

No. DSIR/MS/2020/03
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **March, 2020**)
(Part-I Unclassified)

Major achievements during the month of MARCH, 2020 :

1. Council of Scientific & Industrial Research (CSIR)

Key Contributions and Activities of CSIR

The month of March has been centered on the Coronavirus pandemic and ways to mitigate the rapid spread in the country. CSIR being an R&D organization with expertise in various disciplines spanning from biological sciences, to chemical sciences and engineering has engaged in developing and deploying several S&T based solutions, products and technologies towards addressing the epidemic in the country. While, the first case of the coronavirus pandemic in India was reported on 30th January with no significant rise in cases in February, the transmission escalated during March, resulting in social distancing measures followed by lock down from 24th March, which curtailed our R&D activities to a large extent. Despite the extraordinary challenge posed by lockdown, CSIR scientists, student and staff, exhibiting great dedication, have worked tirelessly on multiple fronts ranging from setting up testing of patient samples, to development of novel diagnostics, drugs, vaccines and hospital devices and PPEs and other initiatives.

CSIR has devised a strategy to address the Covid19 comprehensively and identified five verticals namely;

- Digital and Molecular Surveillance;
- Rapid and Economical Diagnostics;
- Repurposed/New Drugs and Vaccines;
- Hospital Assistive Devices and PPEs,
- Supply Chain and Logistics.

All CSIR labs are contributing to these verticals and CSIR is actively engaged in identifying suitable Industry and PSU partnerships for each and every vertical such that the products and technologies developed are readily scaled up and deployed in the country. CSIR is also working in close synergy with other ministries and departments and state governments in the mitigation of the Covid19 outbreak.



COVID 19 Related Activities:

- CSIR-CCMB in Hyderabad and CSIR-IGIB in Delhi took leadership in establishing testing protocols and re-orient the facilities with appropriate precautions for diagnosis of Covid19 patient samples using RT-PCR methodology. This will complement ICMR testing given the need to scale up testing facilities in the country.
- Both the labs set to perform sequencing of a large number of coronavirus strains which will give insights into the origin, spread and diversity of Coronavirus strains in the country apart from the mutations and severity of viral strains prevalent in India.
- On 22nd March CSIR-CCMB received approval for testing of patient samples from ICMR and soon the first set of patient samples were tested at CSIR-CCMB at the end of March, paving the way for the scale-up of testing.
- CSIR-CCMB is also setting up the growth of the virus in laboratory conditions which is a difficult but critical task that is essential for the development of vaccines and new drugs.
- CSIR-IGIB is developing novel rapid diagnostic tools, apart from sequencing of Coronavirus strains and establishing SOPs for testing and is working in close coordination with NCDC. CSIR-IGIB is also working along with Industry on developing suitable digital surveillance platform that can help in quick identification and isolation of Covid19 positive cases
- Other CSIR labs are also gearing up with necessary infrastructure and training to contribute to the much-needed testing of coronavirus patient sample and it is hoped that at least 10-12 labs will be joining efforts with CSIR-CCMB and CSR-IGIB.
- CSIR-CCMB Training on for doctors and academics from microbiology departments of hospitals of Warangal and Hyderabad. They were trained on RNA isolation and one-step RT PCR to test for COVID19 with reagents suggested by ICMR
- CSIR-IICB provided Real-Time PCR instrument to Indian Army to fight COVID19 on request from Command Hospital Kolkata for COVID19
- On the drugs for the treatment of Coronavirus, CSIR is pursuing dual options of repurposed drugs and new drugs apart from harnessing India's traditional knowledge-based drugs and natural products.
- CSIR has identified the top 15 to 20 lead drug candidates based on global development, whose synthetic process technology can be readied ahead of time, such that when drugs are approved, India will be in a position to launch them quickly for its patients.
- CSIR-IICT and Indian Pharma giant CIPLA have partnered to take up the immediate manufacture of three chemical compounds with antiviral properties.

- Using AI, TCS scientists have found 31 new promising chemical compounds that could potentially be used to fight Covid19. CSIR will be collaborating with TCS for further testing.
- CSIR labs such as CSIR-IICT, CSIR-NCL and CSIR-CDRI have fast-tracked R&D roadmap for indigenous chemical synthesis of drug intermediates and Active Pharmaceutical Ingredients (APIs) that would be needed for the synthesis of the potential drugs for Covid19 based on the global therapeutic pipeline.
- CSIR is working with the Ministry of Ayush in taking forward the Ayush leads to clinical trials such that these can be deployed in the fight against Covid19.
- CSIR engineering labs have initiated scale-up and deployment of various existing hospital devices and PPEs that could aid in the fight against Covid19. Further, there is a focussed approach to meet the shortfall of the PPEs such as coverall, sanitizers, face shields, etc apart from ventilators and oxygen enrichment devices.

Sanitizer

- CSIR-IITR supplied the 150 bottles of Hand-Rub Sanitizer to the LPG Bottling Plant, Bharat Petroleum Corporation Limited, Lucknow to support the Public Utility Service.
- CSIR-IITR handed over the first batch of 350 L Hand-sanitizer to the District Administration
- CSIR-NCL provided 10 liters of hand sanitizer to Pune Office of Central Police Organization
- A team of Scientists from CSIR-NEIST visited Airforce Station, Jorhat, and handed over 130 liters of Hand Sanitizer and 160 liters of Disinfectant in the Airforce Campus.
- CSIR-IICB research scholars took an initiative and approximately 5000 hand sanitizer were made according to WHO guidelines and distributed among local people.
- Herbal Hand Disinfectant (Hankool): patented technology of CSIR-CIMAP based on specific aromatic plant variety. Available for transfer with contract farming for raw material. 150 nos of Hankool - an essential oil-based hand sanitizer patented product from CSIR-CIMAP was distributed to institutional contract workers & security staff.
- CSIR-IHBT inked agreement with M/s AB Scientific Solutions for the production of hand sanitizers & other disinfectants, based on this technology. The company will launch these products very soon in the Indian market including the metro cities.
- CSIR-CECRI made Hand Sanitizer with WHO formulation and 60 liters gifted to the Municipal Commissioner, Karaikudi.
- SENITIMES' alcohol-based herbal disinfectant developed by CSIR-NBRI was launched in the market. The formulation contains Aloe Vera, Gulab

Ark and Citronela oil as herbal constituents.

- Hand Sanitizers developed by CSIR-IHBT distributed to Hon'ble speaker, hospital, offices of SDM, DSP etc at Palampur.
- CSIR-CIMAP prepared 1000 Bottles of Hand Sanitizer, 1000 Bottles of Disinfectant & 50 liters of floor cleaner and distributed to Admin Lucknow of Lucknow Nagar

Non-Covid19 Activities in March

Societal Sector

- CSIR Contributions towards the Namami Gange Programme were presented to the Hon'ble Home Minister, Shri Amit Shah, by CSIR-IITR along with a booklet for public awareness developed by CSIR-IITR
- Various plant varieties such as *Rosa damascena*, *Tagetes minuta*, *Valeriana jatamansi*, *Artemisia maritima* and *Dracocephalum heterophyllum* plant varieties developed by CSIR-IHBT under Aroma Mission were released by Hon'ble Governor of HP, Shri Bandaru Dattatreya.
- CSIR-IIP and SDC Foundation, Uttarkhand, set up an 11th Plastic Bank. SDC Foundation and CSIR-IIP are leading plastic recycling in Dehradun which can be converted to fuel using CSIR-IIP technology.
- CSIR-CIMAP Research Centre, Bangalore jointly organised an awareness program with Kerala Forest Research Institute (KFRI) and NMPB-Regional cum Facilitation Center (RCFC), Southern Region on 5th March 2020 at KFRI sub-center, Nilambur, Kerala. Around 40 farmers from across the state participated in the program. A detailed account on agro technologies of various crops was covered. Possibility to develop a Vetiver cluster in Kannur was also discussed.
- CSIR-CIMAP Research Centre, Bangalore conducts one-day awareness program for tribal and hill farmers in Marayoor, Munnar, Kerala on 3rd March 2020. Around 50 farmers cultivating Lemongrass wild variety participated in the programme during which guidance on CSIR-CIMAP's improved varieties, agro & distillation technologies and marketing was provided to them. A visit to the farmers' fields was also made to understand the practical farming and distillation issues. UNDP, Kerala coordinated the programme.
- CSIR-IMMT CSIR-NML, NASI Jharkhand and SEEDS organized a Health Hygiene Nutrition camp at village Hatanda, Dist Saraikela. More than 75 villagers participated. CSIR-IMMT's Terafil filter remained a source of attention.
- In a move to fight against whiteflies CSIR-NBRI have developed a pest-resistant variety of cotton and is going to start field trials this year from April to Oct in Faridkot Centre of Punjab Agriculture University, Ludhiana.
- An interactive meeting held today at CSIR-NEIST for local entrepreneurs, innovators, scientists and students with Dr Arun K Sarma, Director-General, NECTAR, Shillong.

- CSIR-CSIO organized a workshop cum Innovator Meet on Precision Farming Techniques & Technologies for Sustainable Agriculture

Industrial Sector

- AIC at CSIR-CCMB launched its TIDE 2.0 under its Meity Start-up Hub at IIIT H. Under this program, applications are invited from individuals and start-ups who want to work towards wellness using genomics data and informatics tools.
- CSIR called for proposals under the NMITLI program for industries/start-ups to develop technologies and products to aid in Covid19 mitigation.

Patents Update

Patents Filed		Patents Granted		Patent Prosecutions	
India	Abroad*	India	Abroad*	India	Abroad
7	4	6	4	65	130

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

Technology Transfer/MoU:

- A Memorandum of Understanding (MoU) was signed between HAL and CSIR-NAL for Design, Development, Production and Maintenance of indigenously developed 19 seater SARAS MKII Aircraft, during WingsIndia 2020.
- CSIR-IIIM and M/s Racemix Molecules Pvt Ltd entered into an agreement to do collaborative research & development and industrial production of APIs of life saving drugs.
- CSIR-SERC transferred technology about "Textile Reinforced Concrete Prototyping Technology (TRCPT) for preparation of Textile Reinforced Concrete (TRC) lining of water ponds and industrial wastewater ponds" to M/s Sapphire Consultants, Thane.
- A Tripartite Agreement was signed between CSIR-CLRI and M/s Renolux Engineering SDN. BHD, Malaysia and M/s Econo Services (India), Chennai for "Setting up of FICCO based sewage treatment plant"
- CSIR-CCMB signed an MoU with Urbantechie to develop educational games that CSIR-CCMB will disperse in schools and colleges.
- CSIR-NEERI signed MoU with Nephrology Society Nagpur to study possible environmental factors for Chronic Kidney diseases of unknown Etiology (CKDu) in Vidarbha Region. Findings will be disseminated at national and international levels and a protocol to study and monitor CKDu will be worked out.
- The signing of MoU between CSIR and Navodaya Vidyalaya (NVS) for collaboration in Scientist-Student Connect under Jigyasa platform as part

of Scientific Social Responsibility. MoU was signed by Commissioner NVS and Head CSIR-HRDG.

- CSIR-CSIO developed electrostatic disinfection machine for use in public places and can be customised for homes. 80% more effective than other spray machines and technology transferred to Karnataka-based company.
- CSIR-CSIO Chandigarh transferred the technology of 'Process Technology for Safe Disposal of Waste Mercury Based Lamps and Separation of its Phosphor & Glass' to M/s ADV Metal Combine Pvt. Ltd.

Outreach on Women's Day

- CSIR-CMERI celebrated International Women's Day 2020 on 5th March, 2020. The program was chaired by the Director, CSIR-CMERI. The celebrations were
 - attended by 100 girl students from SCM School, Durgapur
 - The Women's Association of CSIR-CFTRI as part of International Women's Day celebrations, honoured centenarian environmentalist and Padma SHRI AWARDEE SALUMARADA THIMMAKKA. The event was celebrated as a tribute to the conservationist.
- On March 12, CSIR-NML organised a day-long Health Check-up for all its women employees, spouses of male employees, project staff and contractual staff. About 80 women mandatorily attended the health check-up.
- International Women's Day IWD2020 CSIR through CSIR-CIMAP is spreading awareness and training in the cultivation of economically important Medicinal and Aromatic Plants in rural communities which saw about 23% participation of women
- CSIR-IMMT On international women's day 2020, NASI Jharkhand chapter and SEEDS demonstrated the TERAFIL WATER filter, developed by CSIR-IMMT to the tribal women of Musabani block of East Singhbhum. High iron concentration in drinking water is a major problem there.
- CSIR-National Chemical Laboratory, Pune celebrated the International Women's Day with a Half-day symposium on "Women in Science" on March 9, 2020. On the occasion women, scientists delivered exciting talks.
- CIR-NAL organized a One Day Personality Development Programme for women staff on 6th March 2020 at S R V Auditorium

Awards/Recognition:

- Dr. E. Bhoje Gowd, Principal Scientist, CSIR-NIIST has been admitted as a Fellow of Royal Society of Chemistry (FRSC), UK.
- CSIR-CDRI Director Tapas Kumar Kundu, have been selected for Shri Om Prakash Bhasin Award 2019 in the field of Health & Medical Sciences.
- Dr Pavithra Chavali of CSIR-CCMB won SERB-Women Excellence Award of Science and Engineering Research Board (SERB) 2020-2022

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

- 04 in-house R&D units of industries were granted recognition as well as registration certificates.
- 07 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

- 05 SIROs were granted recognition and 03 were granted registration certificates.
- 37 SIROs were granted renewal of recognition and 14 were granted renewal of registration certificates.

Public Funded Research Institution (PFRIs) Registration and Renewal of PFRIs

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

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.5184.74 Lakhs during March, 2020.

- Sale of items worth Rs.5696.05 Lakhs was realized during March, 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 been assigned 54 technologies such as 13 technologies by CSIR-NAL, 6 technologies each by CSIR-CSIO, B.V.Patel PERD Centre, Ahmedabad, CSIR-IHBT, 3 technologies each by CSIR-IIP, CSIR-CIMAP, CSIR-CSMCRI, 2 technologies each by CSIR-NBRI, CSIR-CMERI, CSIR-IIIM, CSIR-IIITR, CSIR-NIIST and one technology each by CSIR-CCMB, CSIR-CFTRI, CSIR-IICT and CSIR-NEIST.
- NRDC has licensed one technology developed by SNBNCBS, Kolkata on 'Detection of neonatal hyper-bilirubinemia' to M/s Zynamed med tech, Visakhapatnam. NRDC has collected a royalty of Rs. 47.00 Lakhs and a premia of Rs.25.00 Lakh from licensing of technology during March, 2020.