

No. DSIR/MS/2021/03
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **March, 2021**)
(Part-I Unclassified)

Major achievements during the month of March, 2021:

1. Council of Scientific & Industrial Research (CSIR)

Update on Initiatives for COVID-19 Mitigation

- CSIR labs have so far set up 11 Makeshift Hospitals with around 350 beds, one each in Ghaziabad, Chennai with NDRF; one in Bhopal and 6 in Himachal Pradesh and 2 in Jammu. CSIR is ready to deploy more as and when the need arises.
- CSIR-CCMB and CSIR-IGIB, as a part of the pan-India SARS-CoV-2 Genomics Consortium (INSACOG) for Genomic Surveillance 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 NCDC and other regulators for appropriate action.
- CSIR-Indian Institute of Chemical Technology (CSIR-IICT) entered into agreement with Bharat Biotech International, along with two companies, to develop new platforms and locally make raw materials for bio-therapeutics and vaccines. Further, Bharat Biotech, Biovet and SapigenBiologix signed a master collaborative agreement, under which the three companies will provide necessary financial support to CSIR-IICT for developing key raw materials. The tie-up is not aimed at just COVID-19 vaccines and bio-therapeutics but also for the development of other vaccines, and includes the development of platforms such as inactivated and messenger RNA vaccines as well as the required raw materials required. This is as a follow up of important contribution by CSIR-IICT, in developing a synthetic process route for adjuvant molecule TLR 7/8 to BBIL for Covaxin, the indigenous vaccine rolled out by BBIL.
- 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 10,73,000 samples 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.
- An Oxygen Concentrator has been developed by CSIR-IIP, which has 100% indigenous components and is 50% cheaper than market cost. The cost of

medical-grade oxygen from the developed device is lower than the market cost. The certification of the device is ongoing and will be completed in next few days and will greatly aid in filling the need for oxygen concentrators.

- A National Healthcare Supply Chain Portal “Aarogyapath” developed by CSIR in partnership with Sarvodaya Infotech which is aimed at filling the critical gaps in last-mile delivery of patient care within India via improved availability and affordability of healthcare supplies is now hosted on the National Health Portal of Ministry of Health and Family Welfare.

New Products/Processes/ Technologies developed

- CSIR-CSIO developed pre-positionable prosthetics, Quadcopter based harvester for harvesting from tall trees, Machine for performing Double Volume Exchange Transfusion and Ambu Bag based portable ventilator (Respi-Aid).
- CSIR-IIP developed a process for recovery of Aromatics from Cracked Naphtha.
- CSIR-NML developed the following:
 - Zincometer, a sensing device for real-time Zinc weight measurement in galvanized wire lines.
 - Process for energy-efficient production of low/medium Carbon Ferromanganese.
 - Process for conversion of Hematite fines to Magnetite using Compressed Natural Gas (CNG).

Technologies licensed/transferred during the month

- CSIR-CMERI:
 - 5 Modules of Integrated Municipal Solid Waste Disposal System (iMSWDS) consisting of (i) Screw Sludge Press, (ii) Regenerative Hot Air Drying System, (iii) Waste plastic disposal utilizing pyrolysis process (excluding Pyrolyser), (iv) Biomass Composter & (v) Biomass Briquetting technology were transferred to M/s Sainath Enviro Tech, Tuticorin-628003, Tamil Nadu
 - Oxygen Enrichment Unit (5-10 LPM) technology transferred to M/s Zen Medical Technologies Private Limited, Dist. Ranga Reddi-501510, Telangana
 - Intelligent UVC LED Sterilizer Unit technology transferred to M/s Trinity Microsystems Pvt. Ltd., Laxmi Nagar, New Delhi-110092
 - High flow rate arsenic removal filter technology transferred to M/s Unicare Technologies Private Limited, Pune Nagar Road, Wagholi, Pune-412207
 - High flow rate Fluoride & Iron removal Plant technology transferred to M/s Unicare Technologies Private Limited, Pune Nagar Road, Wagholi, Pune-412207 and M/s Aquagrants Water Purifier (P) Ltd., Anishabad, Patna, Bihar.

- CSIR-IHBT:
 - Tea based immune-boosting formulation licensed to M/s Vigada Care Private Limited, K-19A, Kalkaji, New Delhi-110019 on 01.03.2021
- CSIR-IICT:
 - Process development for preparation of Superabsorbent polymer (SAP) for Hindustan Petroleum Corporation Limited , Bangalore
 - Recovery of hydrocarbons from oil sludge to reduce environmental impact for Sar Chandra Environ Solutions Pvt. Ltd. Kakinada
 - Development of antiviral-coatings on fabrics using nanomaterials for producing medical masks for Tata Chemicals Limited, Mumbai
- CSIR-NML:
 - Portable Binder detection device handed over to Tata Steel
 - E-waste recycling technologies for the extraction of Cu, Al and Au from waste printed circuit boards (PCBs) transferred to M/s Metaore Recycling Pvt. Ltd., Kolkata
- CSIR-IHBT transferred the “Technology of cultivation and production of kutki and jatamansi” to M/s Hydrocrops Pvt., Ltd., Jalandhar on 17.03.2021

Patents Update:

- Number of patent applications filed in India: 30
- Number of patent applications filed abroad*: 08
- Number of patents granted in India: 48
- Number of patents granted abroad*: 30
- Number of Copyright Applications filed: 03
- Number of Design Applications filed: 01

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
30	08	48	30	42	14

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

Collaborations/Agreements/MoUs Signed (National)

- CSIR-4PI: MoU was signed as on 12th March, 2021 between CSIR Fourth Paradigm Institute (CSIR-4PI), Bengaluru and Dayananda Sagar College of Engineering (DSCE) Bengaluru, Karnataka 560078 for collaboration in the following areas: High performance computing, Data Analytics, Cyber Security, Artificial Intelligence and Machine Learning, Computational and Data Science and Applied Physics.
- CSIR-CIMFR:
 - Tripartite Agreement between Central Coalfields Limited, Darbhanga House, Ranchi; M/s. Gujarat State Electricity Corporation Limited, Vidyut Bhavan, Race Course, Vadodra, India and CSIR-CIMFR, Dhanbad on 08-03-2021.

- Tripartite Agreement between Eastern Coalfields Limited (ECL), Sanctoria, PO. Dishergarh, Burdwan; M/s. Talwandi Sabo Power Limited, Mansa, Panjab and CSIR-CIMFR, Dhanbad on 12-03-2021.
- Tripartite Agreement between Central Coalfields Limited, Darbhanga House, Ranchi; Nabha Power Limited, Rajpura, Patiala, Punjab and CSIR-CIMFR, Dhanbad on 19-03-2021.
- Tripartite Agreement between Central Coalfields Limited, Darbhanga House, Ranchi; M/s. Talwandi Sabo Power Limited, Mansa, Panjab and CSIR-CIMFR, Dhanbad on 22-03-2021.
- Tripartite Agreement between Eastern Coalfields Limited, Sanctoria, PO. Dishergarh, Burdwan; Nabha Power Limited, Rajpura, Patiala, Punjab and CSIR-CIMFR, Dhanbad on 22-03-2021.
- CSIR-CMERI:
 - MoU signed with Dept. of Science & Technology & Biotechnology, Govt. of WB, Vigyan Chetana Bhavan, DD Block, Plot 26/B, Sector-1, Salt Lake, Kolkata-700064, WB for safe disposal of fluoride rich sludge through encapsulation in cement establish block using the low cost geo materials
- CSIR-IHBT:
 - MoUs signed for close cooperation in research and academic activities with National Institute of Technology Hamirpur (Himachal Pradesh) and National Institute of Technology Jalandhar (Punjab) on 01.03.2021.
 - Co-development of the products related to metabolism enhancement with M/s Vigada Care Pvt. Ltd., Ground Floor, K-19A, Kalka Ji, New Delhi, South East Delhi – 110 019 on 08.03.2021
 - Technology transfer agreement to make herbal soap and herbal oil with Ras Vaidyashala, Jobner, Jaipur (Rajsthan)- 303 329 on 09.03.2021.
 - Cultivation and production of Kutki and Jatamansi plant under hydroponic system with Hydrocrops India Pvt. Ltd., Jalandhar (Punjab) on 17.03.2021
- CSIR-IICT:
 - Joint collaboration agreement with Bharat Biotech, Hyderabad on 29 March 2021 to develop new technologies for biotherapeutics & vaccines to support indigenous & affordable health care solutions for humans & animals.
 - Design and commissioning of Accelerated Anaerobic Composting (AAC) System at Suryapet Agriculture Market Yard (250 kg/day) (Director of Agriculture Marketing (DAM), Govt. of Telangana)
 - Collaboration in R&D activities related to R & D in the area of Production of Ascorbic acid (Vitamin C) from 2 Keto L Gulonic Acid.(Amar & Yashasvi Industries Private Limited)
- CSIR-IIP: MoU on Joint research for Process development/fermentation of thraustochytrids in presence of crude glycerol for the production of OMEGAs International Centre for Genetic Engineering and Biotechnology, New Delhi on 21.03.2026
- CSIR-IITR: Two new projects from UP State Power Corporation for environmental monitoring have been initiated. [Project Value Rs. 35 Lakhs]

- CSIR-IMMT: Terafil water filter to M/s Ramashree Chemicals Pvt. Ltd., ON 16/03/2021; and to M/s J.K. Pollution Killer, on 08/03/2021; MoU between NML, IMMT, JNARDDC, NALCO, Hindalco & Vedanta for technology development for holistic utilization of red mud for extraction of metallic values & residue utilisation on 31-03-2021
- CSIR-NAL:
 - MoU for computational electromagnetics and undertake research and development (R&D) projects in core areas of activities on turn-key basis with M/s. Society for Applied Microwave Electronics Engineering & Research, Ministry of Electronics., Govt., of India (SAMEER) Kolkata on 03-03-21
- CSIR-NIO and The Japan Agency for Marine-Earth Science and Technology signed a Memorandum of Cooperation (MoC) for Cooperation in Climate, Ocean and Earth Sciences on 30 March 2021.
- CSIR-NML:
 - Transfer of technological know-how for the extraction of Cu, Al and Au from waste PCBs (know-how and secrecy) with Metaore Recycler Pvt Ltd, Kolkata
 - Development and transfer of know-how for the recovery of Co, Li, and Mn from Lithium-ion batteries (LIBs) (know-how & secrecy) with Metaore Recycler Pvt Ltd, Kolkata

Collaborations/Agreements/MoUs Signed (International)

- CSIR-4PI: Collaboration Agreement for COVID-19 Research Support was signed between CSIR Fourth Paradigm Institute (CSIR- 4PI), Bengaluru and Advanced Micro Devices, Inc. (AMD), USA on 3rd March 2021

High impact S&T services offered

- CSIR-CRRI: Design of Bank Protection work of Haraminalla at Indo-Pak Border, Bhuj, Gujarat.
- CSIR-IHBT:
 - Metal catalyst and hydrogen gas-free selective reduction of biomass-derived substituted furfuraldehyde to alkyl furan as a key biofuel additive.
 - Encapsulation of Rhododendron arboreum by spray drying
 - Cytotoxicity evaluation on samples through CSIRTech
- CSIR-NCL: Technical service was offered to Refining and Petrochemical R&D division of Reliance Industries Ltd. (RIL) for generation of vapor-liquid-equilibrium (VLE).
- CSIR-NML carried out corrosion aggressivity testing of mine water samples. The objective was to measure the corrosion rate of line pipe steel in the supplied water sample under different conditions.

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-CECRI organized skill development programme on electrochemical power sources - Lead acid battery care and maintenance [Online] during 15 -19 March 2021 - total 70 participants attended the training).
- CSIR-CIMFR conducted skill Development Programme on Analytical Chemistry and its Application in Soil and Water Analysis (23-27 March, 2021)
- CSIR-CMERI:
 - Jigyasa Webinar on 'Internet of Things' on 24th March 2021 at 03:00 p.m. for the Kendriya Vidyalaya students of West Bengal, Jharkhand, and Bihar.
 - Two-day Skill Development Training Programme on “Analytical Techniques and Instrumentation for Water Quality Assessment” & number of students & faculty members from the B. B. College, Asansol attended the programme.
 - Five Days Skill Development Programme on “Non-Destructive Testing, Material Characterization and Vibration Analysis of Industrial Components from March 8-12, 2021. The participants from engineering colleges like the National Institute of Technology, Durgapur and from different industries around Durgapur have joined the Skill Development Programme.
 - Three-day residential training program on "Integrated Municipal Solid Waste Management: Zero Waste Solutions" from March 16, 2020, where 25 participants including students and officials from Urban Water Supply & Sanitation Services Advisory Network (host organization: Pragati Bio And Renewable Energy), Bihar participated.
 - Six months Industrial Training Programme to 7/8th Semester B. Tech Students in Design & Advanced Manufacturing Dept., from March 21 to July, 21.
 - Six months Training Programme on Agri-Automation under the Farm Machinery and Precision Agriculture Dept. from February to June 2021.
- CSIR-CRRI:
 - Three days customized online training programme on "New Technology Initiatives in Rural Roads and Use of Marginal Materials" during March 03-05, 2021.
 - Online training programme on "Capsule on Airfield Engineering" during March 08-12, 2021.
 - Three days regular online training programme on "Design, Construction and Quality Control Aspects of Flexible & Rigid Pavements" during March 10-12, 2021.
- CSIR-IICT: Technology Demonstration for Rural Entrepreneurship: a UBA-CSIR-VIBHA initiative was organized by Unnat Bharat Abhiyan, Indian Institute of Technology in association with Council of Scientific and Industrial Research (CSIR), and Vijnana Bharati (VIBHA) March 19, 2021 IRD Conference Room, Indian Institute of Technology Delhi.
- CSIR-IIIM:
 - Hands-on-training workshop on ‘PCR and Real Time PCR’ at IIIM from 1st to 5th March 2021 under CSIR-Skill Development Program.

- Five days Hands on workshop on “Basic techniques in Industrial Microbiology” was conducted from 15-19 March 2021.
- CSIR-IIP:
 - 03 Skill Development Trainings started on :1)Analytical Chemistry 'Tools & Techniques' (Duration :06 weeks, Date of Start :08/3/21 , Refrigeration and Air-conditioning (Duration 03 months, Date of start: 15/3/21)and Glass blowing(Duration:08 weeks, Date of start :15/3/21). Basic Skill Development Training Program on ‘ Aromatics Recovery Process in Hydrocarbon Industry’ has been started since 18/01/2021 for three months.
 - Skill Development Training Program on 'Analytical Chemistry, Tools and Techniques' conducted from 03.03.2021 to 23.03.2021 at chromatography and mass spectrometry Area/ASD.
- CSIR-IITR: Workshop on "Computational Tools for Assessment, Identification and Apportionment of Pollution Sources" under skill integrated initiative was held through hybrid mode (online / offline mode) on March 19, 2021 at CSIR-IITR.
- CSIR-NCL conducted following skill development programs:
 - Targeted proteomics
 - Patents for students, researchers & entrepreneurs
 - Industrial catalysis
 - Optical Characterization of thin films using spectroscopic ellipsometry
 - Targeted proteomics
- CSIR-NIO organised CSIR Integrated Skill Initiative Training Cum Workshop on Natural Products from Marine Bioresources' during March 30-31, 2021.

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

- CSIR-CECRI organized an International Technical Symposium on Corrosion (Online) organized by National Corrosion Council of India in collaboration with CSIR-CECRI on 03-03-2021
- CSIR-CIMFR organized a Workshop on "Concepts of Coal Sampling Techniques" from 16-17 March 2021.
- CSIR-IHBT organized a one-day awareness training on “Cultivation of Aromatic Crops” was conducted for the farmers of Village Jarad, Distt. Kullu (H.P.) on 20.03.2021.
- CSIR-IIIM organized Hands-on-training workshop on ‘PCR and Real Time PCR’ at IIIM from 1st to 5th March 2021 under CSIR-Skill Development Program. The Institute also organized a five days Hands on workshop on “Basic techniques in Industrial Microbiology” was conducted from 15-19 March 2021.
- CSIR-IITR organized a workshop on “Computational Tools for Assessment, Identification, and Apportionment of Pollution Sources“ under skill integrated initiative was held through hybrid mode (online/offline mode) on March 19, 2021, at CSIR-IITR. Under the aegis of the CSIR Integrated Skill India Initiative, CSIR-IITR also organized a National workshop on the Characterization of Nanomaterials on March 23, 2021.

- CSIR-NIO organized an Integrated Skill Initiative Training Cum Workshop on Natural Products from Marine Bioresources was organised during 30 -31 March, 2021.
- CSIR-NISCAIR organized a webinar on "A Policy Dialogue on COVID-19 Vaccine from Self-Reliance to Global Leadership: Opportunities, Challenges, and Policy Imperatives in COVID Era" on the occasion of National Science Day on (1st March at 2 PM to 4 PM).

Visit of high-level dignitaries to the Institute/Laboratory

- Dr Harsh Vardhan, Hon'ble Minister for S&T, ES, MoHFW visited the CSIR-Central Scientific Instruments Organization (CSIR-CSIO) 21 March 2021 and inaugurated the Centre of Excellence on Intelligent Sensors & Systems. He also visited an exhibition of the latest R&D at Chandigarh and interacted with the Scientists and Staff.
- Dr Harsh Vardhan, Hon'ble Minister for S&T, ES, MoHFW visited CSIR-IMTech, Chandigarh and inaugurated IMTech Bio-Innovation Centre which is an extension of the Atal Incubation Centre (AIC)-CCMB in the CSIR-IMTech.
- Shri Anurag Singh Thakur, Hon'ble Minister of State for Finance and Corporate Affairs, Government of India visited CSIR-Institute of Himalayan Bioresource Technology, Palampur on 1st March, 2021
- Shri Virender Kanwar, Honorable Minister of Rural Development and Panchayati Raj visited the CSIR- Institute of Himalayan Bioresource Technology, Palampur on 30th March, 2021

Events to mark India@75 or Azadi Ki Amrut Mahotsav

- Webinar on TERAFILE Water Filter: an efficient, affordable and sustainable solution for drinking water: A CSIR Success Story on the occasion of World Water Day on 22 March 2021
- From Many to One: Saga on the Indian Calendar: On the occasion of the New Year Day of 1 Chaitra 1943, CSIR, CSIR-NPL and VIBHA organized a dual-mode event, both offline and online, on the evolution of the Indian calendar on 22 March 2021.

Other items of significance

- CSIR-CIMFR organized a summit on "Women in Technology: Role of Women in Sustainable Technology and Climate Change" on 8th March 2021.
- Dr. Prathama S. Mainkar, Sr. Principal Scientist, Organic Synthesis & Process Chemistry bestowed with the Best Woman Senior Scientist Award by Benesin of Educational Impressions, Roorkee on 7th March 2021. This award is in recognition of her outstanding contribution and commitment to the empowerment of Women in India through education.
- CSIR-IICT received 'Best Institute Award' in 'New Generation Ideation Contest-2020', a memento, conducted by HPCL, HP green R & D centre, Bengaluru.

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

- 65 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

- 10 SIROs were granted recognition and 04 were granted registration certificates.
- 102 SIROs were granted renewal of recognition and 57 were granted renewal of registration certificates.

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

- 02 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 56 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. 170293.34 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. 25881.09 Lakhs during March, 2021.
- Sale of items worth Rs. 8857.25 Lakhs was realized during March, 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 on 'Seaweed Extract Fertilizers' and has been assigned six technologies by Central Manufacturing Technology Institute (CMTI), Bangalore during March, 2021.
- NRDC has collected premia of Rs.1.00 Lakh and royalty of Rs.5.4 Lakh from respective technologies during March, 2021.
