

**No. DSIR/MS/2021/12**  
Government of India  
Ministry of Science & Technology  
Department of Scientific & Industrial Research  
**MONTHLY SUMMARY FOR THE CABINET**  
(For the month of **December, 2021**)  
(Part-I Unclassified)

**Major achievements during the month of December, 2021:**

**Council of Scientific & Industrial Research (CSIR)**

**New Technologies/Processes Developed/Transferred**

- CSIR-IHBT developed dehydrated floral products and standardization procedures of dehydration techniques of ornamentals.
- CSIR-NIIST developed protein enriched coconut fibre for its client M/s Apex Coco and Solar Energy Ltd, Tirupur, Tamil Nadu
- CSIR-CBRI transferred the technology on manufacturing of internal fuels based eco-friendly and energy efficient burnt clay bricks to M/s Surya Bhatta Company, Sonapat (Haryana) and M/s Karma Bhatt Company, Bagpat (UP) on December 30, 2021.
- CSIR-CFTRI transferred the process for ready-to-eat shelf stable egg crunchy bites to M/s Srinivasa Farms Pvt Ltd, Hyderabad.
- CSIR-CFTRI transferred the process for shelf-stable jowar flour to M/s Priya Gruha Udhyoga, Vijayapur
- CSIR-IICT transferred the process for conversion of Podophyllotoxin to 4'-De Methyl Epi-Podophyllotoxin to Namiex Chemicals Private Limited, Himachal Pradesh.

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

- CSIR-IHBT Technology transfer agreement for designing, manufacturing and using distillation units of different capacities with M/s Kontakt Consortium India Pvt. Ltd., Sidco Nagar, Villivakkam, Chennai on 16.12.2021
- CSIR-CFTRI signed an MoU with M/s SLN Coffee Pvt. Ltd., Kushalnagar, Kodagu on 10.12.2021 for collaborative project on value addition to instant coffee process and other allied activities.
- CSIR-CIMFR signed tripartite agreement with South Eastern Coalfields Limited (SECL), SECL Bhawan, Seepat Road, Bilaspur, Chhattisgarh; M/s. R.K.M Powergen Private Limited, Chennai for Coal Sampling Work on 17-12-2021
- CSIR-IHBT signed an MoU with JSS College of Pharmacy to jointly perform Nanotechnology research
- CSIR-IHBT signed an MoU with Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth (DBSKKV), Dist. Ratnagiri (Maharashtra) on 07.12.2021 for increasing farm income, livelihood promotion and rural development in

Himachal Pradesh through transfer of innovations by means of research, mass propagation, capacity building, and skill development activities for Dalchini (*Cinnamomum verum*).

- CSIR-IHBT signed MoU M/s The Fragrance, Palampur, Maranda, District Kangra on 28.12.2021 for transfer of Technology for making travel/pocket perfumes (4-5 variants)
- CSIR-IICT signed the following MoUs:
  - With Crest Speciality Resins Private Limited, Kheda, Gujarat for process development for DiPropylene Glycol DiAcrylate (DPGDA) from DiPropylene Glycol and Acrylic Acid
  - With Emmennar pharma Pvt Ltd, Hyderabad for Advisory consultancy in performing biocatalysis reactions to produce chiral molecules and Advisory consultancy in the synthesis of Chiral alcohols using chiral reagents / Catalysts
  - With Dandu Biosciences Pvt Ltd, Hyderabad for Collaboration in R&D activities related to Medicinal Chemistry and Analytical Chemistry
- CSIR-IIP signed an MoU Dorf Ketel Chemicals India Private Limited, Mumbai to undertake work on the following:
  - Catalyst for Green diesel project
  - Homogeneous & heterogeneous catalyst for various processes
  - Wax inhibitor/ dispersant technology product for pipeline
- CSIR-URDIP signed an MoU with KPIT Technologies Ltd. for providing IP services to KPIT.
- CSIR-CCMB MoUs/Agreements:
  - With Telangana State Council of Science and Technology (TSCOST) on capacity building/skill vigyan program in the area of Biotechnology teaching.
  - With L V Prasad Eye Institute (LVPEI) for Collaborative Research and Development (R&D) with a focus on frontier areas of mutual interest particularly medically oriented cell and molecular biology, biochemistry and biophysics, genetics and nano-biology.
  - With Rabindranath Tagore University (RNTU), Bhopal for “Exploring the SARS-CoV2 inhibitory and/or anti-Covid19 efficacy activities of selected Natural/Ayurvedic/Herbal products/formulations prepared by RNTU BHOPAL”

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

- CSIR-CDRI signed a licensing agreement with AVETA Biomics Inc , USA on 22/12/2021 for “Standardized crude extract derived from the terrestrial plant herbs *Dalbergia sissoo* (CSIR-CDRI Plant extract named as A-4744)”
- CSIR-IHBT signed an MoU with Plant Health Institute of Montpellier, Montpellier, France on 28.12.2021 for joint research project entitled “Role of viral and host factors in circulative transmission of tomato begomoviruses by the whitefly *Bemisia tabaci*”
- CSIR-IICT signed an International grant agreement with Bill and Melinda Gates Foundation (BMGF), USA for the Grant-in-Aid project on “Development

of a low cost environmentally friendly synthesis of pyronaridine” (Budget- \$90,000, Tenure-1 year)

- CSIR-IIP signed an agreement with Sakatchewan Research Council, Saskatoon for Evaluating potential business relationships in the upstream and downstream sector of petroleum

## Patents Update

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
14	17	23	13	26	125

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

## High impact S&T services offered

- CSIR-4PI offered High Performance Computing services to labs and strategic government institutes like ADE (Aeronautical Development Establishment)
- CSIR-CCMB offered Molecular Diagnostics Services for 176 families comprising 188 samples.
- CSIR-CRRI:
  - Detailed investigation of the structural distresses and suggestions for rehabilitation measures for Safdarjung Airport Aurobindo Road cum Rail Flyover under NDMC region, New Delhi.
  - Investigation of Pedestal at Pier P1 and Strengthening of distressed Pier and Pier Cap P107, P108, P109 at Dwarka Expressway.
  - Determination of Resilient Modulus of DBM-1 and Vetting of Mix Design of CTGSB for 4-Laning sections (Package-5) on NH-91 in Uttar Pradesh.
  - Assessment of Structural Integrity of 4 numbers of PSC girders and suggestions for strengthening Measures for the Major-Bridge (at Km 22+905) over Arpa river of Billaspur-Pathrapali Section on NH-130 in the state of Chhattisgarh.
  - Instrumentation of ROB at Railway Km 139.4 on NH-148N in between Bandikui Junction and Biwai Junction, Rajasthan under Bharatmala Pariyojna (Pkg. 5, Delhi-Mumbai Expressway) of NHAI
- CSIR-IHBT carried out flow cytometry and cytotoxicity analysis of samples for NIT Hamirpur, H.P.
- CSIR-IIP services:
  - Sulfiding performance evaluation of Dorf-Ketal sulfiding agent on hydro-processing catalyst offered to M/S Dorf-Ketal.
  - Sustainable aviation fuel production for Indian Air Force.
  - Audit and evaluation of used cooking oil based Biodiesel for Biodiesel Association of India.
  - Performance Investigation of synthetic ester based hydraulic fluid for M/s. Sun oil Company Pvt. Ltd, Kolkata.
  - Commercialization of Reformulated LPG Sweetening catalyst Thoxcat-ES in Middle East refineries.

- CSIR-NEERI:
  - Groundwater quality assessment and modelling studies in and around Divis Laboratories Limited, Choutuppal
  - Study of Ayyajayanahundi and Keragalli lakes of Mysore for protection, restoration and rejuvenation as per directives of Hon'ble High court of Karnataka
  - Assessment of Air, Water and Soil Quality in Baghjan Oil Blow Out Site and its Vicinity, Tinsukia, Assam
  - Environmental Audit of Secure Land fill (SLF) for Hazardous Waste Disposal at Vindhychal Super Thermal Power Station, Singarauli, Madhya Pradesh.
  - Capacity Building and Technical Assistance for Air Quality Management in Nagpur city.

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

- CSIR-4PI: About 50 students from Sri Sathya Sai Institute for human excellence were trained on computer applications."
- CSIR-CBRI Webinar Series 17.0 on 'Bamboo – A Sustainable Eco-friendly Material for Buildings' was successfully conducted during December 27-29, 2021 organized under the aegis of CSIR Integrated Skill Initiative.
- CSIR-CCMB:
  - Training Programme on "Basic Techniques in Cell and Molecular Biology"- for UG Life science students under DBT-STAR college scheme held from 30th November -3rd December 2021, and 10 students from Bhavan's Vivekananda College of Science, Humanities and Commerce, Sainikpuri, Secunderabad participated in the same.
  - Training Programme on "DNA Based Wild life forensics" held from 1st December to 28th December 2021. Four RFL officers from Nagpur participated in the same.
  - Training Programme on NGS wet Lab, and bioinformatics for the "SBI Foundation Centre of Excellence for Genomics Guided Pandemic Prevention satellite centers" held from 14th to 17th December 2021 with participation of seven personnel from Vijayawada centre, and four personnel from Shillong centre.
  - Inaugural session of Young Innovators Program. 21 students selected for an in-person two-weeks program at CCMB. Zine published on life of a young scientist: <https://scitales.ccmb.res.in/the-cell-membrane-detective/>
- CSIR-CDRI: Student motivation program for students from Goel Institute of Pharmacy and Science, Lucknow
- CSIR-CECRI:
  - One Week Online Skill Development Training Program on "Electrochemical Power Sources: Lead-acid Battery- Care and Maintenance" conducted during 06.12.2021 - 10.12.2021. Total Registered Candidates: 122.
  - Under JIGYASA, CSIR-CECRI organized four Connect with Scientists Webinars

- CSIR-CFTRI:
  - Jigyasa online quiz program for children of six Kendriya Vidyalayas of Mysore, Mandya, Hassan, Chamarajanagar and Kodagu Districts was held on 21.12.2021.
  - NSDC-aligned Baking Technician Program under CSIR Integrated Skill Initiative was held from 15th November to 10th December 2021 which was attended by 18 participants.
  - Online training program on Processing of fruits, vegetables and spices for value addition was conducted during 28th - 30th December 2021 for Akolawala Food Processing Association, Akola District, Maharashtra which was attended by 15 participants.
- CSIR-CGCRI:
  - The sixth Webinar of CSIR-JIGYASA was held on 3rd December 2021. A lecture delivered by Dr. Parag Bhargava, IIT-Bombay on the topic "From early humans to infinity: The everlasting partnership with ceramic materials".
  - CSIR-CGCRI conducted a Skill Development Programme on "Terracotta Processing" at Duttapukur, North 24 Parganas, West Bengal during 16-17 December, 2021 as a part of the CSIR Integrated Skill Initiative Programme.
- CSIR-CIMFR: Skill Development Programme on "Organic Farming & Vermicompost" during 29th November to 4th December 2021.
- CSIR-CRRI:
  - Three days regular online training programme on "Geotechnical and Landslide Investigations for Highway Projects" during December 01-03, 2021. It was attended by 52 participants from various parts of India.
  - CSIR-CRRI conducted five days customized online training programme on "Capsule on Airfield Engineering" for the officers of Border Roads Organisation (BRO) during December 20-24, 2021. It was attended by 22 officers from BRO, Govt. of India.
- CSIR-CSIO: The following Workshop was organised under CSIR Integrated Skill Initiative Programme(CSIR-ISI).
  - One Day Online Workshop was Organised on 'Basic of Repair, Service & Maintenance of Electronics and Electrical Instruments' on 23rd December, 2021.
  - One Day Online Workshop was Organised on "Basics of CAD/CAM Technologies" on 28th December, 2021.
- CSIR-IHBT:
  - Talk on "Indigenous Technology" at Vigyan Utsav by HIMCOSTE Shimla organized on 15.12.2021.
  - Lecture under Skill India program of the HIMCOSTE to the students of Quality Control Biologists and Lab Technician course on 27.12.2021
  - One day awareness cum training programme on cultivation of aromatic and floriculture crops was conducted at the village Sukeri, Tehsil Palampur, Distt. Kangra, HP by team CSIR-IHBT on 06.12.2021. Farmers, village Pradhan, Jila Parishad member and Himachal Wool Federation Chairman attended the program.

- CSIR-IICT:
  - A Skill Training Programme was conducted for the 6th batch of 20 CRCL officers on Advanced Analytical chemistry techniques like Chromatography, Spectroscopy, etc.
  - A Skill Training programme on Water Purification & Analysis was conducted at CSIR-IICT under CSIR -Integrated Skill Initiative
  - CSIR Jigyasa Virtual lab inauguration @Zilla Parishad High School, Chatakonda & Nava Bharat High School, Paloncha in Kothagudem, Telangana was held on Saturday 18th December 2021
- CSIR-IIP conducted two Basic Skill Development Training Programs on 'Analytical Chemistry, Tools and Techniques during 15/11/21-24/12/21 and "Testing of Petroleum Products' during 15/11/21 -10/12/21.
- CSIR-NEERI:
  - Online Training Program on "Good Laboratory Practices (GLP)" held on December 10, 2021
  - Online Skill Training Program on "Soil Quality Assessment and Land Management" held during December 14-15,2021
  - Online Skill Training Program on "Eco-rejuvenation of Fly Ash Dump using Bamboo Diversity for Pollution Mitigation and Ecological Sustainability" held on December 23,2021
- CSIR-NIIST: Skill Development Course on "Chemical and Metallurgical process Calculation" and "Printed electronics based advanced device fabrication" CSIR-NIIST JIGYASA – IISF 2021 two day programme for the KV Students (Online Quiz, Interaction with Scientists, Science Lectures etc.)

### **Conferences, Seminars/Webinars organized**

- CSIR-4PI organized the Festival of Games and Toys at the India International Science Festival 2021 held in Goa
- CSIR-CCMB launched SBI Foundation Centre of excellence for genomics guided pandemic prevention lab
- CSIR-CSIO organized a one day online workshop on "Fundamentals of Entrepreneurship Development Programme (EDP)" on 16th December, 2021.
- CSIR-IHBT organized Swarn Jayanti Tea Fair – 2021 on 14.12.2021 in collaboration with HP State Agriculture Deptt where 500 tea growers/enthusiasts participated.
- CSIR-IHBT organized a half a day session on the large-scale organized cultivation and processing of Dalchini (cinnamon) on 13th Dec. 2021 during India International Science Festival-2021 at Panaji, Goa.

### **COVID related developments**

- CSIR-CCMB developed and validated primer/probes for RT-PCR based detection of Omicron variant.

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

- Hon'ble Minister Rural Development, Panchayati Raj, Agriculture, Fisheries and Animal Husbandry, Govt. H.P., Shri Virendra Kanwar visited CSIR-IHBT

as Chief Guest of "Swaran Jayanti Tea Fair" which was organized on 14th December, 2021 at CSIR-IHBT, Palampur.

- The Royal Norwegian Consulate General, Mr. Arne Jan Flolo, and his delegation visited CSIR-National Institute of Oceanography
- Ms. Ana Ferrand, First Secretary Embassy of the Dominican Republic visited CSIR-NIO, Goa to discuss collaborative programs
- Dr. Olivier Fudym, the Attaché for Scientific and Academic Cooperation for West India at the Embassy of France / French Institute in India, visited the CSIR-National Institute of Oceanography, India, Goa.
- Dr. Jayanta Kumar Roy, Hon'ble MP & Member Standing Committee on Science & Technology, Environment & Forests, Government of India visited CSIR- National Institute of Oceanography

#### **Any other item of significance**

- CSIR-CCMB received DCGI approval for the use of Hydroxy urea as treatment of sickle cell anaemia.
- CSIR-CFTRI: Launching of Nutrition Intervention Program for SAM children in Mysore District in collaboration with District Women and Child Development Department, Govt. of Karnataka and Spirulina Foundation, Tumkur on 6.12.2021.
- CSIR-CSIO: One day Industrial meet of ISTC Entrepreneurs of 1977 Batch organised on 25 December, 2021 at ISTC.

### **DEPARTMENTAL ACTIVITIES**

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

#### **Industrial R&D Promotion Programme**

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

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

## **Scientific and Industrial Research Organisation (SIROs) Recognition/ Registration and renewal of SIROs**

- 09 SIROs were granted recognition and 02 were granted registration certificates.
- 18 SIROs were granted renewal of recognition and 05 were granted renewal of registration certificates.

## **Public Funded Research Institution (PFRIs) Registration and Renewal of PFRIs**

- 13 PFRIs were granted registration certificates.
- 30 PFRIs were granted renewal of registration certificates.

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

Successfully completed the following four projects :

- Automated wheel chair for physically challenged
- Home-made Bending Machine
- Validation of single device for detection of three most prevalent mosquito borne diseases
- Development of Pucca Housing Topography using Bamboo fibre Ferro-cement concrete

## **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. 3096.35 Lakhs during December, 2021.
- Sale of items worth Rs.2480.84 Lakhs was realized during December, 2021.

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

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

- NRDC has licensed two technologies to two industries for commercial exploitation. One company have been licensed the technology to manufacture



Ayush-64 an ayurvedic drug which has been repurposed for use against mild to moderate cases of covid-19. NRDC has been assigned one technology by an organisation /institute during December, 2021.

- NRDC has collected premia of Rs.13.15 Lakhs from respective technologies during December, 2021.

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