

No. DSIR/MS/2021/10
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **October, 2021**)
(Part-I Unclassified)

Major achievements during the month of October, 2021:

Council of Scientific & Industrial Research (CSIR)

New Technologies/Processes Developed/Transferred

- CSIR-CSMCRI developed a process for the preparation of formic acid from CO₂ hydrogenation using mixed metal oxide catalyst.
- CSIR-NIIST transferred the technology for manufacturing of building bricks utilizing waste foundry mould sand. The technology was licensed to M/s Autokast Ltd., Cherthala, Kerala.
- The technology for making biodegradable cutleries from apple tree prunes was transferred by CSIR-NIIST to M/s HIMJOY Enterprises Pvt Ltd, Shimla.
- CSIR-IICT transferred the process for conversion of podophyllotoxin to 4'-De Methyl Epi-Podophyllotoxin to Namiex Chemicals Private Limited, Pathankot.
- CSIR-CSIO transferred the following technologies during the month:
 - Standalone UV air disinfection system for rooms and spaces to M/s TICEON-LLP, M/s Alpha Linear.
 - UVC disinfectant circulating air-flow systems for elevators, toilets etc. to M/s Alpha Linear.
 - LED based NVG compatible Wing and Fin Navigation Lights, Taxi & Landing Lights (TLL) and Drogue Lights along with associated Test Rigs for LCA Tejas - Indian Air Force to M/s Bharat Electronics Limited (BEL), Panchkula.
- CSIR-CFTRI transferred the process for manufacturing Multigrain Pasta & Legume-based Pastato M/s Helse Foods, Mumbai.

Collaborations/Agreements/MoUs Signed (National)

- CSIR-NGRI and IISER, Bhopal signed a memorandum for enriching scientific endeavours in the emerging areas of Earth Science.
- CSIR-NGRI and Geological Survey of India through its Marine and Coastal Survey Division signed an MoU for a collaborative work on State of art seismic data processing techniques and their applications to the high-end multi-channel seismic data acquired by GSI utilizing the resources of both the parties.
- CSIR-NEERI and Maharashtra Animal and Fishery Sciences University signed an MoU for collaborative research work in Environmental Science & Engineering.

- CSIR-NEERI and Nagpur Municipal Corporation (NMC), Nagpur signed an MoU for capacity building and technical assistance for Air Quality Management of Nagpur city.
- CSIR-IICT signed the following MoUs with:
 - U.K Aromatics & Chemicals, Mumbai for Design of a membrane pilot plant for the treatment of MEE condensate of aromatic industrial effluent
 - Srujana Biopharma, Hyderabad for Process know-how for the alkylation of Quinones
 - Tata Steel Ltd, Jamshedpur for Microbial Catalyzed reduction of CO₂ to Chemicals and Fuel
 - Ravoos Laboratories Ltd, Hyderabad for Collaboration in R&D activities in the area of Active Pharmaceutical ingredients, Intermediates and Pelletization
 - Natco Pharma to Collaborate on conducting studies on animals in CSIR-IICT's pharmacology department
- CSIR-IHBT signed the following MoUs with:
 - National Medicinal Plants Board, Ministry of AYUSH, for enhancing the mutually beneficial collaboration between the parties in interest of producing quality planting material of medicinal plants and herbs.
 - H.P. Agro Industries Corporation Limited, Shimla, HP for strategic and implementation partnership based on principles of mutual strength and benefits for the purpose of livelihood promotion and rural development in selected areas of Himachal Pradesh.
 - Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, Chatha, Jammu to undertake joint research work in the areas of mutual interest in agrotechnology, medicinal and aromatic plants, nanotechnology, bioinformatics, biotechnology, microbiology, food processing, biochemical sciences, floriculture, and biodiversity.
 - ICAR-Indian Institute of Spices Research, Kozhikode MoU for strategic and implementation partnership based on principles of mutual strengths and benefits for the purpose of increasing farm income, livelihood promotion and rural development in Himachal Pradesh through transfer of innovations by means of research, mass propagation, capacity building, and skill development activities in Dalchini (*Cinnamomum verum*) cultivation.
- CSIR-CBRI signed a MoA with Public works Department to undertake the work of Shri Badrinath Site inspection before technical review.
- CSIR-CCMB signed MoU with NCBS: Consortium of R&D research and clinical institutions to advance pathogen genomics to track SARS-CoV-2 Variants and accelerate bioinformatics and global data sharing as a part of philanthropic financial support from the Rockefeller foundation for the project COVID-19
- A MoU executed between CSIR-CDRI and University of Kerala, Thiruvanthapuram to promote institutional linkage between CSIR-CDRI and University of Kerala to explore for possible collaborative research programs in specific fields of interest.

- CSIR-CFTRI signed a MoU with Indian Institute of Packaging, Mumbai for promotion of research and development in cutting edge areas of food packaging.
- CSIR-CIMFR signed the following tripartite agreements for Coal Sampling work:
 - Western Coalfields Limited, Civil Lines, Nagpur & Nabha Power Limited, Near Village Nalash, Rajpura, Dist.: Patiala, Punjab
 - Western Coalfields Limited, Civil Lines, Nagpur and GMR, Warora Energy Limited , Bandra Kurla Complex, Bandra (East), Mumbai
 - South Eastern Coalfields Limited (SECL) SECL Bhawan, Seepat Road, Bilaspur, Chhattisgarh and M/s. Jindal Power Limited, O.P Jindal Super Thermal Power Plant, Tamnar, Raigarh, Chhattisgarh
 - Northern Coalfields Limited, At + PO – Singrauli, M. P and MB Power Limited, Laharpur, Jaithari, Anuppur, Madhya Pradesh
 - Mahanadi Coalfields Limited Jagriti Vihar and M/s. Adani Power Maharashtra Limited, Adani Corporate House, Shantigram, Near Vaishnodevi Circle, SG Highway, Ahmedabad
- CSIR-CMERI signed an MoU with Michael Madhusudan Memorial College, Kabi Guru Sarani, City Centre, Durgapur- WB for Hands on skill promotion to 100 students per year on Water Quality Assessment .

Collaborations/Agreements/MoUs Signed (International)

- MoU between Council of Scientific & Industrial Research- National Geophysical Research Institute, Hyderabad, Aarhus University, Denmark and Geological Survey of Denmark and Greenland on mapping of ground water resources and aquifers.
- Traditional Knowledge Digital Library Access Agreement between Council of Scientific & Industrial Research and Danish Patent and Trademark Office.

Patents Update:

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	Indian	Foreign
52	19	11	20	20	62

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

High impact S&T services offered

- CSIR-NGRI conducted Heliborne surveys water and minerals and carried out Audio-Magnetotelluric (AMT) study for Updated Feasibility Study and Detailed Design of Dudhkoshi Storage Hydroelectric Project in Nepal.
- CSIR-NEERI carried out surveillance of drinking water quality supply of Delhi Jal Board .
- CSIR-NEERI carried out Toxicity Analysis and Suggestive Measures during construction/operation of RRTS through the sanitary Landfill Area at Millennium Park, Sarai Kale Khan, New Delhi.
- CSIR-NEERI conducted Laboratory and Field Scale Functionality Assessment of Water Treatment Technologies .

- CSIR-NEERI carried out assessment of Dust Emissions from Stone Crushing Industries and Distance Criteria in the State of Tamil Nadu .
- CSIR-NEERI studied methane and Nitrous Oxides Emission Trends in Domestic and Industrial Wastewater based on Intergovernmental Panel for Climate Change Guidelines for the Years 2017-19.
- CSIR-CCMB provided molecular Diagnostic Services for 108 families comprising 115 samples.
- CSIR-CMERI: Demonstration of the CSIR-CMERI developed indigenous Mechanized Scavenging System at CSIR-NPL Colony, Delhi on 27th October 2021.
- CSIR-CRRI:
 - Taken up a Sponsored project "Structural Safety Audit and Rehabilitation of SreeSankaracharya Bridge on Periyar River, Kalady and Edavannakkadavu Bridge, Malappuram in the State of Kerala" for Kerala Highway Research Institute.
 - Taken up a Consultancy project "Evaluation of Ready to use patch mix for repair of patch and pothole (A product of M/s Vasudev Construction Co.)
 - Taken up a Consultancy project "Design of Whitetopping for Four Lane Road with Divided Carriageway in Ahmedabad".
 - Taken up a Consultancy project "Design of Stone Matrix Asphalt (SMA) with various additives: Hydrated lime, fly ash, plastic waste" for Lucknow Development Authority (LDA).
 - Taken up a Consultancy project "Investigation to assess the stabilized base layer and to suggest remedial measures of PKg 3 and Pkg 4 of ATR road in A&N Island" for Vasishta Constructions Pvt. Ltd.
 - Taken up a Consultancy project "Pavement Design for 60 mtr approach road from sector KP-III to Hindon Bridge under Greater Noida Industrial Development Authority" for Greater Noida Industrial Development Authority.

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-IICT conducted "Entrepreneurial Development Awareness programme" to prospective rural women in association with Rachakonda Security Council (RKSC) at Survail village, Choutuppal, Telangana. Around 100 rural women were participated in the programme.
- CSIR-CMERI organized an online Industrial Training Programme on Advanced Robotics from 18th-29th Oct, 2021. Students from Dr. B.C. Roy Engineering College, Durgapur participated in this training programme.
- An awareness programme on Jigyasa and virtual lab initiative was conducted virtually government school teachers of Telangana state in association with Telangana Social Welfare Residential Educational Institutions Society (TSWREIS).
- CSIR-IHBT organized a one-day awareness-cum-training program on dehydration technology of flowers at VPO Hangloh, District Kangra under CSIR Floriculture Mission

- CSIR-CRRI conducted three days regular online training programme on “Pavement Evaluation Techniques and their applications for Maintenance and Rehabilitation”
- CSIR-CCMB organized Wildlife Week Celebrations. A new video on helping animals under stress was released <https://youtu.be/Gxxd5ZrUqfE>
- A two days Training Workshop for IFS Officers On Wildlife Forensics and Crime Control was organized by CSIR-CCMB
- CSIR-CDRI, CSIR-CEERI, CSIR-CECRI and CSIR-CGCRI conducted JIGYASA programmes during the month
- The following Skill Development Courses/Programmes were organized during the month.

Sl. No.	Lab	Skill Development Course/Programme
1.	CSIR-NIIST	1. Scale up of Bioreactors and Fermentation 2. Removal of organic dyes from aqueous solutions and textile wastewaters 3. Innovative Building materials from industrial by products
2.	CSIR-IICT	1. Modern methods of Chemical Analysis including Spectroscopic & Chromatographic methods of analysis 2. Water Purification and Water Analysis 3. Modern methods of Chemical Analysis including Spectroscopic & Chromatographic methods of analysis 4. Advanced Analytical Chemistry
3.	CSIR-IHBT	Quality Control Biologists
4.	CSIR-CBRI	Structural Pest Management
5.	CSIR-CDRI	Electron Microscopy Techniques for Life Sciences
6.	CSIR-CECRI	Chromatography and Thermal Analysis
7.	CSIR-CMERI	Analytical Techniques and Instrumentation for Water Quality Assessment

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

- CSIR-NGRI showcased its Airborne Geophysics: Fast-tracking Exploration of Mineral and Groundwater Resources in the Azadi ka Amrit Mahotsav Success Story Webinar Series

- CSIR-IICT organized “Fit India Freedom Run 2.0” to commemorate "Azadi Ka Amrit Mahotsav” by institute staff on 1st October 2021. A series of lectures were also conducted by the Institute.
- CSIR-CSMCRRI organized an online Lecture on "Independent India @75 Self Reliance with Integrity"
- CSIR-CRRI celebrated Azadi Ka Amrit Mahotsav & participated in CSIR’s new campaign of highlighting 80 success stories. As part of this campaign, Dr. Kanwar Singh, Senior Principal Scientist delivered a lecture on “Underpass construction using CSIR-CRRI’s soil nailing with box jacking technique”.

Visit of high level dignitaries to the Institute/Laboratory

- Shri. Gajendra Singh Shekhawat, Hon'ble Union Minister of Jal Shakti, and Dr. Jitendra Singh, Hon'ble Union Minister of state (IC) of the Ministry of Science and Technology; Minister of State (IC) Ministry of The Earth Sciences: MoS in Prime Minister’s Office and Ministry of Personnel, Public Grievances & Pensions; Department of Atomic Energy; and Department of Space inaugurated the state-of-art heliborne survey technology for groundwater management in arid regions on 5th October 2021 at Jodhpur, Rajasthan.
- A CSIR delegation led by DG-CSIR, visited the Union Territory of Ladakh during 7–10 October, 2021 during which we took a review of S&T Initiatives of CSIR in the UT.

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

- 13 in-house R&D units of industries were granted recognition as well as registration certificates.
- 89 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

- 09 SIROs were granted recognition and 05 were granted registration certificates.

- 55 SIROs were granted renewal of recognition and 42 were granted renewal of registration certificates.

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 55 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 79 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. 345645.70 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. 2013.56 Lakhs during October, 2021.
- Sale of items worth Rs.1721.27 Lakhs was realized during October, 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 10 technologies to industry for commercial exploitation. The technology to manufacture Ayush-64 (an ayurvedic drug which has been repurposed for use against mild to moderate cases of covid-19) to five companies. NRDC has been assigned 3 technologies by IIT, Rorkee during October, 2021
- NRDC has collected premia of Rs.35.35 Lakhs and royalty of Rs.33.52 Lakhs from respective technologies during October, 2021.
