

No. DSIR/MS/2022/06
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **June, 2022**
(Part-I Unclassified)

Major achievements during the month of June, 2022:

Council of Scientific & Industrial Research (CSIR)

New Technologies/Processes Developed/Transferred

- CSIR-IIP Development of new formulation of LPG Sweeteign Catalyst for Supply Security in the Middle East Market. Project being done in collaboration with BPCL Work Progress:
 1. Four additives found to be effective at 40°C.
 2. Total ten additives tried so far
 3. Experiments with the four best additives to be carried out at 50°C
 4. Best additive identified for scale up at LONA
 5. At polymeric materials area we have developed new polymeric products from petroleum refinery streams such as light cycle oil, heavy gas oil, light coker gas oil, heavy sulfur light cycle oil, light gas oil and one crude oil. Also we have synthesized various DMC catalyst for polyether polyol synthesis.
- CSIR-NBRI developed following certified reference material (CRMs) / Reference Material (RMs): Geraniol (CRM), Eugenol (CRM), (+) Limonene (CRM), Methyl Chavicol (RM), (-) Menthol (CRM), (L) Carvone (CRM), Mangiferin (CRM), Andrographolide (RM), Curcumin (RM); Chrysophanol - Functionalized Antimicrobial Catheters; and Herbal Formulation for Treating Vulvovaginal Candidiasis.
- CSIR-NBRI signed 2 licensing agreements for knowhow transfer of 1) Certified Reference Material (CRM) - Aromatic : L-Carvone, Eugenol, Geraniol, (-) Menthol Medicinal : Mangiferin with M/S Aashvi Technology, LLP, Ahmedabad during Technology Day celebration. 2) Microbial Bio-fertilizer with M/S Uma Sankar Sabuja Dunia Ltd., Nabrangpur, Odisha on 10.06.2022.
- CSIR-CFTRI
 - Developed a process for the preparation of gluten free bakery products to M/s Satyacorp Foods pvt Ltd, Kolkata.

- Nutra chikki with added spirulina - a) Annapurneshwari Mahila Chikki Utpadakara Sangha, Chitradurga; b) Kallayee kadalai Mittai Kuzhu, Tamilnadu; c) Podhigai Women SHG, Tamilnadu; d) Navatha SHG, Andrapradesh; e) Mallikarjuna SHG, Andrapradesh; f) Sri Shakthi Yaraguntla, Andhrapradesh; g) Spandana SHG, Vijayanagara Dist.; h) Health India Wealth India Trust, Kolar.
- CSIR-CGCRI Transferred a technology on “Manufacturing ZTA based ceramic-on-ceramic articulating components” for total hip replacement (THR) to M/s G. Surgiwear Ltd. Rasoolpur Jahanganj, Near Hathoda Crossing, Shahjahanpur, U.P.
- CSIR-CSIO:
 - UVC Disinfectant Circulating Air-Flow Systems for Elevators , Toilets etc. to Voltas Ltd., Mumbai
 - Standalone UV Air Disinfection System for Rooms and Spaces to M/s Vision Reality, Panchkula

Collaboration/Agreement/MoUs Signed (National)

- CSIR-4PI signed MoU with Siksha ‘O’ Anusandhan (SOADU) university, Bhubaneswar. undertaking multi-disciplinary research and joint collaboration on 08-06-2022.
- CSIR-CECRI signed MoU with Summits Hydraulics Private Limited, Coimbatore for process for CO2 capture under flue gas conditions
- CSIR-CECRI signed MoU with Sterling Generators Private Limited, Mumbai for Consultancy for Electrolyser Development.
- CSIR-CFTRI signed MoU with Zum Heilen Diagnostic & Therapeutics Pvt Ltd., Thrissur on 29th June 2022 for a collaborative project on ‘Taste masking of cardamom and rosemary extract and incorporation in juices - namely mango and grape’.
- CSIR-CIMAP signed MoU on 27th June, 2022 with Acharya Narendra Dev University of Agriculture and Technology, Kumarganj Ayodhya to share the facilities and expertise available in each other’s institutions
- CSIR-CIMFR
 - Tripartite Agreement Between CSIR-CIMFR and Western Coalfields Limited (WCL) and Dhariwal Infrastructure Limited, Kolkata for Coal Sampling Work 08.06.2022.
 - Tripartite Agreement Between CSIR-CIMFR and Northern Coalfields Limited (NCL) and Mahan Energen Limited for Coal Sampling work 13.06.2022.
 - Tripartite Agreement Between CSIR-CIMFR and Northern Coalfields Limited (NCL) and Raipur Energen Limited (REL) coal sampling work 13.06.2022.

- Tripartite Agreement Between CSIR-CIMFR and Eastern Coalfields Limited (ECL) and Gujarat State Electricity Corporation Limited (GSECL) for Coal Sampling work 13.06.2022.
- CSIR-CRRI
 - Signed MoU with Petroleum Conservation Research Association on 07.06.2022 for "Identification of the most critical locations having the highest impact on traffic in case of vehicular breakdown".
 - Signed MoU with National Highways and Infrastructure Development Corporation Ltd. on 30.06.2022 to "promote New Materials and New Technologies/ cooperative R&D projects in highway works being taken up by NHIDCL".
- CSIR-CSIO signed MoA with PGIMER, Chandigarh for "Automatic Brushing device for oral Hygiene maintenance in Elderly population"
- CSIR-IICT signed MoU with AIMCO Pesticides Pvt. Ltd., Mumbai for process route freezing and demonstration of process for NaTCP @50 L scale.
- CSIR-IIP signed MoU with Chennai Petroleum Corporation on Single Reactor HEFA Technology for Drop-in Liquid Sustainable Aviation and Automotive Fuel (DILSAAF) on Conversion of Waste Plastics to Fuels and Petrochemicals and Any other area of mutual interest.
- CSIR-IITR signed MoU with Institute of Pesticide Formulation Technology (IPFT), Gurugram on 04/06/2022 and agreed to share existing facilities and available expertise at the respective institutions in developing newer nanoagrochemicals and assessing their toxicity/safety towards achieving the objectives of Atmanirbhar Bharat.
- CSIR-NBRI signed MoU to work jointly for promoting the R&D works related to plant sciences with Global Indo Scientists and Technocrats Forum (GIST), New Delhi on 25.06.2022.
- CSIR-NIIST signed agreement with M/s. AVT Natural Products Pvt. Ltd. For Characterization of Marigold polyphenols.
- CSIR-NIIST signed agreement with ITC Limited, Kolkata for Development of natural fibre based biodegradable food packaging containers.
- CSIR-NIO signed MoU with Indian Institute of Technology (Indian School of Mines), Dhanbad on 20-06-2022 for Collaborative research, development and innovation activities in the field of Marine Geosciences"
- CSIR-CDRI signed MoU with SRM Institute of Science and Technology, Tamil Nadu on 03/06/2022 to promote institutional linkage between CSIR-CDRI and SRMIST and to explore other avenues for possible collaboration.
- CSIR-CCMB and TAPADIA are working together to extend the benefits of research in understanding the genetic basis of type 1 diabetes (T1D) and type 2 diabetes (T2D) in collaboration with funding organisation i.e Chellaram Diabetes Research Centre (CDRC), Chellaram Diabetes Institute

- CSIR-CCMB along with INMAS & DRDO are collaborating for the proposal of “C13 NMR Spectroscopy based Neurotransmitter metabolism in Brain Post Blast Exposure
- CSIR-CCMB and MCBT collaborating towards expanding and revitalizing the field of Genomic studies of India’s Chelonians

Collaborations/Agreements/MoUs Signed (International)

- CSIR-IIP agreement with Corning Incorporated, USA on Substrates of diesel after treatment systems
- CSIR-NCL signed an Agreement for the project fellowship under Australian Alumni Grant Scheme for project "Development of cost effective microbial fuel cells (MFC)" with Australian Consulate General.

Patents Update

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	India	Abroad*
10	16	22	06	30	133

*Data reported to IPU during the said period and may increase late during national phase entries

High impact S & T services offered

- CSIR-CIMAP offered the services of Pilot Plant facility (TBIC) to M/s. Bansod Agri Ayurvedic Industry, Nagpur. The product Cleangerm (200 liters) manufactured in the facility
- CSIR-IHBT
 - Phytochemical investigation of medicinal plants for secondary metabolites.
 - Co-pigmentation of anthocyanins to achieve 180-degree Celsius temperature.
 - Preclinical testing facility for Nutritional & Nutraceuticals
- CSIR-IIP Conducted "Evaluation of Compatibility and Miscibility of HPCL Oil HP ENKLO FRDU 46" sponsored by M/s. HPCL, Ahmedabad Conducted "Friction and wear behaviour of friction wedge material for Railway application" sponsored by M/s. Sujan Industries, Mumbai.
- CSIR-IITR conducted Air Quality Monitoring and Assessment for pre-monsoon at 10-locations in Lucknow city. During the celebration of World Environment Day on June 04, 2022 at CSIR-IITR and released the annual report on Pre Monsoon Assessment of Ambient Air Quality of Lucknow City.
- CSIR-NAL
 - Influence of MACH number on the acoustics and mixing characteristics of a struct-cavity with different length to depth ratios – AR&DB
 - Development of supply of mathematical models of flight dynamics of jaguar aircraft and associated services – HAL

- Inflight instrumentation and data analysis of mirage-2000 aircraft with spice 2000 store at wing stations - Blue Hat Solutions Pvt Ltd
- CSIR-CCMB conduct 227 samples tested for Molecular Diagnostics Services of 222 families.
- CSIR-CRRI designed pavement for 4 laning of Beawar-Pali-Pindwara section of NH-14 in the state of Rajasthan under NHDP phase-III executed by L&T BPP Tollway Ltd.
- CSIR-CRRI Functional and Structural Evaluation of DND Flyway and Mayur Vihar link road for Maintenance and Rehabilitation Measures for Noida Toll Bridge Company Ltd
- CSIR-CRRI Technical audit of cement concrete road (Radission-Blu to Jaitala Main Road), Nagpur for Nagpur Municipal Corporation, Nagpur
- CSIR-CRRI Remedial measure in Dwarka-Palam Flyover for Delhi Development Authority (DDA)

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-CDRI series of Scientist connect program was organised for:
 - students of Krishna Institute of Pharmacy & Sciences, Kanpur, UP on 2nd June, 2022
 - students of School of Pharmaceutical Sciences, Chhatrapati Sahu Ji Maharaj University, Kanpur, UP on 03rd June, 2022
 - students of Axis Institute of Pharmacy, Kanpur, UP on 22nd June, 2022
 - students of Institute of Pharmaceutical Sciences, University of Lucknow UP on 24 June 2022
 - students of Zee college of Pharmacy, Unnao UP on 28 June 2022.
 - **Students trained:**
 - Skill development post graduate trainee (06), UPCST Fellowship Trainee(01), Advance Training (02), INSA-NASI Fellowship Trainee (01), Skill Development on Care, Management of Laboratory Animals & Experimental Techniques (13)
- CSIR-CECRI
 - ABHYAAS Program "Kaaryashaala" (High-End Workshop) through Accelerate Vigyan on "Advanced Materials for Energy Conversion and Storage" is being conducted during 27.06.2022 - 02.07.2022. A total of 25 participants represented from 6 states of India.
 - ABHYAAS Program "Vritika" (Skill Internship) through Accelerate Vigyan on "Training for Expertise in Fabrication and Testing of Photo electrochemical Device for Hydrogen Production" is being conducted during 27.06.2022 - 27.07.2022. A total of 5 participants were selected from Tamil Nadu, Kerala and Odisha.
- CSIR-CFTRI under the Jigyasa programme, a lecture on "Artificial Itelligence in our lives" was delivered on 24th June 2022 by Dr. B.S. Mahanand, Head,

Dept. of Information Science & Engineering JSS-STU, Mysuru which was attended by 50 students and 2 teachers.

- CSIR-CGCRI under Jigyasa Programme, students from Guru Nanak Institute of Technology, Kolkata along with Faculty members visited the labs of CGCRI on 2nd June, 2022.
- CSIR-CIMFR skill Development Programme on "Clean Coal Technology" from 02.06.2022 to 29.06.2022 at CIMFR Digwadih Campus
- CSIR-CIMFR skill Development Programme on " Mechanical Safety in Mines" from 21.06.2022 to 20.07.2022 at CIMFR Barwa Road Campus.
- CSIR-CIMFR organized 2-days School Visit on "Robotic Training Programme" during 10-11 June,2022 under CSIR-Jigyasa Student- Scientist Connect Programme at Credo World School, Dhanbad. On this occasion Total 24 nos. of Students were participated.
- CSIR-CRRI conducted one day online customized training program on "Innovative Ideas and Techniques in the Field of Highway Engineering as Applicable to Hilly/Mountainous Regions" on June 07, 2022.
- CSIR-CSMCRI अंतर्राष्ट्रीय मातृभाषा दिवस के अवसर पर जिज्ञासा के बैनर तले दिनांक 27 जून, 2022 को पूर्वाह्न 11:00 बजे 'शैवालीय शोधों में प्रगति / Advances in Algal Research' विषय पर एक वेबिनार का आयोजन.
- CSIR-IHBT under "JIGYASA" programme, 37 students and 5 teachers of Swami Vivekananda School Ramnagar, Mandi (H.P.) visited CSIR-IHBT, Palampur on 10.06.2022. They visited research labs & different facilities and interacted with the scientists, students and staff members of the Institute. Students took keen interest in the research and development activities of the Institute.
- CSIR-IHBT 01 faculty member and 10 M. Pharmacy (Pharmacology) students of ISF College of Pharmacy, Punjab visited to Zebrafish Laboratory of the institute on 17.06.2022.
- CSIR-IICT organized Skill Development Training on "Basic Certification Course in Bioinformatics and Cheminformatics" through online to B.Sc and M.Sc Chemistry Students of B.V. Raju College, Bhimavaram, Andhra Pradesh and also for Graduates in Chemistry of Bhavans College, Secunderabad from 30th May 2022 to 10th June 2022 under CSIR-Integrated Skill Initiative. Around 32 and 37 participants respectively were benefitted from both colleges.
- CSIR-IIP skill Development Training Program on 'Spectroscopic analytical Techniques' conducted during June 13-24, 2022.
- CSIR-IIIM Jigyasa team visited different schools of rural areas in Bharderwah, District Doda, Jammu & Kashmir to ignite the curiosity among students for science.
- CSIR-IIIM A 'Painting competition' was organized at IIIM Jammu as well as IIIM Srinagar simultaneously on theme 'One Earth'. About 220 students from

various schools of Jammu and 98 students from Srinagar participated in the competition.

- CSIR-IITR conducted painting competition for children of CSIR employees on June 02, 2022. During the celebration of World Environment Day on June 04, 2022 and declared the prize winners of the competition.
- CSIR-NBRI three-month training programme on Dehydrated Floral Crafts was conducted from June 24, 2022 for women empowerment.
- CSIR-NBRI celebrated World Environment Day on 5th June 2022 jointly with Department of Botany, Lucknow University, Lucknow and NASI-Lucknow-Chapter at University of Lucknow and various competitions were organized.
- CSIR-URDIP conducted a session on "Patent Search: Hands on Training" during National eWorkshop on Innovation & Intellectual Property Rights (NeW IPR 2022) on 16th June 2022.

Major Conferences, Seminar/Webinars, Workshops organized

- CSIR-CDRI a talk on "Ethical Dimensions of Science: Understanding the shades of grey" was presented by CSIR- SEC on 9th June, 2022. The lecture was delivered by Dr. Swaminathan Sivaram, Honorary Professor Emeritus and INSA Emeritus Scientist, IISER Pune and Former Director, CSIR- NCL, Pune.
- CSIR-CDRI Er. S.M. Mane and Mr. S. R. Jogdand from CSIR-NCL, Pune delivered a Lecture on "Fire & Electrical Safety Training" from 20th to 21st June, 2022.
- CSIR-CECRI workshop on "Language of Science" by Dr. T. Prem Kumar, former Scientist, CSIR-CECRI for Research Scholars of CSIR-CECRI was conducted on June 16, 2022.
- CSIR-CSMCRI has jointly organized "International Workshop on Water Purification Technologies, Arsenic Removal from Groundwater and Integrated Water Management" Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) New Delhi, during 28 - 30 June, 2022
- CSIR-CSMCRI has organized the expert lecture title on "OPPORTUNITIES AND CHALLENGES IN THE NOVEL APPLICATION OF MEMBRANES IN FOOD PROCESSING" on 21st June 2022 by Dr Navin K Rastogi, Chief Scientist, CSIR-CFTRI.
- CSIR-CRRI organized two days workshop on "Intelligent Solutions for Road Safety through Technology & Engineering (iRASTE)" during June 13-14, 2022. The goal of the project includes "Implementation of a holistic Safe Systems Approach for up to 50% reduction in road crashes / fatalities in the city of Nagpur by leveraging Artificial Intelligence over a period of 2 years".
- CSIR-HRDC conduct a Programme on Procurement of Goods and Services from 9-6-2022 to 10-6-2022
- CSIR-IICT conduct a Management development program on 'Capacity Building in Project Management Tool Kit' by BDRM in collaboration with

Symbiosis Institute of Business Management(SIBM), at CSIR-IICT for two weeks starting from 6th- 17th June 2022. The course aims at training 10 Scientists as a pilot batch, mainly working at management departments like BDRM, KIM & RAPID to learn hands on and deploy best practices of project management in the institute.

- CSIR-IIIM conduct two weeks high end workshop on “Cultivation, Post Harvest Management and Value Addition of Aromatic & Medicinal Plants from 27-06-2022 to 10-07-2022 at CSIR-IIIM, Jammu.
- CSIR-IIP undertaken a major initiative for dissemination of CSIR technologies for creating livelihood opportunities in rural areas in the wake of situation created by COVID. In this regard a farmer-industry-scientist meet was organized at Lovraj Auditorium, CSIR-IIP Dehradun to disseminate the Gur Bhatti Technology and Kisaan Sabha app to the farmers. The objective of this industry-scientist-farmers meet was to disseminate Kisan Sabha application developed by CSIR-NIScPR and Gur Bhatti Technology developed by CSIR IIP Dehradun, for creating livelihood opportunities in rural areas.
- CSIR-IITR hands-on-training workshop on “Luminex Multiplexing of Protein and Gene Expression: Single Tool for Proteomic and Genomic Applications” was organized during June 21-22, 2022, at CSIR-IITR, Lucknow. Dr Nilangi H Andurlekar, Technical Application Scientist, ThermoFisher, presented a live demo of Procartaplex Data Analysis Software and discussed Tips and Tricks on multiplexing assays. More than 45 students participated in 2 days workshop and got Hands-on-Training on Cytokine Storm Assays on the Luminex platform.
- CSIR-NBRI World Environment Day was jointly celebrated with International Society of Environmental Botanists (ISEB) on June 06, 2022. Prof. Renee M. Borges, Centre for Ecological Sciences, Indian Institute of Science, Bengaluru delivered the lecture on 'Only One Earth: Musings on Sustainability'.
- CSIR-NIO celebrate World Oceans Day on 8th June, 2022. The function was presided by the Honourable Chief Minister of Goa Dr. Pramod Sawant.
- CSIR-NIO celebrated Yoga Day on 21st June 2022 at Institute in the presence of Director NIO, Prof. Sunil Kumar Singh. The following sessions were arranged by yoga trainer Dr. Sampada Korde along with Dr. Sneha Naik as accompanying Yoga trainer colleague on Common Yoga Protocol practice and Lectures on Yoga.

Visit of high level dignitaries to the Institute/Laboratory

- CSIR-4PI Ex-DG, CSIR and President(VIBHA) Dr. Shekhar C Mande Visited CSIR-4PI ON 20th June 2022.
- CSIR-CIMFR Prof. Sambit Datta, Dean International, Faculty of Science and Engineering, Curtin University, Western Australia along with his team were visited on 15.06.2022.

- CSIR-IHBT Honorable Union Minister of State, Ministry of Rural Development, Ministry of Consumer Affairs, Food and Public Distribution Sadhvi Niranjan Jyoti ji visited on 12.06.2022 and was shown various research based technologies developed at the Institute for boosting the rural economy through programs like Aroma, Floriculture and Bamboo Missions etc. The Minister was also shown high income generating crops like sohiong, Saffron, Monk fruit, Cinnamon, etc. introduced by CSIR-IHBT in the region. Honorable minister showed keen interest in their technologies having potential for rural upliftment and capacity building among farmers, unemployed youth and entrepreneurship development.
- CSIR-HBTI Shri Amitabh Kant, Chief Executive Officer, NITI Aayog, Government of India visited on 14.06.2022. He was briefed about the technologies developed for boosting the bioeconomy through introduction of high value crops like Heeng, Saffron, Monk fruit, Cinnamon etc by the institute under different missions. Shri. Amitabh Kant showed keen interest in R&D activities of CSIR-IHBT, especially centric to start-ups, industries, farmers and rural communities.
- CSIR-HBTI Mr. Lalmalsawma Pachuau, IRS, Secretary, Planning & Programme Implementation Department (Science & Technology), and Dr. Lalzirmawia Chhangte, IAS, Secretary, Education Department, Government of Mizoram visited CSIR- IHBT, Palampur on 18.06.2022 and saw various facilities of the institute. They were apprised about low chilling apples, aromatic crops, essential oils, vitamin D2 enriched shiitake mushroom, compost booster, bamboo germplasm, floriculture, and value-added food products.
- CSIR-IIP Dr Jitendra Singh (Minister of State (Independent Charge) of the Ministry of Earth Sciences, Science & Technology, Minister of State in the Prime Minister's Office, Ministry of Personnel, Public Grievance) visited on 05 June 2022 and inaugurated the "Pump Wear Test Facility" at CSIR-IIP on 05.06.2022. With this, CSIR-IIP will be the first research laboratory in the country to offer testing of anti-wear properties of Hydraulic Fluids for commercial use. The facility evaluates Hydraulic Fluids as per ASTM D6973, ASTM D7043 and IS 10532 P[5].
- CSIR-IITR celebrated World Environment Day on June 04, 2022. Professor Rup Lal, NASI Senior Scientist, and Platinum Jubilee Fellow, The Energy and Resources Institute (TERI), New Delhi visited the institute and delivered the 26th Dr C.R. Krishnamurti Memorial Oration at the occasion.
- CSIR-HBTI Prof. (Dr.) Z. Fuat Toprak, ERASMUS fellow & Head, Department of Civil Engineering, Dicle Univesity, Turkey visited CSIR-IITR on June 22, 2022.
- CSIR-NAL Dr. G. Satheesh Reddy, Secretary, DDR&D and Chairman, DRDO has visited NAL on 05-06-2022 on the occasion of NAL's 63rd Foundation Day Celebration.

- CSIR-NAL Dr. Shekhar C Mande, Former Secretary, DSIR & DG-CSIR has visited NAL on 20-06-2022 for inaugurated Aircraft Environmental Systems Ground Test Facility.
- CSIR-NIO High Commission of Canada Ms. Diedrah Kelly, Consul General of Canada in Mumbai, Mr. Keith Kan, Consul and Senior Trade Commissioner, Ms. Angela Menezes, Senior Officer-Sustainable Development & Innovation visited on June 27
- CSIR-NIO Hon'ble Chief Minister of Goa, Dr. Pramod Sawant (Chief Guest for World Ocean Day) visited on June 8, 2022.
- CSIR-NIO French Embassy in India & CNRS Visited on June 3, 2022.

COVID related developments/research

- CSIR-CSMCRI Arun K. Rathod, Chetan S. Poojari and Moutusi Manna,"Is Lipid Specificity Key to the Potential Antiviral Activity of Mouthwash Reagent Chlorhexidine against SARS-CoV-2?", Membranes (impact factor 4.1) June 2022, 12, 616.
- CSIR-IHBT conducted COVID-19 samples testing for Kangra district of Himachal Pradesh.

Details of events celebrated to mark India@75 or Azadi Ki Amrut Mahotsav / 75 Years of Indian Independence

- CSIR-CBRI celebrated the 8th edition of International Day of Yoga by organizing various activities such as circulation of guidelines for the background of International Day of Yoga, e-pledge by working staff, display of banners at prominent places, yoga awareness at social media, lectures, drawing and quiz competitions on the theme 'Yoga for Humanity and live yoga demonstration. Yogi Rajnish delivered a talk on Yoga on June 15, 2022. A drawing competition was held for CSIR-CBRI wards on June13, 2022 and a quiz competition among the staff of CSIR-CBRI was also conducted on June 17, 2022. The International Yoga Day was celebrated on June 21, 2022 in the Auditorium of the institute and prizes were distributed to the winners of different competitions.
- CSIR-CECRI conducted a Lecture Series on "Electrochemical Science and Technologies: A Path Forward to Sustainable Society" under Azadi Ka Amrit Mahotsav and CSIR-CECRI@75:
 - Lecture by Dr. M. M. Shaijumon, Associate Professor, School of Physics, IISER Thiruvananthapuram on "Designing Electrode Architectures for Rechargeable Batteries" on June 2, 2022.
 - Lecture by Dr. T. Prem Kumar, Former Scientist, CSIR-CECRI on "Shifting Gears: India Goes Electric" on June 17, 2022:

- CSIR-CFTRI a Technical talk was delivered by Prof. Hosahalli S. Rangaswamy, Professor, Food Science & Agricultural Chemistry, McGill University, Canada delivered on "Thermal Processing - a Journey from Appert to Pascale on 2nd June 2022.
- CSIR-CSMCRI organized a Webinar "Personality Development by Yoga" to celebrate International Day of Yoga and Azadi Ka Amrit Mahotsav on 21 June 2022 under CSIR-Jigyasa program, "Yoga for Humanity"
- CSIR-IHBT celebrated World Environment Day on 06.06.2022. Dr. SS Samant, Director, Himalayan Forest Research Institute (HFRI), Shimla delivered a lecture on "Biodiversity Conservation and Management in context to Indian Himalayan Region".
- CSIR-IHBT celebrated "International Day of Yoga-2022" with great enthusiasm on 21.06.2022. Yog instructor, Dr. Kavita Sood from the Ayurvedic Department, Himachal Pradesh, demonstrated different yog asanas and briefed about their health benefits. The programme was attended by staff and scholars of the institute.
- CSIR-IICT 8th International Yoga Day was celebrated @ IICT on 21st June 2022
- CSIR-IIP celebrated "World Environment Day" on 5th June, 2022, Dr Jitendra Singh (Minister of State (Independent Charge) of the Ministry of Earth Sciences, Science & Technology, Minister of State in the Prime Minister's Office, Ministry of Personnel, Public Grievance) graced the occasion as Chief Guest.
- CSIR-IITR with the slogan for World Environment Day celebrations is "Only One Earth" with a focus on "Living Sustainably in Harmony with Nature". were spread over two days. Delivering the 26th Dr C R Krishnamurthy Memorial Oration at CSIR-IITR, Professor Rup Lal, a renowned molecular biologist and NASI Senior Scientist Platinum Jubilee fellow at The Energy and Resources Institute (TERI), Delhi, stressed upon the fact that understanding microbiome science can lead to a better handling of human health and the environment.
- CSIR-NBRI 8th International Yoga Day was celebrated with the theme 'Yoga for Humanity'. Prof. S.K. Barik, Director also distributed the prizes to winners of Yoga Competition organized on the occasion.
- CSIR-NIIST celebrated International Yoga day and invited talks & discussions on Challenges and opportunities in self-cleaning coating also organized talks & discussions on Opportunities and future scope in microbial coatings.
- SCDD, CSIR, Hq. organised success story webinar on "Antarctica Expeditions: Leadership and Significant Contributions" virtually on 28 June, 2022 with CSIR-NIO.

DEPARTMENTAL ACTIVITIES

DSIR's mandate is to promote Industrial Research and Development besides technology promotion, development and utilization. In order to promote and nurture Research and Development in the country, Industrial R&D Promotion Programme of the department gives recognition and registration to in-house R&D units of industries, not for profit Scientific and Industrial Research Organizations (SIROs), Public Funded Research Institutions (PFRIs) and periodically renews these recognition / registration under the respective Government Notifications (as amended from time to time), by virtue of which these organizations are able to obtain Customs duty exemptions, Goods & Service Tax (GST) concessions and Weighted tax deductions on R&D by Industry (under section 35(2AB) of IT Act). This scheme helps in encouraging industrial R&D in the country.

Industrial R&D Promotion Programme

Recognition/ Registration and renewal of In-house R&D in Industry

- 11 in-house R&D units of industries were granted recognition as well as registration certificates.
- 117 in-house R&D units of industries were granted renewal of recognition as well as renewal of registration certificates.

Scientific and Industrial Research Organisation (SIROs)

Recognition/ Registration and renewal of SIROs

- 07 SIROs were granted recognition and 05 were granted registration certificates

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 13 PFRIs were granted renewal of registration certificates.

DSIR Central Sector scheme 'Industrial Research and Development (IRD)' comprise of the four sub-schemes i.e (i) Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM), wherein financial assistance is extended to independent innovators for converting innovative ideas into demonstrable working models / prototypes / processes that may take the form of new or improved products, processes, or services; and assist them to become incubatees / techno-entrepreneurs, (ii) Patent Acquisition and Collaborative Research and Technology Development (PACE), wherein support shall be provided to industries and institutions for development and demonstration of innovative technologies, (iii) Building Industrial R&D and Common Research Facilities (BIRD), wherein support shall be provided for creation of Common Research and Technology Development Hubs for use by entrepreneurs and industries and (iv) Access to Knowledge for Technology Development and Dissemination (A2K+) wherein studies and conferences in up-coming areas of industrial research shall be taken up besides undertaking a Technology Development and Utilization Programme for Women (TDUPW).

(i) Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM) :

- Successfully completed five projects i.e Development of UAV Avionics for Drone Delivery - BVLOS Operation; Power Assisted Cement Bag Loader; Versatile Hydraulic jack for rapid tyre change and maintenance;

Formulation of Daibis cookies by using sea grass and millets and Multipurpose Innovative Sprayer for farmers.

- Four new projects were awarded i.e. An Indigenous Air-Conditioning Facility for Hospitals during the Covid-19 Pandemic ; Redesign of the Traditional Handloom; TOCIC at CSIR- CSIO Chandigarh and TOCIC at CTAE Udaipur.
- Five on-going projects were reviewed i.e A User friendly & Affordable Head Movement based Mouse for Computers & Smartphones designed for the Upper-limb Disabled ; A Novel Acupuncture Treatment Planning and navigation support device for accurate positioning and needling for Acupuncture practitioners; Real time Adaptive Sterilization of indoor spaces for protection against SARS - Cov2 and other Pathogenic Organisms ; A novel diffusion coating process to enhance wear resistance of tooling and machine parts and Fatigue analysis and injury prevention in sports training using wearable device.

(ii) Building Industrial Research & Development - Common Research Facilities (BIRD-CRF) program - The scheme focuses on creation of Common Research and Technology Development Hubs (**CRTDH**) for micro, small and medium enterprises.

- **CRDTH-DPSRU:**

First meeting of the Project Guidance cum Review Committee (PGRC) for the project entitled DSIR-Common Research and Technology Development Hub (CRTDH) center at Delhi Pharmaceutical Sciences & Research University, New Delhi (DPSRU) in the area of Affordable Health was held on 06/06/2022. Total 25 MSMEs/ Industry were connected to CRTDH Centre for research, product & development, training and workshops.

(iii) Access to Knowledge for Technology Development and Dissemination (A2K+) - The sub-scheme has four components viz: (i) 'Technology Development and Utilization Programme for Women (TDUPW)' (ii) 'Support to Studies' (iii) 'Support to Events' (seminars, workshops, conferences, exhibitions etc.) and (iv) Technology Development and Demonstration Programme.

- **A2K+ Support to Events:**

- An event titled "Workshop on Technology Readiness Level and its applications for Technology Assessment" was supported A2K+ Event to CSIR- National Institute of Science Communication and Policy Research (CSIR-NIScPR), New Delhi which was held from 22nd June, 2022 at CSIR-NIScPR, New Delhi. The workshop aimed to support "Make in India" and "Atma Nirbhar Bharat" (self-reliant India) campaign through maximum participation of experts, scientists, technology developer with the objective to i) assess the stage of technology

development from the technology developer perspective and ii) develop of TRL sectoral framework suitable to the technology being assessed. 50 participants comprising of Scientists, Industry experts, Scholars attended the workshop.

- **A2K+ Support to Studies:**

- Project Guidance cum Review Committee (PGRC) meetings were held to assess the progress and devise roadmap for on-going A2K+ studies on Additive manufacturing in Indian Industry context. “Studies on air ventilation in central air-conditioning units in post-COVID-19 scenarios guided by artificial intelligence and machine learning techniques” and “Study of specific areas registering high failure rate of distribution transformers to analyze the cause of failure and suggest a solution to overcome this problem by applying IT technology and integrating it with metering solutions”.
- A stakeholder meeting was held on 9th June 2022 through Virtual Mode under the project entitled “Forecast Model to Predict Leather Footwear Trade data for the year 2030 using Artificial Intelligence Approach” undertaken by CSIR-CLRI. The main objective of the interaction meet was to have an insight into the trade data points that influence INDIA’S export of leather footwear and can help CSIR-CLRI in development of a machine learning based model.
- A Project Guidance cum Review Committee (PGRC) meeting was held on 17th June, 2022 to assess the progress for ongoing A2K+ study on high failure rate of distribution transformers and suggestive solution to overcome it in Indian context.

- **A2K+ Technology Development and Utilization Programme for Women (TDUPW):**

- 337 Women Beneficiaries have been trained under the various ongoing TDUPW projects aiming at women empowerment through technology deployment and dissemination.

PUBLIC SECTOR ENTERPRISES

Central Electronics Limited (CEL)

CEL is an enterprise under DSIR having an objective to commercially exploit the indigenous technologies developed by National Labs and R&D institutions in the country. CEL has developed a number of products for the first time in the country through its own R&D efforts and it continues to emphasize its leading role in the area of solar photovoltaic systems, electronic gadgets for Railway and other strategic electronic equipment/components among others.

- The company manufactured electronic components/systems/SPV products worth

Rs.1387.02 Lakhs during June, 2022.

- Sale of items worth Rs.1282.20 Lakhs was realized during June, 2022.

National Research Development Corporation (NRDC)

NRDC continues to lay emphasis on broadening and strengthening the technology resource base by nurturing long term relationships with R&D institutions as well as universities, technical organizations, industries and also individual inventors.

- NRDC has licensed one technology on 'Manufacture of Potassium Humate from Lignite, liquid product of 2 to 4% ' to M/s LINGA CHEMICALS during June,2022.
- NRDC has collected premia of Rs.10.00 Lakhs from respective technologies during June, 2022.
