

No. DSIR/MS/2021/07
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **July, 2021**)
(Part-I Unclassified)

Major achievements during the month of July, 2021:

Council of Scientific & Industrial Research (CSIR)

Update on Initiatives for COVID-19 Mitigation

- CSIR-IIP: Technology of Medical Oxygen Plant based on the advanced Pressure Vacuum Swing Adsorption (PVSA) technology transferred to BHEL for Medical Grade Oxygen generation from ambient air (500 and 1000 LPM throughput). CSIR-IIP also signed technology transfer agreements with M/s Ortech Engineering, Nagpur, M/s Paras Defence, Navi Mumbai, M/s Ozone Research India Pvt. Ltd and M/s CORE Energy Ltd for medical oxygen PVSA.
- CSIR-IIIM: Hands on Training in BSL-3 Laboratory Practices & RT-PCR Testing of Clinical Samples for Covid-19 was organized as a part of CSIR-Skill development mission at CSIR-IIIM, Jammu from 2nd to 17th July, 2021 to train the army and air force medical personnel in COVID-19 diagnostics.
- CSIR-NCL: SARs-CoV2 genome sequencing carried out for COVID19 positive samples from across Maharashtra through BJ Medical College, Pune.
- A 100 bedded Makeshift Hospital at Kanakwal, District Bathinda set up by CSIR-CBRI and State Govt. was inaugurated on July 20, 2021 by the CM of Punjab.
- CSIR had designed and developed UV-C disinfection technology for inactivation of virus that can be installed in air ducts in malls, movie theatres and auditoriums etc. This has been recently installed in the Lok Sabha Central hall of the Parliament and Committee Rooms 62 and 63.

New Technologies/Processes Developed/Transferred

- CSIR-CMERI has developed a Tractor operated Iron Ore Dust Collecting Machine. The machine can be used for collection of scattered dusts from the steel factories. It can cover 1 m wide road at a single pass and thereby can clean road area~1500 m²/hr. The machine can be operated with tractors of rating 35 hp above.

- CSIR-CMERI has developed a Tractor Mounted Spading System that reduces the cost of tillage operation and improves the effectiveness of tillage operations. It is useful in seed bed preparation.
- CSIR-IHBT initiated the Monk fruit cultivation program by planting Monk fruit seedling at Raison, Kullu HP on 12 July, 2021.
- CSIR-CECRI has transferred its technology for Anticorrosive Treatment for Steel Reinforcement Rods to M/s Protektol Anticorrosives, Chennai.
- CSIR-CFTRI has licensed the process for the following two food products:
 - Tamarind Candy to M/s AH Naturals, Ernakulam, Kerala
 - Eggless cake premix to Mr. Gordhan Motwani, Madhya Pradesh -
- CSIR-CMERI has effected technology transfer of Fully Automatic Biodiesel Plant technology to Hindustan Petroleum Corporation Limited, Lucknow
- CSIR-CRRI has transferred its technology, "PATCHFILL-The Pothole Repairing Machine M/s Petrochem Specialities, Muzzafarnagar, Uttar Pradesh.
- CSIR-IHBT effected the following technology transfers:
 - Cultivation of Shiitake mushroom to its implementation at large scale signed with M/s Gaurav Agro Foods, Palampur (H.P.)
 - Cultivation and production of medicinal plants (Picrorhiza, Valeriana) under hydroponic system, tissue culture protocols and extraction of the produce signed with M/s Amar Exports, Hyderabad.

Collaborations/Agreements/MoUs Signed (National)

- CSIR-CBRI signed an agreement with Central Public Works Department, Goa to undertake a project on "Third Party Quality Assurance for Construction of NIT Campus" at Goa.
- CSIR-CDRI executed MoU with IISER, Pune to promote institutional linkage between CSIR-CDRI and IISER, Pune to explore for possible collaborative research programs in specific fields of interest.
- CSIR-CFTRI signed an agreement with ICAR-Indian Institute of Millet Research, Hyderabad on 8th July 2021 for joint research and development on processing machinery, value added products, enhancing shelf-life and nutrition profiling of cultivars. Another agreement was signed with Spirulina Foundation, Tumkur on 23rd July 2021 for collaboration to support Severe Acute Malnourished (SAM) children of Mysore District.
- CSIR-CIMFR signed the following agreements:
 - Tripartite Agreement between Western Coalfields Limited, Nagpur; Dhariwal Infrastructure Limited, Kolkata and CSIR-CIMFR, Dhanbad for Coal Sampling Work on 05-07-2019.
 - Tripartite Agreement between South Eastern Coalfields Limited, SECL Bhawan, Chhattisgarh; M/s. KSK Mahanadi Power Company Limited, Hyderabad and CSIR-CIMFR, Dhanbad for Coal Sampling Work on 12-07-2021.

- Tripartite Agreement between Mahanadi Coalfields Limited, Odisha; M/s. KSK Mahanadi Power Company Limited, Hyderabad and CSIR-CIMFR, Dhanbad for Coal Sampling Work on 21-07-2021.
- CSIR-IHBT signed following MoU:
 - MoU for Close cooperation for the benefit of the students and teacher signed with Jawahar Navodaya Vidyalaya, Kangra, Himachal Pradesh.
 - Agreement for availing Incubation Facility for production/enrichment/drying of Vitamin D2 enriched Shiitake Mushroom at CSIR-IHBT signed with Innotech AgroPostikam Pvt Ltd, Indigram Labs, Badarpur, New Delhi on 02.07.2021
 - Agreement for availing Incubation Facility for production/enrichment/drying of Vitamin D2 enriched Shiitake Mushroom at CSIR-IHBT signed with M/s Gaurav Agro Foods, Plot no. 28, Industrial Area -2, Nagri, Palampur (H.P.) – 176 059 on 02.07.2021
 - Agreement for Incubation facility under CM Startup scheme for establishment of facility organic incense sticks with/without bamboo sticks signed with Mr. Tanmay Sharma, C/o Sh. Devi Sharma, V.P.O Khaira, Tehsil Palampur, District Kangra (H.P.) 176 086 on 19.07.2021
 - Agreement for incubation facility under CM Startup scheme for establishment of facility for various types of value added products from *Tinospora cordifolia* (Giloe) signed with Ms. Nitika Bhandari c/o Khadi Gramoudhyog Sansthan, Nagrota Bagwan Distt. Kangra (H.P.) on 19.07.2021
 - MoU to undertake joint collaboration in the area of essential oils signed with Innoveo Exports, B-92, Chitrakut Society, Sanand Ahmedabad, Gujrat – 382 110 on 21.07.2021
 - Availing for incubation facility for development of pine charcoal from pine needle (*Pinus roxburghii*) and its essential oil for Mosquito /Insect repellent formulation signed with Mr. Ajay Kumar Thakur, C/o Shri Sarbjeet Singh V.P.O. Biara Tehsil Palampur, District Kangra (H.P.) 176 063 on 26.07.2021
 - Agreement for availing incubation facility to develop packaging material from Mushroom Mycelium signed with Mr. Rohit Kalia, Plot no. 28, Industrial Area -2, Nagri, Palampur (H.P.) – 176 059 on 26.07.2021
 - Facility use agreement making stevia liquid drops for its commercial sale by using processing facility at CSIR-IHBT, Palampur signed with M/s USAS natural and herbal products Pvt. Ltd., Village Pantehar, Post office Patti, Tehsil Palampur District Kangra (H.P.) 176 061 on 29.07.2021
- Knowhow licensing Agreement with Mr. Surjeet Singh Chahal, Village Fatehpur Shumali, Tehsil, Dhanaura Distt. Amroha, Uttar Pradesh on Improved Jaggery Making Plant - 20.07.2021
- CSIR-NAL:

- Agreement signed with Indian Computer Emergency Team; Ministry of Electronics and Information Technology, New Delhi for Nationwide Deployment of Honeypots Devices for Cyber Threat Intelligence (CTI) generation for NCCC on 08-07-2021
- CSIR-NGRI signed following agreements:
 - MoU between Rail Vikas Nigam Limited (RVNL) and CSIR-NGRI signed on 06.07.2021 for "Airborne Electromagnetic Surveys (AEM) and Integrated Geophysical studies".
 - MoU between Altinok Consulting Engineering Inc., New Delhi and CSIR-NGRI (Revised) signed on 12.07.2021) for "Airborne Electromagnetic Survey".

Patents Update:

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
05	11	22	09	40	70

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

High impact S&T services offered

- CSIR-CMERI rendered the following technical services:
 - Failure Analysis of 02 Nos. Boiler Tubes to Bandel Thermal Power Station (BTPS), WBPDC, Bandel, WB
 - Magnetic particle examination of welded joints between impeller holding hub & ID Fan to Mejia Thermal Power Station (MTPS), DVC, Bankura, WB
 - Vibration analysis & balancing of 1 No. CW pump to CTPS, DVC, Jharkhand
- CSIR-IIP:
 - Testing services are offered under various ongoing projects of the institute, industrial clients, and AcSIR activities. These tests include gaseous fuels (ASTM D7833, D5504), liquids fuels (D6730, UOP744, D5623, D4815, D6584 and IP 391), engine oils (ASTM D3524, D3525), lubricating oils (ASTM D7419), waxes (ASTM D5442), GC-MS and HRMS of petroleum fuels and general chemicals.
- CSIR-NAL:
 - Design & Development of JALDOST MARK-II
 - Development of 5kg payload capacity multi copter Drone
 - Bonding of antenna beams for radar for LRSAM program
 - Maintenance and repair strategy for wind energy development - Development of field repair kit and erosion protective coatings for wind turbine blades
- CSIR-NCL: (BIO) -Supplied microbial cultures and provided Sequencing, VITEK services to industries and academia.

- CSIR-NGRI: Collaboration with Environmental Seismology group of GFZ with the long term objective of developing early warning system for floods associated with landslides/GLOFs in Indian-Himalayan region is in progress.

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-IHBT organised a training programmes on “Cultivation of Aromatic Crops” under Aroma Mission-II and on Hing cultivation to the farmers of Jhanjehali Distt. Mandi on 12th July, 2021 in which 30 farmers and 02 Agriculture Officers participated.
- CSIR-IHBT organized a training programme on “Cultivation of Aromatic Crops” under Aroma Mission-II to the farmers of Balichowki, Dev. Block Siraj Distt. Mandi on 30th July, 2021 in which 30 farmers and 02 Agriculture Officers participated.
- CSIR-CBRI Webinar Series 13.0 was successfully conducted on ‘Recent Advances in Sustainable Construction Materials’ during July 15-17, 2021 under the aegis of CSIR Integrated Skill Initiative.
- CSIR-CDRI:
 - JIGYASA Webinar on Career opportunities in Science organized on 23.07.2021
- CSIR-CECRI: Four Online Skill Development Trainings (one week duration) were conducted in the following topics:
 - Operation & Maintenance of Analytical Instruments during 28th June 2021 to 2nd July 2021.
 - Electroplating and Metal Finishing Techniques during 5th to 9th July 2021.
 - Electroanalytical Techniques for Electrocatalytic and Biosensing Applications during 12th to 16th July 2021.
 - Corrosion of Aircraft Structures during 12th to 16th July 2021. A total of 316 students got trained.
- CSIR-CECRI JIGYASA-Connect with Scientists Online Webinar programme:
 - Role of nanomaterials in electrochemical energy storage on 01.07.2021
 - Metals and alloys in everyday life and beyond on 08.07.2021
 - An overview of solar cell technology and its importance on 15.07.2021
 - Smart technologies for green life on 22.07.2021
 - Li ion battery technology for automotive applications on 29.07.2021
- CSIR-CFTRI: Atal Tinkering Laboratory mentoring session for 15 School/ Pre-Universities in Karnataka.
- CSIR-CGCRI: CSIR-Jigyasa : Student-Scientist Connect Programme held on July 02, 2021 organized by CGCRI. Dr. Hemant Pandey, Chief Guest had presented "Thinking Out of Box for Success", and interacted with school students vis Online mode.
- CSIR-CMERI Jigyasa Lectures
 - Amphibian Robot Technology (08.07.2021),

- Robots that Explore Oceans: History, Scientific Principles and Developments (22.07.2021),
- The Robot that Walks (29.07.2021) and
- Waste Management for Municipal Solid Waste.
- CSIR-CMERI Webinars
 - DSIR- Common research & Technology Development Hub (CRTDH) of CSIR_CMERI conducted a Training programme on Sheet Metal Forming Fabrication for MSMEs, Small Scale Industries & Start-ups from 27th to 30th July, 2021. Representatives from across different enterprises are taking part in the Training Initiative.
- CSIR-CSIO Workshops were conducted under CSIR Integrated Skill Initiative Programme at CSIR-CSIO, Chandigarh:
 - One Day online Workshop was organised on "PLC Programming and Its Applications" on 23rd July, 2021.
 - One Day online Workshop was organised on "SMD and Rework Technology" on 28th July, 2021.
- CSIR-IHBT scientists delivered several lectures to students under DBT HIMCOSTE skill development program.

Events held to mark India@75 or Azadi Ki Amrut Mahotsav / 75 Years of Indian Independence

Date	Title	Institute
08 July 2021	Emergency Restoration System (ERS) – An indigenous technology for quick restoration of power	CSIR-SERC
14 July 2021	The HANSA – Two seat aircraft for pilot training	CSIR-NAL
26 July 2021	Production of Bharatiya Nirdeshak Dravya is the trademark of Indian Reference Materials	CSIR-NPL
30 July 2021	Thulium Fibre Laser at 2µm: A Next Generation Laser for Medical Applications	CSIR-CGCRI

Other items of significance

- CSIR-NIO: Prof. Sunil Kumar Singh, Director, CSIR-National Institute of Oceanography, Goa has been awarded “The National Award for Ocean Sciences” in recognition to his outstanding research contribution in the field of Ocean Sciences.

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

- 16 in-house R&D units of industries were granted recognition as well as registration certificates.
- 87 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

- 18 SIROs were granted recognition and 12 were granted registration certificates.

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

- 08 PFRIs were granted registration certificates.
- 03 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.308752.70 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. 1593.60 Lakhs during July, 2021.
- Sale of items worth Rs.1930.52 Lakhs was realized during July, 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 the technology to manufacture Ayush-64 (an ayurvedic drug which has been repurposed for use against mild to moderate cases of covid-19) to three companies and has been assigned technology on 'Preparation of prototype of washable and renewable PPE kit for Corona warriors' by MIT Centre for Analytical Research & Studies during July, 2021
- NRDC has collected premia of Rs.15.00 Lakh from respective technologies during July, 2021.
