

CSIR's One Week, One Lab

CSIR-CRRI Celebrates "One Week, One Lab"



CSIR-Central Road Research Institute (CRRI), New Delhi, dedicated its "One Week, One Lab" programme from 16-22 July 2023 to honour their groundbreaking accomplishments and foster collaborations in the road construction and transportation sector across the country.

Dr Jitendra Singh, Minister of State (Independent Charge) for the Ministry of Science and Technology and Vice President CSIR addressed the audience and launched the Steel Slag movies. He also launched an Online Road Safety game for school children developed by CSIR-CRRI along with industry partner Chipsoft Solutions Pvt. Ltd,

promoting safe and sustainable transport concepts.

Shri Rajashekhar N, IPS, DIG Modernisation, BPR&D, Ministry of Home Affairs graced the occasion as Chief Guest and Ms Rajni Gandhi, Founder and Secretary of TRAX Road Safety NGO was the Guest of Honour. The guests released Hindi Patrika Sadak Darpan, issues 23 & 24. Over 150 students from various schools and engineering colleges participated and witnessed the state-of-art facilities in CSIR-CRRI. A thought-provoking lecture on Intellectual Property Rights was also delivered by Dr Bhanu, Senior Principal

During the industry meet, CSIR-CRRI scientists presented their latest inventions, technologies & possible areas for collaboration and Industries gave presentations of their latest products/services in the areas of transportation sector.

Scientist at IPU CSIR during Azadi Ka Amrit Mahotsav celebrations as “Rashtriya Boudhik Sampada Mahotsav” (National Intellectual Property Festival).

Earlier, the curtain raiser of the “One Week, One Lab” programme was organised on 16 July 2023 set the theme as “Waste to Wealth” for sustainable road construction in India. Esteemed guests, Dr VK Saraswat, Member NITI Aayog & Chancellor, JNU, and Prof. PK Sikdar, Chairman RC and President ICT, graced the occasion as Chief Guest and Guest of Honour, respectively. They also visited the Steel Slag lab during their visit. The event witnessed the release of the Hindi magazine “सड़क शोध पत्र संकलन वर्ष 2023” (Road Research Journal Collection 2023) and the CSIR-CRRI “One Week, One Lab” memento by the esteemed guests. Engaging presentations from CRRI, Government, Academia, and Industry took place, focusing on the utilisation of various waste materials in road construction. The day concluded with a panel discussion on the way forward and felicitations to all speakers and the Chairman by Director CSIR-CRRI.

The Industry Meet had Ms Ruchika Chaudhary Govil, Additional Secretary Ministry of Steel, as the Chief Guest, and Shri Mahendra Kumar Gupta (IRPS), Joint Secretary, CSIR, as the Guest of Honour. Their addresses facilitated fruitful discussions on bridging the gap between research and industry practices. More than 100 industry representatives actively participated, fostering collaborations between CRRI, the road construction industry, and the Steel Industry. The sessions were chaired by Shri RK Pandey, Advisor, MORTH India, Shri IK Pateriya, Director (Technical), NRIDA, Dr LP Singh, Director General, NCCBM and Shri SK Nirmal, Secretary-General IRC. An impactful address by Hon'ble MoS, Shri Faggan Singh Kulaste, Minister of State, Govt of India, on the future of steel research and its impact on road infrastructure development added significance to the event. During the industry meet, CSIR-CRRI scientists presented their latest inventions, technologies & possible areas for collaboration and Industries gave presentations of their latest products/services in the areas of transportation sector.

During the event following Project Agreement and Technology Transfer Agreements were signed:

- (i) A Technology Transfer Agreement signed on 18 July 2023 with Somani Ecobuild Products LLP for the development of cementitious material for stabilisation of the Sub-Base & Base course in Flexible Pavement.
- (ii) A Project Based Agreement



signed on 18 July 2023 with Arjas Steel Private Limited for the Development of customised steel slag valorisation Technology for LD/BOF steel slag for Arjas Steel Private Limited, Tadipatri Plant, Andhra Pradesh for conversion of BOF Steel Slag as Road Making Aggregates.

Day fourth Young Researchers Conclave witnessed Shri Chetan Prakash Jain, IPRS, CMD, CEL & JS, Finance (FA), CSIR, as the Chief Guest, and CMDRe Amit Rastogi, CMD of NRDC (National IP Festival), as the Guest of Honour in the inaugural session. The inaugural address by Shri Chetan Prakash Jain highlighted the significance of various wings of DSIR, CSIR, NRDC and CEL and also emphasised the role of young researchers. This also included a lecture on “Technology development conundrum – Researcher’s Perspective” as part of the CSIR-CRRI National Intellectual Property Conclave. He covered the way forward for technology development and the approach towards industrial research and threw light on how to protect innovation and invention through Intellectual Property Rights and the prevailing IP trends across the country. It was followed by the inauguration of a Poster Presentation, Trans Tech Blitz and Virtual Labs and interaction with participants by Shri Chetan Prakash Jain, CMDRe Amit Rastogi and Prof. Manoranjan Parida, Director, CSIR-CRRI.

The second session involved a keynote lecture and question-answer session by Dr Viswajanani Sattigeri,



Outstanding Scientist and Head, TKDL-CSIR, the Chief Guest of the session on CSIR-CRRI National Intellectual Property Conclave, on the topic “Intellectual Property – What, Why and How?” She covered a gamut of concepts of IP in the global as well as Indian context. The concluding session was chaired by Dr Ranjana Aggarwal, Director, CSIR-NIScPR.

Day 5 workshop on Engaging with State Government at Bhubaneswar, Odisha, featured Shri Vir Vikram Yadav, IAS, Principal Secretary, Works Department, Government of Odisha as the Chief Guest. He enlightened the gathering with his thoughts and inaugurated the exhibition. The discussions during the workshop emphasised collaborative efforts for transportation advancements, research-to-implementation, and bridging gaps. The major theme centred on road asset management and bridge management systems for sustainable infrastructure development. Engaging discussions with government officials, experts and researchers on road safety and innovative technologies were held. The Young Researchers Meet provided an invaluable platform for student engagement and knowledge sharing.

Day 6 at IIT Hyderabad's KRB Auditorium focused on Next Generation Transport. Dr N Kalaiselvi, DG, CSIR, & Secretary DSIR, served as the

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*CSIR-CRRI's
weeklong celebration
showcased
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industry
collaboration,
encouraged student
engagement,
looked at the North
East region and
addressed vital road
construction and
transportation issues.*



Chief Guest, along with Shri Jayesh Ranjan, IAS, Principal Secretary, Ministry of IT, Telangana, as the Guest of Honour. CSIR-CBRI & IIT Hyderabad also signed an MoU. The session delved into the practical applications of Artificial Intelligence (AI) and Machine Learning (ML) in road safety, driver behaviour, sustainable pavement using recycled materials, and innovative technologies in road construction and data analytics.

The final day hosted Shri K Moses Chalai, IAS, Secretary, NEC, as the Chief Guest, along with Shri PKH Singh, VSM, ADG BRO (East), and Prof. Parameswar K Iyer, Officiating Director IIT Guwahati, as the Guest of Honour. The focus was on transportation and infrastructure development in the North Eastern region of the country. Experts,

government officials, and CRRI scientists engaged in discussions and valuable contributions. An MoU was signed between IIT Guwahati and CSIR-CRRI, fostering research collaboration and student exchange. The event also included a student session with NIT Meghalaya students, allowing a glimpse of their perspectives on road development in the region.

CSIR-CRRI's weeklong celebration showcased remarkable achievements, engaged with the state, promoted industry collaboration, encouraged student engagement, looked at the North East region and addressed vital road construction and transportation issues. These efforts are expected to significantly contribute to India's sustainable infrastructure development and road safety objectives.

“One Week, One Lab” Campaign of CSIR-Fourth Paradigm Institute

CSIIR-Fourth Paradigm Institute (CSIR-4PI), Bengaluru, a constituent laboratory of CSIR organised the “One Week, One Lab” Campaign during 10-15 July 2023, which culminated with the Foundation Day celebrations on 15 July 2023.

The curtain raiser of the campaign was formally launched on 21 June 2023 with the inauguration of the CSIR centralised Super Computing

facility by Dr N Kalaiselvi, DG, CSIR and Secretary, DSIR. This facility will cater to the traditional as well as AI computing computational needs of CSIR laboratories with an enhanced total peak performance of 4.2 Peta-flops. The “One Week, One Lab” brochure and outline of daily events were also released during the curtain raiser.

The campaign was formally inaugurated on 10 July 2023 at



CSIR 4PI. Dr Sridevi Jade, Head and Outstanding Scientist, CSIR-4PI, welcomed the gathering. Chief Guest, Dr KS Yajnik, Founder Head, CSIR-4PI (Formerly C-MMACS), inaugurated the event by releasing the CSIR-4PI campaign inaugural video. Prof. Annapurni Subramaniam, Director, Indian Institute of Astrophysics (IIA) and Guest of Eminence released the brochure of the day-to-day detailed agenda of the event. Dr IA Parvez, Chief Scientist and Chairman, “One Week, One Lab” organising committee, briefed the audience about the activities of the week-long programme.

After the inauguration, about 150 school children from several schools participated in the event “Scientist-Student Connect”. They were explained, “What is this AI all about” followed by another interesting class on “GNSS and its applications in earth sciences”. Students visited the state-of-art infrastructure facilities such as Cyber Security testbed, High-Performance Computing (CHAMP) facility and Greenhouse Gases (GHG) data acquisition. The first day’s activities concluded with a keynote address by Dr Narahari Sastry, Director, CSIR-NEIST, Jorhat.

Day 2 event “College Youth Interaction” was inaugurated by Chief Guest Dr Sastry with an inspiring lecture on the importance of students and their upcoming role in shaping the future of cutting-edge technology

in India. Dr Jade gave a presidential address to the college students from Karnataka and emphasised on human behaviour and the authenticity of data information flowing on social media. The event started with a brief introduction of CSIR-4PI activities through a video followed by a presentation on High Performance Computing (HPC) activities and the application of HPC in the modelling and simulation of extreme weather events across India.

A resource person from Advanced Micro Device (AMD) India Pvt. Ltd conducted a workshop on “Introduction to Compiler Optimisation in AOCC” and “AMD Optimise CPU libraries”. After the workshop, Dr Anilkumar V, Chief Scientist, CSIR-4PI, interacted with students to make them aware of Intellectual Property Rights as part of the ongoing National Intellectual Property festival. The students visited CHAMP facility, cyber security R&D Lab and participated in the demonstration of GHG data acquisition. Day 2 concluded with a keynote address by Dr Parvez and a feedback session from the students about the daylong event.

Day 3 was held at Karnataka State Natural Disaster Monitoring Centre (KSNDMC), Yelahanka, Bengaluru, on 12 July 2023. Dr Jade chaired the meeting and gave the welcome address. Shri Karee Gowda, IAS, Director, KSNDMC Co-Chaired the

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meeting and Dr Sridevi Annapurna Singh, Director, CFTRI, Mysuru, addressed the gathering as the Chief Guest. This Day was dedicated to interaction with different stakeholders from Karnataka State on various R&D activities and technologies of CSIR 4PI relevant to the State. Experts from different government agencies and academic institutes presented ongoing and future possible collaborations. In the afternoon session of the meeting, theme-based round table discussions in areas such as natural disaster forecasting and management, hydrology and water management, geospatial crop monitoring and smart agro-technologies, etc. were conducted followed by theme-wise recommendations, possible areas of new collaborations and formulation of MoUs in the concluding section of the meeting.

Day 4 was dedicated to boosting the collaboration between Industry, Academia and R&D. The event was inaugurated on 13 July 2023 by Chief Guest, Dr VS Prasad, Head of National Centre of Medium Range Weather Forecasting (MoES, Govt of India). Guest of Honour, Prof. RV Ravikrishna, IISc, Bengaluru, delivered the keynote lecture on 'How to Foster a Strong Industry-Academia Connect'. Dr Jade presided over the function and emphasised the need for collaboration among scientists, academia and industry for the benefit of common people of various sectors. Dr KC Gouda, Sr Principal Scientist and convener of this event outlined the day-long programme which mainly aimed at stimulating trans-disciplinary discussions between scientists, scholars, academicians

and industry managers. Dr Manish Modani, Principal Solution Architect at NVIDIA, delivered another interesting talk from the Industry, where he presented the application of modern computing in different sectorial applications. The session also witnessed the signing of MoU with NCMRWF and NIT-K Surathkal.

In the technical sessions, several distinguished speakers presented their case studies and success stories on applied science & engineering research and potential for industry collaborations. Representatives from the MSME and start-ups i.e. Ranjita Encons, Cropin, Armtronix, Medvise Futurekare, Srava Labs, Research Realm, Radio2pir, Cognizant, etc. presented their work and actively interacted with scientists, scholars from different organisations, and academicians from various higher educational institutes. Karthikeyan, CSIR-NAL and coordinator of DSIR-PRISM presented the funding opportunities for the innovators. This was followed by a panel discussion moderated by Dr Parvez, and the discussion concluded with suggestions to create a synergy between research labs, industry and academia for the betterment of society.

On Day 5 (14 July 2023), Science Outreach and Road Show event was held at colleges in Bengaluru. Dr Parvez addressed the gathering and explained the programme. Dr KC Gouda presented the idea of interdisciplinary collaboration with colleges. The Principal, all faculty members and students appreciated the science outreach and roadshow programme. They also spoke about how their students



benefited from the MoU with CSIR-4PI on collaborative research. Dr Anil gave a talk on Intellectual Property and also discussed the advanced cybersecurity research work at CSIR-4PI. Other scientists and research scholars demonstrated the research technologies of CSIR-4PI at the event.

Day 6 event was dedicated to Farmer-Student-Scientist interaction to create awareness on region-specific smart agro-technologies at CSIR-4PI among students and the farming community, on 15 July 2023 at CSIR 4PI. Dr Jade chaired the meeting and welcomed the gathering. Shri Mahendra Kumar Gupta, Joint Secretary (Admin), CSIR, was the Chief Guest of the event and he addressed the farmers, agriculture students and the guests. Dr Mahendra P Darokar, Chief Scientist, CSIR, Head Quarter, was the Guest of Honour and gave introductory remarks related to CSIR's contribution, particularly in the farming and agriculture sectors. Shri Prabhudev, a farmer from Hosahalli, Vijayanagar District, Karnataka, gave feedback on R&D works carried out at his paddy field

by the CSIR-4PI team and shared the experience of realisation of improved yield in his paddy field following farming practice. An interactive session of Farmer-Student-Scientist on critical issues and challenges in the farming environment was also carried out. This was followed by the demonstration of hand-held instruments for agricultural field measurements for the participants of the programme.

In the afternoon, the “One Week, One Lab” programme was concluded during the CSIR-4PI 35th Foundation Day celebrations. Prof. KK Aggarwal, Former Chairman, National Board Accreditation, gave the Foundation Day talk on ‘Importance of data and increasing relevance of the Institute’. Prior to that, a glimpse of the day-wise activities was presented in the form of a video to formally conclude the programme.

The culmination of the day's event was the award ceremony where scientific and non-scientist staff of CSIR 4PI were recognised for their contribution in building up the organisation.

Shri Mahendra Kumar Gupta, JS, CSIR, addressed the farmer agriculture students and the guests.

CSIR-CECRI's “One Week, One Lab” Programme

CSIR-CECRI (CSIR-Central Electrochemical Research Institute), Tamil Nadu, conducted the “One Week, One Lab” programme during 24-28 July 2023.

The curtain raiser of “One Week, One Lab” was inaugurated on 24 July 2023 by Dr Debashish Bhattacharjee, Vice President, Technology & R&D, Tata Steel



Ltd, Kolkata. Shri DM Raipure, Chairman Tungabhadra Board, Karnataka, and Dr Kartik Kumar, R&D Director, Saint Gobain India Pvt. Ltd, Chennai, were the Guests of Honour. A video on “CECRI’s R&D Glimpses” and “CECRI’s Technology Capsule”, were released.

“CECRI-Industry Connect” was organised in which delegates from various industries actively took part in the deliberations and provided their feedback on the ongoing collaborations and future requirements to strengthen their relationship with CECRI. The event witnessed the handing over of two prototypes of the “Piezoelectric Dynamic Pressure Sensor” developed by CECRI to ISRO’s IPRC. A new agreement was signed for contract R&D on atmospheric corrosion testing with Saint Gobain India Pvt. Ltd, India. Day-1 also had “CECRI-Alumni Connect” event through a hybrid mode in which alumni of BTech, PhD and TWAS

Fellows of CSIR-CECRI interacted with the present students.

Day-2, 25 July 2023, marked CSIR-CECRI’s 76th Foundation Day. On this occasion, Dr N Kalaiselvi, Director General, CSIR & Secretary, DSIR was the Chief Guest. In her address, Dr N Kalaiselvi, DG, CSIR highlighted the pivotal role of electrochemistry and electrochemical processes in addressing energy and environmental issues. Shri Bhupinder Singh Bhalla, IAS, Secretary, Ministry of New and Renewable Energy (MNRE) delivered the 76th Foundation Day Lecture. In his address, Shri Bhalla stressed the importance of large-scale processes for green hydrogen production and mentioned CSIR-CECRI’s contributions to MNRE schemes. The Directors of sister labs, Dr KJ Sreeram, Director, CSIR-CLRI and Dr N Anandavalli, Director, CSIR-SERC, attended the event.

The following new experimental facilities were inaugurated during these two days:

1. Molten Salt Metallurgy Facility
2. γ -MnO₂ Pilot Plant
3. Green Hydrogen Laboratory (HyLab)
4. Electroplating Facility
5. Climate Action Building (CAB)

A product on the commercialisation of CSIR-CECRI’s Technology on “3D Printable Polymer Filaments” by the licensee

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M/s. Monotech Systems Limited, Chennai, was also released.

CECRI-Industry Connect on Corrosion Mitigation was held on Day-2. As a part of CECRI-Social Connect, a Students Rally was planned on the same day to create awareness among the general public on CECRI's technological contributions, Intellectual Property Rights (IPR) and "One Week, One Lab" activities. The rally was inaugurated by Sivaganga District Collector, Smt. Asha Ajith, IAS.

Padma Shri Prof. Anil K Gupta, Founder of Honey Bee Network and National Innovation Foundation, Ahmedabad, the Chief Guest, addressed the students on the third day under CECRI-Students Connect. A lecture on IPR was delivered by Dr T Pavan Kumar, Senior Scientist, CSIR-IMMT, Bhubaneswar. Day-3 also had a programme on Do-It-Yourself (DIY) kit demonstration on various topics including batteries, sensors, etc. by school students.

The events of Day-4 were parallelly conducted at Chennai and Karaikudi. The Energy Technology Meet was held at CECRI Chennai Unit located in the CSIR Madras Complex at Taramani, Chennai. The meet was inaugurated by Dr R Venkatadhri, Chief Innovation and Digital Officer, Tata Chemicals, Mumbai. Prof. AK Shukla, former Professor, Indian Institute of Science, Bengaluru and former Director of CSIR-CECRI, Karaikudi, and Dr R Madhan, Director, IGSTC, New Delhi, were the Guests of Honour. The event included two sessions: "Hydrogen Energy: Generation, Storage,



and Utilisation" and "Battery Technologies for e-Mobility" with lectures by industrial delegates and CECRI Scientists. A panel discussion on "Driving India's Green Future: Exploring the Potential of EV Industries, Li-ion Batteries, and Fuel Cells" was also held.

On Day 4, at CSIR-CECRI, Karaikudi, Hands-on Training on Patent Writing was provided by Dr T Pavan Kumar, Sr Scientist, CSIR-IMMT, Bhubaneswar.

CSIR-CECRI conducted Electroplaters' Meet on Day-5 at Madurai to showcase the developments in electroplating to entrepreneurs of electroplaters of Madurai. The event was inaugurated by Dr Rajeev Mehta, Scientist-H, Inter-University Accelerator Centre (IUAC), New Delhi. Shri P Natarajan, President, Electroplaters & Metal Finishers Association, Madurai, and Smt. R





Uma Chandrika, Assistant Director, MSME, Madurai were the Guest of Honour. A live demonstration of electroplating was conducted for college students.

The Valedictory Function of CSIR-CECRI's "One Week, One Lab" was held on Day-5 at CSIR-CECRI, Karaikudi. Dr GA Pathanjali, Managing Director,

High Energy Batteries (India) Ltd, Mathur and Dr Rajeev Metha, IUAC, New Delhi, were the guests to provide the valedictory address. Dr K Ramesha, Director, CSIR-CECRI presided over the function and acknowledged the entire CECRI fraternity for their support in convening the events in a grand manner.

CSIR-CFTRI Celebrates "One Week, One Lab" Programme

CSIR-Central Food Technological Research Institute (CSIR-CFTRI), Mysuru, celebrated the "One Week, One Lab" campaign from 3-7 July 2023 which was initiated with curtain raiser event held at CSIR-CFTRI on 20 June 2023. Dr N Kalaiselvi, Director General (DG), CSIR & Secretary, DSIR unveiled the logo and released the brochure. Dr Sridevi Annapurna Singh, Director, CSIR-CFTRI welcomed the gathering and spoke about the "One Week, One Lab" programme. The Chief Guest and dignitaries launched the Recruitment Software developed by CSIR-CFTRI. DG, CSIR also visited various facilities, product displays and posters venues, and interacted with scientists.

In her address, the DG, CSIR, stated that CFTRI has developed and transferred over

700 technologies over the years. She also stated that the CFTRI-developed *idli* and *dosa* batter technology is not being recognised and is not paying royalties to the institute. Nonetheless, it's fine because people appreciate the institute when they eat food prepared using its technologies. "That is sufficient recognition for the institute's efforts," she added. She stated that the "One Week, One Lab" initiative has been planned in such a way that the CFTRI's research achievements can be effectively highlighted.

The event served as a platform for showcasing the institute's cutting-edge research, technologies, expertise, and facilities in the field of Food Science & Technology. With a theme of "Celebrating Food Research," the campaign aimed to ignite

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the minds of young innovators, students, start-ups, academia, and industry, encouraging them to explore opportunities through deep tech ventures. The week-long campaign showcased the diversity and depth of CSIR-CFTRI research since 1950 and expertise in the field of Food Science & Technology through a series of sessions, panel discussions, interactive programmes, culinary show, open day, expo and poster presentation competition with a focus on "Research, Innovations, and Sustainability in Food Science and Technology." The competition was divided into different categories for participants to present their innovative work. Each day was dedicated to a specific theme, providing participants with valuable insights, networking opportunities, and a glimpse into the world of food science and technology. Besides, various products were also launched during the weeklong programme.

The inaugural event was celebrated on 3 July 2023. Shri Yaduveer Krishnadatta Chamaraja Wadiyar, the 27th and current custodian of the erstwhile kingdom of Mysuru was the Chief Guest along with Guests of Eminence, including Dr Ashok Dalwai, CEO of National Rainfed Area Authority (NRAA), Ministry of Agriculture and Farmers Welfare, in the rank of Secretary, Govt of India; Chairman of Inter-Ministerial Committee on Doubling Farmers' Income as well as former Directors of CSIR-CFTRI Padmashree Dr Vishweshwaraiah Prakash & Distinguished Scientist



Curtain Raiser of "One Week, One Lab" by Dr N Kalaiselvi, DG, CSIR & Secretary, DSIR, Director, CSIR-CFTRI, Dr NK Rastogi, Chief Scientist, CSIR-CFTRI

CSIR and Dr SR Bhowmik; and Dr Sridevi Annapurna Singh, current Director of CSIR-CFTRI.

In the inaugural address, His Highness Shri Yaduveer Krishnadatta Chamaraja Wadiyar emphasised the importance of innovation in nutritious and high-quality foods, particularly indigenous foods and praised CSIR-CFTRI's contributions to the nation. Dr Ashok Dalwai emphasised the need for the science of delivery rather than the science of discovery.

A poster session on innovation in food science and technology for "Start-ups" was held after the inaugural session, with 12 start-ups from across the country presenting posters along with their innovative food products.

There were two talks by eminent speakers including Dr Vishweshwaraiah Prakash and Mr Anand Chordia, Director of Technology and Innovation at Suhana Spices. Dr Prakash highlighted the importance of quality in the food processing process and the need for training to enter domains without compromising the basics. He suggested vertical growth in the field itself to improve agricultural produce yield. Mr Chordia spoke of

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Dr Soumya Swaminathan, former Chief Scientist, WHO, emphasised the importance of nutrition education in schools and the integration of agriculture, health, and climate change sectors to ensure holistic health.

his learnings in the Food Industry and the importance of reducing carbon footprint as well as the circular economy.

This was followed by investment pitches for food processing, featuring seven entrepreneurs and five investors. The event showcased diverse pitches ranging from product development to food packaging and millet-based innovations.

Another session focused on the start-up ecosystem, with six panellists discussing funding opportunities, mentorship, networking, and the role of incubators in supporting start-ups. They emphasised the importance of innovation, scalability, market readiness, commercialisation, and accessing resources. The government's role in supporting start-ups through funding programmes and policy initiatives was also highlighted.

The second day focused on "Women Self Help Groups and Farmer Entrepreneurship,"

inaugurated by Dr Soumya Swaminathan, Chairperson of MS Swaminathan Research Foundation and former Chief Scientist of the World Health Organisation (WHO). She emphasised the importance of nutrition education in schools and the integration of agriculture, health, and climate change sectors to ensure holistic health. She also spoke about the importance of returning to traditional food practices, conservation of seeds, and promoting tribal income.

A culinary contest was organised on 4 & 6 July 2023, recognising Mysuru's diverse culinary dishes and promoting the institute's link to the Heritage City. The contests were open to all and featured two themes: traditional foods with modern twists or fusion foods, novel dishes with millets, and fireless cooking. The session titled "SHG/FPO focus," featured a keynote address by Mr Kurubur Shanthakumar, a prominent farmer leader, emphasising the



Inauguration of the "One Week, One Lab" Programme at CSIR-CFTRI by Shri Yaduveer Krishnadatta Chamaraja Wadiyar; Dr Ashok Dalwai; former Directors of CSIR-CFTRI Dr V Prakash &, Dr SR Bhowmik; Dr Sridevi Annapurna Singh, Director, CSIR-CFTRI

empowerment of farmers as a key driver of national development and contributing to economic and societal well-being. The keynote speaker, Dr Anura V Kurpad, Head of Physiology at St John's Medical College, Bengaluru, emphasised the importance of holistic nutrition and the need to focus not only on proteins but also on fats as part of wholesome foods.

The final session focused on "Supplementary Foods for Women and Child Development," featuring esteemed panellists from diverse backgrounds. Poster sessions focused on Self Help Groups, were also presented. The third day aimed to engage students and the general public in the field of Food Science and Technology. It featured various programmes and sessions aimed at inspiring and educating the younger generation. The JIGYASA student-scientist connect programme included 97 students and 10 teachers from KVS. The programme was inaugurated by Chief Guest Dr Chindi Vasudevappa, former Vice-Chancellor of NIFTEM, Haryana. Dr Sridevi Annapurna Singh interacted with the young minds and encouraged curiosity and scientific exploration. Innovative posters were displayed, showcasing the creativity and potential of the young minds.

A session on "Students Meet Scientists" featured experts who interacted with students, sharing knowledge and experiences, and fostering curiosity.

Another session focused on the "Eat Right India Movement," emphasising the importance

of promoting healthy eating habits and food safety practices. Dr Sachdev Meenakshi, Chief Dietician, spoke on the importance of millet as a healthy and sustainable food source. Experts from FSSAI (Food Safety and Standards Authority of India) delivered a talk and interactive session highlighted the benefits of incorporating millets into the diet and their role in ensuring food security and nutritional well-being.

The day concluded with the "Eat Right Walkathon 2023," flagged off from the Main Building by dignitaries. About 500 participants, including staff and students, walked 2-3 km of the CSIR-CFTRI campus with slogans on millet importance and eat right habits.

The fourth day focused on the importance of millet in promoting sustainable and nutritious food. The event was lauded by Shri. Pratap Simha, Hon'ble Member of Parliament, Mysuru-Kodagu constituency. Eminent experts including Dr Rekha Singhal, Chairman of Research Council, CSIR-CFTRI and Dr KSMS Raghavarao, former Director of CSIR-CFTRI, delivered insightful lectures on traditional foods and food engineering aspects, emphasising their importance.

The Food Expo, which featured nearly twenty stalls, showcased the diverse range of innovative solutions developed by CSIR-CFTRI in the millet sector. AnMoU was signed between CSIR-CFTRI and Dr Jacqueline d'Arros Hughes, Director General International Crops Research

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Institute for the Semi-Arid Tropics (ICRISAT), aiming to undertake joint research activities focused on value addition to dry land crops (millets and pulses), ultimately promoting food and nutritional security in dry lands.

The dignitaries inaugurated drones NAL Octa-Med and NAL Octa-Agri, created by CSIR-National Aerospace Laboratories (NAL), Bengaluru.

The session “CSIR-CFTRI Licensee Meet” aimed at fostering collaborations and partnerships between CSIR-CFTRI and industry players in the food sector.

Panel discussions on millets were conducted, with participants from NGO-Sahaja India, students, faculty, and budding entrepreneurs discussing various topics related to millet research, entrepreneurship, and addressing nutritional challenges.

The academia-industry session was organised that focused on fostering collaboration and knowledge exchange between academia and industry. The

Culinary Clash event during the campaign showcased the versatility of millets in culinary creations.

The Millet Research, Product Development, and Entrepreneurship Exhibition showcased 30 innovative posters on millets, highlighting their potential in addressing nutritional challenges and promoting sustainable food systems. The Food Expo showcased CSIR-CFTRI Licensees' stalls, offering information on innovative technologies and their relevance to entrepreneurship. The two-day Open Day attracted around 8500 visitors, including school students and the general public, who enjoyed the exhibits.

The final day celebrated the contributions of CSIR-CFTRI alumni and the intersection of AI and food science, emphasising the importance of Ayurvedic food for holistic health. The event began with an alumni function of the MSc (Food Tech.) course of CSIR-CFTRI, where Dr Dilip Kulkarni, President of Jain Irrigation Systems Limited, was the Chief Guest. The Golden Jubilee and Silver Jubilee alumni of the MSc (Food Tech.) course of CSIR-CFTRI were honoured for their achievements, and Dr Dlip Kulkarni received the Outstanding Alumnus Award 2023.

The robots exhibited by Holoworld and Holosuit were inaugurated by Shri Jitendra J Jadhav, Former Director, NAL, Director, ADA & Programme, Director (Combat Aircraft), Ministry of Defence; Dr G Narahari Sastry, Director, CSIR-NEIST, Jorhat; Dr Sridevi Jade, Head, CSIR-4PI;; Dr Meenakshi Singh, Chief Scientist,



“Students Meet Scientists” Programme

Head, Technology Management Directorate; Dr C Janaki Associate Director, C-DAC and Dr Sridevi Annapurna Singh.

Dr RS Sodhi, former MD of Amul and President of the Indian Dairy Association, provided valuable insights into the dairy industry and its advancements. The next was the discussion on Artificial Intelligence (AI) and Natural Language Processing in the food industry that focused on the challenges faced by the industry, AI techniques, and the need for AI-based technologies for food processing, smart farmer investment, and quality assurance. The panel also suggested initiating a nodal FT-AI Hub in collaboration with other CSIR, ICAR, and start-up industries.

A panel discussion on the application of Artificial Intelligence in Food Science and Technology focused on various aspects of AI, including its role in industry 4.0, food product categorisation, High-Performance Computing (HPC) facilities, natural language processing, and data intelligent utilisation. Dr G Narahari Sastry highlighted the need for AI algorithms and technologies for

food sector empowerment and income generation. Dr Sridevi Jade highlighted the need for food product categorisation, while Dr C Janaki highlighted the need for high-performance computing facilities and natural language processing for labelling, grading, packaging, and supply chain management. The Ayush Ahaar session focused on the integration of traditional Indian medicinal practices in promoting health and well-being. The day also featured 17 posters showcasing research and innovations in alumni contributions, AI, and Ayurvedic food.

The valedictory function was graced by the presence of Chief Guest, Dr KV Rajendra, Deputy Commissioner, Mysuru, and Guest of Eminence, Mrs Shilpi Agarwal, Divisional Railway Manager, Mysuru, Dr G Narahari Sastry, Director CSIR-NEIST, Jorhat and Dr Sridevi Annapurna Singh, Director CSIR-CFTRI. During the valedictory function, a souvenir was also released by the dignitaries. A brief proceedings of "One Week, One Lab" was presented by Dr Prakash M Halami, Chief Scientist, CSIR-CFTRI. Four products were also launched.

MoUs

CSIR-CDRI Inks an Agreement with ESSCEE Biotech India Pvt. Ltd

In a landmark development for India's scientific community (life sciences and biomedical researchers), CSIR-Central Drug Research Institute (CSIR-CDRI),

Lucknow, under the esteemed leadership of Dr Radha Rangarajan, Director, CSIR-CDRI, executed the signing of a pivotal agreement with ESSCEE Biotech

The agreement signifies a pivotal stride towards self-reliance in the realm of lab reagents and API starting materials for life sciences research.

The workshop aimed to empower science teachers with innovative techniques that make the process of teaching not only more comprehensible but also engaging and captivating for students.

India Pvt. Ltd that introduces a new modified quencher for life sciences research and biomedical applications. Quenchers are substances capable of absorbing energy from fluorescent dye and re-emitting much of that energy as visible light for visualising the specific substance/molecule. The agreement signifies a pivotal stride towards self-reliance in the realm of lab reagents and API starting materials for life sciences research.

The collaborative effort, spearheaded by Dr Atul Goel, Chief Scientist, CSIR-CDRI, and his dedicated team, in the creation of a cutting-edge modified quencher, devised through an economical route, primarily intended for biomedical applications, particularly in the field of phosphoramidite-based oligonucleotide synthesis, which are modified nucleosides and widely used as a standard chemical

in modern DNA synthesis reactions. These molecules permit the sequential addition of new bases to the DNA chain in an exquisitely simple and exceptionally efficient cyclic reaction. Traditionally, such fluorescence quenchers were solely imported from abroad, posing challenges to the country's public healthcare initiatives. So this achievement is especially noteworthy as the current market heavily relies on imported fluorescence quenchers for these critical applications.

Dr Radha Rangarajan expressed her enthusiasm about the project, stating, "Product development in public healthcare is the need of the hour. By designing and synthesising this modified quencher locally, we are taking a significant step towards achieving self-sufficiency in lab reagents and API starting materials, which is crucial for the growth of our nation."

Lectures/Trainings/Workshops

Two-day workshop by CDRI and the Royal Society of Chemistry

The CSIR-Central Drugs Research Institute (CSIR-CDRI), Lucknow, in collaboration with the Royal Society of Chemistry (RSC), UK (Indian Chapter), successfully conducted a two-day teacher training workshop aimed at elevating the teaching methodologies of science educators. The event took place in CDRI's Auditorium Hall and witnessed the participation of over 40 enthusiastic educators from different Schools.

The primary objective of this workshop was to empower science teachers with innovative techniques that make the process of teaching not only more comprehensible but also engaging and captivating for students. The integration of visually appealing and easily understandable teaching methods was emphasised to facilitate effective learning experiences.

Dr Sanjeev Yadav, Senior Scientist at CDRI, welcomed the



participants and highlighted the need for evolving traditional teaching practices in sync with the changing times and briefed about the collaboration of CSIR-JIGYSA and The Royal Society of Chemistry, UK (Indian Chapter). On the first day of the programme, Ms Karima Anjum, resource person from the RSC, shed light on the significance of these workshops, which were conducted under the banner of the Yusuf Hamied Inspirational Science Programme (YHISP). This initiative envisions the enhancement of science educators' skills and knowledge, focusing on equipping them with novel techniques to effectively deliver and elucidate complex scientific concepts. She emphasised the significance of subject-specific pedagogy. She introduced participants to a range of innovative learning tools such as Show Me Board, Flashcards, and Word walls enabling teachers to create dynamic and interactive learning environments that foster understanding and engagement.

The second day of the workshop delved into the integration of technology in education. Ms Anjum demonstrated various AI-powered tools that educators could employ to create captivating classrooms. The tools showcased included Word walls, Google

Sheets, Flippity, Tarsia maker, Padlet, and Jamboard. Ms Anjum illustrated how these tools could be seamlessly integrated into science lessons, facilitating interactive activities and question-based learning. Participants were also shown how to conduct microscale experiments using simple and low-cost objects.

During the workshop, participants delved into interactive sessions and discussions, fostering an environment of collaborative learning. The emphasis was on adopting teaching methods that promote better understanding and retention among students. Through practical demonstrations and engaging discussions, educators were exposed to a spectrum of creative strategies to make the learning process more appealing and effective.

The workshop provided an interactive platform for participants to gain hands-on experience and insights into transforming traditional teaching methods into modern, technology-driven pedagogical approaches.

The event concluded with the felicitation of Ms Karima Anjum and the distribution of certificates to all participants, acknowledging their commitment to enhancing science education.

During the workshop, participants delved into interactive sessions and discussions, fostering an environment of collaborative learning.

IP Awareness Workshop at CSIR-CEERI

As part of the National Intellectual Property Festival, a two-day Intellectual Property Awareness Workshop was organised during 10-11 July 2023 at CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani, in compliance with the guidelines received from CSIR HQ in this regard.

In this workshop, more than 750 students and teachers participated from Pilani and nearby schools. Dr Niraj Kumar, Head of the IP Unit, coordinated and conducted the workshop.

The inaugural session of the workshop was chaired by Dr PC Panchariya, Director,

CSIR-CEERI. In his opening address, Dr Panchariya welcomed the students and explained the meaning of “Intellectual Property”, and apprised them of its importance. Sharing his memories with students, he said that the country is going through a very important phase at the moment. He said that we all must perform our duty to include India in the ranks of developed nations in the golden age of independence. Dr Panchariya emphasised that to achieve the goal set by the Honourable Prime Minister to make India a Vishwaguru again by the year 2047, we need to think about the smallest problem or challenge at its own level and innovate it and a solution should be suggested.

Programme coordinator Dr Niraj Kumar, Principal Scientist delivered focused lectures on various aspects of Intellectual Property in the two-day workshop. Through various examples in his interesting lecture, he informed the participating students about the importance of copyright, trademark, patents, etc., and highlighted their process. In his lecture, he also gave information about the method of obtaining a patent and other things related to it.



Inaugural speech on IP Awareness Workshop by Dr PC Panchariya, Director, CSIR-CEERI

CSIR-NEIST organises a National Symposium

CSIR-North East Institute of Science & Technology (CSIR-NEIST), Jorhat, in association with

the Laboratory Animal Science Association of India (LASAI) organised the two days National



Symposium on ‘Cross talk between Animal Research & Alternatives (NSARA-2023)’ and one-day hands-on training cum workshop on experimentation techniques in animals and available alternative tools” during 7-9 September 2023. The event was the first of its kind in the northeast region in which around 170 participants including scientists, faculties, research scholars and students from different academic and research institutions across the country registered.

The one-day training cum workshop was attended by around 70 participants on 7 September 2023 which was inaugurated by Er Jayanta Jyoti Bora, Chief Scientist, CSIR-NEIST. Invited resource personnel from various institutions of the country had deliberations on different significant areas like care and management of research animals, designing of experiments, ethical and welfare issues during experimentation, pain management, biology and behaviour of laboratory animal species, computation as alternative tools.

Hands-on training cum practical demonstration on handling and restraining of animals, different experimental techniques like sampling, route of administration, anaesthesia and euthanasia, necropsy were performed in the

experimental animal house of CSIR-NEIST, Jorhat. The inaugural session of the symposium was graced by Dr Prabodh Kumar Trivedi, Director, CSIR-CIMAP, Lucknow, as Chief Guest and Dr Suresh Poosala, Founder, Acastha Health and Oncoseek Pvt. Ltd, Hyderabad, as Guest of Honour. Dr Himangsu K Bora, convener, NSARA 2023 welcomed the delegates, invited guests and participants and briefed about the symposium.

During the two days, in five scientific sessions of NSARA 2023, invited speakers from various research organisations delivered their talk on different thematic areas such as (i) Importance, management and ethical regulations in Animal Research, (ii) Alternatives to experimental animals, (iii) Animals as a tool for Basic Research and (iv) New generation animal models. There were 11 oral and 31 poster presentations on relevant thematic areas in which the best five presenters were awarded with certificates during the valedictory session on 9 September 2023. The valedictory session was graced by Dr Subeer S Mazumdar, DG, GBTU, Ahmedabad and Dr Vijay Pal Singh, CSIR-IGIB, New Delhi, as Chief Guest and Guest of Honour respectively.

The event was the first of its kind in the northeast region in which around 170 participants participated.

CSIR-CSMCRI Receives National “Rajbhasha Kirti Award” 2022-23



CSIR-Central Salt & Marine Chemicals Research Institute (CSMRI), Bhavnagar, has received the “Rajbhasha Kirti” Award in Region 'B' under the category of Board/Autonomous Body/Trust/Society for best implementation of Official Language Policy during the year 2022-23. This award was presented by the Hon'ble Union Minister of State for Home Affairs Shri Ajay Kumar Mishra in Pune on the occasion of Hindi Diwas on 14 September 2023. The Department of Official Language organised the 3rd All India Official

Language Conference from 14 to 15 September 2023 in Pune.

According to Dr Kanti Bhooshan Pandey, In charge of official Language Implementation, CSMCRI, has received this national award for the third time in the last four years. Dedicating this national honour to the employees of CSIR-CSMCRI, Director Dr Kannan Srinivasan, Director, CSIR-CSMCRI, said that apart from research, the institute is committed to the maximum implementation of the Official Language Policy in its official works.

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