

In the News

Science and Technology Minister Hon'ble Dr Jitendra Singh Dedicates India's First-of-its-kind "CSIR Innovation Complex" in Mumbai



Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, the Prime Minister's Office, the Department of Atomic Energy, the Department of Space and Personnel, Public

Grievances, and Pensions, Dr Jitendra Singh, who is also the Vice President of CSIR, inaugurated India's first-of-its-kind CSIR Mega "Innovation Complex" in Mumbai on 17 January 2025 virtually. He dedicated this

Lauding CSIR, Dr Jitendra Singh said that CSIR has been playing a significant role in the scientific and technological progress of the country.

complex to startups and industry stakeholders.

Dr Jitendra Singh credited Prime Minister Shri Narendra Modi for his vision enabling India to emerge as a global hub for startups and innovation. He said the inauguration of this complex is another landmark step.

Lauding CSIR, the Minister said that CSIR has been playing a significant role in the scientific and technological progress of the country by addressing national needs through its innovative research, industrial and societal partnerships, entrepreneurship, capacity building, and policy formulation.

Dr Singh remarked that CSIR-IC Mumbai is a state-of-the-art innovation-cum-incubation facility with high-end scientific infrastructure and expertise designed to foster critical translational unmet needs (lab-to-regulator and regulator-to-industry domains) for start-ups, MSMEs and CSIR labs and to catalyse faster tech-transfer.

Dr Singh expressed his confidence that the IC-Mumbai will be used to strengthen the business development and tech-transfer activities of CSIR labs, leveraging the unique opportunities offered by Mumbai. This will serve as a hub for the other incubators operating within the CSIR Labs. The IC Mumbai, which is spread over nine floors, is equipped with 24 “ready-to-move” incubation labs and furnished office/networking spaces for innovative start-ups, MSMEs, industry, and CSIR labs. He underscored that

facilities like these embody the spirit of collaboration, innovation, and inclusivity that define our approach to nation-building.

To promote innovation, industry collaboration and employment generation, the six memoranda of association were signed between CSIR and six prestigious institutes such as IIT Bombay, iCreate, NRDC, etc. Additionally, fifty technology transfers took place from CSIR institutes to startups, MSMEs, and other institutions to strengthen startups.

During her address, Dr N Kalaiselvi, Secretary DSIR and DG CSIR, shared that not just in India but CSIR is collaborating internationally with four countries, namely Germany, Norway, Switzerland, etc. She called it the shaping of a decadal dream into reality. Crediting her predecessors, she remarked on the Purple Revolution as a novel, reflecting dedication towards Indigenous technologies.

Dr Kalaiselvi informed that 10-15 technologies are developed by CSIR every year, which are globally appreciated. She informed that five national highways are currently using steel slag technology developed by CSIR.

Referring to India's indigenisation process, she recalled the development of India's indigenous Paracetamol. Another development is the zero liquid discharge plant, which is the first of its kind in India. She emphasised ‘Aatmanirbhar’ and ‘self-reliance’ as the way forward for making India Viksit Bharat @2047.

Dr VK Paul, a NITI Aayog member, recalled the CSIR team's untiring efforts during the pandemic. He termed them as COVID warriors. He categorically mentioned CSIR for developing a CRISPR diagnostic test – the first in the World. Developing Oxygen concentrators and sending them to every remote corner of the country.

Dr VK Saraswat, a member of NITI Aayog, advised taking innovation to industry rather than calling industry to innovation. He said we develop everything in a cost-effective manner, and

we should leverage this to our advantage.

Dr Ram Vishwakarma, who has the lion's share in bringing this complex into reality, informed us that the complex houses 24 labs of 500 sq. ft each, 24 office spaces for startups, and six conference rooms and lounges. The inaugural event witnessed participation from industry leaders, foreign delegates from Norway, Switzerland, and Germany, MSMEs, start-ups, and over 1,000 scientists from CSIR labs across India.

Adapted from PIB

Synchronising India with “One Nation, One Time”

CSIR-National Physical Laboratory (CSIR-NPL), New Delhi, has been the custodian of Indian Standard Time (IST) since the inception of the laboratory. Trademark for IST® has been registered in 2024. However, time has not been legalised in India so far.

To synchronise time across the country, the Department of Consumer Affairs, Food & Public Distribution, through its Legal Metrology Department, has released the Draft Legal Metrology (Indian Standard Time) Rules, 2025, for public consultation. The “One Nation, One Time” initiative aims to establish a comprehensive legal framework for defining, implementing and standardising Indian Standard Time (IST®) as the sole and mandatory time reference across all sectors nationwide. Introducing these rules is a major



step toward nationwide time uniformity, ensuring that all legal, administrative, financial, and commercial activities operate with a single, accurate time reference.

Time synchronisation is crucial in today's digital and

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CSIR-NPL, India's National Measurement Institute (NMI), is responsible (by an act of Parliament) for realising, maintaining, and disseminating IST®.

interconnected world. Inconsistent time references across sectors can lead to inefficiencies, security risks, and operational challenges.

Different organisations and institutions in India currently rely on various time sources, such as GPS signals or independent time servers, creating inconsistencies. Only one legally recognised time reference will ensure alignment across digital systems, businesses, and government operations to enhance efficiency, security, and trust. The draft rules require all government departments, businesses, and commercial entities to synchronise their systems with IST®, prohibiting alternative time references unless legally permitted. Successful implementation will benefit various sectors, especially financial services (trading, digital payments), telecommunication (5G and 6G), smart power grids, and cyber security (diagnostics, secure operations).

CSIR-NPL: Custodian of Indian Standard Time

CSIR-NPL, India's National Measurement Institute (NMI), is responsible (by an act of Parliament) for realising, maintaining, and disseminating IST®. IST® is generated using advanced atomic clocks and satellite links to ensure that it is traceable to Coordinated Universal Time (UTC), the international reference time, with an uncertainty of less than 3 nanoseconds.

The IST® is widely disseminated with millisecond accuracy with NTP (Network Time Protocol) servers at CSIR-NPL. Indian Space



Research Organisation (ISRO) is being given traceability to IST®, with nanosecond accuracy, via satellite links for the Indian Regional Navigation Satellite System (IRNSS), also known as NavIC. NavIC will play a crucial role in enhancing India's time dissemination capabilities and self-reliance in national time traceability satellite (GPS-free) links.

To enhance accessibility to IST®, secondary time laboratories are being established in five Regional Reference Standard Laboratories (RRSLs) by CSIR-NPL and ISRO, with funding from the Department of Legal Metrology. These labs, traceable to IST®, will function as regional time dissemination hubs, creating a robust network for nationwide synchronisation. Accurate time synchronisation is crucial even for emerging sectors like quantum communication, quantum cryptography and quantum computing.

Public Consultation and Future Implementation

The draft rules were recently released on the MoCA website for public consultation to address industry needs and potential challenges effectively and ensure smooth implementation. Once finalised, the rules will mandate strict compliance across all

sectors, providing a legally enforceable framework for time synchronisation.

The Broader Impact of “One Nation, One Time”

The adoption of a unified time standard will

- Strengthen digital infrastructure by enhancing cloud computing, AI, and IoT networks.
- Boost economic growth through improved productivity and reduced losses caused by time discrepancies.
- Enhance national security by

securing data transactions and defence operations.

- Improve public services such as government portals and transportation networks.

The role of CSIR-NPL is pivotal as the nation's official timekeeper to ensure that IST® remains accurate, traceable, and aligned with international standards. The successful implementation of “One Nation, One Time” will streamline operations nationwide and reinforce India's standing as a global leader in precision metrology and time synchronisation.

The IST® is widely disseminated with millisecond accuracy with NTP (Network Time Protocol) servers at CSIR-NPL.

CSIR Jigyasa EPIC Hackathon 2024

The finale event of the CSIR Jigyasa EPIC Hackathon was organised on 20 December 2024 at the CSIR-IGIB, South Campus, New Delhi. The event was inaugurated by Dr Souvik Maiti, Director, CSIR-IGIB. Dr Geethavani Rayasam (Head, CSIR- HRDG), Dr D Shailaja (Chief Scientist, CSIR-IICT) and Mr Anurag Mishra (Head, Cipla Foundation) were among the dignitaries.

The event started with the poster presentation of the EPIC Hackathon students who had completed their Summer internship at CSIR laboratories across India under the EPIC programme. A total of 35 teams and 48 students had participated in a two-month summer internship at 18 CSIR laboratories across the country out of which 29 students presented their research projects done during the summer internship. At the end of

the event, the winners of the CSIR EPIC Hackathon were felicitated with prizes and certificates. A workshop on pitch decks, Innovation, & Entrepreneurship was also organised for the participants.

The winner of CSIR Jigyasa EPIC Hackathon 2024 is Mr Japteg Singh Bamrah, who received a cash prize of ₹ 50,000 for his project Solar-Mech Engine. He did his internship at CSIR-IIIM, Jammu.



Mr Uddhav Gupta & Mr Udbhav Bandhani were the first runners-up. They did their internship at CSIR-CSIO, Chandigarh, and won a cash prize of ₹ 30,000 for their joint submission titled “Drishyamitram — Illuminating walkways for visually challenged”. Ms Shreya Vinod and Mr Soyal Parija won the third prize of ₹ 10,000 each for their innovative works. The title of the project of Ms Shreya Vinod was “Generating electricity from the waste heat of air conditioners”, and she interned at CSIR-CBRI, Roorkee. Mr Soyal Parija’s topic was ‘I-Stetho-A wireless stethoscope’, and her internship was conducted at CSIR-IMMT.

CSIR launched Empowering Pupil Innovation and Creativity (EPIC) on 5 January 2024 under

the JIGYASA programme with an aim to provide a platform for budding young students to pursue their innovation as well as nurture their potential in developing innovative solutions to address the challenges in the country through science and technology. For this year, innovative ideas from students were invited in two themes, namely “One Health” and “Clean and Green Energy”. Out of the 1300 students who submitted their applications, 52 students were initially selected for a two-month summer internship at different CSIR labs. At the end of two months, 48 students successfully completed their internship. Cipla Foundation partnered with CSIR-IICT for this CSIR Jigyasa EPIC Hackathon 2024 programme.

MoU/Agreements

CSIR-NPL Transferred a High-volume PM₁₀ Technology to an Indian Manufacturer

A state-of-the-art facility, “High-Volume PM₁₀ Sampler”, has been established at the Environmental Sciences and Biomedical Metrology Division of CSIR-National Physical Laboratory (CSIR-NPL), New Delhi, and is providing services to Indian manufacturers and industries in this area. Further, particulate matter of size 10 micrometres and less, called PM₁₀, is one of the important criteria pollutants of National Ambient Air Quality

Standards (NAAQS). Whether the air quality is good or bad is mostly governed by the concentration of particulate matter in ambient air. Therefore, accurate measurement of PM₁₀ is very important. This is also needed because PM₁₀ are inhalable particles and can impact from the throat to the lungs in our respiratory tract and, hence, harmful to our health. A perfect PM₁₀ sampler is needed to know the ambient concentration and further analyse the chemical

constituents of PM₁₀, which may be toxic. Generally, for chemical and biological analyses of PM₁₀ samples, a high-volume sampler is required. Similarly, for analysis of other criteria pollutants, e.g. lead, arsenic, and nickel in PM, a high-volume sampler is recommended because a sufficient amount of PM material is needed for these analyses after the sampling.

The “High-Volume PM₁₀ Sampler” technology, indigenously designed and developed at CSIR-NPL, has been transferred to an MSME, M/s Biomimicry Technologies Pvt. Ltd, New Delhi, during the Innovative and Sustainable Business Strategies (ISBS) workshop as part of the CSIR 100 Days 100 Technologies Programme at CSIR-IICT, Hyderabad, on 27 January 2025. The participants from several industries and different CSIR laboratories attended and addressed the one-day workshop.



MoU signing between CSIR-NPL, New Delhi and M/s Biomimicry Technologies Pvt Ltd, New Delhi at CSIR-IICT

This is the first high-volume PM₁₀ technology developed in India. Importantly, available technology in India is the Respirable Dust Sampler (RDS) PM₁₀, whose cutoff size is 4 micrometres (not 10 micrometres in reality, which is the requirement of a sampler as per Indian NAAQS and ISO 7708). The Indian patent of this technology is published and waiting for the final grant. More scientific details about this technology and development can be found at <https://doi.org/10.1007/s11869-023-01384-3>

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Events

CSIR-IMTECH Celebrates 41st Foundation Day

CSIR-Institute of Microbial Technology (IMTECH), Chandigarh, celebrated its 41st Foundation Day on 24 January 2025, by organising several events including the much-anticipated Foundation Day Lecture.

Dr Rajesh S Gokhale, Secretary Department of Biotechnology (DBT) to the Government of India, delivered this year’s Foundation Day Lecture on The BioE3 policy:



Dr Sanjeev Khosla, Director, CSIR-IMTECH, felicitating Dr Rajesh S Gokhale, Secretary, DBT, Government of India

Biotechnology for Economy, Environment and Employment Driving Bio-Innovation in Bharat. The BioE3 Policy lays down the framework for the implementation of the Biomanufacturing and Biofoundry initiative. This initiative will promote green growth in the country, by transforming today's consumptive manufacturing paradigm to the one based on regenerative principles.

Dr Gokhale highlighted that the BioE3 policy provides a framework to empower Indian institutions, universities, startups and industries to engage in transformative innovations. The policy shall enable intensifying research and innovation, boosting domestic biomanufacturing capability by promoting integrated use of Artificial Intelligence (AI) and digitalisation, setting up the facilities (Biomanufacturing Hubs/Biofoundry/Bio-AIs) for scaling-up and pre-commercial manufacturing and the nurturing cohort of highly skilled workforce.

Welcoming the gathering, Dr Sanjeev Khosla, Director, CSIR-IMTECH, apprised the audience of the institute's achievements in the last year. He said, "The 41st IMTECH Foundation Day stands as



MoU being signed with industries for usage of Biofoundry at CSIR-IMTECH

a testimony to IMTECH's continued pursuit of excellence in microbial sciences for over four decades, with a vision of propelling India into the future with Biotechnology innovation at the forefront". He exhorted the scientific fraternity at IMTECH to focus on future & niche research areas aligning with the goals of Viksit Bharat.

As part of the celebrations, CSIR-IMTECH signed several MOUs' with pharma industries for the usage of Biofoundry at CSIR-IMTECH to aid the rapid development of precision biotherapeutics and early scaling up of proof of concept of biomolecules.

The institute also observed 'Open Day' for the general public during which students, researchers, graduates and science enthusiasts from in and around Tricity visited the campus and interacted with scientists to get a firsthand account of the various facets of microbiology and biotechnology.

CSIR-CSMCRI Celebrates World Hindi Day

An online celebration to commemorate World Hindi Day was organised on 15 January 2025 at CSIR-Central Salt & Marine Chemicals Research Institute (CSIR-CSMCRI), Bhavnagar. In

this function, Dr Raghav Prakash Sharma, Director of Parishkar Group of Colleges, Jaipur and Ex-Director of Rajasthan Hindi Academy, Rajasthan, was present as the Chief Guest and delivered a

Dr Rajesh S Gokhale, DBT, highlighted that the BioE3 policy provides a framework to empower Indian institutions, universities, startups and industries to engage in transformative innovations.

lecture on the topic “Role of Hindi in Emotional and Intellectual Development in the Global Perspective”.

Welcoming everyone, Dr Kanti Bhooshan Pandey, Principal Scientist, CSIR-CSMCRI, gave a brief introduction to the updated implementation of the Hindi language in the institute. Chief Scientist of the Institute, Dr Kamlesh Prasad, CSIR-CSMCRI, explained the Institute’s devotion towards Hindi and explained the usefulness of the official language in the promotion of the institute.

Chief Guest Prof. Sharma, in his address, said that it should be the duty of every Indian to speak Hindi language without any hesitation and to at least communicate in Hindi language with his people, even in foreign



countries. Development of the country is possible only in one’s own language. Many countries of the world, like China, Japan, and Germany, have developed on the basis of their culture and education. India also deserves pride in the strength of its language Hindi. At last, the ceremony concluded with a vote of thanks. Director of the institute, Dr Kannan Srinivasan, praised the successful organisation of the programme.

CSIR-NIScPR Organises STiG-2025 Conference: Paving the Way for Innovative R&D Indicators and Policies

The CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR) in New Delhi organized a two-day international conference on 14 & 15 January 2025. The theme of the conference was “Aligning Science-Technology-Innovation (STI) Indicators for Effective R&D Governance” (STiG-2025). This event coincided with the celebration of the institute’s 4th Foundation Day.

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, during her inaugural address, gave an overview of the conference and highlighted the significance of the foundation day of NIScPR. She elucidated the history of NIScPR, which was formed four years ago after the merging of CSIR-NISTADS and CSIR-NISCAIR, boasting a combined legacy of more than 100 years. Prof. Aggarwal mentioned CSIR-NIScPR as the youngest and



Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, mentioned CSIR-NIScPR as the youngest and one of the most dynamic labs of CSIR & its role as a think tank of Science communication and STI policy research.

one of the most dynamic labs of CSIR & its role as a think tank of Science communication and STI policy research. She also discussed the divisions and missions of CSIR-NIScPR like SVASTIK, TRL, NETRA, creating livelihood opportunities in rural areas, ISSN, journals, etc. She also remembered the role of Prof. Ashutosh Sharma while he was secretary of DST in 2020 in formulating STI policy around the country.

The Guest of Honour, Dr Suman Kumari Mishra, Former Director, CSIR-CGCRI, Kolkata and Adjunct Professor, IIT Ropar, in her address, thanked the NIScPR family for organising a conference on this important topic of Science Technology Innovation (STI) indicators. She also highlighted the role of NIScPR in societal development in S&T and memorised the role of NIScPR's popular science magazines, *Vigyan Pragati* and *Science Reporter*, in disseminating science information to the public for decades. She also said, "We have ample room for innovation, and scientists are willing to take risks".

Prof. Sachin Chaturvedi, Director General, Research and Information System (RIS) for Developing Countries and Guest of Honour in the inaugural session

of the conference, presented "Foundation Day Lecture" under the theme "Reimagining Science, Technology and Innovation Indicators: Towards Development Agenda for Viksit Bharat at 2047". He said that the world is changing, and new development priorities and targets are essential, so we must prepare for STI globalisation. He also emphasised the role of Inclusion and Sustainability as key R&D indicators. Along with many aspects of STI, he said that the role of ethics, sustainable development goals, green growth, MSME connectivity, wellbeing-related parameters, qualitative parameters and others should be included in indicators.

Prof. Ashutosh Sharma, President, INSA, Institute Chair Professor & CV Seshadri Chair Professor, IIT Kanpur, and the Chief Guest of the conference during his address, said that NIScPR's years of expertise have yielded excellent results in science communication and policy research. We need knowledge that impacts society through STI, and it is not just about new technologies but about cultural behaviour towards science in society. Therefore, we require indicators to address this too. He added that the impact of AI and newer technologies is essential



for the future, and in this regard, he highlighted the example of various multi-billion industries that failed because they could not catch up with the advances of science like digital photography and personal computing. He also put a key emphasis on the translation of knowledge and wisdom into monetary terms or wealth and thus asked to add this parameter as an important indicator of evaluation.

After the insightful addresses, the dignitaries on the dais released the conference souvenir, three books, one special issue of the Science Diplomacy newsletter and a special issue of the *Journal of Intellectual Property Rights*, all published by NIScPR. During the closing remarks of the inaugural address, Shri Mukesh Pund, Chief Scientist, CSIR-NIScPR and Co-Chairperson, STiG-2025, thanked all the participants, Prof. Sujit Bhattacharya, Chief Scientist, CSIR-NIScPR & Chairperson, STiG-2025 and other team members of the core organising team to make this event happen successfully.

As a memoir, tree plantation under the “Ek Ped Maa Ke Naam” initiative was also organised in which national and international experts planted trees on the CSIR-NIScPR campus.

There were eight sessions on day one and seven sessions on day two of the conference, some of which were parallelly organised, including talks, panel discussions, paper presentations, etc.

CSIR-NIScPR successfully concluded its two-day international conference, STiG-2025, commemorating its 4th Foundation Day. During the valedictory session, Prof. Ranjana Aggarwal said that the STI ecosystem in India is currently thriving. The UGC CARE list is being revised to improve the quality of journals. India has seen significant growth in patents, and the country ranks third in startups globally. The STI system policy is based on inputs from experts across the board, and there is a growing emphasis on evaluating social media. The One Nation One Subscription (ONOS) is a remarkable initiative, but there is still a need for open access. In fact, 15 Indian journals with a legacy of 70 years offer green and platinum access, setting a precedent for international journals to follow. To drive future progress, conferences like this facilitate networking and cooperation.

The conference concluded with a valedictory address by Prof. Venu Gopal Achanta, Director

Dr Suman Kumari Mishra, Former Director, CSIR-CGCRI, Kolkata and Adjunct Professor, IIT Ropar, highlighted the role of NIScPR in societal development in S&T and memorised the role of NIScPR's popular science magazines, in disseminating science information to the public for decades.

of CSIR-NPL. He emphasised a call to make open-access journals the norm, eliminating the need for payment to access or publish research. Additionally, there is a recognition that better metrics are needed beyond the traditional impact factor issue.

Prof. Sujit Bhattacharya, Chief Scientist, CSIR-NIScPR, summarised the key takeaways, outlining the way forward. Dr Naresh Kumar, Chief Scientist, CSIR-NIScPR, expressed gratitude to all participants, the sub-committees, and the heads of all divisions with a vote of thanks.

CSIR-CIMFR and ASNT India Organise Workshop on Advances in Non-Destructive Evaluation of Steel Wire Ropes in Mining and Aerial Installations: Theory and Practices

Prof. Venu Gopal Achanta, Director of CSIR-NPL, emphasised a call to make open-access journals the norm, eliminating the need for payment to access or publish research.



CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR), Dhanbad, in collaboration with the American Society of Non-Destructive Testing (ASNT) India, successfully organised a one-day workshop and ASNT India NDT Network Programme on “Advances in Non-Destructive Evaluation of Steel Wire Ropes in Mining and Aerial Installations: Theory and Practices” on 10 January

2025. The event brought together industry experts, researchers, and practitioners to discuss and explore the critical role of Non-destructive Testing (NDT) technologies in ensuring the safety and integrity of steel wire ropes used in mining and aerial installations.

During the inaugural session, Dr D Basak, Chief Scientist at CSIR-CIMFR, introduced the workshop, stressing the importance of safety

and innovation in the industry. He discussed the challenges of detecting rope failures and highlighted CIMFR's 25 years of leadership in research and development in this area. Dr Basak encouraged participants to actively engage and share knowledge to drive future innovations in the industry.

Prof. Arvind Kumar Mishra, Director of CSIR-CIMFR, expressed his delight in hosting the national workshop and noted the growing innovation and the increasing use of ropeways in both mining and aerial installations. Prof. Mishra emphasised the critical role of ropes in underground mining, ropeways, and bridges, highlighting the importance of safety, integrity, and cutting-edge research. He stressed the need for smart, AI-driven, and machine learning-based solutions in NDT and encouraged interdisciplinary knowledge sharing. He urged participants to bring forward research that will not only benefit the industry but also contribute to the global future.

Mr P Gokulanadam, Director & General Manager of ASNT India Pvt. Ltd served as the Guest of Honour at the workshop and expressed his sincere appreciation for being part of the event. He commended CIMFR for organising the workshop and highlighted the significant advancements in Non-destructive Testing (NDT) technologies, particularly in their application to steel wire ropes. Mr Gokulanadam also emphasised the vital role of ASNT India in promoting NDT

and its importance across various industrial sectors.

ASNT India, a professional society dedicated to the advancement of NDT technologies and practices, offers a platform for industry professionals to collaborate, exchange knowledge, and contribute to the growth of NDT across diverse industries. ASNT India's mission is to shape a safer world through non-destructive testing.

Mr Gokulanadam expressed ASNT India's eagerness to collaborate with CIMFR and other organisations to further the development of NDT technologies. He encouraged all workshop participants to actively engage in collaborative efforts and conveyed his optimism for the future of NDT research.

The Chief Guest, Mr DB Naik, Deputy Director General (Mech.) of DGMS, also addressed the gathering, highlighting the critical importance of NDT technology in ensuring safety in the mining industry. He shared his experiences and emphasised the role of technology in addressing safety challenges. Mr Naik encouraged participants to continue advancing NDT methods, especially for aerial ropeways, and reiterated the importance of ensuring safety standards across industries.

The workshop provided a platform for experts and participants to share valuable insights and discuss innovative solutions in the field of non-destructive evaluation of steel wire ropes, a key element in ensuring

Prof. Arvind Kumar Mishra, Director of CSIR-CIMFR, stressed the need for smart, AI-driven, and machine learning-based solutions in NDT and encouraged interdisciplinary knowledge sharing.



the safety and reliability of mining and aerial installations. The event underscored the importance of continued research, collaboration, and the adoption of cutting-edge technologies to address safety challenges in the industry. This workshop featured key presentations on non-destructive testing, ropeway safety, and mining. People from different industries participated in this workshop.

The technical session was followed by a valedictory session in which Prof. (Dr) Pankaj Rai,

Director, BIT, Sindri, was present as the Chief Guest. In this session, Prof. Arvind Kumar Mishra emphasised issues like smart sensors, artificial intelligence, machine learning, safety and security and also thanked all the speakers and representatives. Chief Guest, Prof. (Dr) Pankaj Rai, emphasised the use of artificial intelligence and machine learning and said that we need to focus on how students can be trained for the upcoming technology. The programme concluded with the national anthem.

CSIR-NPL Celebrates its 79th Foundation Day

CSIR-National Physical Laboratory (CSIR-NPL), New Delhi, celebrated its 79th Foundation Day on 4th January 2025. CSIR-NPL is the National Metrology Institute (NMI) of India, and its prime responsibility is to develop, maintain and disseminate the National Standards. CSIR-NPL is also developing new measurement standards and cutting-edge technologies based on advanced materials for industries and

strategic sectors and contributing tremendously to the nation's development.

Prof. Veezhinathan Kamakoti, Director, Indian Institute of Technology Madras (IITM), Chennai, graced the function as the Chief Guest. Prof. Venugopal Achanta, Director CSIR-NPL, while addressing the ceremony, briefed about the role of CSIR-NPL. He mentioned the achievements, research and development



activities being carried out and the new mission projects taken up by the institute. He also mentioned that the visibility of CSIR-NPL has gone up at national and international levels. He informed that CSIR-NPL staff is on technical committees of the Asia Pacific Metrology Programme (APMP) and needs to look for leadership roles.

Delivering the 79th CSIR-NPL Foundation Day Lecture on the topic “Glancing into Metrology”. Prof. Veezhinathan Kamakoti mentioned the importance of metrology and standards for the Viksit Bharat mission of Govt of India, and he presented some of his thoughts for strategising it. He discussed about the quantum physical standards for quantum metrology, quantum technologies including computing, communication and quantum key distribution, and semiconductor manufacturing. He stressed the fact that metrology is the way forward for India to become a knowledge and technology superpower. He also presented the opportunities, open problems, challenges, and possible R&D areas for metrology for quantum

technologies, their certification and characterisation in India. He mentioned that CSIR-NPL has a big role to play in the indigenous development of semiconductors and quantum technologies, and IIT Madras is looking forward to being a partner.

During the event, CSIR-NPL signed Memorandums of Understanding (MoUs) with IIT Madras for Academic and Research collaborations and with CSIR-CIMAP for the production of Bharatiya Nirdeshak Dravya (BND) (Certified Reference Materials) in the area of Plant Based Materials. CSIR-NPL also released new BNDs of Lanthanum Hexaboride Powder (BND-2025) for line position and line shape calibration standards for powder X-ray diffraction prepared by a team of CSIR-NPL and White Portland Cement Standard (BND-5064) prepared by a team of CSIR-NPL in collaboration with the Reference Material Producer (RMP) National Council for Cement and Building Materials (NCCBM), Govt of India. Dr SR Dhakate, Chief Scientist, CSIR-NPL, proposed the formal vote of thanks.

Prof. Veezhinathan Kamakoti, Director, IIT Madras, mentioned the importance of metrology and standards for the Viksit Bharat mission of Govt of India, and he presented some of his thoughts for strategising it.

CSIR-IIIM Organises One Day Skill Development Training Programme on Research Methodology, Science Communication and IPR



CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, organised a Skill development training programme on 31 January 2025 at its Jammu campus. The event was designed to impart knowledge about Research Methodology, Science Communication, & Intellectual Property Rights (IPR), which gathered participants from all domains of Science and technology and also from other domains like management, law, etc. The event was attended by students, research scholars, scientists, and other professionals who would benefit from this programme.

Dr Zabeer Ahmed, Director, CSIR-IIIM, inaugurated the event and shed light on the importance of research methodology, science communication and IPR to enrich the scientific ecosystem of the country.

During the inaugural session, Dr Nasir Ul Rasheed, Senior Scientist, CSIR-IIIM, introduced the participants to the theme of the skill development programme and provided an overview of the benefits and key outcomes of the programme.

The inauguration was followed by talks from experts in the domains of science communication and IPR. During the first session, Dr Manish Mohan Gore, Senior Scientist, CSIR-NIScPR, New Delhi, presented a talk during which he highlighted the significance of science communication in bringing out research outcomes of Indian labs to make people aware of scientific developments in the country.

Dr Kancherla Prasad, Coordinator & Senior Scientist at CSIR-IIIM, delivered his talk on another important aspect of

science, which let the scientists reap the benefits of their research and motivated them regarding the IPR. Dr Prasad discussed the importance of IPR and detailed the application part by citing various examples.

In the next session, Dr Lipika Patnaik, Senior Principal Scientist, CSIR- IPU, New Delhi, continued the discussion on IPR and elucidated the process of Patent filing and the processes that are required to safeguard the innovations.

Dr Love Sharma, Scientist, RMBD&IST, during his talk, discussed the basics of science communication and shared examples of a few writings to highlight the skills needed for

effective science communication that can send the appropriate message to scientific people as well as the general public for wider impact.

During the programme, Dr Zabeer Ahmed also unveiled the calendar 2025, which was a visual journey through 2024, highlighting the institute's contributions to research and development, skill development, entrepreneurship, international collaborations and its commitment to societal welfare.

In the valedictory session, Er Abdul Rahim, Head RMBD & IST, took the feedback of participants and also facilitated the distribution of certificates to the participants. Dr Nasir proposed a vote of thanks.

12th year of CCMB's Young Innovators Programme

CSIR-Centre for Cellular and Molecular Biology (CSIR-CCMB), Hyderabad, conducted the Young Innovators Programme for the 12th consecutive year. 24 students studying in grades 8-10 were selected from 24 different schools in Hyderabad among 326 applicants. The selection test took place on 23 December 2024 following the inaugural lecture by Dr Mudrika Khandelwal from IIT-Hyderabad.

The selected students spent a week in the different labs and research facilities at CSIR-CCMB. They were shown how DNA is used to detect genetic diseases, how infectious diseases are understood better through the biology of pathogens, how the state-of-the-art

cryo-electron microscope shows details of biomolecules even up to atomic levels and how such tools are used both for understanding living systems better but also for making improved crop varieties and conserving nature.



“This programme is strategically done for high school students until grade 10 because that is the point where they need to make their choice of studying biology. Their imagination of biology is very limited to natural history. The programme intended to give them a glimpse of the excitement and opportunities that modern biology offers,” said Dr Somdatta Karak, Head of Science Communication and Public Outreach, CCMB.

One of the participants, S Hitesh from Oak Valley School, said, “The Young Innovators Programme was a wonderful experience. I got to see how scientists actually work. I discovered a whole new world of research. Meeting the researchers and hearing

them talk passionately about their work was truly fascinating. I also got to meet other students of my age and formed bonds with them throughout the programme.”

Underlining the importance of building cohorts of young people, Dr Vinay K Nandicoori, Director, CCMB, said, “Through this programme, every year, we connect brilliant young people. Only a few of them might change their career plans and become scientists. But the real value of the programme is instilling in them the love for finding out more and solving challenges. It is then irrelevant for us, as a society, what careers they pursue. We want them to become citizenry inspired by science.”

Dr Vinay K Nandicoori, Director, CCMB, said, “Through this programme, every year, we connect brilliant young people. Only a few of them might change their career plans and become scientists”.

CSIR-CIMFR Skill Development Programme Conducts under CSIR Integrated Skill Initiative “Fundamentals on Coal and Hydrocarbon Geosciences”

The HRD & Skill Development section, in association with Coal-Rock Chemistry and Structure (CRCS) Section of Barwa Road Campus, conducted a Skill Development programme on ‘Fundamentals on Coal and Hydrocarbon Geosciences’ for MSc/PhD students under CSIR Integrated Skill Initiative from 16 to 17 December 2024 at CSIR-CIMFR, Digwadih and Barwa Road Campus, respectively, under the supervision

mentorship and guidance of Prof. Arvind K Mishra, Director, CSIR-CIMFR and Mr Dilip Kumbhakar, Chief Scientist & PL/Nodal, Skill Development.

The course included a series of lectures on the importance of coal and hydrocarbons as energy resources and their fundamentals, focusing on the need for sustainable exploration. It covered coal geology, including formation processes, coal ranks, macerals, and



petrographic properties, alongside an overview of industrial usage of coal. The segment on hydrocarbon geosciences addressed the formation of oil and gas, source rocks, migration, reservoirs, and exploration techniques like Rock-Eval pyrolysis for TOC analysis of coal and shales. The

programme also involved hands-on training on coal petrology and the usage of Rock-Eval for hydrocarbon research/discovery.

The programme was attended by 30 MSc/PhD students from Vinoba Bhave University, Ranchi University, and IIT (ISM) Dhanbad.

The course at CSIR-CIMFR included a series of lectures on the importance of coal and hydrocarbons as energy resources and their fundamentals, focusing on the need for sustainable exploration.

CSIR-IIIM Jammu Celebrates 84th Foundation Day



The CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, marked its 84th Foundation Day on 2 December

2024 with fervour, commemorating its legacy since its establishment as the Drug Research Laboratory by Ram Nath Chopra in pre-

independence India. Dr Manoj Kumar Dhar, Director Academy of Scientific and Innovative Research (AcSIR) Ghaziabad and ex-Vice-Chancellor of the University of Jammu, was the Chief Guest on the occasion. He delivered the Foundation Day lecture on “Creating an Ecosystem to Produce NextGen Science Leaders”, wherein he delved into various opportunities available to the budding young science leaders, as well as the requirement for grooming and mentorship to rise up to the challenges to become leaders of the Viksit Bharat 2047. Dr Nirpendra Chauhan, Director, Centre for Aromatic Plants, Dehradun, was the Guest of Honour. In his address, he dealt with the advancement of MAPs cultivation and opportunities for collaboration between both institutions.

Director CSIR-IIIM, Dr Zabeer Ahmed, highlighted the Institute's achievements over the past year, including an increase in patent outputs, hosting significant conferences, and organising a Start-up Expo inaugurated by

India's Vice President. Certificates of recognition were presented for notable research accomplishments, including patents in drug discovery and process innovation for combating diseases like Alzheimer's, cancer, and viral infections.

The event also honoured contributions to institutional repositories and administrative work in Hindi. A blood donation camp was organised to mark National Voluntary Blood Donation Day, recognising over 30 donors by the chief guest and other dignitaries. Sports competitions like cricket, volleyball, and badminton engaged staff and students, with winners awarded trophies and certificates. Musical chairs and tug-of-war added to the festivities, making the event inclusive and spirited. The celebrations concluded under the guidance of Dr Zabeer Ahmed, with the proceedings led by Dr Deepika Singh (Principal Scientist and Head, QMI) and a vote of thanks by Abdul Rahim (Chief Scientist and Head, RMBD & IST).

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