

**No. DSIR/MS/2021/06**  
Government of India  
Ministry of Science & Technology  
Department of Scientific & Industrial Research  
**MONTHLY SUMMARY FOR THE CABINET**  
(For the month of **June, 2021**)  
(Part-I Unclassified)

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

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

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

- CSIR-CMERI has developed Oxygen Enrichment Unit of capacity 5/10/15 LPM to be used in modular form for installing plant with capacity of 50-100 LPM.
- CSIR-IICT has developed the process knowhow for the synthesis of 2-Deoxy-D-Glucose.
- CSIR-IICT signed agreements on Process knowhow for the synthesis of 2-Deoxy-D-Glucose with following industries:
  - Suven Pharmaceuticals Limited, Hyderabad
  - Lee Pharma Limited, Hyderabad
  - Anthem Biosciences Private Limited, Bengaluru
  - Nosch Labs Private Limited, Hyderabad
  - Emmennar Pharma Private Limited, Hyderabad
  - Krishna Pharma, Hyderabad
  - Sarvotham Care Limited, Hyderabad
  - Accure Labs Private Ltd, Hyderabad
- CSIR-IIP signed Transfer of Technology Agreement on Pressure Vacuum Swing Adsorption (PVSA) plant producing of Medical Grade Oxygen with Paras Defence & Space Technologies Ltd, Mumbai , 15.06.2021.
- RT-PCR Testing: 13 CSIR labs have been testing samples for COVID-19 across India. All the 13 CSIR labs together have tested about 14,00,000 so far. CSIR and TATA MD are working together to make COVID-19 detection more accessible across India by harnessing network of CSIR labs to ramp up the COVID-19 testing capacity across Tier II and III towns as well as rural areas. The initiative will utilize CSIR's network of labs across and the RT-PCR CRISPR test will be done using the Tata MD CHECK SARS-CoV-2 test kits that are powered by FELUDA technology from CSIR-IGIB. The first CSIR lab to set up this facility with Tata MD is CSIR-Indian Institute of Petroleum (IIP), at Dehradun, Uttarakhand. The current testing capacity will be 800 daily tests

that can be scaled up using the Tata MD CHECK automation solution if demand rises significantly.

- Recently, at Pune, CSIR-NCL has carried out sewage surveillance and apart from viral detection by RT-PCR in the sewage samples, it has also optimized sequencing of the virus. This allows for detection of variants in the sewage samples and the community. CSIR-NCL detected the presence of SARS-CoV-2 Delta variant from open drain by sequencing. These methods can be adopted in other cities too.

### **New Technologies/Processes Developed/Transferred**

- CSIR-CSIO has developed a Handheld & Large Screen Vein Visualizer
- CSIR-CSMCRRI has developed the following:
  - De-potash vinasse with indigenous sulfide oxidizing bacteria as a new aquaculture symbiotic “AQUA BOOST” ;
  - A zero discharge hydrometallurgy-based process for the recovery of valuable metals from spent lithium ion batteries;
  - Compounds for detection of hypochlorite and its method of preparation thereof;
  - Process for the preparation of 2-(arylthio)-N-pyridin-2-yl-aryl acetamides and their hydrochloride salts
- CSIR-NIIST developed the process for manufacture of edible & biodegradable products from wide range of agro-residues
- CSIR-CMERI transferred the High Flow Rate Iron Removal Filter technology to M/s Hindustan Engineering, Borthakur Mill Road, Ulubari, Kamrup Metropolitan, Guwahati-781007, Assam on 29.06.2021
- CSIR-IHBT signed an agreement with M/s Komal Innovation & Wellness Initiative on 25.06.2021 for transfer of technology for manufacturing / processing of Garnola bars - (millet and cereals based) and Spirulina peanut bar products.

### **Visit of high-level dignitaries**

- Sh. Virender Kanwar, Hon'ble Minister of Rural Development, Agriculture, Panchayati Raj, Animal Husbandry and Fisheries, Govt. of HP, visited CSIR-IHBT on June 17, 2021

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

- CSIR-CBRI signed an MoU on 04 June 2021 with Indian Institute of Technology, Jammu to promote Cooperative research and to facilitate the exchange of ideas, the development of new knowledge and to enhance high quality research.
- CSIR-CIMFR signed an agreement for Development of 250 Kg/day Syngas to Methonal Pilot Plant and Basic Engineering Package (BEP) of 100 TPD Coal to Methonal Plant with M/s. M N Dastur & Company Pvt. Ltd., P-17 Mission Row Extension, Kolkata on 29-06-2021.

- CSIR-CMERI signed a License Agreement with M/s Hindustan Engineering, Borthakur Mill Road, Ulubari, Kamrup Metropolitan, Guwahati-781007, Assam on transfer of high flow rate iron filter technology.
- CSIR-CSMCRI agreements signed:
  - Sponsored project agreement entitled "Techno Economic Feasibility study for recovery of value added chemicals from bitters" with Jivika Chem International LLP, Ahmedabad;
  - MoU for deployment of the knowhow "Preparation of Activated Carbon" with Chemplant & Engineering services, Kolkata;
  - Sponsored project agreement entitled "Pre-feasibility study on the separation of Ammonium Chloride from Sulphate of Potash (SOP)" with Fertis India Pvt. Ltd., Hyderabad
- CSIR-IHBT:
  - MTA signed with Sher-e-Kashmir University of Agricultural Sciences & Technology - Jammu (SKUAST-J) Chatha, Jammu (J&K) on 16.06.2021 for 100 plants of Hing to evaluate performance of Hing in Kishtwar, Dodar and Poonch Distt. of Jammu & Kashmir.
  - MTA signed with Sh. Ranjan Kumar C/o Alps Resort Upper Bakrota Hills, Dalhousie (H.P.) on 28.06.2021 to take up 13,000 plants of lavender.
- CSIR-IICT signed following other agreements:
  - To carry out vapour phase reaction in vapour phase catalytic facility under FTE contract and Exploration of suitable catalysts for isomerization of substituted benzene derivatives (Aarti Industries Limited, Mumbai)
  - Development of novel Mono dimensional shape selective molecular sieves to improve the physical properties and also yield of lube base (HPCL, Bengaluru)
  - License of technology for Synthesis of Agonist Molecule and demonstration of the optimized process (Sai Life Sciences Limited, Hyderabad)
  - Exploratory studies on catalytic process for the preparation of propylene carbonate using propylene oxide and carbon dioxide (Mobilchem Specialty Pvt Ltd, Mumbai)
- CSIR-IIIM signed following agreements during the month:
  - MoA was signed between CSIR-IIIM, Jammu and Department Of Biotechnology, on 01-06-2021 under recently sanctioned project entitled "Exploiting chemical ecology for IPM: Deciphering the phyto-chemiochemicals involved -Plant interactions of major crop pests of North East Region-India by DBT to accomplish following objectives under project: 1. Initial characterization of the semiochemicals in selected crops (Banana & Citrus) 2. Structural studies and functional validation of identified compounds 3. Synthesis of most promising pheromonal compounds.
  - MoU was signed between CSIR-IIIM, and M/S Terraphilic Innoventures Pvt. Ltd., 1309 P, Sector-43, Gurgaon, Haryana-122001 on 16-06-2021 to lay down broad outline of R& D Collaboration on mutually agreed terms and conditions to explore 1) the possibility of conducting

- research under contract through collaborative or sponsored mode (s)  
 2) to explore the possibility of writing joint R&D project of mutual interest for funding from external agency 3) To conduct clinical trials under AYUSH or DGCI as applicable for selected formulation(s)
- MoU was signed between CSIR-IIIM and Department of Forests and Wildlife Preservation, SAS Nagar, Punjab on 16-06-2021 to work jointly on product development from selected medicinal plants of the state, wherein forest department will provide genuine botanical raw material for development of Phytopharmaceutical drugs/ nutraceuticals/ Food supplements. 2) Valuation of minor forest produce 3) Involvement of farmers for nursery raising & cultivation of MAPs.
  - CSIR-IIP signed Amendment MoU on Biodiesel production based on CSIR-IIP room temperature process for research activities with Chhattisgarh Biofuel Development Authority, Chhattisgarh, 21.06.2021
  - CSIR-NBRI signed Memorandum of Understanding to take all necessary steps required for promoting technologies together with their commercialization in India with North East Centre for Technology Application and Reach (NECTOR), Shillong.
  - CSIR-NIIST signed an agreement regarding manufacture of edible & biodegradable products from wide range of agro residues with M/s Nature's Solution, Noida, Gautam Buddha Nagar.

### Patents Update:

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
14	20	27	22	45	15

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

### High impact S&T services offered

- CSIR-CMERI:
  - Design, detail engineering, manufacturing & installation of 11.5 kWp Solar Artifact for R M Lal Khan Women College, Midnapur, WB.
  - Design Engineering, Supply, Installation, Testing & Commissioning of 04 Nos On-grid Solar Artifact, each capacity 3 kWp for WBREDA, Electronic Complex, Kolkata, WB
  - Installation & commissioning of integrated Rural Solid Waste Disposal System for Manipur State.
- CSIR-CRRI:
  - Noise Mapping, Identification of Hot Spots and Mitigation Plan for Control of Noise Pollution for Jaipur, Jodhpur and Kota for Rajasthan State Pollution Control Board (RSPCB).
  - Noise-vibration control light proofing (privacy control) for wildlife and noise barrier design & preparation of guidelines for IRC to be adopted for National Highway Authority of India (NHAI)

- Evaluation for strengthening of 24 meter roads of sector-10, Greater Noida for Greater Noida Industrial Development Authority.
- Strengthening of roads under Division East Road (M212) Sub Division II PWD Delhi for Public Works Department (PWD), Delhi

### **Other items of significance**

- The CSIR-CMERI 'Mechanized Drain Cleaning System' was deployed at the National Institute of Technology, Durgapur, and National Power Training Institute, Durgapur, for field trials.

### **Workshop/Seminars/Conferences organized**

- CSIR-CECRI organized online Workshop on “Electro-organic and Materials Electrochemistry” Organized by the Society for Advancement of Electrochemical Science and Technology (SAEST) and CSIR-CECRI
- CSIR-CMERI organized the following webinars:
  - Webinars on ‘Oxygen Enrichment Unit - Opportunities & Scope for Indian MSMEs’ by the MSME Development Institute, Indore ;. Webinar on ‘Oxygen Enrichment Technologies and Financial Assistance from SIDBI for MSMEs in Assam’ organized by SIDBI in association with the Government of Assam and Grant Thornton Bharat for the MSMEs of the region on 2 June; A Webinar on ‘Oxygen Enrichment Unit- Seeking MSME partners for solving the Oxygen Crisis’ was organized by MSME-DI, Jammu in association with CSIR-CMERI on 4th June 2021 for the MSMEs of the region.
  - CSIR-CMERI organized a 'HACKATHON' on the Development of GUI-based 3D CAD Slicing and Sliced 2D Tool Path.
- CSIR-CSMCRI Events:
  - A webinar on "Spent Wash Management Technology" to be held on 30th June 2021 at 3.00 PM as part of the ‘CSIR’s 80 Years 80 Success Stories’
- CSIR-IHBT:
  - On-farm awareness-cum-training programmes was organised on “Cultivation of Hing and Aromatic crops” to the farmers of Village Salgran of Distt. Lahaul & Spiti (H.P.) on 19th June, 2021
  - One day training program on agro and process technologies of wild marigold was organised by CSIR-IHBT, Palampur in association with EWOK (Enabling Women of Kamand Valley) society (IIT Mandi) on June 19, 2021.

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

- Under CSIR-CECRI’s JIGYASA: Connect with Scientists (Webinar series) the following webinars conducted in the month of June 2021:
  - Food toxicants sensors: challenges driven opportunities on 10 June 2021; Electrochemical water treatment methods on 17 June 2021; Recent advances in polymer electrolyte fuel cells and material challenges on 18 June 2021
- CSIR-CECRI also conducted three Online Skill Development Trainings (one week duration) on the following topics:

- Energy Materials: Fundamentals to Device Fabrication [21 June 2021]
  - Corrosion Protection Technologies for Construction of Buildings & Structures [28 June 2021]
  - Operation and Maintenance of Analytical Instruments [28 June 2021]
- A total of 1150 students got trained.
- CSIR-CMERI organized Jigyasa Programme on 24 June 2021 for Malda and Nadia district students. The topic was “Water filter technology for removing Arsenic, Iron and Bacterial contaminations.” One hundred and fifty five students attended the programme.
  - CSIR-CSIO organized following Skill Development Workshops
    - Six sigma and quality control management – 01 June 2021
    - Fundamentals of Conventional Machining on 04 June 2021
    - Fundamentals of CNC part programming on 10-11 June 2021
    - Artificial Intelligence on 15 June 2021.
    - Hydraulic and pneumatic techniques for industrial automation- 16th June
    - Solar Energy/Renewable Energy Smart Technology on 30 June 2021
  - CSIR-IHBT:
    - Under CSIR Floriculture Mission, CSIR-IHBT organized training programme at Jhandutta, District Bilaspur on 11 June 2021. Prospects of crops like carnation, marigold, gladiolus, lily and gerbera were discussed for farmers of Jhandutta area.
    - One day training program on the cultivation of saffron in non-traditional areas was conducted by CSIR-IHBT, Palampur for the agriculture officers from Chamba, Kinnaur, Mandi, Kullu, Kangra, and Shimla districts of HP on June 18, 2021. More than fifteen Agriculture officers from the Department of Agriculture, Govt. of HP participated in the training program through virtual mode.

## **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.

## **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. 1944.59 Lakhs during June, 2021.
- Sale of items worth Rs.1892.76 Lakhs was realized during June, 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 eight technologies to industry during June, 2021. Seven companies 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 collected premia of Rs. 36.00 Lakh from respective technologies during June, 2021.

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