

In the News

Dr Jitendra Singh Inaugurates National Biobank and India's own Longitudinal Population Data study at CSIR-IGIB

"Our conditions are complex and deeply heterogeneous. This is where the Biobank becomes vital – it allows us to decode that complexity," says Dr Jitendra Singh.



Union Minister of State (Independent Charge) for S&T and Vice President of CSIR, Dr Jitendra Singh, inaugurated the state-of-the-art Phenome India “National Biobank” at the CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB), New Delhi in the capital on 6 July 2025. The newly launched facility marks a significant stride towards building India's own longitudinal health database and enabling personalised treatment regimens in future.

The Biobank will serve as the backbone of a nationwide cohort study, collecting comprehensive genomic, lifestyle, and clinical data from 10,000 individuals across India. Drawing inspiration from the UK Biobank model, the Indian version is tailored to capture the country's unique diversity across geography, ethnicity, and socio-economic backgrounds. Researchers believe the initiative will aid early diagnosis, improve therapeutic targeting, and

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bolster the fight against complex diseases such as diabetes, cancer, cardiovascular ailments, and rare genetic disorders.

“Today, we hold the promise of a future where every Indian may receive individualised treatment tailored to their genetic makeup, lifestyle, and environment,” Dr Jitendra Singh said while addressing the scientists and researchers at CSIR-IGIB. “This transition to personalised healthcare is no longer theoretical — it is becoming reality, driven by indigenous innovations.”

Reflecting on the unique health challenges faced by Indians, Dr Jitendra Singh noted the high prevalence of central obesity, a risk factor often underestimated. He highlighted past research showing that seemingly lean Indians may carry disproportionate fat around their waist, underlining the need for population-specific

health strategies. “Our conditions are complex and deeply heterogeneous. This is where the Biobank becomes vital — it allows us to decode that complexity,” he said.

The Minister emphasised that India’s scientific landscape is evolving rapidly, citing recent advances in quantum technology, CRISPR-based genome editing, and the fight against Antimicrobial Resistance (AMR).

“India is no longer lagging behind — we are among the early adopters, sometimes even ahead,” he said. The Biobank, he added, will complement these efforts by generating the kind of high-resolution data that can power AI-driven diagnostics and gene-guided therapies.

Dr Jitendra Singh also called for deeper collaboration between research institutions, government departments like the Department of Biotechnology, and industry partners, particularly in areas such as AMR and drug development. “Research must extend beyond the lab — it must find takers in the market and beneficiaries in society,” he noted. The Phenome India Project, under which the Biobank has been launched, is designed to be a long-term, data-rich study tracking the health trajectories of individuals over several years. It will help scientists uncover disease patterns, gene-environment interactions, and response to therapies — all within the Indian context.

Dr N Kalaiselvi, Director General of CSIR and Secretary, DSIR, commended the launch of



the Biobank as a bold step toward India's self-reliance in healthcare data. Describing the initiative as a “baby step” with the potential to evolve into a global benchmark, she noted that the diversity and depth of the Indian cohort data could one day rival or even surpass global counterparts like the UK Biobank.

Dr Kalaiselvi highlighted CSIR's holistic efforts in areas like sickle cell anaemia through indigenous CRISPR-based therapies, affordable diagnostics, and collaborative interventions with tribal communities, while urging IGIB scientists to continue setting national examples in data-driven, people-centric research.

Speaking at the occasion, Dr Souvik Maiti, Director of CSIR-IGIB, reflected on the institute's pioneering role in genomics over the past two decades. “We were the first institute in India to begin

decoding the human genome at a time when sequencing tools were practically non-existent,” he said. Highlighting achievements such as the development of over 300 genetic diagnostics for rare disorders, extensive work on COVID-19 genome sequencing, and the launch of India's first drug genome project, he emphasised CSIR-IGIB's mission of using global technologies to solve local health challenges.

Dr Maiti also pointed to ongoing work on women-centric studies, breast cancer genomics, and the development of indigenous CRISPR-based therapies for sickle cell disease, adding that IGIB's research now extends to domains like space biology and AI-based pilot fitness assessments in collaboration with the Indian Air Force.

Source: PIB

Dr N Kalaiselvi commended the launch of the Biobank as a bold step toward India's self-reliance in healthcare data.

Achieving a Milestone – First Flowering of Heeng

Recently, the first flowering of Heeng (Asafoetida) on Indian soil marked a historic achievement. CSIR-Institute of Himalayan Bioresource Technology CSIR-IHBT), Palampur, introduced this high-value spice crop for cultivation in our country through the ICAR-NBPGR (National Bureau of Plant Genetic Resources), New Delhi. This breakthrough is the result of persistent efforts, taking it from seed procurement, germination standardisation, tissue culture, to farmer training. This is



*In a breakthrough,
for the first time,
Heeng blooms on the
Indian Soil.*

a long-term effort with constant monitoring, and the institute overcame significant biological and logistical challenges, which ultimately led to the first flowering and seed set of heeng at Palampur, approximately five years after the initial planting. This milestone confirms the successful adaptation of this valuable spice, heeng, to the Himalayan conditions of the nation. Flowering is a key step toward establishing a domestic seed production chain, which reduces reliance on imports and enables scalable cultivation.

The journey began with the realisation of the economic and agricultural potential of the Heeng, which led to the initiation of the mission to introduce Heeng cultivation. This effort was made to reduce import dependency and increase farmer incomes in the cold desert regions of the Indian Himalayas, particularly in Lahaul and Spiti, Himachal Pradesh. As a trial, Heeng was planted for the first time on 18 October 2020 at Lahaul and Spiti district in

Himachal Pradesh at an altitude of about 11 thousand feet above sea level. Earlier, CSIR-IHBT procured seeds of six accessions of asafoetida on 25 October 2018 and 4 December 2018 vide import permit Nos. 318/2018 & 409/2018, respectively. The institute started growing these seeds under the vigil of NBPGR, New Delhi, marking it was then the first effort in the country in the last 29 years.

Heeng is a widely used common ingredient in almost everyone's kitchen. It is the flavour of many Indian cuisines. In spite of being such a popular crop, it is not produced in India, but rather imported from Afghanistan, Iran, and Uzbekistan. The Heeng is a perennial plant that is native to the deserts of Iran and the hills of Afghanistan. In these places, it is grown in considerable amounts. However, the initiatives taken by CSIR-IHBT aimed at addressing the associated challenges, reduce import dependency, and empower farmers in the Himalayan region.

Two-day Workshop on Unified Airspace Management & Allied Technologies

India has set the goal of becoming a global drone hub by 2030, and it has immense potential for emerging as a major contributor to cargo drones and air taxis. This workshop on "Unified Airspace management and allied technologies" was organised jointly by CSIR-National Aerospace Laboratories (CSIR-NAL) and

CSIR-National Physical Laboratory (CSIR-NPL) during 17 and 18 July 2025. This workshop was designed as a platform to bring together technologists, industry, academia, regulators, operators and policy-makers to chart a roadmap for the future and to address the challenges in building the ecosystem for urban air mobility.



The key objectives of this workshop were:

- To initiate collaboration amongst policy makers, R&D organisations, academia and industry.
- Exploring the areas for applied research relevant to urban air mobility technologies, such as guidance and control systems, geo-fencing algorithms, GPS denied navigation, communication technologies, sense and avoid systems, and anti-drone systems.
- Identify policy, R&D initiatives, ecosystem, technology development and technology validation gaps for UAM and integration of drones in Indian airspace
- Formulation of a roadmap for UAM/AAM operations and airspace integration in India.
- Establish a National Centre of Excellence on Urban and Advanced Air Mobility (U/AAM) and Integration of drones in Indian airspace.

CSIR-NAL is proposing to work on different aspects of Urban Air Mobility, such as the design and development of a

two-seater urban air taxi and evolving technologies for Urban Air Traffic Management and the Unified Airspace Management. Dr Abhay A Pashilkar, Director, CSIR-NAL, welcomed the dignitaries for their participation and set the pace for the first day of the workshop.

Dr Hanumanth Rao, DG, SAMEER, complimented the team for organising the workshop as it is the need of the hour. He gave a brief overview of the existing communication technologies like 4G and 5G, which are currently used by the various ecosystems. However, for the present context, he emphasised exploratory research on non-terrestrial communication technologies. Keeping in mind the complex interactions, that are anticipated between the aircrafts, rotor crafts, swarm of unmanned drones and the futuristic air taxies, he gave a call to the research and academic community to jointly carry out translational research on the various research verticals associated with the non-terrestrial communications like design and development of light weight compact antennas

Dr Kalaiselvi, Secretary DSIR & DG-CSIR, highlighted the challenges in air mobility, starting from aircraft, helicopters and a huge number of simultaneously operating drones of various kinds.

Dr Somnath, Former Secretary, DoS, indicated that the workshop is the first step in the right direction. A sustainable effort is required to continue with funding from the concerned stakeholders.



with high bandwidth and gain, implementation of grounding schemes in composite aircraft bodies, doppler studies in moving control stations, on-board Identification of Friends and Foes technologies, soft kill and hard kill techniques for rogue drones in civil airspace, counter-drone technologies, protocols for the non-terrestrial which are dynamically changing. He further encouraged collaborative work towards these multi-disciplinary research verticals and offered his continuous support to any collaborative initiatives.

Dr Kalaiselvi, Secretary DSIR & DG-CSIR, highlighted the challenges in air mobility, starting from aircraft, helicopters and a huge number of simultaneously operating drones of various kinds. Hence, there is a need to synergise various elements of the urban airspace. This can be realised by initiating research in areas of Sustainable Mobility using AI, a Blockchain-based framework, AI agents, and a virtual control room to ensure safety and security. She indicated that the workshop would help to know the latent challenges when attempts are made to

customise these research verticals for the unified airspace management. She clarified that CSIR does not work in a silo, but as a team with all research organisations, line ministries, and academia for a noble cause. She said that while the first step is being taken today by providing a platform for exchanging thoughts and ideas and coming out with a roadmap for the research community, it is desirable that we all come together after a year and take a stock of the progress that would be jointly made based on the roadmap.

Dr Somanath, Former Secretary, DoS, complimented the gathering on organising the timely workshop, which would set the pace for taking up research initiatives to address the challenges associated with India-centric unified airspace management and allied technologies and subsequently extend it to the global community. He emphasised regulatory and policy requirements, identification of feasible technologies, addressing challenges of BVLOS, and exploring the realisation of a common framework by combining communication technologies, image-based object identification

and tracking, multi-sensor data fusion capabilities for a fully traceable architecture for seamless communication with adequate safety levels. He cautioned that this effort would require setting up multiple test facilities and simulators. He encouraged CSIR-NAL to take the lead in the design activities, helping the regulatory bodies to frame policies, establishing the required research infrastructures, contributing to the HR training along with academia, indigenisation of the software and hardware and connecting all the stakeholders. Dr Somnath indicated that the workshop is the first step in the right direction. A sustainable effort is required to continue with funding from the concerned stakeholders.

Shri Samir Kumar Sinha, Secretary, Ministry of Civil Aviation, briefly gave an overview of the expanding aviation market in India. He highlighted the various initiatives of MOCA like the Drone Rules, 2021, Production Linked Incentives (PLI) schemes for drone, National Airspace Mapping and UTM integration plans, regulatory reforms & implementation

mechanisms, and collaboration for seamless Civil-Military Airspace usage. On the dynamically changing Indian airspace, which is not just confined to aircraft or helicopters, but also has witnessed the entry of unmanned drones with roles in different sectors, he expressed his concerns about the complex Indian urban space.

The near future addition of manned air taxis would mandate the introduction of safety policies and a stringent certification framework. Keeping all these challenges in mind, Secretary MOCA emphasised taking up Mission Mode actions jointly by MoCA, CSIR, DGCA, Start-ups, Defence services, academia, public and private UTM providers on a war-footing basis to realise the Government's vision of Viksit Bharat 2047. The workshop would enable the visions to become an actionable roadmap and emphasised not to wait to adapt to the future, but to lead to future development in an inclusive manner. He assured of full support of MOCA to facilitate any such collaborative initiatives taken by research organisations like CSIR-NAL.

Shri Samir Kumar Sinha, Secretary, Ministry of Civil Aviation, briefly gave an overview of the expanding aviation market in India.



Peninsular India: How its Biodiversity Changed through Millions of Years

Peninsular India, a tropical region in Southern Asia, extends from the Aravalli Mountains southwards, including the Satpuras and Vindhya, the Eastern Ghats, the Deccan Plateau, and a global biodiversity hotspot – the Western Ghats. It harbours unique and highly diverse groups of animal and plant species, many of which do not occur anywhere else in the world. They are called endemic species. But how did this high endemic diversity originate in peninsular India, and what factors contributed to it?

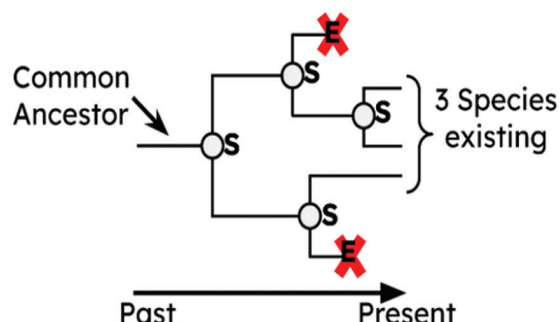
A recent study, from Dr Jahnavi Joshi's lab at the CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB), Hyderabad, published in *Ecology Letters*, uncovers how species of life forms evolved and disappeared across South Asia and the wider Asian region. By analysing 33 well-studied groups of animals and plants using mathematical models, the team traced patterns of species formation (speciation) and loss (extinction) across the region. Such a broad-scale analysis has been done for Asia for the first time. "Each of the groups

The recent study published in Ecology Letters uncovers how species of life forms evolved and disappeared across South Asia and the wider Asian region.

Biodiversity and diversification in India



- Speciation (**S**) increases biodiversity
- Extinction (**E**) decreases biodiversity
- Diversification = **S - E**



- Diversification in India was affected by
 - Change in temperature
 - Mid-miocene aridification

comprises closely related endemic species, and a common ancestor that existed at some point in time. Through millions of years, the common ancestors' descendants spread across the landscape and diversified into multiple species, many of which exist today," explained Dr Joshi.

The researchers found a high disparity in how species are formed or lost across groups of animals and plants. They found evolutionarily related groups, such as different kinds of lizards, exhibited similar rates of forming and losing species. They also noted that half of the animal and plant groups accumulated diversity gradually over millions of years. "The stability of the tropical forest ecosystems in peninsular India has allowed for such steady diversification. As a result, this area has served as a refuge shielding species from severe climate changes," commented Dr Joshi.

The stability of this ecosystem is surprising given the turbulent geo-climatic past of the landmass. "Peninsular India was once part of the Gondwanaland supercontinent with land masses like Africa and Australia. It broke away around 100 million years ago, drifted northward, and eventually collided with Asia, forming the Himalayas. Despite drastic geo-climatic shifts from this movement, the biodiversity in this region has changed rather steadily. This highlights the fascinating resilience of its forest habitats," added Mr Pragyadeep Roy, the first author of the study.

The remaining half of the groups experienced fluctuating rates of new species forming and losing over time. "The global temperatures have been very dynamic across several million years, and our analyses suggest that Earth's temperature strongly influences how species are formed in many groups," explained Mr Roy. The study found that some groups experienced abrupt changes in the rates of forming new species within the time range of 11 to 3 million years ago. "This period was marked by high aridification and monsoon seasonality in peninsular India with a major expansion of grasses, leading to the shrinkage of evergreen forests to the Western Ghats and the mountaintops of the Eastern Ghats. These events certainly inflicted changes in the ranges and habitats of organisms, disrupting their earlier evolutionary trends," explained the researchers.

In summary, the peninsular India plate experienced varied trajectories of speciation among different life forms. Some were influenced by the stability of tropical ecosystems, and others were driven by past fluctuations in temperature and geo-climatic changes that occurred between 11 and 3 million years ago. These insights into how past climate and habitat stability influenced biodiversity can prove crucial in devising effective conservation strategies, especially in light of today's anthropogenic activities and climate change.

The researchers found a high disparity in how species are formed or lost across groups of animals and plants.

CSIR-NCL and Covestro India Collaborate to Tackle Polyurethane Waste

The collaboration marks the start of a Corporate Social Responsibility (CSR) research project focused on developing novel chemical upcycling technologies for Polyurethane (PU) waste.



Dr Ashish Lele, Director, CSIR-NCL; Mr Avinash Bagdi, Director, Covestro (India) Private Ltd and their teams during the occasion of signing the agreement

In a significant step towards sustainable plastic management and circular economy, CSIR-National Chemical Laboratory (CSIR-NCL), Pune, has signed an MoU with Covestro (India) Private Limited to develop sustainable polyurethane upcycling solutions on 15 July 2025. The collaboration marks the start of a Corporate Social Responsibility (CSR) research project focused on developing novel chemical upcycling technologies for Polyurethane (PU) waste, an urgent environmental challenge with limited current recycling solutions.

Polyurethane, a versatile class of polymers widely used in shoes, mattresses, furniture, adhesives, and automotive applications, poses unique end-of-life challenges due to its complex and often cross-linked structure. Traditional recycling approaches fall short in terms of efficiency, scalability, and sustainability. CSIR-NCL, with its expertise in polymer science and waste plastic deconstruction, has emerged as a frontrunner in addressing these issues.

Under this joint initiative, CSIR-NCL will explore both

conventional and electrochemical strategies for PU depolymerisation, transforming waste polyurethane into valuable feedstock chemicals. The project aims to overcome the limitations of current PU recycling methods, which include high energy demands, property degradation, and limited applicability.

Dr Ashish Lele, Director, CSIR-NCL, said, “CSIR-National Chemical Laboratory is excited to partner with Covestro (India) in this ground-breaking initiative to develop novel chemical upcycling methods for polyurethane waste. The conventional and electrochemical strategies we’re developing address the critical limitations of current recycling technologies and align perfectly with our shared vision of a circular

economy. This collaboration represents a significant step toward sustainable plastic management in India and globally, with the potential to transform polyurethane waste into valuable chemical resources.”

The partnership with Covestro (India), one of the global leaders in sustainable materials, brings together complementary strengths-CSIR-NCL’s cutting-edge scientific research and Covestro’s industrial vision and commitment to full circularity. This CSR-backed initiative builds on CSIR-NCL’s legacy of advancing chemical science and engineering innovations to address national and global sustainability challenges through impactful partnerships between industry and academia.

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CSIR-NEERI’s Technology Transfer under the Jal Jeevan Mission

As part of the national initiative under the Jal Jeevan Mission, CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur, has made a significant contribution through the successful technology development and transfer of a GIS-enabled IoT dashboard system. This innovation is a key outcome of the collaborative project titled “Affordable IoT-enabled Water Service Delivery Measurement and Monitoring Sensing System for Rural Deployment.”

The GIS-enabled IoT dashboard system was developed by Er Asheesh Sharma, Principal

Scientist, along with a team of researchers at the IT Cell of CSIR-NEERI. It is a robust software platform that integrates environmental sensing with advanced data visualisation tools. The core innovation lies in a GIS-integrated IoT dashboard capable of real-time and historical monitoring of rural potable water supply systems. The dashboard system has been licensed and transferred to M/s Biomimicry Technologies Pvt. Ltd, marking a successful commercialisation of CSIR-NEERI’s in-house technology.

This solution supports data-driven decision-making for

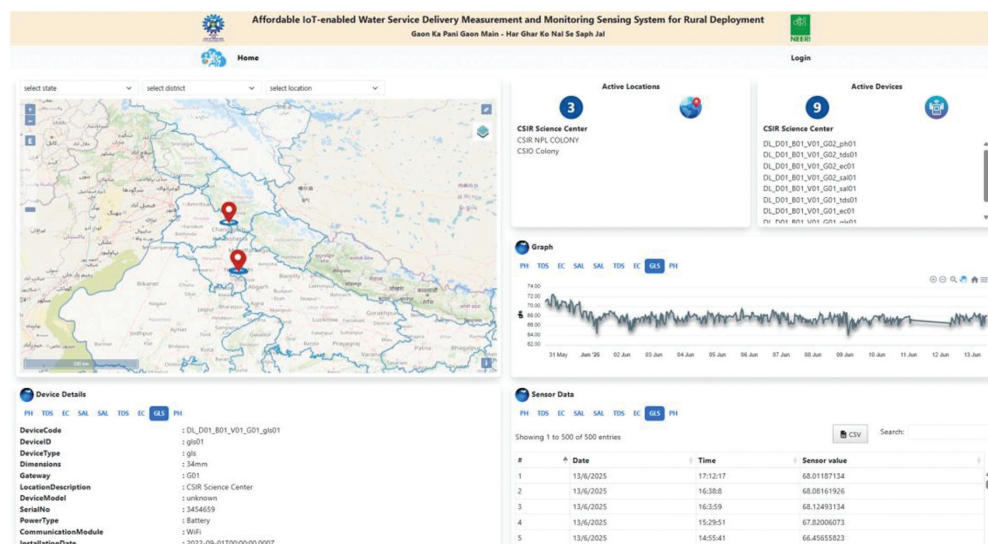
GIS-enabled IoT dashboard system is a robust software platform that integrates environmental sensing with advanced data visualisation tools.



water resource management in rural areas, aligning directly with the Jal Jeevan Mission's vision: "Gaon Ka Pani Gaon Mein – Har Ghar Ko Nal Se Swachh Jal."

The system architecture integrates:

- LoRa protocol for long-range, low-power data transmission, ideal for sparsely populated rural regions.
- Cloud computing services for scalable data storage, processing, and management.
- GIS-enabled dashboard to provide spatially visualised, real-time monitoring of water service delivery.
- Environmental analytics for assessing water quality and distribution patterns.



GIS-Enabled IoT Dashboard

The dashboard enables remote monitoring of multiple parameters, offering authorities and stakeholders an actionable overview of water availability, quality, and usage trends in rural areas.

This technology transfer reflects the synergistic collaboration among five CSIR laboratories, with CSIR-CSIO acting as the nodal lab. CSIR-NEERI's specialised input in

environmental systems and software integration played a vital role in bringing this innovation to fruition.

By supporting equitable and sustainable potable water delivery, this innovation strengthens the Jal Jeevan Mission's core mandate of ensuring "clean tap water in every rural household."

The GIS-enabled IoT dashboard can be accessed at: hargharnal.neeri.res.in

CSIR-NIIST and NECTAR Join Hands to Establish Vegan Leather Manufacturing Units in Northeast India



In a significant step towards promoting sustainable technologies and circular economy in India's North-east, the CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Thiruvananthapuram, signed MoU with the North East Centre for Technology Application and Reach (NECTAR), an autonomous body under the Department of Science & Technology, Government of India on 23 June 2025.

The MoU facilitates the transfer of CSIR-NIIST's plant-based vegan

leather technology to NECTAR for establishing common facility centres and manufacturing units in Meghalaya and other north-eastern states.

These centres will support farmers, MSMEs, and women-led self-help groups in converting agro-waste into high-value, sustainable products. The MoU was exchanged between Dr C Anandharamakrishnan, Director, CSIR-NIIST, and Dr Arun Kumar Sarma, Director, NECTAR, in the presence of Dr N Kalaiselvi, Director General, CSIR, during

Speaking on the occasion, Dr Kalaiselvi emphasised the pressing need to address the growing agro-waste challenge in Northeast India.

By harnessing locally available agro-waste, the partnership aims to promote regional entrepreneurship, generate employment, and foster environmentally responsible manufacturing practices in the Northeast.

a formal ceremony held at CSIR Headquarters, New Delhi.

Speaking on the occasion, Dr Kalaiselvi emphasised the pressing need to address the growing agro-waste challenge in Northeast India. “Agricultural residues such as rice straw, banana and pineapple waste are typically discarded or burned, leading to air and water pollution, soil degradation, and biodiversity loss,” she said. “CSIR-NIIST’s technology provides a sustainable solution by converting this biomass into plant-based leather, replacing 50–70% of the chemicals used in synthetic leather and significantly reducing the environmental footprint of the leather industry,” she added.

This initiative is aligned with national missions like Atmanirbhar Bharat, Make in India, Innovate in India, and the Swachh Bharat. By harnessing locally available agro-waste, the partnership aims to promote regional entrepreneurship, generate employment, and foster environmentally responsible manufacturing practices in the Northeast.

NECTAR will lead the implementation through the

development of common manufacturing centres, with a focus on creating inclusive economic opportunities and uplifting local communities, especially women entrepreneurs. In a parallel stride toward sustainable innovation, CSIR-NIIST also announced a Joint Declaration of Intent (JDI) with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) under the Indo-German Energy Programme. This collaboration will establish a Centre of Excellence (CoE) for Building Integrated Photovoltaics (BIPV) — a transformative solar technology seamlessly embedded into roofs, walls, and windows. Through joint training, research, testing, and standardisation, CSIR-NIIST and GIZ India aim to fast-track BIPV innovation, support local manufacturing, and unlock over 309 GW of clean energy potential.

This initiative reinforces India’s ambition to lead the world in solar-integrated infrastructure and green buildings.

Source: PIB

Events

CSIR-IIIM Celebrates World Bioproducts Day

The CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, celebrated World Bioproduct Day on 7 July 2025 with a simple yet impactful event

aimed at promoting awareness of bioproducts and their role in sustainable development. The event brought together scientists, students, startups, and key



stakeholders to highlight the critical importance of bioproducts in achieving a cleaner, greener, and more economically vibrant future.

Delivering the keynote address, Dr Zabeer Ahmed, Director, CSIR-IIIM, emphasised the national importance of the BioE3 Policy-Biotechnology for Economy, Environment, and Employment. He noted that the policy provides a strategic framework for advancing high-performance biomanufacturing and scaling up bio-based innovations across India. Dr Ahmed highlighted the unique advantage of the Jammu, Kashmir, and Ladakh region as a biodiversity hotspot-often referred to as the 'Bio-mass State of India' due to its rich reservoir of medicinal, aromatic, floral, and microbial biodiversity. "With sub-tropical zones in Jammu, temperate zones in Kashmir, and cold deserts in Ladakh, this region offers immense potential for bio-based innovations," he said.

A key moment of the event was the BioE3 Pledge, led by Dr Ahmed, where attendees,

including scientists, researchers, entrepreneurs, and media representatives, committed to supporting sustainable bioproduct development. Dr Ahmed reaffirmed CSIR-IIIM's continued support for innovation through its Bio-Incubation Centre, mentorship network, and robust innovation ecosystem. Dr Saurabh Saran, In-Charge, IIIM-Technology Business Incubator (TBI), outlined the vision of the BioE3 policy and CSIR-IIIM's thematic focus areas, including Aroma Mission, Phytopharmaceuticals, and livelihood-linked innovations. He noted that over 125 startups have been incubated through CSIR-IIIM's TBI platform, resulting in the development and commercialisation of more than 20 bioproducts.

A major highlight of the day was the launch of a new honey product by CSIR-IIIM incubatee and entrepreneur Mr Aditya Sumbriya, founder of M/s Pahadi Amrit. Sharing his startup's journey "from the Himalayas to national markets", Mr Sumbriya showcased

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*Dr VK Paul,
Hon'ble Member,
NITI Aayog, GoI,
complimented the
institute on its
glorious journey
and presented
his views on the
importance of
bioresources and
livelihood.*

how the venture sources honey and natural products from the Himalayan belt while adhering to CSIR-IIIM's stringent quality and standardisation protocols. Today, Pahadi Amrit distributes its products both across India and internationally.

The event reinforced CSIR-IIIM Jammu's leadership in the bioproduct domain and its strong commitment to the BioE3 mission, aimed at catalysing economic growth, environmental sustainability, and

employment generation through biotechnological innovation. Organised under the patronage of Dr Zabeer Ahmed, the event was held under the overall supervision of Er Abdul Rahim. The inaugural session proceedings were conducted by Dr Saurabh Saran, Principal Scientist, while Dr Suphal B Gupta, Senior Principal Scientist and Nodal, Aroma Mission, delivered the formal vote of thanks. The programme was graced by several students and eminent scientists.

The CSIR-IHBT Celebrates its 43rd Foundation Day



The CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur (HP), celebrated its 43rd foundation day on 2 July 2025 with fervour and gaiety. Dr VK Paul, Hon'ble Member, NITI Aayog, Government of India, was the Chief Guest of the function. He complimented the institute on its glorious journey and presented his views on the importance of bioresources and livelihood. He noted that they have the potential

to revolutionise socio-economy and emphasised the NITI Aayog's initiatives and their implications, especially in the Himalaya. He further discussed Women health and malnutrition.

Dr Paul stated that Science & Technology is a key pillar to Viksit Bharat and exhorted the gathering to rise to the occasion in making India a global leader. He wished the institute the very best in its endeavours.

Dr TR Sharma, National Professor and Former DDG ICAR, delivered the foundation day lecture. He emphasised the natural wealth of the Himalaya and shared his insights on rice breeding towards blast resistance and its implications for society, food security, ecology and economy.

Dr Mahesh Kumar Dadhich, CEO of NMPB, delivered the keynote address online, wherein he stressed the diversity of medicinal plants in the Himalaya and the role of NMPB. He also emphasised the promotion, conservation and management of rare and threatened plants.

Dr AK Tripathi, Director, IISER Mohali, the Guest of Honour, stated that science has played a major role in shaping civilisation and forms the basis of societal growth. He highlighted the role of CSIR Aroma mission in local empowerment and establishing a science-society connection.

Prior to these, Dr Sudesh Kumar Yadav, Director, CSIR-IHBT,

welcomed the guests and presented the activities of the institute and how it is boosting bioeconomy, particularly in the Himalayan region. He detailed the floriculture, aroma and millet mission and the benefits that have flowed to society.

On the occasion, the institute signed two Memoranda of Understanding, one with Tripura University, Tripura and the other with Pharmacopoeia Commission for Indian Medicine and Homoeopathy, Ghaziabad. Also, technology transfer agreements were signed with Suraj Shree Chemicals Ltd, New Delhi; Himalaya Apiaries, Una; and HP Phytopulse, Palampur. An agreement with Plant Hub Biotech Pvt. Ltd, Solan (HP) was also signed.

The programme saw the release of the CSIR-IHBT Annual Report 2024-25; books on Economic impact analysis of CSIR-IHBT Technologies, Potential crops for the herbal sector, and a brochure on low chilling varieties of apples. A video and a brochure on the newly implemented CSIR Mission

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on “Bioresource Conservation and Prospection” were also launched.

The programme also witnessed the inauguration of the two-day Herbal Stakeholder Meet being organised by the institute and the release of its souvenir. The meet has three sessions and address by experts.

Also, monk fruit germplasm resource centre and rose demonstration plots were inaugurated as a part of the foundation day celebrations. The celebrations were attended by the farmers, academicians, industrialists, scientists, students and others.

CSIR-NPL Conducts Dr KS Krishnan Memorial Lecture



Delivering the Dr KS Krishnan Memorial Lecture, Prof. Ganapathy Baskaran, Chief Guest, paid tribute to Dr Krishnan's legacy, reflecting on his groundbreaking work.

To commemorate the outstanding contributions of its Founder Director, Dr KS Krishnan, the CSIR-National Physical Laboratory (CSIR-NPL), New Delhi, organises a series of Dr KS Krishnan Memorial Lectures every year. Since 1965, this lecture series has honoured Dr KS Krishnan's pioneering contributions to science and technology by inviting eminent scientists of national and international reputation to deliver lectures. Over the years, this prestigious platform has hosted numerous Nobel Laureates and distinguished scientific leaders.

This year, the Dr KS Krishnan Memorial Lecture was held on 16 June 2025 and also marked the celebration of the International Year of Quantum Science and Technology 2025. Prof. Ganapathy Baskaran, Distinguished Professor

at IIT Madras, Perimeter Institute for Theoretical Physics, Canada, and Matscience, Chennai, graced the occasion as the Chief Guest and delivered the memorial lecture.

Dr Nita Dilawar, Director's representative, CSIR-NPL, highlighted Dr KS Krishnan's remarkable contributions to Indian science and technology. She emphasised the vital role of metrology in industrial growth, global trade, and societal development, and underscored the importance of quantum science and its impact on modern metrology. She also elaborated on the significant contributions of CSIR and CSIR-NPL towards the nation's scientific and technological advancement.

Delivering the Dr KS Krishnan Memorial Lecture titled “Prediction of Room Temperature

Superconductivity in Graphite, KS Krishnan's Favourite Mineral", Prof. Ganapathy Baskaran paid tribute to Dr Krishnan's legacy, reflecting on his groundbreaking work in light scattering, magnetic susceptibility, quantum mechanics, thermionics, heat conductivity, and resistivity of alloys. He elaborated on the fascinating properties of graphite and carbon-based materials and explored the physics underpinning their superconductivity. Prof. Baskaran explained the Bardeen-Cooper-Schrieffer (BCS) and Resonating Valence Bond (RVB) theories of superconductivity and described how room temperature superconductivity in doped graphene and graphite can be better understood through the RVB theory.

As part of the Dr KS Krishnan Memorial Lecture programme, CSIR-NPL also organised a "Workshop on Quantum Metrology, Materials and Technologies" on 10 June 2025. The Chief Guest of the workshop was Prof. T Ramasami, Former Secretary, Department of Science and Technology, Government of India, and Chairman, KS Krishnan Memorial Trust. Research scholars and school internship students of CSIR-NPL actively participated in the workshop, presenting their research findings and topics of interest. During the memorial lecture event, 13 outstanding research scholars and school students were honoured with Best Presentation Awards in recognition of their exemplary contributions.

CSIR-AMPRI Celebrates World Environment Day

CSIR-Advanced Materials and Processes Research Institute (CSIR-AMPRI), Bhopal, with CSIR-Jigyasa celebrated World Environment Day with the theme "Combating Plastic Pollution" on 05 June 2025, under the Chairmanship of Dr Thallada Bhaskar, Director, CSIR-AMPRI, Bhopal.

At the outset, Dr Asokan Pappu, Chief Scientist, CSIR-AMPRI, gave the opening address. He spoke about the importance of the celebration of World Environment Day and the activities of CSIR-AMPRI. Dr (Er) Manish Mudgal, Chief Scientist, CSIR-AMPRI, spoke about the details of the

programme. He talked about the importance of celebrating World Environment Day and emphasised the recycling of materials and the avoidance of the use of plastic.

Dr Sandeep Singhai, Senior Principal Scientist, CSIR-AMPRI,



Events



delivered a talk on “My Earth My Responsibility: Why, What and How?” wherein he spoke about greenhouse gases, the rise in temperature of the Earth and climate change. He emphasised that children are future responsible citizens. They have to understand their responsibility and put in efforts to reduce pollution to save Mother Earth.

Dr Archana Singh, Principal Scientist, CSIR-AMPRI, discussed the “Impacts and Future of Plastic Pollution”, covering the fate and impacts of plastic that dissociates into microplastics, a big threat to the ecosystem.

Students from Kendriya Vidyalaya and Bansal Institute of Science & Technology, Bhopal,

participated in the programme under the CSIR-Jigyasa initiative. A quiz competition was organised for them, and certificates were distributed to the winners of the competition.

Mrs Medha Mili, Senior Scientist, CSIR-AMPRI, Bhopal, moderated the programme. Dr Satanand Mishra, Principal Scientist and Coordinator, CSIR-Jigyasa, CSIR-AMPRI, proposed a vote of thanks.

Students also visited various laboratories/facilities of CSIR-AMPRI, viz. Bamboo Composite Structure ‘Baithak’, Centre for Advanced Radiation Shielding & Geo-polymeric Materials, 3D Printing Laboratory, Parali Workshop and Metal Composite Laboratory.

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