

**No. DSIR/MS/2023/10**  
**Government of India**  
**Ministry of Science & Technology**  
**Department of Science & Industrial Research**  
**MONTHLY SUMMARY FOR THE CABINET**  
**(For the monthly of October 2023)**  
**(Part-I Unclassified)**

**Major achievements during the month of October 2023**

**COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR)**

**New Technologies/Processes Developed/Transferred**

- **CSIR-CBRI**
  - Transferred a technology on Design of High Draught Brick Kilns with Zig Zag Setting to Newtec Enterprise, Chandigarh on 31.10.2023.
- **CSIR-CCMB**
  - A Kit for Detection of Mutations Causing Genetic Disorders to Vanguard Diagnostics Private Limited, New Delhi
- **CSIR-CFTRI**
  - Process for Bottling of sugarcane juice transferred to K K Life sciences, Triplicane, Chennai
  - DOLY MIX technology transferred to Krisha Foods, Secunderabad, Telangana
- **CSIR-IIP**
  - Development and Certification of new generation lubricant formulations for aerospace surfaces and components HCP-0036.
- **CSIR-NBRI**
  - Developed the following process:
    - A synergistic herbal supplement for gouty arthritis
    - Millet based Nutri Bar: Highly nutritious and energetic bar.
    - Textile colours from temple floral waste
    - Herbal liquid sindoor from rose flowers
    - Perfume based on Lotus inspired fragrance
  - Licensing agreement signed for knowhow transferred of Bioavailable Curcumin with Xavier Med Pvt. Ltd., Hyderabad on 25th October 2023.
- **CSIR-NCL**
  - Developed a continuous process for metformin hydrochloride
- **CSIR-NIIST**
  - Development of plant-based Vegan products as dairy alternatives.
  - Development of sanitary and textile products from natural fiber based agri waste
  - Development of Ozonation-based continuous reactor for sludge-free COD removal of textile effluents
  - Development of Dynamic gas sensing system
  - NIIST Onsite Wastewater treatment (NOWA) technology transferred to Reebon Solutions, Calicut

**Collaborations/Agreements/MoUs Signed (National)**

- **CSIR-CCMB**

- Collaboration for the Identification of the novel molecular marker panel for non-invasive, early diagnosis of NAFL/NASH in Indian population with the following institutes:
  - The Centre for Liver Research and Diagnostics, Hyderabad.
  - Apollo Hospitals, Hyderabad
- **CSIR-CDRI**
  - Executed MoA with DBT, New Delhi on 06-10-2023 w.r.t. Bioprospecting of Marine Microbial diversity for various products under the Marine Bioresource and Biotechnology Network Programme.
- **CSIR-CECRI**
  - Agreement with IEC Fabchem Limited, Chennai for Mixed Metal Oxides Coating Technology for Anode of Electrochemical cell for the production of hypochlorite from brine and sea water
- **CSIR-CEERI**
  - Signed MoU with Engineering Export Promotion Council (EEPC), Jaipur for R & D on 13-10-2023.
  - Signed MoU with Rajasthan Export Promotion Council (REPC), Jaipur for Testing and Characterization on 13-10-2023.
- **CSIR-CFTRI**
  - Signed MoU with Adikavi Nannaya University, Rajamahendravaram, Andhra Pradesh on 16th October, 2023 for strategic positioning through collaborations between both the institutions in meeting emerging scientific and technological challenges of the society.
- **CSIR-CRRI**
  - Signed MoU with National Institute of Technology, Kurukshetra, Haryana for academic collaboration on 10 October 2023.
- **CSIR-CSMCRI**
  - Signed following MoUs:
    - Joint IPR with M/s Swapro Agritech LLP, Varanasi, Uttar Pradesh
    - Technical services project with ENPRO Enviro Tech and Engineers Pvt. Ltd, Surat, Gujarat
    - Addendum GAP agreement with NECTAR, Shilong
    - Addendum Know-how transfer agreement with Marinelixirs Private Limited, Chennai, Tamil Nadu
- **CSIR-IHBT**
  - MoUs Signed with:
    - Tirupati Medicare Limited Nahan Road, Paonta Sahib, District Sirmaur, H.Pand its registered office at Preet Vihar, New Delhifor collaboration in research & development programs, and consultancy activities in mutually decided areas on 16.10.2023.
    - Unati Cooperative Marketing-cum-Processing Society Ltd. Talwara, Dist. Hoshiarpur, Punjab for R&D cooperation in the area of Nutrition, Nutraceutical, Phyto - pharmaceuticals and Cosmetics on 16.10.2023.
    - District Rural Development Agency (DRDA) for societal development through intervention of CSIR-IHBT technologies with on 16.10.2023.
    - Delhi Pharmaceutical Science and Research University (DPSRU), New Delhi for R&D cooperation academic and research related activities on 25.10.2023.
  - Following Agreements were Signed:
    - GULUR AYURVEDA (OPC) Private Limited Ropar to take the technology for making herbal soap bars on 04.10.2023.

- Yuktika Biotech and Nutraceuticals Pvt. Ltd. Kangra, (H.P.) to take the technology for manufacturing/ processing of multigrain protein powder on 16.10.2023.
  - Deccan Health Care Limited, Punjagutta Hyderabad to take the lab scale technology on cultivation of Shiitake mushroom on 16.10.2023.
  - Deccan Health Care Limited, Punjagutta Hyderabad to make/ prepare Tea Mouthwash (2 variants) on 16.10.23.
- **CSIR-IICT**
  - Signed MoA between CSIR-IICT, BPCL & Centre for High Technology (CHT) Carbon capture by adsorption process from refinery flue gases at low temperature using novel porous organic polymeric (POP) adsorbents on 3-10-2023.
  - Executed MoU with Vidyasagar University, Midnapore, West Bengal, on 6-10-2023, on related matters of mutual interest that may emerge over time in the field of Chemical, Biological and allied sciences.
- **CSIR-IIP**
  - Signed MoU with Bharat Petroleum Corporation Ltd. Mumbai for One step conversion of CO<sub>2</sub> into Diphenyl carbonate
- **CSIR-IITR**
  - Following MoU signed for foster collaborative research programmes to provide advancement in scientific and technological knowledge for benefit of society at large with:
    - Cochin University of Science and Technology (CUSAT) Ernakulam, Kochi, Kerala on 3-10-2023.
    - Pondicherry University, Kalapet, Puducherry on 12th October, 2023
- **CSIR-NAL**
  - Signed MoU with Indian Institute of Technology Roorkee for academic and research collaboration of mutual interest in the field of space science and technology on 11th Oct., 2023
- **CSIR-NEERI**
  - Signed MoU with IIM Ahmedabad to promote collaborative research and to facilitate the exchange of ideas, development of new knowledge and enhance high quality research acumen.
- **CSIR-NIIST**
  - Collaborated with Kerala Development and Innovation Strategic Council, Government of Kerala (KDISC) to improve employability of people in Kerala in general and to provide gainful employment in particular through Industry oriented long-term and short-term skill development programmes
  - Agreement for manufacturing Building Bricks utilizing waste foundry mould sand generated by Peekay steel Ltd.
  - Collaboration on academic, research activities, technology incubation, diffusion and entrepreneurship development with National Innovation Foundation, and Vibha Vani India
  - Agreement with Crestchem Ltd, Gujarat for Development of a scalable manufacturing process for MCT Oil from the Palm Kernel Oil Deodorizer Distillate (PKODOD) or (PAKODA) also known as Palm Kernel Fatty Acid Distillate and from Coconut Oil Deodorizer Distillate (CODOD).
  - Agreement with Mr. Adarsh P. Kumar, Partner, Hydronest to provide a solution for improving the pathogen removal efficiency of Continued Bio Sand Filter (CBSF)

- Agreement with Kerala State Pollution Control Board to strengthen, promote and develop co-operations in the field of Science and Technology and Inter Disciplinary Research.
- Agreement with Department of Biotechnology, Ministry of Science and Technology, New Delhi for Development of accelerated biodegradation (aerobic and anaerobic) testing method for biodegradable plastics
- MoU with Sree Chitra Thirunal College of Engineering (SCTCE) for collaboration in the areas of mutual interest.
- MoU with Pushpagiri Research Centre (PRC) to collaborate in the field of multicenter Clinical research and Basic research, faculty and student exchange program for the mutual benefit by utilizing the expertise and infrastructure existing in both institutions.
- Assessment of Heavy Fluvial Minerals in Lean Mineral Production Area with M/S MKN Bricks & Blue Metals (P) Ltd.
- Mutual agreement with Hindustan Aeronautics Limited (HAL), Bengaluru on human resource utilization, facility utilization, technology support services, and consultancy services, collaborative research works in the field of light alloys for the Design and development of aerospace components & Welding.
- **CSIR-NML**
  - Following MoUs signed:
    - Transfer of Technological Know-How for the manufacturing of Zincometer (Know-How Licensing) with Refosteel Instruments, Jamshedpur.
    - Development of Zn-Al-Mg Based Hot Dip Coating for Steel Strips(Collaborative) with RDCIS-SAIL, Ranchi.
    - Development of high temperature low sag aluminum alloy conductor(Collaborative) to Vedanta Limited, Mumbai.

#### **Collaborations/Agreements/MoUs Signed (International)**

- **CSIR-CDRI**
  - A Grant Agreement executed with Bill and Melinda Gates Foundation (BMGF), USA on 30-10-2023 w.r.t. "Target Enabling Packages for Non-hormonal Contraception".

#### **Patents Update**

<b>Patents Filed</b>			<b>Patents Granted</b>			<b>Patent Prosecutions</b>	
India	Abroad* (Unique Patent Application)	Abroad*	India	Abroad* (Unique Patent Application)	Abroad*	India	Abroad*
22	14	16	36	04	04	28	129

\* Data reported to IPU during October 2023 and may change later during national phase entries

#### **High impact S&T services offered**

- **CSIR-CCMB**
  - Provided Molecular Diagnostics Services for 184 families comprising of 204 samples
- **CSIR-CMERI**
  - Visual Inspection of NTPC - VSTPS plant structures as per LMI and conducting nondestructive testing over selected structures (TSP- 1512)
- **CSIR-CRRI**
  - Vetting of the methodologies adopted being carried out and further guidance for repair and rehabilitation of distresses in PQC pavement in the Hubli-Hospect Section-67 from km 128+850 to km 272+571 for KNR Constructions Ltd.

- Technical Solution and Guidance for Construction of Road from BP 1154 to BP 1159 of Indo-Pak Border, Kutch, Gujarat for Central Public Works Department (CPWD)
- Technical solution and guidance for strengthening of existing road from Kuda BOP to Chapariya BP no. 1021 and its auxiliary connecting link road to Kailash BOP at BOP-NO. 998 in AOR of Indo-Pak Border Kutch, Gujarat for Central Public Works Department (CPWD)
- Visual Inspection of the Bridge on Lalpura Jhala-Dhaturi Road on Nevaj River constructed under Package No. MP-30-SMB 01 in Rajgarh District of Madhya Pradesh to Scrutinize the Variation Proposal involving increase in HFL and requirement of River Bank for M.P. Rural Road Development Authority
- Evaluation Studies on the Effectiveness of various forms of Road Safety Product Deployments at Black Spot Locations for Kataline Infra products Pvt. Ltd.
- Rehabilitation of Runway 10/28 and Its Taxiway Systems at IGI Airport New Delhi Vetting of DBM, BC & PQC Mix design for New India Infra Buildtech Ltd.
- Investigations on Distressed Major PSC Single cell Box-girder bridge on NH-31 near Khagaria, Bihar for Punj Lloyd Ltd.
- Construction of Eight Lane Access Controlled Expressway starting near Junction with NH-12 near village Umedpura to Major Bridge over Taakli River NayagaonJageer Village (Ch 419.000-427.300)section of Delhi-Vadodara Green Field Alignment for National Highway Authority of India (NHAI).
- **CSIR-IIP**
  - Testing of two Monosaccharides samples (external samples) and internal samples done for HPLC.
  - Testing services offered under various ongoing projects of the institute, industrial clients and AcSIR activities. These tests include gaseous fuels (ASTM D7833, D5504), liquids fuels (D6730, UOP744, D5623, D4815, D6584 and IP 391), engine oils(ASTM D3524, D3525), lubricating oils(ASTM D7419), waxes (ASTM D5442), GC-MS and HRMS of petroleum fuels and general chemicals.
  - Joint Project proposal for Implementation of Wax Deoiling Technology to produce 30000 Ton per Annum Microcrystalline Wax at CPCL is submitted along with EIL New Delhi.
- **CSIR-NAL**
  - Final stage densification with SIC matrix and SIC-CVD coating of carbon-carbon composites supplied by ACPL-AZISTA Composites Private Limited.
  - Region specific smart agrotechnology's for enhancing soil and plant health (RSSA) CSIR
  - Non-exclusive license for 30hp Wankel engine suitable for civil and military applications – Tridentech Engineering Private Limited
  - Technical support for continued airworthiness of FIN & Rudder for LCA variants –ADA
  - Realization of C\_SIC components through CVI process –DMRL
  - Bird and Hail impact testing of composite radome–R&DE
- **CSIR-NCL**
  - Supply of industrially important microbial strains, and identification services by genotypic and phenotypic methods
- **CSIR-NEERI**
  - Air Quality Monitoring for the impact of the proposed expansion 49 MTY of Gevera Open Cast project of the south eastern coalfield Ltd.Gevra, korbachattisgarh.
  - Prospecting rumen culture bank for novel lytic polysaccharide monoxygenase (LPMO) for efficient deconstruction of agriculture waste residue.

- Detailed Environmental Site Assessment and action plan for remediation for Malbros International Pvt. Ltd at village Mansoorwal, District Ferozpur, Punjab.
- Skill Training Program in Environment.
- Green Solar Photocatalytic Process for Treating of Sulphide rich lime bath tannery wastewater and simultaneous production of green hydrogen fuel.
- **CSIR-NML**
  - Optimization of FBG sensors requirement for locating the critical zone of the Blowpipe.
- **CSIR-SERC**
  - Fatigue life evaluation of three numbers of UIC 54 kg rail profile of different grades of alumino-thermit welded rail joints supplied by M/s. Dhaya Maju Infrastructure (Asia) Sdn Berhad, Malaysia were carried out.
  - The NDT&E and instrumented load testing of 5 steel portals in Mumbai Metro Line-2A (Dahisar (E) to D.N. Nagar) and 2 steel portals in Mumbai Metro Line-7 were carried out for Delhi Metro Rail Corporation Limited (DMRC), Kandivalli West, Mumbai.
  - Quality audit of superstructures of selected spans of steel structures of phase-II section of Mumbai metro line-7 from Goregaon East to Gundavali

### **Outreach Activities (Jigyasa, Skill Development, and others)**

- **CSIR-4PI**
  - organized a Workshop in Statistics and Game Psychology. 30 Students and 15 Teachers from Jai Gopala garodia Rashtrorathana Vidyalaya School participated in the event.
- **CSIR-AMPRI**
  - Participated in the VISION Goa 2023 Exhibition organized at Convention Center Panjim, Goa from 04 - 06 October 2023.
  - Conducted one-week training-workshop under CSIR-Integrated Skill Initiative on Basic Skills in Science Laboratory techniques course during 04-10 October 2023. Nine students from IEHE Bhopal participated in the workshop.
  - Conducted two Days training-workshop under CSIR-Integrated Skill Initiative on CNC Turner, Conventional Turner, Welder & Fitter and advancements in mechanical engineering during 19-20 October 2023 at LNCTE Bhopal.
- **CSIR-CBRI**
  - Organized workshop on Prevention and Control of Higher Trees from Buildings on October 27, 2023 to familiarize the participants with the latest knowledge and techniques on preventing and controlling buildings from harmful trees by understanding the global problematic scenario and its effects, Herbicide treatment, Termite infestation & consequences, Preventive measures and control techniques for Harmful trees etc. 23 students participated from various Institutions.
  - Conducted three-day Skill Development Training Programme on Durability and Repairs of RC Structures on October 16-18, 2023. 40 working professional's/field experts/students of various institutions/organizations across the country participated.
- **CSIR-CCMB**
  - Celebrated Wildlife Week with school students with drawing and skit competitions.
  - Conducted two skill development training programmes
    - Short Term Training course on Basic Techniques in Animal Cell Culture from 9-13 October 2023 with participation of 5 trainees
    - Training program on DNA-based barcode analysis for Animal Food Safety- National Training for Academic Officer (MAFSU) from 9-14 October 2023, and 15 trainees participated.
- **CSIR-CDRI**

- Organized Student Scientist connect program on 16th October 2023 for the students of Bansal Institute of Engineering & Technology, Sitapur Road, Lucknow, UP. 55 students and faculty actively participated.
- Organized Student Scientist connect program on 20th October 2023 on the occasion of Aayurveda Day Celebration for the students of Guru Gorakhsnath Institute of Medical Sciences, Gorakhpur, UP. 105 students and faculty actively participated.
- Organized Student Scientist connect program on 30th October 2023 on the occasion of Aayurveda Day Celebration for the students of Shree Shankar Mumukshu Vidhyapeeth, Shahjhanpur, UP. 65 students and faculty actively participated.
- Organized Outreach Health Awareness Program and Vigilance Awareness Program on 31st October 2023 on the occasion of Aayurveda Day Celebration in the Upper Primary School, Kathwara, Bakshi ka Talab, Lucknow, UP. 250 students, faculty and villagers participated.
- **CSIR-CECRI**
  - Conducted the following Training Programme:
    - Corrosion protection technologies for construction of buildings and structures during 09-13 Oct., 2023. 25 participated.
    - Foundation Course on Solar Energy Materials - Fundamentals to Device Fabrication during 9-13 Oct., 2023. 21 participated.
    - Surface Analytical Techniques during 16-20 Oct., 2023. 51 participated.
- **CSIR-CEERI**
  - Organized Khadi Mahotsav on 23 & 24-10-2023 to showcase and encourage the Khadi and village industry products.
  - Organized Fit India Swachhta Freedom run 4.0 on 18-10-2023.
  - Climate Clocks were installed by CSIR-CEERI at JNV Panchkula, JNV Ambala, JNV Kajara, JNV Bikaner under JIGYASA Program.
  - Organized an online programme Capacity Building Programs as a prelude to Vigilance Awareness, 2023, on Ethics in Research and Governance on 19th October, 2023.
  - Participated in Kishan Jawan Vigyan Mela at Haldwani.
- **CSIR-CFTRI**
  - Conducted two Skill Development programs
    - Spices and Flavours: Current Trends in Processing, Formulations and Quality Evaluation from 09-13 Oct, 2023. 19 participated.
    - Analytical Quality Evaluation of fortified Rice from 31.10.2023 to 3.11 2023. 12 participated.
- **CSIR-CLRI**
  - Conducted training cum awareness program on solid, liquid & hazardous waste management for students from Classes VI to XII of CLRI Kendriya Vidyalaya on 11 and 12 October 2023 during Swachhta Pakhwada celebration. 900 students participated.
  - In collaboration with M S Swaminathan Research Foundation (MSSRF) one day visit for students of the Chennai Corporation school was organized on 19 October 2023. 50 students and 5 teachers participated.
  - 232 School students and seven teachers from Shree Niketan Matriculation Higher Secondary School, Thiruvallur District, Tamilnadu visited on 26 October 2023 to gained exposure on the research programs of the institute.
- **CSIR-CMERI**
  - Following Lectures were delivered:
    - Solar energy and its Applications and on Water quality parameters and it's effect on health, followed by demonstration with DIY kit related to Solar energy

- for Mankar Girls' High School West Bengal on 10.10.2023. 35 students and 3 teachers participated.
    - Introduction to the fascinating world of Artificial Intelligence (AI) and on Solar energy and its Applications followed by demonstration with DIY kit related to Solar energy for teachers of Nutandanga High School (H.S) on 12.10.2023. 46 students and 3 teachers participated.
    - Infusing Intelligence to Machines, Welcome to the world of Artificial Intelligence for St. Xavier school on 16.10.2023. They visited to Municipal Solid Waste Management Plant. 100 students along with 4 teachers participated.
  - Following Skill Development Programmes (SDP) were conducted:
    - Integrated Municipal Solid and Liquid Waste Management System during 4-13 Oct., 2023.
    - Intelligent Systems Engineering Laboratory for Asansol Engineering College, Department of Electronics & Communication Engineering students.
- **CSIR-CRRI**
  - Conducted 5-day Regular training program on Design of Bridge Structure and foundation during 09-13 Oct., 2023. 11 participated from various parts of India.
  - Lecture was organized on Road Safety Awareness and AI application in Road Safety at Kendriya Vidyalaya (KV-II)
  - 26 engineers (AEEs) from National CPWD Academy visited on 12 Oct., 2023 and interacted with scientists in the various divisions.
- **CSIR-CSIO**
  - Organized a lecture cum demo on DAY TIME ASTRONOMY by Education Department (Haryana) & another was delivered on ROBOTICS & AI and KUKA ROBOTS
- **CSIR-CSMCRI**
  - Organized a lecture on National Conference on Emerging Technologies in Chemistry and their Applications during 19-20 Oct., 2023 at Sirohi Rajasthan.
  - Celebrated the 82nd CSIR Foundation Day on 13th Oct 2023.
- **CSIR-IHBT**
  - Lab visits of schools organized:
    - 311 students and 27 teachers from 05 different schools of Distt. Kangra and Hamirpur during 16 to 26 Oct., 2023. They were exposed to different R&D activities of the Institute through lectures and demonstrations in different laboratories.
    - 5 students and 01 teacher from Rainbow World School, Bhawarna, Distt. Kangra (H.P.) visited the Institute on 17.10.2023. In addition to this, 03 faculties and 28 students from Shaheed Bhagat Singh State University, Firozpur, Punjab visited the Institute on 10.10.2023.
    - Conducted 5 days capacity building programme on Hands-on training cum exposure visit to agro and process technologies of floriculture, aromatic, medicinal, spices and plantation crops during 16-20 October, 2023. 24 students from Banaras Hindu University, Varanasi (UP) were exposed to different R&D activities of the Institute through lectures followed by demonstrations in the labs and experimental farms.
    - 45 forest range officer (trainees) belonging to the states of Rajasthan, West Bengal, Himachal Pradesh, Meghalaya and Tamil Nadu visited the Institution on 14.10.2023 under their induction training programme conducted by Tamil Nadu forest Academy, Coimbatore. They visited to various R&D facilities of the institute such as bamboo museum, herbarium, remote sensing and GIS, etc., where they were briefed about various R&D programs of the institute.



- Organized exposure visit program to the students of Govt. Sr. Sec. School, Keylong on 13.10.2023. 46 students and 14 teachers participated.
- **CSIR-IIIM**
  - As a part of CSIR foundation day, Artificial Intelligence based model completion was organized on 9th October, 2023. 700 students from various schools and colleges of Jammu region visited and got exposure about the scientific activities being carried by the Institution.
  - Organized an Awareness, Training and Seed Distribution Programme under CSIR Floriculture Mission in coordination with Agriculture Production Department, Udhampur and Reasi in Katra on 11 Oct., 2023. 330 farmers and women Self Help Groups of NRLM from districts participated.
- **CSIR-IIP**
  - Conducted Skill Development Training Program on Testing of Petroleum Products during 03-20 Oct.,2023 covering testing of Crude oil and its distillate products.
  - 22 Students and faculty members from Shiv Nadar University (SNU) Delhi NCR), visited (Research) Biochemistry & Biotechnology Area/MRED on 13th Oct. 2023.
  - 60 students and faculty members from Deen Bandhu Chhotu Ram University of Science & Technology, Sonapat Haryana visited on 6th October, 2023.
  - 30 students and faculty members from SGRR Univ. Dehradun vested on the 17th of October, 2023
  - Conducted workshop on Awareness on Used Cooking Oil (UCO) and its health hazards at kashipur, Uttarakhand on 21 Oct., 2023.
  - 60 Students and Faculty from DCRUST Murthal Sonipat Haryana University visited on 6th October, 2023.
  - Conducted 03 weeks, Skill Development Training on Testing of Petroleum Products at ACRC from 03 to 20 Oct, 2023. 12 participated.
- **CSIR-IITR**
  - In collaboration with NABL, three days Technical Training program on Analysis of Pesticide residues and contaminants in meat samples using GC-MS/MS technique was conducted from 4-6 Oct., 2023. 16 participants from different labs participated.
  - Conducted 4-day workshop on Computational Toxicology and Bioinformatics from 25-28 Oct., 2023. 22 participants from diverse academic backgrounds attended the workshop from all over the country.
  - Conducted 5-day workshop on Transmission Electron Microscopy from 9-13 Oct., 2023. People from varied backgrounds joined the workshop hailing mostly from sister laboratories and other significant institutes of the country.
- **CSIR-NAL**
  - Conducted Scientist Student Connect Programme during 20-27 Oct., 2023
- **CSIR-NBRI**
  - NBRI-EIACP Centre organized following outreach activities,
    - Significance of healthy food systems in the current socio-economic and environmental context to students of the institute of hotel management on 20 Oct. 2023.
    - An activity-based learning session on environmentally friendly habits for differently abled persons in Rainbow Society Mahanagar.
    - Organized one day interactive programme on 12th October,2023 for school children. 38 students and 03 Teachers Army Public School, Fatehgarh, Uttar Pradesh visited NBRI facility.

- Organized one day Student – Scientist interaction programme on 27th October, 2023 at Jawahar Navodaya Vidyalaya, Unnao (U.P.). 165 students and 10 teachers participated.
    - Organized 15 days training program on Phytochemical Analysis Technician and Quality Control for the Herbal Industry from 26th October, 2023 to 10th November, 2023. 20 students from Christian College, Lucknow University participated.
  - Conducting one-month training programme on Dehydrated Floral Crafts for Women Empowerment from 10 Oct., 2023 at Botanic Garden.
- **CSIR-NCL**
  - Organized and conducted Jigyasa activity for about 150 school children to show them DNA sequencing and its uses.
- **CSIR-NEERI**
  - Conducted following Skill Training Program on:
    - Water Quality Testing and Data Management during 11-13 Oct.,2023
    - Understanding the Climate Science for Environmental Engineering on 31 Oct.,2023
  - October 16-20,202: Training Course for IFS officers on "Environment Management Science & Technology"
- **CSIR-NIIST**
  - Conducted three-month Skill training program on Synthetic Organic Chemistry - Hands on training on fundamentals and specialized reactions from 7th July 2023 to 6th October 2023.
  - 150 Vocational Higher Secondary School students, studying Lab Technician Research & Quality course in 5 rural, Government Vocational Higher Secondary Schools in Thiruvananthapuram District of Kerala visited on 20 Oct., 2023.
  - Conducted Skill development training program on Construction of genetically engineered microorganism during the 9-20 Oct.,2023.
  - 24 students and 2 faculties from the School of Biological Sciences and Biotechnology, Goa University visited to R & D divisions and instrumentation facilities of the Institution on 09 Oct., 2023.
  - 65 final year Civil Engineering students and two faculties from Rohini College of Engineering and Technology, Kanyakumari visited R & D divisions and instrumentation facilities of CSIR-NIIST on October 13, 2023, for getting more practical Knowledge in Engineering and Technology and also for getting awareness about cutting edge research activities.
  - 31 M. Sc. Biochemistry & Microbiology students from Mahatma Gandhi University, Kottayam visited R & D divisions and instrumentation facilities of the Institution on 26 Oct., 2023.
  - Senior Scientist of the Institute delivered talk on Sustainable Development at Kendriya Vidyalaya Army Cantt, Pangode on October 30, 2023. 180 students and ten teachers participated.

### **Major Conferences, Seminar/Webinars, Workshops organized**

- **CSIR Headquarters**
  - CSIR and its lab participated in the Vision Goa 2023, held at Panaji, Goa during 4-6 October, 2023 and Vibrant Uttarakhand 2023 held at Haridwar, Uttarakhand during 20-22 October, 2023. Labs participated were CSIR-NEERI, CSIR-NIO and CSIR-CBRI, CSIR-IIP, CSIR-CIMAP respectively.

- Special Cleanliness campaign 3.0 organized on 2<sup>nd</sup> Oct., 2023. The event was graced by the Hon'ble Minister S&T, Dr. Jitendra Singh.
- **CSIR-CDRI**
  - An awareness seminar on CSIR-Phenome' mission awareness meeting was organized on 12-10-2023 for staff and students of CDRI.
- **CSIR-CEERI**
  - Organized International Symposium on VLSI Design & Testing (VDAT-2023)', with BITS-Pilani and VLSI Society of India from Sept 30 - Oct 01, 2023.
- **CSIR-CLRI**
  - Department of Physical Chemistry, School of Chemical Science, University of Madras along with Society for Polymer Science, India (SPSI) & CSIR-Central Leather Research Institute (CSIR-CLRI), Chennai jointly organized the One Day National Symposium on Advances in Polymer Science & Technology (APST-2023) on 04 October 2023.
  - Organized One day seminar on Modern Trends in Process Modelling, Identification and Control (MTPMIC) on 06 October 2023 to honour Dr R C Panda, Chief Scientist for his contributions in process modelling and odour control in leather industry. Technical experts presented their lectures during the seminar session.
    - Prof. M. Chidambaram, (Retd) Dept of Chemical Engg, IIT Madras delivered a lecture on System Identifications
    - Prof. T.Thyagarajan, Emeritus Professor, Dept of Instrumentation Engg, MIT Campus, delivered a lecture on Autotuning of SISO Systems using shpae information from relay feedback
    - Prof. S. Sundaramoorthy, Dept of Chemical Engg, Puducherry Technological University presented a lecture on Optimal control of single tank activated sludge process
    - Prof. Sanjoy Ghosh, Dept of Biochemical Engg, IIT Roorkee presented a lecture on Optimization & control of fermenters
    - Dr. D. Kalpana, Asst Professor, Dept of Instrumentation Engg, Anna University delivered the lecture on Autotuning of MIMO systems using relay feedback
  - Prof. Dr. Suresh Subramani, Distinguished Professor Emeritus from the Dept of Molecular Biology, University of California, San Diego, USA had enlightened CLRI's Staff gathering with his presentation on Pichia pastoris as a Model Organism for Mechanisms and Potential Cures for Human Peroxisome Biogenesis Disorders on 11 Oct.2023.
  - Prof. Neeraj Sinha, Dean, Centre of Biomedical Research(CBMR), Lucknow delivered on Solid state NMR Spectroscopy of Collagen Protein in Bones in Cartilage on 12 Oct., 2023.
- **CSIR-CRRI**
  - Participated in the 11th Edition of Traffic InfraTech Expo 2023 during October 10-12, 2023 at Pragati Maidan, New Delhi
  - In association with Verma Industries organized National workshop on Hot-in-Plant Road Recycling Using Rejupave Technology on 19th October, 2023.
- **CSIR-CSMCRI**
  - Organized training program on Marine Algae Cultivation and Processing Technology from 9-11 Oct., 2023 at the Marine Algae Research Station, Mandapam Camp, Tamil Nadu.
- **CSIR-HRDC**
  - Programme on Ethics in Research and in Governance during 19-20 Oct., 2023.
  - Capacity Building Programme: Forum of IT Officials 26-27 Oct., 2023.

- **CSIR-IGIB**
  - Organized One Day workshop on GCP Guidelines and Role & Responsibilities of Ethics Committee, on 5 Oct., 2023.
- **CSIR-IHBT**
  - Organized on-farm training program on Agrotechnology of Heeng and Aromatic crops for the farmers of Block Killar (Pangi), Distt. Chamba on 09 Oct., 2023. 21 farmers including officers of Agriculture Department participated.
- **CSIR-IICT**
  - Jointly Organized an industry interaction meet on Innovative Technologies in Pesticide Formulations and Quality Management System as per ISO/IEC17025:2017 with Institute of Pesticide Formulations (IPFT), National Accreditation Board for Testing and Calibration Laboratories (NABL) on 27 Oct.,2023
  - Jointly Conducted workshop on Solid-State Characterization & Biopharmaceutical with Malvern Panalytical Solutions on 6th October 2023.
- **CSIR-IIIM**
  - Conducting a workshop on Scientific & Technological interventions in Medicinal & Aromatic Plants for Rural Development from 28-10-2023 to 06-11-2023 in Srinagar branch. This program is being attended by 26 trainees from different parts of the country.
  - Hosted two steering committee meetings of CSIR Aroma Mission and CSIR Floriculture Mission at IIIM branch office Srinagar on 26-10-23 & 27-10-23 respectively. Directors, Head and Scientist from different Labs attended the meeting physically as well as through online mode.
- **CSIR-IIP**
  - Participated in the Uttarakhand Vikas Pradarshani, organized by Swadeshi Jagaran Manch at Doon University, Dehradun during 16-20 October, 2023
  - A Field Technology Showcase was planned in Champawat by UCOST in collaboration with office of Principal Scientific Adviser's AGNi Mission during 18-19 October, 2023 and CSIR-IIP showcased its technologies at Champawat.
  - Participated in the Vibrant Utrakhand Expo at Haridwar, Utrakhand during 20-22 October, 2023.
- **CSIR-ITD**
  - CSIR- FITO(Forum of IT Officials meeting organized in CSIR-HRDC on 26-27th October'2023.
- **CSIR-NIIST**
  - Co-organized Kerala Academy of Sciences Fellowship Conferment Ceremony
- **CSIR-NBRI**
  - Organized Pushp Krishi Mela at IFAB, Bengaluru in association with CSIR-CIMAP and IFAB under CSIR Floriculture Mission on October 13, 2023. 109 farmers participated.
  - Participated and showcased various technologies & products at Akhil Bhartiya Kissan Mela and Krishi Udyog Pradarshani organized by CS Azad University of Agriculture and Technology, Kanpur during 8-10 Oct. 2023.

### **Visit of high-level dignitaries to the Institute/Laboratory**

- **CSIR Headquarters**
  - Mr. Daren Tang, Director General, World Intellectual Property Organization (WIPO) and other distinguished delegates from the WIPO visited the CSIR-Traditional Knowledge Digital Library (TKDL) facility on 12th October 2023 and participated in discussions on the CSIR Innovation System, TKDL, CSIR Technologies, and CSIR's Current IP Strength & Strategy.

- A German delegation led by Dr. Michael Harms, Deputy Secretary General, DAAD, Germany visited CSIR for exchange of CSIR-DAAD Agreement of Cooperation and for exploring collaboration with AcSIR, India
- **CSIR-CCMB**
  - Prof. Vinod K. Singh, (Padma Shri Awardee), Chair Professor, IIT Kanpur, Former Director, IISER, Bhopal, Chairman Research Council, CSIR – AMPRI, Bhopal and Member, CSIR Society visited CSIR-AMPRI Bhopal on the occasion of celebration of 82nd CSIR Foundation Day on October 16, 2023.
- **CSIR-CDRI**
  - Prof H Ila was invited to deliver a lecture on New directions in heterocycles Synthesis on 10-10-2023
- **CSIR-CLRI**
  - Shri Rajeev Singh Thakur, Additional Secretary, Department for Promotion of Industry & Internal Trade (DPIIT), Govt of India visited and reviewed various projects initiated at CLRI with the support of DPIIT. Also, he had interacted with the Management about special purpose vehicles involved in the upgradation of CEPT under the FLADP scheme and reviewed the implementation of the project.
- **CSIR-IHBT**
  - Dr. Sugandha Chauhan (Senior PUM expert), Netherlands visited during 21-24 October 2023. During the visit she interacted with scientists and scholars of the remote sensing laboratory of the institute and provided them exposure on international funding and collaborative research opportunities.
- **CSIR-CIMFR**
  - Prof. Sukadev Bhoi, Vice Chancellor, BBMKU Dhanbad was the Chief Guest on the Closing Ceremony (Samapan Samaroh) of Hindi Pakhwada on 29.09.2023.
  - Sri P. M. Prasad, CMD, CIL graced the occasion as the Chief Guest on 82nd CSIR Foundation Day-2023 on 04.10.2023.
- **CSIR-CSMCRI**
  - Celebrated Swachhata Special Campaign 3.0 from 2nd to 31<sup>st</sup> October 2023. Shri N. V. Upadhyay, IAS, Municipal Commissioner, delivered an illuminating lecture on Swachhata.
- **CSIR-NIIST**
  - KAS Fellowship Conferment Ceremony 2023 held on 25th October 2023. Shri. Arif Mohammed Khan, Honourable Governor of Kerala was the Chief guest and various eminent personalities like Shri. S. Somanath, ISRO Chairman and Dr. C. Anandharamkrishnan, Director, CSIR-NIIST conferred with the fellowship.

#### **COVID related developments/research**

- **CSIR-IGIB**
  - Host response study from earlier collected hospital admitted COVID-19 patients are ongoing for understanding the possible role of SARS-CoV-2 variants of concern (VOCs) in differential disease severities (mild, moderate, severe) and clinical outcomes (recovered and mortality).
  - Evaluating T cell responses in patients with Covid-19 or with vaccination.

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

- **CSIR-CDRI**
  - Celebrated the 82nd CSIR Foundation Day Celebrations on 3 Oct., 2023.
  - Under Hindi pakhwada, a kavisammelan was organized for staff and students of CSIR-CDRI on 3 Oct., 2023.

- **CSIR-CECRI**
  - Celebrated Fit India Freedom Run 4.0-Azadi Ka Amrit Mahotsav. Organized Freedom Run on 31 Oct.,2023 in the Institute premises.
  - Celebrated Gandhi Jayanthi on 2 Oct., 2023, Shramdaan activity was also performed in the campus on 2 Oct., 2023.
  - During Vigilance Awareness Week 2023, the following workshops was conducted to raise awareness about the Public Interest Disclosure and Protection of Informers (PIDPI) Resolution.
    - Residents of CSIR-CECRI colony on 17 Oct., 2023
    - Sensitizing all the employees, vendors, research scholars, and contractual workers etc., on 18 Oct., 2023
  - Celebrated Rashtriya Ekta Diwas (National Unity Day) on the Birth Anniversary of Late Shri. Sardar Vallabhai Patel, on 31 Oct., 2023. Rashtriya Ekta Diwas pledge was administered by all the HoDs to the staff members in their respective divisions/sections.
- **CSIR-CFTRI**
  - Celebrated Foundation days on 21 October 2023.
- **CSIR-CIMFR**
  - Celebrated 82nd CSIR Foundation Day-2023 on 04.10.2023.
  - Presentation given by Dr P. K. Banerjee, Outstanding Scientist on “TPS Closure and Future Plan for RQA Centers on 27.10.2023.
- **CSIR-CLRI**
  - Celebrated the 82nd CSIR Foundation Day on 03 October 2023. Shri Habib Hussain, Chairman, AV Thomas Group presided over the function.
  - The Society for Polymer Science, India(SPSI), CSIR-CLRI, University of Madras & Academy of Sciences, Chennai jointly celebrated the commemoration of the Birth Centenary of Prof. M. Santappa on 03 October 2023. Shri Ajit Kumar Seth, Former Cabinet Secretary of India & Distinguished PSA Fellow graced the occasion as the Chief Guest. Prof.S.P. Thyagarajan, Former Vice-Chancellor, University of Madras presided over the function.
  - Raghavan Memorial Lecture 2023 was delivered by Dr Paruchuri Gangadhar Rao, Former Distinguished Scientist, CSIR & Former Director, CSIR-NEIST on the topic Moving from Ordinary to Extraordinary on 03 October 2023.
  - In association with UOM & SPSI, Santappa Centenary lecture was organized on 05 October 2023. Prof. Ramaswamy Nagarajan, Distinguished University Professor & Co-Director of HEROES, University of Massachusetts, USA delivered the lecture on the Polymers and Sustainability: Progress through Interdisciplinary.
  - Observed Vigilance Awareness Week (VAW) 2023 on 30 October, 2023. The integrity Pledge was administered by Director and Staff members, Research scholars and Contract workers took the integrity Pledge.
- **CSIR-CMERI**
  - Celebrated the Birth Anniversary of Sardar Vallabhai Patel Rastriya Ekta Diwas (National Unity Day) on 31st October, 2023.
  - Vigilance Awareness Week 2023 was inaugurated on 30.10.2023. Pledge was administered by Director.
  - Celebrated Ayurveda Day 2023 on 25.10.2023. Dr. Shakti Bhusan, Research Officer (Ay.) of Central Ayurveda Research Institute (CARI), Kolkata delivered lecture. Dr. Shakti Bhusan& Dr. Suparna Saha, Research Officer (Ay.) of CARI organized Free Health Checkup Camp.

- As part of Swachh Bharat Mission Special Campaign 3.0, cleanliness drive was conducted at office premises by Mechanized Drain Cleaning machine on 02.10.2023.
- Celebrated 82nd CSIR Foundation Day on 06.10.23. Prof Gautam Biswas, Former Director of CSIR-CMERI & IIT Guwahati graced the occasion as Chief Guest.
- Hindi Fortnight Closing and Prize Distribution Ceremony held on 3rd October 2023.
- **CSIR-CRRI**
  - Celebrated Special Swachhta Campaign 3.0 during October 02-31, 2023. As part of this celebration, a cleanliness drive led by Prof. Manoranjan Parida, Director, was organized in the Institute on October 03, 2023 and participated by staff of the Institute. Besides, a special lecture on “Sanitation Culture and Social Change” was given by Sh.Nikhilesh Jha, IAS (Retd.), Former Joint Secretary, CSIR on October 04, 2023.
- **CSIR-CSMCRI**
  - Celebrated Swachhata Special Campaign 3.0 from 02-31 Oct 2023, staff members has given shramdaan on 02 Oct 2023, to carry out the cleanliness drive in its office campus as well as in the field station at Mandapam
- **CSIR-IICT**
  - Manak Mahotsav was jointly organized with Bureau of Indian Standards, Hyderabad on 10th October 2023.
  - Prof. Roderick Bates, Nanyang Technological University, Singapore delivered leature on Mistakes and Misconduct on 3rd October, 2023.
- **CSIR-IIIM**
  - Celebrated 82nd foundation day on 09-10-2023. Padam Shri Professor Vinod K. Singh, Rahul and Namita Gautam Chair Professor, IIT Kanpur, a distinguished luminary of Indian Science was the Chief Guest on the occasion and delivered lecture on Towards Excellence in Science & Technology.
  - Observing Special Campaign 3.0 from 2-31October 2023 for improving Swachhata and minimizing pendency in Government offices. The month-long Special Campaign 3.0 was launched by Director after paying the floral tribute on the portrait of Mahatma Gandhi.
- **CSIR-IITR**
  - Celebrated 82nd CSIR Foundation Day.
- **CSIR-NAL**
  - Celebrated Foundation Day on 10th October 2023
- **CSIR-NBRI**
  - Celebrated 70th Annual Day of CSIR-NBRI on October 25, 2023. On the occasion, Dr. Anand Kumar Singh, Vice-Chancellor, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur was the Chief Guest of the Function and Dr. VK Mishra, Director, ICAR Research Complex for NEH Region, Umiam, Meghalaya graced the occasion as Special Guest.
- **CSIR-NIIST**
  - Celebrated Gandhi Jayanti on 2nd October 2023 and organized Swachhata Hi Seva event.
  - Celebrated CSIR-NIIST and CSIR Foundation day. Padma Bhushan Dr. Krishna M. Ella, Executive Chairman, Bharat Biotech International Ltd. delivered the Foundation day lecture.
  - Celebrated World Food Day 2023. Director, CSIR-NIIST delivered the World Food Day lecture on Food Architecture followed by Debate on the topics of Vegan food and processed food.

- Director CSIR-NIIST inaugurated Uzhavans Kukky's new unit at Thanjavur which is a startup unit for Millet and traditional food processing, mentored by CSIR-NIIST and NIFTEM, Thajavur
- Organized Fit India Swachhata Freedom Run 4.0 on 28th October 2023.
- Observing Vigilance awareness week from 30th October 2023 to 5th November 2023
- Observed Rashtriya Ekta Diwason 31 Oct., 2023.
- **CSIR-NIO**
  - Dr. Prakash Chauhan Director, National Remote Sensing Centre, ISRO, Hyderabad, delivered a lecture on Exploration of Moon: New insights from Indian Lunar Exploration Missions on the occasion of Foundation Day on 6 Oct., 2023.
- **CSIR-NML**
  - Organized a Cleanliness drive on October 02, 2023. Staff members participated in one hour of shramdaan for Swachhata program.
  - Celebrated 82nd CSIR Foundation Day on 4 Oct., 2023.
  - Celebrated Vigilance Awareness Program by raising awareness about the significance of vigilance and the adverse impact of corruption in Rautara gram panchayat and organizing Essay Competition, Poster making competition etc.
  - The Fit India Freedom Run 4.0 culminated with a Unity Run on 31st October, 2023. The theme, "Swachh Bharat, Swastha Bharat," was organized with the aim of inculcating the habit of walking and running in people in the quest for better health and fitness.
- **CSIR-SERC**
  - Observed Rashtriya Ekta Diwas 2023 (National Unity Day) and the pledge was taken on 31 October 2023
  - Organized fit India swachhata freedom Run 4.0 with the theme Swachh Bharat, Swastha Bharat during 02 - 31 October 2023
  - Observed Shramdhan Day Gandhi Jayanthi as Shramdhan Day on 02 October 2023. Swachhata Shapath (Pledge) was taken on 02 October 2023.
  - Observed Vigilance Awareness Week 2023 from 30 October to 06 November 2023 with the theme of observing Vigilance Awareness Week is Say No to Corruption; Commit to the Nation. Pledge was taken on 30 October 2023.

## **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 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 (IRDPP)**

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

- 5 in-house R&D units of industries were granted Recognition and 5 were granted Registration certificates.
- 41 in-house R&D units of industries were granted Renewal of Recognition and 41 were granted renewal of Registration certificates.



### **Scientific and Industrial Organization (SIRO)**

- 8 SIROs were granted Recognition and 5 were granted Registration Certificates.

### **Public Funded Research Institutes( PFRI)**

- 4 PFRI's were granted renewal of Registration certificates.

### **Fiscal Incentives for Scientific Research u/s 35(2AB) of ITAct 1961**

- 1 in-house R&D unit of industry was granted Approval and 1 was granted Extension of Approval in Form 3 CM u/s 35(2AB) of IT Act 1961.
- 12 Reports in Form 3 CL certifying R&D expenditures of Rs 1203.66 crores were issued to CCIT (E) for fiscal benefits u/s 35(2AB) of IT Act 1961.

**DSIR Central Sector scheme 'Industrial Research and Development (IRD)'** comprises 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 (CRTDH) 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).

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

2 projects namely " Infusion flow monitoring device" and "Development of portable micro-friction stir welding machine as a green technology" were successfully completed during the period.

### **Common Research and Technology Development Hubs (CRTDH) Scheme:**

A Chintan Shivir on "CRTDH Empowering MSMEs" was organised on 13<sup>th</sup> October 2023 at Delhi Pharmaceutical Sciences & Research University (DPSRU), New Delhi under CRTDH program of Department of Scientific and Industrial Research. The Chintan Shivir was focussed on to strengthen translational research and facilitate collaboration between industry and research institutions in creating a conducive ecosystem so as to bridge the gap between scientific knowledge, ideas, and inventions and their practical application in the form of marketable products and services.

### **Scheme A2K+: Studies**

- A call for proposals was made to submit proposals under 'A2K+ Studies on following five themes:
  - a. Affordable and Clean Energy (Ensure access to affordable, reliable, sustainable and modern energy) – Research & Development support and mobilization of public and private capital for innovation in clean and renewable energy.
  - b. Women and Technology: STI Investments and Policy Foresights for Economic and Social Empowerment of women.

- c. India's technological import liabilities and the development of frameworks and methodologies for S&T interventions on import substitution.
  - d. Funding mechanisms for strengthening Industrial R&D and Innovation landscape in India.
  - e. Scope of artificial intelligence based technologies in sectors such as healthcare, education, agriculture, smart cities and infrastructure and smart mobility and transportation.
- A brainstorming session on Conversion of Plastic Waste into Constructive and Useful Materials organized by RGUKT Basar under DSIR-A2K+ Studies program. The session had participation of experts from the government bodies including DSIR Scientists, Industry, Research Organizations, National laboratories to explore and discuss the measures taken by these entities in the realm of converting plastic waste into constructive and useful materials.
  - A new Study entitled "A study report on research on indigenous development membranes for hospital waste water treatment in India to promote its recycle and reuse" was supported to Department of Computer Science & Engineering (CSE), SRM University, Sonepat, Haryana under A2K+ studies program of DSIR.

### **Technology Development and Utilization Program for Women - TDUPW /A2K+:**

- Creation of a new Skill Satellite Centre aiming technological capacity building of women entrepreneurs in the field of Value added food Products & food processing was awarded to PSGR Krishnammal College for Women Peelamedu, Coimbatore.
- A new Project entitled "Entrepreneurship development for farm and rural women through sericulture value addition technologies" was awarded to Forest College and Research Institute (FCRI), Tamil Nadu Agricultural University (TNAU), Mettupalayam, Tamil Nadu.

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

### **Events /Special campaigns organized in the Department**

- A Pledge Ceremony on the occasion of Rashtriya Ekta Diwas was held in DSIR, Technology Bhavan on 31.10.2023.
- As a part of Swachhta Campaign in the department, 10646 physical files were reviewed and 1882 no of physical files were weeded out.
- The Department issued 37 tweets and 2 Press Information Bureau (PIB) Statements during the special campaign 3.0.
- 'Recycling on wheels' an initiative on disposal of e-waste by segregation of useful metals as well as hazardous materials and shredding the same for recycling through a mobile set up of machines was inaugurated by Dr" Jitender Singh, Union Minister of State (IC) of Science & Technology on 2nd October,2023. This new initiative was proposed as Best Practice from DSIR which has been adjudged as one of best practices in institutionalizing Swachhata under the Special Campaign 3.0.

### **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 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. 2023.02 lakhs during October, 2023.
- Sale of items worth Rs. 1835.54 lakhs was realized during October 2023.

### **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 individual inventors.

- Following six Technologies were assigned to NRDC for commercialization during the month:
  - Fabrication of semi-automatic seed cube making Machine by Tamilnadu Agricultural University, Coimbatore.
  - Development and Validation of Protocol for Computerized Zari Testing by CSTR (CSB), Bengaluru
  - New Methods of recycling of discarded silk materials/Waste for sustainability by CSTR (CSB), Bengaluru
  - Development & characterisation of Wrinkle Resistant and high Drape Silk fabrics by CSTR (CSB), Bengaluru
  - Development of special purpose silk thread for sue Battle tank engines in Defense Dept by CSTR (CSB), Bengaluru
  - Development of commercially viable technologies from unexplored high altitude forestry species of Uttarakhand- *Arundinaria falcata* (Ringal) by Sanjeevani Foundation for Health Education and Environment Research Action (SFHEERA)
- 10 MoU's / MoA's were signed with following institutions for providing IP portfolio management and technology commercialization services:
  - NID MP
  - AISECT GROUP, BHOPAL
  - Shri Venkata Ramamohan Ramachandru
  - Sanjeevani Foundation for Health Education and Environment Research Action (SFHEERA), New Delhi
  - NIPER Guwahati
  - Shri Venkata Ramamohan Ramachandru
  - Arunodaya Merecon Private Limited
  - NIOT (Renewal)
  - IIT, Roorkee
  - Bhubaneswar City Knowledge Innovation Cluster Foundation
- Expert Talk was organised on IP Valuation & Innovation Translation by Dr.Erik Hallgren, Dr Morten Holmar of Aarhus University Denmark & Mr.Simon Skarhoj along with Dr.Louise Boisen from Danish Embassy at NRDC, New Delhi.

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