

No. DSIR/MS/2017/09
Government of India
Ministry of Science & Technology
Department of Scientific & Industrial Research
MONTHLY SUMMARY FOR THE CABINET
(For the month of **September, 2017**)
(Part-I Unclassified)

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

MAJOR ACHIEVEMENTS DURING THE MONTH OF September, 2017:

DEPARTMENTAL ACTIVITIES

1. Industrial R&D Promotion Programme

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

- 10 in-house R&D units of industries were granted recognition and 09 were granted registration certificates.
- 30 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

- 04 SIROs were granted recognition and 01 was granted registration certificate.

Public Funded Research Institution (PFRIs)

Registration and Renewal of PFRIs

- 17 PFRIs were granted renewal of registration.

Fiscal Incentives for Scientific Research

- 19 industries were approved for issuance of form 3 CM under Section 35(2AB) of IT Act under weighted tax deduction.
- 90 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.151176.98 lakhs.

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

- Two PRISM projects completed.

AUTONOMOUS BODIES

1. Council of Scientific & Industrial Research (CSIR)

1.1 CSIR Celebrated 76th Foundation Day

The Hon'ble President of India was the Chief Guest on CSIR Foundation Day function at Vigyan Bhawan, New Delhi on 26th September, 2017 on the occasion of its 76th Foundation Day. The President inaugurated an exhibition showcasing major CSIR technologies and products. The President also released two game changing technologies of CSIR namely, a sophisticated and affordable hand-held testing device which allows domestic users to easily identify adulterants in milk and waterless chrome tanning technology for processing raw hides and skins.

While addressing the gathering, Hon'ble President of India highlighted the invisibility of women in India's scientific community. He said, "CSIR as a body and India as society has made enormous progress and yet the participation of women in science in our country is distressingly Small". The President noted that less than two out of every 10 scientific researchers in India were women and of those who joined an Indian Institutes of Technology (IIT), only about 10% were women. "These numbers are simply not acceptable," he said at the function. He appealed to the scientific community to take accelerated steps to promote participation of girl students and women in Science and Technology.

Dr. Harsh Vardhan, the Hon'ble Minister for Science & Technology and Earth Sciences and Environment, Forest and Climate Change and Vice President, CSIR also addressed the gathering and recalled that the Prime Minister had asked CSIR to work on 100 new technologies one year ago. CSIR is working on at least 250 new technologies that are extremely people centric. He also said that none of our development goals has any meaning without gender parity. The Hon'ble Minister of State for Science & Technology and Earth Sciences, Shri. Y.S. Chowdary also graced the function.

The Foundation Day Lecture was delivered by Prof. Rajendra Srivastava of Indian School of Business on 'Research and Innovation in Emerging Markets'.

Dr. Girish Sahini, DG, CSIR announced the prestigious Shanti Swarup Bhatnagar awards for Science & Technology for the year 2017 during the CSIR foundation day function. The President on the occasion gave away 10 Shanti Swarup Bhatnagar Prizes for Science & Technology for the year 2017 (country's highest award in science) and other CSIR Awards namely 6 CSIR Technology Awards for the year 2017, one G.N. Ramachandran Gold Medal for Excellence in Biological Science and Technology 2017, 4 CSIR Young Scientists Award 2017 and 4 CSIR Innovation Awards for School Children 2017

1.2 Hon'ble Minister Inaugurates Exhibition on Swachhata Hi Seva

The Hon'ble Minister of Science & Technology and Earth Sciences and Environment, Forest and Climate Change and Vice President, CSIR, Dr. Harsh Vardhan inaugurated an exhibition on Swachhata Hi Seva, organized by the Ministry of Science and Technology and Ministry of Earth Sciences and coordinated by CSIR. The exhibition highlighted the technologies and products developed by these science ministries which are being used for Swachhata

Abhiyan of Government of India. The exhibition comprised of demonstration of models, and technologies explaining scientific and technological intervention brought in by these ministries. CSIR showcased the technology of Terafil, and tiles made from plastic waste etc.

1.3 CSIR Ranked 9th Public Research Institution Of The World

CSIR has been ranked ninth in the world amongst India's autonomous public research and development organization. The ranking is based on a composite indicator that combines research performance, innovation outputs and societal impact measured by their web visibility, so as to reflect scientific, economic and social characteristics of institutions. The institute has been ranked ninth amongst a total of 1,207 government institutions, according to the Scimago Institution ranking World Report 2017. In overall global ranking, CSIR stands at 75th position amongst 5250 institutions world-wide. It is the only Indian organization which has found place amongst the top 100 Global Institutions, in Scimago Institutions Ranking (SIR). SIR is a science evaluation resource developed by Scimago Labs based on data from Scopus – one of the world's largest database of peer-reviewed research literature, to assess Worldwide Institutions.

1.4 CSIR-CECRI: Developed a Smart Device to Monitor & Detect Cracks In Bridges

CSIR-CECRI, Karaikudi has developed a portable device that will monitor weak structures and send alert whenever a crack is observed. The device called the 'Triboluminescence (TL) camera uses a light emitting compound and a smart camera that allows detection of cracks-invisible to the naked eye on structures made of concrete, metal and fibre-reinforced plastic. The images captured by camera can be shared through cloud storage or a mobile app, web browser or Bluetooth. The technology could be used for departments like the railways for inspection of several old bridges.

1.5 CSIR-IGIB : Developed a Unique DNA-Based Technology to Foretell Rare Genetic Diseases

CSIR-IGIB, New Delhi has developed a unique DNA based technology - GoMED (Genomics and other Omics technologies for enabling Medical Decision). It can help clinicians to identify various genetic diseases such as Turner Syndrome and Gaucher's disease that an individual is susceptible to get in future. In fact, the GoMED is already widely sought after by clinicians and in a short span of one year has been able to provide accessible genetic testing for per 500 patients who otherwise could not have afforded the costly tests.

1.6 CSIR- AMPRI : Developed a Low-Cost Water Filter

CSIR-AMPRI, Bhopal has developed a low cost water filter which operates without electricity. It is based on 'Nano adsorbent' based filter which can process 1 litre to 3 litre per hour. The methodology based on nanocoating the sediment removal filter is a new concept and can be used at the domestic household level. The technology eco-friendly and the exhausted nanoadsorbent can be used in paint and ceramic tiles and desorbed fluoride can be converted into pure calcium fluoride by community treatment which can be used aluminum-metallurgy and making industries.

1.7 CSIR-IMMT: Developed a Method to Detect Lead In Waste Water

CSIR-IMMT, Bhubaneswar has developed a method using gold nanoparticles to develop a simple method to detect lead in wastewater. The new technique makes use of specially-produced gold nanoparticles which change colour when they 'bunch up' in the presence of metal particles such as lead because of their optical properties. It is a cost effective one step method for lead detection.

1.8 CSIR-NCL: Developed an Ultra-Thin Wireless Device That Generates Fuel From Sunlight And Water

CSIR-NCL, Pune has developed an artificial leaf that absorbs sunlight to generate hydrogen fuel from water, an advance that may provide clean energy for powering eco-friendly cars in the future. The ultra-thin wireless device mimics plant leaves to produce energy using water and sunlight.

1.9 CSIR Intellectual Property

The Patent position for this month is given below:

| Patents Filed | | Patents Granted | |
|---------------|--------|-----------------|--------|
| India | Abroad | India | Abroad |
| 12 | 29 | 10 | 40 |

1.10 Honors & Awards

(a) Dr. Shanti Swarup Bhatnagar Prizes for Science & Technology-2017

The following awards were announced during the CSIR Foundation Day Celebrations:

(i) Biological Sciences

Dr. Deepak Thankappan Nair, National Capital Region Biotech, Faridabad,
and
Dr. Sanjeev Das, National Institute of Immunology, New Delhi.

(ii) Chemical Sciences

Dr. G. Naresh Patwari, IIT, Mumbai

(iii) Earth, Atmosphere, Ocean and Planetary Sciences

Dr. S. Suresh Babu, Vikram Sarabhai Space (ISRO), Thiruvananthapuram

(iv) Engineering Sciences

Dr. Alope Paul and Dr. Neelesh B. Mehta, Indian Institute of Science, Bengaluru.

(vi) Medical Sciences

Dr. Amit Dutt, Tata Memorial Centre, Mumbai and Dr. Deepak Gaur, JNU, University, New Delhi.

(vii) Physical Sciences

Dr. Nissim Kanekar, Tata Institute of Fundamental Research (TIFR), Pune and Dr. Vinay Gupta, CSIR-NPL, New Delhi

(b) **CSIR Technology Awards -2017**

(i) The Technology Award for Physical Sciences including Engineering

CSIR-IMMT, Bhubaneswar, has received this award for developing 'Technology for Recovery of Iron Values from Low and Lean Grade Iron Ore Resources' and CSIR-CRRI, Delhi for developing 'Sustainable Cold Mix technology for Construction and Maintenance of Roads'.

(ii) The Technology Award for Innovation

Awarded to CSIR-CLRI, Chennai for developing 'Waterless Chrome Tanning Technology' and to CSIR-CMERI, Durgapur for 'Development of Community Level Iron Removal Plant & Their Implementation in Rural Areas to Supply Iron Free Drinking Water'.

(iii) The Technology Award for Business Development and Technology Marketing

CSIR-CIMFR, Dhanbad has received this award for 'Significantly Enhancing the Business and Marketing of their Knowledgebase'.

(iv) The "Certificate of Merit" under the CSIR Technology Award

CSIR-CGRI, Kolkata has received this award for 'Technology for Manufacturing Special Glass Beads for Nuclear Waste Immobilization'.

(c) **CSIR Young Scientists Award -2017**

(i) Biological Science

Dr. Sakya Singha Sen, CSIR-NCL, Pune, for his innovative and explorative work in developing new inexpensive catalysts for a variety of organic transformations of potential commercial applications.

(ii) Chemical Sciences

Dr. Prosenjit Das, CSIR-CMERI, Durgapur, for his outstanding contributions towards understanding and developing novel automotive products through semisolid processing for industrial use.

(iii) Engineering Sciences

Dr. Sathravada Balaji, CSIR-CGCRI, Kolkata, for his outstanding contributions towards developing novel extended infrared (IR) transmitting low phonon oxide glass for various laser and photonic applications.

(iv) Physical Sciences (including instrumentation)

Dr. Amit Laddi, CSIR-CSIO, Chandigarh, for his important contribution on the development of novel drive control systems for mobility carts for people with motor disability; based on minimal physical imputes like finger, facial features or head gestures.

(d) **CSIR Innovation Award for School Children- 2017**

The first prize was given in this category were awarded to Atharva Avinash Dhebe and Pavan Sankar Ingale of Sainik School, Satara, Maharashtra for proposing a devise to breath under water using arterial gills. The second prize was awarded to A. Siva Bharathi of N.S.N Matriculation Higher Senior Secondary School, Nehru Nagar, Chennai, for developing an innovative

method of raising rice seedlings in an innovative medium which is bio degradable, comprising 50% of coconut coir, 30% of pressmud from sugarcane industry. The third prize was awarded to Tanmayi Appasaheb Kokare and Tanishka Appasaheb Kokare of M.E.S. Waghire High School, Saswad who have devised a dustbin which is capable of containing both, wet and dry garbage in a single unit. The third prize was also awarded to Master S. Mukkani of Panchayat Union Middle School, Narthangudi, Valangaiman Tiruvarur, Tamilnadu, who have designed a two wheeler device with the attachment of a self-confident wheel in the back wheel. By this device one can continue the travel without interruption when two wheeler get puncture in the middle of the journey. Additionally, by adding the dynamo in the sawtooth wheel, the electricity can be generated easily.

Four CSIR Innovation Awards for School Children 2017 were given to six children.

(e) **G. N. Ramachandran Gold Medal for Excellence in Biological Science and Technology 2017**

Awarded to Prof. Kandala Venkata Ramana Chary of TIFR, Mumbai for his contributions in the development of NMR methods to determine structures of proteins, which have provided insights into their biological functions.

1.11 Significant Events

(a) Conferences, Workshops Organized

- (i) CSIR-CFTRI, Mysore has organized a three-day workshop for farmers of cashewnut cluster for Maharashtra. The workshop focused on value added products from the cashewnuts, packaging requirements, cashew apple juice regulatory and safety issues.
- (ii) CSIR-NCL, Pune has organized a Crystallography and Society Satellite meeting as a part of the 24th Congress and General Assembly of the International Union of Crystallography (IUCr).
- (iii) CSIR-NIO, Goa has conducted Long Hydrography Course for 13 naval officers, comprising 2 each from Nigeria & Sri Lanka, 1 each from Bangladesh, Vietnam, Thailand, Philippines, Indonesia; and 4 from India.
- (iv) CSIR-NML, Jamshedpur has organized a two-day national workshop on Hot Dip Galvanizing of Steel (HDGS).
- (v) CSIR-NPL, New Delhi organized (i) one-day workshop on Photovoltaic Metrology – Testing and Calibration; (ii) one-day Brain storming session on Electrical and Electronic measurements; and (iii) Four days Industrial training programme on Temperature and Humidity Metrology.

(b) Agreements/Memorandum of Understanding Signed

CSIR-CMERI, Durgapur has signed license agreement with (i) M/s Bio-Technical Resources, Kolkata on transfer of Extraction of Ethanol from waste starchy biomass Technology (ii) M/s Positronics Innovation Pvt.Ltd., Kolkata on transfer of Safe Disposal of Municipal Solid Waste Technology (iii) Auropol India Pvt.Ltd., Kolkata on transfer Large Scale Production of Graphene Oxide Technology (iv) M/s HINDS Machineries, Gurugram on transfer of Prismatic Solar Tree 1 kWp Technology; and (v) M/s Ants

Ceramics Pvt.Ltd., Vasai (East) on transfer of Domestic Type Filtration Unit of Defluoridaton of water Technology. The institute also signed an MoU with Mizoram Food Processing Industry (Mifproy), Aizawl, Mizoram on rendering Technical Services for Transportation, Installation & Commissioning of a Ginger Processing Unit in the state of Mizoram to achieve economic sustainability.

2. Consultancy Development Centre (CDC)

2.1 Plan Projects

- Content Development for the Course ‘Certificate Programme in R&D Management’: Course structure reviewed by external experts.
- Content Development for the Course ‘Certificate Programme in Technology Management’: 3rd Project Review Committee Meeting held to finalise the course material.
- Study on “Status & Opportunities of Indian Consulting Industry”: Terms of Reference (TOR) have been prepared. Ten proposals have been received and are under consideration for evaluation.

2.2 Funded Projects

Study on “Need based interventions for better marketability of Handicraft Clusters in Uttar Pradesh (Wooden crafts in Nagina and Zari/ Zardozi crafts in Varanasi) for Development Commissioner (Handicrafts) – Based on the meeting held with Director, DC Handicrafts on the Inception Report Part II, the revised report incorporating the comments has been submitted to DC Handicrafts.

PUBLIC SECTOR ENTERPRISES

1. National Research Development Corporation (NRDC)

- National Research Development Corporation (NRDC) has been assigned two technologies by CSIR-CDRI, Lucknow and one technology by CSIR-CMERI, Durgapur. The details are given below :

| S No. | Technologies Assigned by CSIR-CMERI, Durgapur |
|-------|--|
| 1 | Smart Solar Energy Meter |
| | Technologies Assigned by CSIR-CDRI, Lucknow |
| 2 | Centbucridine - A Local Anaesthetic. |
| 3 | A herbal extract for Osteoporosis |

- NRDC has licensed two technologies to M/s. Natura Nursery and Agro Products and one technology each to M/s Baby Engineering Pvt. Ltd., M/s.

Baruni Naturals and M/s. Justin Pinnacle Technologies.NRDC has collected a premia of Rs.9.5 Lakh from licensing of these technologies during September, 2017. The details are as given below :

| Sr. No. | Licensee | Technology | Premia (Rs) |
|----------------|---------------------------------------|--|---------------------|
| 1 | M/s. Baby Engineering Pvt. Ltd. | Solar Power Tree 3 Kwp | 250000 |
| 2 | M/s. Baruni Naturals | Ready to Eat Honey Paan Beeda | 50000 |
| 3 | M/s. Natura Nursery and Agro Products | A micronutrient composition for Black Pepper and a process for its preparation | 200000 |
| 4 | M/s. Justin Pinnacle Technologies | Solar Power Tree 3 Kwp | 250000 |
| 5 | M/s. Natura Nursery and Agro Products | A micronutrient composition for cardamom and a process for its preparation | 200000 |
| | | Total | 9,50,000 |

- NRDC has collected a royalty of Rs.17.22 Lakhs during September, 2017.

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.2137.06 Lakhs and realized sale of such items worth Rs. 435.32 Lakhs during September, 2017.
