

No. DSIR/MS/2019/07
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **July 2019**)
(Part-I Unclassified)

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

Major achievements during the month of JULY 2019

1. Council of Scientific & Industrial Research (CSIR)

Some of the key highlights of this month include:

Dr Harsh Vardhan, Hon'ble Minister for Science & Technology, Earth Sciences and Health & Family Welfare, inaugurated the Next Generation Sequencing (NGS) facility and laid the foundation stone for its Skilling, Training and Lecture Hall Complex at CSIR-CMMB. NGS facility would be of great help in finding the causes of rare genetic diseases and later, diagnostic kits would be used to test the susceptible population. The Honourable Minister also laid the foundation stone for the "Scale-up facility for Agrochemicals" at CSIR-IICT, which would cater to industry and MSME.

Industrial Sector Activities

- Transfer of Technology on "Design of Noise Barrier based on different frequencies (a) Low Frequency Noise barrier configuration (b) Middle Frequency Noise barrier configuration and (c) High Frequency Noise barrier configuration" frequency based noise barriers to Technocrats Kohlhauser Infrastructure Pvt Ltd, Mumbai by CSIR-CRRI.
- CSIR-CMERI has invented new technologies of purifying water contaminated with iron, arsenic and fluoride and M/s Sarvo Technologies Limited, and M/s ISW Industries, Shibpur, Howrah were handed over the technological details using which they will manufacture water purifiers for commercial and community purpose.
- CSIR- CEERI at its CoEFM center in Ludhiana has developed the technology of 'semi-continuous bio-diesel plant which and transferred to Basudev Biodiesel LLP, Bhuvneshwar, Odisha,
- The technology for "Community level Iron Removal Plant" has been transferred to M/s Malted Home Appliances, Bihar by CSIR-CMERI
- CSIR - NCL signed a MoU agreement with the Deccan Sugar Technologists Association for "Microbial formulation for sustainable cultivation of sugarcane crop"
- TATA Global beverages signed an MoU with CFTRI, Mysuru. They will work together in the areas of innovation and food testing services.
- CSIR-NIIST signed an MoU with ASPA (Authentication Solution Providers Association) to support India's fight against counterfeiting and assure better consumer protection and public welfare

- The CSIR-IHBT, Palampur, and Camelia Beverages, New Delhi, signed an agreement for commercial production of value-added diversified tea products. As per agreement, the institute will provide technical knowhow for making tea-flavoured wine and ready-to-drink (RTD) tea products to the company.
- MoU was signed between CSIR-AMPRI, Bhopal and Engineering export promotion council (EPCC) of India

CSIR Intellectual Property

CSIR filed 8 patents in India and 3 patents abroad. CSIR was also granted 28 patents abroad and 25 patents in India.

Strategic Sector

- CSIR- National Physical Laboratory (NPL) signed a MoU with Hindustan Petroleum Corporation Limited (HPCL) for indigenous development of petroleum certified reference materials (CRMs) under trade name of standards Bharatiya Nirdeshak Dravya
- CSIR hands over a Bullet Resistant Vehicle, which has electronics feature augmentation done by CSIR-CMERI to CRPF India.
- CSIR-NML signed an MoU with Aircraft Accident Investigation Bureau (AAIB) in the presence of Shri Pradeep Singh Kharola, Secretary, Ministry of Civil Aviation
- A tripartite MoU was signed between CSIR-IMTECH, CSIR-IITR and Vikram Sarabhai Space Centre to undertake Collaborative Research in various areas.
- CSIR-CSIO and Hindustan Aeronautical Limited (HAL), Korwa signed an MOU to share expertise and lab facilities for indigenization of various optical and optronic systems for different aircraft platforms
- An International project to manufacture components with superior mechanical and physical properties for the automotive and aerospace sectors has been launched at the CSIR-NIIST. The project involves 'design and development of near net-shape manufacturing process for light-weight, high-strength aluminum composite and engineering components by squeeze infiltration technique for automotive and aerospace applications.
- CSIR-NIIST researchers have developed an indigenous semi-automatic fabrication unit for manufacturing dye sensitized solar cell (DSC) based modules. For the first time in the country, NIIST researchers and their industrial partner, Elixir Technologies, Bengaluru, have succeeded in establishing an indigenous, semi-automatic fabrication unit for manufacturing dye-sensitised solar cell (DSC)-based modules, with a cost-reduction of 50%- 60% in module fabrication equipment.

Societal Benefit

- CSIR-CRRI signed a contract with Kerala State Transport Project for Development of Road Maintenance Management System (RMMS) for **Public Works Department Govt. of Kerala**. This is to establish an enhanced and user-friendly web based Road Information System and Road Maintenance Management System of the State PWD Roads, which will help to improve the quality and delivery of PWD services in the provision and management of the

state road network

- A project has been initiated by CSIR-CRRI to develop **comprehensive mobility plan for Ahmedabad City** and to propose feasible short term and long-term traffic management measures/plans and transport infrastructure facilities for safe and efficient movement of motorized, non-motorized vehicles and pedestrians.
- CSIR-NEERI has taken up an ambitious project under the **United Nations Environmental Programme (UNEP)** on chemical and waste management with the aim of preventing human health from being affected by persistent organic pollutants (POPs).
- The **Goa government** has directed CSIR-NIO to study quantum of pollution in all water bodies, including rivers. CSIR-NIO has been entrusted with the task of studying the pollution levels, which will gauge the quantum of pollution.

Farmer Centric Activities and Aroma Mission

- CSIR-IICT has proposed to make and supply 3.6 lakh traps and 7.2 lakh lures for farmers growing maize/corn crops this year to tackle the Fall Worm infestation present in nearly 140 mandals of 15 districts
- Vice-Chancellor, Sher-e-Kashmir University of Agricultural Science & Technology (SKUAST), Srinagar interacted with farmers under Aroma Mission of CSIR and inaugurated the first harvest of the lavender crop and its distillation at Kupwara.
- Under the CSIR Aroma Mission, CIMAP introduced high yielding variety of lemongrass to replace wild variety grown and installed two improved distillation units for the tribal farmers of Anamalai Tiger Reserve, enhancing the oil recovery 2.5 times
- The installation and commissioning of Stainless Steel Distillation Unit (4 quintal capacity) under CSIR Aroma Mission was conducted in Pathankot, Punjab by team CSIR-IHBT.
- CSIR-IIIM Jammu in collaboration with Ladakh Organic Farmers Foundation (LOFF) imparted training on cultivation of aromatic plants to students of High School, Chuchot, Leh, Ladakh.
- Awareness cum training programme was conducted by Team CSIR-IIIM, Jammu at Beeghota village in Rajgarh, Alwar, Rajasthan and more than 50 farmers participated in the programme.
- The agrotechnology of Lemongrass (Jor Lab L-8) was transferred to M/s S.S. Enterprise, Bokajan, Assam on 3rd July 2019 by CSIR-NEIST.
- Awareness cum training programme was conducted at Gonawari in Chindwara district, Madhya Pradesh on 3rd July 2019 by Team CSIR-IIIM Jammu. More than 80 farmers participated in the programme. Shri Divya Pandey, Reliance Foundation Head MP, Shri Salil Khokerkar, DDM, NABARD Chindwara, Shri Uttam Jaipuria and Smt. Kanupriya Jaipuria from Cleopatra Aromatics Delhi attended the programme.
- An awareness programme was organized by Team CSIR-CIMAP Lucknow on 5th July 2019 at Kachona (Balamau) block of Hardoi district, Uttar Pradesh under CSIR Aroma Mission collaborative project sponsored by HCL Foundation. More than 100 farmers including women participated in the

programme.

- Awareness cum training programme was conducted by Team CSIR-IIIM at Village Deotalab (Bhago) in Rewa district, Madhya Pradesh on 8th July 2019. 14 farmers participated in the programme.
- The seed sowing of Palmarosa crop was initiated at Kolluru, Mahbubnagar district in Telangana through the interventions of CSIR-CIMAP Research Centre, Hyderabad.
- Team CSIR-CIMAP conducted a field visit of palmarosa cluster along with seed material distribution for next season crop under CSIR Aroma Mission in Baran district of Rajasthan.
- The distribution of wild marigold (*Tagetes minuta*) seeds was conducted under CSIR Aroma Mission at Panchari, Udhampur, Jammu and Kashmir on 12th July 2019 by Team CSIR-IIIM Jammu.
- The planting of CK10 variety of Rosagrass was conducted under CSIR Aroma Mission at Bazpur in Udham Singh Nagar district, Uttarakhand by CSIR-IIIM Jammu.
- The agrotechnology of Lemongrass (Jor Lab L-8) was transferred by CSIR-NEIST to M/s Destine Agro, Agartala under CSIR Aroma Mission
- The planting of CKP-25 variety of Lemongrass was conducted under CSIR Aroma Mission at Basantpur village, Akbarpur in Ambedkar Nagar district, Uttar Pradesh by CSIR-IIIM Jammu.
- Successful trial runs of Stainless Steel Distillation Units (500 kg capacity) installed at Sumbli and Drudu in Bhandarwah, Doda district, Jammu and Kashmir were carried out by CSIR - IIIM Jammu under CSIR Aroma Mission.
- 10000 plantlets of 'Jor Lab P-1' variety of Patchouli were distributed for plantation to Nagaland NGO on 16th July 2019. CSIR-NEIST has already signed an MoU with this NGO for implementation of CSIR Aroma Mission in the state of Nagaland.
- New area expansion under lemongrass has been initiated in Khalipara village at Malgoan cluster in Kondagaon, Bastar, Chattisgarh under CSIR Aroma Mission.
- More than 40 farmers participated in the awareness-cum-training programmes conducted on July 18 at Gandhari village and July 19 at Chanderkot village of Ramban district, Jammu and Kashmir by Team CSIR-IIIM Jammu. On this occasion, 50 kg seeds of *Tagetes minuta* were distributed to the farmers registered under Aroma Mission.
- An inspired farmer installed his own distillation unit for the Lemongrass crop cluster developed by him under CSIR Aroma Mission at Digisolopa in aspirational district Nabarangpur, Odisha.
- The planting of Lemongrass (CKP-25 variety) was conducted under CSIR Aroma Mission at Rupinpur village, Akbarpur in Ambedkar Nagar district of Uttar Pradesh through the interventions of CSIR-IIIM Jammu.
- The planting of CK10 variety of Rosagrass was conducted under CSIR Aroma Mission at the cluster developed at Devali village, Nagpur in Maharashtra through the interventions of CSIR-IIIM Jammu.
- The planting of CKP-25 variety of Lemongrass was conducted under CSIR Aroma Mission at the cluster developed at Bageshwar, Uttarakhand through the interventions of CSIR-IIIM Jammu.

- The tribal farmers in Anamalai Tiger Reserve were trained on distillation techniques especially its do's and don'ts by Team CSIR-CIMAP on 26th July 2019
- New area expansion through the establishment of Palmarosa nursery in Pithabata village, Mayurbhanj, Odisha under CSIR Aroma Mission

Research Highlights

- Research from IIT Mandi, CSIR-IITR and Jamia Hamdard, has unravelled the mechanism by which lead salt can promote fat accumulation in the liver. NAFLD is a condition wherein there is excessive fat accumulation in the liver
- Tigers in Bandhavgarh, Kanha and Sariska are under tremendous stress induced by tourism and this is probably affecting their reproduction, a study by CSIR-CCMB has found.
- Researchers at IIT, Kanpur and CSIR-CDRI hit upon a novel way to destroy superbugs, which are becoming increasingly resistant to most known antibiotics.

Memorandum of Understanding (MoU)

- MoU signing ceremony between IIT Delhi and 5 CSIR laboratories (CSIR-IMMT, CSIR-NPL, CSIR-AMPRI, CSIR-CSIO and CSIR-CEERI) to promote cooperative research. The plan is to initiate about 60 Interdisciplinary Research projects with the five CSIR laboratories this year and promote collaborative research, exchange of ideas, development of knowledge, enhancing high quality research throughput. It will serve as a platform to students, faculty and other research scholars equally to contribute towards research and development growth of nation and fuelling its growth
- CSIR-CCMB, signed an MoU with Centre for DNA Fingerprinting and Diagnostics (CDFD) to provide quality DNA-based diagnostic services to the public at lower costs, to develop newer diagnostic methods and to engage in scientific research to improve understanding of human genetic disorders.
- Signing of a MoU between CSIR-AMPRI, Bhopal and Lovely Professional University, Phagwara for undertaking joint research and academics in various areas relevant to nation building
- Signing of MoU between CSIR and Amity University for undertaking joint research and academics in various areas relevant to nation building.

Skill Development Activities

- Under CSIR Integrated Skill Initiative Programme, CSIR-IHBT organized a 5 days skill development programme on "Landscape Gardener" in which 12 postgraduate students and professionals from HP, J&K and Haryana participated
- CSIR-IIP Dehradun signed a long term (3 yrs extendable for another 2 yrs) MoU with IOCL for imparting training on Petroleum Refining Technology to the employees of IOCL.
- One week training on "Science Communication" was organized by CSIR-NISCAIR
- CSIR-SERC undertook Skill Development Program on NDT of concrete structures
- CSIR-NBRI organized three days training on Bonsai Techniques under CSIR Integrated Skill Initiative.

- CSIR-NEERI organized a two-day international workshop on 'Management of Management of persistent organic pollutants (POPs) in India with United Nations Environment Programme
- Cloud Seeding orientation program was hosted by CSIR-4PI
- CSIR-CSIO in collaboration with IIT Mandi organized a workshop to train students and researchers on artificial intelligence machine learning.
- CSIR-APCTT Workshop on "New Paradigm in Technology Transfer and Commercialisation" was conducted at CSIR-HRDC, Ghaziabad
- One week training on "Website Development" organized at CSIR-NISCAIR under CSIR Integrated Skill Initiative
- CSIR-NML organized a five-day skill Training Programme on Entrepreneurship Development on Innovative Product Prototyping for MSME (IPPM 2019).
- CSIR-NCL, Pune in coordination with Indian Institute of Science and Research (IISER), Pune inaugurated the Grand Finale of Smart India Hackathon (SIH) 2019.

Student and other outreach activities

- CSIR- CCMB conducted a program on Antibiotic Resistance to 38 young students from 19 schools of Hyderabad
- A batch of around 100 students with five teachers from KV, Arjangarh and KV No.1 Faridabad visited CSIR-CRRI
- A batch of 58 students with 2 teachers from KV Palampur, Distt. Kangra(H.P.) visited CSIR-IHBT, Palampur
- Interaction with Scientists- A two day visit of 75 students from various KVs to CSMCRI, Bhavnagar
- CSIR-IITR successfully conducted "Empowering Pupil Innovation and Creativity (EPIC-2019)" Young Scientist Competition & Budding Innovator Camp as part of CSIR-Jigyasa Programme.
- An outreach health awareness program for women was organized by CSIR-CDRI at Fakharpur of District Bahraich
- School students visited MSW (MunicipalSolidWaste) plant at CSIR-CMERI
- About 450 students & 50 teachers from KV Madurai1, Madurai2, Karaikudi and from other State Govt. Schools from Sivagangai District took part in the programme at CSIR-CECRI, Karaikudi
- Under JIGYASA Programme, CSIR-CECRI celebrated One Day Seminar on International Year of Periodic Table 2019 today
- A batch of 40 students and 4 faculties from KV Amhat, Sultanpur (U.P.) visited CSIR-CDRI labs and interacted with scientists
- CSIR-CBRI organized Student-Scientist Connect Programme for more than 200 students of KV 1 & 2, Roorkee to observe World Youth Skills Day.
- CSIR-CBRI scientist presented lecture to 160 NCC Cadets from various schools of Roorkee during Pollution Awareness Pakhwada at Cant. Board School

- Under the JIGYASA program, a batch of 68 students and 5 faculties from Kendriya Vidyalaya Mati, Akbarpur, Kanpur Dehat visited the labs and interacted with scientists at CSIR-CDRI
- CSIR-NEERI with Swachh Association organised a workshop to spread awareness about composting tech. to handle & manage waste at source. Hands-on training were given to the citizens
- CSIR-CSMCRI 70 students and 10 faculty members, from 6 KV's of Viramgam, Himmatnagar, Gandhinagar and Wadsar visited the Institute
- A group comprising of nearly 100 students from Kendriya Vidyalaya, visited CSIR-NML and interacted with scientists and research scholars under the Jigyasa programme
- More than 100 students and faculties from Kendriya Vidyalayas of Jammu and nearby areas visited CSIR IIIM. The students interacted with research scholars, scientists and technical staff of the Institute
- A batch of 41 students with 04 teachers from KV Bhanala, Distt. Kangra (H.P.) visited CSIR-IHBT Palampur
- A batch of 40 students and 5 faculties from KV MCF Lalganj, Rae Bareli (U.P.) visited CSIR-CDRI labs
- Students and teachers from KV Karnal visited CSIR-IMTECH
- CSIR-IHBT: A lecture cum demonstration was provided on "Alternative technology for production of plant secondary metabolites" followed by visits to Herbarium, Pilot Plant Facility, Tea Factory, Bamboo Museum and labs, viz. Nanotechnology, Natural Product Chemistry, Entomology, Foodtech etc.
- Under JIGYASA programme a group of 35 students from KV Nadaun, Hamirpur (HP), accompanied by 3 teachers, visited CSIR-IHBT, Palampur (HP).
- Visit of Sri R. Kamalakannan, Minister for Agriculture, Govt.of Puducherry to CSIR-CFTRI
- Interaction on research cooperation with the attaché of university cooperation/French Embassy in India, Mme. Emilia Cartier on their visit to the institute
- Interaction of team, CSIR-AMPRI, Bhopal with officials of Rail Coach Factory, Kapurthala

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 (us 35(2AB) of IT Act). This scheme helps in encouraging industrial R&D in the country.

1. Industrial R&D Promotion Programme
Recognition/ Registration and renewal of In-house R&D in Industry
 - 09 in-house R&D units of industries were granted recognition as well as registration certificates.
 - 80 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

- 08 SIROs were granted recognition and 04 were granted registration certificates.
- 42 SIROs were granted renewal of recognition and 23 were granted renewal of registration certificates.

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 09 PFRIs were granted registration certificates.
- 04 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 37 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. 35754.29 Lakhs incurred on R&D by Industry.

PUBLIC SECTOR ENTERPRISES

1. 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.1218.46 Lakhs during July 2019.
- Sale of items worth Rs. 1032.07 Lakhs was realized during July 2019.

2. 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 three technologies by individual inventor.

- NRDC has also licensed five technologies, collected a premia of Rs. 56.25 Lakh and a royalty of Rs. 21.71 Lakh from licensing of technologies during July, 2019.
- NRDC signed MoU with DQQA Ministry of Defence to establish IPR Cell in DGQA HQs
