

JUNE-AUGUST 2025



सीएसआईआर
CSIR
भारत का नवाचार इंजन
The Innovation Engine of India



सीएसआईआर निस्पार

News on CSIR

R&D Achievements

Volume:1





CSIR stands at the forefront of shaping India's scientific future with innovation, sustainability and inclusivity. This newsletter mirrors our mission transforming cutting-edge research into societal impact, nurturing young minds and building India's strength as a global knowledge leader.

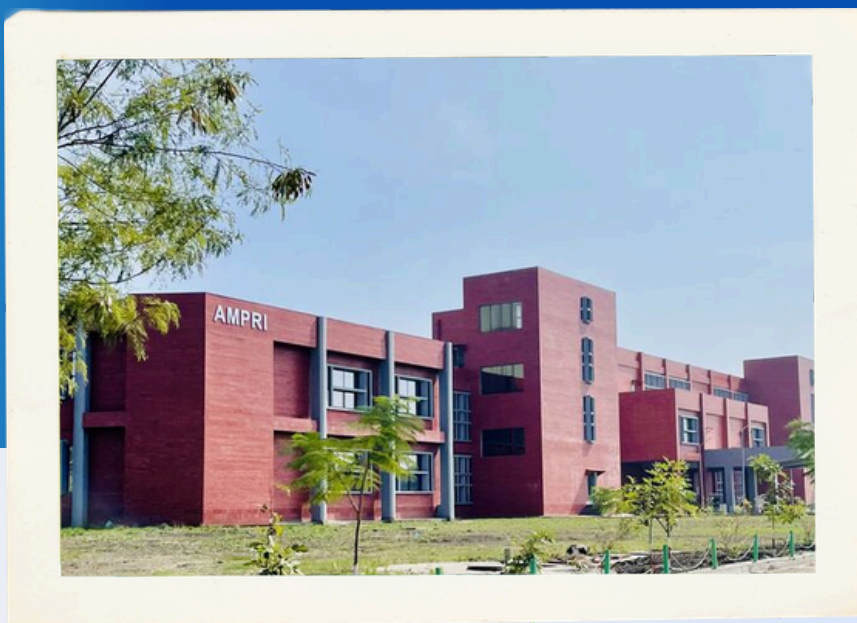
Dr. (Mrs.) N. Kalaiselvi, DG-CSIR & Secretary, DSIR



At CSIR-NIScPR, we are committed to connecting Science, Technology and Innovation with society through policy research, communication and outreach. This edition highlights our initiatives from empowering grassroots innovation to fostering industry linkages, making science not just informative, but transformative for communities and the nation.

Dr. (Mrs.) Geetha Vani Rayasam, Director, CSIR-NIScPR

CSIR'S ACHIEVEMENTS

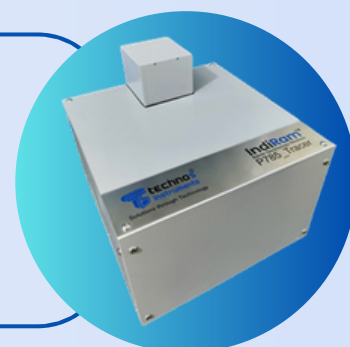


CSIR-AMPRI's Indigenous Raman Spectrometer: A Triumph of 'Make in India'



CSIR-AMPRI, Bhopal, has developed and commercialized India's first indigenous high-end Raman Spectrometers, challenging global giants like Horiba, Renishaw, and Bruker.

Executed under CSIR-NMITLI with M/s TechnoS Instruments, Jaipur, two models CTR-300 and CTR-150 were approved in 2022. Rapid adoption followed at CSIR-IICB Kolkata, MANIT Bhopal, IISER Pune, NCL Pune, CIPET Chennai and IIST Thiruvananthapuram.



Entirely designed, assembled and tested in India, the system integrates flexible software, supports global hardware and ensures reliable local service. Rooted in the Raman Effect, this achievement strengthens Atmanirbhar Bharat, reducing import dependence while empowering Indian researchers with cost-effective, cutting-edge tools across science, pharmaceuticals and nanotechnology.

CSIR-CECRI's Lithium-Ion Battery Manufacturing: Empowering India via ICeNGESS



CSIR-Central Electrochemical Research Institute (CECRI) leads the ICeNGESS project, advancing India's Make in India and Aatmanirbhar Bharat goals through indigenous lithium-ion battery manufacturing.

The newly inaugurated 18650-type cylindrical battery facility in Chennai produces 1,000 cells daily, bridging lab-scale research and industrial production.

Collaborations with Tata Chemicals Ltd. enable cathode material scale-up and joint R&D on next-generation chemistries. Locally manufactured batteries reduce fossil fuel dependence, support electric mobility and drive economic growth.

Complementing production, the 'Battery to Battery' circular economy project recycles critical metals like lithium, cobalt and nickel. Through ICeNGESS, CSIR-CECRI is positioning India as a global leader in clean energy, sustainable technology and energy independence.





CSIR-CFTRI and McDonald's India Launch Nutri-Rich Multi-Millet Bun

CSIR-CFTRI, Mysore, in partnership with McDonald's India (West & South), has launched a nutrient-rich multi-millet bun during National Nutrition Week (Sept 1-7, 2024).

Made with 22% millets bajra, ragi, jowar, proso and kodo this bun enhances vitamins, minerals and dietary fiber while partially replacing wheat. Sourced from over 5,000 farmers across multiple states, it promotes sustainable, climate-resilient crops and empowers local communities.



Launched in Mumbai, it is now available in 400 outlets, enhancing popular burgers like McAloo Tikki and McSpicy Paneer.



This initiative exemplifies CSIR-CFTRI's commitment to nutritious innovation, combining advanced food technology with industry expertise for healthier, sustainable dining.

CSIR-NAL's JALDOST Airboat Revolutionises Lake Rejuvenation in Bengaluru



CSIR-NAL, Bangalore, unveiled JALDOST on June 1, 2019 an innovative airboat designed to remove weeds, plastic debris and pollutants from Bengaluru's lakes.

Launched at Halasuru Lake, it can collect up to 5 tons of waste per operation, featuring a closed pontoon hull and hybrid air-paddle propulsion for shallow, weed-dense waters. Its steel belt conveyor efficiently transfers waste to trucks, ensuring minimal ecological disturbance.



Developed with Shrivari Engineering Systems and customised for BBMP, JALDOST also supports flood rescue operations.

Director Abhay Anant Pashilkar highlighted its role in promoting cleaner, healthier water bodies. This indigenous technology exemplifies CSIR's commitment to environmental sustainability, scalable lake management and societal impact.

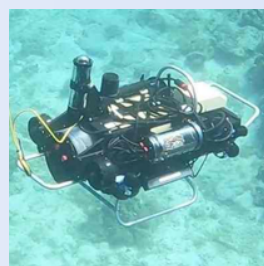


CSIR-NIO's C-Bot Revolutionizes Coral Reef Monitoring in the Indian Ocean

CSIR-National Institute of Oceanography (NIO), Goa, unveiled C-Bot on January 28, 2024 an indigenous autonomous underwater vehicle (AUV) designed to monitor and protect India's coral reefs.

C-Bot provides critical insights into coral health, enabling marine scientists to address ecosystem challenges caused by human activities. Beyond reef monitoring, its adaptable design supports pipeline inspections, hydrographic surveys, subsea studies, and defense applications such as mine detection and underwater surveillance.

C-Bot exemplifies indigenous innovation, aligning with Atmanirbhar Bharat goals. This transformative technology advances marine research, promotes sustainable ocean management and positions India as a global leader in underwater robotics and coral conservation.



CSIR-IIIM Aroma Mission



Since 2017, **CSIR-IIIM Jammu**, one of the 11 labs under the CSIR Aroma Mission, has transformed lavender cultivation into the celebrated 'Purple Revolution.' Leveraging farmer-focused technologies, the institute converts essential oils into market-ready, value-added products under the concept '**Farmer-Grown, Farmer-Made, Nature-Approved.**'

Raw materials sourced directly from farmers are used to produce eco-friendly, chemical-free soaps, diffusers, balms, incense sticks, candles, essential oils, hair oils, herbal teas, massage oils and wellness kits.

Launched in 2024, these products ensure sustainability, authenticity, and transparency, with 100% farmer participation. By enabling value addition and supporting Agri-startups and entrepreneurs, CSIR-IIIM enhances rural livelihoods while promoting the growth of India's aromatic and FMCG sectors.



Reducing import dependence of Heeng



CSIR-Institute of Himalayan Bioresource Technology (IHBT), is a global leader of technologies for boosting bio-economies through sustainable utilization of Himalayan bio-resources.

Its current focus areas are agrotechnology, biotechnology, chemical technology, environmental technology, dietetics and nutrition technology, fermentation and phytofarming technology.

IHBT has introduced the cultivation of asafoetida (heeng) in suitable cold desert conditions of Indian Himalayan regions by developing the agro-technology for its cultivation.

It aims to reduce India's dependence on the imports of heeng- a valuable spice crop and this will also boost farmer income in the Himalayan region.

Through distinguished work since 1983, Palampur-based IHBT serves the nation.



MoUs of CSIR labs



CSIR-SERC and L&T Construction Sign License Agreement for Innovative Construction Technology

On 8 March 2024, CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai, signed a License Agreement with L & T Construction – Water & Effluent Treatment IC, Chennai. The agreement is for the transfer of technology titled 'Textile Reinforced Concrete Prototyping Technology (TRCPT)', developed by Dr. (Mrs.) Smitha Gopinath, Principal Scientist at CSIR-SERC.



Textile reinforced concrete (TRC) is an upcoming non-conventional construction material consisting of fine-grained cementations binder and non-metallic textile reinforcement. CSIR-SERC has developed TRCPT, a precast technology to produce TRC components for which an Indian patent has been granted. TRCPT can serve as an effective indigenous technological solution to achieve economical mass production of TRC products.

CSIR and Laghu Udyog Bharati Partner for MSME Growth



Council of Scientific & Industrial Research (CSIR) and Laghu Udyog Bharati (LUB) signed a Memorandum of Understanding (MoU) on August 21, 2024, at CSIR Headquarters to transfer selected CSIR technologies to Micro and Small Entrepreneurs. The partnership aims to transfer 100 CSIR know-how/technologies/products to identified MSMEs under LUB within 100 days. It also involves providing suggestions to CSIR for developing new technologies in areas of interest by MSMEs for tech advancement, regulatory compliance, market reach, and export promotion. During the MoU signing, 15 technologies from 6 CSIR labs (CSIR-CSIO, Chandigarh, CSIR-IMMT, Jammu, CSIR-NAL, Bangalore, CSIR-NBRI, Lucknow, CSIR-CSMCRI, Bhavnagar and CSIR-CFTRI, Mysore) were transferred to companies. Transferred technologies spanned sectors like pesticide detection (Pesticide Detection Kit), drones (Multi-copter Drones), air quality monitoring (Air Quality Monitoring System), agriculture (Potash enriched Biochar), and food (Gluten-free biscuits). Laghu Udyog Bharati is an all-India organization of Micro and Small Industries with over 51,000 members across 27 states.





CSIR-IIIM & HAPICO Industries Sign MoU for Collaborative Biopesticide Development

CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu, has signed a Memorandum of Understanding (MoU) with HAPICO Industries Private Limited on March 20, 2025. This collaboration aims to develop novel biopesticides using the rich biodiversity of medicinal and aromatic plants. The partnership seeks to reduce the harmful impact of chemical pesticides on human health and the environment. The goal of this partnership is to develop innovative and sustainable biopesticide solutions by leveraging CSIR-IIIM's scientific expertise and HAPICO Industries' product portfolio expansion, with a focus on formulating a biopesticide derived from a potent indigenous microbial strain identified by CSIR-IIIM. Dr. Zabeer Ahmed, Director of CSIR-IIIM, emphasized the institute's commitment to translational research and sustainable innovation in biopesticide development. HAPICO Industries aims to develop solutions aligning with evolving market demands.



CSIR-IMMT Partners with Russian Institutions for Critical Minerals

CSIR-Institute of Minerals and Materials Technology (CSIR-IMMT), Bhubaneswar signed two Joint Declarations of Intent (JDIs) with Russia's JSC Giredmet (under Rosatom) and National University of Science and Technology MISIS (NUST MISIS) on April 25, 2025. This partnership aims to strengthen cooperation in critical mineral processing and sustainable resource development. Dr. Ramanuj Narayan (Director, CSIR-IMMT) signed the JDIs with Dr. Andrei I. Golinei (Director, Chemical Technology Unit, JSC Rosatom Science) and Dr. Michael R. Filonov (Vice-Rector, NUST MISIS). The collaboration seeks to advance technologies for critical minerals, aligning with goals for sustainable resource development.

NEWS CAPSULES

CSIR's 'One Day as a Scientist' Inspires Young Minds across India



From July 21–25, 2025, CSIR conducted 'One Day as a Scientist' (ODAS) across its 37 laboratories, under the Jigyasa programme inspired by Hon'ble PM Shri Narendra Modi. Designed for students of classes VII–XII, ODAS offered hands-on experimentation, DIY science models, lab tours, and interactive sessions with researchers, exposing them to real-world scientific practices. Each lab hosted 75–100 students daily, totaling up to 3,000 participants per day. The week concluded with a valedictory at CSIR-NPL, New Delhi, graced by Union Minister Dr. Jitendra Singh. CSIR-IIIM Jammu alone engaged over 500 students from Jammu & Kashmir and Ladakh, strengthening outreach in remote regions and fostering early interest in scientific careers.



Jigyasa EPIC Hackathon: Fostering Young Innovators

Complementing ODAS, CSIR's Jigyasa EPIC Hackathon challenged students to develop solutions under two themes Clean and Green Energy and One Health. Junior (Class VII–IX) and Senior (Class X–XII) participants presented innovations in energy harvesting, sustainable waste-to-energy, pandemic preparedness, and healthcare technologies. Winners received recognition and opportunities for summer internships at CSIR labs. Top projects included SolarMech, a Stirling engine solar device; Drishyamitram, a smart walkway for the visually impaired; a waste-heat harnessing device; and I-Stetho, a wireless digital stethoscope. The hackathon highlighted young India's scientific creativity while promoting mentorship and skill development through hands-on innovation.



Broad Impact and Reach

Over the past eight years, CSIR's Jigyasa outreach has benefitted more than 13.5 lakh students and 80,000 teachers, highlighting its commitment to science education. ODAS remains a flagship initiative, offering immersive experiences that spark lifelong interest in research and innovation. Students registered in advance with entry tickets, ID proof, and consent forms, while travel and accommodation were not provided. The overwhelming participation across India reflects the programme's relevance. 'One Day as a Scientist' exemplifies CSIR's sustained efforts to bring science closer to society and nurture the next generation of innovators and problem-solvers for a knowledge-driven future.



CSIR-NBRI Launches 'PIO' – India's First Herbal Fizzy Drink

CSIR-NBRI, Lucknow, launched PIO, India's first herbal fizzy drink, at CSIR's 'One Week One Theme' event on 24 June 2024, inaugurated by Hon'ble Union Minister of State for (I/C) Science & Technology and Earth Sciences, Dr. Jitendra Singh. PIO is a 100% plant-based, caffeine-free, and artificial sweetener-free beverage, combining the taste of soft drinks with health benefits from traditional herbs like mulethi, giloy, ashwagandha, punarnava, and cardamom. Scientifically validated for safety and efficacy, it supports immunity, digestion, and overall wellness. CSIR-NBRI has transferred the patented technology to 3D Nutrients for commercial production. PIO exemplifies the integration of Ayurvedic knowledge with modern nutraceutical science, offering a refreshing and healthy alternative to conventional soft drinks.



CSIR Boosts Critical Mineral Research with Centres of Excellence

CSIR-IMMT, Bhubaneswar, and CSIR-NML, Jamshedpur, have been recognized as Centres of Excellence under the National Critical Mineral Mission, strengthening CSIR's role in advancing Atmanirbhar Bharat. Operating under a hub-and-spoke model, these CoEs lead a consortium of research labs, academic institutions, and industry partners, pooling expertise to drive innovation in mining, materials, and strategic minerals. The hubs set standards, provide guidance, and develop tools, while spokes execute localized R&D initiatives. This initiative enhances India's self-reliance in critical minerals, supports strategic resource management, and underscores CSIR's leadership in research and technology development across the critical mineral value chain.



ISRO Chairman Urges Self-Sufficiency in Critical Minerals

At CSIR-NIIST's Golden Jubilee Conclave, ISRO Chairman Dr. V. Narayanan emphasized India's need to reduce mineral and material imports to 'near zero' within the next decade. He urged CSIR scientists to develop a roadmap for self-sufficiency in critical minerals, highlighting the importance of materials science for space technology and India's indigenous cryogenic engine development. This vision aligns with the National Critical Mineral Mission (NCMM) 2025, which aims to expand domestic exploration, strengthen value chains through technology and finance, and build a skilled workforce, securing India's supply of minerals vital for clean energy and strategic sectors.

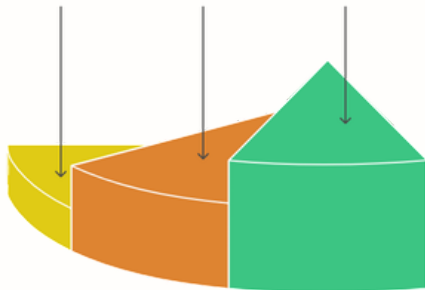


DATA ANALYSIS



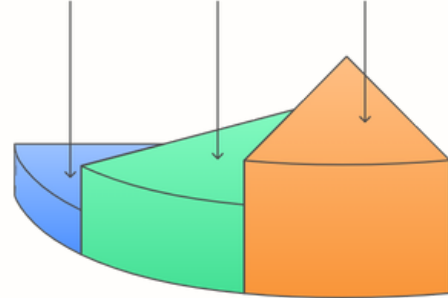
X : Monthly Engagement Growth

June	July	August
Initial engagement with 23,716 impressions and 1,725 engagements.	Slight increase in impressions to 30,931 but a decrease in engagements to 1,709	Significant growth in impressions to 44,208 and engagements to 3,131



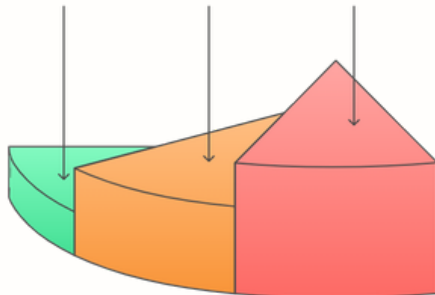
Facebook: Monthly Engagement Growth

June	July	August
Initial engagement with 27529 reach and 529 engagements.	Initial engagement with 29099 reach and 1473 engagements.	Initial engagement with 19988 reach and 688 engagements.



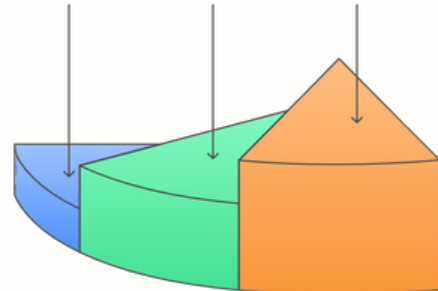
Instagram : Monthly Engagement Growth

June	July	August
Initial engagement with 6785 reach and 300 engagements	Initial engagement with 5308 reach and 283 engagements	Initial engagement with 2875 reach and 115 engagements



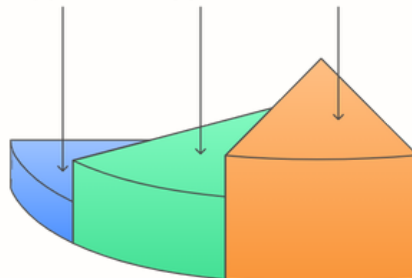
YouTube : Monthly Engagement Growth

June	July	August
Initial engagement with 7901 impressions and 3220 views.	Initial engagement with 30140 impressions and 12160 views.	Initial engagement with 11107 impressions and 2666 views.



LinkedIn: Monthly Engagement Growth

June	July	August
Initial engagement with 3178 impressions and 59 engagements.	Initial engagement with 17273 impressions and 317 engagements.	Initial engagement with 6193 impressions and 286 engagements.



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