



THRIVE

Technology & High-impact Research for
Indo-German Vision & Eminence (Winter Edition)



About IGSTC

The Indo-German Science & Technology Centre (IGSTC), a joint initiative by the Department of Science & Technology (DST), Government of India and the Federal Ministry of Research, Technology and Space (BMFTR), Government of Germany was established to facilitate Indo-German R&D networking through substantive interactions among government,

academia/research system and industries, thus fostering innovation for overall economic and societal developments in both the countries. Through its various funding programmes, IGSTC intends to catalyse innovation centric R&D projects by synergising the strength of research/academic institutions and public/private industries from India and Germany.

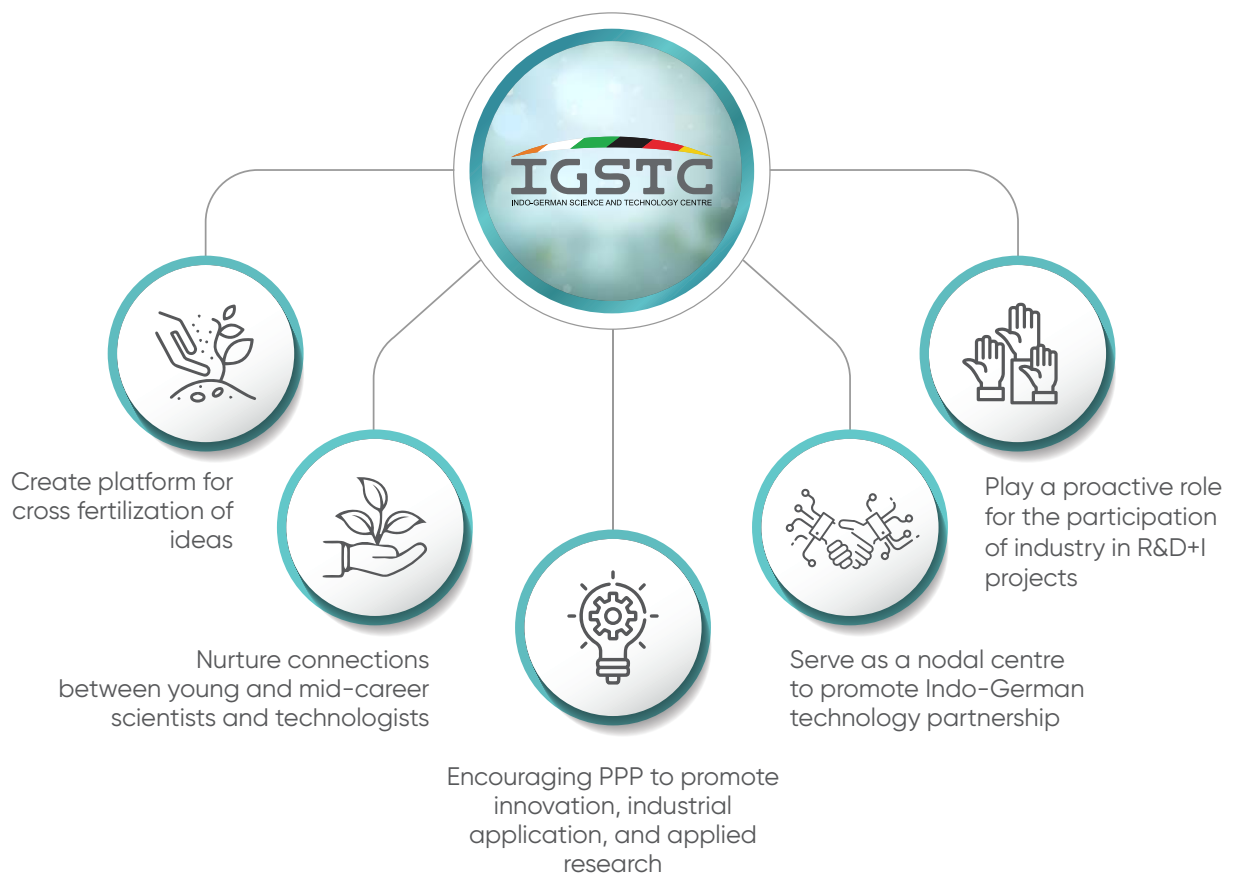


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Foreword



**Dr. Praveen
Somasundaram**

IGSTC marked the last quarter of 2025 with new leadership, stronger Indo-German collaborations, successful research initiatives, and a significant high-level German delegation visit

This Newsletter captures the major achievements and occurrences related to IGSTC missions over the last quarter of 2025.

IGSTC has a new Director, Dr. Kusumita Arora in September 2025, who brings with her, a few decades of experience in conducting research in India and through Indo-German collaborations. Under the new leadership, the organization continues to surge forward in diverse facets of its activities.

Facilitating growth of Indo-German technology and innovations through public-private partnerships is at the forefront of pursuits. IGSTC has reached out to academic research partners through various fora like World Food India program, Delhi and Science Roundtables, Chandigarh in September, DWIH Talk Series on Research Careers in Germany and deliberations on How to fund your Research and Research Stays in October.

Special efforts have been initiated to establish links with the world of MSME-s and Startups in India. To this end, communication with T-Works, Telangana was initiated during the WASH Innovation Roundtable to explore possibilities of techno-scientific exchanges and collaborations with Germany.

Four bilateral workshops on diverse topical themes such as 'Sustainable membrane technologies for environmental protection' in University of Hamburg, 'Role of catalysis in achieving global net-zero targets' in INST Mohali, 'Digital innovation and urban water management through the lens of Digital Public Goods' in University of Hamburg and 'Receptor Modelling, Applications and Technical Solutions' at IIT Madras. A Workshop on 'Proteomics – A to Z: From Molecular Analysis to Biological Insights' was organized at BITS, Pilani in connection to the visit of Dr. Ute Distler (Johannes Gutenberg University Mainz, Germany) to Prof. Nishith Gupta at BITS, Pilani, Hyderabad Campus.

Three WISER 2022 Awardees completed their three year research. Dr. Thanammal Ravichandran, Professor at Kumaraguru College of Liberal Arts and Science (KCLAS), Coimbatore, an IGSTC WISER 2022 successfully completed her project titled "Potential of Digital Innovations and their Institutional Dimensions to Enhance Dairy Productivity in Developing Countries", in collaboration with Prof. Dr. Mizeck Chagunda at the University of Hohenheim, Germany. Dr. Manju Nanda, Chief Scientist at CSIR–National Aerospace Laboratories, in collaboration with Prof. Dr. Umut Durak at the German Aerospace Center (DLR) completed her project on Development of a model-based safety assessment framework that integrates software health management directly into certification-oriented engineering workflows.

The Indo–German team of Prof. Dipti Gupta, Professor at IIT Bombay, in collaboration with Prof. Jasmin Aghassi-Hagmann at the Karlsruhe Institute of Technology (KIT), Germany integrated screen-printed organic electrochemical transistors developed at IIT Bombay with lipid-patch microarrays fabricated at KIT using dip-pen nanolithography to facilitate cancer detection at Point-of-Care.

Ten pairs of PECFAR researchers completed their research stays in the institutes of their respective research partners, with their research areas covering.

- Exploring Robust Magnetic Excitations
- From Biomass Waste to Catalysts
- Engineering Living Tissues through Programmable Bioinks
- Probing Chemical Reactions under Strong Light–Matter Coupling
- Smart Coatings and Rheo–Casting Models in Magnesium Alloys
- Anode-Free Energy Storage Concepts
- Tracking How Warming Alters Monsoonal Storms
- Understanding How Floating Solar Systems Interact with Their Environment
- Strengthening Organic Poultry Systems
- Improving Reliability of High-Power Electronic Converters

Mr. Mainak Bhattacharyya, a doctoral researcher from IISER Bhopal has commenced his IF at QC Design at Ulm, the city of Einstein’s birthplace, working on developing low-overhead decoders and optimizing error-resilient quantum architectures using specialized software.

Under the SING program, Prof. Hridayesh Prakash of Amity University, India, and Prof. Andreas Weigert of Goethe University Frankfurt, Germany “Tweaking sphingolipids for restoring gut immune balance in inflammatory bowel diseases”. The complementary strengths of two geographically separated labs could be brought together to address an important scientific problem related to inflammatory bowel diseases, which are chronic conditions marked by repeated inflammation of the intestine.

The highlight of this period was the visit of Dr. Silke Launert, Parliamentary State Secretary, Federal Ministry of Research, Technology and Space (BMFTR), Germany, and her delegation on 19 November 2025. An Exchange Evening was organized by IGSTC during her official visit to India. The event brought together key stakeholders from the Indo–German S&T ecosystem along with IGSTC program awardees, providing a platform to showcase collaborative achievements and strengthen bilateral engagement. In her address, Dr. Silke Launert, reaffirmed BMFTR’s strong commitment to advancing Indo–German scientific cooperation and commended IGSTC’s role in fostering meaningful partnerships. Before her arrival in Delhi, she also visited the laboratory of Dr. Medhavi Vishwakarma at the Indian Institute of Science, highlighting the policy and scientific relevance of an ongoing IGSTC–WISER collaboration in mechanobiology and cancer research.

As the Head of the International Cooperation Division of the Department of Science & Technology, GOI, I am proud to be associated with the energy and dynamism of the IGSTC Team and look forward to many more achievements in the months to come.



EVENTS AND INITIATIVES





Joining of New Director

Dr Kusumita Arora
joined as **Director**
IGSTC on 11 September
2025.

The Indo-German Science & Technology Centre (IGSTC) marked a significant moment in its institutional journey as Dr. Kusumita Arora assumed charge as Director on 11 September 2025, joining on deputation from the CSIR-National Geophysical Research Institute.

An alumna of Indian Institute of Technology Kharagpur, Dr. Arora completed a prestigious dual-university PhD programme between Osmania University, Hyderabad and Freie Universität Berlin—an academic pathway that itself reflects the spirit of Indo-German collaboration. With over three decades of experience spanning the mining industry, geophysical exploration, and fundamental research on the

Earth's geopotential and geomagnetic fields, she has built an internationally respected scientific career. Her contributions include more than 100 peer-reviewed publications and the mentorship of numerous doctoral, post-doctoral, and master's researchers.

A Fellow of the Telangana Academy of Sciences and recipient of the 2025 Women Scientist Award from the Geological Society of India, Dr. Arora also serves as Vice President of the International Association of Geomagnetism and Aeronomy. Notably, she becomes the first woman to lead IGSTC as Director— an inspiring milestone for women in STEM and a new chapter in Indo-German scientific cooperation.

RASHTRA 2025

In the World Food India 2025 program, the Indo-German Science & Technology Centre (IGSTC) was pleased to be associated with RASHTRA 2025 (Risk Analytics Seminar Heralding the Transformation of Agriculture), a landmark event focused on advancing risk analytics, climate-smart agriculture, food security, and sustainable innovation. The

seminar brought together policymakers, researchers, and practitioners to deliberate on data-driven approaches and innovative strategies for building resilient agricultural systems in the face of climate and socio-economic challenges.

Dr. Kusumita Arora, Director, IGSTC, graced the occasion as the Guest of Honour and

delivered an insightful address highlighting how Indo-German collaboration in science, technology, and innovation can serve as a strong model for fostering robust partnerships in agriculture and climate resilience. Fostering development of sustainable and scalable solutions for future-ready agri-food systems.





The Chandigarh Roundtable united top academic leaders to advance strategic Indo-German collaboration in science, technology, and innovation through joint research, academic exchange, and industry partnerships led by IGSTC.

IGSTC Roundtable

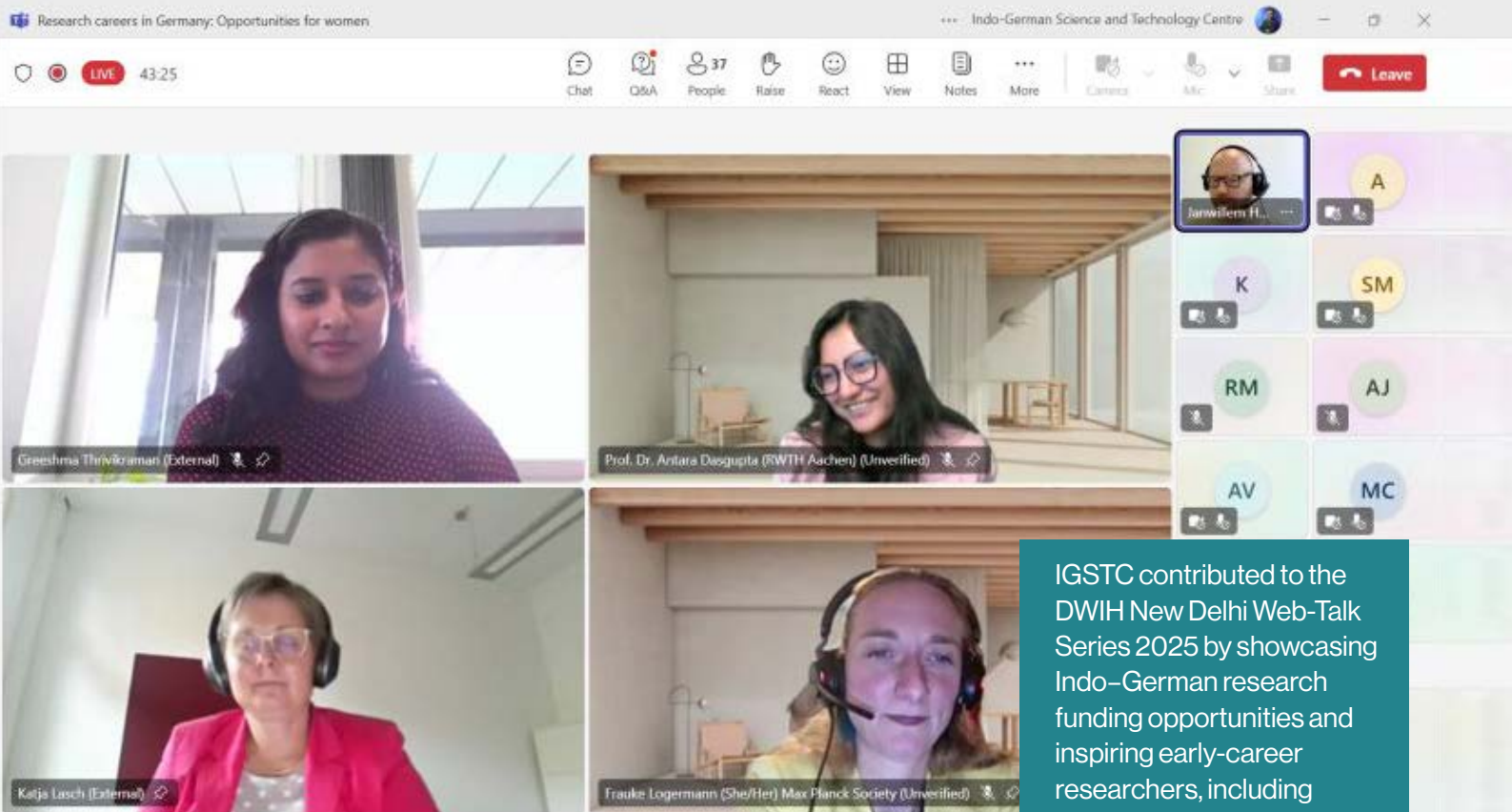
The Roundtable in Chandigarh served as a high-level forum to explore pathways for strengthening bilateral cooperation between India and Germany in science, technology, and innovation.

The event was graced by Prof. Renu Vig, Vice Chancellor, Panjab University, along with eminent participants including Prof. Sudip Mandal (Dean R&D, IISER Mohali), Prof. Ashwani Pareek (Executive Director, NABI), Prof. Shantanu Bhattacharya (Director, CSIR-CSIO), Prof. Rohit Sharma (Dean, International Relations, IIT Ropar), and Prof. Akash Deep (Director, INST), among others. The deliberations were led by

Dr. Kusumita Arora, Director, IGSTC, who elaborated on emerging opportunities for Indo-German collaboration established her strategic vision for future engagement and purpose driven bilateral cooperation. Discussions

focused on fostering joint research, academic exchange, and industry linkages, underscoring IGSTC's catalytic role in enabling impactful and sustainable bilateral partnerships.





DWIH Web-Talk Series

IGSTC is pleased to participate in the DWIH New Delhi Web-Talk Series on "Research Careers in Germany", held on 8–9 October 2025, contributing valuable insights on funding opportunities and career pathways for early-career researchers. The program brought together experts and scholars to discuss mechanisms for fostering international research collaboration and professional development.

Mr. Hans Westphal, Head, IGSTC German Project Office, spoke in the session "**How to Fund Your Research and Research Stays**" on 8 October 2025, where he highlighted

IGSTC's funding schemes and instruments that support Indo-German collaborative research and innovation. On 9 October 2025, Dr. Greeshma Thiruvikraman, IGSTC WISER Awardee and Assistant Professor at IIT Madras, shared her

professional journey during the session "**Opportunities for Women**". Her experiences as a WISER awardee offered motivation and guidance to young researchers, particularly women scientists, for progress towards a successful research career.





IGSTC engaged with T-Works to promote Indo-German collaboration in Integrated Water Resource Management and encourage startups to participate in the 2026 Call under the 2+2 framework.

New Connections with Startups and Industries

T-Works is a Manufacturing Innovation Incubation Cell, India's largest prototyping center & knowledge partner established by the Government of Telangana to empower creators, startups, and enterprises and enable their ideas to move from lab to market

with speed, scale, and global competitiveness. IGSTC took advantage of the WASH Innovation Roundtable & Engagement to present the ethos and programs of IGSTC during the event, so that startups in the arena of water resource management become of the 2+2 theme of

Integrated Water Resource Management for Call 2026 and feel interested in formulation of Indo-German collaborative projects. Avenues of inviting members from German startups to T-Works facilities were also discussed.



BILATERAL WORKSHOPS





The 2025 Indo-German workshop series advanced bilateral collaboration in sustainable membranes, green catalysis, digital water management, and air quality research, fostering academia-industry partnerships and paving the way for future 2+2 initiatives.

The **SHINE 2025** workshop, was held from September 22–25, 2025, at the University of Hamburg. Coordinated by Dr. Bhaskar Jyoti Deka and Dr. Volkan Filiz, the event focused on sustainable membrane technologies for environmental protection, specifically addressing challenges in water treatment and the removal of emerging contaminants like PFAS and microplastics. The workshop featured robust participation from academic and research institutions including IIT Roorkee, IIT Delhi, IIT Kharagpur, IIT Bombay, and CSIR-NCL from India, alongside Germany's University of Hamburg, Helmholtz-Zentrum Hereon, Max Delbrück Center (MDC), and the Leibniz Institute for Polymer Research Dresden. Industrial and utility

perspectives were provided by Hamburg Wasser, Hereon-Polymer, and Merck KGaA. A major recommendation was the urgent need to establish a dedicated hub for sustainable membrane technology research to foster continued bilateral innovation.

The **Cat4SusChem** workshop took place from September 23–26, 2025, at INST Mohali, focusing on the pivotal role of catalysis in achieving global net-zero targets by 2050. Coordinated by Dr. Kamalakannan Kailasam and Dr. Sebastian Wohlrab, the event bridged the gap between fundamental research and industrial application by bringing together a network that included Bharat Petroleum Corporation Limited (BPCL), the Institute of Nano Science

and Technology (INST), the Leibniz-Institute for Catalysis (LIKAT), and the Department of Science and Technology (DST). Academic representation featured experts from IIT Delhi, IIT Bombay, IIT Ropar, IISER Mohali, CSIR-IICT, CSIR-NCL, and ICT Mumbai from India, alongside German delegates from **LIKAT Rostock, TU Berlin, and various Max Planck Institutes**. Participants committed to enhancing academia-industry partnerships specifically for the commercialization of green technologies.

Concurrently, the **DPG-WaSPUR** workshop was held during September 24–25, 2025, at HafenCity University

Hamburg. Coordinated by Prof. Dr. Mona Iyer and Prof. Dr. Jörg Rainer Noennig, it addressed the intersection of digital innovation and urban water management through the lens of Digital Public Goods (DPGs). The workshop involved interdisciplinary participation from CEPT University (Ahmedabad) and the National Institute of Urban Affairs (NIUA) from India, while the German contingent included HafenCity University Hamburg (HCU), the United Nations University (UNU-EHS), and the City Science Lab. A significant milestone was the formalization of plans to jointly

apply for IGSTC 2+2 funding in 2026 to implement digital twins and open-source data for flood resilience.

The year concluded with the workshop on **Receptor Modelling, Applications and Technical Solutions**, held from October 27–29, 2025, at IIT Madras. This interdisciplinary platform aimed to translate air quality research into actionable outcomes, involving Indian institutions such as IIT Madras, IIT Delhi, IIT Bombay, IIT Tirupati, and the National Physical Laboratory (CSIR-NPL). German

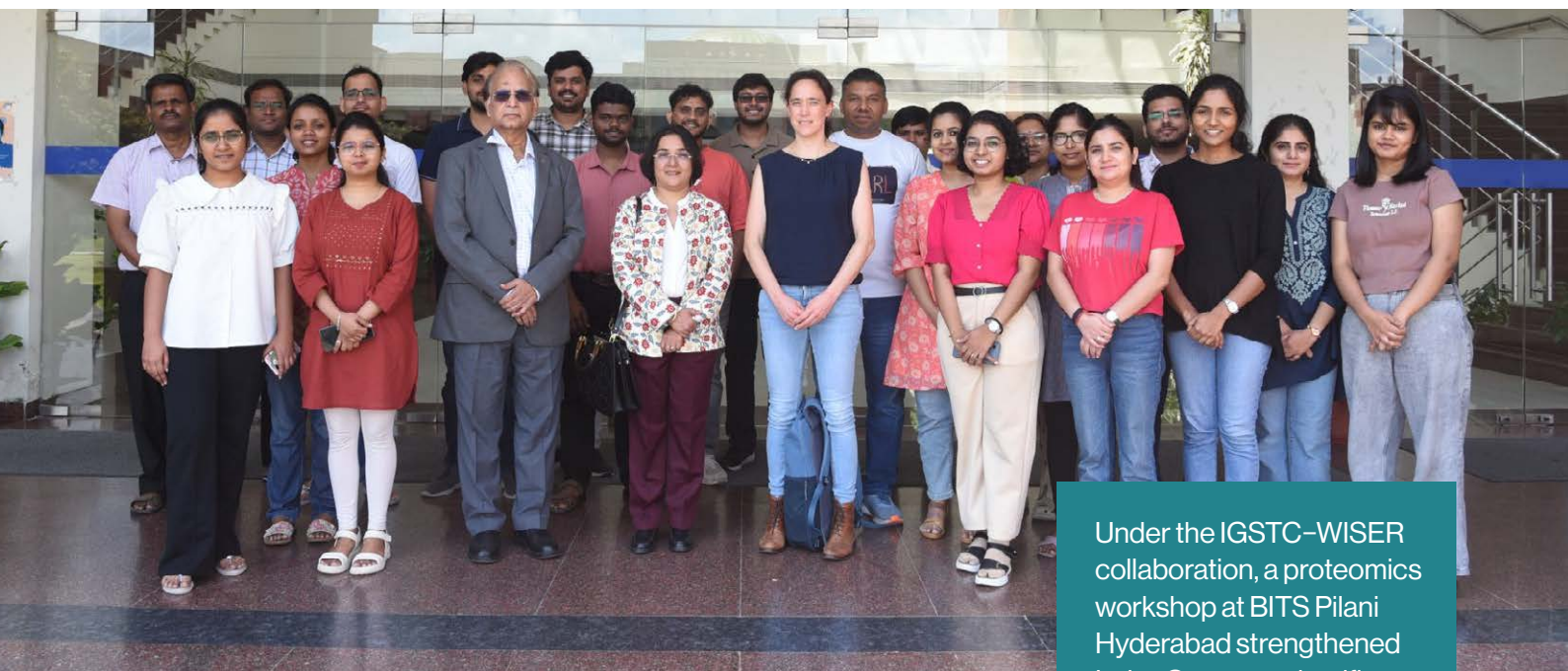
participants hailed from the Helmholtz Centre for Environmental Research (UFZ), German Aerospace Centre (DLR), Leibniz Institute for Tropospheric Research (TROPOS), and the Research Institute for Sustainability (RIFS). Additionally, startups like SUPERBLOCKS participated to explore the commercialization of sensor technologies. The event successfully fostered a new network committed to long-term Indo-German cooperation in environmental health and data-driven management.





WOMEN INVOLVEMENT IN SCIENCE & ENGINEERING RESEARCH (WISER)





Under the IGSTC-WISER collaboration, a proteomics workshop at BITS Pilani Hyderabad strengthened Indo-German scientific exchange and advanced research on *Toxoplasma gondii* infection.

Proteomics Workshop anchors WISER Research Exchange

As part of ongoing IGSTC-WISER collaboration, a two-day workshop titled "Proteomics – A to Z: From Molecular Analysis to Biological Insights" was conducted on 29–30 September 2025 during the WISER research visit of PD Dr. Ute Distler (Johannes Gutenberg University Mainz, Germany) to iPEARL (Intracellular Parasite Education and Research Labs), BITS Pilani, Hyderabad. The workshop served as a vibrant platform for knowledge exchange, bringing together leading experts from India and Germany to discuss the latest developments, methodologies, and applications in proteomics.

Dr. Distler led the technical sessions, drawing on methodologies applied within the active WISER project on proteomics-based characterization of *Toxoplasma gondii* infection in human skeletal muscle cells. Distinguished speakers including Dr. Kusumita Arora, Director, IGSTC; Prof. Mohan Rao, Head of Biological

Sciences and former Director of CCMB Hyderabad; Dr. Paresh Sharma from NIAB, Hyderabad; Mr. Mohammad Mustafa from iPEARL; and Prof. Nishith Gupta, DBT/Wellcome Trust India Alliance Senior Fellow at iPEARL and the proteomics team at Thermo Fisher Scientific participated.





The IGSTC WISER 2022 project leveraged the NITARA digital herd management platform to enhance dairy productivity through data-driven advisories and Indo-German collaboration between KCLAS and the University of Hohenheim.

IGSTC-WISER Project on Digital Dairy Innovations

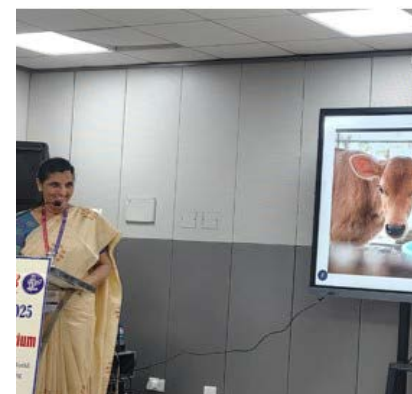
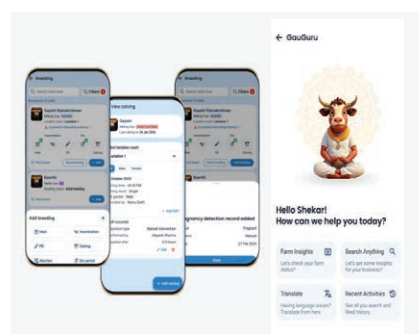
The project demonstrates how scalable digital tools can be embedded within institutional systems to enhance dairy productivity in developing-country contexts. It operationalised digital herd management through the NITARA application, enabling systematic registration and longitudinal monitoring of animals at the farm level. Data on reproductive status, animal health, feeding practices, and milk production were digitally captured to establish a structured evidence base for identifying constraints underlying low productivity.

These datasets informed the delivery of evidence-based, farmer-specific advisories through coordinated extension mechanisms, including veterinary-led interventions, animal health camps, and

WhatsApp advisory groups. This approach enabled early identification and management of reproductive disorders such as infertility and repeat breeding, alongside targeted nutritional and preventive health interventions.

Led by Dr. Thanammal Ravichandran, Professor at Kumaraguru College of Liberal Arts and Science (KCLAS), Coimbatore, the IGSTC WISER 2022 project titled "Potential of Digital Innovations and their Institutional Dimensions to Enhance Dairy Productivity in Developing Countries" was successfully completed on 19 January 2026, in collaboration with Prof. Dr. Mizeck Chagunda at the University of Hohenheim, Germany. The integration of real-time field data with targeted advisory delivery enabled coordinated action

among farmers, veterinarians, and extension agents, contributing to reductions in production losses.





The IGSTC-WISER 2022 project advanced certification-ready aerospace software by integrating AI-assisted, model-based safety assessment into avionics engineering through Indo-German collaboration between CSIR-NAL and DLR.

Model-Based Safety Assessment transform certification of Safety-Critical Avionics Software

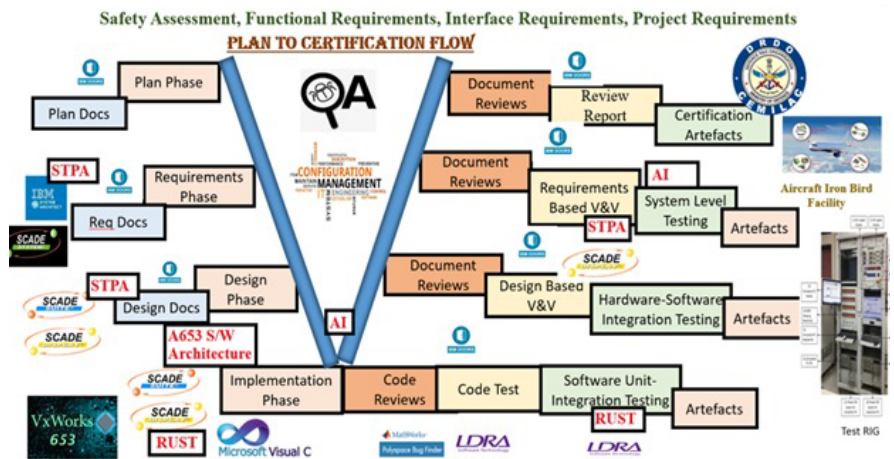
Addressing a critical gap in the certification of safety-critical aerospace software, an IGSTC-WISER 2022 project developed a model-based safety assessment framework that integrates software health management directly into certification-oriented engineering workflows. Successfully completed on 19 January 2026, the project explored how model-based and AI-assisted techniques can be systematically applied to detect, analyse, and

mitigate software faults in complex avionics systems, including reconfigurable and integrated modular architectures.

The project was led by Dr. Manju Nanda, Chief Scientist at CSIR-National Aerospace Laboratories, in collaboration with Prof. Dr. Umut Durak at the German Aerospace Center (DLR).

Strategically, the project addresses a growing certification bottleneck by aligning scalable,

scenario-driven safety assessment with regulatory expectations, demonstrating a forward-looking pathway to modernise assurance practices while preserving the rigour required for safety-critical aerospace software. The work delivered validated methodologies and demonstrator tools, strengthening software health management practices and Indo-German collaboration in certified avionics software engineering.





The IGSTC-WISER 2022 project developed a patent-backed bioelectronic platform using OEET technology for rapid, label-free detection of cancer-associated extracellular vesicles through IIT Bombay-KIT collaboration.

From Printed Electronics to Liquid Biopsy: Advancing Rapid Cancer Detection at the Point of Care.

Addressing a key translational challenge in liquid biopsy diagnostics, an IGSTC-WISER 2022 project developed an integrated bioelectronic sensing platform for the rapid detection of cancer-associated extracellular vesicles (EVs) directly from blood samples. Completed on 19 January 2026, the project explored how combining electrolyte-gated transistor (EGT/OECT) technology with biomimetic EV-capture strategies can overcome limitations of conventional, time-intensive diagnostic workflows.

The project was led by Prof. Dipti Gupta, Professor at IIT Bombay, in collaboration with Prof. Jasmin

Aghassi-Hagmann at the Karlsruhe Institute of Technology (KIT), Germany. The Indo-German team integrated screen-printed organic electrochemical transistors developed at IIT Bombay with lipid-patch microarrays fabricated at KIT using dip-pen nanolithography. This architecture enabled selective capture of EVs via antibody-functionalised lipid membranes and their direct electrical readout, eliminating the need for fluorescent labels or sample pre-processing. Research visits and joint experiments at KIT and IITB supported integration, functionalisation, and testing of prototype devices. Strategically, the project

demonstrates a scalable pathway to translate printed electronics and bio-interfaces into low-cost, point-of-care cancer diagnostics, while strengthening Indo-German collaboration at the interface of materials science, electronics, and biomedical engineering.



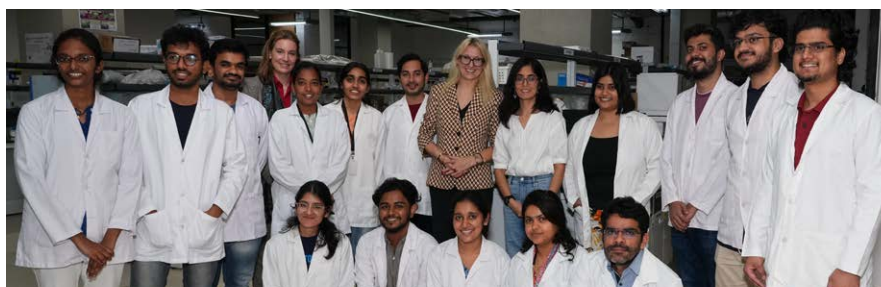
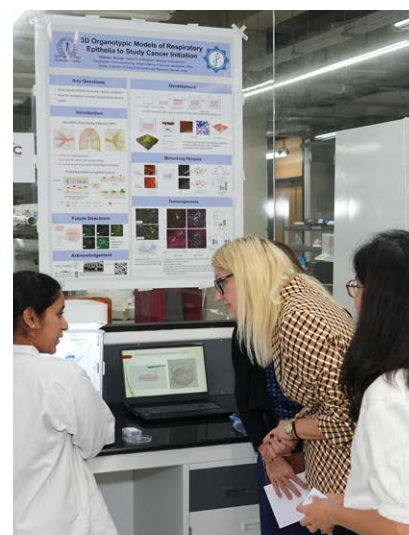


Dr. Silke Launert's visit to IISc spotlighted the IGSTC-WISER mechanobiology project advancing Indo-German research on fibrosis-driven cancer mechanisms and bilateral science policy collaboration.

German Parliamentary State Secretary Visits IISc Lab to Spotlight Indo-German Mechanobiology Research

In November 2025, Dr. Silke Launert, Parliamentary State Secretary at the Federal Ministry of Education and Research (BMFTR), visited the laboratory of Dr. Medhavi Vishwakarma at the Indian Institute of Science, highlighting the policy and scientific relevance of an ongoing IGSTC-WISER collaboration in mechanobiology and cancer research. The visit provided a platform to discuss how Indo-German cooperation is advancing understanding of idiopathic pulmonary fibrosis (IPF) as a pre-cancerous condition. Dr. Vishwakarma's WISER project, conducted with Dr. Jacopo Di Russo at RWTH Aachen University, investigates how fibrosis-driven changes in the extracellular matrix alter

tissue mechanics and impair epithelial defence against cancer (EDAC). Using 3D airway organoids, phototunable hydrogels, and live-cell imaging, the project examines tissue-specific pathways of cancer initiation in fibrotic lungs. The interaction underscored the strategic role of WISER in linking frontier biomedical research with bilateral science policy priorities and reinforcing long-term Indo-German collaboration.





The IGSTC-WISER research visit by Dr. Svenja Nellinger to SASTRA University advanced scalable cdECM biofabrication for translational wound-healing and organoid applications through Indo-German collaboration.

Hands-on Biomaterials Research Marks WISER Research Exchange

In February 2025, Dr. Svenja Nellinger, University of Stuttgart, undertook a WISER research visit to SASTRA Deemed University, hosted by Dr. Sundaramurthi Dhakshinamoorthy, to address a central challenge in bioactive wound-healing materials: the reliable production and functionalisation of cell-derived extracellular matrix (cdECM) at scales suitable for biofabrication.

The visit enabled hands-on optimisation of cdECM isolation from multiple cell types, including CaCo2 cells, whose growth characteristics require adapted protocols. Experimental work also refined metabolic glycoengineering strategies to introduce bioorthogonal functional groups into cdECM, a prerequisite for controlled hybridisation with printable biomaterials. These steps are essential for integrating cdECM into hybrid bioinks that

combine biological activity with processability for fabrication.

Beyond experimental progress, the visit aligned Indian and German workflows on bioink formulation, characterisation, and application, and opened a new translational direction through the integration of cdECM into colon organoid culture systems. Joint publication planning and follow-on collaboration pathways were defined. Scientifically, the visit marked a transition from protocol

development to application-oriented biofabrication, underscoring WISER's role in enabling laboratory-embedded Indo-German collaboration in translational biomaterials research.



FEATURE

An Exchange Evening in New Delhi to honour Dr. Silke Launert, Parliamentary State Secretary, Federal Ministry of Research, Technology and Space (BMFTR), Germany, was organized by IGSTC during her official visit to India. The event brought together key stakeholders from the Indo-German S&T ecosystem along with IGSTC program awardees, providing a platform to showcase collaborative achievements and strengthen bilateral engagement.

The welcome remarks by Dr. Kusumita Arora, Director, IGSTC, followed by presentations from IGSTC awardees highlighting success stories from

flagship programs such as the 2+2 Projects, WISER, PECFAR, and the Industrial Fellowship sharing the insights into the impact of IGSTC support on their research and innovation journeys.

In her keynote address, Dr. Silke Launert reaffirmed BMFTR's strong commitment to advancing Indo-German scientific cooperation and commended IGSTC's role in fostering meaningful partnerships. The event concluded with interactive discussions and networking, reinforcing IGSTC's commitment to impactful bilateral collaboration.

A Joint Secretary-level meeting of Indian and German S&T organizations, led by H.E. Dr. Silke Launert, Parliamentary State Secretary, Federal Ministry of Research, Technology and Space (BMFTR), Germany and Dr. Abhay Karandikar, Secretary, Department of Science & Technology (DST) was held on 21 November 2025. The reconvening of the 12th India-Germany Joint Science & Technology Committee (JSTC) meeting and the extended interactions marks an important step in revitalizing bilateral engagement and advancing mission-driven, future-ready scientific cooperation.



The IGSTC-hosted Exchange Evening in New Delhi, featuring Dr. Silke Launert and Dr. Abhay Karandikar, successfully showcased collaborative research achievements and reaffirmed a high-level commitment to revitalizing Indo-German scientific cooperation through mission-driven, future-ready partnerships.





PAIRED EARLY CAREER FELLOWSHIP IN APPLIED RESEARCH





The IGSTC-PECFAR exchange between IIT (ISM) Dhanbad and Johannes Gutenberg University Mainz advanced pioneering research on topological inertial magnons, strengthening Indo-German collaboration in quantum magnetism.

Exploring Robust Magnetic Excitations

Unusual magnetic excitations with robust, topology-driven behavior, capable of propagating along material edges without easily scattering or dissipating, took centre stage during IGSTC-PECFAR exchange visits between Dr. Ritwik Mondal (IIT (ISM) Dhanbad) and Dr. Alexander Mook (Johannes Gutenberg University Mainz), who advanced joint research on topological inertial magnons through reciprocal visits from April to July 2025. Working across Mainz and Dhanbad, the pair identified a two-sublattice

ferromagnetic honeycomb system hosting inertial magnons and demonstrated topological anticrossings between precessional and inertial modes with associated edge states.

The visits also supported invited talks and research interactions at the University of Kaiserslautern, University of Konstanz, Karlsruhe Institute of Technology, and the S.N. Bose National Centre for Basic Sciences, expanding the collaboration network. Outcomes include manuscripts

in preparation and follow-on plans to explore transport signatures and atomistic spin-dynamics simulations, reinforcing the long-term Indo-German partnership enabled by PECFAR.





From Biomass Waste to Catalysts: PECFAR 2024 Exchange Between Dr. Sudarsanam Putla and Dr. Majd Al-Naji Explores Lignin Valorisation Pathways

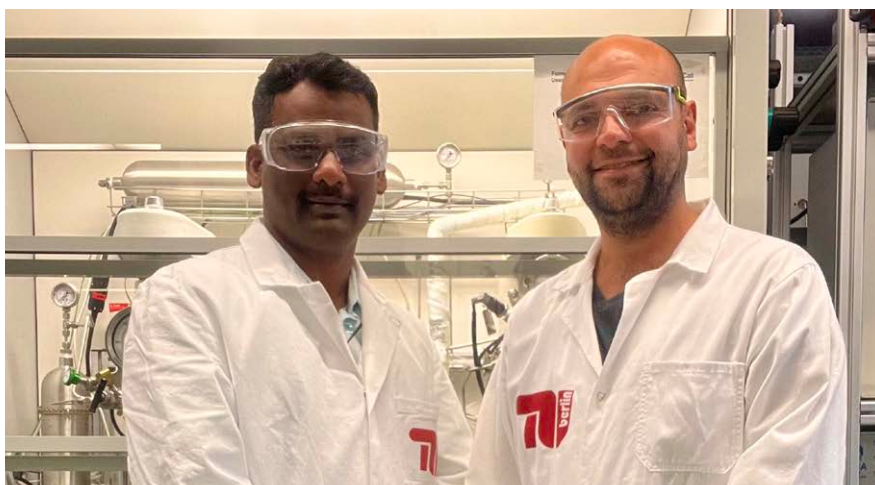
The IGSTC-PECFAR exchange between IIT Hyderabad and TU Berlin advanced sustainable biomass valorisation by converting lignin waste into functional catalysts and biofuels, strengthening Indo-German collaboration in green chemistry.

Transforming lignin waste into functional catalysts and biofuels was the scientific focus of IGSTC-PECFAR exchange visits between India and Germany, as Dr. Sudarsanam Putla (Indian Institute of Technology Hyderabad) and PD Dr. Majd Al-Naji (Technische Universität Berlin / BasCat-UniCat BASF JointLab) advanced joint research on sustainable biomass valorisation during reciprocal visits from December 2024 to June 2025.

The visits enabled hands-on work on lignin extraction from non-edible biomass, development of lignin-derived carbon catalysts, and optimisation of catalytic routes for converting lignin

into biofuels under mild conditions. Laboratory access at BasCat, TU Berlin, and interactions across multiple German and Indian research institutes supported catalyst characterisation, parallel testing strategies, and discussions on scale-relevant

processing. The exchanges also strengthened networks for joint publications, patent exploration, and follow-on project proposals, reinforcing PECFAR's role in linking catalytic science with circular bioeconomy objectives.





The IGSTC-PECFAR exchange between SASTRA Deemed University and TU Darmstadt advanced 3D/4D bioprinting and translational biofabrication through strengthened Indo-German collaboration in regenerative medicine.

Engineering Living Tissues through Programmable Bioinks

Controlling how cells respond to printed microenvironments was the scientific focus of IGSTC-PECFAR exchange visits between Dr. S. Dhakshinamoorthy (SASTRA Deemed University) and Prof. Andreas Blaeser (Technical University Darmstadt) during March–June 2025. The collaboration combined India's strengths in bioink chemistry and cell-material interactions with Germany's expertise in precision bioprinting and dynamic bioreactor systems. Joint experiments advanced 3D and 4D bioprinting strategies, including piezoelectric and polysaccharide-based bioinks, multicellular spheroids, and organ-on-chip platforms for regenerative medicine and disease modelling. The visits also aligned protocols for scalable tissue fabrication,

accelerating translation from laboratory constructs to clinically relevant models. By integrating complementary capabilities across both countries, the exchange supported alignment of biofabrication protocols, joint proposal development, and coordinated translational planning under PECFAR.

Together, the visits linked fundamental biofabrication research with application-oriented tissue engineering workflows, while supporting researcher training, cross-laboratory learning, and effective use of complementary bioprinting infrastructure.





The IGSTC-PECFAR exchange between TIFR and DESY advanced cavity-polariton chemistry by experimentally probing how vibrational strong coupling in optical cavities can modify chemical reactivity.

Probing Chemical Reactions under Strong Light-Matter Coupling

How optical cavities can actively influence chemical reactivity was the scientific focus of IGSTC-PECFAR exchange visits between Dr. Kalaivanan Nagarajan (Tata Institute of Fundamental Research) and Dr. Marcus Seidel (DESY). The collaboration involved reciprocal research stays in February-March 2025 (DESY to TIFR) and May-June 2025 (TIFR to DESY).

During the visits, the pair advanced experiments on vibrational strong coupling, where molecules confined

inside optical cavities form hybrid light-matter states known as polaritons. Using space-free Fabry-Pérot cavities, the team directly probed these polaritonic states rather than relying solely on indirect cavity-splitting signatures. This approach enabled closer examination of how strong coupling modifies the molecular potential energy surface, a key determinant of reaction pathways and kinetics.

Joint work combined cavity design, spectroscopy, and

simulations to improve experimental control over hybrid light-matter states and to align theoretical and experimental interpretations. Seminars and cross-departmental discussions at both institutions further supported this integration. The visits enabled coordinated experimentation and shared use of advanced photonics infrastructure, contributing to deeper understanding of cavity-polariton chemistry through Indo-German collaboration under PECFAR.



The IGSTC-PECFAR exchange between IISc and Helmholtz-Zentrum Hereon integrated casting process modelling with advanced LDH coatings to improve corrosion resistance in magnesium alloys through Indo-German collaboration.

Smart Coatings and Rheo-Casting Models in Magnesium Alloys

Why some magnesium alloys corrode rapidly while others remain protected depends not only on surface coatings, but on how the alloy is formed in the first place. This question framed IGSTC-PECFAR exchange visits between Dr. Prosenjit Das (Indian Institute of Science) and Dr. Valeriya Kasneryk (Helmholtz-Zentrum Hereon), with reciprocal research stays in November 2024 (Hereon to IISc) and June 2025 (IISc to Hereon).

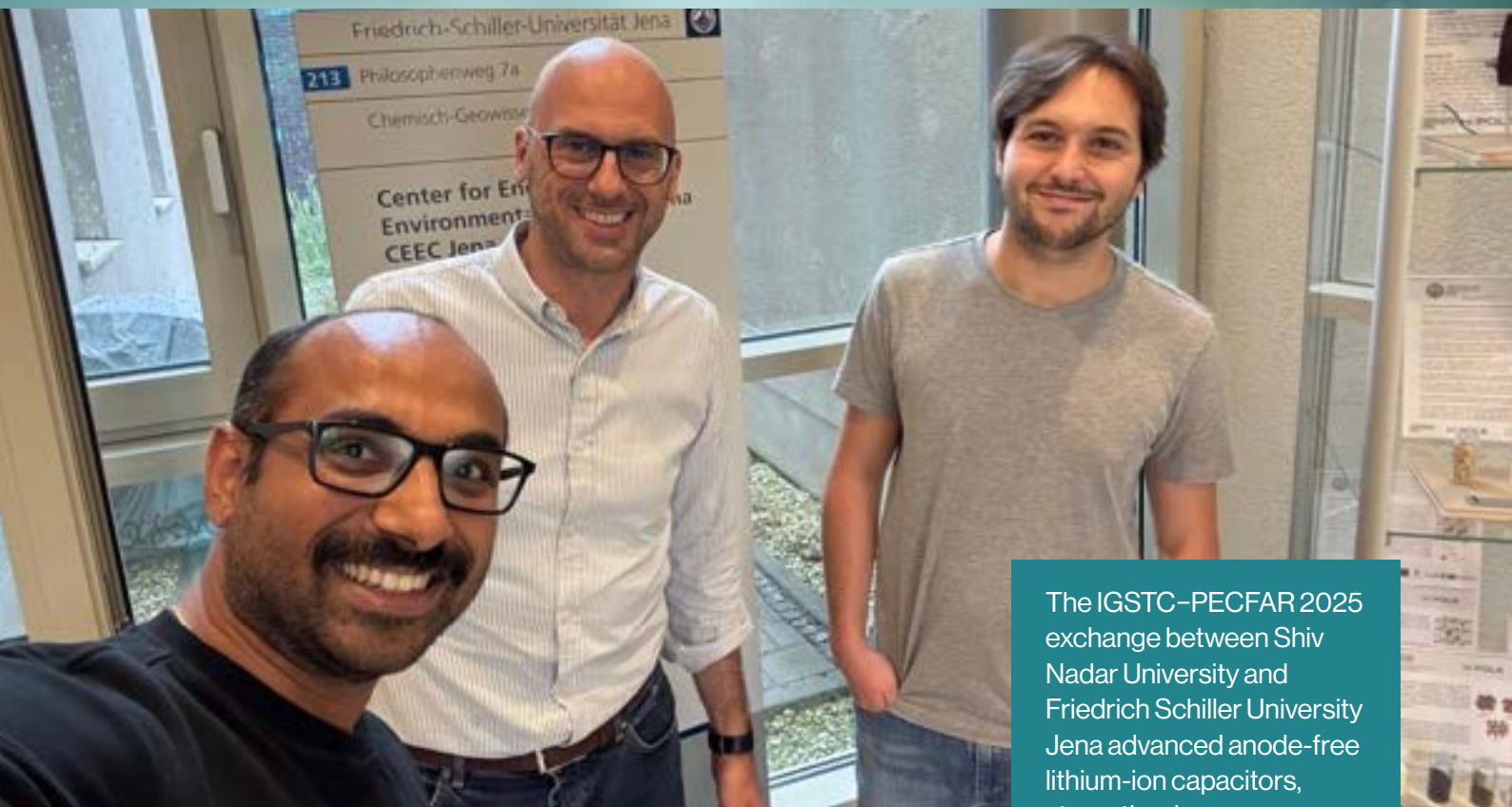
The collaboration linked rheo-gravity die casting conditions, such as melt flow, cooling behaviour, and microstructural evolution, to the performance of in-situ

layered double hydroxide (LDH) coatings developed for corrosion protection of AZ91D magnesium alloys. By combining CFD and phase-field modelling with experimental coating growth, the team could relate processing history directly to corrosion response, rather than treating casting and coating as separate steps.

Advanced characterisation using SEM, XRD, EDS, and electrochemical impedance spectroscopy supported this integrated analysis. The visits brought modelling and surface engineering into a single workflow, creating a shared experimental – computational

framework and setting the stage for joint publications and continued PECFAR collaboration.





The IGSTC-PECFAR 2025 exchange between Shiv Nadar University and Friedrich Schiller University Jena advanced anode-free lithium-ion capacitors, strengthening Indo-German collaboration in next-generation energy storage.

Anode-Free Energy Storage Concepts Advance

Rethinking how lithium-ion capacitors can operate without a pre-installed anode was the scientific focus of IGSTC-PECFAR 2025 exchange visits between Dr. Binson Babu (Shiv Nadar University, India) and Juan Luis Gómez Urbano (Friedrich Schiller University Jena, Germany). During reciprocal research stays in August–September 2025 (India to Germany) and October–November 2025 (Germany to India), the pair advanced a proof-of-concept for anode-free lithium-ion capacitors, where lithium ions are supplied in situ from the electrolyte or sacrificial salts.

Joint experiments systematically examined how

pressure, temperature, electrolyte composition, additives, and sacrificial salts influence device performance and stability. The visits also enabled access to pilot-scale battery facilities, invited talks across German and Indian institutes, and the initiation of new collaborations in lithium-sulfur and sodium-ion

batteries. The exchange expanded the scope of the project from proof-of-concept testing to parameter optimisation and recyclability considerations, laying a technical foundation for follow-on Indo-German collaboration in next-generation energy storage systems.





The IGSTC-PECFAR visit to the Alfred Wegener Institute revealed that intensified monsoonal rainfall under warming scenarios is driven primarily by thermodynamic moisture amplification rather than stronger storm dynamics, advancing Indo-German climate research collaboration.

Tracking How Warming Alters Monsoonal Storms

Why monsoonal storms can produce heavier rainfall without becoming dynamically stronger was examined during an IGSTC PECFAR research visit by Vishnu S. Nair to the Alfred Wegener Institute, hosted by Antonio Sanchez Benitez, from 8 November to 22 December 2025.

Using storyline-based high-resolution climate

simulations, the visit analysed tropical monsoonal storms across pre-industrial, 2K, 3K, and 4K warming scenarios. Results showed little change in storm intensity or circulation structure, but a marked increase in rainfall, particularly under 4K warming, linked to thermodynamic moisture amplification rather than dynamical strengthening. Vortex-centric diagnostics

were used to separate dynamical and thermodynamic contributions, providing clearer attribution of rainfall extremes. The work also initiated targeted analyses of Bay of Bengal storms and Western Ghats extreme rainfall events, laying the basis for joint publications and continued Indo-German collaboration under PECFAR.



The IGSTC-PECFAR 2025 visit to Fraunhofer ISE advanced Indo-German collaboration on evaluating floating and agro-photovoltaic systems under real environmental conditions, linking field measurements with performance and reliability analysis.

Understanding How Floating Solar Systems Interact with Their Environment

How floating and agro-photovoltaic (FPV/APV) systems perform under real environmental conditions was the focus of an IGSTC-PECFAR 2025 research visit by Dr. Manish Kumar (Himachal Pradesh University) to the Fraunhofer Institute for Solar Energy Systems, from 25 August to 24 October 2025, in collaboration with Alexander Gräf.

Working with the Floating PV team led by Karolina Baltins, the visit involved environmental measurements beneath FPV installations, analysis of ecosystem interactions, and assessment of wave-induced mismatch losses and soiling effects. Field visits to FPV sites at Hartheim and Leimersheim, and APV sites near Freiburg, were

complemented by exposure to accelerated degradation testing and PV reliability laboratories.

The exchange linked field observations with performance analysis, supporting follow-on Indo-German collaboration on FPV evaluation and deployment under diverse climatic conditions.





The IGSTC-PECFAR 2025 visit to the Thünen Institute advanced Indo-German research on sustainable organic poultry systems by integrating nutrition, welfare design, and genetics to enhance productivity and adaptability.

Strengthening Organic Poultry Systems

The ways in which nutrition, welfare design, and genetics interact to determine productivity in organic poultry systems was examined during an IGSTC PECFAR 2025 research visit by Dr. P. Athilakshmy (Tamil Nadu Veterinary and Animal Sciences University) to the Thünen Institute of Organic Farming, Germany, from 1 October to 30 November 2025, in collaboration with Helen Mara Pluschke.

The exchange focused on dual-purpose poultry systems, integrating egg and meat production to address welfare and sustainability challenges. Scientific work examined how alternative protein sources, including algae and insects, influence growth and health, and how early-life interventions such as dark brooders shape

long-term behaviour and welfare. Behavioural scoring and welfare indicators were used to link management practices to measurable outcomes.

Field visits, interactions with breeding organisations, and engagement with certification bodies highlighted how

biological performance is tightly coupled with breeding choices and regulatory frameworks. By integrating animal physiology, behaviour, and production systems, the exchange generated evidence-based insights relevant to adapting organic poultry practices to Indian farming conditions.





The IGSTC-PECFAR 2025 exchange between NITK Surathkal and Karlsruhe Institute of Technology advanced reliability-oriented design of high-power DC-DC converters through collaborative modelling, fault analysis, and experimental validation.

Improving Reliability of High-Power Electronic Converters

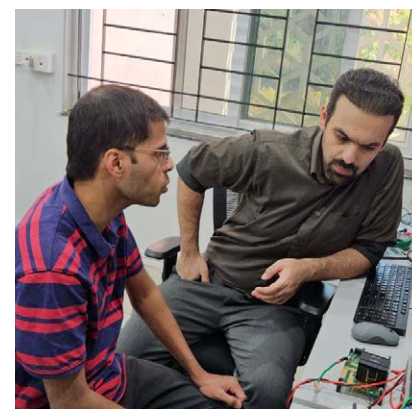
How converter architecture and fault-tolerant design influence reliability limits in high-power electronic systems was the focus of an IGSTC PECFAR 2025 exchange between Dr. Dharavath Kishan (National Institute of Technology Karnataka, Surathkal) and Dr. Moein Ghadran (Karlsruhe Institute of Technology, Germany).

During Dr. Ghadran's visit to NITK from 1 December 2025 to 15 January 2026, the collaboration examined DC-DC converter topologies with particular emphasis on DC-link capacitor degradation and fault scenarios, a dominant failure mode in high-power converters. Joint discussions explored how topology selection, control strategies, and protection

schemes affect fault propagation, system stability, and post-fault operation. Laboratory interactions aligned modelling assumptions with experimental test protocols, enabling more realistic system-level reliability assessment.

The visit also included technical seminars, participation in PESGREE 2025

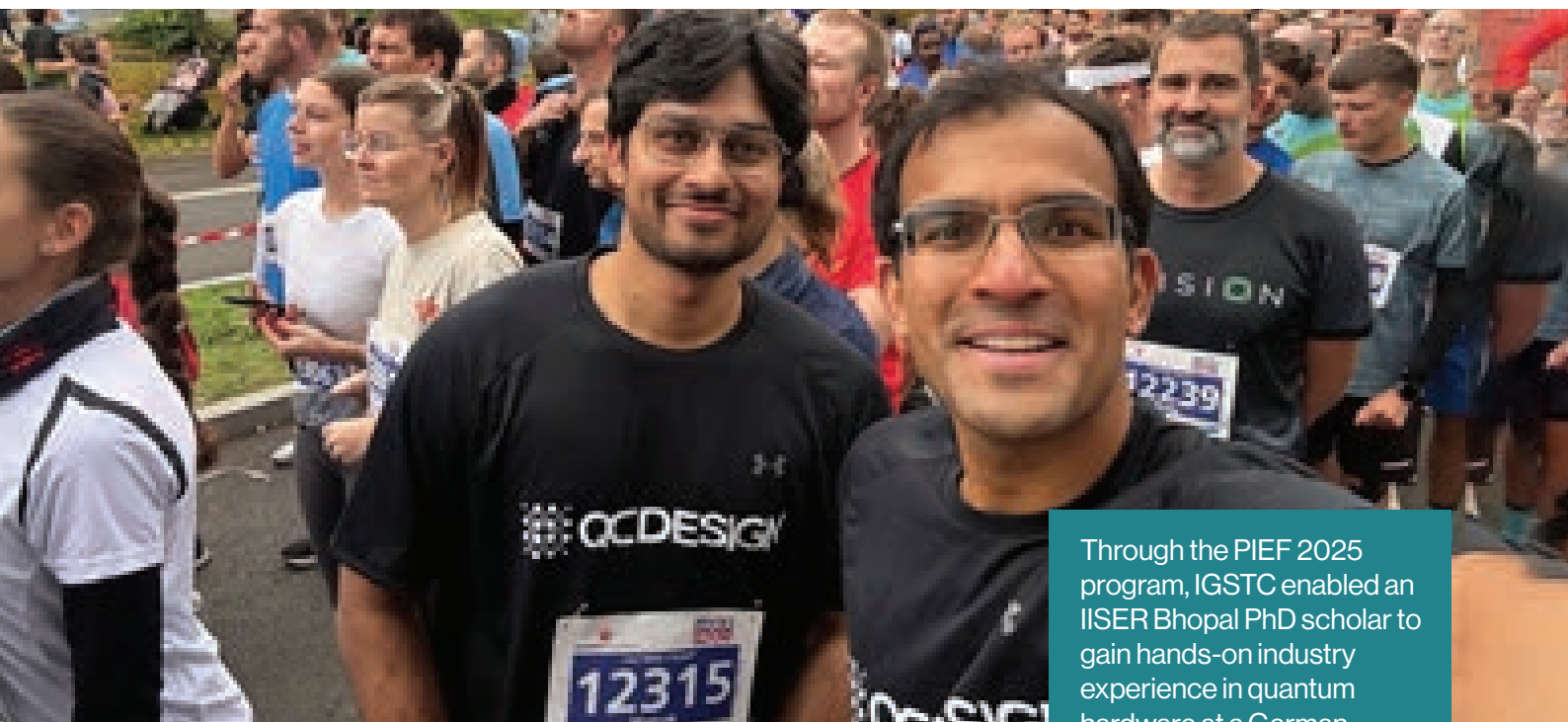
at IIT Dharwad, and interactions with academic and industrial partners. Together, these activities strengthened the link between analytical modelling, protection design, and experimental validation, laying a technical foundation for follow-on collaborative work in reliability-oriented power electronics under PECFAR.





IGSTC INDUSTRIAL FELLOWSHIP PROGRAM





Through the PIEF 2025 program, IGSTC enabled an IISER Bhopal PhD scholar to gain hands-on industry experience in quantum hardware at a German startup, strengthening academia-industry linkages and global research exposure.

Reshaping Scalable and Robust Quantum Architectures

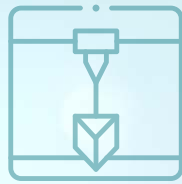
IGSTC continues to foster individual excellence through its PhD Industrial Exposure Fellowship (PIEF) program. This initiative provides Indian PhD students with unique opportunities to gain industrial experience in Germany, bridging the gap between academic research and practical applications.

A notable example from the 2025 cohort is Mr. Mainak Bhattacharyya, a doctoral researcher from IISER Bhopal. Specializing in quantum hardware fault tolerance, Mainak served as a visiting researcher at QC Design, a German startup in Ulm

developing automation software for quantum hardware. During his fellowship, he contributed to developing low-overhead decoders and optimizing error-resilient quantum architectures using specialized software. Beyond technical research, the fellowship offered cultural

immersion, including participation in the Einstein City Marathon in Ulm, Einstein's birthplace. Such experiences highlight the fellowship's role in developing globally-minded researchers equipped with both technical expertise and industrial perspective.





SMALL IMMEDIATE NEED GRANTS





During the period from September to December 2025, five SING projects were actively underway. One of the SING projects focused on the development of nano-enabled bioinks for three-dimensional bioprinting of personalised bone grafts, bringing together researchers from Manipal University, Jaipur and the Technical University of Darmstadt. Addressing an important challenge in regenerative medicine, the collaboration aimed to develop bioinks that combine printability, mechanical stability, and biological functionality to support patient-specific bone repair using digital manufacturing. The partnership allowed the Indian and German teams to leverage complementary strengths, with access to advanced fabrication and characterisation facilities in Germany and biological and materials expertise in India.

Another SING project supported the development of a terahertz-based non-destructive testing system for quality inspection in plastics and paper manufacturing. Led by CSIR-Central Electronics Engineering Research Institute (CEERI), Pilani, in collaboration with LayerSense GmbH, Germany, the project focused on assessing the feasibility of using terahertz metrology for real-time, contact-free and

NDT assisted industrial inspection. This project exemplifies the strong translational potential of Indo-German cooperation and demonstrated how SING can support early-stage validation of technologies with clear industrial relevance.

Of the remaining two SING projects, one initiative focused on advanced sensing and instrumentation, enabling Indian and German partners to jointly assess technical feasibility, integrate complementary methodologies, and establish a shared experimental framework. This proposal aims to address one of the most critical challenges in healthcare—early and accurate diagnosis of sepsis—by developing a portable, point-of-care biosensing device capable of simultaneously detecting key sepsis biomarkers. The collaboration between Koneru Lakshmaiah Education Foundation, India, and TU Bergakademie Freiberg, Germany, brings together complementary expertise in electrochemistry, biosensing, and nano-bioelectrochemical systems. Another project addressed emerging materials and applied technologies, to validate the safety of cottonseed protein isolate (CSPI) as a sustainable protein source for human consumption. Although cottonseed is rich in

high-quality protein, its wider use in food is limited due to concerns related to gossypol toxicity. This collaboration between ICAR – Central Institute for Research on Cotton Technology (CIRCOT) and Gottfried Wilhelm Leibniz Universität Hannover aims to address these concerns through a series of well-structured in-vitro toxicological studies. In parallel, the study will examine the digestibility and bioavailability of CSPI to understand its nutritional quality. In the fifth SING proposal, collaboration between IIIT Kottayam and Celestial Space Technologies GmbH, Germany, aims to focus on the design and development of solar panel-integrated transparent microstrip patch antennas with isoflux coverage for small satellite applications in the S and X bands. A detailed study of the evolving small satellite market revealed a growing demand for global connectivity driven by 5G, the Internet of Things, mobility, and data-intensive applications, highlighting the limitations of traditional single-band satellite platforms. Overall, these five ongoing SING collaborations vividly demonstrate how modest,

well-targeted support can redefine high-quality Indo-German connections at

a very early stage. Together, they lay a strong foundation for deeper scientific

partnerships, follow-on funding, and long-term technological and societal impact.

Spingolipids: Resetting Gut Immunity

A 2024 SING project entitled *"Tweaking sphingolipids for restoring gut immune balance in inflammatory bowel diseases"* was recently completed by Prof. Hridayesh Prakash of Amity University, India, and Prof. Andreas Weigert of Goethe University Frankfurt, Germany. The project addressed an important scientific problem related to inflammatory bowel

diseases, which are chronic conditions marked by repeated inflammation of the intestine. A major challenge in these diseases is the broken gut immune homeostasis, which is manifested by recurrent desmoplastic activation of the gastric mucosa, subsequently leading to leaky gut and malaise. Intestinal cells were deliberately damaged in

controlled experiments, and immune cells were then exposed to the signals released from these cells. This experimental design allowed the researchers to observe how immune cells responded to tissue damage and how their behaviour could be modified by introducing sphingolipid-related pathways.

The key scientific outcomes of the study are:

- Sphingolipid metabolites e.g. S1P / C-1P influences inflammatory bowel disease.
- Ceramide and TNF- α pathways together drive pathogenic inflammation in PBMC derived CD14+ monocyte.
- Stabilizing S1P-S1PR1 signalling by pharmacological approaches may temper local activation of Intestinal macrophages and necrotic death of Intestinal epithelial cells.
- Enhancing Oxy-sphingolipid index in appears to be a potential homeostatic approach for mitigating IBD pathogenesis.
- Sphingolipid rheostat can be a prognostic marker for IBD pathogenesis.

The project outcomes are expected to lead to joint scientific publications and will serve as preliminary data for developing larger collaborative research proposals. The collaboration has strengthened institutional links between the partner groups.



Team discussion at Goethe University Frankfurt



Prof Prakash with Prof Weigert at Goethe University Frankfurt

IGSTC Unplugged: Echoes Across the Digital Sphere

Indo German Science & Technology Centre

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Hon'ble Prime Minister **Narendra Modi** visited the greenhouse facility for protected cultivation supported under the IGSTC 2+2 project 'senservit' at the **Indian Agricultural Research Institute**, New Delhi, during his recent programme showcasing India's advancements in agricultural science and technology.

Under the Indo-German Science & Technology Centre (IGSTC), the project 'Senservit: Development and evaluation of automated sensors for a highly-efficient nutrition management system in indoor vertical farming' has successfully developed and demonstrated advanced, IoT-enabled sensor technologies for precision fertigation management.

These sensors now enable:
Automated real-time monitoring of essential nutrients (NPK, Ca, Mg), EC, and pH.
Smart control of fertigation systems through closed-loop IoT integration.
Efficient vertical farming, enabling sustainable production of vegetables and high-value crops in urban and climate-restricted regions.

The project exemplifies the success of Indo-German collaboration in transforming research into real-world agricultural innovation.

The Senservit project brings together project partners including Dr. Murtaza Hasan from the Indian Agricultural Research Institute, Mr. Shivendra Singh from Barton Beere Pvt. Ltd., Prof. Hakeem Mameji from Hochschule Weihenstephan-Triemsee, Dr. Mohamed Bourouah from Hahn-Schickel, and Mr. Georg Brückner from Sondermaschinenbau Brückner GmbH.

The Prime Minister's visit to the Senservit demonstration site highlights how Indo-German R&D partnerships under IGSTC are driving innovation towards smart, resource-efficient, and climate-resilient farming solutions for a sustainable future and food security.

Press Information Bureau - India | Dr. Jitendra Singh India DST | Bundesministerium für Bildung und Forschung



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Open Call - Indo-German Bilateral Workshops

Looking to build impactful Indo-German research collaborations and bring researchers together for thematic exchange? The Bilateral Workshops grant by the **Indo German Science & Technology Centre (IGSTC)** aims to provide a platform for scientific dialogue and foster future academia-industry partnerships.

Thematic areas could include topics of mutual interest between India and Germany, such as sustainability, including new energy materials, agriculture, sensor materials & technologies, sustainable & resilient buildings, alternative energy storage system, and more.

Who is eligible?
Researchers holding regular positions in:
• Public or private non-profit R&D organisations
• Universities and institutes of higher education

Financial support largely covers organizational costs, as well as travel and accommodation for participants.

Applications are accepted throughout the year.
Next cutoff date: 31st January 2026

Learn more: https://linkd.in/dey_4CAF

Bundesministerium für Bildung und Forschung Department of Science & Technology, Government of India, India DST, DLR Projektträger DAAD India Research in Germany Internationales Forschungsmarketing

#IndoGerman #IGSTC #ScienceDiplomacy #ResearchFunding #InternationalCollaboration #CallForProposals #DST #BMFB



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Today, I had the pleasure of welcoming H.E. Dr. Silke Launert, Parliamentary State Secretary, BMFT, & the distinguished German delegation at the bilateral meeting between the two countries.

India and Germany share a remarkable S&T partnership of over five decades, grounded in innovation, scientific excellence, and sustainable development. From early collaborations to the creation of Indo-German Science & Technology Centre, our cooperation has steadily grown. In 2022, **India DST** and the German Research Foundation established a new joint funding mechanism to support Indo-German International Research Training Groups (IRTG).

Our discussions focused on expanding research collaboration and deepening joint participation in major international science infrastructures such as FAIR and DESY.

As the India-Germany Joint Science & Technology Committee (JSTC) Meeting resumes after several years, this 12th meeting marks a vital step toward revitalizing our bilateral engagement and shaping future-ready, mission-driven scientific cooperation.



Bundesministerium für Bildung und Forschung

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In einer Welt mit wachsenden geopolitischen Herausforderungen ist unsere strategische Partnerschaft mit Indien wichtiger denn je! So die Parlamentarische Staatssekretärin Dr. Silke Launert.

Das gilt gerade auch in Wissenschaft und Technologie, wo wir auf über 50 Jahre Zusammenarbeit seit dem WTZ-Abkommen von 1974 zurückblicken können. Um dies zu bekräftigen, war unsere Parlamentarische Staatssekretärin jetzt vor Ort in Indien. „Der Innovationshub in Forschung und Entwicklung ist beidseitig und. Gemeinsam werden wir die vertrauensvolle Kooperation in Zukunftsfeldern weiter ausbauen.“

Im Fokus stand die 12. WTZ-Sitzung zusammen mit Staatssekretär Prof. Karandikar vom Indischen Wissenschaftsministerium **India DST**. Außerdem traf Staatssekretärin Launert exzellente Wissenschaftlerinnen mit Stipendien des Indo-German Science & Technology Centre (IGSTC) – dem Flaggschiff der Kooperation zwischen dem BMFT und DST. Sie besuchte die Indian Space Research Organisation (ISRO), das Indian Institute of Space (IISc) als einer der besten Forschungseinrichtungen Indiens sowie europäische Firmen mit indischen Niederlassungen wie Airbus, Bosch und Infineon Technologies. Eindrucksvoll war auch die HighTech-Messe „Bangalore TechSummit“, auf der auch Deutschland über Bayern und Nordrhein-Westfalen vertreten war.

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Web Talk Series: Research Careers in Germany

Next issue: Join us for these insightful webinars highlighting career pathways and funding opportunities in the German research ecosystem.

07 October 2025 | 16:00 IST / 12:30 CEST
A Pathways in Public Health

Gain firsthand insights into Germany's public health research landscape from experts working at the intersection of biomedical research, healthcare and public health. Explore career pathways spanning fundamental, clinical and applied research.

Speakers:
• Dr. Charlotte Schwenner – Helmholtz Centre for Infection Research
• Prof. Dr. Hens, Wouter – University of Leuven & DAAD Global Center (HACS-UP)
• Dr. Subhanshu Mandal – Indian Institute of Technology, Kharagpur
• Pragnat Saravali – Max Delbrück Center
• <https://linkd.in/gwQ2V7Q2>

08 October 2025 | 16:00 IST / 12:30 CEST
Funding Your Research and Research Days in Germany

From short-term research stays to doctoral studies and long-term collaborations, gain insights into scholarships, bilateral programs, and fellowships for mobility of international researchers in Germany.

Speakers:
• Dr. Franziska Langer – Deutsche Forschungsgemeinschaft (DFG) – German Research Foundation
• Anurupa Dhill – DAAD India
• Dr. Kunal Banerjee – Indian Institute of Science Education & Research (IISER), Kolkata and Alexander von Humboldt Foundation
• Hans Westphal – Indo German Science & Technology Centre / DLR Projektträger
• Aasthena J – DWIH New Delhi
• <https://linkd.in/gwQ2V7Q2>

09 October 2025 | 16:00 IST / 12:30 CEST
Opportunities for Women in Research

Hear from researchers and diversity professionals working at the intersection of science, technology and gender equity about the opportunities, challenges and support systems that empower women to lead and thrive in Germany's cutting-edge research and tech landscape.

Speakers:
• Dr. Ananta Dasgupta, PhD – RWTH Aachen University
• Dr. Greshma Thirumala – Indian Institute of Technology, Madras
• Franka Logemann – Max Planck Society
• Anurupa Dhill – DAAD India
• Dr. Raju Lash – DAAD German Academic Exchange Service
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Register soon and see you there!

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Fraunhofer IFAM

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Our colleague Dr.-Ing. Frederike Langer is delighted to welcome Dr. Shristi Sharma to Fraunhofer IFAM.

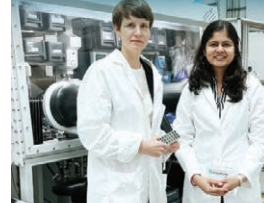
Dr. Sharma will be working as a postdoctoral researcher in the Electrical Energy Storage department at Fraunhofer IFAM for 12 months as part of an industrial fellowship from the Indo-German Science & Technology Centre (IGSTC). The fellowship enables young researchers at the doctoral or postdoctoral level to gain industrial experience in Germany. IGSTC promotes cooperation between research and industry in India and Germany through its programs.

The Electrical Energy Storage department develops materials, components, and cells for the next generation of electrical energy storage. The Process and Production Engineering group at Dr. Sharma is working with, evaluates production processes for stack-up of all-solid-state battery production, addressing TRL 4-6. She will focus on production techniques for surface-based composite cathodes for all-solid-state batteries.

Dr. Sharma is staying with the group as part of Fraunhofer IFAM's Braunschweig 2500 series as a joint research and transfer platform for the development of system solutions for batteries and fuel cells in the field of electric mobility, which are to be further developed into prototype-capable solutions and systems as components of the energy transition. The new 2500 series building will be opened in 2026.

We wish Dr. Shristi Sharma all the best in her work in the Electrical Energy Storage department.

#FraunhoferInnovation #ElectricalEnergyStorage #Materials #Battery



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Expanding Horizons, Strengthening Cooperation: The IGSTC Story of 2025



Dr Kusumita Arora

Director

As the curtain falls on 2025, the Indo-German Science & Technology Centre (IGSTC) stands at the confluence of purpose and progress—celebrating a year that not only strengthened enduring partnerships but also redefined the contours of bilateral innovation. From catalysing high-impact Industry–Academia collaborations to advancing the cause of Women in STEM, from nurturing emerging scientific talent to enabling seamless global knowledge exchange—IGSTC has continued to translate vision into action.

In her year-end message, Director Dr. Kusumita Arora reflects on this journey with clarity and conviction—highlighting the Centre’s evolving contribution as a bridge between ideas and impact, research and deployable solutions, and talent and opportunity.

This remarkable trajectory has been made possible through the unwavering support of the Department of Science and Technology (DST), Government of India, Federal Ministry of Research, Technology and Space (BMFTR), Federal Republic of Germany, and a vibrant scientific community whose collective commitment continues to drive excellence.

As IGSTC steps into 2026, it does so with renewed ambition—to strengthen strategic partnerships, accelerate translational research, and build a future where Indo-German cooperation becomes a global benchmark for innovation-led growth.

The journey continues towards a stronger, sharper, and more future-ready than ever before.

Indo-German Science & Technology Centre

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