

No. DSIR/MS/2023/04
Government of India
Ministry of Science & Technology
Department of Science & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of April 2023)
(Part-I Unclassified)

Major achievements during the month of April 2023

Council of Scientific & Industrial Research (CSIR)

New Technologies/Processes Developed/Transferred

- **CSIR-CDRI**
 - Novel substituted aminopyridines as 5-hydroxytryptamine receptor modulators and uses thereof
- **CSIR-CEERI**
 - Optimization of submicron feature size structures is done using Laser lithography system (nanoscribe), used for fabrication of metamaterial structures for development of IR filters
- **CSIR-CFTRI**
 - Developed following process:
 - Instant products from moringa leaves for M/s Shri Shaila Organics, Bangalore.
 - Tamarind juice for M/s North BastarVanopaj Producer Company Ltd., C/o Kamal Kishor Koushik, Uttar Bastar (Kanker).
- **CSIR-CSIO**
 - Transfer of Technology of UV-C to M/s Sidwal Refrigeration Pvt. Ltd, Faridabad
- **CSIR-CSMCRI**
 - Developed following process:
 - Cultivation of *Salicornia brachiata* for generating higher biomass for value addition to M/s. Jagran Pehel, Kanpur and Mr. Hamza Taher Burhani, Surat.
 - Process know-how for production of solvent- resistant membrane and transfer to Permionics Membranes Pvt Ltd, Vadodara.
 - *Kappaphycusalvarezii* Sap, its method of production from seaweed as basic raw material, and its application to M/s SwaproAgritech LLP, Varanasi.
- **CSIR-IICT**
 - Process for, "Dimerization of Soya Fatty Acids" was conducted at 1 Kg/batch scale to Biopharma Labs, Hyderabad
 - Process for Solvent free and tin free Aliphatic and Aromatic Urethane acrylate (250g batch) to Sai Lifesciences, Hyderabad
- **CSIR-IIP**
 - Developed a New Variants of the re-formulated LPG Sweetening Catalyst – Thoxcat ES for the M.E. market – BPCL (SSP -0092) for optimization to get maximum yield of the flow improver synthesis using commercial grade reactants and solvent using DMC catalyst for the synthesis of polyether polycarbonate polyols. The sweetening catalyst – Thoxcat ES has been commercialized in the Middle East (M.E.). The reformulated catalyst has the capability to handle carryover issues and has been

accepted in ORPIC, Oman and Aramco, Saudi Arabia for regular consumption in 2020. Due to large market share of the catalyst particularly in the M.E., CSIR IIP and BPCL jointly agreed to develop an alternative variant for supply security to the middle east.

- Sign Licensing agreement on Improved Jaggery Making Plant with Freyr Foods Pvt. Ltd. Muzaffarnagar, U.P
- **CSIR-SERC**
 - Textile Reinforced Concrete Prototyping Technology for TRC Liner Production was licensed to M/s. Archana Blocks, Tamilnadu on 03 April 2023

Collaborations/Agreements/MoUs Signed (National)

- **CSIR-Hqrs**
 - CSIR & Oil India Limited (OIC) signed an umbrella MoU for collaborative R&D on energy research, establishment of Research facilities and for capacity building.
- **CSIR-CBRI**
 - An MoU was signed with SAIL at Durgapur on 15.04.2023 for research & development collaboration in various areas of mutual interest for design of green steel intensive utility structure/ building using SAIL structural, Life-cycle costing and assessment.
 - Signed agreement with M/s Antara Purukul Senior Living Limited P.O. Sinola, Dehradun, Uttarakhand on April 1, 2023 to undertake the work of Investigation of Seepage Issues in Antara Buildings and Recommendations for Appropriate Remedial Measures.
- **CSIR-CCMB**
 - Signed an agreement with Indian Pharmacopia Commission (IPC)-for Development of Primary reference standards for Bio therapeutics, Monographs for Monoclonal antibodies and DNA Barcode for medicinal Plants as per the requirement of IPC.
- **CSIR-CDRI**
 - An MoU was executed with Dr. Harisingh Gour Vishwavidyalaya, Sagar, Madhya Pradesh MoU on 19-04-2023 to promote institutional linkage between to explore other avenues for possible collaboration.
- **CSIR-CEERI**
 - MoU signed with VNIT Nagpur regarding project on "Thermal ribbon sensor" on 29-03-2023.
- **CSIR-CIMAP**
 - Signed an Agreement for market seeding of CSIR-CIMAP research based herbal products/formulations with M/s. Nirmal Nature, Gurugram, Haryana for marketing of Lip Balm, Acne Preventive Facewash, Kleenzie Herbal Facewash, Geranium Active Shampoo
- **CSIR-CIMFR**
 - Signed an Agreement with SCI-COM Software India Private Limited, Pune for Collaborative Research on 05.04.2023
- **CSIR-CMERI**
 - MoU signed on 26/04/2023 between CSIR-CMERI-CoEFM, Ludhiana and Emphyrean Global, BPCL Petrol Pump, Sangrur for providing its expertise towards 'Development and Manufacturing of Bio Bitumen'.
- **CSIR-CRRI**

- A MoU was signed with Kalinga Institute of Industrial Technology (KIIT), Deemed to be University, Odisha for Academic and Research collaboration in the areas of mutual interest on 03.04.2023.
- **CSIR-CSMCRI**
 - Prediction of impact on aquatic environment due to increase in permissible limit of COD value in marine discharge near Kantiajal, Gulf of Khambhat, Gujarat with The Central Pollution Control Board (CPCB), Delhi & CSIR-NIO, Goa.
 - Evaluation of Water Consumption per year for the Unit at Veraval and issuance of water consumption certificate with Grasim Industries Limited, Nagda, M.P.
 - Micro algal Biomass Production at a scale of 200 Kg per day at Sambhar Salts, Rajasthan, Hindustan Salts Limited, Mandi and Hindustan Salts Limited, Khadaghoda for its commercialization as vegan protein with Hindustan Salts Limited, Jaipur.
- **CSIR-IICT**
 - Signed following MoUs with
 - IIT Patna to promote cooperative research and to facilitate the exchange of ideas, the development of new knowledge, and to enhance high quality research acumen on 13 April 2023.
 - Instrohut Pvt Ltd for Photo Catalytic Reactor for Heterogenous and Homogenous reactions.
 - Granules India Ltd for Process Know-how for Dicyandiamide
 - PMFAI, Mumbai for Process know-how for Trifloxystrobin
 - PMFAI, Mumbai for Process know-how for Fluxapyroxad
 - Greenew Tech Pvt Ltd to Design of High rate biomethanation technology based on AGR.
- **CSIR-IIP**
 - MoU with Research Triangle Institute Global India Private Limited, New Delhi to Jointly collaborate for the development of business model for Plastic Waste to Transportation Fuel (PWTF) Technology
 - Licensing Agreement signed with M/s Gaskon Engineers, New Delhi on 19/04/2023, in the august presence of Hon'ble Minister of State (Independent Charge) of Ministry of Science & Technology and Earth Sciences, Dr. Jitendra Singh and Joint Secretary, MSME, Smt. Mercey Epao at India Habitat Centre, New Delhi during the MSME meet under the OWOL programme of CSIR-IIP, for the fabrication of commercial scale (2 and 5 TPD) biogas up-gradation plants based on CSIR-IIP's Vacuum Swing adsorption (VSA) technology for the production of Compressed Biogas (CBG) meeting BIS 16087 (2016) specifications for pipeline quality biomethane for CBG or Bio-PNG applications.
 - CBG technology transfer document for the 2 TPD CBG commercial plant was shared with M/s Mailhem Environment Pvt. Ltd., Pune for their upcoming CBG plant at Rudrapur, Uttarakhand.
- **CSIR-NIIST**
 - Technology for the production of crema (coffee) with improved foam retention time- TATA Coffee Limited, Bengaluru
 - The development and commercialization of electrochromic "smart" glasses- Saint Gobain India Pvt. Ltd, Tamil Nadu
 - District Survey Report for Riverbed or sand mining in Kollam District (Kulathupuzha River)-Divisional Forest Officer (DFO), Thiruvananthapuram

Collaborations/Agreements/MoUs Signed (International)

- **CSIR-CCMB**

- Meeting with FXM and CNRS team on April 21, 2023, to discuss Indo-French collaboration in the Lifesciences field.

Patents Update

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	India	Abroad*
07	15	09	04	16	103

* Data reported to IPU, CSIR during April 2023 (till 28 April, 2023).

High impact S&T services offered

- **CSIR-CCMB**

- Provided Molecular Diagnostic Services comprising 225 samples for 204 families
- Optical Sequencing for diagnosis of ISHD patients specifically & standardizing for some other disorders.

- **CSIR-CDRI**

- Common Research and Technology Development Hub (CRTDH): Provided analytical services to two MSME, and consultancy for new drug product development to two Medium-Sized Enterprise in the Pharmaceuticals sector.
- Animal Facility Laboratory: The CPCSEA (Committee for the Purchase of Control and Supervision of Experimental Animals) approved experimental animals (total no. 344) were supplied to outside research organizations for research purpose. In that, 129 were rats and 215 were mice.
- Sophisticated Analytical Instrument Facility: Provided service for analysis of sample by IR (Infrared), Mass, NMR (Nuclear Magnetic Resonance) and EM (Electron Microscopy). In the month of April, total 168 external samples have been analyzed for 31 users.

- **CSIR-CMERI**

- Visual inspection and nondestructive evaluation over critical struacts (RCC capital and Steel) for Sipat super thermal power station, Bilaspur
- DPR preparation with consultancy support for construction, installation & commissioning of Bio Gas plants for West Bengal Zilla Parishad
- Drop test performance evaluation of Pit Bottom Buffers for Pit Bottom Buffers manufacturers.
- Testing of Agricultural machinery and implements, plant protection equipment for Agricultural machinery manufactures.
- ARC for metallurgical investigation to find out the hardness, PMI and RA of high chrome grinding media for CTPS, DVC.

- **CSIR-CRRI**

- Strengthening of Road by Milling and Recycling Process under Division East Road (M-212), Sub Division III. Public Works Department (PWD), Delhi.

- Witness of the Proof of Concept being Executed by Wirtgen at EPE for Restoration of Riding Quality (Phase-I) for Maple Highways, New Delhi
- Assessment of FDR related work executed on PMGSY road (Package UP30122 and UP30132) in Gonda Uttar Pradesh for Rural Engineering Department, Uttar Pradesh
- Assessment of FDR related work executed on PMGSY roads (Package NO. 6089, 6090, 6091 & 6092) in Sant Kabir Nagar Distt. Basti Uttar Pradesh for Rural Engineering Department
- Road Safety Audit of 6755 Kms of Odisha Road Network, Compliance of Road Safety Audit Measures on 2500 Kms, Black Spot Improvement Measures at 49 Stretches and Capacity Building for OWD Engineers for Govt. of Odisha
- Cold application of Engineering Muck Material in Road construction for National Mission on Himalayan Studies (NMHS), Uttarakhand
- Evaluation of "Petrocel" (cellulose fiber pellet) for stone matrix asphalt for AshitaRenewables, Uttar Pradesh
- Artificial Intelligence for Road Safety in Telangana-iRASTE Telangana for INAI Applied Research Center, Hyderabad
- Investigation to suggest Remedial measure/CGBM on specified section (2 Km) of 4 laning on Jammu-Udhampur for Athaang Infrastructure Pvt. Ltd. , New Delhi
- Structural Safety Audit of major bridge over river Yamuna at Benda Ghat in the Raebareilly-Banda Section of NH-232 in U.P. for National Highway Authority of India (NHAI), UP
- Evaluation of Liquid Waterproofing Membrane properties of Tecnopol Product and its durability effect on Bridge Deck. for TecnoCoating Systems Pvt. Ltd., Kerala
- **CSIR-CSMCRI**
 - Technology assessment for edible seaweed production (Monostroma sp.) and seedling production (Gracilaria dura)
 - NALCO, Orissa has sponsored a project for "Scale up studies for the Zeolite 13X Powder technology" for one year.
- **CSIR-IIP**
 - New Coal Tar sample was made TI free for preparing bulk Hybrid Pitch and design and fabrication of high capacity glass reactor for preparing bulk Hybrid Pitch using Petroleum and Coal based feed stocks, in the Project " Development of Coal Tar - Petroleum Hybrid Pitch "; Sponsored by Tata Steel Limited. 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-IITR**
 - Conducted safety evaluation study of Tata Copper Plus (Nano carbonated water-based beverages) sponsored by Tata Consumer Products Limited, Bangalore.
- **CSIR-NAL**
 - Design & fabrication of wind tunnel model of vshorads configuration at NAL-DRDI.
 - Damage monitoring of composite structures using multimode in-situ piezoelectric sensor network 2063 – AR&DB.
 - Thermal performance studies of static (wave and feather) seals - phase III - M/s.Honeywell technology solutions Lab Pvt. Ltd.

- Performance evaluation of expendable engine bearings (ball bearings and roller bearings) – GTRE.
- Service charges for 2D cascade test of a typical small gas turbine engine, turbine NGV and rotor blade mean sections – GTRE.
- **CSIR-NEERI**
 - Green Auditing of Regional Institute of education, National Council of Educational Research and Training.
 - Addressing Vehicular Traffic Induced road dust resuspension with S&T based action plan for air quality improvement in Delhi NCR.
 - Verification of Annual Mine closure activities of Jalapa opencast lignite mines of BLMCL at Balmer district.
 - Assessment of Lead contamination in & around universal Lead Alloys, Vellore.
- **CSIR-NGRI**
 - A short report on activities on Joshimath Land subsidence was submitted to NDMA and USDMA.
 - Under National Geophysical Mapping Program CSIR-NGRI has completed gravity profiling of 1734 Sq.Km, till now with data from 2340 stations.
- **CSIR-NML**
 - Creep and stress Rupture property evaluation of 16mo3 grade material at 530OC Uttam Value Steels Limited (UVSL), Wardha, Maharashtra.

Outreach Activities (Jigyasa, Skill Development, and others)

- **CSIR-Hqrs**
 - CSIR joined hands with the Energy Swaraj Foundation, Atal Innovation Mission, and All India Council for Technical Education (AICTE) in organizing the 'World's Largest Global Climate Clock Assembly and Display' event on 22 April 2023 (Earth Day) to create a massive awareness regarding climate change and the need for corrective actions to mitigate the changing climate. All CSIR Labs participated to organize events and the Energy Literacy Training was completed by staffs of CSIR.
 - Hon'ble Minister of State (Independent Charge) of Ministry of Science & Technology and Earth Sciences, Dr. Jitendra Singh launched CSIR-YUVA Portal, CSIR-JIGYASA App and CSIR AstroLab for Divyangjan students on 17.04.2023.
- **CSIR-4PI**
 - Organized and conducted " VISMAYA VIGYANA SUMMER TRAINING" from April 17th to 22nd 2023. 17 students participated and were given a glimpse of HPC; Climate Modelling; Seismology; GPS & GHG measurements. The students also completed their energy literacy training from energy swaraj foundation.
 - organized VISMAYA VIGYANA YOU-TUBE WEBINAR SERIES on "BIG DATA SEISMOLOGY " by Dr. Anil Earnest on 13th, 20th & 27th April 2023.
- **CSIR-CBRI**
 - NIRD & PR approved National Qualification training cum Accreditation Programme under NSDC on 'General Pest Management-Technician' was organized at CSIR-CBRI, Roorkee on April 17-21, 2023 under the aegis of CSIR Integrated Skill Initiatives. The programme was attended by 23 participants covering different parts of country. The programme aimed to upgrade the latest knowledge & skills of the working professionals using different tools & techniques in the area of structural pest management covering Termites, Mosquitoes, Cockroaches, Bed Bugs, Flies, Rodents, Minor Pests, Weed, Birds & other Vertebrates etc.

- An inaugural lecture under the CSIR-CBRI Exert Lecture Series organized on April 11, 2023 in which Prof Stephen Yeomans, Former Professor, University of New South Wales, Canberra (Australia) delivered a lecture on Galvanised Steel Bars for Concrete Structures- Current Status and Future Development.
- Conducted the "World Earth Day Celebration" with Climate Clock Assembly event under JIGAYASA 2.0 on 22.04.2023 in which more than 150 Students and Teachers from different Schools were participated like (DPS Haridwar, Montfort School Roorkee, Scholars Academy, Anand Swaroop Arya, Bal Vidya Mandir). The event was inaugurated by Dr. R. Pradeep Kumar Ramancharla, Director CBRI,
- **CSIR-CCMB**
 - 2-day event at St Ann's college on AMR awareness on Apr 24-25, conducted Earth Day celebrations with 15 schools in collaboration with CSIR-IICT on Apr 22.
 - Dr Jyotsna Dhawan-Presented a lecture on "The secret life of stem cells" to visiting MSc students from SRM University Chennai on April 19th 2023
- **CSIR-CDRI**
 - Interactive workshop on mental health awareness was organized on 6th April 2023. Dr. Adarsh Tripathi, Professor of Psychiatry at KGMU, Lucknow gave demonstrations, role plays and discussion addressing A key for skill for living a better and stress-free life.
 - Student-Scientist Connect Program under Jigyasa was organized on:
 - 11th April 2023, for the student of "BRD PG College, Deoria (U.P.)". 40 students & 05 staff attended the program and perceived the research on going in the laboratory.
 - 12th April 2023,for the student of " JSS College of Pharmacy (Mysore)". 15 students & 03 staff attended the program & interacted with Scientist activities.
 - 25th April 2023,for the student of " Hygia College of Pharmacy, Lucknow". 24 students & 04 staff attended the program & interacted with Scientist activities.
 - 26th April 2023, for the student of " Hygia Institute of Pharmacy, Lucknow". 45 students & 04 staff attended the program & interacted with Scientist activities.
 - 27th April 2023, for the student of " Vivek College of Technical Education, Bijnour (U.P.)". 50 students & 04 staff attended the program & interacted with Scientist activities.
- **CSIR-CECRI**
 - Conducted Industry Oriented Onsite Tailor-made Special Refresher Training Course on "Batteries for Marine Applications during 11.04.2023 to 13.04.2023. 52 Staffs from Cochin Shipyard Ltd., Kochi, Kerala Participated.
 - Surface coatings for value added products viz. Decorative and functional applications during 17.04.2023 to 21.04.2023.
 - Industrial Wastewater Treatment Technologies during 24.04.2023 to 28.04.2023. 46 participants participated.
 - Organized World's Largest Global Climate Clock Assembly & Display on the occasion of the World Earth Day on 22.04.2023 in association with Energy Swaraj Foundation (ESF), Atal Innovation Mission (AIM), NITI Aayog & All India Council for Technical Education (AICTE). Dr. N. Anandavalli, Director, CSIR-SERC inaugurated the Event and addressed the student. 14 School Students and 5 teachers from schools in and around Karaikudi participated. A Quiz Competition was also conducted for Students on that day.

- The following talks were delivered on Alagappa University Community Radio [90.8 FM] under the Series of Scientific Talks (in Tamil) – VigyanaVinthai Programme during April 2023:
 - "Role of Science and Technology in Nation Building" on 07.04.2023.
 - "Reality of engineering in our country" on 12.04.2023.
 - "History of Nikola Tesla", "Thomas Alva Edison's Life History and Inventions" on 17.04.2023.
 - "Plastics" on 25.04.2023
- Online Quiz Competitions were conducted on the following National/ International Days during April 2023:
 - International Year of Millets 2023
 - World Health Day - 07.04.2023
 - International Day for Monuments and Sites - 18.04.2023
 - World Earth Day - 22.04.2023
 - World Corrosion Awareness Day - 24.04.2023
 - World Intellectual Property Day - 26.04.2023
 - World Day for Safety and Health at Work - 28.04.2023
 - World Veterinary Day - 29.04.2023.

Visit of College and School Students:

- 17 PG Students (Environmental Science) and 4 Faculty Members from Madurai Kamaraj University Madurai visited our Institute on 30.03.2023
- 20 School Students and 4 Teachers from Panchayat Union Middle School, Thalakovur, Sivagangai District visited our Institute on 13.04.2023 and gained valuable insights on the ongoing R&D activities at CSIR-CECRI.

- **CSIR-CEERI**

- Supported the development of Jigyasa App Launched by Hon' Minister Dr. Jitendra Singh on 17-04-2023,
- 40 Students from MDU Rohtak Physics Department have visited on 28-04-2023.

- **CSIR-CFTRI**

- Under the Jigyasa program Climate Clock Display program was organized on 21.04.2023 which was attended by 20 students and 2 teachers of Jawahar Navodaya Vidyalaya, Mysuru.

- **CSIR-CIMAP**

- Facilitated M/s Chandravedaherbals for manufacturing and packaging of mosquito repellent body lotion through the Pilot Plant Facility in the month of April, 2023

- **CSIR-CIMFR**

- On the occasion of Earth Day celebration on 22.04.2023, organized demonstration of Climate Clock to Students of class VIII to X from Sanskrit Vidya Mandir High School Digwadih and Kasturba Gandhi Balika Vidhyalaya, Jharia.

- **CSIR-CMERI**

- Conducted programme on Analytical Techniques and Instrumentation for Water Quality Assessment on April 26-28, 2023
- One day lab visit by students of
 - Ramkrishna Mission School on 12.04.2023 and demonstration was given on robotic and Automation and also on Municipality solid waste management .24 students and 3 teachers participated.

- One day lab visit by students of JNV Dugapur and Tulsi Girls High School on 22.04.2023 and demonstration was given on Climate Change Clock.
- One day lab visit by students of Umarani Gorai Mahila Kalyan Girls High School 27.04.2023 and demonstration was given on Robotic and Automation and also on Water Testing Laboratory.
- **CSIR-CRRI**
 - Conducted MoRTH approved 15-day certification course on "Road Safety and Other Road safety related aspects" during April 03-18, 2023. Attended by 65 participants from various parts of India.
 - As part of Earth Day-2023 celebration, CSIR-CRRI organized Climate Clock assembly and Display event for the students from class 8th to class 12th under Jigyasa Model of Engagement "Important Awareness Days" on April 25, 2023. 150 Students & 12 teachers from Two schools attended the program.
- **CSIR-CSIO**
 - Participated in the interactive Session on opportunities for MSMEs in Defense Manufacturing Ecosystem in North India
- **CSIR-CSMCRI**
 - Organized the expert lecture on Novel organic reactions & reagents of interest in Indian Pharmaceutical & Chemicals Industries on 6th April 2023.
- **CSIR-IHBT**
 - Earth Day was celebrated at CSIR-IHBT, Palampur on 22.04.2023, in which 40 students and 02 faculty members from Jawahar Navodaya Vidyalaya, Paprola Distt. Kangra (H.P.) participated. Also, 34 students and 03 faculty members from different colleges and university from Himachal Pradesh and Haryana visited the Institute on 03, 13 and 19.04.2023.
- **CSIR-IICT**
 - Under CSIR Integrated Skill Initiative (ISI), A Skill Development Training course titled "Basic Cheminformatics & Bioinformatics" was started from 26 April, 2023 to 10 May, 2023. Graduates students in Lifesciences from Bhavans Vivekananda College, Secunderabad and 22 graduates are attending.
 - Organized a Skill Enhancement Training program to 11th batch (Group A & B) officers from Central Revenue Control Laboratories (CRCL), Govt. of India, New Delhi on "Advanced Chromatography and Spectroscopy Techniques" for a period of one month. The training began on 26th Mar 2023 and will conclude on 28th Apr 2023.
 - Celebrated "Earth Day" on 22nd April, 2023 at institute's premises, addressed "Introduction climate change, effects & mitigation". CSIR-IICT in association with CSIR-CCMB conducted earth day awareness program on 22nd April, 2023 at Swami Vivekananda auditorium on its campus. Director CSIR-IICT addressed children who came from different schools in and around Hyderabad. He stressed the importance of this day as "Awareness Day".
- **CSIR-IIIM**
 - Organized Global Climate Clock assembly and display event organized on 22nd April, 2023 to create awareness among students. 108 school students from Bhartiya Vidya Mandir Amphalla and Dashmesh along with 9 teachers participated
 - CSIR-IIIM employees and students have done online Energy Literacy Training by 'Energy Swaraj Foundation', a non-profit organization so as to enhance energy

literacy. The program was well taken by scientific, technical and administrative staff and a total of 388 officers, employees and research scholars attended program.

- **CSIR-IIP**
 - Conducted following Skill Development Training Programs:
 - Testing of Petroleum Products during 03/4/2023 to 21/4/2023.
 - IndustrialCatalyst, Preparation and Micro-reactor study during 31/3/2023-28/4/2023
 - During One Week One Lab event, half-day programmewas organized for school students on April 15, 2023, at CSIR-IIP, Dehradun. 75 students from 5 different schools participated
 - 60 Students from Sun City School, Gurugram, Haryana, visited on 20thApril, 2023
- **CSIR-IITR**
 - Around 300 students vested CSIR-IITR from various schools under jigyasa programme.
 - Celebrated Earth Day on 22 April 2023 at CSIR-IITR, Lucknow.
- **CSIR-NEERI**
 - Skill Development Workshop on "Green Skilling for Sustainable Development", April 08, 2023.
 - One Week One lab program from 08 April 2023 to 13 April 2023.
- **CSIR-NGRI**
 - Several NGRI employees have successfully completed Energy Literacy Training - Energy Swaraj Foundation
 - One training on Geochemcial analysis and instrumentation offered to 27 nos. Chemists from Customs Revenue and chemical Labs Officers from all over India.
 - On 24.4.2023, 200 school children visited CSIR-NGRI on the commemorate the 53rd Earth Day.
- **CSIR-NML**
 - Organized the Jigyasa program for school students on 25th April 2023 at its laboratory premises in Jamshedpur to teach the scientific temperament among school children. More than 300 school students, around 60 teams took part in this event and students from various schools presented their interactive scientific models & presentations.
- **CSIR-SERC**
 - "Global Climate Clock Assembly and Display Event" on the Earth Day celebration on 22nd April 2023
 - CSIR-SERC, Chennai, CSIR-CLRI, Chennai and CSIR Madras Complex jointly organized the "Global Climate Clock Assembly Activity" on 22nd April 2023 at CSIR-CLRI premises.22 Students and 1 Teacher from Kendriya Vidyalaya, CLRI, Adyar, Chennai and 26 Students and 3 Teachers from Sri Sankara Vidyashramam Matriculation Higher Secondary School, Thiruvanmiyur, Chennai participated.
- **CSIR-URDIP**
 - Head, CSIR-URDIP and Scientists along with Scientist from CSIR-IPU have conducted IP discussion meetings at CSIR-CLRI on 12th and 13th April, 2023 and at CSIR-NIIST on 19th and 20th April 2023 involving one-to-one interactions and extensive discussions with the inventors.

Major Conferences, Seminar/Webinars, Workshops organized

- **CSIR-Hqrs**
 - CSIR participated in “Saksham Haryana 2023” at Hissar, Haryana from 24-29 April, 2023.
 - CSIR-National Physical Laboratory (NPL), New Delhi, organized One Week One Lab (OWOL) campaign from 17-21 April, 2023. Hon’ble Minister of State (Independent Charge) of Ministry of Science & Technology and Earth Sciences, Dr. Jitendra Singh inaugurated the occasion and also launched CSIR-YUVA Portal, CSIR-JIGYASA App and CSIR AstroLab for Divyangjan students during the inaugural session. The following CSIR Labs also organized their OWOL campaign during the month - CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur, from 8-13 April, 2023; CSIR-Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar, from 10-14 April, 2023; CSIR-Indian Institute of Petroleum (IIP), Dehradun, from 13-19 April, 2023; CSIR-National Metallurgical Laboratory (NML), Jamshedpur, from 24-28 April, 2023.
- **CSIR-CDRI**
 - One-day programme on Pre-clinical Animal Models and Available Alternatives was organized to commemorate World Laboratory Animal Day on 24th April 2022. More than 300 staff and students participated in the symposium.
 - Workshop on 3D Bio-printing Technology was arranged for the students of CSIR-CDRI on 25.04.2023. Ms. Vijeta Jaiswal, Field Application Specialist (India), CELLINK Bio-printing, coordinated the workshop focused on its demonstration and applications in various fields, including microfluidics. 35 staff and students participated.
- **CSIR-CFTRI**
 - A lecture by Dr. Rupal Dalal, Professor, IIT, Mumbai was organized on the hope for healthy ageing through nutrition and lifecycle approach on 10th April 2023.
 - National Workshop on Gerobiotics Supplementation Through Millet Beverage and Fermented Millet Curd was organized on 12th and 13 April 2023.
- **CSIR-CRRI**
 - Hindi Workshop organized on “Morbi Setu Tragedy – Challenges and Prospects” by Shri SS Gaharwar, Chief Scientist on 28 April 2023
- **CSIR-CSIO**
 - Organized Awareness & training on Intellectual Property Dr R S Khandpur Lecture on “Computational Materials Science”
- **CSIR-CSMCRI**
 - Organized One-Week-One-Lab Program from April 10, 2023 to April 15, 2023
- **CSIR-HRDC**
 - Awareness Programme on Sexual Harassment of Women at Workplace: Prevention, Prohibition and Redressal for CSIR Directors on 11th and 18th April 2023
 - Session on Meditation and Mental Health was conducted on 11th April 2023
- **CSIR-IHBT**
 - Essential Oil Association of India (EOAI), Noida, India in association with CSIR-IHBT Palampur, Himalayan Phytochemicals and Growers Association (HIMPA), Mandi (H.P.) and Indian Institute of Technology (IIT), Mandi (H.P.) organized one-day workshop on Himalayan Rosa damascena under the theme “Development of Aroma

Farming and Essential Oil Industry of Western Himalayan Region” at CSIR-IHBT, Palampur, HP on April 21, 2023.

- Participated in the exhibition during the two-day G-20 summit held on 19th - 20th April, 2023 at Dharamshala. Officials from CSIR-IHBT showcased their technology-based products and interacted with delegates of G20 from different countries and visitors at the venue.
- **CSIR-IICT**
 - Organized an awareness programme cum webinar under the aegis of National Intellectual Property Awareness Mission (NIPAM) launched by the Government of India under the banner "Azadi Ka Amrit Mahotsav" in association with IP Group of CSIR-NCL, Pune on April 05, 2023 to create widespread awareness on Intellectual Property Rights (IPR). More than 100 participants have attended the program. This event covered basics of IPR, patents, patenting process, patentable inventions, career in IPR and many related aspects.
- **CSIR-IIIM**
 - A special training program for Panchayati Raj Institutions (PRI) representatives and farmers from Kathua district J&K was organized on 28-04-2023 under the phase -III of CSIR-Aroma Mission. Around 50 farmers and PRI representatives from the Kathua district attended the program. During this day long programme, they were apprised about the cultivation, processing, value addition, product development and marketing of Aromatic Crops.
 - 40 UC & PG students of Pharmacy along with 10 faculty members of Guru Govind Singh College of Pharmacy, Yamunanagar, Haryana visited the institute on 28-04-2023.
- **CSIR-IIP**
 - Organized “One Week One Lab Program” during 13th–19th April, 2023. Inauguration/Curtain Raiser & Press Briefing, 13th April 2023, India Habitat Centre, New Delhi.
 - Stake Holders Meet, 13th April 2023, AN, India Habitat Centre, New Delhi
 - Foundation Day & Dr. B.R. Ambedkar Jayanti Celebration, 14th April, 2023, CSIR-IIP, Dehradun
 - Jigyasa -School Students visit & Interaction with Scientists & Research Scholars, 15th April 2023, CSIR-IIP Dehradun
 - Alumni Meet cum Workshop on 15th April 2023 (Afternoon)
 - Nature @ CSIR-IIP on 16th April 2023
 - Gram Chaupaal at Bajrikot Village, Champavat and Sustainable Aviation in India & Industry Meet at New Delhi on 17th April 2023
 - PAN-CSIR Collaboration Showcase & MSME Meet at New Delhi, and Academia Connect program at CSIR-IIP on 18th April 2023
 - Meeting with Uttarakhand State Govt. Functionaries & Valedictory Function at CSIR-IIP, Dehradun on 19th April 2023
- **CSIR-NAL**
 - 2nd National Workshop on Electric Aircraft & Allied Technologies during 27-28 April 2023
- **CSIR-NBRI**

- A two-day Summer Plant Science Festival was organized during April 13-14, 2023. Prof. Manoj Kumar Dhar, Director, Academy of Scientific and Innovative Research (AcSIR), Ghaziabad was the Chief Guest and inaugurated the festival on April 13, 2023. Prof. Dhar shared the different objectives of New Education Policy-2020 being implemented by the Government of India and also called on research scholars to reorient their doctoral research topics to move from fact finding to solution building.
- **CSIR-NML**
 - Workshop on Rare Earths for Self-Reliant India, was organized as a part of One Week One CSIR Event at Ranchi on 2 April, 2023.
 - Workshop on Material Challenges in Unlocking the Hydrogen Era organized at CSIR-NML on 26th April 2023. Industry experts from different walks of life have taken part in this event.
- **CSIR-NIIST**
 - Hindi Workshop organized by Shri CH V Subbarao, Senior Hindi Officer, CSIR-NGRI, Hyderabad for Administrative Staff, newly appointed Technical Assistant and JSA on 20.04.2023.

Visit of high-level dignitaries to the Institute/Laboratory

- **CSIR-CDRI**
 - Dr. Sujit Kumar Dutta, Joint Secretary, Ministry of Animal Husbandry, Dairy and Fisheries, Secretary of CCSEA (Committee for Control and Supervision of Experiments on Animals) and AWBI (Animal Welfare Board of India) visited CDRI as Guest of Honor in one-day Symposium themed, "Pre-clinical Animal Models and Available Alternatives" organized to commemorate World Laboratory Animal Day.
- **CSIR-CSIO**
 - Air Vice Marshal Shridher Kishore Mohlah VM PD(FT) NFTC, ADA visited CSIO
- **CSIR-CSMCRI**
 - Dr. (Smt.) Bhartiben Shiyal, Hon'ble MP, Bhavnagar & Shri N.V. Upadhyay, IAS, Municipal Commissioner, Bhavnagar visited CSMCRI during One Week One Lab Program.
- **CSIR-IICT**
 - Dr. S. Chandrasekhar, Secretary, DST, Govt, Dr. S. K. Varshney, Adviser and Head, International Cooperation Division from DST, Dr. Didier Raboisson, Attaché for Scientific and Academic Cooperation, French Embassy in India, CEFIPRA, visited the Institute on 3rd April, 2023, in connection with "Indo-French Science Connect" An Alumni Event".
 - French delegation visited institute on 20th April 2023 and held talks on future collaboration.
- **CSIR-IIP**
 - Dr Dhan Singh Rawat, Hon'ble Minister Health, Education, Cooperative Uttarakhand Govt. Dr Arun K Singh, Chairman ONGC visited IIP on the occasion of foundation day on 14 April as Chief Guest.
- **CSIR-NGRI**
 - Dr. Srinivasa Kumar, Director, INCOIS visited and delivered 53rd Earth Day Lecture on 25.4.2023.

- **CSIR-NIIST**
 - Dr. Anil Dutt Semwal, DRDO- DFRL, Mysore and his team visited on April 11, 2023, for exploring the possibilities of collaboration
 - Dr Soumya Swaminathan, Chairperson of M S Swaminathan Research Foundation & Former Chief Scientist of World Health Organisation (WHO), visited on April 26, 2023
- **CSIR-NML**
 - Honorable Governor of Jharkhand, C P Radhakrishnan visited NML staff & launched the CSIR-NML's One Week One Lab (OWOL) national campaign on 25th April 2023.

COVID related developments/research

- **CSIR-CCMB**
 - Sequenced 260 water samples & 750 clinical samples are in process.
- **CSIR-CSMCRI**
 - Recovery of Aleuritic Acid from Seedlac
 - Recovery of lac resin from the alkaline aqueous effluent of Aleuritic Acid process
 - Regulation of chromium translocation to shoot and physiological, metabolomic, and ionic adjustments confer chromium stress tolerance in the halophyte Suaedamaritima
- **CSIR-IHBT**
 - Finalizing sampling transfer of remaining RT-PCR kits, cataloguing positive samples in the facility, coordination for sample relocation.
- **CSIR-IIP**
 - Twenty-five samples were received for COVID-19 testing, 48% of samples were reported COVID-19 positive.

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

- **CSIR-CECRI**
 - In commemoration of our Nation's 75th Year of Independence, Azadi Ka Amrit Mahotsav and CSIR-CECRI@75, CSIR-CECRI in association with SAEST is organizing a monthly Lecture Series on 'Electrochemical Science and Technologies: A Path Forward to Sustainable Society'.
 - Lecture delivered on "Structure-Property Correlation in Battery Electrodes: Few Case Studies" on 6th April, 2023
- **CSIR-CRRI**
 - Organized one day awareness camp on prevention of sexual harassment at work place on April 11, 2023. The camp was organized to create awareness on prevention of sexual harassment among staff members of the Institute.

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

- 47 in-house R&D units of industries were granted Renewal of Recognition and 8 were granted renewal of Registration certificates.

Public Funded Research Institution (PFRI)s

- 6 PFRI was granted Renewal of Registration certificate.

Scientific and Industrial Organization (SIRO)

- 81 SIROs were granted Renewal of Recognition and 51 were granted Registration certificates.

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

- 5 Industries were approved for issuance of form 3CM and 18 industries were approved for issuance of extension of 3CM u/s 35(2AB) of IT Act for weighted tax deduction.
- 5 reports in Form 3CL submitted to CCIT (E) u/s 35(2AB) of IT Act for weighted tax deduction on industrial R&D involving a total amount of Rs 133.12 Crores.

DSIR Central Sector scheme 'Industrial Research and Development (IRD)' comprise of the four sub-schemes i.e (i) Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM), wherein financial assistance is extended to independent innovators for converting innovative ideas into demonstrable working models / prototypes / processes that may take the form of new or improved products, processes, or services; and assist them to become incubatees / techno-entrepreneurs, (ii) Patent Acquisition and Collaborative Research and Technology Development (PACE), wherein support shall be provided to industries and institutions for development and demonstration of innovative technologies,(iii)Building Industrial R&D and Common Research Facilities (BIRD), wherein support shall be provided for creation of Common Research and Technology Development Hubs (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 new innovation projects were sanctioned and 2 projects were successfully completed during the period.

Patent Acquisition and Collaborative Research and Technology Development (PACE) Scheme:

A Project Review Committee (PRC) meeting to review the financial and technical progress of project entitled "Development and standardization of manufacturing process for large scale production of valuable secondary metabolites from callus-derived cells of vascular cambial explants of selected woody plants species"supported to M/s Sami-Sabinsa Group Limited was held on 25thApril, 2023.

Access to Knowledge for Technology Development and Dissemination (A2K+)- Studies:

A Project Guidance Cum Review Committee (PGRC) meeting to review the financial and technical progress of project "Studies on air ventilation in central Air-conditioning units in post COVID-19 scenario guided by machine learning and artificial intelligence technique" supported to IIT Delhi was held on 12th April, 2023.

Technology Development and Utilization Program for Women (TDUPW):

A Project Review Committee (PRC) meeting to review the financial and technical progress of project entitled "Training of Progressive Technologies and Capacity Building for Himalayan Community" supported to Himalayan Environmental Studies and Conservation Organization (HESCO), Dehradun was held on 3rd April, 2023.

225 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 for the first time in the country through its own R&D efforts and it continues to emphasize its leading role in the area of solar photovoltaic systems, electronic gadgets for Railway and other strategic electronic equipment/components among others.

- The company manufactured electronic components/systems/SPV products worth Rs. 739.24 lakhs during April 2023.
- Sale of items worth Rs. 203.31 lakhs was realized during April 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 2 technologies on Wave Powered Navigational Buoy Technology to M/s NextEng Enviro Pvt Ltd; Saline Water Lantern to M/s Yallas Technology Solutions (OPC) Pvt Ltd.
- NRDC has collected premia of Rs. 1.95 lakh from respective technologies during April 2023.

Revised Format-Monthly Report for the month of April, 2023

Ministry / Department: **Department of Scientific and Industrial Research (DSIR)**

1. (a) Important policy decisions taken: NIL
(b) Major achievements during the month:
(DSIR Monthly Summary file enclosed/attached('DSIR-MS-April, 2023')
2. Important policy matter held up on account of prolonged inter-ministerial consultations: NIL
3. No. of cases of 'sanction for prosecution' pending for more than three months: NIL
4. Particulars of cases in which there has been a departure from the Transaction of Business Rules or established policy of the Government: NIL
5. Status of ongoing Swachhta Abhiyan (progress under Special Campaign): The Cleanness drive is conducted from time to time to clean office and space freed due to weeding out of files /papers.
6. Status of Rationalization of Autonomous Bodies: NIL
7. Information on specific steps taken for utilization of the Space Technology based tools and applications in Governance and Development: NIL
8. Vacancy position of senior level appointments in the Ministry/Department, including Autonomous Bodies/PSUs : NIL
9. List of cases in which ACC directions have not been complied with: NIL
10. Details of FDI proposals cleared during the month and status of FDI proposals awaiting approval in the Ministry / Department: Not Applicable.