

Department of Science and Technology- Year Ender 2025

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I. INDIA'S RANKING IN GLOBAL S&T INDICES CONTINUES TO RISE

India secured 38th position in Global Innovation Index among the top innovative economies globally as per Global Innovation Index (GII) 2025. As per WIPO Report 2023, India is ranked at 6th position in terms of intellectual property (IP) filings in the world. India improves its ranking to 49th position (2024) from 79th position (2019) as per Network Readiness Index (NRI) 2024 report. NRI is one of the leading global indices on the application and impact of information and communication technology (ICT) in 133 economies around the world. India is globally placed at 3rd rank in terms of the research publications.

II. Research Development and Innovation Fund

The Union Cabinet has approved the RDI Scheme on 01 July 2025 to incentivize private sector participation in R&D, with a total outlay of ₹1.0 Lakh crore over Six years, out of which ₹20,000 crore allocated for FY 2025–26. The main objectives of the Research, Development and Innovation (RDI) scheme are to 1) encourage the private sector to scale up research, development and innovation (RDI) in sunrise domains and in other sectors relevant for economic security, strategic purpose, and self-reliance, 2) finance transformative projects at higher levels of Technology Readiness Level (TRL) of 4 and above, 3) support acquisition of technologies which are critical or of high strategic importance, and 4) facilitate setting up of Deep-Tech Fund of Funds. The scheme targets sunrise sectors including energy security and transition, and climate action; deep-technology including quantum computing, robotics and space; AI and its application in agriculture, health and education; biotechnology, biomanufacturing, synthetic biology, pharma, medical devices; and digital economy including Digital agriculture and the digital economy. Other proposed sectors are technologies whose indigenization is important for strategic reasons or for economic security and Atmanirbharta and; any other sector or technology deemed necessary in public interest.

The scheme will be operationalized through a Special Purpose Fund (SPF) within the Anusandhan National Research Foundation (ANRF) using a two-tiered funding mechanism:

- First level: SPF within ANRF as the custodian of funds.
- Second level: The implementation of the scheme shall be done by 2nd level fund managers. The 2nd Level Fund Manager can be in the nature of: Alternate Investment Fund structure (AIF), Development Finance Institutions (DFIs), Non-Banking Finance Corporation (NBFC) and Focused

Research Organization (FRO), e.g. Technology Development Board (TDB), Biotechnology Industry Research Assistance Council (BIRAC), IIT Research Park etc.

Funding will be available in the form of unsecured long-term loans at low or nil interest rates. In select cases, equity-based financing particularly for startups, may also be

undertaken. Contribution to Deep-Tech Fund of Funds (FoF) or other RDI-focused FoFs may also be considered.

For wider publicity and dissemination of the details about the programme, a series of Outreach Programs have been conducted in multiple places across the country.

These programmes brought together over 200 fund managers, startups and corporates, showcasing strong industry excitement around India's new ₹1 lakh crore RDI Fund. The discussions highlighted how this Special Purpose Fund under ANRF will drive a private-sector-led R&D ecosystem and accelerate deep-tech innovation in AI, semiconductors, biotech, clean energy, space and other sunrise domains. The event marked a major step toward mobilizing large-scale capital for high-impact, high-risk research in India

III. ANUSANDHAN NATIONAL RESEARCH FOUNDATION (ANRF):

The Anusandhan National Research Foundation (ANRF) was established under the ANRF Act, 2023, with provisions coming into effect on 5th February 2024, to transform India's R&D ecosystem and propel scientific excellence.

The operationalization of the ANRF was initiated with the first meeting of the Governing Board (GB) on 10th September 2024 chaired by the Hon'ble Prime Minister as the President of the Governing Board (GB). The Governing Body (GB) announced the launch of two new major initiatives on October 14, 2024: the Prime Minister Early Career Research Grant (PMECRG) Supports early-career researchers and the Mission for Advancement in High-Impact Areas - Electric Vehicle (MAHA-EV) Mission to Promotes research and development in electric vehicle components.

As of now, several initiatives/programs have been launched under ANRF. Some of the key programs are; MAHA: MedTech Mission; AI for Science and Engineering (AI-SE); the Inclusivity Research Grant (IRG); and State University Research Excellence (SERB-SURE); PAIR (Partnerships for Accelerated Innovation and Research); JC Bose Grant; Prime Minister Professorship, Convergence Research Centres of Excellence (CoE), ARG-MATRICES, Advanced Research Grant (ARG), National Science Chair (NSC), National Post Doctoral Fellowship (N-PDF); Ramanujan Fellowship.

IV. NATIONAL QUANTUM MISSION

The Union Cabinet approved the National Quantum Mission (NQM) at a total cost of Rs.6003.65 crore for a period of eight years, aiming to seed, nurture and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology. So far:

- 4 Thematic Hubs have been set up at IISc. Bengaluru, IIT Madras, IIT Bombay, IIT Delhi which includes 152 researchers, 43 institutions, and 17 project teams covering 17 states and 2 Union Territories.

- Formulated exclusive guidelines to support startups in quantum technologies and eight

(8) startups have been supported —QuNu Labs, QpiAI, Dimira Technologies, PRENISHQ, QuPrayog, Pristine Diamonds, Qanastra, and Quan2D Technologies.

- In collaboration with AICTE, has introduced B.Tech and M.Tech programmes in Quantum Technologies across colleges in India
- A Concept Paper for the Quantum Safe Ecosystem in India has been launched to outline a strategic framework for ensuring long-term cybersecurity resilience against emerging quantum threats.

Under the National Quantum Mission, three national-level Central Fabrication Facilities are established at premier institutions—IIT Delhi, IISc Bengaluru, IIT Bombay and IIT Kanpur with an investment of about Rs.720 Crore. These facilities will serve as national assets, accessible to academia, industry, start-ups, and strategic sectors.

The following technologies have been developed under NQM:

- QNu Labs Pvt. Ltd. developed the world's longest 500 km QKD network and launched QShield, the world's first full-stack Quantum Security-as-a-Service platform, with NQM support.
 - QpiAI created a 64-qubit scalable, fault-tolerant Quantum Processor Unit (QPU) to achieve quantum advantage in real-world applications.
 - PQuest Group under the IIT Bombay's Quantum Sensing & Metrology T-Hub launched India's first indigenous Quantum Diamond Microscope (QDM) for advanced magnetic field imaging.
- Prenishq, an NQM-supported startup, developed a high-precision diode laser with superior beam quality and stability for quantum communication and computing.

v. NATIONAL MISSION ON INTERDISCIPLINARY CYBER PHYSICAL SYSTEM

The National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) aims at development of technology platforms to carry out R&D, translational research, product development, incubating & supporting startups as well as commercialization. During the past year:

- Supported BharatGen (Generative AI model in Indian languages) which is being implemented through the TIH at IIT, Bombay.
- Third-Party Evaluation rated mission highly effective.

4 Technology Innovation Hubs upgraded to Technology Translation Research Parks (TTRPs): IIT Indore (Digital Healthcare), IISc Bangalore (Robotics & AI), IIT Kanpur (Cybersecurity), IIT (ISM) Dhanbad (Mining Innovation).

vi. NATIONAL SUPER COMPUTING MISSION (NSM)

National Supercomputing Mission (NSM) is implemented and steered jointly by DST and Ministry of Electronics and Information Technology (MeitY). NSM envisages to empower our national academic and R&D institutions spread over the country by enabling High- Performance Computing (HPC) infrastructures of various capacities. It is being achieved in a phased manner; Initial commissioning has taken place using the procured systems, followed by assembling the system in

the country. As of now, 39 Petaflop of supercomputers have been created across 37 locations. The recent infrastructure creation is based on indigenous developments like Rudra server, software stacks etc. Through NSM, GoI intends to reach the large Scientific & Technology community in the country and enable the nation with HPC capacity to solve multi-disciplinary grand challenge problems.

VII. CLIMATE ENERGY AND SUSTAINABLE TECHNOLOGIES

- Pilot-scale projects launched for Coal Gasification, Methanol, DME.
- Sustainable bioenergy-based Effluent Treatment Plant (ETP) inaugurated in Kerala.
- Five Carbon Capture and Utilisation (CCU) testbeds in the cement sector, forming a first-of-its-kind research and innovation cluster to combat industrial carbon emissions.

— a major move toward sustainable industrial practices and reducing carbon emissions from heavy industries. By promoting CCU technologies in cement manufacturing, the project aims to support climate-friendly industrial growth and help India meet its carbon-reduction commitments.

VIII. INTERNATIONAL CONNECTS:

- Several new international S&T collaboration and initiatives undertaken to connect with the best global science under Indian participation in mega S&T facilities such as FAIR Project, CERN, SKA, Elettra.
- Launching of the 1st Call for submission of the project proposals in “Green Hydrogen Innovations for Sustainable Energy Solutions” under Indo-French scientific partnership between DST and French National Research Agency (ANR), France.
- 20 Pairs of Women Scientists (20 Indian and 20 German) have been awarded the IGSTC-WISER Grant.
- India and Russia agreed to strengthen the “Roadmap for STI Cooperation.” focusing on joint R&D, co-development of technologies (including expanding cooperation in digital technologies and supporting startup exchange programs) and initiatives addressing societal challenges.
- Signing of MoU on Cooperation in the Field of Science and Technology between DST and the Ministry of Tertiary Education, Science and Research, Republic of Mauritius

IX. STI DATA & POLICY RESEARCH

Towards strengthening the evidence-based policy ecosystem, the department has been implementing the National Science & Technology Management Information System (NSTMIS) and the Policy Research Cell (PRC). The NSTMIS programme acts as the nodal agency for Assessment, Monitoring and Benchmarking of S&T potential of the country. To fulfill this task, it different survey exercises at national level. Currently two major surveys, the national S&T Survey which attempts to collect the data on resources devoted to R&D is under progress. The survey targets to collect data from 8000+ institutions including research laboratories, higher education institutions and industries across the country. Towards building and strengthening an institutional mechanism for a robust evidence-driven STI policy system in the country, the PRC has established DST-Centre for Policy Research (CPRs) have been established and strengthened in various academic institutions across the country. These Centres are engaged in targeted research in a number of key areas relevant to the country, train scholars in STI policy domain, and contribute towards better STI policy making. In addition to that, to generate a critical mass of policy professionals/researchers, DST has been supporting a STI Policy Fellowship Programme (DST-STI PFP). The DST-STI PFP provides scientists, engineers and

policy enthusiasts, an opportunity to gain exposure from the close quarters of policy making and contribute their knowledge and analytical skills in the STI policy realm. Currently, total 9 CPRs are being to carry out policy research in different STI domains.

x. KEY ACHIEVEMENTS FROM AUTONOMOUS INSTITUTIONS

The Department nurtures 25 Autonomous Institutions (AIs). These include 16 research & development institutions, 04 specialized knowledge and S&T service organizations, 05 professional bodies. Some of the key achievements during the year-2025 include:

INST (Institute of Nano Science and Technology)

INST has reported several high-impact breakthroughs in nanomedicine and sustainable nanotechnology. Its scientists have developed novel nano-formulations targeting Parkinson's disease, including a melatonin-based "darkness hormone" nano-system and another safer therapeutic delivery platform for patients. INST has also pioneered an advanced nano-catalyst capable of reducing the environmental footprint of industrial chemical processes, showcasing both efficiency and eco-friendliness. Their innovative drug-delivery systems for rheumatoid arthritis promise targeted relief with minimized side effects, while their work on nano-cups for cancer therapy opens the door for more precise and effective heat-based oncological treatments. Together, these advances highlight INST's leadership in translational nanoscience for healthcare and green chemistry.

IIA (Indian Institute of Astrophysics)

IIA has made remarkable contributions to astronomy and solar physics, including the discovery of a nascent galaxy forming at the end of an unusually long tidal tail of NGC 3785, offering insights into galactic evolution. Researchers detected iron lines in X- rays from a binary black hole system, enabling better inference of black hole properties. Their non-conventional technique for determining the radial dimensions of coronal mass ejections (CMEs) improves predictions of space-weather impacts on Earth. IIA teams have also mapped the thermal structure and magnetic fields of solar coronal holes, discovered a new form of stellar chemistry, and identified tiny coronal loops that unlock the Sun's faint explosive activities. Additionally, IIA scientists explained unusual solar-driven atmospheric phenomena observed over Ladakh, strengthening India's frontier research in solar-terrestrial interactions.

S.N. Bose National Centre for Basic Sciences

SNBNCBS has expanded India's strengths in quantum science, materials research, and astrophysical instrumentation. It established a new observatory in Purulia, West Bengal, expected to significantly strengthen national capabilities in astrophysics. Researchers achieved a major breakthrough by offering a real-world demonstration of quantum advantage, enhancing the future of quantum technologies. Their development of amalgamated hybrid materials has enabled artificial synapses that mimic brain-like functions, opening new horizons for neuromorphic computing. In healthcare, SNBNCBS scientists used AI to decode cancer pathways for personalized therapies, supporting precision medicine. These contributions underscore the institute's cross- disciplinary excellence.

BSIP (Birbal Sahni Institute of Palaeosciences)

BSIP continues to illuminate Earth's deep past through groundbreaking palaeobotanical and geological discoveries. Studies revealed that tropical flora showed surprising resilience during Deccan volcanism, reshaping understanding of prehistoric climate

stress. Researchers decoded the Permian fire records of India, providing evidence of ancient wildfire chronicles. The institute uncovered a 24-million-year-old paleontological secret, and leaf fossil analyses showed how the rise of the Himalaya transformed Kashmir's climate around 4 million years ago. Their insights into Ladakh's hot springs offer clues to the origins of life on early Earth and even Mars. BSIP also identified 37,000-year-old bamboo remains in Manipur, unlocking important Ice Age ecological histories in Asia.

JNCASR (Jawaharlal Nehru Centre for Advanced Scientific Research)

JNCASR has delivered a series of transformative advances spanning materials science, health research, and quantum technologies. Their new system for stress detection via wearable devices merges materials engineering with health monitoring. Researchers achieved breakthroughs in confined electron behavior, improving optoelectronic materials, sensors, and nanocatalysts. A pioneering discovery in thermionic emission from metal–semiconductor superlattices promises next-generation energy devices. JNCASR is exploring a potential new autism therapy aimed at improving patient self-sufficiency. The institute also developed fast-charging, long-life sodium-ion batteries, a major move toward affordable energy storage, and uncovered rare-earth magnetism phenomena important for future quantum applications. Additionally, insights into genetic drivers of oral cancer among Indian women pave the way for targeted interventions.

IASST (Institute of Advanced Study in Science and Technology)

IASST's multidisciplinary research spans venom biology, nanomedicine, environmental materials, ethnobotany, and nutrition sciences. Its scientists unravelled hidden complexities in the venom of the Pope's Pit Viper, expanding knowledge relevant to antivenom development. They developed magnetic nanoparticles with potential anti-cancer applications, and created an eco-friendly, high-performance lubricant that supports sustainable industrial practices. IASST also documented medicinal potential in poisonous plants of Northeast India, revealing traditional "hidden healers." Their research further showed how fermented foods can enable personalized nutrition for India's diverse population, integrating microbiome science with dietary culture.

Bose Institute

The Bose Institute contributed key research in both biological sciences and wearable technology. One study showcased a new system integrated into wearable devices capable of detecting stress through advanced sensing and data interpretation, promising next-generation health monitoring. Another major achievement involved Indian scientists rewriting a 50-year-old biological rule, reshaping fundamental understanding in the life sciences and influencing future research in molecular biology.

CeNS (Centre for Nano and Soft Matter Sciences)

CeNS has delivered major advances in renewable energy materials, smart surfaces, and sustainable batteries. Bengaluru scientists developed a novel alloy-based catalyst for efficient green hydrogen generation and created smart windows that change color

without external power, revolutionizing energy-efficient building technologies. Their work also strengthened India's solar-powered hydrogen production pathways. CeNS researchers engineered supercharged green-energy materials and built cost-effective smart windows, pushing forward affordable smart-infrastructure solutions. Furthermore, the institute created flexible, safe, eco-friendly batteries and made breakthroughs in efficient zinc-ion battery technologies, pointing toward greener future energy storage.

RRI (Raman Research Institute)

RRI has advanced foundational research in quantum physics, ultracold matter, and cosmology. Scientists explored how particle transport near absolute zero can inform the creation of smart quantum devices. A major leap in quantum magnetometry simplified precision magnetic-field measurements. Their research showed surprising effects of noise in quantum systems, challenging classical expectations. RRI contributed to cosmology by examining how miniature quantum computers can help decode early-universe signals, and demonstrated how high-energy phenomena shape atom-level interactions, enabling next-gen quantum materials. Additionally, they certified true randomness using quantum systems, advancing secure digital technologies.

ARCI (International Advanced Research Centre for Powder Metallurgy and New Materials)

ARCI developed a hydrogen-based fuel-cell power system designed to provide uninterrupted backup power for telecom towers. This innovation enhances reliability while lowering carbon footprints, marking an important step in integrating hydrogen into India's clean-energy infrastructure.

NECTAR (North East Centre for Technology Application and Reach)

NECTAR showcased an innovative aerostatic drone system tailored for enhanced surveillance and disaster-management operations. Its high stability and load-bearing capabilities make it valuable for real-time monitoring during natural disasters, security operations, and emergency response.

ARI (Agharkar Research Institute)

ARI scientists unveiled previously unknown biodiversity within the *Aspergillus* section Nigri, identifying two new species from India. This discovery deepens global understanding of fungal taxonomy and has implications for agriculture, food safety, medicine, and industrial biotechnology.

- The support to 44 departments across various academic institutions and Universities and 22 postgraduate colleges is extended under the Fund for Improvement of S&T Infrastructure (FIST) Program, with a total assignment of ₹57.0 crores to enhance research infrastructure and for enabling innovation, to address societal challenges and for enhancing training and workforce development.
- Review and monitoring of 285 FIST supported departments across various academic institutions and Universities has been completed with five cycles of subject expert committee meetings.
- Similarly, 19 ongoing projects and 06 completed project of PURSE also reviewed to strengthen the research ecosystem in universities while supporting mission-oriented research aligned with national priorities and to widen broad representation of groups, universities, and geographic regions that are underrepresented in STEM disciplines.
- Nine new universities were supported with a total assignment of ₹99.0 crores under the Promotion of University Research and Scientific Excellence (PURSE).
- In the coming year, programs such as FIST, PURSE, SAIF, SUPREME, and STUTI will focus on identifying and supporting additional ~150 departments including postgraduate colleges, institutes, and universities to strengthen and expand the next generation of scientific talent through enhanced research infrastructure.
- ₹273.89 Cr approved under Fund for Improvement of S&T Infrastructure (FIST) 2024 for 115 departments & 22 PG colleges.
- CISCoM at IIT Hyderabad set up under DST- Sophisticated Analytical & Technical Help Institute (SATHI) – India's first in-situ microscopy centre.
- Upcoming: Support for 100 more departments under FIST, new PURSE selections.

XII. TECHNOLOGY DEVELOPMENT & TRANSFER AND STRENGTHENING THE START-UP AND INNOVATION ECOSYSTEM

Department of Science and Technology (DST) has been implementing the National Initiative for Developing and Harnessing Innovations (NIDHI) Program with the focus on nurturing start-ups and individual innovators. Key achievements include:

- NIDHI program expanded to Tier II/III cities.
- 8 new Inclusive Technology Business Incubators (iTBI)s and 10 Entrepreneur-in- Residence Centres set up.
- Advanced Manufacturing Technologies (AMT) program supported 11 projects in Surface Engineering & Precision Manufacturing.
- Inauguration of Dental Technology Innovation Hub (MAIDS) — boost to indigenous devices — With inauguration of this innovative hub, DST aims to support development and manufacture of indigenous medical-dental devices, reducing import dependence and bolstering self-reliance in healthcare technology. The hub could accelerate translation of research into affordable devices for Indian patients and medical institutions.

XIII. SCIENCE FOR EQUITY, EMPOWERMENT AND DEVELOPMENT FOR INCLUSIVE GROWTH OF SOCIETY.

Science for Equity, Empowerment and Development (SEED) division supports for implementation of S&T solutions for the socio-economic challenges faced by marginalized sections of the society.

- 21 new projects have been supported under the theme of assistive and rehabilitative technologies for disabilities, including solutions for speech and hearing disorders, digital accessibility tools for the

blind and visually impaired, and mobility-enhancing devices such as exoskeletons, prosthetics and adaptive vehicles.

- Four Women Technology Parks (WTPs) have been set up in Uttar Pradesh, Tamil Nadu, Sikkim, and Arunachal Pradesh to promote gender equality and empower women through science- and technology-based solutions
- ICAR–IIHR Bengaluru has developed a micronutrient formulation called Arka Mango Special to enhance soil efficiency and overall plant health. The institute has also introduced supporting technologies such as water traps and fruit fly traps to further aid mango farmers.
- Through a network project, ICAR-NBAGR & NDRI, Karnal, DRDO-DIPAS & DIHAR, IISc Bangalore and JMI Delhi identified beneficial metabolites in the colostrum and milk of native Trans-Himalayan cattle in Ladakh and developed an efficient method to extract endogenous peptides for accurate proteomic analysis.
- Vigyan Ashram, Pune introduced Black Soldier Fly (BSF) technology and processed about 60 MT of urban biowaste per month at Rajgurunagar.
- A novel herbal mineral water formulation using *Solanum nigrum* (black nightshade) leaves was successfully developed and validated as a pilot-scale product by the Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala.
- A fully standardized process for Lactose-free milk powder (LFMP) with enhanced solubility, nutritional value for lactose-intolerant consumers has been developed at National Dairy Research Institute Karnal, Haryana

XIV. SCHEDULED CASTE SUB PLAN AND TRIBAL SUB PLAN

- Five (5) STI Hubs were established for holistic development of SC and ST Communities by developing STI solutions for addressing the challenges in the predominant livelihoods and livelihood system.
- STI interventions undertaken by NIT Puducherry are addressing the livelihood needs of economically disadvantaged fishermen in Karaikal district by strengthening the entire post-harvest fisheries value chain.
- IIT Jodhpur is integrating traditional knowledge with technology to enhance livelihoods, sustainability, and community-driven socioeconomic growth in Western Rajasthan through STI interventions in 25 villages.
- IIT Guwahati is promoting establishment of biodegradable toy manufacturing units using eco-friendly polymers for Assam's rural ST communities, fostering livelihood and social upliftment.
- ICAR-National Research on Pig, Guwahati is empowering Mising and Bodo women in Assam's Dhemaji and Lakhimpur districts by establishing an STI Hub in piggery which introduces traceability, IoT-based meat inspection, micro abattoirs, and pork product technologies.

XV. S&T Capacity Building

"Innovation in Science Pursuit for Inspired Research (INSPIRE)" is a flagship scheme of Department of Science & Technology for attraction of talent to science. The objective of INSPIRE Programme is to attract meritorious youth to study basic and natural sciences at the college and university level, pursue research careers in both basic and applied science areas including engineering, medicine, agriculture and veterinary sciences and thus, build the required critical human resource pool for strengthening and expanding the Science & Technology system and R & D base of the country.

- INSPIRE MANAK has successfully reached schools and students across the nation, promoting STEM education. A total of 11.47 lakh ideas and innovations were mobilized from schools of all States and UT's across the country during the year 2025- 26.

· All 36 States and UT's participated in the program.

- 52% of nominations received from Girls and 48% from Boys.
- 84% of participating schools are based in rural parts of the country.
- A total of 50009 school students have been selected for INSPIRE- MANAK in the FY 2024-25 and provided with financial assistance of Rs. 10000/- each.
- 27% of the selected students (13495) belong to SC/ST category.
- 54 students and 03 supervisors participated in SAKURA Science High School Program and visited Japan during 15-21 June, 2025.
- In the 124th episode of Mann Ki Baat, Hon'ble Prime Minister Shri Narendra Modi highlighted the INSPIRE–MANAK initiative, noting its significant role in nurturing a spirit of innovation among children.

INSPIRE

- During the year 2025, 24785 INSPIRE Scholars, 3277 INSPIRE Fellows and 352 INSPIRE Faculty Fellows are supported for pursuing Graduation and Post-Graduation, Doctoral and Post- Doctoral Research Career in S&T areas respectively.
- On competitive selection, 14 INSPIRE Scholars and 03 supervisors participated in Asian Science Camp (ASC) 2025 and visited Suranaree University of Technology, Nakhon Ratchasima, Thailand during 31st July -06th August, 2025 winning a remarkable set of awards: 2 Silver Medals, 3 Bronze Medals, 3 Honorary Mentions, and the only Special Prize.
- On competitive selection, 8 INSPIRE Fellows were provided opportunity to participate in the 16th JSPS-HOPE meeting held at International Conference Centre (ICC), Yokohama, Japan during 09th - 13th March 2025 and they showcased the research work carried out by them.

WISE-KIRAN

‘Women in Science and Engineering-KIRAN (WISE-KIRAN)’ aims to encourage and promote women in the Research & Development (R&D) in Science & Technology (S&T) domain. The WISE-KIRAN Scheme provides opportunities for women scientists, especially those who have had a career break, to pursue research in basic and applied sciences, address societal challenges, and receive training in the field of Intellectual Property Rights.

- No of School girls supported in STEM are 29443 in Vigyan Jyoti programme.
- No. of women supported for pursuing PhD degree are 108.
- Number of women only universities and colleges supported for R&D infrastructure are 27 in CURIE.
- No. of Senior Women scientists supported are 23.
- No. of Women Scientists trained in Leadership development program in collaboration with UKIERI are 168.
- No. of women scientist supported for pursuing R&D in Basic science, applied science and translational work for society are 572.

- A Centre for Sustainable Textile Heritage and Technology has been initiated at IIT- Delhi to revive the traditional textiles viz. Banarasi, Tussar Silk Baluchari/Swarnachari, Phulkari Embroidery, Maheshwari, Ilkal Weaving, Jain Pata Conservation, Bhavani Jamakkalam, Muslin Weaving, Mysore/Mulberry Silk, Punja Durrie Craft, Namda Craft, Ryndia Textiles. The Centre will also assess the carbon footprint quantification of heritage textile processes, identify emission hotspots, and develop mitigation and sustainability strategies leading to policy framework for green textiles in the country.
- A heavy metal removal natural hybrid adsorbent has been developed from cow-dung for its subsequent utilization as cheaper electrodes for energy storage devices. The synthesized porous carbon material demonstrated the removal of 90% Cr (VI) from water within 20 minutes with maximum adsorption capacity of 219 mg/g at 45°C. These electrodes were subsequently utilized as supercapacitor electrodes, demonstrating 84% capacitance retention after 10,000 cycles.

xvii. MEDICAL DEVICES AND TECHNOLOGY

The project titled “Design, Development, Certification and Clinical Trial of the Advanced Indigenous Cochlear Implant System (Sravan II)” has been approved for implementation by the Society for Biomedical Technology (SBMT). The Department of Science and Technology (DST) has committed a budget of Rs. 1999.265 lakhs for the four-year duration of the project, with an initial release of Rs. 2.5 crore (Rs. 2 crore under the Capital component and Rs. 50 lakhs under the General component) as the first installment.

Memorandum of Understanding was signed between Ministry of Ayush, Government of India and Department of Science and Technology, Government of India for Promoting Research supporting Ayush concepts, Procedures and Products on 27.11.2025.

xviii. STATE SCIENCE AND TECHNOLOGY PROGRAMME

Arunachal Pradesh State Council for Science & Technology (APSCST) has developed a temperature-independent, revivable microbial preservation system that represents a major breakthrough in cold-chain-free biotechnology. This indigenous platform enables long-term preservation (up to 36 months stability) of a wide range of microorganisms, including bacteria, yeast, anaerobes, and fungi, across a temperature range of -196°C to $+50^{\circ}\text{C}$, using proprietary hydrogel-based formulations tailored to different microbial groups. Surpassing the Organisation for Economic Co-operation and Development (OECD)/World Federation for Culture Collections (WFCC) global standards, the technology has been transferred to National Research Development Corporation (NRDC) for commercialization, strengthening India’s capabilities in biotechnology, healthcare logistics, industrial fermentation, agriculture, and microbial resource distribution.

xix. VAISHVIK BHARATIYA VAIGYANIK (VAIBHAV)

During ESTIC-2025, 19 VAIBHAV Fellows representing Universities, Institutions, Industry and R&D centers from countries such as the UK, US, Canada, Sweden, Germany, Singapore, Finland, Australia and many more along with 20 Indian Hosts participated in an exclusive session on ‘VAIBHAV Vision on Viksit Bharat’ on 4th November, 2025 at Bharat Mandapam, New Delhi. They highly appreciated the Government’s efforts to institutionalize diaspora

engagement through the VAIBHAV fellowship and shared ideas for improving collaboration between Indian institutions and Indian Diaspora faculty/ scientists such as exchange visits for students and faculty, increase in duration of years of fellowship, connection of academia and Industry etc.

Under 2nd call of VAIBHAV Fellowship, a total of 216 proposals were received and 17 applicants were recommended for the award.

The 3rd call of VAIBHAV Fellowships was announced in 2025 and a total of 227 proposals were received. After eligibility check, 201 proposals have been screened in and are currently undergoing technical evaluations.

xx. GEOSPATIAL MISSION

The National Geospatial Mission, announced in the Budget 2025-26 and Rs. 100 crores allocated for the FY 2025-26:

- Modernizing foundational infrastructure using PM Gati Shakti framework.
 - Goals: Urban planning, land record digitization, infrastructure optimization.
- Approval process of the mission is under progress

XXI. National Council for Science & Technology Communication (NCSTC)

National Council of Science and Technology Communication (NCSTC) Division commenced Science on Wheels in the State of Maharashtra, West Bengal, Andhra Pradesh and Delhi. In Maharashtra, the bus travelled across 22 schools in 16 tribal villages of Trimbakeshwar Tehsil, Nashik District. Till date, 9348 beneficiaries including 240 teachers have been benefited through interactive science learning using hands-on activities, STEM demonstrations, and exposure to emerging technologies to spark scientific curiosity. In West Bengal, the bus travelled across 36 schools of North 24 Paragana District, benefitting 8,000 students with interactive science education especially in Scheduled Caste and backward areas.

In Andhra Pradesh, the bus travelled across 60 schools of Alluri Sitharama Raju District benefitting 40,500 students thus reviving the glory of Indian Science and Technology through interactive sessions and exhibits on Indian Mathematics, Astronomy, Art & Architecture, Ancient Archaeological System, Food Culture, Crafts, Weaving, Handloom Textiles, Pottery, Metal Work, Healthcare System, Metallurgy, Soil Conservation, and Power Generation in ancient times. In Delhi, the bus created awareness among 4150 students on the highly relevant theme 'Clean and Green Energy'.

The 31st National Children's Science Congress (NCSC) was held in Bhopal, Madhya Pradesh from 3rd to 6th January, 2025 on the Theme '*Understanding Ecosystem for Health and Well-being*' wherein 607 child scientists selected from state level CSC presented their projects and 20 best projects were selected at national level. National Science Day was celebrated across the nation benefitting more than 6,35,894 people through various engaging scientific activities like Science Kit/video/app making, poster presentation, VIGYANOTSAV – National Science Day Quiz 2025, Rally, Seminar/Workshops in schools, colleges, institutes, and universities. Technology enabled special sessions for especially abled students were also conducted.

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इस विज्ञप्ति को इन भाषाओं में पढ़ें: हिन्दी , Gujarati , Kannada