

No. DSIR/MS/2019/06
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **June 2019**)
(Part-I Unclassified)

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

Major achievements during the month of JUNE, 2019:

1. Council of Scientific & Industrial Research (CSIR)

Societal Benefit

CSIR labs have been playing a crucial role in aiding government regulators and setting up of norms, guidelines and processes in several sectors spanning from roads and bridges to environment and food safety. Some of the key activities this month highlight this aspect of CSIR contributions to society.

- **CSIR-SERC**, Chennai has been asked to investigate the technical, safety, and security reasons, and lapses of a collapse of an under-construction water tank for a sewage treatment plant (STP) which killed two engineers and a site supervisor in Bengaluru.
- The Karnataka High Court has directed the state government to rope in **CSIR-NEERI** as an expert agency to undertake an in-depth study of the lakes within BBMP limits. The court further stated that NEERI has to study the existing lakes, ascertain the locations of the lakes that have disappeared and suggest restoration measures. Moreover, NEERI has to come up with short-term and long-term measures for the protection.
- **CSIR CRRI** will examine and present a report to the government in the matter of taking a call on future of BRTS corridor in Bhopal.
- **CSIR-NEERI** has been working with MPCB to reduce pollution in Mumbai and has sought introduction of congestion charges on cars and two wheelers in Mumbai. NEERI and MPCB suggested Rs 1 for cars and 50p for two wheelers.
- **CSIR-NEERI**, in its study assessing environmental impact of poultry farms, found that the battery cage system of rearing is a cause of concerns & a shift to cage-free, better-ventilated systems can address these issues. The Telangana State Pollution Control Board (TSPCB) issued a show cause notice to Indira Poultry Farm in the Yadadri Bhuvanagiri district for not adhering to the rules of the Water (Prevention and Control of Pollution) Act and Air (Prevention and Control of Pollution) Act, based on a study.

- BMC, Mumbai appointed **CSIR-NEERI** to conduct a survey on waste composition and quantification across the city to highlight the city's waste generation, transportation & disposal dynamics..
- **CSIR-NEERI** has completed the Environment Impact Assessment for Bainguinim (Goa) site.
- Interim result of a study carried out by **CSIR-NEERI** in Kolkata on the city's air has led to environment department and state pollution control board work to replace coal with either electricity or cooking gas at roadside eateries and kiosks that iron clothes. The study shows that about 26 per cent of the city's particulate matter (PM 2.5) pollution is because of burning coal at roadside eateries and cloth ironing kiosks.

CSIR labs Development and adoption of Eco-friendly technologies:

- Environment-friendly baits Pheromone Application Technology (PAT) developed by **CSIR-IICT** to be supplied to cotton farmers and carry out awareness by IICT. The baits are environment-friendly baits to tackle the pests with out poisoning the crop, soil or the air.
- **CSIR-IICT** is converting its solid dry waste to recycling paper and plastic by tying up with a firm. It is also converting kitchen waste into bio-gas through an Anaerobic Gas-lift Reactor (AGR), an European invention, re-developed to suit Indian conditions, that it has successfully installed in many places for private and public organizations. Biogas generated from food waste is linked to kitchen stove. IICT entered into an agreement with another Hyderabad-based startup, Waste Ventures India, which will pick up all the dry waste generated by IICT on a weekly basis
- **CSIR-NEERI** has developed a **treatment system for biomedical liquid** and pathological effluents on pilot scale in order to overcome the health hazards created by disposing off blood, water, body fluid and pathological samples into drain without treatment. An integrated approach referred to as multi-intervention system shall be demonstrated to treat the BMLW effluent that does not involve use of chemicals and thus minimizes recurring costs and offers ease of operation.
- Scientists at **CSIR-NEIST, Jorhat**, have developed a ceramic membrane with the help of a mixture of potter's clay, stone dust and tea waste that can treat effluents from a textile unit. These filters are especially useful in petrochemical processing, where it is not possible to use organic membranes.

Aroma Mission

This is a flagship program of CSIR with several labs participating and working with farmers all over the country in cultivation of aromatic plants. Every month CSIR scientists carry out several awareness programs, training and distribution of seeds to farmers. Few highlights are:

- A three-day skill cum technology upgradation programme on cultivation, processing and marketing aspects of aromatic and medicinal plants was conducted at **CSIR-CIMAP**. 69 young entrepreneurs and farmers representing 12 states and 43 districts from different regions of the country participated. The participants were given practical demonstration of distillation and planting techniques.
- Field demonstration of CSIR-CIMAP developed **mobile distillation unit** in different clusters of Dudhwa region, **Uttar Pradesh** was undertaken. The mobile distillation unit allows small area farmers to also cultivate aromatic crops.
- The **distillation units (500 kg capacity) were installed** at Sumbli, Bhaderwah in Doda district and Galhar village in Kishtwar district of **Jammu and Kashmir** by CSIR-IIIM Jammu
- The **agrotechnology of Citronella (Jor Lab C-5)** was transferred to Mr. Takum Miza, Pasighat, **Arunachal Pradesh** by CSIR-NEIST.
- CSIR-NEIST organized the Meeting-cum-Training programme on '**Catalyzing rural empowerment** through cultivation, processing, value addition and marketing of aromatic plants' organized under CSIR Aroma Mission at Rajapara, Kamrup, **Assam**. Farmers attended the programme from Assam, Nagaland, Manipur, Meghalaya and Arunachal Pradesh
- The local farmers of Darhal, Rajouri, Jammu and Kashmir, **extracted the first lot of essential oil from one-year old Lavender crop**. Last year, Lavender was introduced for the first time in Pir Panjal mountain range by CSIR-IIIM Jammu. It has been well accepted by the local farmers in Rajouri. Lavender has lots of potential to alleviate economic conditions of the small and marginal farmers of the region.
- **CSIR-IIIM**, Jammu signed **MoU with 'Universal Food Products'**, Pudukkottai district, Tamil Nadu and '**Half Land Enterprises**', Mysore, Karnataka for implementation of CSIR Aroma Mission in Tamil Nadu and Karnataka respectively. Universal Food Products is involved in agricultural sector and is facilitating marginal farmers in Tamil Nadu whereas Half Land Enterprises is facilitating marginal farmers at various locations in Karnataka.
- A training programme on 'Cultivation and Processing of Aromatic Plants' was organized on 8th June at Kamalpur, Dhalai, **Tripura** by Team CSIR-NEIST.
- A Memorandum of Understanding (MoU) was signed between CSIR-NEIST and 'Para Vidya Yog Sanstha', Manipur on 10th June for implementation of CSIR Aroma Mission in the state of **Manipur**.
- Many **awareness cum training programs** on cultivation and value addition of aromatic crops were organized by CSIR-IHBT at Village Unyura, Almora; Village Theekh, Block Kapkote, District Bageshwar of Uttarakhand and by CSIR-IIIM Jammu at Mohanpura village, Todabheem, District Karoli and Nabhri-Tah-Bhim village, District Rajsamand, Rajasthan.
- CSIR-NBRI organized training at Sohana village in aspirational district Siddharthnagar, UP and at Devlapar, Nagpur, Maharashtra
- More than 150 farmers and students participated in the awareness programme organized by CSIR-IIIM Jammu at J.J. Arts and Science College in Pudukkottai, Tamil Nadu on 25th June 2019.

- Awareness cum training programmes were organized by CSIR-IHBT at Shillibagi village, Thunag, Mandi, HP and at Patlot distt. Nainital, Uttarakhand, at village Morada, district Mayurbhanj, Odisha, vill. Chulathach, Block Seraj, Teh. Balichowki, distt. Mandi (HP) were also organized.

Technology and Industry

- CSIR has prepared a **compendium of about 225 Technologies** above TRL6, and was submitted to Vice Chairman NITI Aayog. The compendium of technologies span several sectors and sector wise assessment of TRLs was done by CSIR and validated by external experts.
- CSIR-NCL signed a **Technology Licensing Agreement** with Greenvention Biotech Pvt. Ltd., Pune for integrated pest and pathogen management in agriculture using fungi and their metabolites.
- Transfer of know how to M/s Johnson of **lead free X-ray shielding tiles** by CSIR-AMPRI. Currently lead containing tiles are mostly imported. Looking forward to making difference in health and other strategic sectors in India and abroad.
- DG, CSIR inaugurated **Common Research and Technology Hub at CSIR-CMERI**, Durgapur
- **CSIR-IMTECH and Merck India** signed the collaborative research agreement for establishing High End Skill Development Centre at IMTECH
- CSIR- NML signed a MoU with Engineering export promotion council of India (**EEPC India**), MoU to work on engineering technologies. CSIR-NML would help the country's engineering exporters in achieving cutting edge technologies for a highly competitive global market.
- CSIR-IITR signed an agreement with H2OMantra Private Limited where the main objectives are R&D for the assessment and certification of existing Iron, Arsenic & Fluoride removal water treatment products/technologies and other technologies related to the water treatment.
- Industry meet was organized by CSIR-CMERI

Skill Development:

- One week training on "Dspace Software for Design and Development of Institutional Repositories" conducted during 24-28 June 2019 at CSIR-NISCAIR under CSIR Integrated Skill Initiative.
- Skill Development Training Programs on 'Downstream Processing for Enzymes and Proteins and basic Skill Development Training Programme on 'Analytical Chemistry - Tools and Techniques'' was undertaken at CSIR-IIP

- Under Skill development initiative of CSIR, Microbial identification workshop at NCIM Resource Centre (NCL) has been conducted.
- One week training on "Koha Software for Library Automation' was conducted by CSIR-NISCAIR under CSIR Integrated Skill Initiative
- Training of Master Trainers for development of masons in Himachal Pradesh on Earthquake Resistant Construction Practices was done at CSIR-CBRI
- Training Program on seaweed cultivation and processing by CSMCRI was conducted
- CSIR-CLRI to carry out comprehensive study on "Supply Chain of Footwear Industry" including Shoes and Leather Items and Shoe Component segments in **Angola**.
- Five days Training of Master Trainers on Earthquake Resistant Construction Practices at CSIR-CBRI was organized. Field demonstration of different types of walling systems of buildings performed by the Master Trainers of Training Programme on Earthquake Resistant Construction Practices at CSIR-CBRI was organized.
- CSIR-CLRI conducted a customized training programme in BAG MAKING for M/s KH Exports India Pvt. Ltd. Chennai

Promoting Start Up and Innovation

- Incubator Manager Immersion program was held focussing on various aspects of running a high impact business incubator by Venture Center-NCL Pune
- CSIR-NEERI to mentor and help the startups in scaling up their venture & exploring avenues in their respect sector under SIG initiative of TiE Nagpur.
- Bio Mysuru Summer 2019- Mysuru Food & Biotech Startup Meet held on June 8th, 2019 at CSIR-CFTRI.
- CSIR CCMB organized workshop on biologics for Nectar therapeutics India
- Innovation in Biologics and Biosimilars workshop was organized by Atal Innovation Center at CSIR-CCMB
- The NIDHI Center of Excellence at Vemture Center, Pune organized a One Day Hands-on Workshop on business modelling for Early-Stage Innovations.
- The first in a series of seminars organized by the Indian Patent Office, in collaboration with the World Intellectual Property Organization and industry associations on June 20, 2019 at CSIR-Indian Institute of Petroleum (IIP).

Jigyasa and Outreach

- CSIR-IIIM, Jammu in collaboration with Department of Pediatrics, SMGS Hospital, Govt Medical College (GMC) Jammu, organized the **Sickle Cell Anemia Awareness Program** on the occasion of World Sickle Cell Day-2019.

- A group of 41 students from Shiksha Niketan, visited CSIR-NML, Jamshedpur and interacted with scientists and research scholars
- As a part of External Publicity and Public Diplomacy (XPD) Division's outreach programme, a group of 20 **Journalists/Editors from Afghanistan** has visited and interacted with the scientists of **CSIR-IIP**
- CSIR-CBRI conducted outreach programs to Chemistry PGTs of 7 Regions (Agra, Chandigarh, Dehradun, Delhi, Gurugram, Jabalpur & Varanasi) at Kendriya Vidyalaya No. 2, Roorkee
- 05 days summer vacation residential workshop under JIGYASA program was carried out at CSIR-IIP, DEHRADUN.
- Teachers from Kendriya Vidyalayas (Bhopal Region) visited CSIR-AMPRI, Bhopal and interacted with scientists and researchers.
- A **Seminar** was organized by CSIR on **role of S&T in Indian elections** to highlight contributions of CSIR, IITs and other institutes in coming up with S&T solutions for conduct of smooth democratic elections in the country
- A 3-month program has been organized by Central Board for Workers Education (Ministry of Labour & Employment, Govt. of India) in association with CSIR-NML to provide **basic education to the female workers** of CSIR-NML who could not complete their basic school level education.
- CSIR-NEERI will work with Mahagenco who will make available land belonging to Koradi Thermal Power Station to **women self-help groups (SHGs)** for bamboo plantation. NEERI scientists will help the SHG members in planting bamboo and taking care of plants for three years

Research Highlights

- A sensor to detect, a protein linked to heart attacks within 10 minutes, confirming heart muscle damage faster than standard tests has been developed at **CSIR- CSIO**.
- Novel drug leads have been developed for the development of anti-Leishmanial agents at **CSIR-CDRI**.
- Researchers at **CSIR-CCMB** have shed new light on understanding endocytosis, which can help in treating depression better.
- A **'green' alternative**, researchers from **CSIR-NIIST**, Thiruvananthapuram, have fabricated an anticorrosive material made from mango leaves.
- A team of scientists in NEIST, Assam has developed a chemical process that turns 'dirty' coal into a biomedical 'dot' to help detect cancer cells. These will be

much cheaper than the imported CQDs, and use of environment-friendly reagents and less water than methods elsewhere

- CSIR-National Chemical Laboratory (**CSIR-NCL**) has revealed the fragmented forests can harbor a high diversity of flowering plants and there is a need to conserve them.

MoU

- CSIR-IITR signed a MoU with AIIMS Jodhpur, endeavors to mitigate problems of Human Health and therefore, to strengthen the Medical Research.
- CSIR-IIP signed an MoU Agreement with GATI Foundation, Dehradun to collect segregated plastic (clean polyethylene and polypropylene type plastics only) from waste sources and deliver to CSIR-IIP

Department of Scientific and Industrial Research (DSIR)

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.

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.
- 98 in-house R&D units of industries were granted renewal of recognition as well as renewal of registration certificates. Figures reported during April, 19 and May, 19 are being revised as under :
- For April, 19: 98 in-house R&D units of industries were granted renewal of recognition as well as renewal of registration certificates.
- For May, 19: 175 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

- 16 SIROs were granted recognition and 13 were granted registration

certificates.

- 09 SIROs were granted renewal of recognition certificates.

Fiscal Incentives for R&D by Industry

- 25 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.13486.33 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.1119.56 Lakhs during the month.
- Sale of items worth Rs. 934.75 Lakhs was realized in the month.

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 four technologies by Central Silk Technological Research Institute, Bangalore.
- NRDC has also licensed four technologies, collected a premia of Rs. 19.50 Lakh and a royalty of Rs. 6.64 Lakh from licensing of technologies during June, 2019.
