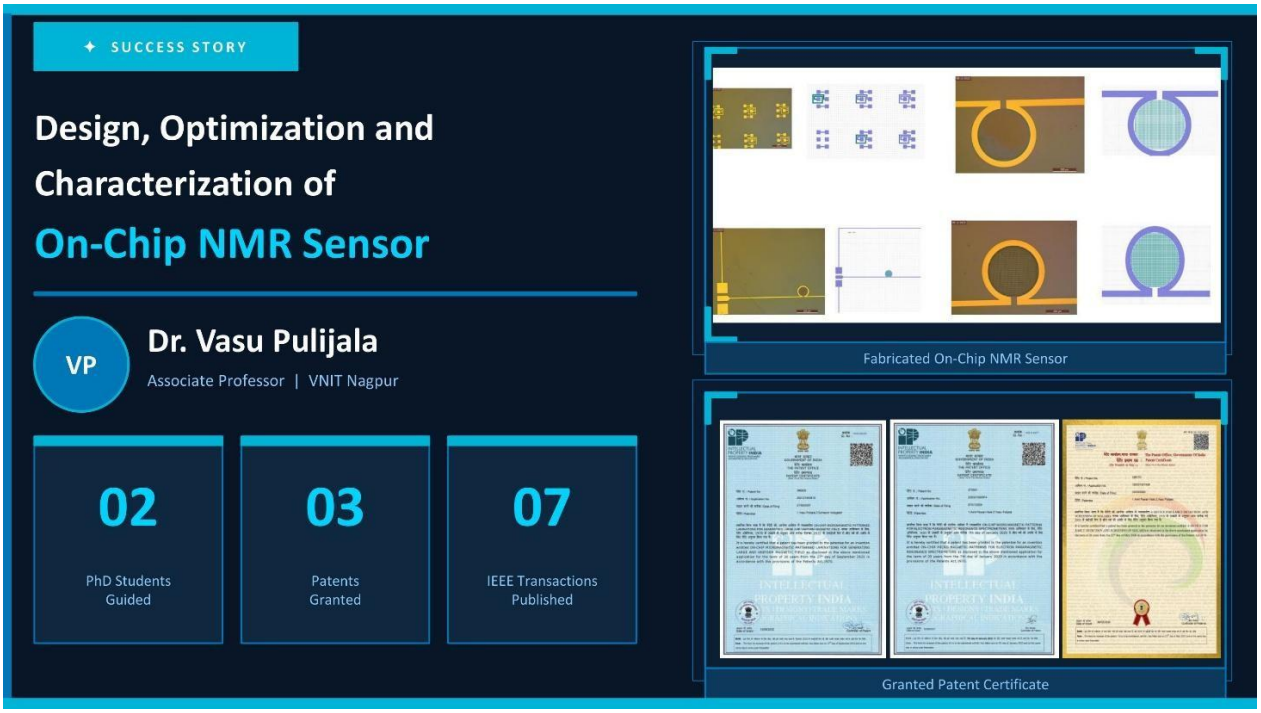
Success stories: INUP-i2i Users

IISc

A) User's Success Stories



B) User's Success Stories

IISc - User's Success Stories

Dr. Achal Bhiogade | R&D Manager, Saint-Gobain Grindwell Norton Ltd., Nagpur

Dr. Bhiogade successfully translated research exposure into industry innovation by publishing a paper on flexible multiferroic PVDF/$CoFe_2O_4$ composite films for pyroelectric energy conversion. His work reflects the application of advanced materials research enabled through access to fabrication and characterization facilities.

Dr. Partha Saha | Assistant Professor, Assam Engineering College

Dr. Saha credits the INUP project at IISc for significantly contributing to the completion of his PhD. Subsequently, he progressed to a Senior Research Fellow position at IIT Guwahati, demonstrating clear academic advancement enabled by the program. create an image to add it in the impact assessment document

Dr. L. L. Rajeswara Rao | Associate Professor, GITAM Deemed to be

Participation in INUP-supported research contributed to Dr. Rao's career progression and promotion to Associate Professor, reflecting the program's role in strengthening academic credentials and professional growth.

Mr. Nayak Ram | Research Scholar, NIT Tiruchirappalli

Mr. Nayak Ram was selected for the prestigious 16th HOPE Meeting with Nobel Laureates (DST India), marking a significant milestone in his research journey and international exposure.

Dr. Raghav Sharma | INSPIRE Faculty, IIT Ropar

Despite initial project constraints, Dr. Sharma leveraged INUP training to independently operate advanced tools at institutions like IIT Delhi and the National University of Singapore. This led to high-impact publications during his PhD and postdoctoral research, highlighting long-term skill transfer.

Dr. Vijeth | Assistant Professor, Nagaland Central University

Dr. Vijeth attributes his faculty appointment at a central university to the training and research exposure gained through INUP at IISc. He continues to extend this impact by encouraging his PhD students to participate in the program, creating a multiplier effect in capacity building.

Dr. Robin Khosla | Assistant Professor, IIT Mandi

Following his participation in INUP (2015–16), Dr. Khosla completed his PhD and progressed through roles including Assistant Professor at NIT Silchar and a Humboldt Postdoctoral Fellow at the University of Stuttgart. He is currently an Assistant Professor at IIT Mandi, exemplifying global academic mobility and excellence enabled by early research exposure.

Dr. Arjun Hari M | Senior Facility Technologist, CeNSE, IISc

Dr. Arjun Hari M secured an Indian patent based on work carried out at CeNSE. His achievement highlights the program's role in fostering innovation and intellectual property development within advanced semiconductor research environments.

Dr. Asisa Kumar Panigrahy | Associate Professor, ICFAI Foundation for Higher Education, Hyderabad

Dr. Panigrahy was honored with the Gandhian Young Technological Innovation Award, presented by former President Shri Ram Nath Kovind. His recognition demonstrates the societal and technological impact of research strengthened through INUP engagement.

Ms. Atheena Pramod | Research Scholar, NIT Tiruchirappalli

Through participation in the program, Ms. Pramod achieved two journal publications, showcasing enhanced research output and academic productivity driven by hands-on exposure to advanced facilities.

Mr. P. Maheswar Reddy | Research Scholar, NIT Agartala

Mr. Reddy published a journal article (2024) acknowledging the use of CeNSE IISc facilities funded by MeitY, DST, and MoE. His work demonstrates the program's contribution to high-quality interdisciplinary research and global knowledge dissemination.

IITB - User's Success Stories

Dr. Monica Jaiswal and Dr. Robin Kumar, Assistant Professors, Amity University, Noida, Uttar Pradesh

Dr. Monica Jaiswal and Dr. Robin Kumar have successfully completed their research and development work on the topic "Development of reversible and flexible gas sensor device with micro-heater for remote monitoring of quality of food storage and packaged food using Bi_2O_3 nanorods." As part of this work, they fabricated a fully functional gas-sensor prototype and progressed from proof-of-concept to prototype validation.

This Hackathon winning R&D work at INUP-IITB led to the establishment of the startup Nanovistar and contributed to strengthening India's deep-tech ecosystem in nanotechnology and sensor development.

Mr. Pratik Mishra, Mr. Nityansh Sahu, Mr. Prakhar Shrivastava, Prof. Arnab Sarkar, IIT BHU, Uttar Pradesh

Mr. Pratik Mishra, Mr. Nityansh Sahu, Mr. Prakhar Shrivastava, and Prof. Arnab Sarkar have successfully completed their research and development work on the topic "Microfluidics based point of care (POC) complete blood counting (CBC) Micro-chip."

This Hackathon winning R&D work at INUP-IITB led to the fabrication of innovative, low-cost, portable point-of-care devices for blood cell separation and enumeration. The team subsequently launched the startup NaMECS Pvt Ltd.

Dr. Jayu P. Kalambe, Dr. Dinesh Rotake, Ms. Khushi Wankhade, Ms. Simran Siddiqui, Shri Ramdeobaba College of Engineering and Management, Nagpur, Maharashtra

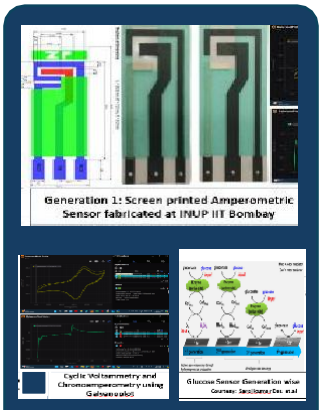
Dr. Jayu P. Kalambe and team have successfully completed their research and development work on the topic "Design and Fabrication of IDE (Interdigitated Electrode) based Biosensors for Leukemia Detection."

This Hackathon winning R&D work at INUP-IITB demonstrated high specificity and sensitivity in leukemia biomarker detection using aptamer-based selective layers. As part of this work, they filed a patent: "Design and Fabrication of IDE (Interdigitated Electrode) based Biosensor for Disease Detection," Patent Application Number 202521020780, published in the Indian Patent Journal on March 21, 2025.

Dr. Vibha R. Bora, Professor & Incharge BETiC-GHRCE, and Mr. Piyush Harde, G. H. Raisoni College of Engineering, Nagpur

Dr. Vibha R. Bora and Mr. Piyush Harde have successfully completed their research and development work on the topic “Replaceable bio-sensor and rechargeable transmitter for Continuous Glucose Monitoring.”

This R&D work at INUP-IITB led to the development of Generation-1 Amperometric sensor for glucose measurement. As part of this work, they filed a patent: “Continuous Glucose Monitoring System with Replaceable Sensor & Rechargeable Transmitter,” Application No. 202321022490, filed in March 2023.



Mr. Manas Thakur, Mr. Sk. Najes Riaz, Research Scholar, and Prof. Sourav Sarkar, Jadavpur University, Kolkata, West Bengal

Mr. Manas Thakur, Mr. Sk. Najes Riaz, and Prof. Sourav Sarkar have successfully completed their research and development work on the topic “Development of an on-chip electrochemical sensor for the detection of Dengue virus (DENV-E) using nanostructured carbonaceous nitrogen-rich reduced graphene oxide.”

This Hackathon winning R&D work at INUP-IITB led to the establishment of the deep-tech startup Sense-XT, which has since become part of India’s National Quantum Mission. The startup has received support and funding through this mission, enabling accelerated innovation in biosensors and nanotechnology.

Ms. Vidhya Sivan, Research Scholar, and Prof. Pius Augustine, Department of Physics, Sacred Heart College, Kochi, Kerala

Ms. Vidhya Sivan has successfully completed her research and development work on “Integration of MZO-based FeFET with 2D layered MoS_2 as channel for memory and neuromorphic computing applications”.

As part of this work, she presented at the International Conference on Advanced Materials for Sustainable Energy and Environmental Infrastructure (ICAM-SEEi 2025), IITRAM, Ahmedabad, 26th–28th November 2025, where she secured the Best Oral Presentation Award on the paper titled “HfO_2-based Metal–Ferroelectric–Metal (MFM) Capacitor Structure for Back-End-of-Line (BEOL) Compatible Non-Volatile Memory Applications.”

II

Prof. Poorvi Khushal Joshi, Assistant Professor, Electronics Engineering Department, Shri Ramdeobaba Kamla Nehru Engineering

Prof. Poorvi Khushal Joshi has successfully completed her research and development work in the area of thin-film bulk acoustic resonators (FBAR), and embedded VLSI design.

As part of this work, she has successfully completed a project titled “Fabrication and Characterization of FBAR”, and filed two patents on innovative fabrication methods for thin-film bulk acoustic wave resonators: i. “A Method of Fabrication of Thin Film Bulk Acoustic Wave Resonator” – Application Number 202321081834, Date of Publication 22/12/2023; and ii. “A Method of Fabrication of Thin Film Bulk Acoustic Wave Resonator” – Application Number 202321085898, Date of Publication 12/01/2024.

Her notable publication “Parametric Optimization of Thin Film Bulk Acoustic Wave Resonator Operating above 5 GHz” (IETE Journal of Research, December 2025, DOI: 10.1080/03772063.2025.2600564) further demonstrates her contributions to advancing RF MEMS technologies.

IITD - User's Success Stories

Dr. Daniel C, Hindustan Institute of Technology and Science (HITS), Chennai, Tamil Nadu

Dr. Daniel C, a Hackathon winner, carried out R&D work at INUP–IIT Delhi on "Magnetorheological fluid with enhanced sedimentation stability using nano carbonyl iron and green surfactants for seismic mitigation." As an outcome of this work, one paper has been published.

Varun Bhatnagar, PhD, Motilal Nehru National Institute of Technology (MMNIT) Allahabad, Prayagraj

Varun Bhatnagar has successfully completed his research and development work on the topic *"*Development of a Nano Biosensor for Prognosis of Gastrointestinal Perforation using FABP-2 as Biomarker*"* As part of this work, he has published one paper in peer-reviewed journals.

Dr. Ajit Kumar Maddheshiya, Research Scholar Department of Physics- University of Allahabad

Dr. Ajit Kumar Maddheshiya, a Research Scholar in the Department of Physics at the University of Allahabad, attended hands-on training on solar cell characterization under the INUP-i2i program at IIT Delhi and successfully completed the workshop. He is currently a Raman–Charpak Fellow in France.

Dr. Shiv Kumar, Assistant Professor at the University of Delhi

Dr. Shiv Kumar, Assistant Professor at the University of Delhi, has been awarded a prestigious research fellowship funded by the Royal Society of Chemistry (RSC), UK.

Devices Developed by INUP-i2i participants at IIT Delhi

Participants have successfully designed and fabricated a wide range of devices, including organic photovoltaic (OPV) cells, OLEDs, photodetectors, MOSFETs, microfluidic channels, and SAW devices.

IITG - User's Success Stories

Deepak Jyoti Deuri, Ph.D Scholar, Nagaon University

The INUP-i2i R&D project on Hardwood-derived lignin as a tribo-positive filler in electrospun PVDF nanofibers for efficient triboelectric energy harvesting, conducted by Deepak Jyoti has made a significant impact in the research field of newer energy-harvesting techniques. He has filed a patent and published the work at journal. **Patent Information:** Deepak Jyoti Deuri, Parikshit Gogoi, Jiwajyoti Mahanta, IITG "Enhancing Triboelectric Nanogenerator Performance through Sustainable Lignin-Based Nanofibers: Fabrication, Characterization, and Application"

Shilpi Kumari, PhD, Dept. of Physics, Birla Institute of Technology, Mesra, Ranchi

This R&D work which was completed at IITG as a medium-term project demonstrated a g-C_3N_4 -based OFET device for detecting lipase concentration offering a scalable, sensitive system for real-time lipase monitoring and potential diagnostic applications. This work has resulted in a peer reviewed journal paper and a filed patent titled "Enhanced Biosensing Capabilities of Graphitic Carbon Nitride-Based Organic Field Effect Transistors for Lipase Detection".

Lavi Kumar Vaswani, PhD, Jaypee Institute of Information Technology, Noida

Lavi Kumar has conducted his medium-term project and based on his R&D work, he won 3rd Place Poster Award in ICTP 2025 Winter College on Optics: Theoretical and Applied Aspects of Metamaterials and Metasurfaces, March 4, 2025, at Trieste, Italy. He has also published two peer-reviewed journal articles.

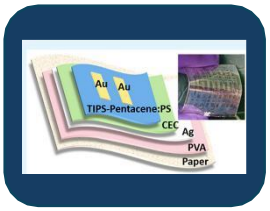
Dr. Himanshu Sharma, Post Doc, Peking University

Dr Himanshu Sharma has completed his medium-term project and received the prestigious International BMS Fellowship at Peking University for post-doctoral position. As a INUP user, he was working on supramolecular self-assembly inlow molecular weight gels. His work was published in Chemistry A European Journal.

IITKgp - User's Success Stories

Gargi Konwar, Ph.D Scholar, IIT Jodhpur

Progressed to the role of **Postdoctoral Industrial Fellow at Fraunhofer IPA**, reflecting successful transition into an internationally reputed applied research ecosystem.



Dr. Dibakar Sarkar, Ph.D Scholar, Bose Institute Kolkata

Currently serving as an **Associate Scientist at Lupin Ltd.**, contributing to industrial R&D in the pharmaceutical and materials domain.

Tuhin Bhattacharjee, Research Scholar, Assam Engineering College, Guwahati

Engaged as a **Research and Teaching Assistant at the University of South Florida**, indicating strong academic progression and international research exposure.

Dr. Achal Bhigade, Ph.D Student,SRM Institute of Science and Technology, Chennai

Serving as **Technical Lead – R&D (Material Science & Nanotechnology) at Saint-Gobain Abrasives (Grindwell Norton Limited)**, demonstrating leadership roles in industrial innovation and materials engineering.

IITM - User's Success Stories

Dr. Nikhila Patil, PhD, Department of Electrical Engineering, IIT Roorkee

Dr. Nikhila has successfully completed her research and development work on the topic *"Design and Fabrication of Thin Film Heaters for Gas Sensing."* As part of this work, she has filed a patent and published three papers in peer-reviewed journals.

Dr. Muthaimanoj Periyasamy, (Assistant Professor, Department of Mechanical Engineering, Rajalakshmi Engineering College, Chennai)

The successful completion of this R&D work at INUP-IITM on *"CFD Optimized Microfluidic Device for Cell Sorting"* has led to significant research outcomes. This includes two research papers and a patent (in process).

Dr. Pritam P. Shetty (Founder, Refractx Pvt. Ltd) PhD, Department of Physics, IIITDM

This Hackathon winning R&D work at INUP-IITM on *"Development of an Optical Proteinuria Sensor Using Hydrogel Grating"* led to the establishment of a startup "Refractx Pvt. Ltd" and a patent "GratoSense: An Optical Biosensing Platform Utilizing Microstructured Hydrogel Substrates Fabricated via Soft Lithography" (in process).

J Kawya, PhD, Department of Physics, Bharathidasan University

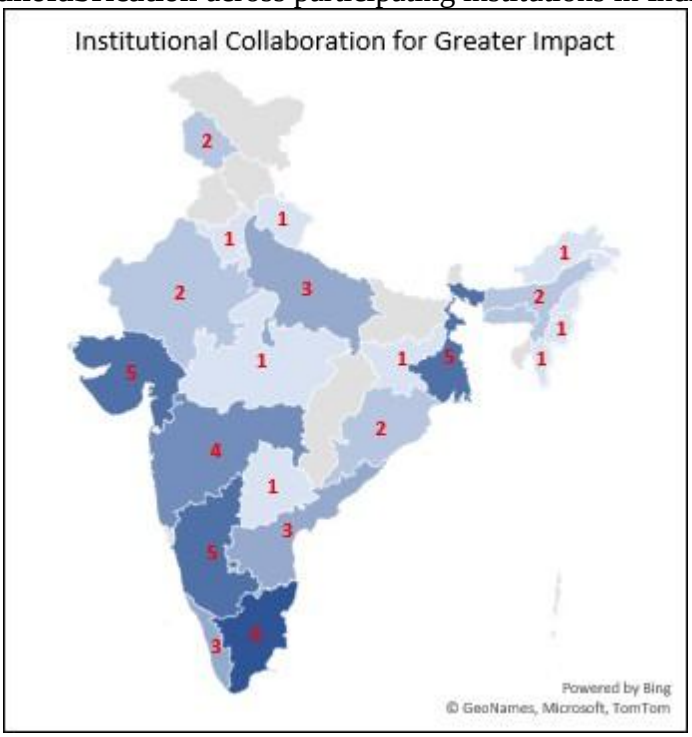
The successful completion of this R&D work at INUP-IITM has led to significant research outcomes. This includes two research papers and a patent "A method for modifying a perovskite solar cell with an upconverter" (in process with TNSCST).

Dr. Ancy Albert, Fondecyt Postdoctoral Fellow, Chile

Dr. Ancy carried out her R&D work at the INUP-IIT Madras, where she focused on advanced materials research. Her contributions include two research papers in peer-reviewed journals. After completing her PhD from Amrita Vishwa Vidyapeetham, she is continuing her academic journey as a postdoctoral fellow in Universidad Mayor in Santiago, Chile.

Success Stories: Collaborating Institutes

The **Collaborating Institute Initiative under the INUP-i2i Project** has made a significant and measurable impact in strengthening the academic, research, and infrastructure ecosystem in the areas of **nanoelectronics, semiconductor devices, nanophotonics, MEMS, microfluidics, and nanofabrication** across participating institutions in India.



A key outcome of the initiative has been the **enhancement of academic curricula**, with several collaborating institutes introducing new courses, advanced electives, and specialized academic modules in emerging semiconductor and nanotechnology domains. In addition, a few institutes have initiated proposals for new programs, minors, and M.Tech specializations, thereby contributing to long-term capacity building and skilled manpower development.

The initiative has also substantially strengthened the **research ecosystem** by enabling collaborating faculty and institutions to undertake **short-term and medium-term research projects at host nanocentres under INUP-i2i**. These projects span critical areas such as **biosensors, photodetectors, flexible electronics, gas sensors, solar cells, MEMS devices, and advanced semiconductor materials**, resulting in enhanced research capability and translational outcomes.

Another major impact area has been **student training and human resource development**. A significant number of **B.Tech, M.Tech, and Ph.D. students** have availed internships, hands-on fabrication exposure, and characterization facility access through the host institutes. This has led to improved technical competency, research orientation, and readiness for careers in the semiconductor and advanced electrnic sectors

The initiative has further catalysed **institutional infrastructure development**, with several collaborating institutes initiating or strengthening their own nanoelectronics and semiconductor facilities through support from agencies such as **DST-FIST, MeitY, DBT, DRDO, and SERB**.

Efforts include setting up clean-room infrastructure, thin-film laboratories, MEMS and microfluidics centres, FESEM facilities, and device characterization labs.

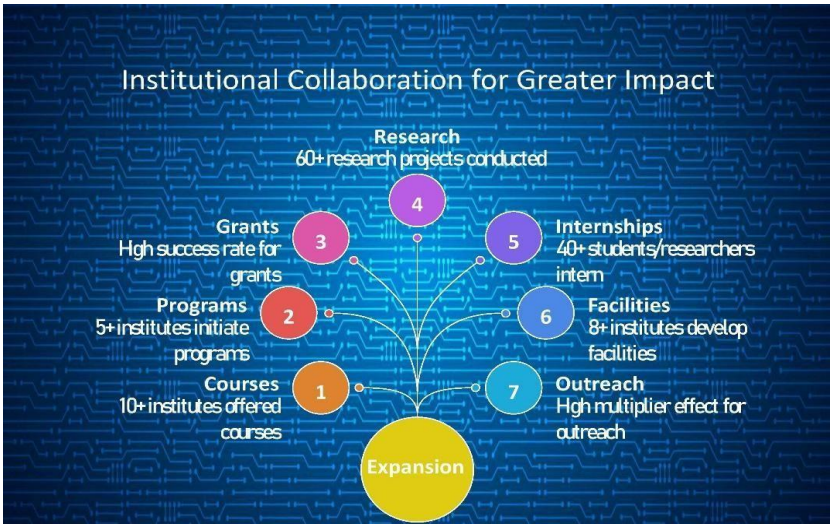
DST FIST program Each received ~1Cr

Importantly, the initiative has also created a **multiplier ecosystem effect**, wherein participating institutes have begun mentoring smaller colleges and extending access to their emerging facilities through workshops, hands-on training programs, and collaborative research support. This has contributed to regional capacity building and broader dissemination of advanced technology skills.

Overall, the Collaborating Institute Initiative under INUP-i2i has **significantly exceeded its intended outcomes across academic development, research productivity, student skill enhancement, and infrastructure creation**, thereby contributing meaningfully to India's national goals in semiconductor and nanotechnology capacity building.

Outcome Indicator	Impact Achieved	Applicable Institutes & Evidence	Assessment
New Program Launched	Multiple institutes introduced new academic courses and strengthened curriculum in semiconductor and nano domains	**BITS Pilani** – PDC on Device & System Packaging; **BMSCE** – Advanced Microelectronics Fabrication (from Mar 2025); **IISER Bhopal** – Introduction to MEMS, Smart Sensing, MOS Device Modelling, Nanomaterials; **NIT Calicut** – Semiconductor Device Physics, Nanofabrication; **REVA University** – Nanoscience & Nanotechnology; **National Engineering College** – Fundamentals of Nano Electronics; **VIT Chennai** – VLSI Devices & Technology; **Amrita** – Thinfilm Physics; **Rajalakshmi Engineering College** – Microfluidics Lab	**Strongly Achieved**
New Courses Launched	Specialized academic programs, minors, and M.Tech proposals initiated	**BITS Pilani** – Minor in Semiconductor Packaging (Senate approval pending); **NIT Calicut** – M.Tech in Semiconductor Technology proposed; **VRSEC** – Nano-Semiconductor Device Physics; **MIT MAHE** –I. Semiconductor Devices and Packaging Opto-Electronic & Photovoltaics Compound Semiconductor Electronics MOS Device Modelling Fundamentals of Electronic Packaging Materials II. Advanced Solid-State Devices Flexible Electronics III-V Novel Semiconductor Devices Photonic Material and Devices for Integrated Photonic Mesoscopic Electronic Devices **Siddhartha Academy** – Nanoelectronics **IIT Jammu** - Solid State Physics Physics of Transistors VLSI Technology Microelectronics Simulation Lab	**Achieved / Ongoing**

		RBU, Nagpur – Bio-MEMS, Bio-Nanotechnology	
Grant Proposals Submitted	Strong evidence of grant proposal submission and sanction	**BITS Pilani** – SERB, DRDO, MeitY, DST joint proposals; **BMSCE** – DST-FIST, DRDO sanctioned; **IISER Bhopal** – DST-AMT, DST-FIST, ICMR, NQM, ISRO RESPOND; **NIT Calicut** – DST proposal; **REVA** – DST-FIST sanctioned; **NIT Nagaland** – DST FIST ₹168 Lakhs + Nano Mission proposal; **Rajalakshmi** – DBT, DRDO, DST proposals	**High Research Impact**
Research Projects Executed	Multiple medium-term research projects completed	**BITS Pilani** – MEMS gyroscope, MEMS IMU; **BMSCE** – memory devices & chalcogenide materials; **IISER Bhopal** – 4 projects including RIE of Si/SiO_2 and microfluidic templates; **NIT Calicut** – H_2 sensor and SAW devices; **REVA** – multiple PhD projects in luminescence, gas sensing, memory devices; **PDEU** – flexible memristor; **NIT Srinagar** – CZTS/MoS_2 photodetection **RBU Nagpur, IIT Jammu, Sardar Patel University, Siddhartha Academy, Andhra Pradesh and YCIS Satara, VNIT, Nagpur –** carried out 20 projects (short & medium)	**Highly Achieved Publications: more than 25 Patent: 4**



The INUP-i2i collaboration has created measurable impact across curriculum enhancement, sponsored research, skilled manpower development, nano facility creation, and regional mentoring ecosystems, thereby significantly strengthening India's semiconductor and nanoelectronics academic and research landscape.

Feedback Parameter	Avg. Score (out of 5)	% Satisfaction*	Remark
Quality of Training Content	4.7	94%	Excellent
Hands-on Experience	4.7	94%	Excellent
Resource Persons / Faculty	4.79	96%	Excellent
Relevance to Research / Industry	4.5	90%	Very Good
Overall Feedback	**4.67**	**93.40%**	**Excellent**

The feedback from the collaborating institutes have been very supportive and reflects an overall satisfaction level of 93.4%, indicating excellent performance of the training, hands-on support, faculty guidance, and research relevance under the INUP-i2i initiative.

Outcome Indicator	**Impact Achieved**	**Applicable Institutes & Evidence**	**Assessment**
Student Internships Supported	Strong UG / PG student participation	**BITS Pilani** – PhD scholars at CeNSE; **BMSCE** – Ajit Gupta, Prakyath T.P.; **IISER Bhopal** – Pratik Pal, Sourin Das, Gargi Thakur; **NIT Calicut** – Vanshika Sreekumar; **National Engineering College** – 3 students; **MNNIT Allahabad** – 8 students; **RCOEM** – multiple UG / PG / PhD students	**Exceeds Target**

Nano Facility Users	Significant research facility utilization by Master's / PhD scholars	**BITS Pilani** – Pradnya Chabbi, Vinay Venkataram; **BMSCE** – Harini B, Shruthi A; **IISER Bhopal** – 5 PhD scholars; **NIT Calicut** – Sneha C, Anoop A.V.; **REVA** – Rajlaxmi, Vindya Shetty, others; **Sardar Patel University** – 3 students; **RCOEM** – 6+ users	**Strongly Achieved**
Facility Setup Initiatives	Several institutes-initiated infrastructure and clean-room / device labs	**BITS Pilani** – DST SATHI, MeitY proposal; **BMSCE** – DST-FIST procurement; **NIT Calicut** – FESEM purchased; **REVA** – DST-FIST; **NIT Nagaland** – DST-FIST ₹168 Lakhs; **PDEU** – Flextronics Lab; **VIT Chennai** – clean room under construction; **VRSEC** – phased facility development; **Rajalakshmi** – Centre of Excellence in MEMS & Microfluidics	**Major Institutiona l Impact**
Mentorship & Facility Access	Regional mentoring ecosystem and training support established	**BITS Pilani** – trained ~800 participants through PDC; **IISER Bhopal** – 150+ trainees globally, 50 through NPTEL workshops; **NIT Calicut** – FESEM hands-on training to 11 participants from multiple institutes; **VRSEC** – planned regional support; **Rajalakshmi** – centralized facility with 16 sponsored projects	**Ecosystem-Level Impact Achieved**

Startup Success Stories

IISc

Bellatrix Aerospace

Mr. Rohan M Ganapathy, Co-founder & CEO

Bellatrix Aerospace in collaboration with CeNSE, IISc through INUP program, MEMS based pressure transducers were developed for the space application. Two different specifications of pressure transducers were developed and tested. All the environmental tests were carried out on the hardware, and it was qualified for the use in POEM-2 and POEM – 3 PSLV missions. Upon completing the ground qualification program, the pressure transducers were used in the flight. It was successfully functioned on orbit. Bellatrix Aerospace got the on-orbit data from POEM- 3 PSLV C58 mission and the transducers was functioning well on orbit.

SuperQ

Dr. Nagendra Nagaraja, Founder & Director

SuperQ has filed 5 Patents and 2 Patents are in progress.

SuperQ is the first start-up in India working on broad Temperature Superconducting Devices for Quantum Technologies.

SuperQ was a Runners-Up for Elevate 2021 & Start-up India Seed Fund Scheme

SuperQ is a part of Quantum Communication Task Force for CDOT, India

SuperQ is in talks with QNu labs, CDAC & Murata for LOI for our SuperQ SupersensTM

SuperQ is a Department of Telecommunication DCIS 2023 50 Lakhs awardee

ABX3

Dr. Laxman Gouda, Co-Founder & CEO

2ABX3 PV Private Limited (startup supported under INUP-i2i) made the prototypes (2 Nos.) of working perovskite solar cell module prepared by standard deposition method on flexible PET sheets and on glass.a) They have demonstrated a stable lab-scale perovskite solar cell with efficiency greater than 24%. b) They have demonstrated scalable perovskite coating techniques for A4-size substrates. c) They have demonstrated a minimodule with an efficiency higher than 17%. d) They have demonstrated the scalability of carbon electrodes and SnO2 with module higher than 14%.

IISc

Theranautilus

Dr. Debayan Dasgupta,

Co-Founder & Director

Theranautilus raised $1.2 million in seed funding on November 19, 2024, led by pi Ventures to develop nanorobotic solutions for healthcare. The funding will be used to commercialize dental products—specifically targeting dental hypersensitivity—and advance toward human clinical trials.

Successfully completed the data collection phase for their product using INUP-supported facilities

Obtained regulatory approval for their device

On track to achieve ISO certification by early 2025

Secured BIRAC BIG 21 funding (Proposal No: BIRAC/CCAMP01937/BIG-21/22)

Funding enabled procurement of a dedicated furnace, reducing dependency on shared lab resources

Attracted strong interest from institutional venture capitalists

Successfully closed seed funding round (announcement expected soon)

Leveraged INUP infrastructure and guidance to accelerate R&D and funding milestones

Magheals

Founder : Shilpee Jain and Rajesh Katoch

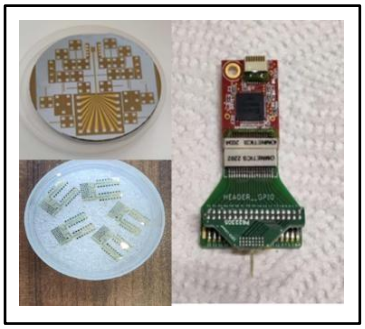
Selected to incubate at Centre For Medical Innovation and Entrepreneurship (CMIE) National Cancer Institute, AIIMS New Delhi

Awarded at the Elevate 2025 Award with a cash prize of 23 Lacs INR

IITB

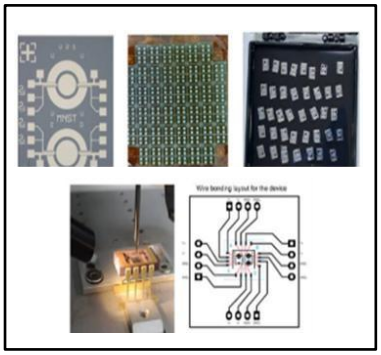
Mr Kaustubh Deshpande
Founder & Sr MEMS Engineer
www.eywaneuro.com

Eywa Neuro Pvt. Ltd, India's first commercial invasive neurotechnology company, in collaboration with IITB Nanofabrication Facility has successfully manufactured India's first commercial sub-15-micron, invasive brain implant that can record from and stimulate individual neurons in the brain. Using thin-films MEMS technology, and the lithography, deposition, and plasma etching tools available at IITBNF, Eywa Neuro has developed thin-film polyimide-based brain implants that are not only biocompatible but also allow recording from a large number of neurons. These probes promises to be a key Indian invention that can help in neurosurgical intervention and neuroscience research.



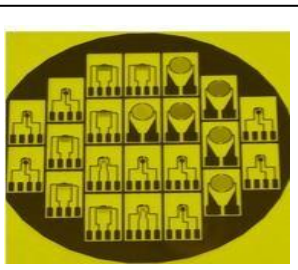
Mr. Shashank Kumar (Co-Founder & Director)
www.multinanosense.com

Multi Nano Sense Technologies Pvt. Ltd., a pioneering startup and MSME based in Nagpur, is at the forefront of developing advanced gas sensing technologies. Supported by the Technology Development Board (TDB), the company has successfully commercialized its patented solid-state electrochemical hydrogen sensors, achieving Technology Readiness Level (TRL) 9 and earning the trust of leading Indian and global clients. Through close collaboration with IITB and by leveraging technology licensed from the University of Cambridge, the company has successfully developed and fabricated MEMS-based thermal conductivity sensors within India. These sensors are currently undergoing production scale-up at Semiconductor Laboratory (SCL), Mohali, marking a significant step toward indigenous manufacturing



Mr Satyam Tiwary,
Founder
www.technoculture.io

Eywa Neuro Pvt. Ltd, India's first commercial invasive neurotechnology company, in collaboration with IITB Nanofabrication Facility has successfully manufactured India's first commercial sub-15-micron, invasive brain implant that can record from and stimulate individual neurons in the brain. Using thin-films MEMS technology, and the lithography, deposition, and plasma etching tools available at IITBNF, Eywa Neuro has developed thin-film polyimide-based brain implants that are not only biocompatible but also allow recording from a large number of neurons. These probes promises to be a key Indian invention that can help in neurosurgical intervention and neuroscience research.



IITD

H2DC12 Avenue Pvt. Ltd, Nagpur	Product developed: Green Hydrogen Generator by 3D Printed Membraneless Microelectrolyser. Product Offering: Low cost 3d printed membraneless micro electrolyser for green hydrogen generation and Personal care – antioxidant. Received one of the best start-up in INUP program among all the IITs /Universities at IITB 2024
Gunsutra Pvt. Ltd., Indian Institute of Technology Delhi, Hauz Kha	Product developed: Microfluidic chip-based SOIL PESTICIDE ANALYZER. TRL Level: 6 Low cost chip for separation & then quantitation of Pesticides.
Sensonics Transducers Pvt. Ltd. Gurugram, Haryana	Product: Capacitive Micromachined Ultrasonic Transducers. Sensonics builds, low voltage, low cost, highly reliable ultrasound transducers arrays in a variety of form factors for applications involving imaging and instrumentation. Our low-voltage CMUT arrays operate at low voltages, without sacrificing sound pressure levels, and feature design elements like low parasitics, row-column addressing and BEOL CMOS compatibility to enable solutions in medical diagnostics and therapeutics, wearables, NDT, robotics, and other industrial applications.

IITG

Primary Healthtech Pvt. Ltd. (Mobilab)

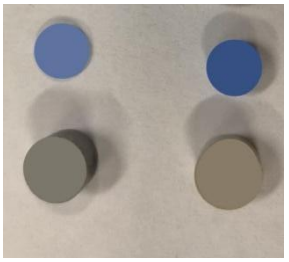
Founder: Mr. Sahil Jagnani

National Startup Award Winner (2022) by Startup India – First company from North East India to receive this honour. TiE50 Award Winner 2024, Silicon Valley, USA. Best Innovation Award (2024) by the Indian Council of Medical Research (ICMR). Conducted successful trials and received certifications in Arunachal Pradesh, Nagaland, Leh (Ladakh), and Mathura; pipeline includes 10,000+ defence deployments and proposals from five state governments under National/State Health Mission channels. Received ICMR approval, following independent validation by AIIMS Delhi, confirming Mobilab's performance equivalent to standard laboratory systems. 18+ patents and 40+ trademarks. Identified distributors across three countries, with initial deployments already underway in Uganda and Indonesia, marking the beginning of Mobilab's international expansion. Tapped into 7+ Indian states via distributor partnerships; 200+ devices deployed. Submitted proposals to 5 state governments for PHC/CHC diagnostic upgradation procurement. Deployed AI-powered modules — Patho.AI and Train.AI — enabling automated validation, technician training, and process standardization, with 4 other AI models under development. Mobilab was recently invited to the India–EU Business Forum, where we had the distinct honour of interacting with Hon'ble Prime Minister Shri Narendra Modi regarding our work in healthcare accessibility.

Shri Mitra Innovations Pvt. Ltd. (SMI)

Founder: Dr. D. Pamu

SHRI MITHRA INNOVATIONS PRIVATE LIMITED, where innovation and precision converge to redefine the possibilities of advanced materials. As a dynamic startup, we are committed to revolutionizing thin film and ceramic applications through our cutting-edge ceramic discs. With a team of dedicated experts leading the charge in material science, we push boundaries to engineer solutions that not only meet but exceed durability, efficiency, and performance standards. This is one of the start up which is indigenously fabricating ceramic discs



Symbica Pvt. Ltd.

Founders: Sandhan Sarma, Nilotpal Baruah, Subhajit Dhar, Zeeshan Nawaz

Granted 2 patents for a bionic prosthetic hand and adaptive prosthetic socket manufacturing CDSCO manufacturing license currently in process. Successfully completed pilot trials and NABL testing. Established collaborations with NGOs and rehabilitation centers to improve accessibility in

IIT Kharagpur

Innovodigm Private Limited

Founder: Dr. Ayan Chatterjee

Innovodigm Private Limited, a deep-tech startup from Indian Institute of Technology Kharagpur, is transforming vaccine delivery through cutting-edge biomedical innovation. Founded in 2020 as a spin-off from the institute's Microelectronics and MEMS Lab, the company developed a revolutionary microneedle-array patch—a painless, thermostable alternative to traditional injections that eliminates cold-chain dependency and reduces medical waste. By enabling easy, self-administrable vaccination even in remote areas, Innovodigm addresses critical
global immunization challenges. The startup gained major recognition after raising ₹5.5 crore in seed funding and being selected among top innovations at national showcases, marking its transition from lab research to real-world healthcare impact. healthcare challenges.

IMEDTECH LLP

Founder: Soham Banerjee

IMEDTECH LLP, a startup incubated at Indian Institute of Technology Kharagpur, reflects the institute's growing strength in affordable healthcare innovation. Incorporated in 2021, the startup emerged from research-driven efforts to develop accessible medical technologies and digital health solutions. IMEDTECH LLP focuses on bridging gaps in healthcare delivery through cost-effective and technology-enabled approaches, aligning with IIT Kharagpur's emphasis on socially impactful innovation. Founded by researchers and entrepreneurs from the institute, it aims to translate academic

Senflex Innovation

Founder: Suman Mitra

Senflex Innovations, a startup incubated at Indian Institute of Technology Kharagpur, showcases how academic research can evolve into impactful healthcare solutions. Originating from work on flexible sensors and smart systems, it developed an AI- enabled smart mask that monitors breathing, oxygen levels, and heart rate in real time, enabling early detection of respiratory diseases. Focused on affordability, its low-cost devices make advanced diagnostics accessible and reduce reliance on hospitals. Since its founding around 2022, Senflex has gained recognition as a promising deep-tech med-tech startup, notably winning the "Demo Futuristic Winner" award at a national nanoelectronics roadshow. It continues to expand toward building a comprehensive

IIT Madras

JSP Enviro,
Chennai

Founder:
Dr. Fidal V T

JSP Enviro is a cleantech startup specializing in industrial effluent treatment systems. The company focuses on developing advanced sensors and automation solutions using in-house fabrication facilities. It has developed a sustainable, low-energy, and fully automated treatment system tailored for water-intensive industries.

JSP Enviro has been featured in Aavishkar impact report 2024. The report was officially unveiled at Sankalp Bharat summit, 2024, held at Varanasi, India. Previously JSP Enviro has been featured at Circular change makers, Lakme Fashion week- 2021, Climate Launchpad 2018. JSP Enviro is also the recipient of Tide 2.0 by Meity. JSP Enviro is presently looking at the pilots and commercialization of the technology. The company is presently incubated at IIT Madras Incubation cell and funded by Rainmatter and Social Alpha.

RefractX,
Chennai

Founder:
Pritam P Shetty

RefractX Pvt. Ltd. develops high-quality, mass-market products powered by advanced optical and photonics technologies. With a vision to revolutionize the industry, the company focuses on delivering innovative and reliable equipment that enables the end-users to achieve accurate and efficient diagnostics. The startup is engaged in developing products across the dairy industry, medical diagnostics, and optical instrumentation sectors.

With the lithographic and material characterization support from INUP, CNNP, IIT Madras they are working on fabricating substrates for milk adulteration detection.