

No. DSIR/MS/2021/02
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **February, 2021**)
(Part-I Unclassified)

Major achievements during the month of February, 2021:

1. Council of Scientific & Industrial Research (CSIR)

Update on Initiatives for COVID-19 Mitigation

- CSIR-CCMB and CSIR-IGIB as a part of the pan Indian SARS-CoV-2 Genomics Consortium (INSACOG) for Genomic Surveillance for SARS-CoV-2 set up for monitoring the recent emergence of several variants of the virus with increased transmission etc. have been carrying out sequencing of the SARS-CoV-2 genomes and sharing the data with National Centre for Disease Control (NCDC) and other regulators for appropriate action. In addition to that genome sequencing is being done for Thyrocare and State Government of Kerala by CSIR-IGIB. So far about 700 sequences have been performed by CSIR-IGIB and the results, are analysed both by the lab as well as NCDC.
- A first of its kind genome sequencing laboratory has been launched at the New Delhi International Airport by CSIR-IGIB along with SpiceHealth company for testing samples of all travellers arriving into the country who test positive for Covid-19. Sample testing through sequencing has been highly successful at Delhi Airport. Sample to sequencing and results take 3 working days.
- Apart from genomics based surveillance, CSIR has taken up sero-surveillance in a big way. Sero-surveillance of Hyderabad city has been done by CSIR-CCMB and ICMR-NIN. Finding the status of neutralizing antibodies is also part of the study. CSIR-CCMB and ICMR-NIN have collected 9,500 samples in Hyderabad City for sero-surveillance (300+ sample/ward for 30 wards). The results of the sero-surveillance study done in Hyderabad show 54% seropositivity.
- The vaccination program in India started in January 2021 and CSIR has initiated studies to understand the effectiveness of vaccines in generating antibody response and its kinetics. Studies on the immune surveillance post vaccination data from Max Hospital conducted by CSIR-IGIB showed that the persons who were seropositive before vaccination showed high antibody level with days while those who were seronegative showed presence of antibody in 14 days. The study was performed on a group of 135 healthcare workers administered Covishield. These studies would be useful in determining optimal timing of the second dose during mass immunization within the constraints of vaccine supply and administration.

<https://www.medrxiv.org/content/10.1101/2021.02.28.21252621v1.article-info>

- Further, CSIR-CCMB has signed a MoU with State Health Dept in Hyderabad for post vaccination immune surveillance study in which CCMB plans to test around 200 samples, which will be provided by State Health Dept.
- Thirteen 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 > 9,00,000 so far.
- The Phase 3 clinical trial of Sepsivac with Cadila and the Phase III clinical trial of repurposed drug for Umifenovir being carried out by CSIR-CDRI are underway.
- Under the CSIR-Ministry of AYUSH Joint Initiative on validation of traditional ayurvedic formulations through scientific evidence, four formulations have been taken up for their clinical safety and efficacy against COVID-19. So far in the clinical trials of three formulations viz., Ashwagandha, Guduchi + Pippali, and Yashtimadhu, the recruitment of study participants has been completed in all three trials and that the follow-up is going on.,It is expected that the trials including 12-week follow-up would be complete by the end of April 2021 and reports would start coming in from May 2021 onwards.
- CSIR is working on various air disinfection/purification systems such as UV based disinfection and is testing out deployment in Rail Coaches, Metros etc.
 - MODULAR UV DISINFECTANT SYSTEM, for rooms, HVAC systems in malls, offices etc has been developed. The UV exposure required to kill the coronavirus was tested and validated at CSIR-IMTech using SARS-CoV-2 viral cultures. As a pilot study, the system has been installed at CSIR HQ Auditorium, air duct system. CSIR is exploring retrofitting in Lucknow Metro and railway coaches etc.
 - CSIR-CSIO has also developed indigenous air sampler, which can detect the presence of virus in the air samples. This would be useful if deployed in high volume gatherings in enclosed spaces such as malls, auditorium, movie theaters and hospitals. These devices have been tested to see if they can detect the virus at CSIR-IMTECH. CSIR-CSIO is currently making these devices, and will be licensed to interested industries and MSMEs

New Products/Processes/ Technologies developed

- CSIR-NCL's efforts for developing novel antiviral agents have resulted in the discovery of a potent SARS CoV2 active molecule - featuring a new motif. The process for continuous flow synthesis of Mesoporous Silica has been developed. Pilot plant is under installation for 1 kg/day capacity.
- CSIR-CEERI has developed a growth recipe of ~ 1 μm thick n-GaN with Si-doping on 2 inch sapphire substrate optimized by metal organic chemical vapor deposition (MOCVD) reactor for GaN based LEDs application. The Institute has also developed a process for fabrication of fan-out on Si-substrate for flip chip bonding of UV LEDs is developed.

Technologies licensed/transferred during the month

- CSIR-CRRI transferred technology on Macrosurfacing, thin surfacing for cement concrete pavement to JMVD Industries Pvt. Ltd. on 22 February 2021.

- CSIR-IHBT signed a technology transfer agreement on 09 February 2021 with M/s Carol's Formulations, C/o Noble Product for a formulation that promotes cartilage health 09.02.2021.
- CSIR-IHBT signed two technology transfer agreements for manufacturing/ processing of (i) Energy/Granola bars - (millet and cereals, protein based) PRODUCTS, and (ii) instant beverage mixes products/ variants with The MAK BIOTEK, K-22, Sawan Park Ashok Vihar, Phase-3, New Delhi 110052 on 22 February 2021

Patents Update:

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
7	9	26	15	-	-

**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 agreement with Oil and Natural Gas Corporation Limited HQ, Dehradun on February 18,2021. The agreement envisages to undertake the work on “Fire Safety Audit of GEOPIC & ONGC Academy Building”.
- CSIR-CBRI signed an MoU with Rajarambapu Institute of Technology, Rajaramnagar on February 2, 2021 for enhancing the availability of highly qualified manpower in the area of Civil Engineering and other allied areas of Engineering, Technology and Sciences
- CSIR-CECRI signed an MoU with Narendra Explosives Limited, Dehradun for collaboration in the area pyrotechnique compositions and green crackers safety arming devices compositions.
- CSIR-CECRI entered into an agreement with JSW Steel Limited, Mumbai forelectrowinning of Iron from commercial and Ferrous Sulphate produced from JSW Steel Ltd
- CSIR-CIMFR agreements:
 - Tripartite Agreement between South Eastern Coalfields Limited (SECL), SECL Bhawan, Bilaspur, Chhattisgarh; M/s. Jindal Power Limited, Raigarh and CSIR-CIMFR, Dhanbad for coal sampling work on 09-02-2021.
 - Tripartite Agreement between Northern Coalfields Limited (NCL), At + PO – Singrauli, M. P.; M/s. Gujarat State Electricity Corporation Limited, Vadodra and CSIR-CIMFR, Dhanbad for coal sampling work on 10-02-2021.
 - Tripartite Agreement between Eastern Coalfields Limited (ECL), Dishergarh, Burdwan, W.B.; M/s. Talwandi Sabo Power Limited, Mansa, Panjab and CSIR-CIMFR, Dhanbad for coal sampling work on 25-02-2021.

- Tripartite Agreement between Central Coalfields Limited, Darbhanga House, Ranchi; M/s. Talwandi Sabo Power Limited, Mansa, Panjab and CSIR-CIMFR, Dhanbad for coal sampling work on 26-02-2021.
- CSIR-IHBT agreements:
 - MoU for joint collaboration in the area of essential oils with M/s Jaishree Enterprises, Block No. D, Plot No. 18 Sector 4B, Adipur Gujarat on 02.02.2021
 - Agreement with NMPB for approved project "Development of probiotics for plant tissue culture: Boosting the performance of micropropagated plant materials by supplementing plant associated useful endophytes on 03.02.2021
 - MoU signed for strategic partnership as well as implementation partnership based on principles of mutual strengths and benefits for the purpose of livelihood promotion and rural development in Chamba District, HP with Deputy Commissioner, Chamba, HP, on 17.02.2021
 - Agreement for utilizing facility available at CSIR-IHBT for making/ producing Biofertilizer product with M/s Golden Rise, V.P.O. Patti, Tehsil Palampur District Kangra (H.P.) 176 061 on 17.02.2021
 - Technology transfer agreement for manufacturing/ processing of (i) Energy/Granola bars - (millet and cereals, protein based) PRODUCTS, and (ii) instant beverage mixes products/ variants with The MAK BIOTEK, K-22, Sawan Park Ashok Vihar, Phase-3, New Delhi 110052 on 22.02.2021
 - Consultancy agreement to construct one drying shed and one storage godown at Ayurvedic Pharmacy Paprola (H.P.) with Director Ayurveda-cum-Member Secretary State Medicinal Plant Board on 23.02.2021
- CSIR-IICT:
 - MoU signed between CSIR-IICT and M/s Shiva Pharma chem. Ltd, Vadodara, Gujarat for the project "Validation of CSIR-IICT catalyst for the oxidation of mesitylene to produce 3,5-dimethyl benzoic acid(DMBA)"
 - MoU signed between CSIR-IICT and VLINE Pharmachem Pvt. Ltd., Hyderabad for the project "Synthesis of the key intermediate 1-(3-(2-(7-Chloro-2-quinolinyl)ethenyl)phenyl)ethanone of Montelukast"
 - MoU signed between CSIR-IICT and M/s Renovis Pharma Labs LLP for "Collaboration in R&D activities related to Pharmaceutical key starting materials and intermediates"
 - Tripartite Agreement between Council of Scientific and Industrial Research, Cipla Foundation and HelpAge India for Project SAANS for producing masks
 - MoU with Department of Chemicals and Petrochemicals. Ministry of Chemicals & Fertilizers Government of India, New Delhi (05-02-2021)
- CSIR-IIIM signed and MoU with a women entrepreneur Ms Hiresha Verma on 15th Feb, 2021.

Collaborations/Agreements/MoUs Signed (International)

- CSIR-IICT is a partner in the Indo-Denmark collaborative research project funded by DBT with IIT Guwahati & G B Pant University of Agriculture & Technology, Pant Nagar on “Innovative algae platform for industrial wastewater valorization”.
- CSIR-NCL has initiated collaboration with the group of Prof. Daniel Crespy (Department of Materials Science and Engineering, Rayong, Thailand) to develop supramolecular polymers featuring our recently developed Janus G-C nucleobase self-assembling system.

High impact S&T services offered

- CSIR-CRRI conducted a feasibility study for the construction of Flyover/Underpass/Grade separator at three intersections in Surat City, Gujarat. CSIR-CRRI is also carrying out the investigation and evaluation of UP PWD Roads Funded by World Bank/ADB
- CSIR-IHBT services:
 - Scale-up synthesis of cyclohexane-1,3-diones and 4-alkyl resorcinol production as high value bioactive chemicals
 - Evaluation of biofertilizer for Arizona Biotech Pvt. Ltd

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-CBRI under the CSIR Integrated Skill Initiative conducted an ‘Advanced Course on Ground Improvement Techniques’ during February 15-17, 2021.
- CSIR-CECRI conducted a one week online skill development training program on Electroplating and Metal Finishing Technologies during 08-12 February 2021. A total of 70 participants registered and 59 participated in the above training. The Institute also held a one week online skill development training program on Paints and Coatings for Corrosion Protection 22-26 February 2021. In all, 130 participants registered and 90 participated in the above training.
- Under Jigyasa and as a part of the National Science Day Celebrations, CSIR-CECRI organized the following Online competitions on 19 February 2021
 - Online quiz competition on "Nobel Prize Winners" - Category - IX - XII STD - No. of Participants : 1792
 - Online slogan competition on "Future STI : Impact on Education, Skill and Work" - Category VI - VIII STD - No. of participants : 1926
 - Online quiz competition (exclusively for girl students) on "Women and Girls in Science" - Category - IX - XII STD - No. of participants : 1423
- CSIR-CRRI conducted three days customized online training programme on "New Technology Initiatives in Rural Roads and Use of Marginal Materials" during February 15-17, 2021. Forty three participants from various parts of India attended. The Institute also conducted three days regular online training programme on "Pavement Evaluation Techniques" during February 17-19, 2021. Other programmes conducted by CSIR-CRRI include:

- Three days customized online training programme on "Design, Construction, Quality Control Aspects of Flexible & Rigid Pavements" during February 22-24, 2021.
- Three days regular online training programme on "Design of Bridge Structure and Foundation" during February 24-26, 2021.
- CSIR-CSIO organized a competition for school children on "Innovative Content for Science Teaching" under CSIR-JIGYASA program.
- CSIR-IIIM organized a skill development programme for farmers under CSIR-Aroma Mission held in different parts of J&K U.T on 09-02-2021.
- Under the CSIR Integrated Skill Initiative programme CSIR-IITR, a training course on "Quality Management System for Research and Regulatory Laboratories" was held on 22/02/2021.

Conferences, Workshops, etc. organized

- CSIR-CECRI organized an Industry Meet and Brainstorming Session on Energy Conversion & Related Devices under CSIR's Energy (Conventional & Non-Conventional) and Energy Devices Theme on 05 February 2021.
- CSIR-IHBT coordinated a course of "Quality control biologist" under skill development program of DBT-HIMCOSTE.
- CSIR-IICT in association with IWSA (Indian Women Scientists Association) Hyderabad and Atal Incubation Centre-CCMB organized the IUPAC-Global Women's Breakfast 2021 (GWB2021) on 9th Feb' 2021. The purpose of the event is to provide a networking platform for women in science in a meaningful way to support professional aspirations and discuss on the theme for GWB2021 "Empowering Diversity in Science". Seventy eight women scientists from different scientific and academic institutes of Hyderabad participated in the event.
- CSIR-IIIM-Technology Business Incubator in collaboration with Venture Centre, Pune organised an awareness camp on 18 and 19 February 2021 where over 65 entrepreneurs, students & faculty of biotechnology took part. 18-19th of Feb, 2021.
- CSIR-Indian Institute of Toxicology Research in partnership with FSSAI and Capability Harnessing Initiatives on Food Safety Sciences (#CHIFSS) organised a Workshop 2021 on "Risk Assessments of Novel Foods: Scientific and Regulatory Framework" for Food Processing Industries, Scientists and Research Professionals, Academia- Students & Faculties and Regulatory Agencies on 24 February 2021.
- A bilateral CSIR - Belarus interactive meeting was organised on 17.02.2021 through MS Teams with participation of experts from National Academy of Science, Belarus and CSIR for identifying collaboration potential in the areas of a) Radio & Space Physics, b) Information technology; c) Chemicals, Drugs, Biotechnology; d) Nanotechnology, Materials; e) Unmanned systems; and f) Mining. Participation of 85 persons was recorded online which included experts from 13 CSIR Institutes and CSIR-HQ, 1 from IRS, ISRO and 9 institutes and NAS HQs from NAS Belarus.

Visit of high level dignitaries to the Institute/Laboratory

- Hon'ble Shri M Venkaiah Naidu ji, Vice President of India was the Chief Guest for the function of CSIR-Central Building Research Institute's 75th Foundation Day on February 10, 2021. Dr Harsh Vardhan, Hon'ble Minister of Science and Technology and Vice President, CSIR and Hon'ble Shri Jairam Thakur, Chief Minister, Himachal Pradesh were the Guests of Honour.
- Honourable Member of Parliament (Rajya Sabha), Dr. Sudhanshu Trivedi visited CSIR-CRRI on February 25, 2021 and inaugurated energy efficient 84 capacity training hall. The Hon'ble MP also delivered National Science Day Lecture on "Future of Science, Technology and Innovation: Impacts on Education Skills and Work".

Other items of significance

- CSIR-CEERI: Under the project activity entitled "Design & development of thick film sensor electrodes for EMAT" fabrication of 10 thick film electrodes for Milk Analyzer as per requirement of REIL, Jaipur has been completed.
- CSIR-CRRI:
As a part of awareness campaign in Road Safety Month, an online lecture and quiz was organised by CSIR-CRRI on 28-01-2021 for the students of Delhi NCR under the JIGYASA program. Around 600 students participated in the programme.
- CSIR-IICT and its industry partner M/s Vinati Organics Limited, Mumbai has been declared as the winner of the National Award -2020 for the development and commercialisation of Product Para-Tert-Butyl-Toulene(PTBT) & Para-Tert_Butyl-Benzoic Acid(PTBBA) by the Technology Development Board, New Delhi

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

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

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

- 06 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 108 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.502257.50 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. 2623.25 Lakhs during February, 2021.
- Sale of items worth Rs. 2600.89 Lakhs was realized during February 2021.
- Technology obtained from Electronics and Radar Development Establishment (LRDE- DRDO), Bangalore for manufacturing of Transmit /Receive(TR) modules and appreciation received from Election Commission for prototype Remote Voting Machine(RVM) were the major achievements reported.

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 18 technologies by Central Manufacturing Technology Institute (CMTI), Bangalore during February, 2021.
- NRDC has collected premia of Rs.11.46 Lakhs and royalty of Rs.3.25 Lakh from respective technologies during February, 2021.
