

No. DSIR/MS/2019/11
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **November 2019**)
(Part-I Unclassified)

Ministry/Department: Department of Scientific and Industrial Research (DSIR)

Major achievements and activities during the month of NOVEMBER 2019

1. Council of Scientific & Industrial Research (CSIR):

Indian International Science Festival (IISF) 2019 was held in Kolkata from 5th to 8th of November which was addressed by Hon'ble PM Shri Narendra Modi remotely, where in he urged for instilling scientific temper and highlighted that Science is for society and that Science is a long term investment. CSIR and its constituent labs actively participated in several events at IISF 2019 including an exhibition of CSIR technologies and products at Science City, which was attended by hundreds of school students.

CSIRs Farmer Centric Activities and Contributions

- **CSIR-IHBT**, Palampur and Ladakh Farmers and Producers Co-operative Limited (LFPCL) have entered into a MoU to grow saffron in Ladakh using tissue culture technology for production of disease free, healthy and flowering sized saffron corms in the non-traditional areas.
- Farmers Meet in collaboration with Horticulture Dept. was held at **CSIR-CFTRI** as part of Kannada Rajyostava Celebrations on 25th November 2019. Aahara Vignana magazine was released and various demonstrations were also shown to farmer delegates.
- Many CSIR labs participated in Agrovision 2019 organized at Nagpur on 22-25 Nov, 2019. Various CSIR Institutes engaged in developing agro products & farming equipment displayed their products for the benefits of farmers and guided them on increasing their productivity at minimum cost

CSIR Activities towards Environment Protection and Ecology

- **CSIR-NEERI**, Nagpur launched the Indian air quality Interactive Repository or IndAIR, which has archived approximately 700 scanned materials from pre-internet era (1950-1999), 1215 research articles, 170 reports and case studies, 100 cases and over 2,000 statues, to provide the history of air pollution research and legislation in the country. Such a repository on the subject of air pollution is one of the first in the world.
- **CSIR-NEERI**, in association with the local territorial government has developed

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an Android based mobile application called "Neer Padhivu Jal Abhilekha" to digitize all water bodies in Puducherry. This application identifies and monitors change in the use of land and around the waterbodies using remote sensing and GIS-based geotagging techniques.

Strategic and Industrial Sector

- **CSIR-IMTECH** has received approval for grant from National Biopharma Mission to establish a new CGMP facility, which will be a National Repository of GMP Microbial Cell Bank of bio-pharmaceutical relevance.
- **CSIR-CECRI**, Karaikudi signed a MoU with M/s Uranalytics Pvt. Ltd Bhagalpur, Bihar on Development of reusable electrochemical sensor platform for sensing couple of biomarkers for diagnosing chronic kidney diseases and diabetes.
- **CSIR-CEERI**, Pilani and Fleeca, India signed an MoU for innovative product development. This collaboration will bring intelligent system for tyre pressure monitoring system (TPMS) based on artificial intelligence which will help driver to monitor tyre and avoid creating unsafe driving conditions like air leakage, tyre burst and others.
- Union Minister of Science & Technology and Earth Sciences, Dr. Harsh Vardhan inaugurated an **Exhibition of Technologies in Food Processing** developed by CSIR, which was organized with Associated Chambers of Commerce and Industry of India (ASSOCHAM) and Ministry of Food Processing Industries (MoFPI) The exhibition displayed various food products that are cost-effective, tasty, nutritive with no side effects and the machines developed by CSIR laboratories.
- **CSIR-CFTRI**, Mysuru signed an MoU with **Food and Biotechnology Consultancy Services (FORBICS)**, Mysuru for working together to provide premium services to industry/entrepreneurs in terms of process development, scale-up technology transfer, etc. which would in turn benefit a large number of SMEs and enterprises who have set goals for establishing a robust and viable food-based venture with a strong scientific and market basics.
- **CSIR-IHBT** signed agreement with M/s Baijnath Pharmaceuticals Paprola, H.P. to develop products related to child and mother healthcare of national priority. R&D and value addition will be done by CSIR-IHBT, while the company will provide formulation.
- **CSIR-CECRI**, Karaikudi has transferred the technology on "Electrochemical synthesis of DL-Homocysteine" to Hyderabad based M/s Aurore Life Science Pvt. Ltd. The technology aims to treat severe cold & liver complaints.
- In a first indigenous development **CSIR-CRRI**, New Delhi and JCB India an earthmoving and construction equipment maker have jointly developed pothole repair machine that can serve the purpose of roads and highway

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maintenance and other operations in the areas of road safety and productivity.

Patents Update

- CSIR has become a member of an international body, World Association of Industrial and Technological Research Organizations (WAITRO) that has 160 Member organizations from 78 countries to promote co-operation among industrial and technological R&D organizations. This membership allows for CSIR institutes to develop cooperation linkages with other member organisations for research and technology development partnerships and participate in various programs like Horizon European Consortia

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad	India	Abroad	India	Abroad
14	16	18	24	22	23

CSIR Outreach Programs

- **CSIR-CFTRI**, Mysuru as part of JIGYASA programme, organized the scientist-students contact programmes for various schools to educate them about scientific thinking and provided knowledge about Food Processing techniques.
- **CSIR-NML**, Jamshedpur for a group of 10 students of Mechanical, Automobiles and Metallurgical Engineering from Aditya Institute of Technology, Aadityapur organized a interactive meet with the scientists and research scholars under the aegis of Industry Sponsored Students NML Interactive Programme
- A group of 37 students and 1 teacher from Government Girls' model senior secondary school, Sector 20, Chandigarh visited **CSIR-IMTECH**. A demonstrative tour of the major facilities of the Institute was provided to the visitors.
- Under "Jigyasa Programme", three batches of students with about 45 from DAV Sr. Sec. School, Palampur, Kangra (H.P.) visited **CSIR-IHBT**, Palampur (HP) and interacted with the scientists and researchers of the Institute.
- CSIR-NEERI & Navodaya Vidyalaya Samiti, Pune have jointly organised the Regional Children's Science Congress at NEERI, Nagpur during 14-19 Nov., 2019 as part of the 'Jigyasa: Scientist Connect Programme'.
- Regional Science Congress 2019 was organized and Students and Teachers from Jawahar Navodaya Vidyalayas across M.P., Chhattisgarh and Orissa visited **CSIR-AMPRI**, Bhopal.
- Two day exposure visit was organized CSIR NEIST under Chief Minister's Gyan Jyoti Scheme, Govt of Assam. Approx 1000 students and 45 teachers

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from 10 districts of Assam visited **CSIR-NEIST** and its different labs and interacted with the scientist and research scholars.

- A group of 53 students and 6 teachers from KV 1&2 Patiala and KV Nabha visited CSIR-IMTECH. Another group of 50 students & 6 teachers from KV 3 Patiala, KV Mullanpur & KV Fatehgarh-Sahib visited CSIR-IMTECH. Visitors were provided a demonstrative tour of the Bioinformatics & Big Data Analytics Centre, Fermentation facility & MTCC.
- Students outreach program was conducted at CSIR-IICT on 28th Nov where in 100 students from ZPHS, Gowdavally, Medchal participated.
- CSIR-CBRI team organized Gram Sabha & Students' Awareness Activities at Rajiv Gandhi Navodaya Vidyalaya and Govt Jr High School, Shikarpur under Vigilance Awareness Week 2019

R&D Highlights

- **CSIR-CCMB**, Hyderabad has identified an enzyme (MepK) that plays a crucial role in the enlargement and growth of bacteria, by studying *E.coli*, The enzyme MepK helps in cutting a particular class of bonds that connect their peptidoglycan. The action allows more material to be added to the cell wall, making a larger compartment for the cell to reside in.
- **CSIR-CCMB**, Hyderabad has identified a protein (Secretagoin, SCGN) that can help regulate the blood sugar levels in the body and increase the secretion of insulin in the obese persons. This study can lead to better ways of managing diabetes, developing a potential therapeutic drug along with lifestyle modifications.
- **CSIR-CDRI**, Lucknow in collaboration with IISER, Pune have identified a protein pathway in an antibiotic-resist bacterial strain called *Staphylococcus aureus* and also a new molecule that can target this pathway which may help develop new antibacterial drugs in future

Awards

- **CSIR-CRRI**, New Delhi won two SKOCH awards, one order of merit and another silver, for the successful execution of project on "Rehabilitation of National Highway using Recycled Asphalt Pavement".

Skill Development and Workshops

- Training on 'Arsenic Estimation by Arsenic Field Kit & Inductively Coupled Plasma Mass Spectrometer (ICP-MS) was organized at CSIR-NBRI. 40 participants from 20 districts of UP participated
- Bioinformatics center at CSIR-IMTECH organized a training programme to familiarize and train the participants in computational techniques on Biomacromolecular structures.
- National Workshop on Understanding the Methodologies and Basics of Animal Research (UMBAR2019) was conducted at CSIR-IMTECH. The course will

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provide both theoretical and practical training in the area of Laboratory Animal Science.

- AdVetCon 2019 with an international conglomerate of about 200 veterinarians was organized by LaCONES-CCMB, which aims to bring the latest advances in veterinary sciences for wildlife conservation over the next three days.
- CSIR-NEERI conducted CPCB sponsored 3 days Training Program on "Accidental Spill - Emergency Response and Environmental Impact Assessment - Future Perspective"
- National Workshop on Artificial Intelligence in Industry was conducted at CSIR-CMERI, which was sponsored by ICPS Division of DST.
- Inaugural program of the First National Workshop on using Indian Biodiversity Information Network Database for Research and Education in Ecology and Conservation at CSIR CIMAP Lucknow.
- Seven weeks Training Programme on Petroleum Refining Technology and Petrochemical, Nov11 to Dec27, 2019 for IOCL Chemical Engineers was inaugurated at CSIR-IIP.
- Workshop on Electrochemical Techniques for Energy, Sensor, and Corrosion Techniques was held at CSIR-CSIO.
- A three-week Basic Skill Development Training on 'Downstream Processing for Enzymes & Proteins' was conducted under CSIR-IIP Integrated Skill Development Training Programs at CSIR-IIP.
- CSIR TRISUTRA Ayurgenomics Unit organised the first "Train the Trainer" (ToT) CME workshop on "Ayurgenomics and Integrative Medicine for Wellness" (CSIR-IGIB)
- Training Programme on "Groundwater Quality Monitoring & Assessment (GQMA)" was conducted at CSIR-NGRI
- To strengthen the Metrology Infrastructure of the SAARC region with the provision of technical expertise, CSIR-NPL of India has organized "SAARC-PTB Preparatory Workshop on Inter-laboratory Comparisons for Length and Volume".
- Skill Development Training Programme on Biosensor Design & Applications and Wastewater Treatment was conducted at CSIR-CECRI, Karaikudi
- Second batch of Training programme in 'Bags Design' under CSIR HARIT commenced on 20th November at CSIR-NEIST in Jorhat by CSIR-CLRI.
- Team CSIR-CLRI showcased its capabilities and facilities to the wide group of audience that included international delegates, defence personal etc at a seminar on "Safety, Protective and Occupational footwear" organized by Bureau of Indian Standard in New Delhi.
- **CSIR-NML**, Jamshedpur has conducted 3-day professional training program on "Recycling of Metallurgical Waste", which covered lectures and demonstrations on the aspects of recycling smelter wastes, iron and steel related wastes, iron and steel wastes, other non-ferrous wastes.

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Memorandum of Understanding (MoU)

- **CSIR-IICT** and Hyderabad Metro Rail Limited and L&T Metro Rail Hyderabad Limited, in a unique initiative, signed a MoU to develop a Science Corridor between east Secunderabad and Nagole metro stations. The initiative is to provide an opportunity to common public and children especially to observe and appreciate the utility of science in daily life.
- **CSIR-TKDL**, New Delhi and Centre for Development of Advanced Computing (C-DAC), signed a MoU for pursuing cooperation related to upgrades and modernization of the CSIR-Traditional Knowledge Digital Library, Information and Communication Technologies (ICT) and allied platform(s), including advanced technologies such as Big Data Analytics, Artificial Intelligence (AI), mobile applications, Information Processing Tools, Techniques and Language Technology Standardization covering Indian and foreign languages.
- **CSIR-IMTECH**, Chandigarh and IIT Bombay has signed an MoU to promote advanced research in the area of Health Sciences.
- **CSIR-IITR, Lucknow** signed a MoU with Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCIMST), Trivandrum to address the issues on public health and safe biomedical devices to tackle and resolve the emerging challenges in the area of health sciences.
- **CSIR-NEIST**, Jorhat and JB College, Jorhat signed a MoU to explore, extend and strengthen the functional relationship and promote education and research.
- NITs signed MoU with **CSIR-CSIO** which are NIT Kurukshetra, NIT Jalandhar, NIT Srinagar and NIT Hamirpur
- **CSIR-IMTECH** today signed a MoU with IIT Bombay for collaborative research on health care and other areas of mutual interest.
- **CSIR-CDRI** has signed an agreement with Manipur based FEEDS-Ethno-Medicinal Research Centre for scientific validation of traditional medicine knowledge.
- **CSIR-TKDL** (Traditional Knowledge Digital Library) has signed an agreement with Asian Agri History Foundation, at Pant Nagar for cooperation related to digitization & inclusion of information on traditional Indian agriculture & allied domains
- India led by Dr. Shekhar Mande, Secretary DSIR participated in the 5th Meeting of Shanghai Cooperation Organization member States Heads of Science Ministries at Moscow on November 21, 2019.

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

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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 (us 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

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

Scientific and Industrial Research Organization (SIROs)

Recognition/ Registration and Renewal of SIROs

- 03 SIROs were granted recognition and 02 were granted registration certificates.
- 18 SIROs were granted renewal of recognition and 06 were granted renewal of registration certificates

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 02 PFRI was granted registration certificate.
- 20 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 40 reports in form 3CL submitted to CCIT under Section 35(2AB) of IT Act for weighted tax deduction on R&D by Industry involving a total amount of Rs. **187248.32** Lakhs incurred on R&D by Industry.

Consultancy Development Centre (CDC) :

Major achievements reported during the month - Study on "Development of Strategic Roadmap for MHSC, Moradabad" -The Draft Report has been prepared and submitted to the Office of DC(H) on 25th November 2019.

Study on "Need based Interventions for better marketability of Handicraft Clusters in Uttar Pradesh" - Presently, the work of field survey and data collection is in progress. So far, data from more than 1200 stakeholders (i.e. approx. 50% of the target sample size as suggested by DC(H)) has been captured during the field survey.

PUBLIC SECTOR ENTERPRISES

Central Electronics Limited (CEL)



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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. 3809.45 Lakhs during November 2019.
- Sale of items worth Rs.3926.05 Lakhs was realized during November 2019.
- Major Achievements reported during November 2019 are (i) Order received from ISRO for Circulators, (ii) First order received for 5 Nos. Radome and (iii) Order of Rs.226.00 Crore received from M/s Energy Efficiency Services Limited (EESL) for Solar Power Plant.

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 been assigned eight (8) technologies by University of Agricultural Sciences, Bangalore.
- NRDC has licensed four (4) technologies and collected a royalty of Rs.08.00 Lakh for licensing of technologies during the month.

