CSIR IN MEDIA

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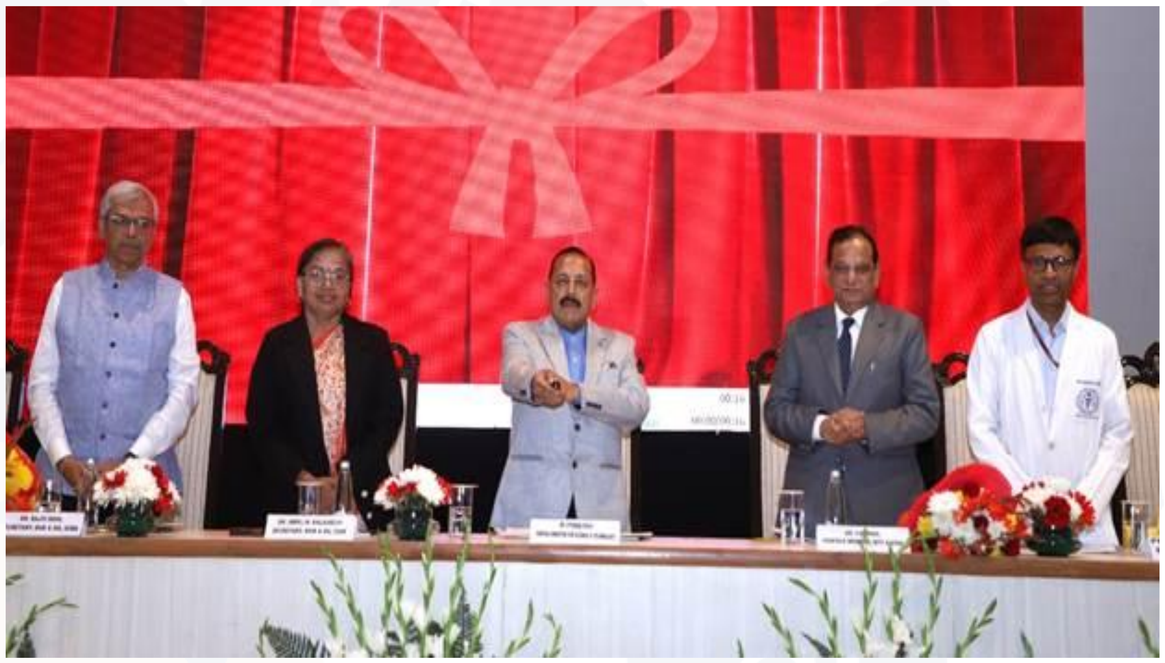
NEWS BULLETIN
06 TO 10 FEBRUARY 2025

Compiled by Science Communication and Dissemination Directorate (SCDD), CSIR, Anusandhan Bhawan, New Delhi

Union Minister Dr. Jitendra Singh today launched India's first indigenous Automated Bio Medical Waste Treatment Plant at AIIMS New Delhi.

CSIR-NIIST

10th February , 2025



Union Minister Dr. Jitendra Singh today launched India's first indigenous Automated Bio Medical Waste Treatment Plant at AIIMS New Delhi. The Automated Biomedical Waste Treatment Rig, named "Sṛjanam," was officially dedicated to the nation by the Minister at a ceremony held in the AIIMS auditorium. Following the ceremony, he, accompanied by Director General of CSIR Dr. N. Kalaiselvi and Director of AIIMS Dr. M. Srinivas, walked to the site within the AIIMS premises where the machinery had been installed and formally switched it on.

This innovative, environmentally friendly technology, developed by CSIR-NIIST (National Institute for Interdisciplinary Science and Technology), offers a significant advancement in the sustainable management of biomedical waste.

Speaking on the Commissioning, Minister of State (Independent Charge) Science & Technology; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh called for a paradigm shift from 'Waste to Wealth' and emphasized the importance of sustainability and environmental concerns. He noted that India's economy has transitioned from being part of the fragile five to a member of the First Five and is poised for continued growth. He highlighted the significance of the new biomedical waste treatment rig, which is set to revolutionize waste management in healthcare facilities.

The "Sṛjanam" rig can disinfect pathogenic biomedical waste such as blood, urine, sputum, and laboratory disposables, without the use of costly and energy-intensive incinerators.

Additionally, the rig imparts a pleasant fragrance to the otherwise foul-smelling toxic waste. With a daily capacity of 400 kg, the equipment is capable of handling 10 kg of degradable medical waste per day in the initial phase. Once validated, this technology will be ready for full-scale implementation after receiving approval from relevant authorities.

With the growing demand for better waste disposal solutions, the "Sṛjanam" rig offers a safer and more efficient approach, eliminating the risks associated with human exposure to harmful waste and minimizing the chances of spills and accidents. The technology has been third-party validated for its antimicrobial action, and studies have shown that the treated material is safer than organic fertilizers like vermicompost.

Dr. Jitendra Singh lauded CSIR-NIIST for its innovative and cost-effective solution to dispose of pathogenic biomedical waste in an eco-friendly manner. He referenced the 2023 annual report of the Central Pollution Control Board (CPCB), which indicated that India generates 743 tonnes of biomedical waste daily, presenting a significant challenge in its safe and proper disposal. The new technology addresses this issue and presents an environmentally responsible alternative to traditional incineration methods.

Dr. Jitendra Singh further explained that improper segregation, open dumping, open burning, and inadequate incineration of biomedical waste lead to severe health hazards, including the release of carcinogens and particulate matter. He emphasized the need for effective waste management to prevent the spread of infectious diseases and reduce the risk of antimicrobial resistance.

Dr. Jitendra Singh also acknowledged the efforts of Prime Minister Narendra Modi, whose leadership continues to drive India's progress in science, technology, and green initiatives. He praised Shri. Tanmay Kumar, Secretary, Ministry of Environment, Forest, and Climate Change (MoEFCC), for his prompt actions in securing the necessary clearances for this project. In his address, Dr. Singh mentioned other technological milestones achieved by India, including the first indigenous DNA vaccine, the development of India's first HPV vaccine to

combat cervical cancer, and rapid advancements in space technology. He also highlighted India's breakthrough in pharmaceuticals with the creation of the indigenous antibiotic 'Nafithromycin' and India's first gene therapy trial for hemophilia, supported by the Department of Biotechnology (DBT).

Vice-President of CSIR, Dr. Jitendra Singh, recalled the 'One Week One Lab' initiative, which aims to raise awareness about CSIR's groundbreaking projects, such as the first hydrogen buses developed by NCL Pune, off-season tulips developed by CSIR Palampur, the 108-petal lotus, and more.

The Science and Technology Minister also emphasized the priorities of the government during its first 100 days, which include the approval of India's first Bio E3 policy, the sanctioning of 1000 crores for Viability Gap funding for space startups, 2000 crores for Mission Mausam, and 50,000 crores for the Anusandhan National Research Foundation (NRF). Furthermore, he highlighted the recent Union Budget, which proposes 20,000 crores for Bharat Small Modular Reactors (SMRs).

Dr. Jitendra Singh concluded by urging for increased academic collaboration between institutions and proposed making postgraduate students co-guides in exchange programs, fostering synergy and shared learning. He emphasized the government's unwavering support for science, technology, and innovation under the leadership of PM Modi. He said "This initiative aligns with the government's vision of a "Viksit Bharat" by 2047, and with continued progress in innovation and sustainable technologies, India is set to become a global leader in environmental and healthcare solutions".

The ceremony was attended by distinguished dignitaries including Dr. V. K. Paul, Member, Niti Aayog, Dr. Rajiv Bahl, Secretary, DHR and DG, ICMR, Tanmay Kumar IAS, Secretary MoEFCC, Dr. N. Kalaiselvi, Secretary DSIR and DG, CSIR, and Dr. M. Srinivas, Director, AIIMS.

Published in:

Pib

CCMB Hosts International Workshop on Tuberculosis Research

CSIR-CCMB

10th February , 2025

Tuberculosis (TB) bacteria can take refuge not only in lung cells but also in the liver and other organs, revealed Dr. Rajesh Gokhale, Secretary of the Central Department of Biotechnology. He made the statement while inaugurating a four-day international workshop on tuberculosis at the Centre for Cellular and Molecular Biology (CCMB) here on Sunday. The workshop, themed "Understanding and Solving the Complexities of Mycobacterium Infections," aims to explore recent advancements in TB diagnosis, treatment, and vaccine development. CCMB Director Dr. Vinay K. Nandikuri highlighted that the workshop will provide valuable insights into Mycobacterium tuberculosis and strategies to combat the infection. The event is being supported by the European Molecular Biology Organization (EMBO). With TB remaining a major global health challenge, the discussions at this forum are expected to pave the way for more effective treatments and prevention strategies.

What is Tuberculosis?

Tuberculosis (TB) is an infectious disease that most often affects the lungs and is caused by a type of bacteria. It spreads through the air when infected people cough, sneeze or spit.

Symptoms of Tuberculosis

People with latent TB infection don't feel sick and aren't contagious. Only a small proportion of people who get infected with TB will get TB disease and symptoms. Babies and children are at higher risk.

Common symptoms of TB

prolonged cough (sometimes with blood), chest pain, weakness, fatigue, weight loss, fever, night sweats.

Published in:

Etvbharat

What scientists make of R&D allocations in the 2025 Union Budget

CSIR

10th February , 2025

Abhay Karandikar, Secretary, Department of Science & Technology (DST):

The Budget provides an overall and possibly unprecedented thrust on research and innovation by setting aside Rs 20,000 crore for DST towards research in the private sector, including corporates and startups. There is a focused attempt to bring together academia, private sector and startups to work on national missions, such as the AI and quantum missions already underway, and the newly announced nuclear mission (to set up small and modular reactors), the geospatial mission, and others. A key focus of the funding trend is to boost research, development and innovation. The dedicated fund of Rs 20,000 crore is part of the Rs 1 lakh crore corpus fund announced in the budget of July 2024 to boost private sector R&D, especially in deeptech and sunrise sectors. DST will be the nodal ministry driving this fund. This will be a major step towards creating strategic autonomy in some key technology sectors.

The National Geospatial Mission has been announced with an allocation of Rs 100 crore for FY 2025-2026 to develop foundational geospatial infrastructure and data. The mission will help implement the National Geospatial Policy 2022, notified by DST with the goal of expanding the access and use of geospatial data and making India a world leader in the geospatial sector. The Union Finance Minister has also announced several initiatives to boost science, technology, and innovation in the country including the Nuclear Energy Mission, initiatives in clean tech, Atal Tinkering Labs, and the Centre of Excellence on AI in Education.

Rajesh Gokhale, Secretary, Department of Biotechnology (DBT):

The Union Budget demonstrates a strong commitment to advancing India's biotechnology sector, aligning closely with the DBT's objectives. The Rs 3,446.64 crore allocation reflects a significant increase of 51.45%from the previous year's allocation. An allocation of Rs 20,000 crore has been designated to support private-sector-driven research. Recently, the government

also approved the 'Bio-RIDE' scheme to foster innovation, promote bio-entrepreneurship, and strengthen India's position as a global leader in biomanufacturing and biotechnology. The Budget introduces several initiatives that align closely with DBT's mission to advance India's biotechnology sector. The support for private sector research is expected to accelerate advancements in areas such as gene-editing, personalised medicine, and sustainable agriculture. The proposal for a light-touch regulatory framework based on principles and trust is a progressive step. Simplifying regulations and updating outdated laws will enhance the ease of conducting biotech research and development, facilitating faster translation of scientific discoveries into market-ready solutions.

The National Mission on High Yielding Seeds will focus on strengthening the research ecosystem and developing high-yielding, pest-resistant, and climate-resilient seeds, aligning with DBT's efforts in agricultural biotechnology. Aligned with the government's 'BioE3 Policy' for fostering high-performance biomanufacturing, the National Manufacturing Mission (NMM) announced in the Budget aims to accelerate technology development and commercialisation. Additionally, it will drive the expansion of India's skilled workforce and boost job creation. Efforts are already underway to implement the BioE3 Policy in support of the NMM. Similarly, some of DBT's initiatives contribute to self-reliance programmes, such as the mission on minor oil seeds (with identification of new genes/alleles for linseed, sesame, niger, and safflower for accelerated genetic improvement, productivity enhancement, and sustainability). Another is a mission programme on "Characterisation of Genetic Resources", to sequence/re-sequence and characterise available germplasm resources of pulses such as chickpea.

N. Kalaiselvi, Director-General, Council of Scientific and Industrial Research (CSIR):
The Union Budget reinforces science, technology, and innovation (STI) as key enablers of national progress, aligning with CSIR's vision of advancing self-reliance and global competitiveness. The budget's focus on public-private partnerships, industry collaboration, and technology-driven entrepreneurship will accelerate innovation in manufacturing, healthcare, sustainability, and strategic sectors.

For agriculture and rural prosperity, CSIR's Aroma and Floriculture Missions align with the Agri-Districts Initiative, promoting value-added farming and boosting farmer incomes. Similarly, CSIR's Millets Mission supports self-reliance in pulses and oilseeds, ensuring nutritional security and climate-resilient farming. The CSIR Cotton Mission aligns with the National Cotton Mission, strengthening India's position in global textile markets. The Indigenous Manufacturing and Smart Packaging Missions finds synergy with the NMM, driving innovation-led industrial growth. The Green Hydrogen Mission, spearheaded by CSIR, supports the clean energy transition.

For youth-skilling, CSIR's Jigyasa Programme complements the Atal Tinkering Labs, fostering STEM education and research exposure. The Seaweed Mission and Learn & Earn Program empower women entrepreneurs, supporting economic inclusion. Additionally, CSIR's Footwear for Healthcare and India Footwear Sizing Program align with the leather sector initiatives. This budget cements CSIR's pivotal role in nation-building and reinforces STI as the foundation for a self-reliant, inclusive, and globally competitive India.

K.S. Parthasarathy, former Secretary, Atomic Energy Regulatory Board (AERB):
I was one among a handful of officers who joined a nascent AERB and was its secretary for nearly 17 years, almost entirely its entire formative years. The Central government's ambitious programme to enhance the share of nuclear power to 100 GWe by 2047 and to invest heavily to support associated R&D is challenging to all stakeholders. Accepting private sector participation in the nuclear sector adds a new dimension to the programme. Success in the project to develop and install small modular reactors (SMRs) is essential in India's energy transition. As per the IAEA, SMRs are nuclear reactors of power generating capacity 300 MWe equivalent or less. The AERB has implemented measures to regulate the safety of VVER Russian reactors, pressurised heavy water reactors of 700 MWe, the prototype fast breeder reactor, etc., all of which include first of the kind technologies. AERB's reports to the IAEA Convention of Nuclear Safety reveal how openly and transparently it has been fulfilling its mandate. AERB staff updates its knowledge and expertise in safety-related disciplines associated with new technologies. It has linkages with the US Nuclear Regulatory Commission and the French regulatory agency among others, and exchanges its experience

regularly.

C.P. Rajendran, National Institute for Advanced Studies:
The Budget indicates a significant influx of funding for science and technology, as well as for the DBT, whereas the allocation for the Department of Scientific and Industrial Research is nominal. Beyond the fine print, the less obvious factors will take time to surface. Overall, two key points emerge: the importance of curiosity-driven science does not seem to be a major priority. Much of the funding appears directed towards mission-mode programmes such as nuclear energy, AI, the Jal Jeevan Mission, and private sector initiatives, among others. The government also plans to amend the Nuclear Liability and Damage Act 2010, which makes operators liable for nuclear damage. This will have serious ramifications. Many experts have raised concerns about SMRs. The Finance Minister also announced the expansion of the Small Industries Development Bank of India Fund for Startups with an additional Rs 10,000 crore corpus to enhance the "deeptech ecosystem" in startups focused on AI, biotech, and space technology. India has many deeptech startups, with over 3,600 in 2023. In that year, they raised $850 million, reflecting a 77% decrease from 2022 due to investors' lack of confidence regarding investment returns. It seems the increase in funding will primarily benefit technology development. Curiosity-driven research is the type of research propelled by scientists' curiosity regarding specific research questions and investigation methods that require creativity. What I observe is a growing corporatisation of science driven solely by immediate utility. Another critical issue is the rigid bureaucracy surrounding funding, which has created significant problems over the years.

Tapasya Srivastava, head, Department of Genetics, University of Delhi South Campus:
The Budget brings forth cheer to meet the increasing need of health research and biomedical devices given the recent Economic Survey report that recognised physical and mental harms of ultra-processed food leading to non-communicable diseases. The government continues to show excellent commitment to research, development and innovation through the Ministry of Science and Technology. Following up on the R&D fund last year, this year's budget has made an allocation of Rs 20,000 crore towards the fund. This corpus has taken the Ministry's allocation from Rs 8,029 crore last year to Rs 28,508 crore this year.

The percentage increase from revised estimates 2024-2025 to budget estimates 2025-2026 to Central universities (4.3%) is about half of that given to IITs (8.4%), which is disappointing given the number of students and the overhauling with respect to the National Education Policy (NEP) that universities are going through. These changes require unprecedented support from the government, which is not evident looking at these numbers. It would have been more meaningful if the Prime Minister's Research Fellowship became an interim research fellowship of a reasonable amount that replaces the abysmally low Rs-8000 non-NET UGC. The PMRF is competitive and is given mostly to labs sufficiently endowed with their own funding.

The AI bandwagon is something that all governments seem to want to rush into. The allocation has come into the Centre of Excellence in AI education and therefore one hopes the Centre of Excellence also sets benchmarks for adoption in a way that truly benefits Indian society, beyond buzzwords. The Annual Status of Education Report 2024 shows some of the highest enrolment in a decade, not only recovering from COVID-19 decline but exceeding expectations. With a significant number of youth struggling with mental health issues, overall health decline, reduced attention span and consumerism, the unprecedented advantage of a steady government for thoughtful implementation of value-based learning and life skills in school education to bring generational changes, appears to have been lost.

Soumitro Banerjee, Professor, Department of Physical Sciences, Indian Institute of Science Education and Research, Kolkata: The Union Budget lacks the vision to create a scientific India. The scientific community of India is dismayed to see the low financial allocation to sectors crucial for the country's scientific development. The NEP-2020, adopted by the same government, recommended the expenditure on education be 6% of the GDP, which requires at least 10% of the Union Budget to be spent on education.

But since 2020, there has been no attempt to meet this target. This year the allocation is only 2.54%. This implies that through NEP-2020, the government is trying to change the structure and content of education without improving its quality. The direction of change is clear from

the five-fold increased outlay for 'Indian Knowledge Systems'. Basic science research has taken a backseat as the funding for IISc and the IISERs has been reduced. The UGC, which funds all universities, saw a drastic reduction in its budget last year (from Rs 5,360 crore to Rs 2,500 crore). Despite some increase this year (Rs 3,336 crore), it is far below the pre-2024 figure. As a result the condition of research in universities will continue to be dismal.

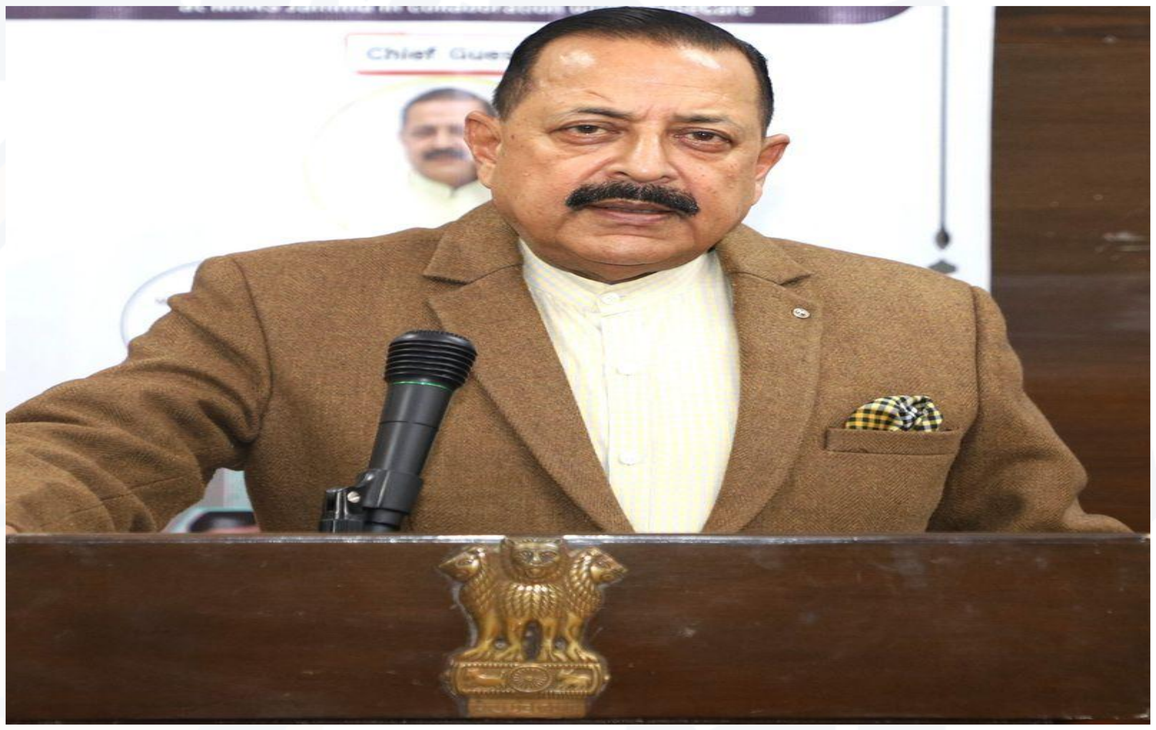
In order to see the vision of a scientific India come to fruition, the need of the day is a significantly larger outlay in scientific and technological research to the extent of 3% of the GDP and an increase in the education budget to 6% of the GDP.

Published in:
The Hindu

J&K has vast potential in leather goods industry: Union minister

CSIR-IIIM

10th February , 2025



Jammu and Kashmir has vast potential in the leather goods industry, said Union Minister Jitendra Singh, asserting that proper training can significantly contribute to economic growth and generation of livelihoods. The Minister of State in the Prime Minister's Office was speaking at a function after flagging off an industrial training programme on leather goods manufacturing for women entrepreneurs here on Saturday. The initiative is aimed at empowering women by providing them with skill development opportunities in the leather sector.

The training programme is being organised by the CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu which was financially supported by Central Electronic Limited (CEL) under Corporate Social Responsibility (CSR).

"Jammu and Kashmir has vast potential in the leather goods industry due to the availability of raw materials, traditional craftsmanship, and growing demand for handmade, high-quality leather products.

"Proper training in this sector can significantly contribute to economic growth and livelihood generation, especially to unemployed women," the minister said.

He said this is a unique initiative where three organisations — CSIR-Indian Institute Integrative Medicine (CSIR-IIIM), CSIR-Central Leather Research Institute (CSIR-CLRI)

and CEL — have collaborated to strengthen the entrepreneurial ecosystem in Jammu and Kashmir.

“This effort, spearheaded by CSIR-IIIM, aims to empower women in J&K and is expected to significantly benefit startups registered under the Atal Innovation Centre at CSIR-IIIM,” the minister said, highlighting the importance of skill development in creating sustainable livelihood opportunities.

Earlier, Director, CSIR-IIIM, Jammu Zabeer Ahmed detailed the training programme, which is focused on various aspects of leather goods manufacturing, including design, production, and marketing, with the goal of equipping women with the necessary skills to establish their own startup and businesses enterprise.

Published in:
Tribuneindia

VIA Agro Forum to hold food processing workshop today

CSIR-CFTRI

10th February , 2025

The Agro Rural Development & Food Processing Forum of Vidarbha Industries Association Nagpur is organising a workshop titled ‘CSIR – CFTRI available technologies and expertise in food processing for adoption in Vidarbha' on February 10 at 10.30am at VIA Auditorium, Udyog Bhavan, Civil Lines.

Dr Sandeep Mudliar, the chief scientist CSIR-CFTRI and other experts will speak on the subject. For more contact VIA 0712-2561211, convenor Shachi Mallick (9421708516), or project director Kapil Charan Sahoo (9890324891). The seminar will be beneficial to agro food processing professionals and budding food technology research scholars and students.

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Published in:

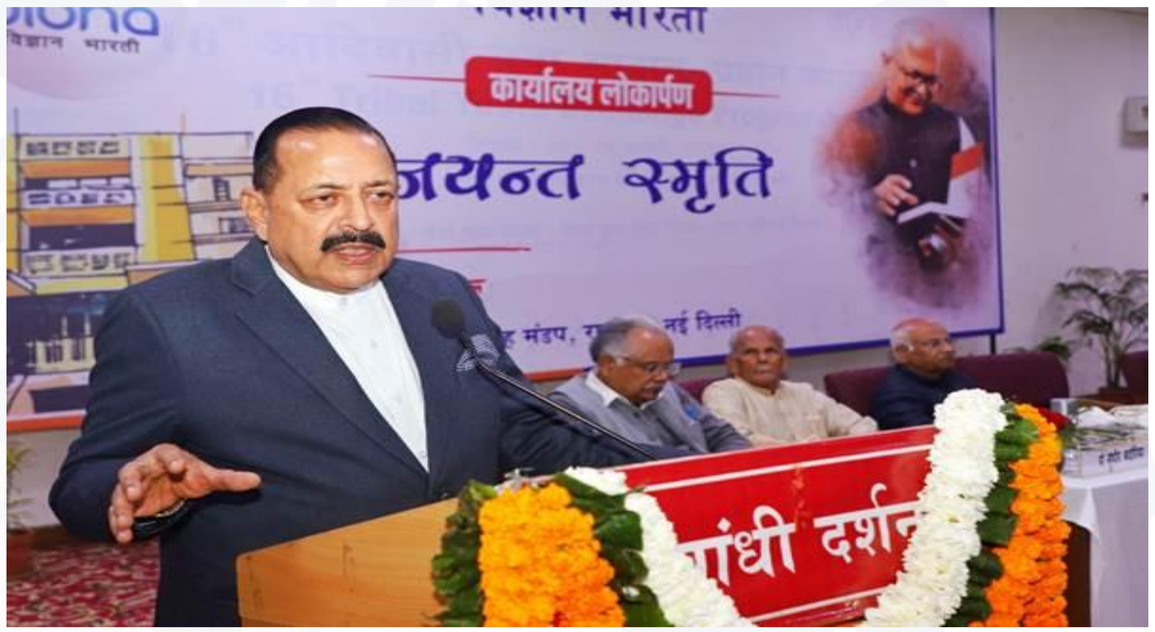
Times of India

India's quantum leap testified by global success stories like Vaccine, Chandrayaan, says Dr. Jitendra Singh

CSIR-TKDL

09th February , 2025

Union Minister Dr. Jitendra Singh said here today that India's quantum leap was testified by global success stories like Vaccine and Chandrayaan. He was speaking after inaugurating the new premises of "Vigyan Bharati" in the national capital, describing the same as a long-felt need. He emphasized that the office would serve as a center for exchange of ideas and a seat of learning.



Addressing the ceremony, Union Minister of State (Independent Charge) Science & Technology; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh stated that India is witnessing a transformative era in science under the leadership of Prime Minister Narendra Modi. He highlighted how the Prime Minister not only encourages but also provides unwavering support to the scientific community, strengthening it with resources and enabling collaborations with non-governmental sectors to achieve the best outcomes.

Reflecting on the advancements of the past decade, Dr. Jitendra Singh stressed that while India has always had immense scientific acumen and talent, the missing element was commitment and prioritization from the political leadership—something that is now being actively addressed under PM Modi's governance.

Dr. Jitendra Singh underscored the significant progress India has made, particularly in healthcare. He noted that India, once not taken seriously in curative healthcare, is now emerging as a global leader in preventive healthcare. He proudly mentioned India's

achievements, including: The first DNA vaccine developed during the pandemic. The first indigenous HPV vaccine to combat cervical cancer and rapid advancements in space technology, despite a late start in the sector. He also spoke about India's commitment to global climate change efforts, reaffirming the country's target of achieving net-zero emissions by 2070.

Dr. Jitendra Singh highlighted the importance of Traditional Knowledge Digital Library (TKDL), calling it a valuable repository of indigenous wisdom. He cited examples such as: The Konark Temple in Odisha, which remained intact even after the super cyclone of 2000, showcasing India's architectural resilience.

The growing interest in traditional medicine, as seen during the pandemic when the West explored homeopathy and naturopathy for potential remedies. He also referenced India's success in using steel slag for road construction in Arunachal Pradesh, in collaboration with the Tata Group, drawing parallels with the durable routes of Ajanta and Ellora that have withstood the test of time.

Quoting Dr. Syama Prasad Mookerjee, Dr. Singh remarked, "By remaining committed to our legacy, we should not deprive ourselves of what is happening across the world." He urged Vigyan Bharati to act as an interface for identifying initiatives and fostering collaborations, similar to how IN-SPACe and BIRAC have become successful platforms for the space and biotechnology sectors, respectively. He also proudly announced India's recent breakthrough in pharmaceuticals with the creation of the indigenous antibiotic 'Nafithromycin', positioning India as a leader in both traditional and cutting-edge technologies. Dr. Jitendra Singh emphasized that integration is no longer an option but a necessity and called upon Vigyan Bharati to become a key medium for broader scientific integration. He expressed confidence that such efforts would drive India's continued rise as a global powerhouse in science and technology.

Published in:
Pib

Civic agencies plan to deploy CSIR-CMERI mechanical drain cleaning system

CSIR-CMERI

09th February , 2025

In a bid to stop manual cleaning of drains and sewer, the engineers of civic agencies in the city have started exploring the feasibility of implementing a mechanical drain cleaning system.

Scientists from the Council of Scientific and Industrial Research-Central Mechanical Engineering Research Institute (CSIR-CMERI) held meetings recently with engineers from the Greater Chennai Corporation, the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB), and other government agencies to implement the new system to replace manual scavenging.

In the past few years, the CSIR-CMERI has patented drain cleaning systems to replace the manual work in drainage cleaning. It had developed a machine for use in sewer pipes up to 300 mm in diameter for a length of up to 100 m and can handle blockage caused by plastic, other non-biodegradable items, debris, and tree root intrusion.

According to representatives of manual labourers in Chennai, 40 persons have died during drain and septic tank cleaning in the city in the past 10 years. However, many of their families are yet to receive compensation.

Civic agencies have already announced mechanisation of drain and sewer cleaning, but this has been an expensive exercise. The CSIR-CMERI's drain cleaning machine is affordable when compared to the expensive jet rodding machines and super suckers, the officials said.

Recently, 213 jet rodding machines were provided to persons selected from the manual labourers of the CMWSSB, with 50% of the machine's cost of ₹64 lakh subsidised by the government. The manual labourers, however, organised protests alleging that the 1,449

manual labourers on contract and 789 permanent ones were not among those who received this subsidy.

The GCC has also deployed jet rodding machines and super suckers to clear blockage in storm-water drains in many of its 15 zones. However, the machines are expensive, and operation cost was high. The CSIR-CMERI's machine will be more efficient in resolving civic issues caused by overflowing drains and sewer, the civic officials added.

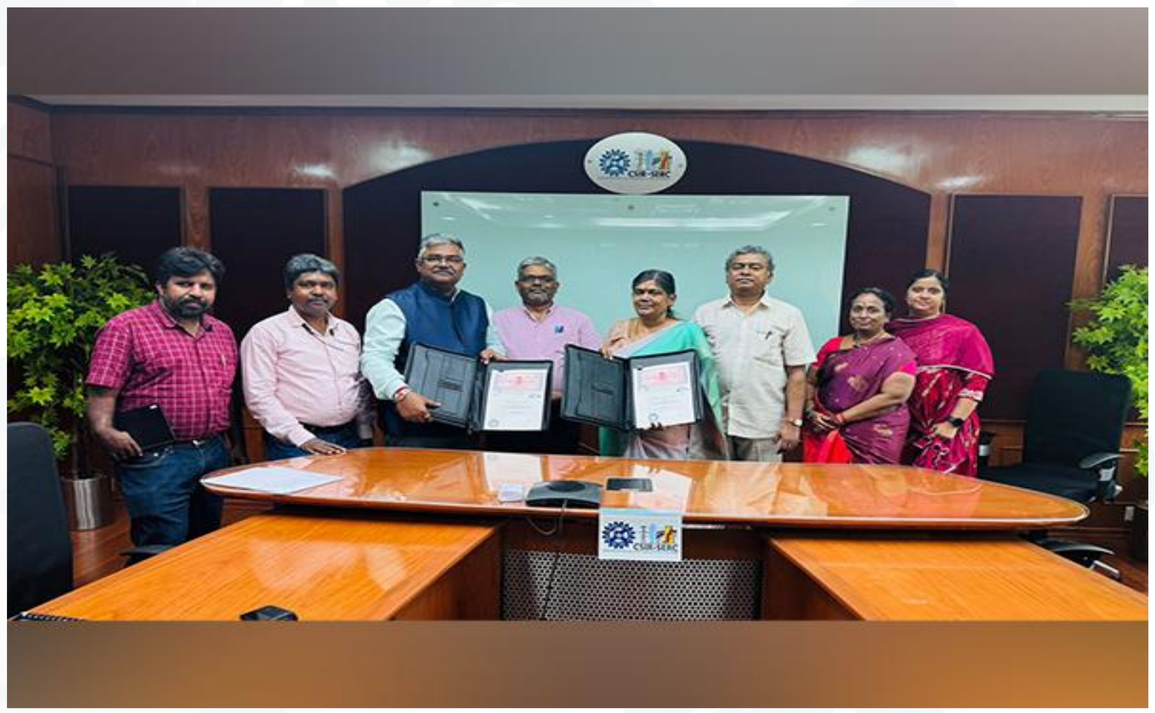
Published in:
The Hindu

CSIR Unveils Advanced Security Booth Technology for MSME Enhancement

CSIR-SERC

08th February , 2025

New Delhi, [India], February 8: The Council of Scientific & Industrial Research (CSIR) has launched the '100 days, 100 technologies' program focused on boosting the competitive edge of Micro, Small, and Medium Enterprises (MSMEs) through advanced technology transfers. This initiative aims to reinforce local industries with cutting-edge solutions.



In a significant development, the CSIR-Structural Engineering Research Centre (SERC) has transferred the technology for a high-velocity multi-hit resistant movable protective booth to Sehgal Doors. Known for their fireproof and security doors, Sehgal Doors will now enhance their offerings with this new innovation. The agreement, signed by CSIR-SERC Director Dr. N. Anandavalli and Neeraj Sehgal of Sehgal Doors, marks a major milestone in security innovation.

The advanced security booth, developed at CSIR-SERC, Chennai, features steel fiber-reinforced cementitious composite panels designed for modularity and NIJ level-III protection against multiple 7.62 AP projectile impacts. Notable for its easy assembly, repair, and aesthetic flexibility, the booth is poised to elevate security standards across diverse national facilities.

Published in:
Devdiscourse

CSIR-NAL with DRDO and ISRO to Construct Most Advanced CTW Tunnel for Aerodynamic Research & Testing

CSIR-NAL 08th February , 2025

The Council of Scientific and Industrial Research – National Aerospace Laboratories (CSIR-NAL), the Defence Research and Development Organisation (DRDO), and the Indian Space Research Organisation (ISRO) have teamed up to build a state-of-the-art Continuous Trisonic Wind Tunnel (CTWT) or CTW Tunnel. This facility is expected to be one of the world's most advanced of its kind.

A Continuous Trisonic Wind Tunnel (CTWT) is a sophisticated facility designed to simulate the conditions that aircraft and aerospace vehicles experience at various speeds, including subsonic, transonic, and supersonic speeds (Mach 0.1 to 4).

Unlike traditional wind tunnels that operate intermittently, a CTWT can run continuously, allowing for long-duration tests that are crucial for studying steady-state aerodynamic behaviors.

The CTWT project, which has been approved for development, aims to be completed by 2031. The CTWT will feature two distinct wind tunnels: a Continuous Type Wind Tunnel and a Blowdown Type Wind Tunnel. These tunnels will allow for long-duration tests and high-speed aerodynamic simulations, significantly reducing India's reliance on foreign facilities.

The Continuous Type Wind Tunnel will be 2.5 meters wide by 2.5 meters high. The facility will be capable of simulating air speeds from Mach 0.1 to 1.8. The CTW Tunnel will be designed for continuous operation, allowing for long-duration tests crucial for analyzing steady-state aerodynamic behaviors.

The Blowdown Type Wind Tunnel will be 1.75 meters wide by 1.75 meters high. It will be designed for higher speeds and transient flight conditions, offering insights into high-speed

aerodynamics. The Blowdown Type Wind Tunnel will be capable of simulating air speeds from Mach 1.6 to 4.

Notably, the North American Trisonic Wind Tunnel (NATWT) located in El Segundo, California, built by North American Aviation in the 1950s, had a maximum testing speed of Mach 3.5.

The collaboration between CSIR-NAL, DRDO, and ISRO to build a new Continuous Trisonic Wind Tunnel (CTWT) facility is a significant step for India's aerospace capabilities.

This facility will help reduce reliance on foreign wind tunnels, saving both time and costs, while enhancing national security by keeping sensitive projects within the country.

This ambitious project is expected to be completed by 2031, with a Detailed Project Report (DPR) finalized by July 2025.

These advanced wind tunnels will help studying the behavior of aircraft, missiles, and space vehicles under various flight conditions, and at the same time reducing reliance on foreign wind tunnels and keeping sensitive projects within the country.

Published in:
Indianweb2

Dr. Jitendra flags off CEL, CSIR supported Women Entrepreneurs for Leather Skill Development Training

CSIR-IIIM

08th February , 2025

Union Minister of State (Independent Charge) for Science and Technology; Earth Sciences and Minister of State for PMO, Department of Atomic Energy, Department of Space, Personnel, Public Grievances and Pensions, Dr. Jitendra Singh today flagged off an Industrial Training Program on Leather Goods Manufacturing for women entrepreneurs from the J&K.

The initiative aims to empower women by providing them with skill development opportunities in the leather sector. The training program is being organized by the CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu which was financially supported by Central Electronic Limited (CEL). This employment generation programme is the Corporate Social Responsibility (CSR) initiative of CEL through which the project titled "Employability to Women Through Skill Development and Entrepreneur Support in Manufacturing & Designing of Leather Goods and Garments" was granted to CSIR-IIIM, Jammu.

While addressing the gathering, Dr. Jitendra highlighted that this is a unique initiative of first of its kind where three organizations viz., CSIR-Indian Institute Integrative Medicine (CSIR-IIIM), CSIR-Central Leather Research Institute (CSIR-CLRI) and Central Electronic Limited (CEL) have collaborated to strengthen the entrepreneurial ecosystem in the Union Territory of Jammu and Kashmir. Further dwelling on the policies of Govt. headed by Prime Minister, Narendra Modi, Dr Singh also commended the institutions like CEL which has funded this special project for imparting training to women with a focus on their employability, the CSIR-CLRI, globally renowned institution for conducting the training at its satellite centre at

Jalandhar. This effort, spearheaded by CSIR-IIIM, aims to empower women in J&K and is expected to significantly benefit startups registered under the Atal Innovation Centre at CSIR-IIIM.

Dr. Jitendra also highlighted the importance of skill development in creating sustainable livelihood opportunities. He emphasized that the Jammu & Kashmir region has vast potential in the leather goods industry due to the availability of raw materials, traditional craftsmanship, and growing demand for handmade, high-quality leather products. Proper training in this sector can significantly contribute to economic growth and livelihood generation, especially to unemployed women.

Earlier, Dr. Zabeer Ahmed, Director, CSIR-IIIM, Jammu while welcoming the Union Minister apprised him about the training focused on various aspects of leather goods manufacturing, including design, production, and marketing, with the goal of equipping women with the necessary skills to establish their own startup and businesses enterprise.

During next one week, the participants will receive hands-on training from industry experts at CSIR-CLRI, Jalandhar and will be guided in modern techniques to ensure their competitiveness in the market, he informed.

Dr. Ahmed also underscored the significance of utilizing scientific research and innovation to boost entrepreneurship and support local talent in the country as a whole. The program is expected to create new opportunities in the leather sector and contribute to the economic growth of the region. The training program was organized under the guidance of Dr. Zabeer Ahmed, Director, CSIR-IIIM, Jammu & Chairman, Atal Incubation Centre.

The event was attended by officers of CSIR-IIIM including Er. Abdul Rahim, Head Br. Srinagar & Vice-Chairman, Atal incubation Centre, Dr. Saurabh Saran, Pr. Scientist, PI, Atal Incubation Centre, Dr. Shahid Jibran, CEO, Atal Incubation Centre.

Published in:

Jammulinksnews

Aero India 2025 to showcase cutting-edge defence technology

CSIR-NAL

08th February , 2025

Aero India 2025, scheduled between February 10 and 14 at Yelahanka Air Force Station, Bengaluru, promises cutting-edge aerospace and defence technology. Major participants include HAL, NAL, BEL, and global defence giants.

The United States Air Force will showcase the F-35, B-1B "Lancer," and KC-135 "Stratotanker." Russia's Su-57 arrived at the Air Force Station on Friday. Swedish defence company SAAB will be featuring the Gripen-E fighter jet; SAAB has also promised the 'fastest delivery to the IAF' in a post on their website.

Bharat Electronics Limited (BEL) will present state-of-the-art products in 14 categories, including defence communication, avionics, electronic warfare, and AI-based solutions. Its notable exhibits include Weapon Systems: Pralay Missile, QRSAM, Long-Range Land Attack Cruise Missile; Radar Systems: Arudhra, Ashwini, Multi-Function Radar; Futuristic Tech: 5G for Defence, Quantum Cryptography, Unmanned Warfare.

CSIR-National Aerospace Laboratories (NAL) will highlight its Hansa-NG flying trainer and Saras-Mk II, a 19-seat light transport aircraft under the UDAN scheme. A static and flying display of Hansa-NG will allow flying clubs to assess the aircraft. Saras-Mk II's features include a pressurized cabin, digital anti-skid braking, and Cat II landing autopilot. NAL is also advancing High-Altitude Platforms (HAP) for pseudo-satellite applications in 5G & 6G telecommunications. Other exhibits include Wankel Engines, Q-Plane e-VTOL, and a Continuous Wind Tunnel model.

Hindustan Aeronautics Limited will showcase its latest products under the theme "Innovate. Collaborate. Lead." Key attractions include Light Utility Helicopter (LUH), HTT-40 Simulator; Scaled models: LCA Mk1A, HJT-36, Hindustan 228 (amphibian variant); Flying

Displays: LCA Mk1A formations, HJT-36, HTT-40, LUH

A highlight of India Pavilion will be a full-scale Combat Air Teaming System (CATS) Warrior and a 1:1 model of the Advanced Medium Combat Aircraft (AMCA). HAL's aerospace contributions include Cryogenic Engine CE-20, GSLV Mk III, and Chandrayaan-3 models.

Bengaluru-based startup Garuda Aerospace will unveil eight next-gen drones for defence, safety, and logistics, including Rocket Launcher drone, Landmine Detection drone, Logistics and firefighting drones
VR Military Drone Simulator. Garuda Aerospace is also forming strategic partnerships with Thales, DRDO, Tata Elxsi, and Rajasthan Electronics to drive unmanned aerial systems innovation.

Published in:
Deccanherald

CSIR-NIScPR's IJBB Releases Special Issue on Opportunities & Challenges in Biological Chemistry

CSIR-NIScPR

07th February , 2025

The Indian Journal of Biochemistry and Biophysics (IJBB), CSIR-National Institute of Science Communication and Policy Research (NIScPR), New Delhi, has brought out a special issue in association with Birla Institute of Technology and Sciences (BITS), Pilani, K K Birla Goa Campusand theSociety of Biological Chemists –India, (SBC-I) on the theme, "Biological Chemistry: Opportunities, Challenges and the Way Forward" . As a leading public funded Science publishing institute in India, CSIR-NIScPR publishes 15 journals in various STI disciplines, and all of them are indexed by reputed national/international agencies like Science Citation Index (Web of Science), Scopus, NAAS and UGC CARE.

IJBB, a monthly premier peer-reviewed research journal in the subject area of Biochemistry, Biophysics and Biotechnology, with the JIF score of 1.5. With reputed national/international experts on Board, the journal has been receiving considerable attention from researchers and academicians across the globe. Its commitment to publishing quality research makes it a vital resource for those seeking to stay at the forefront of these critical scientific disciplines. This special issue (March 2025 IJBB Vol. 62 Issue no. 3) has 9 review papers and 1 original research paper broadly covering the emerging trends in the Biological Chemistry contributed by reputed researchers in the subject area.

The articles cover (i) Phosphodiesterase 4 as a candidate therapeutic target of cancer (ii) A review on repurposing anti-diabetic drugs for the amelioration of betel-nut induced carcinogenesis; (iii) Chromatin higher order structure and possible therapeutic target (iv) From 2D to 3D: decoding tuberculosis pathobiology and drug development with ex vivo disease models; (v) Transport mediated antibiotic resistance in Mycobacterium tuberculosis; (vi) Phenotypic antibiotic resistance: Involvement of genes and additional factors; (vii) An overview of response pathways for protection of mitochondria from protein misfolding stress (viii) Advances in myogenic differentiation: Role of stem cells, RNA-binding proteins,

molecular pathways, and detection Techniques; (ix) Aspergillusnigeracidogenic metabolism: A biased view from the C and N interface; and (x) Camptothecin exerts anti-cancer effects through FoxM1 inhibition

Publication of this special issue was possible only with the intensive effort of Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, New Delhi, and able guidance of the Editorial Board comprising globally renowned experts Prof. Stephen Dimitrov (Chief Editor, IJBB), Prof DN Rao (Executive Editor, IJBB), Guest editors Prof. Suman Kundu and Prof. Meenal Kowshik, from BITS, Goa Campus, and the initiative taken by Dr. NK Prasanna, Editor, IJBB. We appreciate the kind encouragement from Dr Charu Verma, Head, Research Journals. Contribution from authors, reviewers, and the technical support provided by the print production team of CSIR-NIScPR for successful timely publication of this issue deserves special mention.

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Indiaeducationdiary

Rejubit: CRRI launches made-in-India agent for recycling old bitumen roads

CSIR-CRRI

07th February , 2025

The Central Road Research Institute (CRRI) launched Rejubit, a made-in-India rejuvenating agent for restoring and recycling old bitumen roads on Thursday. This agent will reduce the cost of relaying roads by 66% and lower the country's import burden. Using this new agent, old road materials can be recycled at one-third of the existing cost using imported additives, Ambika Behl, senior principal scientist at CRRI, told HT.

Once available at scale, this chemical agent will also significantly reduce the demand for new raw materials, a significant portion of which are currently imported, she added.

Union minister for road transport and highways Nitin Gadkari speaking at the launch said this material will also help India's ambitious economic goals as India needs to reduce its import bill. "The capacity of our country's refineries is 50 lakh tons, and our requirement is 95 lakh tons. So, 45 lakh tons of bitumen are imported," he said.

Gadkari also emphasised the need for eco-friendly and cost-effective road solutions to support India's growing infrastructure. "We need good quality of roads. We want to reduce the cost of construction and improve the quality of road construction. By using different materials, we can do this."

This rejuvenating agent will be manufactured by Ooms India, a private company that has an India license from CRRI.

Later in the day, during Question Hour in Lok Sabha, Gadkari said that during the last three financial years, 103 instances of action were taken against contractors and concessionaires due to substandard work, poor performance, non-completion, or timeline overruns for national highway projects. The data tabled in Parliament showed that in six cases, the bank guarantee from these contractors was encashed.

Tripura, Maharashtra, and Nagaland fared the worst among the states with 13, 12 and 11 such projects respectively. Rajasthan and Uttar Pradesh were the other majorly affected states in this respect, with 10 and nine projects each featuring among the 103 that have been flagged by the ministry for delays.

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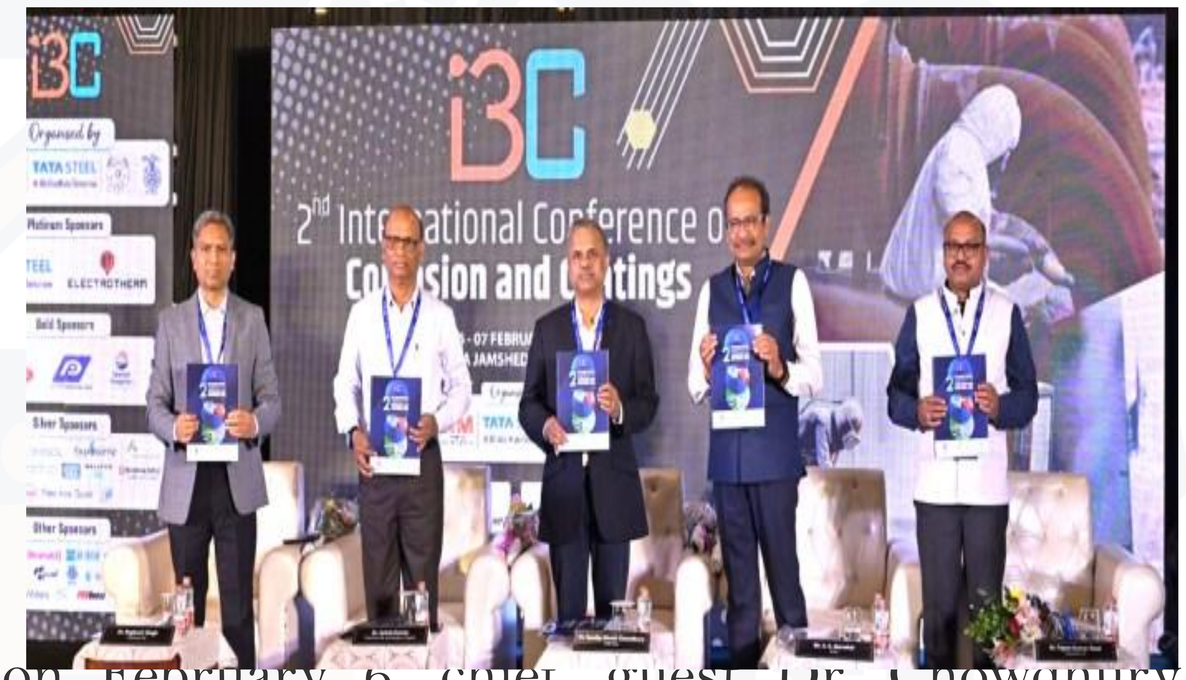
Hindustantimes

Corrosion costs India 2-3% of GDP annually: CSIR-NML Jamshedpur Director

CSIR-NML, IICT, IMMT

07th February , 2025



"Corrosion is a silent enemy, and India loses 2-3% of its GDP annually due to its impact. This calls for immediate attention from scientists, engineers, and technologists to work collectively on innovative solutions to protect steel structures from corrosion," said Dr. Sandip Ghosh Chowdhury, Director of CSIR-NML. Addressing the international conference on Corrosion and Coatings (i3C-2025), at a hotel in Golmuri (Jamshedpur) on February 6, chief guest Dr. Chowdhury emphasized the crucial role of steel in the nation's development and urged for advanced corrosion protection strategies.

Two-day event organized by the Indian Institute of Metals (IIM) Jamshedpur Chapter in association with Tata Steel Ltd., CSIR-National Metallurgical Laboratory (CSIR-NML), and National Institute of Technology (NIT), Jamshedpur, began on February 6.

Guest of Honour, A.K. Manohar, Executive Director of NTPC, New Delhi, delivered an insightful address on the challenges of corrosion in the power sector. "Corrosion severely affects power plant structures, necessitating immediate protective coating solutions. Collaboration among scientists, engineers, and academicians is key to developing effective technologies for mitigating corrosion," he said, stressing the importance of consortium-based efforts for research and development.

Dr. Raghuvir Singh, Chairman of i3C-2025, welcomed the delegates and provided an overview of the two-day technical program, which featured four plenary lectures, 15 keynote speeches,

and 40 contributory lectures. The conference also included a poster session with over 15 displays and several technical stalls for participant interaction and exposure to the latest advancements. Dr. Ashok Kumar, Chairman of IIM Jamshedpur Chapter, briefed the audience on the activities of IIM and its efforts in organizing prestigious conferences like i3C. He emphasized the critical role played by IIM Jamshedpur in addressing the current needs of the industry and promoting technical knowledge.

Dr. Tapan Kumar Rout, Convenor of i3C-2025 and Principal Scientist at Tata Steel, expressed gratitude to all the sponsors, speakers, and attendees. He noted that i3C-2025 stood out as a unique conference focused on idea exchange and technological innovation, providing a platform for discussions not often seen in similar events.

More than 100 delegates and speakers from 34 reputed institutions, including IIT Kharagpur, IIT Kanpur, IISc Bangalore, IICT Hyderabad, and RMIT University (Australia), participated in the conference in both physical and hybrid modes. Representatives from industries like Jindal Steel & Power, Materials Design (USA), and COMSOL (Switzerland) were also present.

The event received support from sponsors such as Tata Steel, Electrotherm, Growel, Nippon Parkerising, Henkel, Shimadzu, and Tata BlueScope, among others. The discussions held during the conference are expected to pave the way for new advancements in corrosion protection and coatings technology.

Earlier, the conference was formally inaugurated with the release of the conference souvenir by the dignitaries, including Dr. Ashok Kumar, Chairman of IIM Jamshedpur Chapter; Dr. Raghuvir Singh, Chairman of i3C-2025; Dr. Tapan Kumar Rout, Convenor of i3C-2025; Sudhanshu Pathak, former Vice President of Steel Manufacturing, Tata Steel; and Dr. Ramanuj Narayan, Director of CSIR-IMMT. Other key dignitaries included Mr. Praveen Thampi, Chief CRM at Tata Steel Kalinganagar, and Atul Srivastav, Vice President of Welspun Group.

Published in:

Avenuemail

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