

**No. DSIR/MS/2021/01**  
Government of India  
Ministry of Science & Technology  
Department of Scientific & Industrial Research  
**MONTHLY SUMMARY FOR THE CABINET**  
(For the month of **January, 2021**)  
(Part-I Unclassified)

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

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

**Update on Initiatives for COVID-19 Mitigation**

- CSIR labs CCMB and IGIB are part of the pan Indian SARS-CoV-2 Genomics Consortium (INSACOG) for Genomic Surveillance for SARS-CoV-2 given the recent emergence of various mutations leading to several variants of the virus with increased transmission etc. Both the labs have been sequencing viral samples of travellers from UK who are positive for the infection to assess the presence of the UK variants and aid in checking the spread of the variant.
- The spread of various SARS-CoV-2 variants such as the UK, South Africa etc emphasizes the need for genomic surveillance of international (and national) travellers. In this context, CSIR-IGIB has standardized and validated the portable nanopore based sequencing for SARS-CoV-2 and is set to sign an agreement with Spice Health to do nanopore-based sequencing at airports for genomic surveillance. The study will be started as a pilot project at Delhi airport which if successful can be replicated at other cities as early identification will enable quarantine and preventing spread of the variants in the country.
- 13 CSIR labs have been testing samples for COVID-19 across India with CSIR-CDRI, CSIR-IITR, CSIR-NBRI and CSIR-CFTRI having tested more than 1.0 lakh samples each. All the 13 CSIR labs together have tested about 8,00,000 so far.
- The Phase III clinical trial of Sepsivac by Cadila and CSIR on Covid19 patients is underway after completion of Phase II trials. Further, the Phase III clinical trial of repurposed drug Umifenovir at CSIR-CDRI is underway.
- The Phase II clinical trial of the phyto-pharmaceutical AQCH has been completed and Phase III clinical trial is being planned as emergency authorization post phase II trial was not granted by regulatory agency.
- Similarly, five clinical trials of various Ayush drugs for use in Covid19 treatment are underway in partnership with Ministry of Ayush. No severe adverse events have reported so far and the trials are expected to be completed by end of March 2021.
- CSIR-NAL designed non-invasive BiPAP Ventilator called Swasthvayu, which is approved by DGHS, has completed its delivery of 1200 ventilators as per the terms of the order received from Delhi Government.

- CSIR-CBRI, which was awarded the contract by H.P. Government for constructing the three, make shift hospitals at Shimla, Nalagarh and Tanda have been completed.

### **New Products/Processes/ Technologies developed**

- CSIR-IICT prepared ortho chlorobenzonitrile by ammoxidation of ortho-chloro toluene for Tatva Chintan Pharma Chem Private Limited, Ankleshwar, Gujarat. CSIR-IICT also developed the process optimization for the synthesis of agonist molecule, a molecule that binds to a receptor causing activation and resultant cellular changes, for Bharat Biotech Ltd., Hyderabad
- CSIR-IIP developed medical grade oxygen concentrator from ambient air for hospital use. The rights for marketing, detailed engineering and servicing of the medical grade oxygen plant has been transferred to M/s Gaskon on PAN India basis. The laboratory also designed a demonstration plant based on a Hybrid Process for the production of Grade 'A' Helium from Natural gas: TIP development.
- CSIR-CMERI developed community level household Effluent Treatment (ET) plant for agricultural purposes.
- CSIR-IHBT developed natural hair oil and product prototypes for floor cleaner, cedar hydrosol & Toilet cleaner under Chief Minister's start-up programme.

### **Technologies licensed/transferred during the month**

- CSIR-CECRI transferred the technology for coating underwater/wet surfaces on concrete/steel substrates to M/s. Krishna Conchem Products Pvt. Ltd., Mumbai. The Institute was involved in fabrication of 18650 type Li-ion manganese-nickel-cobalt (MNC) cathode material to M/s. TATA Chemicals Limited., Mumbai.
- CSIR-CECRI manufactured four coat paint schemes consisting of epoxy & polyurethane paint systems for concrete structures for M/s. Advance Paints, Mumbai
- CSIR-CMERI transferred high flow rate Arsenic & Iron removal filter technology to M/s TECHNOCHEM, KNC Road, Barasat, North 24PGS-700124, WB. The Institute also transferred Domestic Iron Water Filter technology to M/s Zenith Aquatech, 292, Sarat Chatterjee Road, Shibpur, Howrah-711102, WB
- CSIR-IICT licensed Bodipy Fluorophores for Mitochondrial Tracking to Tokyo Chemical Industry Co., Ltd., Japan

### **Patents Update:**

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
17	08	35	07	-	-

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

## Collaborations/Agreements/MoUs Signed (National)

- CSIR-CBRI signed an MoA with Artificial Limbs Manufacturing Corporation of India (A Government of India Undertaking), Kanpur to undertake the work on Technical Examination & quality inspection of civil construction works
- CSIR-CCMB MoUs signed:
  - With Bharat Biotech International Limited for community screening of sero-surveillance of Covid-19 in Hyderabad
  - With C-CAMP Bangalore for wider outreach and utilization of CCMB facilities
  - Tripartite MoA with Semantic Web India Pvt. Ltd. and AIC-CCMB for developing a software platform-Sandhi Gene Variant Analysis
- CSIR-CDRI and NIPER, Hyderabad signed an MoU on 05-01-2021 for exploring collaborative research programs in specific fields of interest.
- CSIR-IIIM, Jammu signed an agreement with National Dope Testing Laboratory(NDTL), New Delhi on 11-01-2021 for joint research collaboration in the areas of synthesis of reference standards and in vivo and in vitro studies (PK studies) on the metabolites and long term metabolites.
- CSIR-IIIM, Jammu signed agreement M/s Hindustan Aeronautics Limited, Bangalore on 20-01-2021 for augmenting COVID-19 testing facility at Kargil, Ladakh under CSR scheme.
- The CSIR-IIIM has entered into an agreement with National Institute of Sowa Rigpa, Leh, an autonomous organization under the Ministry of AYUSH, to promote cooperative research and to facilitate the exchange of ideas, the development of new knowledge, and to enhance high quality research acumen. The major thrust of the understanding on which the parties will cooperate are the advancement of research in Sowa Rigpa System of Medicine and implementation of cooperative research projects for drug design and development from medicinal plants used in this system of medicine.
- CSIR-NAL signed an MoU for development and deployment of cyber physical systems and superior individual subsystem with M/s. Lab to Market Innovation Pvt Ltd, Bangalore
- CSIR-CRRI signed the following MoUs with the NHAI on 1 January 2021:
  - MoU for Technical collaboration for Noise-vibration control, light proofing (privacy control) for wildlife and noise barrier design & preparation of guidelines for IRC to be adopted.
  - MoU for Technical collaboration for Development of high strength and fast curing cementitious stabilized base layer
  - MoU for Technical collaboration for Feasibility study (lab & field) of using higher RAP Content in Bituminous pavement
- CSIR-CIMFR MoUs:
  - Agreement with M/s. Optimized Solutions Limited, Ashram Road, Ahmedabad – Gujarat on Digital Mine Using Internet of Things
  - Agreement with M/s. Edgeforce Solutions Pvt. Ltd., IIIT Hyderabad Campus, Survey No. 25, Gachibowli, Hyderabad on 18-01-2021 for Gramin E-Bazar Software
- CSIR-CMERI MoUs:

- MoU signed with B.B.College, G.T.Road, Ushagram, Asansol, WB for skill development programme on water quality assessment to promote great learning opportunity for the students for gaining first-hand knowledge in the applicative fields of environment and to extend the knowledgebase and infrastructure of CSIR-CMERI as a part of the CSIR Integrated Skill Initiative
- MoU signed with Urban Water Supply And Sanitation Services Advisory Network, Lohiya Nagar, Kankarbagh, Patna-800020, Bihar for skill development programme on Municipal Solid Waste Management
- CSIR-IHBT Agreements:
  - MTA to take up 1 Kg stevia seeds signed with M/s Sivani Stevia Industry, Ward No. 10, Green Road, Chandmari, Golaghat, Assam - 785 621 on 05.01.2021
  - MTA to take up 2000 rooted plants of damask rose variety signed with Mr. Rattan Singh Guleria, VPO Sidhpurghar, Tehsil, Jawali, Kangra (H.P.) on 07.01.2021
  - Signed consultancy agreement to construct one drying shed and one storage godown at Jangal Jhalera, Bilaspur (H.P.) with Director Ayurveda-cum-Member Secretary State Medicinal Plant Board on 15.01. 2021
- CSIR-IICT:
  - MoU signed between CSIR-IICT and University of Mysore for collaborative research programs of mutual interest.
  - MoU signed between CSIR-IICT and Vaggdevi Degree & PG college, Hanamkonda, Warangal for Teaching, Research and Training in selected and advanced thrust areas in S&T.
- MoU signed between CSIR and IIT Bombay for CSIR - Virtual Lab on 29.01.2021

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

- CSIR-NIO: Memorandum of Understanding between Pacific Oceanological Institute (POI), Russia, Russian Academy of Sciences and CSIR-NIO/NGRI.

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

- CSIR-CBRI initiated the construction of makeshift hospital at Srinagar, Jammu & Kashmir.
- CSIR-NML carried out improvement in the operational life of manganese steel blow bars used in limestone primary crusher.
- CSIR-SERC carried out Condition Assessment of Identified RC Plant Structures of a 425 MW gas-fired power station. CSIR-SERC was involved with the evaluation and management of longitudinal force on substructure of Railway Bridges for RDSO, Lucknow. Experimental investigations were carried out on Bridge 342 (open web steel girder) near Erode, Tamil Nadu for the evaluation of dispersion of longitudinal force in substructure.

- CSIR-IIP carried out Evaluation of Friction and Wear of friction wedge material for Railway application, for M/s. Webtec Texmaco Rail Pvt Ltd., Kolkata and M/s. Frontier Alloy Steel Ltd., Kanpur.

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

- CSIR-CBRI organised a webinar on ‘Disaster Resilient Building Constructions’ during January 27-30, 2021
- CSIR-CCMB organized Young Innovator Program (Jan 4th - Jan 13th) for high school students, Mentoring of 25 school teams across India in Climate Change Challenge
- CSIR-IMTECH under Dissertation Training Program has inducted 31 students for 6-months duration.
- CSIR-CECRI organized Skill Development Training Programmes on Operation and Maintenance of analytical instruments (82 participants), Biosensor design and application (59 participants), Electrochemical power sources - Li ion battery (194 participants), Electroanalytical techniques for biosensing application (59 participants) were conducted during 18 - 22 January 2021
- CSIR-CFTRI provide skill-based training to 100 farmers/ FPOs under PM FME Scheme and 18 SC-ST aspiring and existing entrepreneurs.
- CSIR-NML organized Online Faculty Development Program (11th-15th January 2021) for faculty members of diploma and graduate engineering colleges on Materials Processing and Heat Treatment Processes of Metals and Alloys.
- CSIR-NML organized the 2nd Scientist-Science Teachers Conclave (29th January 2021) to demonstrate the concept of building 3D crystallographic structures using Origami to more than 100 science teachers from all over India through online interface.
- In connection with Vigyan Manthan Yatra – 2020, Madhya Pradesh Council of Science & Technology organized virtual visit to the CSIR-SERC on 18 January 2021. CSIR-SERC scientists delivered the Technical Presentations and Virtual Demonstrations to the students from the class of 8th to 12th standard. 150 students participated.
- Under the Unnat Bharat Abhiyan (UBA), a flagship National program launched with a purpose to provide access of CSIR rural technologies to the masses, improved jaggery making plant "Gur Bhatti" of CSIR-Indian Institute of Petroleum has been shortlisted for deployment in rural areas.

### **Conferences, Workshops, etc. organized, if any, during the month**

- CSIR-CECRI organized Industry Meet on CSIR Mission Project “Innovation Centre for Next Generation Energy Storage Solutions (ICeNGESS)” under the Chairmanship of Dr. V.K. Saraswat, Hon’ble Member NITI Aayog
- CSIR-CMERI, Durgapur and MSME-Development Institute, Ahmedabad jointly organized Webinar on ‘Water Purification Technology for MSMEs on 05/01/2021

- CSIR-IHBT organized a one-day awareness-cum-on farm training was conducted to the farmers of Village Kwaring, Distt. Lahaul & Spiti (H.P.) on 22.01.2021.
- CSIR-IITR, Lucknow organised two days National Science Conference in Hindi on "पेयजल: समस्या एवं निवारण" from January 18-19, 2021.
- CSIR-SERC conducted an online Advanced Course on "Behaviour and Design of Connections in Steel Structures", 18-22 January 2021. Another online Advanced Course on "Geopolymer Concrete" was held on 28-29 January 2021
- CSIR-IIP: A three weeks online training programme on Petroleum Refining Technology for 47 Chemical Engineers was initiated on January 25 to and will end on February 12, 2021

### Other items of significance

- Three Variants of Mob Control Vehicles- Heavy category (7.5-ton); Medium category (2.5-ton) payload capacity & compact tractor-based vehicle designed & developed by CSIR-CMERI and sponsored by PMO were demonstrated successfully at Parade Ground, CRPF Group Centre, Gurugram on 28th January, 2021.
- CSIR-NISCAIR: Hon'ble Union Minister Dr. Harsh Vardhan and Dr. Shekhar C. Mande, DG-CSIR visited the CSIR-NISCAIR and CSIR-NISTADS campuses to inaugurate the new institute CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR) established consequent to the merger of CSIR-NISCAIR and CSIR-NISTADS on 14 January 2021.
- CSIR-CFTRI: Shri B.C. Patil, Hon'ble Minister of Agriculture, Govt. of Karnataka visited CSIR-CFTRI 19.01.2021 to inaugurate the Farmer's Training program under the PM FME Scheme.
- CSIR-IITR;
  - Shri Brajesh Pathak, Hon'ble cabinet minister of Legislative, Justice, Rural Engineering Service, Government of Uttar Pradesh inaugurated the National Science conference in Hindi "पेयजल: समस्या एवं निवारण" on 18 January 2021 at CSIR-IITR, Lucknow.
  - Smt. Sanyukta Bhatia, Mayor, Lucknow participated as a Special Guest in the inaugural function of National Science conference in Hindi "पेयजल: समस्या एवं निवारण" on 18 January 2021 at CSIR-IITR, Lucknow.

### 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 and 19 were granted 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**

- 06 SIROs were granted recognition and 03 were granted registration certificates.
- 17 SIROs were granted renewal of recognition and 04 were granted renewal of registration certificates.

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

- 12 PFRIs were granted registration certificates.
- 05 PFRIs were granted renewal of registration certificates

### **Fiscal Incentives for R&D by Industry**

- 62 reports in form 3CL submitted to CCIT under Section 35(2AB) of IT Act for weighted tax deduction on industrial R&D involving a total amount of Rs.290890.52 lakhs

## **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. 2735.20 Lakhs during January, 2021.
- Sale of items worth Rs. 2627.05 Lakhs was realized during January 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 three technologies and has been assigned 8 technologies by Central Manufacturing Technology Institute (CMTI), Bangalore during January, 2021.
- NRDC has collected premia of Rs. 6.00 Lakhs and royalty of Rs.10.74 Lakh from respective technologies during January, 2021.

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