

**Subject: MONTHLY SUMMARY FOR THE CABINET (For the month of March 2024)**

**Major achievements during the month of March 2024**

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

**New Technologies/Processes Developed/Transferred**

- **CSIR-CDRI**
  - Process developed for:
    - Amino Acids based Poly(ADP-ribose) polymerase (PARP) Inhibitors.
    - Asymmetric ring opening of Vinyl Aziridines by Carboxylic Acid.
  - Technology developed for first-of-its kind oral pill to fasten bone healing process.
- **CSIR-CFTRI**
  - Technology transferred for:
    - Green pepper in brine to Mrs. Aruna A K., Chikkamagaluru, Karnataka.
    - Production of millet and multi millet semolina to M/s Mothers Agro Foods Pvt. Ltd, Ernakulam, Kerala.
- **CSIR-CIMAP**
  - Technology developed for Essential Oil based Soap under CSIR-Aroma Mission.
- **CSIR-CLRI**
  - Technology developed for:
    - Integrated device for odour abatement,
    - Amine based composition and a process for the preservation of hides/skins,
    - Improved stable emulsion and a process for the preparation thereof
- **CSIR-CRRI**
  - Technology developed for:
    - Producing bio binder from biomass
    - E V Charge Software
- **CSIR-CSMCRI**
  - Technology developed for:
    - De-Potash Vinasse with indigenous sulfide oxidising bacteria as a new aquaculture synbiotic "Aquaboost".
- **CSIR-IICB**
  - Technology developed for:
    - Quinoline compounds for the treatment of fatty liver disease
    - A non-invasive system and method for automatic identification of haemorrhagic stroke regions
- **CSIR-IICT**
  - Technology for the preparation of Triacontanol from Crude Rice Bran Wax transferred to Yadavi Technologies Pvt Ltd, Mumbai

- **CSIR-IIP**
  - Developed process for:
    - A hetero structured g-C<sub>3</sub>N<sub>4</sub>/MOF-808 (NIP) photo catalyst for the coupling of CO<sub>2</sub> with benzyl amines and benzyl alcohols to give respectively the corresponding α-amino acids and symmetrical carbonates at room temperature under visible light irradiation.
    - Desulfurization of tire pyrolysis oil (TPO) from waste vehicle and airplane tires.
- **CSIR-NAL**
  - Developed process for continuous synthesis of Lignin blended Polyacrylonitrile polymer based precursor fiber and carbon fiber thereof.
- **CSIR-NIIST**
  - Technology developed for ready to cook tender coconut payasam mix
  - Technology licensed to M/s Aquagri Processing Pvt. Ltd., Manamadurai:
    - Setting up of plant for manufacturing multi-use biodegradable tableware from seaweed, Chitosan, and Carrageenan.
    - Manufacturing leather alternative (Vegan Leather) from seaweed, Chitosan, and Carrageenan.
- **CSIR-SERC**
  - Technology licensed for Textile Reinforced Concrete Prototyping Technology (TRCPT) to M/s. Larsen and Toubro Limited - Water and Effluent Treatment IC, Chennai.

#### **Collaborations/Agreements/MoUs Signed**

- **CSIR-CBRI**
  - MoU signed for Academic and Research interaction with:
    - S. R. University, Warangal Telangana on 10/03/2024.
    - NIRMA University, Ahmedabad on 29/03/2024
- **CSIR-CFTRI**
  - MoU signed with:
    - Milltec Machinery Private Ltd., Bengaluru to support in the establishment of selected secondary millet processing lines on 01/03/ 2024.
    - BAIF Development Research Foundation, Pune to work together to conduct trainings for small-scale food processing initiatives and develop relevant extension aids for the benefit of rural communities on 05/03/2024.
- **CSIR-CIMAP**
  - MoU signed with:
    - Sant Gadge Baba Amaravati University, Amravati, Maharashtra for academic and scientific cooperation on 12/03/2024.
    - Sri Dev Suman Uttarakhand University for Joint research projects thereby mutually using research facilities on 19/03/2024.
  - An Agreement signed with Saajhee Rekha Svayan Sahaayata Samooh, Semra, Chinhat, Lucknow for making Incense Sticks and Fragrant Cones on 13/03/2024.
- **CSIR-CLRI**
  - Signed Consultancy Agreement with:
    - M/s. Pioneer Jellice India Pvt Ltd., Cuddalore, Tamil Nadu towards Preparation of Business Feasibility Report for establishing a Gelatin Manufacturing Plant (using hide/skin) in India on 14/03/2024.
    - Lupane State University, Zimbabwe towards Review of Project Report for Establishing a Pilot Tannery on 27/02/2024.
- **CSIR-CRRI**
  - MoU signed with Engineering Export Promotion Council of India (EEPC India) for Dissemination of steel slag Road Technology of India on 06/03/2024.
  - MoA signed with:
    - Greater Noida Industrial Development Authority (GNIDA) for Functional and Structural Evaluation of Roads, vetting of design and BOQ, Pavement design,

implementation of new technologies, Construction Quality Supervision, Road Safety, Traffic Management Plan and intersection improvement measures, and Training of Engineers and Staff Members on 11/03/2024.

- Bharat Petroleum Corporation Limited (BPCL) for Feasibility study of using Module developed from end-of-life plastic for road and allied construction on 15/03/2024.
- **CSIR-CSIO**
  - Signed MoU with Artificial Limb Manufacturing Corporation of India (ALIMCO) for design, developing manufacturing rehabilitation and assistive technology for Divyangjan.
- **CSIR-CSMCRI**
  - Signed MoU with Sowbhagya Biotech Private Limited for Nano Products for Agriculture Usage and Microbial Fermentation based Biostimulants for Seaweed growth and allied areas.
  - Signed Technology transfer agreement with:
    - Sowbhagya Biotech Private Limited on Process Know-how for the production of refined kappacarrageenan from kappaphycus alvarezii via semi refined kappa carrageenan.
    - Sudh Biotech Pvt Limited on De-Potash Vinasse with indigenous sulfide oxidising bacteria as a new aquaculture synbiotic "Aquaboost".
- **CSIR-IHBT**
  - MoU signed with:
    - Ayurfresh Green LLP, Mathura Road, Delhi to undertake joint collaboration in the area of essential oils on 06/03/2024.
    - M/S Aaromya, Panchkula, Haryana, to undertake joint collaboration in the area of essential oils on 08/03/2024.
- **CSIR-IICB**
  - MoU signed with Central Council for Research in Ayurvedic Sciences - Central Ayurveda Research Institute, Kolkata on:
    - Chemopreventive Effects of Opuntia elatior Fruits Against Chemotherapy-Induced Toxicity in Ovarian Cancer Pre-Clinical Models
    - Evaluation of Neuroprotective potential of Brahmi Ghrita, Panchgavya Ghrita and Ayush 56 in epilepsy model, its functional significance and mechanism.
- **CSIR-IICT**
  - MoU signed with:
    - Anurag University, Hyderabad, to promote cooperative research and to facilitate the exchange of ideas, the development of new knowledge, and to enhance high quality research acumen on 22/03/2024.
    - Rettenmaier India Pvt. Ltd. for development of Durable and Compostable products based on natural fibres from JRS.
    - Royal Melbourne Institute of Technology (RMIT) for Joint Research Program, Joint PhD and R&D programme on 16/03/2024.
    - French Institutions (Centre National de la Recherche Scientifique (CNRS), University of Rennes (URI), The Ecole Nationale Supérieure de Chimie de Rennes (ENSCR), The Institute National des Sciences Appliquées de Rennes (INSA-Rennes)) for Indo-French Joint Laboratory Program, Indo-French Joint Laboratory for Natural Products and Synthesis towards Affordable Health "LIA NPSAH" for joint R&D, exchange of scientists, exchange of students, organizing joint conferences and workshops
  - Signed agreement with:
    - Asian Azoles Pvt Ltd for development of catalytic process for the preparation of 3-methoxy propiophenone and 4-hydroxy propiophenone.
    - Yadavi Technologies Pvt Ltd for development of Process Knowhow for the preparation of Triacontanol from Crude Rice Bran Wax.
    - ChemRix biosciences for screening and development of novel solid forms of Nicotinamide Riboside Chloride (NRCI).
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- **CSIR-IIIM**
  - Signed MoUs on 16/03/24 with:
    - NHAI to take up the implementation of plantation project of lavender crop along Ramban to Banihal (NH-44).
    - Himalayan Essential Oils Producer Company Limited (HEOPCL) to explore the possibility of aromatic crops extension and value addition and also work on the scientific validation of the herbal products of HEOPCL.
    - Anphar Laboratories for synthesize the identified Active Pharmaceutical Ingredients for the Anphar and also work upon the drug intermediates.
    - JK Aroma to perform the animal studies for the identified herbal products of the JK aroma.
- **CSIR-IIP**
  - Signed MoU with:
    - UCOST, Dehradun to deploy the pine needle-based fuel making technology in Champawat on 05/032024
    - IIT, Roorkee for Academic and Joint Research Programs
- **CSIR-IITR**
  - Signed MoU with:
    - King George's Medical University (KGMU), Lucknow, for sharing a common desire to extend and strengthen the functional relationship 06/03/2024.
    - Vimta Labs Limited (VIMITA), Hyderabad, for foster collaborative research programs to provide advancement in scientific and technological knowledge on 08/03/2024.
    - Waters Pacific Pte Ltd, (Waters) Bangalore, for analysis of contaminants (including PFAS) and compound hazardous to the human health in food chain and the environment with waters technology on 14/03/2024.
    - Utter Pradesh State Institute of Forensic Science (UPSIFS), Lucknow for Educational Activities, Research Collaboration, Training of Professionals, Exchange of faculties expertise and Students of both institutions on 22/03/2024.
- **CSIR-NAL**
  - Signed MoU with IIT Roorkee to promote co-operation in the field of Space Science and Technology on 11/03/2024
- **CSIR-NBRI**
  - Signed Agreement with NASF (National Agricultural Science Fund) under ICAR, New Delhi, for the Effects of abiotic and biotic factors on secondary metabolite profiles of Rauwolfia serpentine and Tribulus terrestris: Optimizing cultivation strategies in different agro-climatic regions of India on 05/03/2024.
  - Signed of MoU with DBT, New Delhi, for the project entitled Development of Bioelectronic Sensor Technology Coupled with High-throughput metabolomics for quality control of Jatamansi: An economically important medicinal plant on 06/03/2024.
- **CSIR-NEIST**
  - Discovered a new plant species '*Begonia Narachari*' in Arunanchal Pradesh.
- **CSIR-NIIST**
  - Signed MoU with
    - Institute of Chemical Technology (ICT), Mumbai for Feasibility assessment of agro-residue for ethanol production using ICT's proprietary technology, using different biomass hydrolyzing enzyme cocktails.
    - Vikram Sarabhai Space Centre, Thiruvananthapuram to jointly explore and undertake collaborative research and development activities in areas of mutual interest.
    - Defence Research & Development Laboratory, Defence Research and Development Organization (DRDO) to jointly explore and undertake collaborative research and development activities in areas of mutual interest.
    - CHRIST (Deemed to be University), Bengaluru to establish a mutual framework governing the respective organisational relationships, responsibilities, and activities while carrying out the research collaboration.

- **CSIR-SERC**

- Signed MoU with PSG Institute of Technology and Applied Research, Coimbatore, for Intellectual cooperation, scholarly exchange, and development of national partnership in the major research areas related to structural engineering on 14/03/2024

**Patents Update**

Patents Filed			Patents Granted			Patent Prosecutions	
India	Abroad* (Unique Patent Application)	Abroad (Multiple Countries) *	India	Abroad* (Unique Patent Application)	Abroad (Multiple Countries) *	India	Abroad*
36	21	30	41	09	09	37	140

\* Data reported to IPU during March 2024 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-CDRI**

- Common Research and Technology Development Hub (CRTDH) provided consultancy for new drug product development to one MSME in the Pharmaceuticals sector.
- Animal Facility Laboratory: The CPCSEA (Committee for the Purchase of Control and Supervision of Experimental Animals) approved that experimental animals (502 Nos.).
- Sophisticated Analytical Instrument Facility: Provided service for analysis of samples by IR Spectroscopy, Liquid Chromatography–Mass Spectrometry (LC-MS), NMR Spectroscopy [FT NMR], Electrospray Ionization Mass Spectrometry (ESI-MS), and High-Performance Liquid Chromatography (HPLC). In March 2024, a total of 177 external samples of 50 users were analyzed.

- **CSIR-CRRI**

- Investigation to ascertain cause of development of potholes and suggest remedial measures between KM 132.000 to KM 158.000 NH-25 for NHAI.
- Evaluation of Pavement Design of NH-08 in the State of Tripura for M/s Satish Prasad.
- Review of pavement design for Six laning of Chengala to Neeleshwaram Section of NH-17 (New NH-66) from ch. 56+200 to ch. 93+468 under Bharatmala Pariyojana in the State of Kerala on Hybrid Annuity Mode for NHAI.
- Pavement and mix design for Marshaghai-Jamboo Road, Kendrapada, Odisha sing existing Road Material for PWD
- National Greenhouse Gases Inventory for Road Transport Sector-(BTR1 & BUR4) Fourth National Communication for Ministry of Environment and Forest & Climate Change

- **CSIR-IITR**

- Analyzed drinking water sample sponsored by Northern Coal Fields Limited, Jayant, Singrauli, UP.

- **CSIR-NAL**

- Supply (design and fabrication of scaled models of NASM-MR (LV&CV)) for force and moment, hinge moment and air intake characteristics funded by Research Centre Imarat, Hyderabad.
- Quasi static and dynamic evaluation of firefly micro satellites funded by Pixxelspace India Private Limited.
- DELS facility maintenance and update for claw evaluation of LCA variants funded by ADA, DRDO.

- **CSIR-NCL**

- Supply of microbial cultures and allied services to industries and academia
- **CSIR-NML**
  - Thermo mechanical Processing and Cold rolling of Medium Carbon High Manganese Alloy steels with precise control of heat treatment parameters have been carried out on the samples provided by the sponsored agency (Tata Steel).
- **CSIR-SERC**
  - Monotonic Fracture Tests on Full Scale Notched Pipe Welds to Study the Effect of Thermal Ageing on its Fracture Behaviour.
  - Experimental Investigations on 5.3 m Wide 200 Ft Span Single Lane Modular Steel Bridge Without Walkway Under 70R Loading.
  - Wind tunnel investigation on aero elastic models of 150 m tall RC chimneys - for 7 x 210 MW and 1 x 250 MW Raichur Thermal Power Station.

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

- **CSIR-CBRI**
  - Conducted skill development training programme for Innovative Building Construction Systems during 13-15/03/2024, 26 participants.
  - Organised Visit for the Students of NITTTTR, Chandigarh & SPA New Delhi on 21/03/2024, 28 participants.
- **CSIR-CDRI**
  - Conducted Skill Development Program (SDP):
    - For students pursuing Postgraduate courses, 03 Participants.
    - On Pharmaceutical Product Development and Quality Control, 10 Participants.
  - Student Scientist connect program organized for the students of:
    - Wards of 59th Vahini Sashastra Seema Bal (SSB), Nanpara, Bahraich (UP), 25 participants.
    - Amity Institute of Biotechnology, Amity University, Lucknow (UP) on 11/03/2024, 33 participants.
    - Maharishi University of Information Technology (MUIT), Lucknow (UP) on 12/03/2024, 53 participants.
    - I. P. Post-Graduation Collage, Bulandshahar (UP) on 13/03/2024, 30 Participants.
    - Amity University, Lucknow (UP) on 18/03/2024, 35 participants
    - Nandini Nagar Mahavidyalaya, Gonda (UP) on 22/03/2024, 55participants
    - Jhunjhunwala PG College, Ayodhya (UP) on 27/03/24,46participants.
- **CSIR-CECRI**
  - Conducted Skill Development Training Programme on:
    - Paints and Coatings for Corrosion Protection: Marine, Industrial and Decorative Application during 18-22/03/2024, 47 participants.
  - Training cum Lab Visit programmes were organised for Chidambaram College, Tuticorin and Government arts college, Chidambaram on 20/03/2024; 22 &70 participants respectively.
- **CSIR-CFTRI**
  - Conducted Skill Development on Processing of:
    - Tamarind and Value addition during 04-05/03/2024 & 11-12/03/2024, 38 participants.
    - Processing of Millets for Value Added Products during 26-28/03/2024, 15 participants.
- **CSIR-CGCRI**
  - Conducted skill development program on:
    - Ceramic Membrane and Water technologies during 06-07/03/2024 & 19-20/03/2024; 20 &18 participants respectively.
    - Principles and Application of ICP-AES, UV-Vis Spectrophotometer, Atomic Absorption Spectrophotometer, Ion Meter and Classical Analysis for Chemical

- Characterization of Glass, Ceramic and Allied Materials during 12-13/03/2024, 16 participants.
- Functional and Quality Control of Ceramic Raw Material in Tile Body was held by CSIR-CGCRI Naroda Centre during 21-22/03/2024; 36 participants.
- Organised Student-Scientist Connect program at Amlajorah High School, Kanksa-1, Paschim Bardhaman, West Bengal on 22/03/2024.
- **CSIR-CIMAP**
  - Organized training programme on:
    - Cultivation of medicinal and aromatic plants during 11-15/03/2024 & 18-22/03/2024; 41 & 28 participants respectively.
    - Sustainable cluster development for the farmers of Barabanki Cluster 19-21/03/2024.
- **CSIR-CLRI**
  - Conducted training program on making pencil pouches, sling bags and office file folders etc. at DSP-Mahila Samaj, Durgapur during 09-22/03/2024, 16 participants.
  - Organized visit for:
    - Prathysha Engineering College, Thiruvallur on 15/03/2024, 72 participants.
    - Rural schools from Udumalaipet, Coimbatore on 20/03/2024, 110 participants.
  - MSME-funded Management Development Programme (MDP) on:
    - The benefit of the leather industry in Kolkata leather cluster on 05/03/2024
    - Change Management for Technological Advancements for Greener Leather Sector, Stakeholders of leather and allied industries participated.
  - MSME-funded Entrepreneurship cum skill development (E-SDP) programme on:
    - Gait Analysis and Leather Processing and Testing & Calibration for Leather Sector completed on 07/03/2024 & 15/03/2024 after 06 weeks respectively.
    - Waste Management for Leather Sector and Testing and Calibration for Leather Sector completed on 19/03/2024 after 06 weeks.
    - Leather Processing at Regional Centre Jalandhar completed on 07/03/2024 after 06 weeks.
    - Leather & Non-Leather Goods Manufacture at Regional Centre, Kolkata completed on 22/03/2024 after 06 weeks, 27 participants.
  - MSME funded Advanced Management Development Program (A-MDP) for:
    - The top management of the industries was commenced on 18/03/2024 for a week at the Regional Centre Jalandhar.
    - Leather Sector commenced on 07/03/2024 for five days.
  - MSME-funded Entrepreneurship Awareness programme (EAP) for:
    - Arasu College of Arts and Science for Women, Karur on 02/03/2024.
    - Brainware University, Kolkata on 06/03/2024.
    - Rayat Bahra Group of Institutions (RBI), Punjab at Regional Centre, Jalandhar.
- **CSIR-CRRI**
  - Conducted training program on:
    - New Technology Initiatives in Rural Roads including use of marginal material during 04-08/03/2024, 31 participants.
    - Planning for Sustainable Transport System for Smart Cities during 19-21/03/2024, 08 participants.
- **CSIR-CSMCRI**
  - 20 tons seed biomass of *Kappaphycus alvarezii* was distributed to 20 beneficiaries identified from Mandapam region on 02/03/2024 and Rameswaram region on 20/03/2024 in the presence of Deputy Director Fisheries, Ramanathapuram, Department of fisheries and fishermen welfare Govt Tamil Nadu.
- **CSIR-4PI**
  - Organised Scientist-Student Interaction for Morarji Desai Residential School in Anumanahalli, Ramanagar District on 06/03/2024, 54 participants.

- **CSIR-IHBT**
  - Organized training programme on:
    - Plant Tissue Culture for the staff of the Department of Horticulture, Himachal Pradesh during 01-15/03/2024
    - Imparting technical support for Cultivation of lavender to the farmers of Bharmour region in Aspirational District of Chamba.
    - Aromatic plants for Horticulture Department, H.P on 12/03/2024, 09 participants.
    - Aromatic and Medicinal plants, their agricultural and processing technologies for Carrier Point University, Hamirpur, HP on 15/03/2024, 13 participants.
    - Plant Tissue Culture for Horticulture officers of Biotechnology Dept. during 01-15/03/2024.
  - Organised visit of:
    - DAV Public School, Sunder Nagar, Mandi, Himachal Pradesh and 5 KAMP NASTA National and State Toppers on 20/03/2024, 45 participants.
    - Sanatan Dharma College, Hoshiarpur, Punjab on 07/03/2024, 07 participants.
    - Career Point University, Hamirpur, Himachal Pradesh on 06/03/2024.
- **CSIR-IICB**
  - Organized training program at Charigram Sri Ramkrishna Ashram Adarsha Balika Vidyalaya, Raghunathpur, Kolkata on 21/03/2024.
- **CSIR-IICT**
  - Skill Development training program on Basic Certificate course in Bioinformatics & Cheminformatics during 04-15/03/2024, 22 participants.
- **CSIR-IIIM**
  - Organised outreach program for:
    - Army Goodwill School, Wayne, Kupwara in Kashmir Region on 14/03/2024, 80 participants.
    - JNV Gharota to educate students about water quality for safe drinking water on 22/03/2024.
  - Conducted Skill Development program on:
    - Natural Products and Medicinal Chemistry during 29/02/24 to 02/03/24.
    - Basic Techniques in Drug Discovery and Development during 05-07/03/24, 11 participants.
    - Biomedical Research and Drug Discovery (Biological assays cell-based and Mice Experiments during 06-08/03/24, 09 participants.
    - OECD Principles in GLP during 11-13/03/24, 55 participants.
    - Tissue Culture Techniques during 14-16/03/24), 30 participants.
    - Cloning and Protein Expression during 16-20/03/24.
    - Industrial Microbiology during 16-20/03/24, 18 participants.
  - Distributed 90,000 Lavender plants at Chamalwas, Banihal, Ramban district in UT of J&K under CSIR-AROMA mission, among 50 farmers.
  - Distributed 3.5 lacs of Lavender QPM to the farmers of eight different districts of Kashmir, under CSIR-AROMA mission. The material will serve for cultivation of Lavender at an area of about 58 acres.
- **CSIR-IIP**
  - Organised visit for:
    - DIT, Dehradun on 05/03/2024, 22 participants.
    - Scientists from DRDO on 06/03/2024, 41 participants.
  - Organised Fulbright Outreach program for the Students, Project Staff, Research Fellows, and Permanent Staff on 14/03/2024.
- **CSIR-IITR**
  - Organised Skill Development Programme on Nanomaterial Characterisation during 12-13/03/2024, 30 Participants.



- **CSIR-NAL**
  - Organized visit of students from Morarji Desai Residential School, Ramanagara on 05/03/2024.
- **CSIR-NBRI**
  - Organized visit of Rajkiya high school, Gillauli, Gonda on 14/03/2024, 84 participants.
  - Conducted training on dehydrated floral crafts at Mahayogi Gorakhnath University, Gorakhpur on 09/03/2024, 72 participants.
- **CSIR-NGRI**
  - CSIR Integrated Skill Initiative Program on Advanced Training Programme on Analytical Geochemistry during 04-13/03/2024, 30 participants.
- **CSIR-NIIST**
  - Conducted Skill training program on Dye Sensitized Solar Cells: Fundamentals, Device Fabrication, Characterizations and Applications during 04-08/03/2024.
- **CSIR-NML**
  - Virtual lab integration for school students:
    - Micro Project Training during 18-22/03/2024, 45 participants.
    - Science and Maths Club (Stem - Club) on 21/03/2024, 50 participants
- **CSIR-SERC**
  - Customised Short-Term Course for Civil Executive Trainees of NTPC during 11-23/03/2024, 27 Participants.
  - Conducted training Programme on Instrumentation, Field Investigations and Longitudinal Force Evaluation and Mitigation Techniques for Railway Bridges for RDSO and Railway Officials during 21-22/03/2024, 27 Participants.

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

- **CSIR Headquarters**
  - CSIR participated in the ChemTECH World Expo 2024 at Mumbai Exhibition centre, Goregaon, Mumbai during 04<sup>th</sup>-07<sup>th</sup> March 2024.
  - 7<sup>th</sup> CSIR-AMRIT Lecture on Linking universities, research institutes and industry: Learning from the past, shaping the future delivered by Prof. K. VijayRaghavan, Former Principal Scientific Adviser to the Government of India on 20/03/2024.
  - CSIR-HRDC conducted Induction Programme for Newly Recruited Scientists from 04-13/03/2024
- **CSIR-CBRI**
  - Organized a National Conference on Natural Hazards & Build Better for Risk Mitigation (AES- 2024) in collaboration with Indian Society of Earthquake Science, and Dept. of Earth Sciences, Indian Institute of Technology, Roorkee on 28/03/2024.
- **CSIR-CDRI**
  - Organised Symposium on GLP Studies: Requirement for IND Submission on 26/03/2024.
- **CSIR-CSIO**
  - Organised 5th India International Seaweed Summit and Expo 2024 Bhavnagar, jointly with Indian Chamber of Commerce at India International Centre, New Delhi during 19-20/03/2024.
- **CSIR-IICT**
  - Organised International symposium on Nature Inspired Initiatives in Chemical Trends (NIICT-2024) during 07-09/03/2024.
- **CSIR-IIIM**
  - Organised Purple Revolution with AgriTech Start Up exhibition & laid groundwork for prosperous & eco-friendly future for Doda's farmers & beyond on 09/03/2024 at Doda, UT of J&K.
- **CSIR-IITR**
  - Organized conference on Women in Academia, Research and Management of Toxicology & Health-Wellness (WARM-TH 2024) King George Medical University

(KGMU), National Institute of Pharmaceutical Education and Research (NIPER) Raebareli and Association of Food Scientists and Technologists of India (AFSTI) Lucknow Chapter.

- **CSIR-NBRI**
  - Organized a special scientific session on Stress Relief on Daily Basis: Medical Impact of Plant Based Molecules on 13/03/2024.
- **CSIR-NCL**
  - Conducted National Safety Week-2024 during 04-10/03/2024.
  - International, Conference cum workshop, resource development of medicinal and floricultural orchids -lab techniques to entrepreneurial ventures and orchid show (hybrid mode)
- **CSIR-NIIST**
  - Organised Hands on Training Workshop in Fluorescence Spectroscopy, Confocal Fluorescence/Raman Microscopy and Cellular Imaging on 05/03/2024, 25 participants.

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

- **CSIR-CDRI**
  - Dan Goldberg PhD, Senior Program Officer, Drugs Team | Discovery & Translational Sciences, Global Health, Bill & Melinda Gates Foundation visited and reviewed the progress being made in the Non-hormonal contraceptive program funded by the BMGF.
- **CSIR-IICB**
  - DFG delegates, led by Dr. Franziska Langer, the Director of the German Research Foundation (DFG) in India, along with Dr. Vaibhav Agarwal, Deputy Director of DFG (India office), and Prof. Dr. Daniel Frost from the University of Bayreuth visited on 28/04/2024.
- **CSIR-IICT**
  - Shri G. Kishan Reddy, Hon'ble Union Minister of Culture, Tourism and DoNER and Dr. Jitendra Singh, Hon'ble Union MoS (Independent Charge) Science & Technology, MoS Vice President, CSIR laid Foundation stone setting up the Science Experience Centre at the CSIR-IICT Campus on 04/03/2024.
  - Smt Smita Sabharwal, IAS graced the occasion and inspired in a lively interactive session on International Women's Day (08/03/2024).
  - Israeli Delegation (Lt. Col. Gil Elmalem-Dy. Defence Attache and R&D Attaché, Embassy of Israel in New Delhi, Mr. Golan Uria Malka- Head, Ms. Hannah Miriam Katz- Director of International Cooperation, Mr. Alon Kurtsman and Ms. Limor Horovitz from Dual-Use Innovation Unit, DDR&D, Israel) visited on 20/04/2024.
  - Indo-French Delegation (H.E. Dr. Thierry Mathou - Ambassador of France to India, Mr. Thierry Berthelot - Consul General of France in Bangalore, Mr. Pascal LOREAU - Head of Bureau de France in Hyderabad, Dr. François-Xavier MORTREUIL - Attaché for Scientific and Academic Cooperation in Bangalore and Mr. Bertrand DE LA FOREST DIVONNE - Head of Regional Economic Service (SER) in Bangalore) visited on 28/03/2024.
- **CSIR-IIIM**
  - Dr. Jitendra Singh, Hon'ble Union MoS (Independent Charge) Science & Technology, Vice President, CSIR visited on 16/03/24 for the occasion of MoU execution ceremony.
- **CSIR-IITR**
  - Her Highness Pramoda Devi Wadyar, Maharani of Mysuru, visited as a Chief Guest in Women in Academia, Research and Management of Toxicology & Health-Wellness (WARM-TH 2024) conference on 06/04/2024.
- **CSIR-IMMT**
  - Principal Secretary to the Prime Minister; Shri Parmod Kumar Mishra visited the CSIR-Institute of Minerals and Materials (CSIR-IMMT), Bhubaneswar, on 01<sup>st</sup> March, 2024

- **CSIR-NIIST**
  - Kerala State Suchitwa Mission team lead by the Executive Director, Mr. U.V Jose IAS (Retd) and Mrs. Ganga, Director Solid waste management visited 01/03/2024.
  - Prof. G. D Yadav, Emeritus Professor of Eminence and Former Vice Chancellor and R.T. Mody Distinguished Professor J.C. Bose National Fellow (Govt. of India) visited on 22/03/2024.

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

- **CSIR-NCL**
  - Ongoing project related to Sewage surveillance for SARS CoV2 surveillance (2)As part of divisional project entitled " Discovery & Pre-clinical Development of Antivirals for COVID-19 & Other Diseases (HCP-41)", synthesized 60 novel analogs of GC-14 (known Mpro inhibitor). Among these 60 compounds, 35 were found to be potent antivirals (with >95% viral inactivation at 1 micro-molar concentration), two of them were shortlisted for further PK, ADME (in vivo) investigations.

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

- **CSIR-CIMAP**
  - Celebrated CSIR-CIMAP Foundation Day -2024 on 26/03/2024.
- **CSIR-CRRI**
  - The International Women's Day celebrated during 08-15/03/2024 for celebrating the social, economic, cultural and political achievements of women.
- **CSIR-CSMCRI**
  - CSIR-CSMCRI has celebrated the International Women's Day 2023 in March 2024.
  - 53rd National Safety Daycelebrated on 04/03/2024.

#### **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 expenditures by Industry (under section 35(2AB) of IT Act).

#### **Industrial R&D Promotion Programme (IRDPP)**

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

- 39 in-house R&D units of industries were granted fresh Recognition and 39 were granted fresh Registration certificates.
- 36 in-house R&D units of industries were granted renewal of Recognition and 36 were granted renewal of Registration certificates.

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

- 2 SIROs were granted fresh Recognition and 1 was granted fresh Registration Certificates.
- 68 SIROs were granted renewal of Recognition and 41 were granted renewal of Registration Certificates

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

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

**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)**

One innovation project namely 'Any time medicine dispensing machine' was reviewed during the period. Two new projects namely 'Point-of-Care Test for Blood Placental Growth Factor to Improve Early Detection of Preeclampsia in Low Resource Settings' and 'Development of Battery thermal management system (BTMS) to enhance Lithium-ion Battery (LIB) safety' were sanctioned during the period. Two projects namely 'Sustainable space cooling solution' and 'Development of Enhanced Potato Yield using Tuberonic Acid based novel approach' were successfully completed during the period.

### **A2K+ Events:**

A Technical Advisory Committee (TAC) meeting was held on 19<sup>th</sup> March 2024 to evaluate the proposals received under A2K+ Events. A total of 17 proposals were evaluated. The Advisory Committee recommended 3 Proposals for further consideration.

### **A2K+ Studies:**

Two Studies projects namely "Techno-Commercial Assessment of TRL-6 and above technologies developed in India in academia, research labs and industry" supported to Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi and "Study of specific areas registering high failure rate of distribution transformers to analyze the cause of failure and suggest a solution to overcome this problem by applying IT technology and integrating it with metering solutions" supported to PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur were reviewed during the period.

A Technical Advisory Committee (TAC) meeting was held on 20<sup>th</sup> March 2024 to evaluate the applications received under A2K+ Studies call for proposals. A total of 49 proposals were evaluated under three themes addressing societal challenges, research priorities, and national visions.

### **A2K+ TDUPW:**

- Celebration of International Women's Day (IWD) 2024: IWD2024 program was conducted on 8<sup>th</sup> March 2024 on the theme "Invest in Women: Accelerate Progress", in collaboration with PSGR Krishnammal College for Women, at Coimbatore. The program also marked

inauguration of TDUPW- Skill Satellite Centre at PSGR Krishnammal College for Women Coimbatore District, Tamil Nadu supported under TDUPW/A2K+ scheme of DSIR. This centre will provide the technological intervention and capacity building to women on food processing, fortification and value addition utilizing raw material from local rural areas and also financial literacy and enterprise development training.

- A project "Technology Intervention for Product Diversification in Handloom Weaving to Promote Capacity Building for Livelihood Security of Women Artisans" was awarded to Department of Textiles and Apparel Designing, Assam Agricultural University (AAU), Jorhat. The project will cover a total 300 women of 8(eight) villages of Titabar subdivision of Jorhat district.

**338 rural** women were imparted technological capacity building and training in the field of food processing (Production of Jam, Pickles, Bread-Spread, Squashes, Juices), sericulture, mushroom cultivation & value-added products and paper recycling under various ongoing projects of TDUPW program of DSIR.

## **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 through its own R&D efforts and 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.6621.34 lakhs during the month of February.
- Sale of electronic components/systems/SPV products worth Rs.9214.10 lakhs was realized during the month of February.

### **National Research Development Corporation (NRDC)**

The Corporation continued to lay emphasis on broadening and strengthening the technology resource base by nurturing long-term relationships with R&D institutions, Universities as well as industry.

- During the period, the corporation licensed 6 technologies to various industries for commercialization:
  - I. Multigrain High Protein Mix to M/s Softbio
  - II. Antifungal Ointment to M/s Manikstu Agro
  - III. Air Conditioner and Water Generator System to M/s Sun Teknolozy Pvt. Ltd
  - IV. Varshini 2 - An air conditioner and water generator to M/s Sun Teknolozy Pvt. Ltd
  - V. Bread (9 Varieties) to M/s TropBon
  - VI. Rot-Fix: a Broad Spectrum Environment Friendly Formulation for Control of Root Rot Disease in Mulberry to M/s Rainbow Agrovet Seri Technologies
- During the period the corporation signed 4 MoAs with IIT, Guwahati, Vellore Institute of technology (VIT), Karnataka State Council for Science & Technology and Cambridge Institute of technology.
- NRDC and USPTO organised International Symposium on "IP commercialization for a Sustainable Future" at Cambridge Institute, Bengaluru

The corporation collected a premium of Rs 6.65 Lakhs towards licensing of technologies to industries during the month.

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