

No. DSIR/MS/2020/09
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **September, 2020**)
(Part-I Unclassified)

Major achievements during the month of September, 2020:

1. Council of Scientific & Industrial Research (CSIR)

Key contributions, activities and achievements of CSIR

79th CSIR Foundation Day

- On 26th of September, CSIR celebrated its 79th Foundation Day. Dr Harsh Vardhan, Union Minister of Science and Technology, Earth Sciences, Health and Family Welfare and Vice President, CSIR presided over the event. On the occasion, various CSIR Awards were announced.
- Fourteen school children received CSIR Innovation Awards for School Children-2020.
- For their outstanding contributions, seven CSIR scientists of up to 35 years of age from five disciplines were bestowed the CSIR Young Scientist Award.
- CSIR Technology Awards seeks to foster and encourage multi-disciplinary in-house team efforts and external interaction for technology development, transfer and commercialization. Seven teams of winners of the CSIR Technology Awards - 2020 were announced.
- CSIR Award for S&T Innovation for Rural Development (CAIRD) for the years 2017, 2018 and 2019 were also announced.
- The CSIR Diamond Jubilee Technology Award-2019 and G N Ramachandran Gold Medal for Excellence in Biological S&T-2020 were also notified on the occasion. The much-awaited and most-prestigious Shanti Swarup Bhatnagar Prize Winners of the year 2020 was also announced. In all 14 scientists from seven disciplines were announced.
- The Hon'ble Minister also released a Digital Flip Book and a short-video that give glimpses of CSIR's COVID-19 mitigation efforts. AVRA Laboratories, a leading pharmaceutical company, founded by Padmabhushan A.V. Rama Rao, will be establishing three research chairs at the Council for Scientific and Industrial Research (CSIR) with the aim to support and recognize exemplary work in the field of translational research.
- AV Rama Rao chairs, named in honour of Dr. AV Rama Rao, a former CSIR-IICT director, were announced which provide a three-year fellowship to selected scientists to recognize and advance their efforts.

Update on Initiatives for Covid-19 Mitigation

CSIR has been engaged in developing various products, processes, technologies in the areas of diagnostics, drugs, surveillance, hospital assisted devices and PPEs and supply chain logistics towards mitigation of Covid-19 for the past several months. Few of the key activities in the month of September are:

- FELUDA, the novel paper-based diagnostic kit based on CRISPR-Cas which has been developed by CSIR-IGIB and licensed to TATA Sons has been approved by DCGI. This is the only third diagnostic test in the world to use the CRISPR-Cas method for SARS-CoV-2 detection. TATA Sons is scaling up the manufacturing, and the kits will be available in the market soon.
- A simple and fast dry swab based and direct RT-PCR method with no RNA isolation, developed by CSIR-CCMB that can easily scale up the current testing by threefold (without any additional financial and human resource burden) has been reviewed by ICMR and CSIR is working with ICMR for regulatory approval.
- Quick and easy to use RT-LAMP diagnostic test developed in partnership with Reliance Industries has also been submitted to ICMR and is being validated independently currently.
- Combination trials of repurposed drugs in partnership with LAXAI Pharma is being reviewed by DCGI, and Clinical trial application for combination therapy in partnership with Mylan has also been submitted to DCGI and is being reviewed.
- Phase II clinical trial of Sepsivac by Cadila has been completed and DCGI has reviewed and permission for a larger clinical Phase 3 trial has been sought.
- Many clinical trials are ongoing such as ACQH phytopharmaceutical, plasma therapy, among others.
- On the Covid19 sample testing by RT-PCR front, thirteen CSIR labs have been testing samples for COVID-19 across India. About 3.6 lakh samples have been tested so far.
- The non-invasive ventilator BiPAP developed by CSIR-NAL has undergone testing on Covid19 patients at Hospital on 30 patients. DGHS after reviewing the data has expressed satisfaction with the data and has advised testing on more patients at other larger hospitals
- After successfully establishing the makeshift hospital prototype at NDRF campus in Ghaziabad, CSIR is implementing a strategy for building make-shift hospitals at J&K, HP, and other places that have shown interest.

- CSIR-Cohort: CSIR has carried out a sero-surveillance across CSIR labs in the country, and the first round of testing has been done on nearly 9000 and analysis of the data is ongoing.
- Proven reinfection in 2 asymptomatic health care workers from North India has been published making it the first published report of reinfection from India. This is amongst the first few global reports. The two healthcare workers posted in the COVID-19 unit of a tertiary hospital in North India, who tested positive for SARS-CoV-2 by RT-PCR on 5th May and 17th May, 2020 respectively. Subsequently, they tested negative for SARS-CoV-2 by RT-PCR on 13th May and 27th May, respectively. After resuming duties in the hospital, the two individuals tested positive again for SARS-CoV-2 on 21st August and 5th September and further tested negative on the 14th and 6th days respectively. Both individuals were again asymptomatic but had a higher viral load on the second episode of reinfection. Reinfection was confirmed by sequencing of viral genomes. The paper is available at *Clinical Infectious Diseases*: <https://doi.org/10.1093/cid/ciaa1451>

New Products/Processes/ Technologies developed

- CSIR-Indian Institute of Petroleum (CSIR-IIP) designed a demonstration plant based on a hybrid process for the production of grade Helium from natural gas
- CSIR-National Institute of Interdisciplinary Science and Technology (CSIR-NIIST) has developed a reusable stopgap facemask (SFM)
- CSIR-National Metallurgical Laboratory (CSIR-NML) has developed the following technologies:
 - Zincometer: A sensing device for real-time Zinc weight measurement in galvanized wire lines
 - Technology for beneficiation of low-grade limestone containing finely disseminated Silica grains for utilization in the cement making industry
 - Energy-efficient production of low/medium carbon ferromanganese
 - Conversion of Hematite fines to Magnetite using Compressed Natural Gas (CNG)
 - Tungsten metal powder from plant tailings or waste sample
 - Low cost work hardenable Hadfield steel for heavy impact gouging wear-resistant application
 - Know-how for preparation of hydrogen standard (CRM) in steel

Technologies licensed/transferred during the month

- CSIR-CECRI: Electrochemical Production of Sodium Hypochlorite to M/s. RS Nanotechnologies, Sattur
- CSIR-CFTRI:
 - Paan flavoured water
 - Dry dehulling of sesame seed
- CSIR-IHBT:

- Technology transfer & MoU signed for Process of commercial production of protein and fiber enriched granola/cereal and protein bars with M/s. Sumati Foods, Village Juddi Kalan, Baddi, District Solan, H.P.
- MoU for transfer of technology on lab-scale technology on the cultivation of Shiitake mushroom to its implementation at large scale signed with M/s Taqqene Training and Research Enterprise (TGTRE)
- Licensing for Manufacturing/ processing of (i) Granola bars - (Millet and Cereals based), and (ii) Spirulina peanut bar PRODUCTS to M/s Sumati Foods, Village Juddi Kalan, Baddi, Tehsil Baddi, District Solan, H.P. on 01.09.2020T
- CSIR-NAL: License Agreement for Production and commercialization of Piezo - Electric PVDF Films with M/s. Ajay Sensors & Instruments
- CSIR-NIIST: Licensing of know-how for aerodynamically designed reusable stopgap facemask (SFM)- Mr Varun Kumar K V, M/s AVK Toolings, Kariyod, Kuttichal P O, Thiruvananthapuram

Patents Update:

Patents Filed		Patents Granted		Patents Prosecutions	
India	Abroad	India	Abroad	India	Abroad
21	06	37	15	34	55

Collaborations/Agreements/MoUs Signed (National)

- CSIR-CDRI: Consultancy Agreement signed with M/s Kinomera Biosciences Pvt Ltd., Maharashtra on 23-09-20 in the area of bone biology: Area of bone diseases, fracture healing and on emerging molecular pathways for therapeutic targeting
- CSIR-IHBT: Agreement signed with Mr. Surender Mohan, Sunder Nagar, District Mandi (H.P.) Entrepreneur under CM Start-up Scheme for the development of plant-based product for skin diseases in animals; Incubation facility to make natural perfumes and air fresheners under CM Startup scheme with Mr. Kushal Kumar District Sirsa, Haryana, India and Memorandum of Agreement (MoA) related to the Skill Vigyan Programme sanctioned by DBT, with Himachal Pradesh Council for Science, Technology & Environment "HIMCOSTE", Bemloe, Shimla, Government of Himachal Pradesh
- CSIR-IITR:
 - An MoU was signed between CSIR-IITR, Lucknow and Integral University, Lucknow on 18th September 2020 for long term collaboration in the areas of mutual interest
 - An MoU was signed between CSIR-IITR, Lucknow and National Institute of Pharmaceutical Education and Research, Hyderabad on 24th September 2020 for long term collaboration in the areas of mutual interest.
- CSIR-NAL
 - Memorandum of Agreement for providing support for the supply of Automated Weather Observing Systems (AWOS) for installation at 18

- Airports across India. with Central Electronics Limited, New Delhi (Govt., Of India)
- License Agreement for Production and commercialization of Piezo - Electric PVDF Films with M/s. Ajay Sensors & Instruments
- CSIR-NIIST:
 - Phytochemical evaluation of pretreated samples-M/s Pankajakasthuri Herbals Research Foundation, Ayurveda medical college, Kattakada, Thiruvananthapuram
- CSIR-NML: Fatigue Behavior of Primary Piping/Vessel Materials of Indian NPPs under Multi-axial Cyclic Conditions (Sponsored) with Bhabha Atomic Research Centre(BARC)

Collaborations/Agreements/MoUs Signed (International)

- CSIR-CDRI: Based on the existing Memorandum of Understanding between the Council of Scientific & Industrial Research (CSIR) and Hiroshima University, Japan. CSIR-CDRI and Hiroshima University, Japan on 23-09-20 signed the annexure & mutually agreed for implementation of the undergraduate and graduate student exchange under the "International Linkage Degree Program for Developing Innovators Transforming Advanced Technology to Social Goals".

High impact S&T services offered

- CSIR-CLRI: CLRI has assessed about 1553 samples during the September month, the samples collected across the Kanpur, Mumbai and Chennai ports and that received independently from customers towards Finished Leather Certification for the benefit of the customs and the leather industry.
- CSIR-IMT: Testing of Anti-Viral efficacy of compounds/ devices/ appliances/ disinfectants/sample material for Industries against live SARS-COV-2 Strain.
- CSIR-NML: Evaluation of Welding Joints of Thermal Power Plant Boiler Pipes through Electromagnetic Parameters

Outreach Activities (Jigyasa, Skill Development, and others)

- CSIR-CEERI: A session on Virtual Labs was organized through MS-Teams at Birla Shishu Vihar, Pilani under CSIR-Jigyasa and Niti Aayog's Atal Innovation Mission on 19-09-2020
- CSIR-CLRI: Short-term skill development training programmes pan India sponsored by National Scheduled Castes Finance and Development Corporation (NSFDC): Training has commenced in September 2020 for about 200 candidates out of the 1050 candidates sanctioned to CSIR-CLRI by NSFDC for 2019-20, Mobilization for these candidates is under progress to enable commencement of training post-pandemic situation. Fifty-one students who have undergone Short-term skill development training sponsored by NSFDC during 2018-19 have been placed during September 2020.
- CSIR-CRRI: CSIR-CRRI organized Online Training Programme on "Quality Control Aspects of Rigid Pavement and Flexible Pavement" from September 24-26, 2020. The programme was sponsored by Shyama Prasad Mukherjee Port Kolkata, West Bengal.

Visit of high-level dignitaries to the Institute/Laboratory

- CSIR-AMPRI: Shri Om Prakash Sakhlecha, Minister for Science and Technology and MSME, Government of Madhya Pradesh visited the Institute on 07.09.2020.
- CSIR-CLRI: Shri K. S. Sundara Raman, Managing Director, SHIVA TEXYARN LIMITED, Coimbatore and Chairman, Indian Technical Textiles Association (ITTA) visited CSIR-CLRI with his team on 10th September 2020 and discussed on R&D areas for collaboration. Following the meeting with Director, Team SHIVA TEXYARN visited the Gait Lab, Design & Fashion Studio and Centre for Analysis, Testing,
- CSIR-NAL: Air Vice Marshal KVR Raju VM, Director, IAF-PMT

Conferences, Workshops, etc. organized, if any, during the month

CSIR-CECRI: CSIR's Brainstorming on "Atmanirbhar Bharat: Energy Management and Energy Storage Devices organized by CSIR-CECRI, Karaikudi on 16th September 2020 (with the participation of National and International eminent experts).

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

- 83 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

- 01 SIRO was granted renewal of registration certificate.

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 02 PFRIs were granted registration certificates.
- 30 PFRIs were granted renewal of registration certificates.

Fiscal Incentives for R&D by Industry

- 44 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. 107130.30 lakhs.

Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM)

One project on 'Low Power Portable MUGA & ERI Spinning Machine' was successfully completed during September, 2020.

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. 2048.38 Lakhs during September, 2020.
- Sale of items worth Rs. 2373.78 Lakhs was realized during September, 2020.

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 one technology on 'High Precision Optical Standard Glass Scales' to Central Manufacturing Technology Institute (CMTI) and licensed four technologies to Central Sericultural Research and Training Institute.
- NRDC has collected premia of Rs. 22.50 Lakh and royalty of Rs. 5.69 Lakh from respective technologies during September, 2020.