TEM).** For each step forward, the resource requirement often doubles or more, making the journey from TRL 5 to TRL 8 increasingly resource intensive. This poses a major challenge not only for academic researchers and faculty-led initiatives but also for many early-stage startups.

The critical question is: Are these TRL 4+ innovations ready for industry adoption and scale-up toward commercialization? Unfortunately, the honest answer is "No." Indian industry, in general, is not prepared to pick up technologies at TRL 4 and invest in maturing them to TRL 9. The risks are too high, the timelines too long, and the commercial potential too uncertain.

The Challenge: Crossing the Mehndiratta Valley

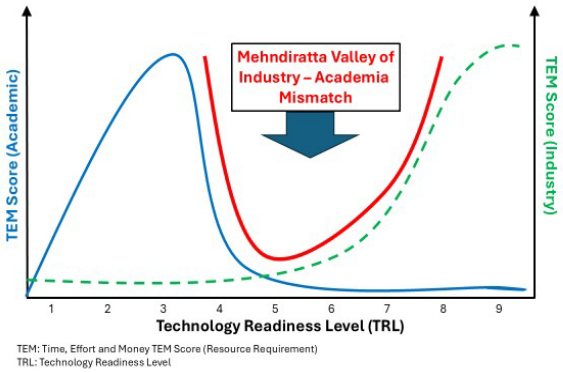
In this valley, technologies are beyond proof-of-concept but not yet validated for large-scale clinical use or regulatory compliance—essential milestones for commercialization. While central government agencies and private funders continue to support a high volume of early-stage innovations, the success rate of these projects reaching the market remains disproportionately low. This bottleneck is not due to a lack of ideas or talent, but because there is no structured, well-supported pathway to bridge this critical TRL gap. As a result, promising innovations risk being stranded, unable to progress toward full commercialization or societal impact.

Role of Technology Transfer Office

A Technology Transfer Office (TTO) affiliated with academic institutions—such as the Foundation for Innovation and Technology Transfer (FITT) at IIT Delhi—plays a pivotal role in bridging the "Mehndiratta Valley of Industry-Academia Mismatch", particularly in the transition of innovations from Technology Readiness Level (TRL) 4 to TRL 7. Recognizing the critical gap in industry-academia alignment and the associated commercialization pathways, TTOs serve as essential enablers where many promising innovations often falter.

This disconnect leaves a vast number of promising innovations from academic institutions stuck in limbo—shelved, underutilized, or forgotten. Despite substantial investment and effort, many of these technologies never reach the market, waiting in the hope that one day an industry partner might notice them amidst an ever-growing pile of untapped academic solutions.

Neither the academic sector nor the industry appears sufficiently concerned about the large number of high-quality innovations that remain stalled due to a fundamental expectation mismatch between them. This critical gap is referred to as the "Mehndiratta Valley of Industry-Academia Mismatch (MVIAM)," as illustrated in the Figure 2. The MVIAM represents technologies and solutions situated between Technology Readiness Levels (TRL) 4 to 7 — a critical transition zone where academic institutions often lack the resources to advance development, and industry finds little strategic or financial incentive to invest.



TEM: Time, Effort and Money TEM Score (Resource Requirement)
TRL: Technology Readiness Level

The TTO provides comprehensive support from the earliest stages of intellectual property (IP) creation and management, through market assessment, industry outreach, and licensing facilitation. This proactive engagement helps academic innovations advance toward commercial readiness and real-world application. By leveraging deep expertise in IP protection and industry engagement, TTOs strengthen the transition from academic research to market deployment—ultimately driving greater impact and value creation. Despite the commendable efforts of India's limited pool of expert Technology Transfer Offices, the mismatch valley continues to deepen—highlighting an urgent need for broader, more strategic, and systemic interventions.

Proposed Solution: Academia-to-Commercial Accelerator Program (ACAP)

To overcome this persistent challenge, there is an urgent need for a federal-level intervention through a policy-backed initiative—the Academia-to-Commercial Accelerator Program (ACAP). This structured program could be specifically designed to guide innovations from TRL 4 to TRL 7, facilitating their transition from academic labs to market-ready solutions.

Key Features and Rationale for ACAP

1. Addressing Innovator Concerns

Innovators often hesitate to share the know-how of their technologies due to fears of losing ownership and recognition. ACAP must include robust legal frameworks and IP protection mechanisms that safeguard the interests of inventors and institutional stakeholders. Clear provisions on knowledge sharing, credit, and commercialization rights will build trust and transparency.

2. Specialized, Multi-Disciplinary Approach

The journey from TRL 4 to 7 involves complex processes such as advanced prototyping, clinical trials, and regulatory compliance—all of which require access to expertise, infrastructure, and funding that is often beyond the reach of a single academic institution or startup. ACAP may bring together national and international facilities, foster multi-disciplinary consortia, and integrate clinical validation partners into the innovation pipeline.

3. Tripartite Collaboration Model

ACAP should be built on a three-way collaboration among

- Academic institutions: for research expertise and foundational technology
- Industry partners: for scaling, product development, and market deployment
- Government agencies: for policy support, funding, and regulatory facilitation

4. Incentivizing Industry Participation

Why should the government be involved? Because policy-driven incentives can significantly reduce the perceived risks for industry. ACAP can mandate:

- Financial incentives for industry partners investing in TRL 4–7 innovations
- Priority status for projects aligned with the Make in India and import substitution missions
- Tax benefits or public procurement guarantees for successful commercial deployments of ACAP-supported technologies

5. Expanding the Vision: "Innovate in India for Make in India"

ACAP can help transform Make in India into a more powerful slogan: "Innovate in India for Make in India." It ensures that indigenous innovations are not just manufactured in India but are also conceived, developed, and validated within the country, tailored to local needs, populations, and geographical challenges.

Conclusion

The Mehndiratta Valley of Industry-Academia Mismatch is real, and it holds the key for India's progress toward becoming a global innovation leader in healthcare and other deep-tech sectors. Establishing a robust, policy-mandated initiative such as the Academic-Commercial Acceleration Program (ACAP) is essential. ACAP can systematically connect academic ingenuity with industrial capability, unleashing the full potential of India's intellectual capital and accelerating the translation of academic innovative research into real-world impactful commercial solutions.

About the Author

This article is authored by Prof. Amit Mehndiratta, Professor of Biomedical Engineering at IIT Delhi and AIIMS New Delhi. A medical doctor by training and a Ph.D. in Biomedical Engineering from the University of Oxford, UK, Prof. Mehndiratta has been serving at IIT Delhi for the past eleven years. He is a well-recognized figure in the MedTech sector, both in India and internationally, known for his significant contributions to medical imaging and rehabilitative assistive technologies.

He leads the Centre of Advanced Research and Excellence in Disability & Assistive Technology at IIT Delhi, supported by the Indian Council of Medical Research (ICMR). The centre has enabled the advancement of multiple innovations in the rehabilitative space from TRL 4 to TRL 7, in close collaboration with clinical partners at AIIMS New Delhi.

In recognition of his contributions to biomedical engineering, Prof. Mehndiratta was awarded the prestigious Abdul Kalam Technology Innovation National Fellowship by the Indian National Academy of Engineering.

He is also one of the key contributors to the establishment of the newly inaugurated Magnetic Resonance Imaging (MRI) Facility at IIT Delhi, launched under the Institute of Eminence initiative. This state-of-the-art facility is the first of its kind among Indian engineering and technology institutions, dedicated exclusively for indigenous innovation in areas such as MRI-compatible medical devices, software solutions, and AI-based image reconstruction and processing algorithms.

In addition, Prof. Mehndiratta serves as an Independent Advisor to the Policy-Resilience Foundation (PRF)—a pioneering organization that works with government bodies to embed resilience into policy frameworks. PRF focuses on developing adaptive and self-evolving policy systems, particularly in healthcare and other critical sectors, by addressing structural gaps and enhancing the sustainability and responsiveness of governance.



Prof. Amit Mehndiratta
Indian Institute of Technology Delhi (IITD)



In Memoriam:

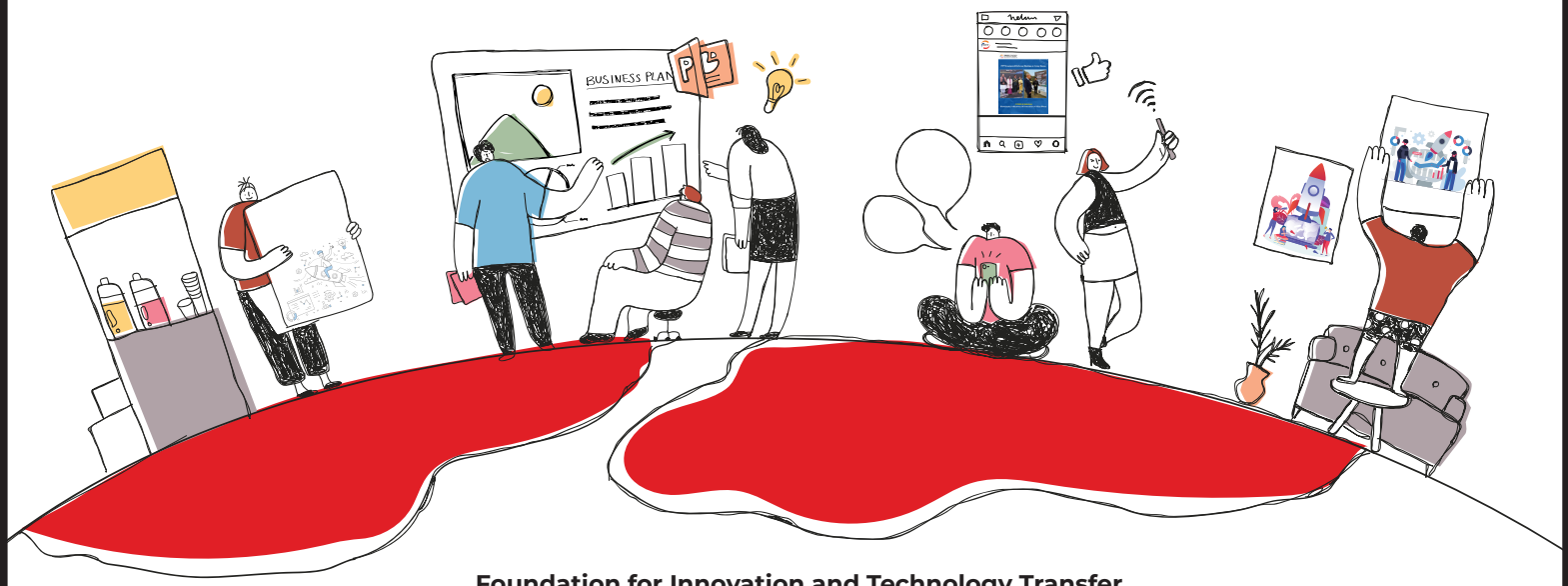
Dr. Arya Kumar Sengupta (1945–2025)

FITT mourns the passing of Dr. Arya Kumar Sengupta, the founding Managing Director of the Foundation for Innovation and Technology Transfer (FITT), IIT Delhi. Dr. Sengupta breathed his last on July 19, 2025, at the age of 81.

A visionary leader, Dr. Sengupta served FITT for 13 years (1993–2005), laying the foundation for India's first autonomous Technology Transfer Organization within the IIT ecosystem. His pioneering efforts institutionalized technology transfer, collaborative R&D, and industry-academia partnerships, resulting in a surge of innovation and commercialization at IIT Delhi. Under his stewardship, FITT facilitated over 40 technology transfer agreements, filed more than 120 patents, and launched the Technology Business Incubation Unit (TBIU)—a milestone in nurturing entrepreneurship within academia.

Dr. Sengupta's relentless commitment to bridging science and enterprise transformed FITT into a catalyst for innovation. Today, as FITT stands as a thriving hub of deep-tech ventures, we honor his legacy and express our deepest condolences to his family and colleagues. His vision continues to inspire us in our mission to advance technology for societal impact.

FITT



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