

**No. DSIR/MS/2017/08**  
Government of India  
Ministry of Science & Technology  
Department of Scientific & Industrial Research  
**MONTHLY SUMMARY FOR THE CABINET**  
(For the month of **August, 2017**)  
(Part-I Unclassified)

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

**MAJOR ACHIEVEMENTS DURING THE MONTH OF August, 2017:**

**DEPARTMENTAL ACTIVITIES**

**1. Industrial R&D Promotion Programme**

**Recognition/ Registration and renewal of In-house R&D in Industry**

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

**Scientific and Industrial Research Organization (SIROs)**

**Recognition/ Registration and Renewal of SIROs**

- 01 SIRO was granted recognition and registration certificate.
- 12 SIROs were granted renewal of recognition and 05 were granted renewal of registration.

**Public Funded Research Institution (PFRIs)**

**Registration and Renewal of PFRIs**

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

**Fiscal Incentives for Scientific Research**

- 11 industries were approved for issuance of form 3 CM under Section 35(2AB) of IT Act under weighted tax deduction.
- 48 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.153010.80 lakhs.

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

- The project on 'Development of Novel DIVA ELISA Kit for detection of Paratuberculosis infection' supported under PRISM Scheme has been successfully completed.

- The project on 'Biomass based environment friendly incubator for hatching of fertile poultry eggs' supported under PRISM Scheme has been successfully completed.

## **AUTONOMOUS BODIES**

### **1. Council of Scientific & Industrial Research (CSIR)**

#### **1.1 CSIR-CDRI : Developed a Formulation for Osteoarthritis**

CSIR-CDRI, Lucknow have developed a standardized nano formulation from spinach for treatment of osteoarthritis. This is the first ever breakthrough in the areas of osteoarthritis, a most common and chronic condition of the joints which effects mainly the weight bearing joints such as hips and knees. At present there is no viable treatment available for osteoarthritis.

#### **1.2 CSIR-CSIO : Developed a Device for Detection of Ghee Adulteration**

CSIR-CSIO, Chandigarh has developed a device to detect adulteration in desi ghee. The device is a small instrument that takes samples of ghee to assess the quality. Each type of ghee has a standard signature and if the sample does not match that standard signature, the ghee is adulterated. An algorithm has been developed to check the samples. The device can also detect the type of ghee from an unknown a sample.

#### **1.3 CSIR-IGIB: Created Gene Map for Diabetes**

CSIR-IGIB, New Delhi has created a gene map for diabetes, identifying seven genes that could be later be exploited to come out with a more effective cure for the lifestyle disease, affecting millions of Indians, both rich and poor. While there are 650 genes that are directly or indirectly associated with the five common diseases associated with diabetes, seven genes are associated with all the five complications. These five could serve as targets for future research on the search for better diabetes control medication. The diseases, whose genetic links were explored in the study are atherosclerosis, diabetic nephropathy, diabetic neuropathy, diabetic retinopathy and cardiovascular diseases.

#### **1.4 CSIR-IIP : Developed a Process to Convert Plastic in to Petrol**

CSIR-IIP, Dehradun in collaboration with GAIL (India) Ltd., has developed a process by which waste polyethylene and polypropylene type plastics can be converted into petrol and diesel. One kilogram of waste polyethylene and polypropylene can be converted to either about 600-650 ml of petrol or 700-750 ml of diesel along with LPG. The process has been developed at the bench scale.

#### **1.5 CSIR-IGIB: Developed a New DNA Sensor for Quick Pathogen Detection**

CSIR-IGIB, Delhi & National Centre for Disease Control (NCDC), Delhi developed an ultrasensitive DNA chip based sensor for quick detection of *S. pyogenes*, a bacterium which can causes a wide range of diseases in about 30 minutes. The DNA chip is highly specific device for *S. pyogenes*. The conventional method of identification takes 18-24 hours and the basic culture test does not specifically help distinguish *S. pyogenes*. From mild skin and throat infections to life-threatening toxic shock syndrome, *S. pyogenes*

infections affect 700 million people every year. If not treated during early stages of the infection, *S. pyogenes* can even lead to rheumatic heart disease (heart valves damage). The sensor was found to be stable for 12 months with only 10% loss in initial current peak on storage at 4<sup>0</sup> C.

### 1.6 CSIR-NIIST : Developed Process for Production of Ethanol

CSIR-NIIST, Thiruvananthapuram have been able to turn waste into wealth. They have produced ethanol from discarded cotton-stalks by using a combination of chemical and biological techniques.

The stalks were treated with an acid, alkali and different enzymes to breakdown the complex organic polymers of the stalk. The acid helps to remove hemicellulose, a polymer of the cell wall and the alkali extracts lignin, a binding matrix in the cell wall, made of complex phenolic. These treatments expose cellulose, the major component made of glucose to the action of enzymes. The cellulose was further treated using enzymes to convert it into glucose.

### 1.7 CSIR-NEERI: Developed Mechanical Low-Cost Flusher to Improve Rural Toilets

CSIR-NEERI, Nagpur has developed a 'low cost automatic mechanical urinal toilet flusher' which can be used in rural as well as urban areas recognizing the need for proper household toilet availability. The mechanical flusher does not need electricity and works on simple mechanism of spring. A platform near the urinal is attached to an overhead water storage tank.

### 1.8 Atal Incubation Centre Launched at CSIR-CCMB

The prestigious Atal Incubation Centre (AIC), a concept funded by Niti Aayog, was inaugurated at CSIR-CCMB, Hyderabad. The institute is one among ten other institutions in the country which were selected by Niti Aayog for setting up 'Atal Incubation Centre'.

### 1.9 CSIR Intellectual Property

The Patent position for this month is given below:

Patents Filed		Patents Granted	
India	Abroad	India	Abroad
10	33	17	29

### 1.10 Significant Events

#### (a) Conferences, Workshops Organized

- (i) The constituent laboratories of CSIR have organized exhibitions expert lectures one-day visit by school students etc. as a part of Platinum Jubilee celebration of the CSIR.

#### (b) Agreements/Memorandum of Understanding Signed

- (i) CSIR-CBRI, Roorkee has signed the MoU with Jaypee University of Engineering & Technology, Guna (JUET) JUET, Guna and CSIR-CBRI, Roorkee will encourage scientific interactions and collaborative research works

in the field of Civil Engineering, including the areas of Structural engineering, Seismic microzonation, Geotechnical engineering, Environment engineering, Building science & technology, Disaster mitigation and Wind effects on structures.

- (ii) CSIR-IMTECH, Chandigarh has signed MoU with Johnson & Johnson (J&J) to work closely on a research and development programme for exploring potentially more effective, safer, all-oral treatment regimens to tackle multidrug-resistant TB (MDR-TB), as well as new molecular entities to treat all TB patients.
- (iii) CSIR-NPL, New Delhi has signed MoU with ISRO Telemetry Tracking and Command Network (ISTRAC), Indian Space Research Organisation (ISRO), Department of Space. CSIR will provide the Universal Coordinated Time (UTC) traceability to the Time Scale of Indian Regional Navigational Satellite System (IRNSS) – an independent navigation satellite system being developed by the (ISRO).

**( c ) Honour & Awards**

- (i) Dr. Suman L. Jain, Senior Scientist, CSIR-IICT, Hyderabad has been awarded CRSI Bronze Medal during CRSI-NSC-21<sup>st</sup> Symposium in Chemistry. Also Dr. S Sridhar, principal scientist, CSIR-IICT, Hyderabad and his team were selected for the prestigious ‘Nina Saxena Excellence in Technology Award 2017 by IIT, Kharagpur.

**2. Consultancy Development Centre (CDC)**

**2.1 Plan Projects**

- Content Development for the Course-Certificate Programme in Technology Management: Project Review Committee Meeting has accepted the revised draft Course Material.
- Design and development of CDC website in Hindi along with the inclusion of responsive feature has been completed.

**PUBLIC SECTOR ENTERPRISES**

**1. National Research Development Corporation (NRDC)**

- National Research Development Corporation (NRDC) has been assigned five technologies by CSIR-Central Mechanical Research Institute (CMERI), Durgapur. The details are given below :

S No.	Technologies Assigned by CSIR-CMERI, Durgapur
1	Domestic Arsenic Water Filter Unit
2	Domestic Fluoride Water Filter Unit
3	Solar Park
4	Post Harvesting Processing Unit
5	PROM: Phosphate Rich Organic Manure

- NRDC has licensed one technology to M/s. Marico Limited, Coimbatore and collected a premia of Rs.0.5 Lakh from licensing of the technology during August, 2017. The details are as given below :

<b>Sr. No.</b>	<b>Licensee</b>	<b>Technology</b>	<b>Rs</b>
1	M/s Marico Limited, Coimbatore	Nata-de-coco Production from Microbial Fermentation of Coconut Water through Enrichment Techniques	50,000
		<b>Total</b>	<b>50,000</b>

## 2. **Central Electronics Limited (CEL)**

Central Electronics Limited continued its activities in the area of solar photovoltaic systems, electronic gadgets for Railway and other electronic equipment/components etc. The company has manufactured electronic components/systems/ SPV products worth Rs.889.38 Lakhs and realized sale of such items worth Rs. 1316.70 Lakhs during August, 2017.

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