

In the News

CSIR-IIIM Initiates India's First Cannabis Medicinal Project



HON'BLE Union Minister of State (Independent Charge) Science & Technology, Dr Jitendra Singh on 23 July 2023 said, Jammu is going to pioneer India's first Cannabis Medicine Project.

'Cannabis Research Project' of CSIR-IIIM Jammu is the first of its kind in India, in

Private Public Partnership with a Canadian firm, which has great potential to put the substance of abuse for the good of mankind, especially for patients suffering from neuropathies, cancer and epilepsy.

Dr Jitendra Singh said this during a visit to the Cannabis Cultivation Farm of

*Hon'ble Union
Minister S&T
Dr Jitendra Singh
complimented the
efforts of the CSIR-
IIIM for pioneering
research in exploring
the therapeutic
properties of
Cannabis.*

CSIR-Indian Institute of Integrative Medicine at Chatha near Jammu to get first-hand information about the cultivation practices for Cannabis in the protected area of the institute and research work being carried out on this important plant.

The Minister said, this project of CSIR-IIIM is also important from the perspective of *Atmanirbhar Bharat* as after getting all the approvals, it will be able to produce export quality drugs meant for different kinds of neuropathies, diabetic pains, etc.

Dr Jitendra Singh said, since J&K and Punjab are affected by drug abuse, this kind of project will spread awareness that this substance of abuse has diverse medicinal uses, especially for patients suffering from malignancies and other diseases.

Dr Jitendra Singh said, the signing of an agreement between CSIR-IIIM and IndusScan is historic not only for J&K but for the whole of India as it has the potential to produce those kinds of medicines which have to be exported from foreign countries. This kind of project will give an impetus for huge investment in Jammu and Kashmir, Dr Jitendra Singh added.

While appreciating CSIR-IIIM for this project, Dr Jitendra Singh said, CSIR-IIIM is the oldest scientific research institute in India with a history of discovering the mint way back in the 1960s, it is the centre of purple revolution and now the Cannabis Research Project of CSIR-IIIM is going to make it more prestigious in terms of scientific research in India.

During the field visit, Dr Jitendra Singh took stock of the one-acre protected area where CSIR-IIIM is presently doing large-scale cultivation of superior accessions of Cannabis.

The Minister also visited the glass houses with climate control facilities where research work on improving the varieties for desired cannabinoid content is being performed.

Dr Jitendra Singh complimented the efforts of the CSIR-IIIM for pioneering research in exploring the therapeutic properties of Cannabis, a plant which is otherwise prohibited and known for abuse. The Minister expressed his satisfaction with the research work conducted on Cannabis Project by CSIR-IIIM and also acknowledged the immense potential of cannabis-based treatments in addressing various health conditions.

Dr Jitendra Singh emphasised the importance of using the latest technology and cultivation practices for increasing the produce that would help farmers. He also stressed the need for developing newer indigenous varieties that would suit the environmental conditions of our country. He highlighted the role of biotechnology in this endeavour and encouraged the researchers to continue pushing the boundaries of scientific development.

While briefing the media on the occasion, Dr Jitendra Singh said, Cannabis is a wonder plant from which the FDA has approved the drugs such as Marilnol/nabilone and Cesamet for the treatment of nausea and vomiting; Sativex for

neuropathic pain and spasticity; Epidiolex & Cannabidiol for epilepsy and being used elsewhere in countries. In J&K, the license was granted to CSIR-IIIM for research and protected cultivation and upon permission of GMP manufacturing, the rest of the pre-clinical and clinical studies would be completed.

Dr Zabeer Ahmed, Director, CSIR-IIIM, apprised the Union Minister that at present CSIR-IIIM has a repository of more than 500 accessions collected from different parts of the country. The scientists of the institute are working to provide end-to-end technology for Cannabis cultivation, and drug discovery with emphasis on disease conditions like pain management in cancer and epilepsy.

He further informed the Union Minister that under a tripartite agreement of CSIR with the Department of Biotechnology (DBT) and the Indian Council of Medical Research (ICMR), CSIR-IIIM has completed the exploratory research on Cannabis. After the license for cultivation of

Cannabis for scientific purposes was granted by J&K Govt for further pre-clinical regulatory studies related to the management of cancer pain and epilepsy, it is very important to carry out GMP manufacturing for pre-clinical and clinical studies which are mandatory requirements of the discovery of newer therapeutic drugs. An application to get a license from the Excise Department of J&K Govt for GMP manufacturing and transportation of Cannabis material exclusively for scientific purposes has been submitted, he informed.

Pertinently CSIR-IIIM is the pioneer in Cannabis research and obtained the first license for cultivation in the country. Following this, many other states like Uttarakhand, Uttar Pradesh, Manipur, Madhya Pradesh and Himachal Pradesh have started making the policy and rules for the use of Cannabis for scientific purposes.

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CSIR's One Week, One Lab

CSIR-NML Celebrates “One Week, One Lab” Programme

CSIR-National Metallurgical Laboratory (CSIR-NML), Jamshedpur, celebrated its “One Week, One Lab” programme from 24-28 April 2023, which was initiated with a curtain raiser ceremony at Hotel Radisson Blu, Ranchi. Shri CP Radhakrishnan, Hon'ble

Governor of Jharkhand graced the occasion as the Chief Guest. Dr N Kalaiselvi, DG, CSIR and Secretary, DSIR, was the Guest of Honour.

Dr N Kalaiselvi welcomed the Hon'ble Governor and mentioned the reason for the establishment of CSIR



Shri C P Radhakrishnan, Hon'ble Governor of Jharkhand gracing the inaugural ceremony

laboratories in various locations of India and their contributions to the upliftment of Science & Technology in the country, for both industrial and societal applicability.

Shri C P Radhakrishnan congratulated CSIR-NML for its efforts to align with the government missions like "Skill India", "Make-in-India", "Swachh Bharat", "Self-Reliant India" and others. He appreciated the initiatives of the laboratory like Women Technology Park, Urban Ore Recycling Centre for waste to wealth (e-waste recycling), Lithium Metal Extraction and other Rare Earths Extraction. A capsule video on the R&D focus and achievements was also displayed in the ceremony. A

souvenir on the entire programme of the laboratory was also released by the dignitaries.

A workshop on Rare Earths for Self-Reliant India was organised as a part of the inaugural function. Eminent speakers from varied organisations gave technical lectures about the relevance of rare earths for industries.

On the second day, an exhibition "NML at a Glance" for showcasing its technological innovations & inventions was inaugurated by Dr Debashish Bhattacharjee, Vice President, Technology & New Materials Business, Tata Steel, Jamshedpur. The exhibition hosted about 80 technical posters

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Address by Dr N Kalaiselvi, DG-CSIR

covering various domains of its S&T contributions like NML technologies commercialised, NML technologies ready for commercialisation, sophisticated instruments/high-end equipment, R&D solutions to solve societal challenges, etc. Besides, live demonstration of some of the inventions and a few portable models of the processing equipment, like polymer 3D printing, etc. was part of the show. A set of futuristic ideas by the young scientists of CSIR-NML were presented in the show.

Subsequently, the “Jigyasa: School Students-Scientists Interaction” event was inaugurated by Prof. Gangadhar Panda, Vice Chancellor, Kolhan University and Dr Indranil Chatteraj, Former Director, CSIR-NML. Around 300 students from various schools in and around Jamshedpur visited the exhibition and interacted with the researchers. Another event the “Technology Challenge Hackathon” was organised on the same day in which school students of class VIII-XII from in and around Jamshedpur, Jharkhand, participated. Scientific ideas-based presentations were made by participants on the theme of “Quest of Smart and Sustainable Society by the students”. Third day events included the continuation of the Hackathon for students, researchers and technocrats of ITI, Diploma, UG, PG, PhD and Industries.

CSIR-NML also organised a half-day workshop on 26 April on “Materials Challenges in Unlocking the Hydrogen Era” to focus on materials for the storage and transportation of gaseous hydrogen. Eminent experts from the industry and academia gave technical lectures and participated in a panel discussion on topics related to the

use of Hydrogen in the development of steel and the current state of Indian R&D in the field of transportation of Hydrogen.

The fourth-day events included a Technopreneurship Meet and Shilpakar Mela (Artisans’ Meet) to create a platform where entrepreneurs, industry and startups come together and can explore the technologies ready for commercialisation at CSIR-NML. Experts were from the Technology Development Board (TDB), which helps and funds startups for the commercialisation of technologies and connects the manufacturers with the startups. A number of artisans from West Bengal and Jharkhand participated in the programme and set up an exhibit of handicrafts, as part of the exhibition.

On the last day of the campaign, an “Academia Meet” was held at CSIR-NML to provide a platform for interaction among the academic institutions of Jharkhand state with researchers and experts in the field of Metallurgy. Prof. Indranil Manna, Vice Chancellor of BIT Mesra and former Director, IIT-Kanpur, graced the occasion as Chief Guest and

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delivered the keynote lecture on "Major Challenges in Metallurgical and Materials Engineering for Future Development of India".

He further praised the objective of the campaign as an effort to bring science closer to society. He also presented an overview of challenges and opportunities in the materials used in various sectors like Defence, Automobiles including Electrical Vehicles, Energy and Aerospace. Other eminent speakers from different institutes also delivered lectures on varied topics.

Around 100 students and 30 faculty members from colleges and universities of Jharkhand participated in the meet. A poster presentation session on the theme "Metals and Materials" for the growth of the nation was held and three best posters were awarded.

An Industry Meet was organised by CSIR-NML Madras Centre to bring the representatives of the industries in and around Chennai and showcase available technologies of CSIR-NML. Dr N Anandavalli, Director, CSIR-SERC, Chennai, and the Coordinating Director, CSIR-Madras Complex, in her inaugural address, emphasised the exemplary role played by CSIR-NML in the industrial development of

India, post-independence.

The Chief Guest, Mr M Srinivasan, Executive Director-Operations, Ramco Cements Limited emphasised the need for collaborative R&D by industry and R&D laboratories for resolving the industrial problems. Mr Tim Sheehan, Managing Director of Eriez Magnetics India Limited spoke on the need to conserve non-renewable resources while practising environmentally safe operations. Professionals from different industries participated in the event.

The valedictory session was held in the presence of Prof. Indranil Manna. According to him, such campaigns are really instrumental in spreading awareness among various groups of stakeholders. Such initiatives of CSIR and constituent laboratory spread within the country can bring science closer to society and showcase the available S&T solutions and technologies. Dr Avanish Kumar Srivastava, Director, CSIR-NML, reiterated the scope and purpose of the campaign. Dr Sital Kumar Pal, CSIR-NML, presented the way forward for CSIR-NML and the experiences gained from the various events held during the week. Dr Sarmistha Sagar, Chief Scientist, CSIR-NML, proposed the vote of thanks.

"One Week, One Lab" Events of CSIR-CLRI

CSIIR-Central Leather Research Institute, Chennai, organised "One Week, One Lab" events on the theme "Celebrating Leather" during 1-6 May 2023 in three different parts of the country – Kolkata, Ladakh and Chennai.

The programme was inaugurated on 1 May 2023 during the Foundation Day celebrations of CSIR-CLRI at Chennai, with the release of a teaser video highlighting the contributions of the institute and the events



of the programme. Dr Shailesh Nayak, Director, National Institute of Advanced Studies (NIAS), Bengaluru, delivered the BM Das Memorial lecture, Shri Habib Hussain, Chairman, Research Council, CSIR-CLRI presided over the function, and Shri V Noushad, President, Confederation of Indian Footwear Industries was the Guest of Honour.

On 2 May, the “56th Edition of LERIG Conclave 2023” was conducted at Indian Leather Products Association (ILPA) hall, Calcutta Leather Complex, Kolkata with the theme “Science, Research, Innovation System for High Trade Benefits to India (SRISHTI)”. The Presidential address was delivered by Shri Sanjay Leekha, the Chairman of the Council for Leather Exports (CLE). The Guests of Honour were Shri Habib Hussain, Chairman, Research Council, CSIR-CLRI & Chief Executive Officer, AV Thomas Leather & Allied Products Pvt. Ltd; Shri Mukhtarul Amin, Chairman and Managing Director, Superhouse Ltd; Shri R Selvam, IAS, Executive Director, CLE; Shri Ramesh Kumar Juneja, Regional Chairman (East)-CLE; Shri Ajay Kumar Tarway, President, ILPA; Shri Arnab Jha, President,

Indian Leather Technologists Association.

At LERIG Conclave 2023, the waterless chrome tanning technology was licensed to M/s Vinit Gloves and M/s Sadia International, Kolkata. Director, CSIR-CLRI exchanged the technology transfer agreement with them. The technical sessions were focused on novel solutions/products for leather and goods/accessories industries, sustainability of the leather and leather products sector, and growth opportunities for young startups/entrepreneurs & experience sharing on the trinity partnership.

A workshop on “Safety in Leather and Leather Products Industry” by Mr G Swaminathan, Retd Scientist, CSIR-CLRI was organised on 3 May 2023 at ILPA Hall for the benefit of the industry, and about 40 industry members benefitted from the workshop.

Awareness Cum Product Demonstration training programme for self-help groups, entrepreneurs, and graduates was organised at Leh, Ladakh during 2-4 May 2023, and at Kargil, Ladakh during 6-7 May, in collaboration with the Dept of Industries & Commerce, UT

CSIR-CLRI has endeavoured to recreate the magic moments of the Leather Fair and Leather Products show, which was first started by CLRI during the 1960s and later developed into an international fair.

Ladakh. About 44 women in Leh and 57 women in Kargil benefitted from this programme.

Industry-Institute Meet was organised on 4 May at CSIR-CLRI, on the topic “CSIR-CLRI’s Role in the Growth of Indian Leather Sector: Past, Present and Future” chaired by Padma Bhushan Dr T Ramasami, Former Secretary, DST, GoI including other eminent personalities as panellists from the industries. Dr T Ramasami highlighted the Academy-Research-Industry trinity relationship and recommended that a forum may be commenced as Indian Leather Alliance for Sustainability.

An International Leather Conference called Crosslinx’23 was organised by students during 4-6 May. Prof. Partha P Majumder, National Science Chair (Scientific Excellence), Science & Engineering Research Board, GoI, delivered the Nayudamma Lecture 2023 on “Genomic medicine – What’s all this excitement?” on 4 May. A special get-together for alumni of the Department of Leather Technology, AC Tech Anna University housed at CSIR-CLRI was held on 6 May at CSIR-CLRI.

CSIR-CLRI has endeavoured to recreate the magic moments of the Leather Fair and Leather Products show, which was first started by CLRI during the 1960s and later developed into an international fair. The Public Roadshow was also held during 5-6 May.

Leather Tech Expo had about 16 stalls of alumni and technology partners of the institute with 100% genuine leathers for sale.



Dr Deepak Siwach IPS, Deputy Commissioner of Police, St Thomas Mount, Greater Chennai City Police and Shri K Parthasarathy, Former Scientist and Head, Leather Process Technology, CSIR-CLRI, inaugurated the Leather Tech Expo on 05 May. Over 2100 people visited the entrepreneur stalls on the first day of the Roadshow. Business was heavy with two of 16 stalls running out of products by noon.

CSIR-CLRI exhibited its legacy as the theme pavilion showcasing the leather value chain from animal farming, leather as byproducts of meat industry, processing of leather, distribution of leather and product clusters across the country, artisanal products, exotic products, leather and other natural material combination products, Indian footwear sizing system, Gait Analysis, and the uniqueness of leather as against synthetics. The CSIR-CLRI Theme Pavilion was inaugurated by Dr Ganga Radhakrishnan, Former Scientist and Head, Polymer Science & Technology, and Dr Mary Babu, Former Scientist & Head, Biomaterials Lab, CSIR-CLRI on 05 May.

CSIR-CLRI has set up a Leather Museum showcasing the antique artefacts of leather to appreciate leather. CSIR-CLRI museum housed a few antique leather products including the 16th

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century container of Italian origin, used to store gunpowder, 19th century cutlery case designed to hold forks and knives in a stylish manner and a sewing box of European origin designed with drawers, compartments and brass fittings in a graceful way.

Shri R Selvam IAS, Executive Director, Council for Leather Exports, inaugurated the Leather Museum in the presence of family members of Mr Nagappan, a leather entrepreneur who initiated the thought process of setting up

a Museum for Leather at CLRI. Shri R Selvam has recommended having a separate building to house the Leather Museum permanently at the campus.

Over 6500 people visited the Public Roadshow of CSIR-CLRI including 2200 school children and college students from about 23 colleges in and around Chennai, around 400 students from Government schools, and Public from all around Chennai. More than 1500 people witnessed the Leather Products show.

Shri R Selvam IAS, Executive Director, Council for Leather Exports, inaugurated the Leather Museum that showcases the antique artifacts of leather to appreciate leather.

CSIR-AMPRI Organises “One Week, One Lab” Programme

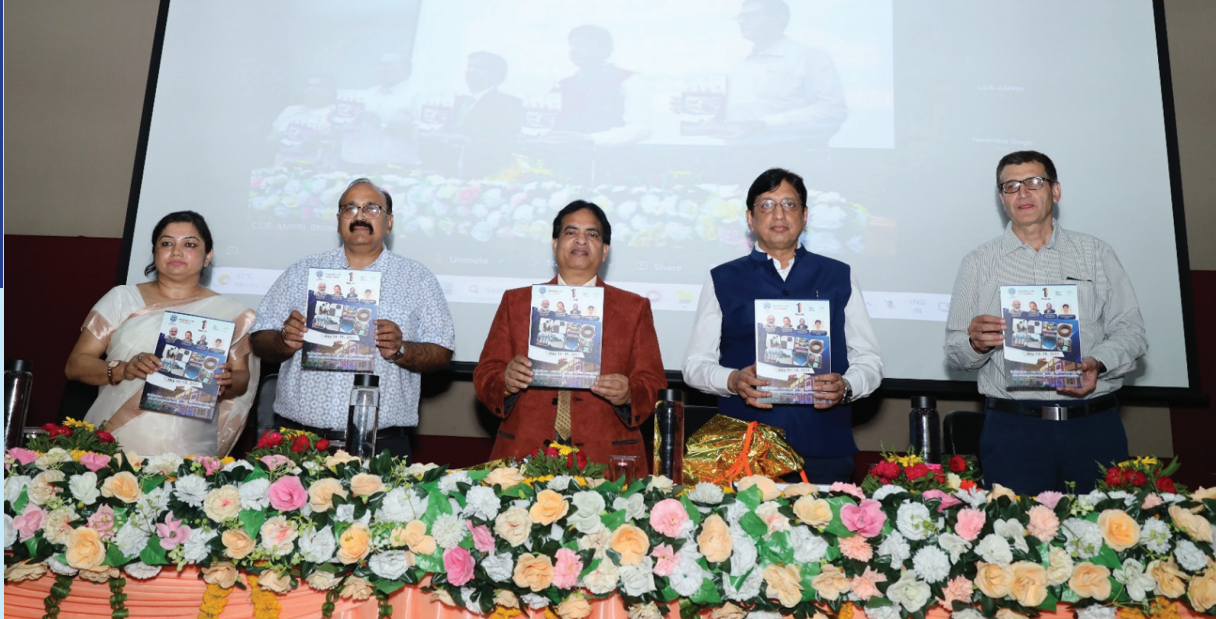
CSIR-Advanced Materials and Process Research Institute (AMPRI), Bhopal, organised the “One Week, One Lab” programme during 14-18 May 2023, under the leadership of Dr Avanish Kumar Srivastava, Director, CSIR-AMPRI, Bhopal, and CSIR-NML, Jamshedpur.

CSIR-AMPRI celebrated National Technology Day & curtain raiser of the “One Week, One Lab” programme on 12 May. Shri Deependra Singh, Chairman and Managing Director, Indian

Rare Earths Ltd, was the Chief Guest at the function.

The capsule film of CSIR-AMPRI was released by Shri Deependra Singh on the occasion. During his visit, Shri Deependra Singh visited various laboratories/facilities of CSIR-AMPRI. He also gave a talk on “Rare Earth Materials for Shaping Future”.

The inaugural function of the programme was celebrated on 14 May. Shri Mangubhai Patel, Hon’ble Governor of Madhya Pradesh was the Chief Guest on the occasion.



Release of brochure of "One Week, One Lab" Programme

In the first session, the programme began with the inauguration of the Expo by the Governor during which he also visited the stalls and saw various products developed by CSIR-AMPRI.

The technology "Bamboo Composites for Modern Housing Structures" developed by CSIR-AMPRI, was transferred to M/s Ecological Fibre Composites Pvt. Ltd Jabalpur, MP, in the presence of the Governor. Additionally, a booklet on "Report & Way Forward Action Plan" of CSIR-AMPRI, was released by the Governor. During his address, Shri Mangubhai Patel expressed his happiness to be part of this event. In the concluding remarks, he also suggested CSIR-AMPRI to establish its vision for Vision India@2047.

In the second session, a thematic discussion on "Advanced and Futuristic Materials" Prof. Siva Umapathy, Director, IISER, Bhopal, was the Chief Guest and Session Chair of the function. Dr Lalhmingmawia Pachuau, Additional Director of Horticulture, Department of Horticulture, Govt of Mizoram, was the Distinguished

Guest; Prof. Saroj Barik, Former Director, CSIR-NBRI and Professor, North Eastern Hill University, Meghalaya, was the Guest of Honour. The discussion also included various invited talks by industry representatives. A brochure of the programme was released on the occasion.

Industry Meet and Expo on Theme "Entrepreneurship Opportunity for Sustainable Economy" for Technology Demonstration and Dissemination was organised on 15 May 2023. In the first session of the Industry Meet: Entrepreneurship Opportunity for Sustainable Economy, Shri Parikipandla Narahari, IAS, Secretary, MSME & Industries Commissioner, Government of Madhya Pradesh, was the Chief Guest. Shri Ashok Kumar Chauhan, IFS, Additional Secretary, Department of Forests, Govt of Madhya Pradesh was the Guest of Honour.

On this occasion, a compendium of technologies developed and transferred by CSIR-AMPRI was also released. Industry representatives visited the expo and saw various technologies of

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Inauguration of Expo by Hon'ble Governor of MP, Shri Mangubhai Patel

CSIR-AMPRI. Techno-commercial presentations were given by scientists of CSIR-AMPRI about various technologies developed/ transferred to industries in the last few years.

In the second session during Expo: Technology Demonstration and Dissemination, Shri Ramesh Kumar Gupta, IFS Principal Chief Conservator of Forest, Department of Forests, Govt of MP was Chief Guest and Shri DD Gajbhiye, Joint Director, Indian Enterprise Development Services, Ministry of MSME, Indore, was Guest of Honour.

On 16 May, the R&D and Academia Meet and Young Researchers' Conclave was organised. During Academia Meet in the first session, Prof. Pramod K Verma, Professor & Head Vikram University, Ujjain (Former VC, Barkatullah University & Former DG, MPCOST, Bhopal) was the Chief Guest. Besides, Prof. Vinod Krishna Sethi, DG, RKDF University, Bhopal, and Prof. Harish Rao, Pro-Vice Chancellor, People's University, Bhopal gave lectures. Elsevier's Book "*Advanced Materials from Recycled Waste*" edited by scientists from CSIR-AMPRI, was also released. In the second session, Young Researchers'

Conclave was organised on the topic "Emerging Technologies for Sustainable Future". Prof. IA Palani, Department of Mechanical Engineering, IIT Indore, was the Chief Guest at the occasion. During the session, oral presentations were given by three Young researchers' of CSIR-AMPRI.

On 17 May, Jigyasa & Awareness Programme and Open Day were organised. Students of KVs, NVs and other schools including their teachers participated in the programme. Shri Girish Gautam, Hon'ble Speaker, Legislative Assembly, Madhya Pradesh, was the Chief Guest. Dr Purnima Swarup Khare, Director, School of Nanotechnology, RGPV, Bhopal, and Er Sanjeev Agrawal, Chancellor, Sage University, Bhopal & CMD SAGE Group, were Guests of Honour. Deputy Commissioners from KVS and NVS of MP and Chhattisgarh also graced the occasion. Some of the Deputy Commissioners were honoured by CSIR-AMPRI due to their outstanding contributions towards the Jigyasa programme.

Hon'ble Shri Girish Gautam during his address mentioned that we cannot move to innovation without Jigyasa. He

Industry representatives visited the expo and saw various technologies of CSIR-AMPRI.



Welcome of Hon'ble Shri Girish Gautam, Speaker, Legislative Assembly, MP

Shri Girish Gautam, Hon'ble Speaker, Legislative Assembly, MP, mentioned that we cannot move to innovation without Jigyasa and he also appreciated the efforts of CSIR-AMPRI to connect students to scientists.

also appreciated CSIR-AMPRI's efforts to provide opportunities for students to interact with scientists and receive awareness about science and technology.

Dr Surender Kumar, Senior Scientist, CSIR-AMPRI, spoke about creating awareness among the students regarding various career opportunities. Quiz, play, competitions and model demonstrations were also organised for students. Awards were also given to winners of competitions.

The open day was organised in the second session. Students from various colleges and faculties have attended the programme. Professor Sudhir Singh Bhadauria, Director, UIT, RGPV was the Chief Guest.

Professor Vipin Vyas, Department of Bioscience, Barkatullah University was the Guest of Honour. Dr Sandeep Singhai, Principal Scientist, CSIR-AMPRI, spoke about the scope of the open-day programme. Attendees of the open day as well as Jigyasa visited Expo and also watched the CSIR-AMPRI capsule film played at the occasion.

On 18 May, the Skill Development and Tribal Welfare Programme

was organised and a valedictory function was celebrated. Hon'ble Shri Vishnu Datt Sharma, Member of Parliament, was the Chief Guest at the function. Hon'ble Shri Jitendra Litoriya (Cabinet Minister Rank), Chairman, MP Khadi & Village Industries Board, Bhopal, was the Distinguished Guest. Shri Raghvendra Shrivastava (IFS), Hon'ble Member, SEAC; Shri Rohit Singh (IAS) Director, MSME; Prof. Sanjay K Tiwari, Vice Chancellor, MP Bhoj (Open) University, Bhopal; and Prof. Akhilesh Kumar Pandey, Vice Chancellor, Vikram University, Ujjain, were Guests of Honour.

An MoU was also signed between CSIR-AMPRI and Vikram University, and MP Bhoj (Open) University. Advanced Construction Materials Laboratory & SODAR facility inaugurated at the occasion. Hon'ble Shri Vishnu Datt Sharma highlighted that research should be done in such way that it should reach to society for its development.

"Anusandhan Sandesh" Hindi research journal was also released by Shri Vishnu Datt Sharma.

The valedictory function was organised in the second session. At the onset, Dr Avanish

Kumar Srivastava, Director, CSIR-AMPRI, welcomed the guests and gave the welcome address. Prof. Sunil Kumar Gupta, Vice Chancellor, Rajeev Gandhi Prodyogiki Vishwavidhyalaya (RGPV), Bhopal, was the Chief Guest at the function and Prof. Anil Kothari, Director General, Madhya Pradesh Council

of Science and Technology (MPCST), Bhopal, was Guest of Honour.

Dr Mohd Akram Khan, Chief Scientist and Coordinator of the programme, CSIR-AMPRI and Dr J P Chaurasia, Senior Principal Scientist presented a brief summary of “One Week, One Lab” Activities at the occasion.

CSIR-CEERI “One Week, One Lab”

CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani, organised CSIR’s ambitious programme ‘One Week, One Lab’ during 15-19 May 2023. The programme at CSIR-CEERI was structured for maximum outreach by Dr PC Panchariya, Director, CSIR-CEERI, to meet the objectives expected. The event witnessed exchanging of seven agreements, including MoUs, NDAs and Know-How License agreements. The event was attended by representatives of industries and start-ups, scientists, students, research scholars, farmers and other government agencies.

Dr Suchandan Pal, Chief Scientist, coordinated the programme which was convened by Sh. Pramod Tanwar, Head, PME. The Institute also hosted technology demonstrations and exhibitions during the programme, which saw more than 500 visitors, including students from schools, colleges, agricultural NGOs, farmers, industry persons, etc.

Dr PC Panchariya, Director, CSIR-CEERI, presided over the inauguration programme on 15 May 2023, with Prof. V Ramgopal Rao, Vice-Chancellor, BITS-Pilani, invited as Chief Guest; Dr Chandra Shekhar, Former Director, CSIR-CEERI

The event witnessed exchanging of seven agreements, including MoUs, NDAs and Know-How License agreements.



CSIR-CEERI logo and coffee table book launch

Prof. V Ramgopal Rao, Vice-Chancellor, BITS-Pilani, discussed the contribution of CSIR-CEERI and BITS to the scientific and industrial progress of the country.

and Senior Emeritus Professor, BITS-Pilani as the Guest of Honour. Dr Panchariya welcomed and informed the audience about CSIR's "One Week, One Lab" initiative. He added that 37 CSIR laboratories spread across the country are showcasing their heritage, unique scientific innovations and technological achievements every week. In his address, he listed some of the major research activities and technologies developed by the institute in the recent past.

Prof. V Ramgopal Rao congratulated the Director, CSIR-CEERI, and all staff for organising this event. He discussed the contribution of CSIR-CEERI and BITS to the scientific and industrial progress of the country. Highlighting the historical relationship between BITS-Pilani and CSIR-CEERI, he mentioned that both institutes have the potential to establish Pilani on the world map, and he would endeavour to work in this direction.

Guest of Honour and former Director of CSIR-CEERI, Prof. Chandra Shekhar, appreciated the research achievements of CSIR-CEERI in the country and was pleased with the transfer of technologies to the industries. He emphasised that it is also necessary to be innovative to meet the needs of industries and general consumers, apart from being an excellent engineer or scientist. He called upon the young scientists of CSIR-CEERI to discharge their responsibilities keeping in mind the changing global conditions, under the leadership of Dr Panchariya.

Aligning with the branding of CSIR, the guests released a new logo for CSIR-CEERI and a coffee table book of the institute in the inaugural session. The coffee table booklet illustrates the significant achievements made by the institute in the last 70 years.

CSIR-CEERI licensed the Know-How of the "IoT-enabled Smart Watch for Monitoring Vital Health Parameters" to M/s Mediminers India Pvt. Ltd, Hyderabad, and also delivered the prototypes of "IoT enabled Colposcope for pre-stage Screening of Cervical Cancer" to M/s Divine Meditech Pvt. Ltd, Noida, developed by Dr Satyam Srivastava. Apart from this, the institute exchanged MoUs with M/s Panacea Medical Technologies Pvt. Ltd, Bengaluru, M/s VK Industries, Pilani and SKIT-Jaipur, and Non-Disclosure Agreement (NDA) with M/s Dronetech, Mumbai. The team led by Dr Ranjan Barik also handed over prototype units of Thermionic Dispenser Cathode to M/s Panacea.

On 16 May, the Microwave workshop started with a welcome address by Dr Panchariya, followed by the overview of Microwave and Plasma R&D activities at CSIR-CEERI by Dr SK Ghosh, Head of VED Group. Chief Guest Dr AK Patra, Director ISRO-NARL, Gadanki, spoke at length on "Radio and Microwave Instrumentation in Atmospheric Research Current Trends". He discussed the chronological development of Indian radar for weather study in the context of complete elevation plane beam scanning, followed

by the development of Doppler radar. He presided over the Technical Session in the morning, which had invited talks from Mr Anurag Verma, SAC-ISRO, on ISRO's "Gaganyaan Mission" and by Dr Pramod K Sharma, IPR Gandhinagar, on "High power RF & microwave technologies for heating and current drive in plasmas at IPR". Prof. Chandra Shekhar was felicitated with VEDA Lifetime Achievement Award for 2021, as announced during VEDA Conference earlier. The next session had three technical talks starting with Dr SK Dutta, Outstanding Scientist, DRDO-MTRDC Bengaluru, on "Tu-Be or nought Tu-Be — that is the question", followed by Dr Kumud Singh, BARC, Mumbai, on "Challenges and new designs for Focusing elements in VED's", and by Mr S Senthil Kumar, BEL, Bengaluru on "Microwave Tubes Manufacturing Processes Challenges and Future".

The Artificial Intelligence workshop on 17 May 2023, was graced by Prof. Santanu Chaudhury, Director, IIT Jodhpur, as the Chief Guest, and Dr N Anandavalli, Director, CSIR-SERC, Chennai, as the Guest of Honour. Notable invited speakers were Prof. Kapil Ahuja, IIT, Indore, and Mr Gurpreet Singh Sachdeva, Associate Director at Cognizant.

Prof. Chaudhury delivered a thought-provoking plenary talk on "Recent Advancements in AI and its Future Research Directions". He discussed the key challenges existing in deep learning techniques face in addressing real-

world problems and highlighted the significance of Causal AI in addressing these challenges. Dr Sanjay Singh, Head of AIT Group, provided an overview of recent and ongoing Artificial Intelligence activities at CSIR-CEERI and details of the ongoing CSIR Mission Mode Project on AI-enabled Technologies and Systems. The Vice President of KH Leather Industries Private Limited, Chennai, also attended the event and signed an NDA with CSIR-CEERI. The e-Trike team, led by Dr BA Botre, Principal Scientist, also delivered the prototypes of the Electronics Controller Card for BLDC motors to M/s Alphasine Technologies Pvt. Ltd, Lucknow.

On 18 May, workshop on "Semiconductor Materials, Devices, and Systems" was conducted, during which Chief Guest Prof. V Ramgopal Rao, Vice-chancellor of BITS-Pilani Group of Institutions, delivered a keynote address on "Leveraging the National Semiconductor Mission to promote deep-technology innovations in academia", emphasising India's existing position in the world in terms of funding, research papers, and patents. Adding to that, the Guest of Honour, Dr Venugopal Achanta, Director, CSIR-NPL, furthered the role of semiconductor-based metamaterials through his talk on "Opportunities for semiconductors in the national mission projects".

Earlier, Dr Suchandan Pal, Head of SSM Group, gave the audience an overview of Semiconductor and Sensors activities at CSIR-CEERI. Then, Dr Satya Gupta, Founder &

Prof. Santanu Chaudhury, Director, IIT Jodhpur, discussed the key challenges existing in deep learning techniques face in addressing real-world problems and highlighted the significance of Causal AI in addressing these challenges.

Sh. Mahendra Kumar Gupta, Joint Secretary (Administration), CSIR, said that farmers are the backbone of our economy.

CEO of EPIC Foundation, President of VLSI Society of India and Former Chairman of IESA, in his talk on “Making India Electronics and Semiconductor Product Nation”, discussed the choice of products to be developed, market research, the commercial viability of products and business model. Dr Tarun Kumar Sharma, Department of Atomic Energy, briefed about ongoing R&D activities at RRCAT through his talk on “Development of GaAs and GaN-based Photonic Devices”.

CSIR-CEERI's “One Week, One Lab” event concluded by showcasing the CSIR contributions to the agriculture sector through Kisan Mela on 19 May 2023, with Dr PK Trivedi, Director, CSIR-CIMAP, as Chief Guest and Sh. Mahendra Kumar Gupta, Joint Secretary (Administration), CSIR, as the Guest of Honour. The event was attended by more than 150 farmers from nearby areas. In his address, Dr PK Trivedi emphasised that agricultural product diversification is essential to increase the farmer's income. He also called upon the farmers to cultivate medicinal and aromatic

plants instead of traditional crops to realise this mandate of the Government of India. Shri Mahendra Kumar Gupta added that farmers are the backbone of our economy and congratulated Dr Panchariya and his team for conceptualising and making this event successful with Kisan Mela.

In an interactive session, Dr Sanjay Kumar, Senior Principal Scientist, CSIR-CIMAP, informed all the farmers about cultivating good medicinal and aromatic plants instead of traditional farming and crops and their benefits through his exciting and informative presentation. Towards the end, Dr Manish Mathew, Head TBD, guided a tour of the Precision Agriculture station being developed by the institute to the farmers, agriculture students and other guests by showcasing the activities of the research station.

The “One Week, One Lab” event at CSIR-CEERI brought together the minds of young innovators, students, start-ups, academia, and industry to look for opportunities through CSIR-CEERI technologies and ventures.



Kisan Mela

CSIR-NIScPR, UBA and VIBHA Organise One-day Training Workshop

CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR), New Delhi, in collaboration with Unnat Bharat Abhiyan (UBA) and Vijnana Bharati (VIBHA) organised a one-day training workshop on incense stick making at Gram Panchayat Bhawan of Pilli Padav village (Gaindikhata cluster), Haridwar, Uttarakhand on 25 May 2023.

The workshop was aimed towards encouraging and providing training to farmers and women on Incense Stick making technology (know-how) developed by CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow.

The event commenced with a welcome address by Ms Meenakshi Choudhary, Local coordinator, UBA network. Dr Yogesh Suman, Senior Principal Scientist,

CSIR-NIScPR discussed the importance of efforts being made jointly by these organisations to create a livelihood in rural areas by using CSIR technologies.

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, joined the event online and briefed the audience about the importance of the incense stick making technology and outlined the difference it created in the livelihood near Shirdi, Maharashtra. She also mentioned the changes this technology has brought in the lives and livelihoods, especially of women. Further, she explained the ecological importance of this technology and how it may contribute to generating a circular economy by developing a local ecosystem.

Prof. Virendra Kumar Vijay, National Coordinator of UBA, explained about the Unnat Bharat Abhiyan and how it is progressing

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, briefed (online) the audience about the importance of the incense stick making technology and outlined the difference it created in the livelihood near Shirdi, Maharashtra.



Dr Yogesh Suman, Sr Principal Scientist, CSIR-NIScPR, addressing the participants

towards creating the Atmanirbhar Bharat. The Gram Pradhan Shri Shashi Jhandwal mentioned the local problems related to unemployment and livelihood and how the intervention of such technologies could help solve these problems. He also thanked CSIR-NIScPR and UBA teams for organising such a useful training programme.

The training session was conducted by Shri Manoj Yadav, Technical Officer, CSIR-CIMAP, in which he interacted with the trainees, discussed the intricacies involved at every step, and arrangements of the raw material by various possible channels. He also mentioned that this technology is self-reliant and

incense stick can be produced by using household tools. In this training workshop, the trainees were highly interested in learning which was attended by more than 120 women participants.

CSIR-NIScPR is organising a series of such training workshops in collaboration with Unnat Bharat Abhiyan (UBA) and Vijnana Bharati (VIBHA). These programmes are focused on creating livelihood opportunities in the villages associated with the UBA network. The CSIR-NIScPR team was headed by Dr Yogesh Suman, Senior Principal Scientist along with Dr Shiv Narayan Nishad, Senior Scientist; Dr Vinayak, Senior Scientist, and Ms Meetali Bharti, Scientist at CSIR-NIScPR.

Students learnt about career opportunities in drug discovery and development at CDRI

A Student-Scientist Connect programme was organised in CSIR-CDRI (Central Drug Research Institute), Lucknow, under the CSIR JIGYASA project on 2 June 2023. CSIR-CDRI invited a batch of 61 Students along

with 4 faculties from Subhash Chandra Bose Institute of Higher Education, IIM Road, Lucknow. The purpose of this programme was to enhance classroom learning through research laboratory-based learning.



Dr Sanjeev Yadav, Senior Scientist and coordinator of the JIGYASA programme at CSIR-CDRI, initiated the programme with an introductory talk about the various activities of CSIR-CDRI. Citing the example of “Saheli” which is one of the world’s first non-steroidal contraceptive, he informed about the contributions of the institute in drug discovery and development. He mentioned various fields for students where they can pursue their career.

He said that youngsters have great opportunities in the field of Pharmacy. Further, he explained how a molecule is converted into medicine and how the various scientists work as a team to make this molecule into a novel drug. He also gave information on how they can start their journey with CSIR-CDRI.

Later, participants visited various labs and interacted with the scientists and observed hands-on experimentations.

Overuse of Chemotherapy leads to physiological and financial toxicity: Dr Manjiri

THE 25th National Technology Day was celebrated in CSIR-CDRI on 15 May 2023, to remember the achievements & honour of India's scientists, engineers, researchers and their achievements with the theme of “Integrated Approach in Science and Technology for a sustainable future”.

On this occasion, the Director of CSIR-CDRI, Dr Radha Rangarajan

welcomed the dignitaries Dr Manjiri Bakre, founder CEO of OncoStem Diagnostics Pvt. Ltd. and Dr Dhananjay Dendukuri, Co-founder & CEO of Achira Labs Pvt. Ltd. In her welcome address, Dr Rangarajan said, “Technology reflects the future of the world as technology plays a very important role in each aspect of life whether in the field of drug discovery or human resource development.”

*Overuse of
Chemotherapy leads
to physiological and
financial toxicity: Dr
Manjiri, OncoStem
Diagnostics Pvt. Ltd.*



*Microfluidic
technologies in the post-
COVID World will play
significant role in Point
of care testing:
Dr Dhananjay,
Co-founder & CEO of
Achira Labs Pvt. Ltd.*

She further informed that on the First National Technology Day in 1999, Hon'ble Prime Minister Atal Bihari Bajpai launched the institute's popular antimalarial drug product alpha-beta Arteether.

On this occasion, the annual report of the institute was also released by the dignitaries on the dais.

Dr Manjiri Bakre delivered the Technology Day talk on the topic "Does every Breast Cancer patient need Chemotherapy?". Dr Manjiri Bakre questioned the relevance of chemotherapy. She informed about 95% of patients undergo chemotherapy though only 15% of patients require and benefit from it. Overuse of chemotherapy leads to physiological and financial toxicity. So before taking chemotherapy one has to go through proper prognostic tests and alternative methods. She informed that to address this need, she founded her startup company OncoStem with the vision of developing and delivering innovative, cost-effective and reliable tests for personalised cancer treatment planning.

"CanAssist-Breast (CAB)", a flagship product of her team for breast cancer patients is being sold in India and internationally for the last 6 years. She claimed that CanAssist-Breast test will benefit about 70% cancer patients in India.

Dr Dhananjay Dendukuri shared his thoughts on "Rapid advance in point of care testing through microfluidic technologies in the post-COVID World". He mentioned that simpler and cheaper testing solutions are needed today. He said his microfluidics based technology is very useful in this regard as it is miniaturised, hence needs less sample (only 3 microliter sample is sufficient) and reagent volume and enables the patient for home testing which reduces the cost of test also. These technologies bring multiple functionalities like cell separation, mixing and readout on to one cartridge and are very handy to use. India is a big emerging market for this newer technology.

The programme ended with gratitude to the guests by Senior Scientist Dr Sanjeev Yadav.

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