

**No. DSIR/MS/2023/09**  
**Government of India**  
**Ministry of Science & Technology**  
**Department of Science & Industrial Research**  
**MONTHLY SUMMARY FOR THE CABINET**  
**(For the monthly of September 2023)**  
**(Part-I Unclassified)**

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

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

**New Technologies/Processes Developed/Transferred**

- **CSIR-CBRI**
  - The following Technologies were transferred:
    - Manufacturing of Internal Fuel Based Eco-friendly and Energy Efficient Burnt Clay Bricks With Criss Cross Bricks Setting to Sauga Bricks Pvt. Ltd., Distt. Bagpat, Uttar Pradesh on Sep 12, 2023.
    - Design of High Draught Brick Kilns with zig-zag setting to Pollution Consultants & Engineers, Faridabad, Haryana on Sep 19, 2023.
- **CSIR-CECRI**
  - High performance moisture compatible resistant protective coating system to Krishna Conchem Products Pvt Ltd., Maharashtra.
- **CSIR-CFTRI**
  - Preparation of ready to cook multigrain whole mix for drink/porridge to Mamma mills, Chikayyanachtrahobli, Nanjangud.
  - Chikki/Nutrachikki (3 formulations) to Durga Agro Foods, Industrial Suburb Yeshvantpur, Bangalore.
- **CSIR-CLRI**
  - Circular Single Stack Interchange for Four Directional Movement of Vehicles.
  - Developed technology on Preparation of synthetic tanning agents using the protein hydrolysate from chrome shavings and licensed to PA Footwear Pvt Ltd., Chennai.
- **CSIR-CSIO**
  - IoT based Smart Ventilation Solution to improve Indoor Air Quality and Comfort Camera based helmet tracking prototype
- **CSIR-CSMCRI**
  - CO<sub>2</sub> selective organic-inorganic hybrid hollow fiber membrane and its method of preparation thereof;
  - Melt extruded ion-exchange membranes and its method of preparation thereof
- **CSIR-IIP**
  - Development and Certification of new generation lubricant formulations for aerospace surfaces and components HCP-0036.
- **CSIR-NCL**
  - Developed continuous solvent free process of metformin hydrochloride.

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

- **CSIR-CBRI**
  - Signed MoU with Fire & Security Association of India (FSAI) for mutual collaboration in the area of Fire Safety and Engineering on September 27, 2023.

- **CSIR-CCMB**
  - Collaborated with Bhagavan Mahavir Medical Research Centre (BMMRC) for implementation of the regional prospective observational research for tuberculosis India phase II common protocol.
  - Collaborated with Vanguard Diagnostics Private Limited for technology/know-how transfer of the Detection of Sick Cell Anaemia / Sick Cell Disease (SCA/ SCD) Technology.
  - Collaborated with Nizam's Institute of Medical Sciences (NIMS) for implementation of Use of Glioma samples for deciphering role of neuro developmental proteins in cancers.
- **CSIR-CDRI**
  - A Sponsored Agreement executed with Esscee Biotech (India) Pvt. Ltd., Lucknow, on 05-09-2023 w.r.t. Synthesis of new fluorescence quenchers with functional modifications for nucleic acid research.
  - Signed MoU with IIT, Madras on 04-09-2023 to promote institutional linkage between CSIR-CDRI and IIT-Madras and to explore other avenues for possible collaboration.
  - A Clinical Trial Agreement for Phase III, multicenter, randomized, double-blind, placebo-controlled, interventional study on efficacy and safety of Standardized fraction of Picrorhizakurroa Royal Ex Benth (Picroliv®) for 24 weeks in the Management of Non-Alcoholic Fatty Liver Disease (NAFLD) was executed with Postgraduate Institute of Medical Education and Research, Chandigarh on 29-08-2023.
- **CSIR-CEERI**
  - Jodhpur Institute of Engineering and Technology -Academic and R&D Collaboration
  - CEL Sahibabad-ASIC for C-Band & X-Band PCM
- **CSIR-CFTRI**
  - Signed MoU with JSS College of Arts, Commerce and Science, Mysuru on 13th September 2023 to assist in organizing training programmes for supporting the academic programmes of both B.Voc and M.Voc courses with customized topics and to provide knowledge-based support to the academic programmes.
- **CSIR-CIMFR**
  - Agreement for Know How Transfer of Improved Soft Coke Making Technology with Maa Tara Fuels, Dhanbad, Jharkhand on 05.09.2023.
- **CSIR-CLRI**
  - Signed Consultancy agreement with Tube Investments of India Limited, a part of Murugappa Group, Chennai towards Development of Process for the Preparation of nanosized Iron Oxide Pigments from Pickling Spent Liquid - A Waste to Wealth Approach.
  - During the 82nd CSIR Foundation day at Pragati Maidan, New Delhi on 26 September 2023 following two agreements were signed towards inclusive growth through CSIR & Industry Linkages:
    - Garware Fulflex India Pvt Ltd towards development of a process to manufacture sustainable rubber-based leather –like material using the rubber source supplied from Garware Fulflex India Private Limited, Pune
    - PA Footwear Pvt Ltd towards transfer of the technology on Preparation of synthetic tanning agents using the protein hydrolysate from chrome shavings.
  - Signed MoU with National Institute of Pharmaceutical Education and Research (NIPER) during September 2023 in connection with R & D Collaboration for the execution of Synthetic ePTFE/Silicone graft for tracheal reconstruction.

- **CSIR-CMERI**
  - License Agreement signed with Akash Enterprise, Bhurkunda, North 24 Parganas, West Bengal on technology transfer of Integrated Municipal Solid Waste Disposal System (iMSWDS) for Bulk Waste Generators consisting of (i) Biogas Plant (20 cum/day) and (ii) Briquette Plant (50-60 kg/hr).
- **CSIR-CSMCRI**
  - Exploration of marine actinobacteria for anti-infective and industrial products general MoA with Department of Biotechnology, Ministry of Science and Technology, Government of India;
- **CSIR-IHBT**
  - Signed MoU with MCM D.A.V., COLLEGE, Kangra (H.P.) for Academic and Research Cooperation on 05.09.2023.
  - Signed MoU with Department of Ayurveda Govt. of Himachal Pradesh (GoHP) to promote academic and research co-operation with Rajeev Gandhi Govt. Post Graduate (R.G.G.P.G.) Ayurvedic College, Paprola, Kangra (H.P.) on 05.09.2023.
  - Signed MoU Swami Rama Himalayan University, Swami Ram Nagar, Jolly Grant, Dehradun (Uttarakhand) for Academic and Research Cooperation on 18.09.2023.
  - Signed an Agreement with Munisha Foods India Pvt. Ltd., Distt. Hamirpur, Himanchal Pradesh to take the technology for manufacturing/ processing of multigrain protein powder on 05.09.2023.
  - Signed an Agreement with Gaytri Plant Tissue Culture Lab., Distt. Kangra Himanchal Pradesh for establishment of tissue culture facility at Palampur for training and propagation of sub-tropical horticultural plants on 05.09.2023.
  - Signed an Agreement with Gaytri Plant Tissue Culture Lab., Distt. Kangra Himanchal Pradesh for use CSIR-IHBT technology for in vitro propagation of apple and monk plants as per technical know-how of CSIR-IHBT on 05.09.2023.
- **CSIR-IICT**
  - Signed following two Agreements for Design of High rate biomethanation technology for the generation of biogas & bio-manure from organic waste for the generation of 5000 m<sup>3</sup>/day (minimum) of biogas using AGR Technology developed by CSIR-IICT with:
    - Amflind Pvt Ltd.
    - VS Lignite Power Pvt Ltd.
  - Development of compostable products and signed an Agreement with Greenworks Bio Products Pvt Ltd.
  - Signed MoU with Central Pulp & Paper Research Institute (CPPRI), U.P., on 13th September 2023 to foster collaboration, provide opportunity for global experience and to facilitate the advancement of knowledge on the basis of reciprocity, best effort, mutual benefit and frequent interactions.
  - An MOU has been exchanged with Pyrotask Energy to work together on Design and Demonstration of Prototype for Green Hydrogen Production Process in Biorefinery Platform with Net Zero Emissions for demonstration of green hydrogen production of 150 KLD using biogenic waste.
- **CSIR-IIP**
  - MoU with Indian Institute of Technology, Madras for Joint collaborative activities of mutual interest.
- **CSIR-NAL**
  - Signed MoA with CII, New Delhi for Prime Minister's Fellowship Scheme for Doctoral Research on Formulation and evaluation of a novel indigenous room temperature curing epoxy resin system for structural applications.

- Signed License Agreement with the following companies for NAL's Multi-copter Drone Technology on 20th Sept., 2023 on the occasion of NAL's OWOL event.
  - Garuda Aerospace Pvt. Ltd., Chennai
  - SiDAK Technologies Pvt Ltd., New Delhi
- Signed license agreement with Hylan Power One Pvt Ltd., Bengaluru for NAL's Solid Oxide Fuel Cell - Single Cell technology for power generation on 20th Sept., 2023 on the occasion of NAL's OWOL event.
- Signed MoU with the following colleges / Polytechnic colleges on 21st Sept., 2023 for establishing a cooperative programme in research and academic training on the occasion of NAL's OWOL event:
  - B.M.S College of Engineering, Bengaluru
  - Mangalore Institute of Technology & Engineering, Mangalore
  - KAMMAVARI SANGHAM GROUP OF INSTITUTIONS, Bengaluru
  - AJ Institute of Engineering & Technology, Mangalore
  - M E I Polytechnic, Bengaluru, Mangalore
  - Govt Model ITI, Bengaluru.
- **CSIR-NEIST**
  - Incubation Cum Rental Agreement with BioNest and CK udyod Foods Pvt. Ltd, Jorhat on 21-09-2023
- **CSIR-NGRI**
  - Signed MoUs with following Institutions for S & T Cooperation and mutually agreed aspects of R & D:
    - Civil Engineering Department., IIT-Chennai
    - Dept. Geology, Bundelkhand University, Jhansi, Uttar Pradesh
    - SRTM University Nanded (Geology Dept.), Maharashtra.
- **CSIR-NIIST**
  - Signed MoU with Rubber Research Institute of India inks for bridging mutual co-operation in research and developmental activities.
  - Signed MoU with IECRS (Indian Environment Consultancy & Research Services, Nagpur) inks for providing a common platform for deriving mutual benefits in their pursuit of higher learning, research and assist in general to various environmental related organizations and benefiting their respective problem areas, by way of exposure to each other's programs, in particular.
  - Agreement for manufacturing Building Bricks utilizing waste foundry mould sand generated by Peekay steel Ltd.
  - Research collaborations in the area of Spice Processing, Functional Foods, and Nutraceuticals with Aurea Biolabs Private Limited, Ernakulam
  - Research collaborations in the area of Food & Nuetraceuticals with Akay Natural Ingredients Private Limited, Aluva

## Patents Update

Patents Filed			Patents Granted			Patent Prosecutions	
India	Abroad *	Multiple Countries	India	Abroad*	Multiple Countries	India	Abroad*
15	07	07	22	10	11	27	145

\* Data reported to IPU during the above said period and may change later during national phase entries. The unique filed / granted patent may appear in the next months also if it's corresponding application is filed / granted in the respective months.

## High impact S&T services offered

- **CSIR-CCMB**
  - Provided molecular diagnostic services for 183 families comprising 197 samples.
- **CSIR-CDRI**
  - Common Research and Technology Development Hub (CRTDH): Provided analytical services to one MSME and consultancy for new drug product development to one Medium-Sized Enterprise in the Pharmaceuticals sector.
  - Sophisticated Analytical Instrument Facility: Provided service for analysis of samples by High-Resolution Mass Spectrometry (HRMS), IR Spectroscopy, and NMR spectroscopy. In the month of September 2023, a total of 211 external samples were analyzed.
- **CSIR-CMERI**
  - Training programme on integrated Municipal solid and liquid waste management system for Various Academic, R&D institute, industry, MSME all over India.
  - Failure analysis of Turbine Blade of failed blade, LPT -1 Front side 8th stage blade no- 27. Sponsored by Jindal India Thermal Power Limited, PO. Kaniha, Angul, Odisha.
- **CSIR-CRRI**
  - Use of new technology, DBM Mix design with RAP for the 4/6 lane Ludhiana Rupnagar section of NE-5 for Ceigall India Ltd, Punjab
  - Evaluation of Gurgaon-Kotputli-Jaipur Section of NH 48 (km 188-km 268+300) towards suggesting remedial measures for rehabilitation/Strengthening for Patel Infrastructure Ltd, Gujarat.
  - Evaluation of Bituminous Pothole Patching Mix Potseal for Instant repair of Pothole for Verma Industries, New Delhi.
  - Customized Training on Highway Development and Management Tool (HDM-4) at Road Development Authority, Sri Lanka for Road Development Authority, Sri Lanka.
  - Customized training Programme on Design of Bridge and Foundation with emphasis on Long Span Bridges for M. P. Rural Road Development Authority, Madhya Pradesh.
  - Inspection and Vetting of the Proposed Crash Barrier Treatment between the Main Carriageway and Service Roads for Cut Sections for a Road Section in Kerala for KNR Constructions Ltd, Telangana.
  - Study of Bridge Deck Water Proofing Materials from M/s FOSROC India suitable to deploy as bridge deck overlays for Fosroc Chemicals (India) Pvt. Ltd.), Karnataka.
- **CSIR-IIP**
  - 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.
- **CSIR-NAL**
  - Experimental studies on flow separation and its control in a submerged intake funded by AR&DB.
  - Pre-investment activity on preparation of DPR and identification of land for setting up of 2.5m x 2.5m continuous trisonic & 1.75m x 1.75m blowdown supersonic wind tunnel facility funded by CSIR
  - Flight validation and update of aerodynamic database and air data for LCA variant using system identification techniques funded by ADA
  - Static strength test of flapper on test box funded by ADA

- **CSIR-NCL**
  - Supplied industrially important microbial strains and allied microbial identification services to industries and academia.
- **CSIR-NEERI**
  - Study on emission sources mapping and preparation of local level action plan around Air Pollution Hotspots.
  - Air Quality Monitoring and Emission Source Apportionment studies for Thane in the state of Maharashtra.
  - Rapid Environmental impact and Risk Assessment study for the proposed Polysilicon Unit of M/s. Reliance New solar Energy Ltd., Jamnagar.
  - Air Pollution Impact Assessment study for preparation of sectoral Guidelines for the glass Industries in the identified Industrial Area, Jalesar Road, Firozabad, U.P.

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

- **CSIR-4PI**
  - Organized Vismaya Vigyana You-Tube Kannada Lecture on topic “What is Artificial Intelligence all about” on 5-6, September, 2023.
  - 82 students and 6 teachers from Narayan e-Techno School, Bengaluru participated in the Jigyasa: Scientists - Students interaction on 21, September, 2023,
- **CSIR-CBRI**
  - Conducted course on Design of Fire Protection Measures during 25-27 September, 2023 at Indian Habitat Centre, New Delhi by the Fire Safety Engineering group of CSIR-CBRI. More than 60 delegates from 15 states participated.
- **CSIR-CCMB**
  - Celebrated Open Day on the occasion of CSIR's 82nd Foundation Day on 26 Sept, 2023, and was attended by 7200 visitors.
  - Conducted a skill development program on Engineering zebrafish with CRISPR tools spanning during 4-18 September, 2023, and 9 participants were trained.
- **CSIR-CDRI**
  - Offered various Skill Development Programs (SDP):
    - Healthcare & Life Science Skill Development Program, 12 participated.
    - Postgraduate Training/Dissertation Skill Development Program, 1 participated.
  - Organized Student Scientist Connect program:
    - Shree Lal Bahadur Shastri Degree College, Gonda, UP on 4th September 2023. 42 students and faculty participated.
    - Amity College of Pharmacy, Lucknow, UP on 8th September 2023. 30 students and faculty participated.
  - Organized Health Awareness Outreach Program (Societal Program) on 15th September 2023 in the Village Devrai Kala and Beekamau, Tahsil Bakshika Talab, Distt. Lucknow. 150 number of villagers participated.
  - Open Day Celebrations on 82nd CSIR Foundation Day was organized on 26th September 2023. 1100 enthusiastic students and educators from 25 schools across the region, including Sultanpur, Hardoi, Raebareli, Unnao, Kanpur, and Lucknow colleges participated.
- **CSIR-CECRI**
  - Conducted following Skill Development Training Programme:
    - Chromatography and Spectroscopy from 11- 15 September, 2023. 55 participated.



- Two-days online Industry Oriented Refresher Course was conducted on Lithium-ion Battery: Materials to Manufacturing from 21-22 September, 2023. 20 Staffs from ITC, Bangalore participated.
- **CSIR-CEERI**
  - GLA Mathura College B Tech students visited lab on 09-09-2023.
  - Regional Science Congress 2023 NVS School students visited Lab on 13.09.2023 to 15-09-2023.
  - Celebrated Foundation day on 29.09.2023.
- **CSIR-CFTRI**
  - Organized Yusuf Hamied chemistry camp from 30.08.2023 to 01.09.2023 for students of Govt. High Schools of Mysuru taluk and Kendriya Vidhyalaya of Mandya & Chamarajanagar which was attended by 71 students and 10 teachers
  - As a part of the CSIR Foundation Day on 26.09.2023, open day was organized to the students of Private & Govt schools and PU Colleges of Mysure. 560 students and 25 teachers visited the Institute.
  - Two Skill Development Programs were conducted:
    - Processing of millets and value-added products from 25.09.2023 to 27.09.2023, 30 participated.
    - Fundamentals of food analysis for process hygiene and microbial food safety criteria from 25.09.2023 to 27.09.2023, 12 participated.
- **CSIR-CIMFR**
  - Conducted Executive cum Skill Development Programme on Recent Advances in Mines Fire, Ventilation, Miner's Health from 11th -15th September, 2023.
- **CSIR-CLRI**
  - 27 Mechanical Engineering students and three faculty members from St. Peter's Institute of Higher Education and Research, Chennai visited on 05 September 2023 to gain exposure on the research programs of the institute.
  - The rural school students from Galilio Science Club, Coimbatore visited on 06 September 2023. 50 school students and two faculty members visited the Institute and gained exposure on the research activities of the institute.
  - 45 Biomedical Engineering students along with faculty members from Eswari Engineering College, Chennai, visited on 12 September 2023 and gained exposure about the various R&D activities taking place at the Institute.
- **CSIR-CMERI**
  - Conducted SDP on Analytical Techniques and Instrumentation for Water Quality Assessment; Sep 20-22, 2023.
  - Jigyasa Rath was taken to various schools for showcasing and to exhibit different technologies such as Solar tree, Solar Chullah, Bio gas plant, E-Tractor, Municipal Solid Waste management, Drain cleaning equipment, Iron Removal Plant etc. during 15-26 September, 2023.
- **CSIR-CRRI**
  - Conducted 5-day Regular training program on Pavement Evaluation Techniques and their Applications for maintenance and Rehabilitation during September 18–22 September, 2023. 30 participated from different parts of India.
  - Conducted 7-day Customized training program on Highway Development and Management (HDM-4) at Road Development Authority, Sri Lanka during 20-24 September, 2023. The training program was sponsored by Road Development Authority, Sri Lanka.

- **CSIR-CSIO**
  - Conducted one Day Workshop on 15th September, 2023 for the participants of Punjab Engineering College on:
    - Mechanical Measurement Technologies.
    - Awareness lecture on PRISM Scheme.
  - Conducted one Day Workshop on Entrepreneurship Development Programme (EDP) on 27th September, 2023 under CSIR Integrated Skill Initiative Programme.
  - Conducted student-Scientist Connect Programme in KV 3BRD School, Chandigarh on 20th September 2023 under CSIR-Jigyasa initiative. The Lecture session on A brief journey of Science in time: The Evolution of Science was delivered by Sr. Scientist at CSIR-CSIO, Chandigarh. Also, the presentation on "Drones" was presented by Phd Scholar & quiz session was also conducted.
  - Organized the Lab visits for Jawahar Navodaya Vidyalaya, Pabra, Haryana to visit Electronics Lab (Analog/ Digital electronics), Mechanical workshop and Simulation lab on 22nd September, 2023
- **CSIR-CSMCRI**
  - Jigyasa program for KV School students (50 no's) and Govt. Girls Higher Secondary School (50 no's) was conducted on 11th September 2023 on Quenching thirst of the young minds. Quiz, essay writing and slogan writing competitions were conducted, and prizes were distributed to the winners (1st, 2nd and 3rd prizes were given for each competition).
  - Conducted training programme on Microalgal diversity and their biotechnological potentials. 13 participated.
  - Organized two days Teacher's Training Workshop from 25-26 Sept 2023 along with Regional Science Centre, Bhavnagar and the Royal Society of Chemistry (RSC)
- **CSIR-IHBT**
  - 61 girl students and 04 teachers from Govt. Middle School (Girls) Bhawarna, Distt. Kangra (H.P.) visited on 06.09.2023.
  - Organized two days Skill Development Workshop cum Experimental Learning Classes on 14th-15th September, 2023 for 31 Vigyan Jyoti scholars of Govt. Sr. Sec. School Baijnath and JNV Paprola, Distt. Kangra (H.P.) under the CSIR-Jigyasa and Vigyan Jyoti Program. Students had hands-on training cum exposure visit in different R&D activities of the Institute.
  - Organized following Cyber Security Workshops:
    - A lecture on cyber security was organized for 31 Vigyan Jyoti scholars under the Jigyasa program on 15.09.2023.
    - 48 students and 04 faculty members from two different colleges of Himachal Pradesh (RGM Govt. College Jogindernagar, Distt. Kangra and Sri Sai University, Palampur, Distt. Kangra) visited the Institute on 04 and 06 September, 2023.
  - Under CSIR-Integrated Skill Initiative Program (Phase-II)
    - Eight weeks Course "Plant Tissue Culture Technician" successfully started for 07 students from 01st September, 2023 to 31st October, 2023.
    - Eight weeks Course "Floriculturist Protected Cultivation and Gardener" successfully started for 02 students from 01st September, 2023 to 31st October, 2023.
    - Eight weeks Course "Gardener" successfully started for 03 students from 01st September, 2023 to 31st October, 2023.
    - 178 students and 08 faculty members from GGSDS College, Rajpur, Palampur; Sri Sai University, Palampur and MCM DAV College, Kangra attended two days (18th-19th September, 2023) Symposium on "Role of



Women Scientists in S&T-based Entrepreneurship Development” jointly organized by National Academy of Sciences India (NASI) and CSIR-IHBT Palampur.

- Organized visit of a team of 29 Deputy Ranger Trainees (3rd batch) of the Himachal Pradesh Forest department on 02.09.2023 under their induction training programme conducted by HP forest academy, Sundernagar, Mandi, HP to the various R&D facilities of the institute.
- Organized visit of a team of 44 Range Forest Officers (trainees) from Chandrapur Forest Academy, Maharashtra on 11.09.2023 under their induction training programme.

- **CSIR-IICT**

- Conducted Analytical Skill Development Course - 2023 sponsored by Organization for the Prohibition of Chemical Weapons, The Netherlands from 4th to 15th September 2023 with 15 International participants.
- CSIR-IICT, CSIR-CLRI in coordination with Zaheer Science Foundation conducted JIGYASA programme in New Delhi, on 22nd August, 2023. This programme was organized for showcasing a comprehensive science-based learning to the students of Govt schools.
- World Ozone day was celebrated on 16<sup>th</sup> September, 2023. Six schools representing Bibinagar, Ananthram, Mothakondur along with Srinivasa Model school, Nacharam, Sridevi Digi school Mallapur and IICT-ZM School participated.

- **CSIR-IIIM**

- Conducted one day program on commercial floriculture & field days on marigold held across chenab valley of J&K on 05-09-2023 for appraisal of frontline demonstrations & assessment of farmers field crop performance.
- CSIR-IIIM Technology Business Incubator in collaboration with Government Degree College, Drass organized a city awareness among the local youth of the drass region about the startup enterprise on 26-09-2023. Team TBI sensitize about the various facilities available with the incubator and government schemes to support innovation related to Agritech, healthcare and Nutra startups.
- CSIR-IIIM Technology Business Incubator organized one day city camp on Entrepreneurship Development to raise awareness among students and faculty members of Government Degree College of Kargil on 27-09-2023.
- CSIR-IIIM Technology Business Incubator camp, organized a special session on science & innovation was also organized at Suru Valley Public School Kargil on 28-09-2023.

- **CSIR-IIP**

- Conducted 5-day Residential Programme under ‘Jigyasa’ programme for the students of Scindia KanyaVidyalaya, Gwalior from 18th-22nd Sept 2023 at CSIR-Indian Institute of Petroleum, Dehradun.
- On the occasion of 82nd CSIR-Foundation Day, an Open Day organized for the students of Kendriya Vidyalaya of Dehradun. 200 students visited the different research labs of CSIR-IIP.

- **CSIR-NAL**

- Organized student visit under Jigyasa Programme & Inauguration of MAV Simulator on 4th Sept., 2023
- organized One Week One Lab Programme during 19-24th Sept., 2023
- CSIR-NAL Participated on CSIR Foundation Day Celebration during 26-27th Sept., 2023 at Pragati Maidan, New Delhi.

- **CSIR-NBRI**
  - Under Jigyasa programme, CSIR-NBRI Jigyasa team and EIACP team together organized one day interactive programme on September 13th, 2023 for school children. 41 students and 3 Teachers of Jawahar Navodaya Vidyalaya, Raebareli participated in the event. A lecture on “Mission LiFE: Healthy Lifestyle (Millet and Nutritional Benefits)” was delivered by Scientist, CSIR-NBRI followed by other activities like awareness quiz, sustainable lifestyle pledge.
  - CSIR-Foundation Day was observed as “open day” for public and schools. 1088 students, 51 teachers from different schools visited different different labs of the Institute.
  - Ozone Day Celebration on 15 Sep 2023, at Mahila Degree College, Lucknow by NBRI-EIACP.
  - Swachhata Abhiyan performed at Govt. Girls Inter College, Kaiserbag, Lucknow by CSIR NBRI-EIACP on 26 Sep. 2023
  - Under Skill Development Programme following activities are conducted:
    - Organized one-day training program on Dehydrated Flower Craft under the Skill Development Program on 12th September, 2023. 11 participated.
    - Organized two days training programme on Bioinoculant producer for agriculture from 14 – 15 September, 2023. 28 participated.
    - Organized three days training programme on Vertical & Roof Top Gardening training from 18th to 20th September, 2023. 12 participated.
    - Organized one-day training program on Bonsai Technique on 21st September, 2023. 13 participated.
- **CSIR-NCL**
  - Talk delivered by NCL Scientist at Flow Chemistry Conference, on 15 September, 2023 at Mumbai. 200 officials participated from the industry.
- **CSIR-NEERI**
  - September 04.05.2023: Artificial Intelligence and Remote Sensing for monitoring and management of environment @ CSIR-NEERI’s Delhi Zonal Center.
  - September 25-27,2023: Drinking Water Quality Monitoring and Analysis- Physio-chemical, Microbiological and Molecular Aspects” @ CSIR-NEERI's Kolkata Zonal Center.
- **CSIR-NEIST**
  - Organized training and awareness program on “Cultivation of Mushroom”: Training on Mushroom Cultivation at CSIR-NEIST Branch Itanagar, Arunachal Pradesh on 21.09.2023. 10 students from Deptt of B.Sc Agriculture Himalayan University Itanagar participated.
  - Organized Student Scientist Connect Program to create scientific temperament among the following school students.
    - Sonari Senior Secondary School, Assam on 11-09-2023. 110 students and 10 faculty members participated.
    - Unity Christian Higher Secondary School, Dimapur, Nagaland on 22-09-23. 30 students and 2 faculty members participated.
  - Distributed 15000 chrysanthemum, Marigold & other flower saplings to different farmers of Assam & Nagaland under CSIR-Floriculture Mission
- **CSIR-NGRI**
  - Celebrated One Week One Lab (OWOL) program from 4-9 September 2023, several programmes were conducted:
    - Geoscience Conclave with invited Talks and Public Lectures.
    - Stakeholders Connect with Industry Interactions and Panel Discussions.

- Workshop on Exploration of Geothermal Energy.
  - Society Connect (JigyasaOpen day) for Academic and student connect with Open Day & Outreach Jigyasa Student Connect.
  - Farmer's connect with Kisan Meet and Meeting with Beneficiaries were organized wherein several dignitaries, academicians and students from school, colleges and universities were attended. The program ended with great success.
- **CSIR-NIIST**
    - Celebrated CSIR foundation day, all facilities were open to the public and more than 650 school and college students visited the campus.
  - **CSIR-NIO**
    - Celebrated International Coastal Clean-Up Day in collaboration with Indian Coast Guard and Ocean Society of India at Miramar Beach, Panjim, Goa on 16th September, 2023.
    - Celebrated the 82nd Foundation Day of CSIR on 26th September 2023. 250 students, teachers and general public visited to know more about the scientific endeavors in ocean research. The students also got an opportunity to visit the exhibition on marine resources and instruments and view films on ocean sciences. Lecture on Careers in oceanography was also delivered on this occasion for the students of standards XI and XII.
  - **CSIR-SERC**
    - 30 B.E. Civil Engineering and M.E. Structural Engineering Students and 2 Faculties from Sree Sastha Institute of Engineering and Technology, Chembarambakkam, Chennai, visited on 1<sup>st</sup> September 2023.
    - 15 Engineers from Highways Research Station, Government of Tamilnadu, Guindy, Chennai, visited on 20 September 2023

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

- **CSIR Headquarters**
  - CSIR labs organised their One Week, One Lab (OWOL) campaign.
    - CSIR-NGRI, Hyderabad from 4-9 Sept., 2023
    - CSIR-IMMT, Bhubaneswar from 11-16 September, 2023
    - CSIR-CMERI, Durgapur from 11-16 September, 2023
    - CSIR-NIScPR, New Delhi from 11-16 September, 2023
    - CSIR-IGIB, New Delhi from 18-23 September, 2023
    - CSIR-NAL, Bangalore from 19-24 September, 2023.
  - CSIR and its lab participated in the Jaipur Expo 2023, held at Jaipur, Rajasthan during 14-26 September, 2023. Labs participated were CSIR-AMPRI, CSIR-CEERI.
  - CSIR foundation day was celebrated on 26<sup>th</sup> September 2023 at Bharat Mandapam, New Delhi, where the Hon'ble Minister Dr. Jitendra Singh awarded the Shanti Swarup Bhatnagar prizes. Foundation Day Lecture was delivered by Shri S. Somanath, Chairman ISRO and Secretary DOS. On this occasion a Mega Exhibition on CSIR Decadal Achievements was organized at Hall no 2, Pragati Maidan, New Delhi. Prof. Ajay Sood, Principal Scientific Advisor to Government of India inaugurated the Exhibition along with DG, CSIR. All 37 CSIR labs participated and showcased their technologies, products & prototypes. School students visited the stalls and interacted about displayed technologies with CSIR scientist. JIGAYASA team organised various science talks & quiz for visiting student and distributed prizes. Technical Sessions on various themes of CSIR were also organized.

- **CSIR-CBRI**
  - Organized two days Indo-Swiss Workshop on Modelling Rock-ice Avalanches, Rock falls and Debris flows on September 19-20, 2023 under the aegis of CSIR- Integrated Skill Initiative. 128 working professionals/field experts/students of different institutions/organizations across the country participated. This workshop was joint activity of Central Building Research Institute CSIR-CBRI Roorkee and WSL Institute for Snow and Avalanche Research SLF, Switzerland under the Indo-Swiss Collaborative Project. The Workshop was inaugurated by Director CSIR-CBRI.
- **CSIR-CDRI**
  - Organized three days India bioscience's Regional Young Investigators Meeting (RYIM) from 13-15 September 2023.
- **CSIR-CMERI**
  - Weeklong Celebration of 'One Week One Lab' event at CSIR-CMERI, Durgapur on the following themes:
    - Farmers' Connect on 11/09/2023.
    - Make in India & MSME Connect on 12/09/2023.
    - Robotics & Automation.
    - Clean & Green India.
    - Jigyasa & Student Connect.
- **CSIR-CRRI**
  - Organized One Day Workshop on Electrical Mobility on September 01, 2023
- **CSIR-CSIO**
  - Conducted two Days Workshop on Practical Application of Industrial IoT on 13-14 September, 2023 under CSIR-Integrated Skill Initiative Programme. Principal Technical Officer, ISTC delivered lecture on the topic of Fundamentals of Industrial IoT & Visualization & Data Storage on Cloud. Hands on exposure on Industrial IoT and Cloud Computing was provided on 14September, 2023.
- **CSIR-HRDC**
  - Online Programme on Roles & Responsibilities of Inquiring Officer (IO) and Presenting Officer (PO) in disciplinary proceedings during 21-22 September, 2023.
  - Conducted Ethics and Governance in Science Programme on 27 September, 2023.
- **CSIR-IHBT**
  - Two days symposium was jointly organized with The National Academy of Sciences India (NASI) on 18-19 September, 2023 on Role of Women Scientists in S&T-based Entrepreneurship Development.
- **CSIR-IICT**
  - Organized two-day 'IP Filing Review cum Interaction Meeting' with a joint team of URDIP-CSIR & IPU-CSIR at CSIR-IICT, Hyderabad on 13th & 14th September 2023. The event ended with a happy note on "Let's Make Our IP into VIP (Valuable Intellectual Property)".
- **CSIR-IIIM**
  - Organized Youth Conclave on 16-17th September 2023 in Jammu as a part of its endeavor to promote the startup entrepreneurship ecosystem. Hundreds of youngsters witnessing the products and innovations on display. A total of 25 startups participated from across Jammu and Kashmir in the two-day mega event which was inaugurated by Dr Jitendra Singh, Hon'ble Minister of S&T.
- **CSIR-ITD**
  - Meeting organized virtually for CSIR, India: An Innovation Hub for Global Sustainable Development" during the Science Summit at 78 United Nations General Assembly, 2023 (SSUNGA78)

- Meeting organized for 49th Annual General Meeting of Central Electronics Limited.
- **CSIR-NBRI**
  - Celebrated 82nd CSIR Foundation Day on 29.09.2023 along with valedictory function of Hindi Pakhwada 2023. Prof. Pravat Kumar Roul, Vice-Chancellor, Odisha University of Agriculture & Technology, Bhubaneswar graced the occasion as Chief Guest of the function.
- **CSIR-NIIST**
  - The technical seminar on 'Sustainable Coconut Processing Strategies for Global Market' as part of International Coconut day celebrations at CSIR-NIIST which was followed by technical sessions and panel discussions on Research and development interventions for the cultivation, crop management and value addition of coconut. International Coconut Community (ICC) officials, industry representatives, Farmer Producer Organizations (FPOs), policy makers, officials from Central and State Governments agencies, Agri Business Experts, Research and Academic Experts attended the event.
- **CSIR-SERC**
  - Organized following Webinars:
    - "Circular Economy in Construction Industry towards Promoting Waste Management and Utilization" was held on 06 September 2023.
    - "Retrofitting Techniques for Transmission Line Towers Using Composite GFRP Angle Sections" was held on 13 September 2023.
- **CSIR-URDIP**
  - Teams CSIR-URDIP and CSIR-IPU visited CSIR-IICT on 13<sup>th</sup> and 14<sup>th</sup> September 2023 and CSIR-CDRI on 20<sup>th</sup> & 21<sup>st</sup> September 2023 and conducted an IP review activity of the institutes involving one-to-one interactions in the form of breakout sessions and extensive discussions with the inventors so as to realize the road blocks encountered in IP filings by the Institutes.

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

- **CSIR-CECRI**
  - Celebrated the 82nd CSIR Foundation Day on September 27, 2023. Prof. V. Palanimuthu, Director, National Institute of Food Technology, Entrepreneurship and Management, Thanjavur was the Chief Guest and delivered the Foundation Day Lecture.
- **CSIR-CIMFR**
  - Shri Ujjwal Tah, Dy. Director General (HQ), DGMS graced the occasion as the Chief Guest on the occasion of Inaugural Session of An Executive cum Skill Development Programme on "Recent Advances in Mines Fire, Ventilation, Miner's Health" from 11th - 15th September, 2023.
- **CSIR-CSIO**
  - Wing Commander Ajay Gandhi visited institute to explore the opportunities for indigenous air force tech innovation
- **CSIR-IICT**
  - Prof. D V Khakhar, INAE Chair Professor & former Director, IIT Mumbai was the Chief Guest for the CSIR Foundation day function held on 29th September 2023.
- **CSIR-IIP**
  - Shri Sujit Kumar Mukherjee, IFS, Former Director Wildlife Institute of India, Dr.M.P.S. Bisht, Professor (Geology), HNB Garhwal University, Uttarakhand and Former Director, Uttarakhand Space Application Centre (USAC)

- **CSIR-NBRI**
  - Hindi Pakhwara was celebrated. Renowned folk singer Padmashri (Smt.) Malini Awasthi, chief guest inaugurated the exhibition of Hindi books organized by the library of the institute. The latest issue of the official language magazine 'Vigyanvani' was launched and certificates were also distributed to the winners of the Hindi Promotion Award.
  - Dr. Chang Heasook, representative Ministry of Environment, South Korea visited and discussed possibilities of collaborations in the field of Environment Assessment & plant conservation.
- **CSIR-NIIST**
  - Mr. C.M. Cherian (Vice President, MRF Tyres) and Dr. Sreekumar Nair (Corporate Manager, R&D, MRF Tyres) visited on 16 Sept., 2023 to discuss potential avenues of research collaboration with the Materials Science and Technology Division of NIIST.

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

- **CSIR-NEIST**
  - Under the project entitled with "Spatiotemporal Dynamics of SARS-CoV-2 Variants in Wastewater Systems in Northeast India through Genomic Surveillance and Epidemiology for Forecasting its Spread "; CSIR-NEIST has been carried out the wastewater-based surveillances for SARS-CoV-2 from different wastewater bodies of Jorhat District. In the month of September 2023; 30 wastewater samples have been collected from different parts of Jorhat District and all samples have been tested negative.
  - Establishment of the protocol for Wastewater based detection of SARS-CoV-2 and the target-based genome sequencing.
  - Genome sequencing activities are in progress. However, during the month of September there is no samples received for sequencing.

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

- **CSIR-CBRI**
  - An Expert lecture on "Self-healing Construction Materials: State of the Art and Future Outlook" was delivered by Dr. Antonios Kanellopoulos, Department of Engineering and Technology, University of Hertfordshire, UK on Sep 19, 2023 under the banner of CSIR-CBRI expert lecture series.
- **CSIR-IIIM**
  - Started the leather training course on 05-09-2023 besides various others soft initiatives under Atal Incubation Centre (AIC-IIIM) with the objective to empower youth and to support the local economy by enhancing the livelihood of local community
- **CSIR-IIP**
  - Participated in Energy Summit 2023 organized at UPES, Dehradun during 20-22 September, 2023.
  - Participated in the CSIR-Expo 2023 on the occasion of CSIR Foundation Day, 26-27 September, 2023.
- **CSIR-NIIST**
  - Millet Mela organized by FSSAI-Southern Region in association with Food Safety Department, Govt. of Kerala to be held at CSIR-NIIST on 8th September 2023.
  - International coconut day celebrated at CSIR NIIST in association with ICC, CDB and NABARD.



- Industry connect meet on "Specialty chemicals & active pharmaceutical intermediates" to happen at CSIR-NIIST on 22nd September 2023
- Industry Connect meet on 'Chemical Synergy: Bridging Industries with Synthetic Expertise,' at CSIR-NIIST on 22nd September 2023.
- **CSIR-NIO**
  - Organized a Talk on Making sense of plankton: What we know and don't know about pelagic ecosystems, Part 1 The phytoplankton perspective; Part 2 The zooplankton perspective by Prof. Victor Smetacek, Bio-Oceanography Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany
- **CSIR-SERC**
  - Celebrated Hindi Pakhwara from 31.08.2023 to 20.09.2023.
  - Open Day: As a part of the foundation day celebrations Open Day was observed at CSIR Campus, Taramani, Chennai, and at TTRS (Tower Testing and Research Station) Campus, Tirusulam, Chennai, by CSIR-Structural Engineering Research Centre (CSIR-SERC) and Regional Units of CSIR-CECRI, CSIR-CEERI, CSIR-CSIO, CSIR-NEERI and CSIR-NML 26 September 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 (PFRI) 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**

- 24 in-house R&D units of industries were granted Renewal of Recognition and 27 were granted renewal of Registration certificates.

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

- 25 SIROs were granted Renewal of Recognition and 17 were granted renewal of Registration Certificates.

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

- 13 PFRI were granted Registration certificates.
- 8 PFRI were granted renewal of Registration certificates.

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

- 6 in-house R&D units of industries were granted Extension of Approval in Form 3 CM u/s 35(2AB) of IT Act 1961.
- 6 Reports in Form 3 CL certifying R&D expenditures of Rs 7920.01 Lakhs 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):**

4 new projects namely "An Integrated and Portable Health Check-up Device", "Development of Smart Water Logging Detection Device ", "Development of an UAV Assisted Intelligent Agriculture Ecosystem ", "Multi tasking precision paddy platform " were sanctioned during the period.

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

##### **CRTDH –CSIR-CMERI, Durgapur**

A Chintan Shivir on CRTDHs Empowering MSMEs was held on 12<sup>th</sup> September, 2023 at CRTDH-CMERI, Durgapur, as part of the CRTDH project of DSIR. The purpose of this Chintan Shivir was to strengthen ties between academia and business by emphasizing how crucial this collaboration is to push R&D and creating an environment that encourages knowledge sharing, collaborative research, and technological innovation. The technical sessions included "overview of futuristic technological interventions in the area of low cost machining at CRTDH-CMERI and highlighted smart and additive manufacturing can be integrated to enhance efficiency, productivity" and "various initiatives undertaken by CRTDH-CMERI to help MSMEs in their R&D endeavour".

##### **CRTDH –CSIR-IIMT, Bhubaneswar**

A Chintan Shivir on CRTDHs Empowering MSMEs was held on 15<sup>th</sup> September, 2023 at DSIR-CRTDH at CSIR-Institute of Minerals and Materials Technology, Bhubaneswar. Dr. N. Kalaiselvi, Secretary, DSIR & DG, CSIR in her recorded video address, emphasized on the role of DSIR and CRTDHs in promoting entrepreneurship, showcasing local research and innovation, fostering skill development across diverse sectors, and more. The technical session included an overview of CRTDH at CSIR-IMMT, Bhubaneswar, its broader objective, infrastructural facility available, technologies developed & transferred / licensed, MSME connect initiated, issues resolved for MSME, services offered and available opportunities for MSMEs.

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

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

- A brainstorming event 'Sangoshtree' on ICT Tools for School Education – Current status & emerging trends was organized at DSIR on 6<sup>th</sup> September, 2023. The event was a multi-stakeholder consultation aiming to maximize the impact and outcome of ongoing studies awarded under A2K+ (Studies) program on the theme -ICT and school Education.
- A "Stakeholder Workshop: Roadmap for adopting the technologies and policies for high filtration efficiency air filters for HVAC systems in post-Covid-19 scenario" was organised on

1<sup>st</sup> September, 2023 as a part of the study titled “Studies on air ventilation in central air conditioning units in post-Covid-19 scenario guided by Machine Learning and Artificial Intelligence techniques” funded by DSIR under A2K+ Studies Program. Representatives of filter Industry, DSIR officials, and Project Review Members of Guidance Committee (PGRC) participated in the workshop.

- Project Review Meetings (PRC) were held in DSIR on 6<sup>th</sup> September, 2023 to review the progress of the following projects:
  - i. Cochin University of Science and Technology, Kochi, Kerala: “A report on ICT tools catering to a wide range of learners, including children with special needs with focus on schools in Haryana, Delhi, Goa and Kerala”.
  - ii. Symbiosis Institute of Management Studies, Constituent of Symbiosis International, Khadki, Pune: “A report on ICT tools catering to a wide range of learners, including children with special needs with focus on western region in India which consists of Maharashtra, Gujarat, Goa and Dadra and Nagar Havelli and Daman and Diu”.
  - iii. Malaviya National Institute of Technology, Jaipur: “A Study of the Usability and Accessibility of various ICT Tools related to English Language Speaking and Reading Skills of Children with Autism Spectrum Disorder (ASD)”.
- A new Study “A report on ICT tools catering to a wide range of learners, including children with special needs” was awarded to PSGR Krishnammal College for Women Peelamedu, Coimbatore, Tamilnadu under DSIR-A2K+ (Studies) program.
- First Project Guidance cum Review Committee (PGRC) meeting was conducted on 19<sup>th</sup> September, 2023 to review technical and financial progress of the study entitled “Techno-commercially Optimized Waste Management System Based on SMART Trash Bin” Supported to Academy of Technology, Adisaptagram, Hooghly.

#### **A2K+: Events**

- 22<sup>nd</sup> Meeting of the Technical Advisory Committee (TAC) of A2K+ Events was held online through a virtual platform on 27.09.2023. Twelve screened in proposals were put up for consideration of TAC as part of the agenda. Seven proposals were recommended by TAC for consideration.
- National Symposium on Crosstalk Between Animal Research & Alternatives ( NSARA 2023) & One day Training cum Workshop on Laboratory Animal Science & Alternative Tools was organised by CSIR-North East Institute of Science and Technology (CSIR-NEIST) Pulibor, Jorhat, Assam from 07.09.2023 to 09.09.2023 under A2K+ Events Program. The conference was attended by 273 participants, which includes 42 Delegates, 6 Key-Note Speakers, 17 Speakers, 8 Resource Persons & 200 Registered Participants. The Symposium aimed at sharing and disseminating scientific information in the area of pre-clinical drug discovery and research using animal models as well as other alternative tool for biomedical research.

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

- 15<sup>th</sup> meeting of Technical Advisory Committee (TAC) of TDUPW/A2K Programme was held on 22<sup>nd</sup> September, 2023 in DSIR. A total of 15 proposals from Academia, Research Institutes, and Not-for-profit research organizations were evaluated for funding support under TDUPW Programme for empowering women through technology capacity building.

- Project Review Committee (PRC) meeting of TDUPW Project entitled “Development of Women Entrepreneurship for low cost Sanitary Napkins production” of Department of Chemistry, JSS Academy of Technical Education, Noida was held on 5<sup>th</sup>September, 2023 to review technical and financial progress of the project.
- Fourth Project Review Committee (PRC) meeting of TDUPW Project entitled “Dissemination of Bio-Energy Technology Through Bio-Coal Preparation from Waste Green Coconut Shell as an Energy Rich and Smokeless Cooking Fuel Among Rural Women in Puri District of Odisha” of Socio Cultural Development Centre ( SCDC) Dist. - Jagatsinghpur, Odisha was held on 4<sup>th</sup>September, 2023 to review technical and financial progress of the project.
- A new Project titled “Socio-Economic Empowerment of Women Micro-Entrepreneurs with a Special Focus on Mushroom Cultivation: A Sustainable Livelihood Option” was awarded to Rajagiri College of Social Sciences, Cochin, Kerala under TDUPW program.

115 Women Beneficiaries have been trained under the various ongoing TDUPW projects aiming 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 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.2700.77 lakhs during September, 2023.
- Sale of items worth Rs. 2419.32 lakhs was realized during September 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.

- NRDC has licensed two new technologies on Indigenous Gold Standard Diagnostic Kit for MDR and XDR-TB to M/s Molbio Diagnostics Pvt Ltd; ANKUSH- a new silkworm bed disinfectant to M/s Healthline Pvt Ltd during September 2023.
- NRDC has collected premia of Rs. 10.00 Lakhs from respective technologies during September 2023.
- NRDC has signed six MoAs for technology commercialization with Ram Krishna Dharmarth Foundation ( RKDF) University; Tamilnadu Agricultural University (TNAU), Coimbatore; S.N. Bose National Centre for Basic Sciences (SNBNCBS); Maulana Azad National Institute of Technology, Bhopal, MP; Central Institute of Petroleum Engineering and Technology (CIPET), Raipur and Council of Scientific & Industrial Research(CSIR).

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