

In the News

CSIR & Directorate of Defense Research and Development, Israel, sign MoU



TO promote S&T cooperation between India and Israel, a Memorandum of Understanding (MoU) on Industrial Research and Development Cooperation was signed between CSIR under the Ministry of Science and Technology (MoS&T) of the Republic of India and the Directorate of Defense Research and Development (DDR&D), under the Ministry of Defense of the State of Israel on 4 May 2023.

Dr N Kalaiselvi, DG, CSIR, and Secretary, DSIR, thanked Dr Jitendra Singh, the Hon'ble Minister of State (IC), Ministry of S&T and Earth Sciences, for gracing the meeting and his continued support to CSIR. She welcomed the dignitaries and gave an overview of CSIR, showcasing its technological and research prowess as also the ongoing collaboration discussions with DDR&D, Israel in Aerospace, Healthcare, and Energy. Sharing CSIR's

The MoU shall enable cooperation in mutually agreeable industrial technology fields through the implementation of specific projects.

priority topics she concurred with the interest of DDR&D for furthering collaboration with Israel in high technology areas.

Acknowledging the ongoing cooperation efforts of CSIR and his team, Dr Daniel Gold, Head, DDR&D, envisioned that the CSIR-DDR&D cooperation would be beneficial for the welfare of both countries. He added that DDR&D welcomes collaboration not only with R&D organisations but also with startups, companies and venture capitals on both sides. He apprised that AI and photonics are strengths of Israel and welcomed cooperation with CSIR in high technology sectors which would pave the way for building a better future.

Stressing the successful completion of three decades of India-Israel successful diplomatic relations, HE Mr Naor Gilon, Ambassador of Israel to India emphasised the close friendly relations between Israel and India, which have culminated into a strategic partnership after the complimentary visits of the Hon'ble Prime Ministers of both the countries in 2018. The present CSIR-DDR&D cooperation would add another feather and be a milestone for India-Israel relations.

The MoU shall enable cooperation in mutually agreeable industrial technology fields through the implementation of specific projects. The collaboration would encompass some of the key industrial sectors including Healthcare; Aerospace & Electronics Instrumentation; Civil, Infrastructure & Engineering;

Chemicals and Petrochemicals; Sustainable Energy including Energy Devices; Ecology, Environment, Earth & Ocean Sciences and Water; Mining, Minerals, Metals & Materials; Agriculture, Nutrition & Biotechnology.

The collaboration through the MoU would be steered and the execution monitored by a Joint Steering Committee led by the heads of the CSIR and DDR&D for taking forward mutually benefiting Industrial and technology cooperation.

Specific collaboration on Hydrogen and Aerospace currently under discussion between CSIR and DDR&D was briefed by Dr Abhay Pashilkar, Director, CSIR-National Aerospace Laboratories (CSIR-NAL), Bengaluru, and Dr Ashish Lele, Director, CSIR-National Chemical Laboratory (CSIR-NCL), Pune. They welcomed collaboration on futuristic technologies in these domains, including in High Altitude Platform and Hydrogen Valley programs of CSIR, respectively.

Specific collaboration on Therapeutics between CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad, and M/s 101 Therapeutics for conducting clinical trials of a COVID-19 drug having enormous therapeutic potential was briefed; if successful this would prove to be highly appropriate and effective for the preparation of future pandemics.

The cooperation MoU between CSIR-IICT and M/s 101 Therapeutics was also signed during the meeting. In his remarks,



Hon'ble Minister Dr Jitendra Singh said that it is a very important year in the S&T sphere of India under the leadership of the Hon'ble PM of India as India is holding the G20 presidency, celebrating the International Year of Millet, as also India and Israel completed 30 years of successful diplomatic relations.

He apprised that CSIR has specialised laboratories in almost all the identified priority sectors and therefore assured appropriate competence for this cooperation, for instance, indigenous Hydrogen Fuel Cell bus by CSIR-NCL, and purple revolution (Lavender

cultivation) by CSIR-IIIM. He welcomed the technology partnership with Israel and congratulated both sides for their efforts to strengthen the India-Israel relationship.

Dr Rama Swami Bansal, Head, International S&T Affairs Directorate (ISTAD), CSIR, thanked the Hon'ble Minister for his continued support to CSIR, the team from Israel for building and formalising the cooperation and her colleagues from CSIR and MEA for their kind and gracious presence during the MoU signing meeting.

Hon'ble Minister Dr Jitendra Singh apprised that CSIR has specialised laboratories in almost all the identified priority sectors and therefore assured appropriate competence for this cooperation.

Gurugram University in collaboration with CSIR-NIScPR Organises "Science Conclave and Agro-Tech Expo 2023"

GURUGRAM University in collaboration with CSIR-NIScPR, New Delhi, and the Department of Science & Technology (DST), Haryana, organised the "Science Conclave and Agro-Tech Expo 2023" during 15-16 March 2023 at Gurugram

University. The conclave brought together audiences from different strata of society such as scientists, academicians, students, farmers, entrepreneurs and technology developers. The programme was aimed at introducing farmers and students to CSIR technologies

Dr Kalaiselvi said that farmers play a very crucial role and appreciated the organisers for roping in the farmers during the event. She further informed about the “One Week, One Lab” campaign being conducted by CSIR labs. She also motivated the students present to talk to scientists from the nearby CSIR lab, shake hands with them and learn many things about science.



Dr N Kalaiselvi, DG, CSIR addressing the Science Conclave at Gurugram University

for livelihood generation and sustainable development in rural areas. Unnat Bharat Abhiyan (UBA) and Vijnana Bharati (VIBHA) were the knowledge partners.

Dr N Kalaiselvi, DG, CSIR & Secretary, DSIR, GoI, graced the inaugural session as the Chief Guest. Guests of Honour were Dr Kailash Chandra Sharma, Vice Chairman, Haryana State Council of Higher Education, Panchkula, Haryana; Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, New Delhi; and Prof. Dinesh Kumar, Programme Chairman, Vice Chancellor of Gurugram University.

While addressing the gathering, Dr Kalaiselvi said that farmers play a very crucial role and appreciated the organisers for roping in the farmers during the event. She further informed about the “One Week, One Lab” campaign being conducted by CSIR labs. She also motivated the students present to talk to scientists from the nearby CSIR lab, shake hands with them and learn many things about science.



Prof. Ranjana Aggarwal, Director, CSIR-NIScPR addressing the gathering

Prof. Dinesh Kumar stated that this event intends to provide an enabling environment for interaction amongst interested stakeholders such as farmers and students to make their connection with science and technology. Prof. Ranjana Aggarwal discussed the objectives of CSIR-NIScPR and elaborated on the concept and idea behind this Science Conclave & Agro-Tech Expo. The mentor of Vijnana Bharati Dr Shankar Rao Tatwawadi and Prof. Kailash Chandra Sharma addressed the audience.



At the Agro-Tech Expo, eight labs of CSIR showcased their technologies and products. This expo was the main attraction for the farmers as well as students. The stalls at the expo featured a range of initiatives where farmers learned about cutting-edge crop varieties, modern agricultural techniques and cutting-edge equipment developed in various CSIR labs.

rural development & Atmanirbhar Bharat along with science mentalism show, science cartoon show, and special lecture on Saur Mandal Ki Sair were the centre of attraction for the audience.

Special issues on innovations and millet year brought out by CSIR's popular science magazines namely Science Reporter (English) and Vigyan Pragati (Hindi) were released during the programme.

This book has been written to eliminate the difficulty faced by Hindi medium-educated employees working in English, says Mr Harish Kumar, Under Secretary of Council HQ.



Dignitaries of the valedictory session

During the programme, on-the-spot poster-making competition on “Sustainable Development”, Science Model Exhibition on ‘Atmanirbhar Bharat’ for students, and two days puppet show were also organised. The puppet expert Shri Narayan Srivastava exhibited several puppet shows based on different stories from daily life.

On 16 March Dr Omkar Rai, Executive Chairman, Startup Odisha and Prof. Asim Ali Khan, Director General, CCRUM, Ministry of Ayush, GoI, graced the valedictory session. More than a thousand scientists, academicians, farmers, and school & college students from surrounding districts actively took part in the programme.

Release of Book *Fundamental and Supplementary Rules – A Simple Study*

ON the occasion of Amrit Mahotsav of Independence, a book compiled on the subject "Fundamental and Supplementary Rules (FR/SR) – A simple study" in Hindi by Mr Vivek Bajpai, Section Officer working at CSIR Headquarters was released on 28 February 2023 by Mr Mahendra Kumar Gupta, Joint Secretary (Administration), CSIR.

Mr Gupta congratulated Mr Bajpai and advised all the staff/officers of CSIR HQ present in the auditorium to study the book and its use in official work.

On this occasion, Mr Harish Kumar, Under Secretary, CSIR said that “This book has been

written to eliminate the difficulty faced by Hindi medium-educated employees working in English and to end the old tradition of 'Look Back, Walk Ahead' of working in English. This will definitely prove to be beneficial for the personnel in the execution of work and making the government rules available in easy-to-understand language.”

In his address, Mr Bajpai said “The book does not only contain brief knowledge of Fundamental/ Supplementary Rules but provides a blueprint of it in proper sequence and systematic way so that anyone can understand it without any effort and can get the summary of all rules in just 103 pages.”

“One Week, One Lab” Programme at CSIR-NIIST

1
Week
One Lab



niist
सीएसआईआर का अंतर्विषयी आयाम
interdisciplinary face of CSIR



Dr N Kalaiselvi, DG-CSIR and Secretary, DSIR during the inaugural ceremony

CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST), Thiruvananthapuram, hosted the “One Week, One Lab” programme from 13 to 18 March 2023 to showcase R&D activities and technologies developed by CSIR-NIIST that have shown potential to deliver to societal causes.

The programme was inaugurated by Dr N Kalaiselvi, Director General, CSIR, and Secretary, DSIR, on 13 March. The inaugural event was chaired by the Guest of Honour Prof. Javed Iqbal and was presided over by Director CSIR-NIIST, Dr C Anandharamakrishnan. As part of the campaign, CSIR-NIIST also held a millet food festival, which was inaugurated in the presence of Dr N Kalaiselvi. A startup conclave was held during the afternoon session of 13 March, where Dr Saji

Gopinath, Vice Chancellor, Digital University, Kerala, was the Chief Guest, and Shri Anoop Ambika CEO, Kerala Startup Mission with Dr Devendra Reddy Kalva, were the Guests of Honour.

During the programme, CSIR-NIIST also hosted a series of thematic sessions including many panel discussions on varied topics of science and technology. During these panel discussions, eminent scientists, entrepreneurs, and industry delegates presented their contemplative thoughts regarding solutions to the pertinent issues in the realm of science and technologies and feasible ways for effective & fast lab-to-land translation including product commercialisation and export paradigms.

These thematic sessions as well as panel discussions were attended by the general public,

As part of the campaign, CSIR-NIIST also held a millet food festival, which was inaugurated in the presence of Dr N Kalaiselvi, DG CSIR.

Two panel discussions were held on themes of “Scientific Validation of Traditional Knowledge for Healthy India” and “Strengthening Ayurvedic MSME Industries with Academic and Research Inputs”.

representatives from NGOs, delegates from industry, students of schools & colleges, lecturers, assistant professors, scientists from other institutes, etc.

The first thematic session in the series was “Ayurswasthya” held on 14 March to endorse awareness concerning the validation of Ayurveda scientifically and methodically. It was inaugurated with a welcome address by Dr Manoj Nesary, Advisor, Ayurveda, Ministry of Ayush. The special address on “Ayurswasthya” was delivered by Dr Radha Rangarajan, Director, CSIR-CDRI, Lucknow, and Shri Kesavendra Kumar IAS, Special Secretary Ayush, Govt of Kerala. Two panel discussions were held on themes of “Scientific Validation of Traditional Knowledge for Healthy India” and “Strengthening Ayurvedic MSME Industries with Academic and Research Inputs”.

During the afternoon session on 14 March named “Urja” based on the themes of “Energy Materials, Devices, and Hydrogen: the Promising Path to Amrit Kal” and “Specialty Chemicals: building Atmanirbhar Bharat with a focus on Sustainability” was held. It was inaugurated by Shri KR Jyothilal IAS, Additional Chief Secretary, Govt of Kerala, and the special address of the session was delivered by Dr KJ Sreeram, Director, CSIR-CLRI. An address by Guest of Honour Shri Rajesh Jha, MD and CEO, Adani Vizhinjam Port Pvt. Ltd, was also delivered.

The session on strategic materials on 15 March was inaugurated by Dr S Unnikrishnan

Nair, Director, VSSC, ISRO. The special address was by the Guest of Honour, Dr R Balamuralikrishnan, Director, DMRL-DRDO, and Dr Avinash Kumar Srivastava, Director, CSIR-AMPRI, and Dr V Narayanan, Director, LPSC-ISRO. The afternoon session of 15 March was based on the theme of “Regional Materials in Rubber & Coir Technologies”, which was inaugurated by Shri D Kappuramu, Chairman, Coir Board. There was a special address by the Guest of Honour Dr Sawar Dhanania, Chairman Rubber Board, pertinent to the themes of rubber and coir technologies.

The thematic session on 16 March was inaugurated in the presence of Dr Rajamanickam IAS, principal Director, local self-government department, & commissioner of rural development, Govt of Kerala. The special addresses during “Prithvi” were delivered by Er Pradeep Kumar AB, Chairman, Kerala State Pollution Control Board, and Sri Babu Ambat, Executive Director, CED. Also, Dr Sheela AM, Member Secretary, Kerala State Pollution Control Board, Govt of Kerala, discussed waste management in the industrial sector during the startup and industry conclave of the “Prithvi” session.

On the afternoon of 16 March, a discussion on “Environment Management Services for developmental Projects” under the “Prithvi” theme was chaired by Dr Adeela Abdulla IAS, Director, Kerala Solid Waste Management Project. Dr D Sajith Babu, IAS,



CSIR-NIIST family celebrating the open day

Director, Institute of Land and Disaster Management, Govt of Kerala and Dr Bineesha P, Board Member, Technology Development Board, DST, Govt of India, were guests.

The conclave on “Sree Anna” on 17 March had Dr B Ashok IAS, Agriculture Production Commissioner and Principal Secretary Department of Agriculture Development and Farmers Welfare, Govt of Kerala, Dr Ajith Kumar Shasany, Director, CSIR-NBRI and Dr M Loganathan, Director-in-charge, NIFTEM, Thanjavur as guests.

The afternoon session of 17 March on “Agri-nutri-biotech” theme was addressed by Dr Anjan Ray, Director, CSIR-IIP and Dr YB Ramakrishna, Former Chairman, Working Group Biofuels, MoPNG, Govt of India.

Parallel to these thematic sessions, different programmes of the millet food festival were hosted including startup meet, millet exhibitions, millet cooking competition, farmer’s meet, millet familiarisation session, chef challenge, etc.



Dr N Kalaiselvi interacting with farmers and entrepreneurs during the millet food festival at NIIST

On 18 March, CSIR-NIIST celebrated an open day when the institute exhibited its science and technologies to the public of the city to create awareness among them regarding how science could transform the quality of life. Many ministers including Adv. GR Anil, Minister for Food and Civil Supplies, Consumer Affairs and Legal Metrology and Shri P Prasad, Minister for Agriculture, Govt of Kerala, also visited the millet food festival and science exhibitions and appreciated the efforts of the institute to find solutions to societal causes with the help of science and technology.

CSIR-NIIST celebrated an open day when the institute exhibited its science and technologies to the public of the city to create awareness.

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



Padma Shri (Prof.) ED Jemmis as Chief Guest at the Launching Programme

A “Brainstorming Session on Solid Waste Management” was held where discussion on types of waste generated, challenges associated and possible solutions.

CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, Assam, conducted the “One Week, One Lab” programme during 18-24 March 2023 with an aim to showcasing CSIR initiatives, achievements and other S&T interventions to innovators, entrepreneurs, start-ups, academia, industry personnel, students and common people.

The programme was launched in the presence of Padma Shri (Prof.) ED Jemmis, the founder Director of IISER, Thiruvananthapuram, Dr Suman Kumari Mishra, Director, CSIR-CGCRI and Dr G Narahari Sastry, Director, CSIR-NEIST on 18 March which was also the foundation day of CSIR-NEIST. The institute also dedicated the morning to the Branch Laboratory, Imphal (BLIM), Manipur, celebrating the Golden Jubilee, which was established as a Field Station in 1973. A group

of farmers, entrepreneurs and others from Manipur joined the celebration along with the staff of BLIM, led by Dr HB Singh.

On 19 March 2023, the day started with interactions with pensioners of the institute to know their experiences, suggestions and also the problems they faced.



Dr Amit Ganguly delivering a talk on municipal solid waste

A “Brainstorming Session on Solid Waste Management” was held where discussion on types of waste generated, challenges associated and possible solutions



Inauguration of the “Agriculture, Food, Health and Wellbeing” programme

for solid waste management was held extensively in the presence of the Director, CSIR-NEIST, Dr Amrit Ganguly from CSIR-CMERI along with a group of scientists from the institute.

The theme of the third day was “Agriculture, Food, Health and Wellbeing” and the inauguration session of the programme was graced by Hon’ble Shri Tage Taki, the Agriculture Minister of the Govt of Arunachal Pradesh, along with a group of officials from Arunachal Pradesh and Prof. Ratna Kanta Talukdar, Principal-cum-Chief Superintendent of Jorhat Medical College & Hospital as Guest of Honour.

Later, a seminar on “Health and Well-being through Integrative Medicine” was organised with the participation of a large number of renowned physicians of the region as resource persons like Dr Deepak Sharma, Dr Sarweswar Agarwal, Dr Chandra Borah, Dr Munmee Das, etc. Simultaneously, an interactive session was organised with the entrepreneurs, SHGs, NGOs, farmer representatives and the CSIR-NEIST Branch Laboratory, Itanagar (BLIT), Arunachal Pradesh, where various issues related to socio-economic development in the state were discussed.

A dedicated programme for women was held on 21 March which was attended by a large number of women employees including project staff & research scholars of the institute to discuss topics of research, presented by the medical officers, two incubates of BIRAC-BioNEST and a research scholar of the institute. Dr Purnima Barua, Superintendent, Jorhat Medical College and Hospital (JMCH), attended the programme as Chief Guest.

“Industry, Entrepreneurs and Startups Meet” on 22 March was the star attraction of the week-long programme as it had tremendous potential to create linkages with industries and provide opportunity to realise the problems faced by the industries, available technologies, facilities, expertise and solutions through interaction between

A seminar on “Health and Well-being through Integrative Medicine” was organised with the participation of a large number of renowned physicians of the region as resource persons.



A glimpse of “Empowering women for S&T intervention”

During the event, several science experiments and instruments were put on display to motivate and encourage students.



Exhibition & Teachers-students-parents-scientists interaction programme

the industrialists, scientists and research scholars. The industry participants were OIL; ONGC; IOCL, Bongaigaon; IOCL, Sibsaagar; Innotech; Anvaya Innovations; GM materials, Coal India, Sewali Home Enterprise, etc.

Considering the “Knowledge for Empowerment” theme of CSIR-NEIST, three days i.e., 19, 21 and 24 were dedicated to students from different schools and colleges of North East India where several hands-on experiments, demonstration of scientific experiments, student-scientist connect programmes, lab visits and different competitions (Quiz, Art, Riddle, Poem and Photography) were organised for the students.

More than 700 students from different parts of Assam and North-East India visited CSIR-NEIST and participated in different programmes during the event. During the entire event, several science experiments and instruments were put on display to motivate and encourage students. Also, hands-on training was carried out with some equipments to create curiosity among them.

A huge farming community of NE India is associated with



MoU signing

CSIR-NEIST through various R&D and societal programmes including the currently ongoing CSIR-Aroma Mission, CSIR-Floriculture Mission, STINER, RCFC-NER, etc. So, 23 March was dedicated to the farmers where more than 250 participants from different parts of Assam, Arunachal Pradesh and Nagaland joined where Shri SV Shukla, Director, FFDC, Kannauj, Shri Ramakant Harlalka, M/s Nishant Aroma Pvt. Ltd Mumbai and a few other resource persons shared their knowledge and interacted with the farmers.

An MoU of technology transfer on “Supercapacitor Battery Hybrid System for E-rickshaws” was signed between Anvaya Innovations, Jorhat, and CSIR-NEIST, Jorhat, during the Industry Meet programme.

“One Week, One Lab” Programme Celebrations at CSIR-IICB



During inaugural ceremony

JOINING the campaign, CSIR-Indian Institution of Chemical Biology (CSIR-IICB), Kolkata, conducted the week-long programme from 27 March to 2 April 2023. Dr Souvik Maiti, Director, CSIR-IGIB, Dr Arun Bandyopadhyay, Director, CSIR-IICB and Dr P Jaisankar, Chief Scientist, CSIR-IICB, inaugurated the programme at the JC Ray Auditorium of CSIR-IICB on 27 March 2023.

On 28 March, Industry-Academia Meet was organised on the theme “Industry-Academic Collaborations: The Road Ahead”, to bring together researchers, academics, and industry leaders to discuss the challenges and opportunities in this critical area. The meet was inaugurated by the Chief Guest Dr Kannan Srinivasan, Director, CSIR-CSMCRI and Dr Suman Kumari Mishra, Director of CSIR-CGCRI, who graced the occasion as the Guest of Honour. The panel discussion was led by Dr Arun Bandyopadhyay who started with the genesis of CSIR-IICB and highlighted how an experimental medicine lab has now grown into

a state-of-the-art disease biology lab. The panel discussion included eminent speakers from different industries who shared their experiences and insights on the challenges and opportunities in industry-academic collaborations.

An ‘Open House’ programme was organised on the third day during which 97 students from Kendriya Vidyalaya Santragachi, Kendriya Vidyalaya, Joka, Calcutta Diocesan St Saviours English Medium School, Gems Academia International School and Pratt Memorial School visited different laboratories and instrumentation facilities of CSIR-IICB.

On 30 March 2023, Student-Scientist Meet was organised in which 89 students from Bidhannagar College, Bethune College, Lady Brabourne College, Maulana Azad College and Dhruba Chand Halder College visited different laboratories and instrumentation facilities of CSIR-IICB TRUE, Salt Lake Campus.

Laboratory visits and an interactive session with Scientists and Government officials were arranged on the fifth day of the

Industry-Academia Meet was organised on the theme “Industry-Academic Collaborations: The Road Ahead”, to bring together researchers, academics, and industry leaders to discuss the challenges and opportunities in this critical area.



campaign. Shri Dhrubajyoti Chattopadhyay, District Science Officer, District Science Centre, Purulia, visited CSIR-IICB, Jadavpur and Salt Lake Campus and interacted with scientists and students of different laboratories.

A popular lecture on Diabetes was conducted at the JC Ray Auditorium of CSIR-IICB on the sixth day. Dr Sujoy Ghosh, Professor Physician in the Department of Endocrinology at the Institute of Post Graduate Medical Education & Research (IPGME&R), SSKM Hospital and Dr Partha Chakrabarti, Senior Principal Scientist, CSIR-IICB, spoke on the different aspects of Diabetes.

The week-long campaign was concluded with the 67th Foundation Day celebration of CSIR-IICB on 2 April 2023. Prof. Samit Chattopadhyay, Shri BK Birla and Shrimati Sarala Birla,



Chair Professor, BITS Pilani and Former Director, CSIR-IICB, graced the occasion.

Dr T Rajamannar, Executive Vice President & Advisor to MD, Head, High Impact Innovations — Sustainable Health Solutions, Sun Pharmaceutical Industries Ltd, Vadodara, Gujarat, delivered the Dr JC Ray Memorial Lecture. Dr Arun Bandyopadhyay, Director, CSIR-IICB, Prof. V Ravichandiran, Director, NIPER-Kolkata & NIPER-Hajipur were also present at the Foundation Day Programme.

A popular lecture on Diabetes was conducted at the JC Ray Auditorium of CSIR-IICB on the sixth day.

Workshops/Training Programmes/Symposiums

CSIR-NIScPR's Brainstorming Workshop on "Socio-economic Impact of CSIR Food and Agri-Technologies: A Dialogue with Stakeholders"

CSIR-National Institute of Science Communication & Policy Research (NIScPR), New Delhi, organised a brainstorming workshop on "Socio-economic impact of

CSIR food & agri-technologies: A dialogue with stakeholders".

During her welcome address, Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, shared valuable insights on the significance of

identifying gaps in the transfer of innovative technologies from CSIR laboratories to society at the grassroot level. The agriculture sector plays a critical role in the socioeconomic development of our country. Adopting innovative food and agri-technologies can lead to increased productivity, better crop yields and improved quality of agricultural produce.

Prof. Aggarwal highlighted the importance of considering factors such as innovativeness, technologies' strength, and stakeholders' opinions to bridge the gaps between technology development and its practical implementation. This is essential to ensure that the benefits of scientific research and technological advancements reach the intended end-users promptly and efficiently.

To achieve this, it is necessary to have a multi-disciplinary approach that also involves different stakeholders such as researchers, policymakers, farmers, firms and entrepreneurs. She added that the dialogue during the workshop would help identify and address the various barriers that hinder the successful transfer and adoption of innovative food and agri-technologies, and consequently contribute to the socio-economic development of our country.

Briefing about the overview of the project, Dr L Pulamte, Principal Investigator and Sr Principal Scientist, CSIR-NIScPR, highlighted the background and objectives of the project, such as employment generation, income generation,



contribution to the rural economy and women empowerment, import substitution, export contribution and new business opening for the users. He emphasised the need to assess the benefits of public funding to CSIR for research and its commitment to the social cause. The assessment would provide insights into the costs and benefits of developing technologies, and also the status of the fulfilment of intended purposes of technology development.

Mr Mahesh RV, President of Spirulina Foundation, Tumkur, said that after submitting his dissertation on Spirulina production in 2010, founded a company, and has tied up with JSW Foundation and Welcome Foundation. He has served 15,000 to 100,000 malnourished children at an NGO and has set up 30 Self Help Groups (SHGs) in different parts of India. Triggered by his initiative, the Karnataka state government launched a state

The agriculture sector plays a critical role in the socioeconomic development of our country, says Prof. Ranjana Aggarwal, Director, CSIR-NIScPR.

Women entrepreneurs from Arunachal Pradesh shared their experience with vermicompost production and highlighted the challenges of marketing, customising technology, importing equipment and financial issues.

budget scheme to provide Spirulina to all malnourished children. His organisation, Mothers against Malnutrition, follows the concept of the 6 Ls (Local Problems, Local Solutions, Leading to Livelihood, to Local Ladies).

Mr Suresh KS, Shre Shridhareshwara Coconut Products, Mysuru, started value addition as a coconut farmer when coconut prices dropped. His organisation aims to provide quality coconut value-added products, including virgin coconut oil by CSIR-CFTRI, Mysuru, and the technology using the cold-processed centrifugal separation method. They conduct research and development to innovate new coconut products and prioritise updating and upgrading.

Mr Pranjal Baruah, CEO/General Secretary, Mushroom Development Foundation, Guwahati, started growing mushrooms in 1995 and trained 1,200 female farmers on mushroom cultivation, production and marketing. He also formed mushroom growing clusters in different parts of the country.

Dr Mahesh Gupta of CSIR-IHBT, Palampur, and Dr Jatin Kalita of CSIR-NEIST, Jorhat, gave solutions to stakeholders' problems. Dr Navin Kumar Rastogi and Dr SS Mamatha of CSIR-CFTRI briefly explained the technologies available in their lab and also suggested solutions to stakeholders' problems.

Ms Toko Menu Likha and three other women entrepreneurs from Arunachal Pradesh shared their experience with vermicompost

production and highlighted the challenges of marketing, customising technology, importing equipment and financial issues.

Anita Kataria, representing Neoconcept Enterprises in New Delhi, presented her and daughter Joshita Kataria's Dosa-making machine. She highlighted the valuable points of their machine and also mentioned that CSIR-CFTRI had taken their chapatti machine. Joshita compared the two technologies and concluded by saying that Dosa demand is less in the North India region compared to the South region, and the Chapati machine is quite popular in North India.

Mr Lakhvinder Singh Chhina from Singh Agritech Pvt. Ltd, Kashipur, expressed his gratitude to IHBT-Palampur and shared his opinion on hand-holding support in transferring the canning technology for ready-to-eat foods that are chemical and preservative-free. He reported having produced and supplied a large quantity of these foods to the local market. He also suggested connecting with hospitals to provide canned khichdi to patients who are unable to consume a proper meal. Additionally, he shared his successful experience of exporting these products to Canada.

Dr Debajit Mahanta, the Project Director of APCS&T in Itanagar, shared his experience on challenges he faced in obtaining raw materials for the high-value commercial banana fibre extraction and product development, as well as the agro-technologies of citronella and

lemongrass. He obtained licenses from CSIR-NEIST and provided 5000 dwarf plants to various districts in Arunachal Pradesh. Additionally, he conducted ten awareness training workshops for groups of entrepreneurs, self-help groups, and farmer's association groups.

Sunil S of Bhavani Industries in Mandya, Karnataka, shared his experience with dhal milling machinery. In 2001, his father and uncle obtained a license from

CSIR-CFTRI and sold the machinery under the Karnataka government subsidy. They also incorporated customer feedback into the design of the machines. The machines are versatile and can be used for a range of dhal milling applications.

Overall, the workshop was a successful event connecting various stakeholders across the country in a hybrid mode. The workshop concluded with a vote of thanks by Dr Suman Ray, Principal Scientist, CSIR-NIScPR.

CSIR-CDRI Organises Energy Literacy Training and Climate Clock Awareness Programme

CLIMATE change is impacting societies globally but warming beyond 1.5°C will prove disastrous to the over 3 billion people who live in places highly vulnerable to climate change as reported by Intergovernmental Panel on Climate Change (IPCC).

Therefore, to spread awareness towards the climate clock & its importance, climate change and its consequences among youth, Energy Literacy training programmes were organised at CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow, from 24-27 April 2023 for students of HYGIA College of Pharmacy, Lucknow; HYGIA Institute of Pharmacy, Lucknow, and Vivek College of Technology Education Bijenour, Uttar Pradesh, under the umbrella of the CSIR-JIGYASA programme to commemorate

the World Earth Day. Almost 150 students and 12 faculty from three colleges have participated in the awareness programme.

During the training programme, participants were briefed about the real-time data of the climate clock through the website (<https://climateclock.world/>). The climate clock shows the time and how much time is left to reach the global temperature increase by 1.5°C based on real-time data and if the temperature increases then its consequence will be irreversible. Participants were motivated to take the Energy Literacy training and act accordingly to save the climate and also took the oath to save the Climate and to reduce the carbon footprint.

Dr Sanjeev Yadav, Senior Scientist, CSIR-CDRI, talked about the adverse effect of climate

*Global warming
beyond 1.5°C will
prove disastrous to
the over
3 billion people:
Says IPCC report.*

*Laboratory Animals
sacrifice their lives
for Humanity so
we should respect
them, says Dr Sujit
Kumar Dutta, Joint
Commissioner,
Ministry of Animal
Husbandry,
Dairying and
Fisheries and
Secretary, CCSEA
and AWBI.*

change. With the emission of greenhouse gases mainly CO₂, the temperature of the earth is rising day by day which leads to the melting of glaciers and the rise of sea level. The coastal areas of many countries are almost on the verge of submersion.

During the Student-Scientist Connect programme, he delivered a motivational talk on Career opportunities for Pharmacy Students and explained various fields including Biomedical Researcher, Medicines Adviser, Patent Attorney, Forensic Scientist, Regulatory Attorney, Quality Control Chemist, Quality

Assurance, Medical Science Liaison, Pharmacovigilance, and many more, where students can opt as per their strengths and weakness. He also informed how students can start their journey with CSIR-CDRI.

Further, participants visited various labs and facilities of the institute and interacted with the scientists to know about the experiments being performed in the labs.

The programme was concluded with feedback from students & faculties and a group photo to memories of the event.

CSIR-CDRI Organises One Day Symposium on “Preclinical Animal Models and Available Alternatives”

TO commemorate the World Laboratory Animal Day, CSIR-CDRI, Lucknow, organised a one-day symposium on “Preclinical Animal and Available Alternatives” in collaboration with the Laboratory Animal Science Association of India (LASAI). Director CSIR-CDRI, Dr Radha Rangarajan, welcomed the guests and participants and shed light on the purpose of the symposium.

The Guest of Honour of the Symposium, Dr Sujit Kumar Dutta, Joint Commissioner, Ministry of Animal Husbandry, Dairying and Fisheries and Secretary, CCSEA and AWBI delivered an inaugural speech on animal's role in making different medicine and performing various experiments. In his lecture,



he said, we should reduce animal usage in various research as much as we can. There is an urgent need for the replacement of Animal Models in laboratories.

Later, Dr Suresh Poosala, Founder, Oncoseek Bio Pvt. Ltd and Acasta Healthcare Pvt. Ltd delivered a plenary talk on Alternatives and some Animal Model of Diseases in Drug Discoveries. He said the use of

New Approaches, Methodologies, also known as New Alternative Methods or NAMs, to establish drug safety and effectiveness may be adopted in place of animal testing where appropriate. He said we should pick up the right animal in the right quantity or if possible use an alternative method. He emphasised on 3Rs of animal usage alternatives which refer to the Replacement, Reduction and Refinement of animals in research and testing.

In the first half, posters on alternative and novel animal models were presented by the research students. Later in the second half, the first session was focused on Alternate to Animal Models and was chaired by Dr Naibedya Chattopadhyaya and Dr Suresh Poosala,

The first lecture of the session was delivered by Dr Parthasarathy Ramakrishnan CSIR-IITR on Computational Toxicology Platform toward Replacing Animal Testing. Dr Chetana Sachidanandan from CSIR-IGIB, New Delhi, presented Zebrafish as a model for human disease. Dr Aamir Nazir, CSIR-CDRI, Lucknow, presented *C. elegans* as an alternative to animal models for disease research.

Ms Vijeta Jaiswal from Cellink Bioprinting, Bengaluru, presented a new concept of 3D Bioprinting as an alternative to animal testing.

Session two started with Regulatory Guidelines in Animal Research chaired by Dr Sujit Kumar Dutta and Dr Sharad Sharma. Dr Vivek Tyagi, Senior Consultant, CCSEA, New Delhi, gave speech on CCSEA – Aim Rules, function and Recent Notifications of CCSEA for nomination and establishments. Dr UD Gupta, Ex-Director in Charge, ICMR-NJILOMD, Agra presented a report on Biosafety Practices and Infectious Diseases.

Dr Satish Panchal, Sun Pharma Advanced Research Company Ltd (SPARC) discussed the Regulatory requirement of using dogs in non-clinical research. Dr Neeraj Khatri, CSIR-IMTech, Chandigarh, gave some guidelines on Approval and Inspection of Animal Facilities in India as per CCSEA guidelines.

The session concluded with remarks by Dr SK Rath, Chairman Organising Committee and the session ended with a vote of thanks by Dr Rajdeep Guha, Secretary, organisation committee.

Dr Neeraj Khatri, CSIR-IMTech, Chandigarh, gave some guidelines on Approval and Inspection of Animal Facilities in India as per CCSEA guidelines.

CSIR-CBRI Organises Workshop on “Jigyasa: Scientist-Teacher Connect”

CSIR-Central Building Research Institute, Roorkee, organised a “Scientist Teacher Connect” workshop on 24 March 2023 under Jigyasa 2.0 in which around 35

teachers from eight schools i.e., DAV Meerut, DPS Haridwar, Cantt Board Roorkee, Anand Swaroop Arya Inter College, Scholars Academy Roorkee, Army Public



School 1, Kendriya Vidyalaya 1, Bal Vidya Mandir Roorkee participated. The motive of the workshop was to inculcate a scientific approach in the teacher's mind and to introduce them to the laboratories, with the work being done at the CBRI.

The workshop was inaugurated by CSIR-CBRI Director Dr R Pradeep Kumar. On this occasion, a lecture session on building safety, corrosion, earthquake safety, etc. was organised in which Dr Suvir Singh, Chief Scientist, CSIR-CBRI, enlightened teachers about the importance of fire safety in buildings. Dr SR Karade, Chief Scientist, CSIR-CBRI, gave a talk on corrosion in buildings. The third lecture was presented by Dr LP Singh, Senior Principal Scientist, CSIR-CBRI, on climate change where he discussed about the

concern of increasing CO₂ levels. Lastly, Dr PKS Chauhan, Principal Scientist, CSIR-CBRI, discussed the why and how of earthquakes.

In the afternoon session, teachers visited the laboratories i.e., Fire laboratory, Exhibition Hall, Chemistry lab, and Robotics lab of the CBRI where they were explained about the working of instruments and concepts involved by the scientists.

In the Valedictory function, teachers shared their experiences and feedback about the workshop. Later, Dr SK Negi, Chief Scientist, CSIR-CBRI, presented certificates and mementoes to the participants. The workshop was coordinated by Dr Chandan Swaroop Meena and Dr Hemlata.

Printed and Published by

Mukesh Ambadas Pund on behalf of CSIR-National Institute of Science Communication and Policy Research

Dr KS Krishnan Marg, New Delhi -110 012

Editor: Hasan Jawaid Khan; **Associate Editor:** Sonali Nagar

Design: Abhinav Raj; **Production:** Ashwani Kumar Brahmi

Phone: 25848702; **Fax:** 25847062; **E-mail:** hjk@niscpr.res.in, sonalinagar@niscpr.res.in

Website: <https://niscpr.res.in>

Please direct all Subscription-related queries to:

Sales & Distribution Officer, NIScPR; **E-mail:** sales@niscpr.res.in;

Phone: 25843359

Annual Subscription: ₹750; **Single Copy:** ₹75.00

RN 4512/57