



Highlights of Annual Report 2019-20

- i. DSIR is the nodal department for granting recognition to In-house Research & Development centres established by industry. During this period 186 In-house R&D centres were granted fresh recognition and 696 In-house R&D centres were granted renewal of recognition.
- ii. DSIR has given recognition to 2238 In-house R&D centres of companies. Of the 696 company's granted renewal of recognition during the year, 22 companies incurred an annual expenditure of over Rs. 50 crores each, 140 companies incurred an annual expenditure in the range of Rs. 5 crore to Rs. 50 crores and 104 industries incurred an annual expenditure in the range of Rs. 2 crore to Rs. 5 crores.
- iii. Public funded research institutions (PFRIs), Universities, IITs, IISc and NITs registered under PFRI program of DSIR can avail custom duty exemption & concessional GST vide relevant notification and other amendment from time to time for research purposes. During the period under report 14 such institutions were newly registered with DSIR and 57 institutions were granted renewal of registration.
- iv. During the period under report 65 new Scientific & Industrial Research Organisations (SIROs) were recognized by DSIR and 217 SIROs were granted renewal of recognition.
- v. Secretary DSIR, designated as the Prescribed Authority accorded fresh approvals to 93 companies under section 35(2AB) of Income-tax Act, 1961. The detailed R&D expenditure of the approved companies has been examined by DSIR and 263 reports valued at Rs. 8171.10 crores have been forwarded to Chief Commissioner Income Tax (Exemption) in Form 3CL, as required under the IT Act
- vi. Common Research & Technology Development Hubs (CRTDH) programme has established 12 CRTDHs in 3 phases. These CRTDHs have entered into more than 50 agreements for product/process development. 26 industries/individuals have been incubated under the hubs so far. Till now 03 incubate have set up commercial units for marketing the products in the food processing sector.
- vii. Department under PRISM (Promoting Innovations in Individuals, Start-ups and MSME's) scheme has supported 24 new projects. This scheme has successfully completed a total of 13 projects supported during the period under report. Some of the completed projects are - Artificial human-skin as an alternative to animal model; - Low-cost Paper Carry Bag Making Machine; - Solar operated Micro Irrigation Applicator, Solar Powered Farm Level Cold Storage with battery-less refrigeration and thermal storage.
- viii. IT-eG division progressively implements e-Governance in the Department, which is in conformance to the National e-Governance Action



Plan. For IT and e-Governance activities a comprehensive IT-Action Plan in the department as formulated in line with the Government directions issued from time to time.

- ix. Department under PACE (Patent Acquisition & Collaborative Research and technology Development) scheme provides catalytic support to industries & institutions for traversing their journey from proof of concept to pilot scale. During the period under report three (03) projects were monitored during the year. These projects involve a total project cost of Rs. 606.2 Lakhs for which Rs. 242.5 Lakh is in the form of loan to industry.
- x. 5 ongoing technology development projects from institutions (IITs and IISc) in the Manufacturing and Water Resources domains supported under IMPacting Research Innovation and Technology (IMPRINT) initiative of Ministry of Human Resource Development (MHRD) are under progress. These projects involve a total project cost of Rs.515.33 lakh for which DSIR is extending a support of Rs. 257.665 lakhs as grant to institutions and an equivalent grant is provided by MHRD.
- xi. In A2K+ (Access to Knowledge Development and Dissemination) scheme of DSIR, 14 studies are under progress in A2K+-Studies and 17 events were sanctioned under A2K+-Events. Under Technology Development & Utilization Programme for Women (TDUPW), 11 projects are under progress. The Technology Development and Demonstration Programme (TDDP) supported in

total 254 R&D projects of Industrial units with a total project cost of Rs. 750.60 crores in which DSIR support is Rs. 280.40 crores. 101 technologies developed under the scheme have been commercialized and the department has received a cumulative royalty of Rs.72.52 Crore during the period 1997-2019. In the current financial year, progress of last 3 on-going projects was monitored.

- xii. DSIR played an active role in APCTT's functioning, particularly relating to its programmes and policies. India being the host country has been providing institutional support to APCTT since its inception. DSIR also extended support towards a new project "Promotion of Regional Cooperation between India and ESCAP member States to Strengthen National Innovation Systems". Activities under this project were implemented.
- xiii. The Right to Information Act 2005 has been implemented successfully in the department. The proactive disclosures are regularly updated and available on the DSIR Website. DSIR has received 94 applications during the period under report and all the applications were registered and disposed off on RTI Request & Appeal Management Information System.
- xiv. CSIR, an autonomous organization under DSIR, comprises of 38 national laboratories, having 3502 active scientist supported by 4648 scientific & technical personnel and during the period under report, it has published 5205 papers in SCI journals.
- xv. CSIR-IIP, Dehradun has indigenously produced bio-aviation fuel using its



- patented technology from jatropha oil. The first historic biofuel-powered flight was flagged off from Dehradun airport and with this India is now one of the few nations in the world to utilise biofuel for planes.
- xvi. CSIR-IICB, Kolkata has found new clues to Parkinson's disease.
- xvii. CSIR-NCL, Pune has developed an Anti-TB co-crystal drug with improved stability.
- xviii. CSIR-CCMB, Hyderabad have discovered a new mechanism to inhibit bacterial growth, paving the way for novel antibiotics to fight against infections resistant to drugs.
- xix. CSIR-CSMCRI, Bhavnagar has prepared a plastic chip electrodes (PCEs) capable of picomolar detection of retinol binding protein -4 for early management of type II diabetes.
- xx. CSIR-NBRI, Lucknow has identified four novel fungal strains that can remove arsenic from contaminated water in batch and column modes.
- xxi. CSIR-IMTECH, Chandigarh has developed a simple, cost effective and rapid assay for the detection of bacterial contamination in water samples.
- xxii. CSIR-CMERI, Durgapur at its Ludhiana station has designed & developed biodiesel plant to convert Tung oil, a non-edible vegetable oil into biodiesel.
- xxiii. CSIR-CECRI, Karaikudi have developed a novel single step electrochemical route for the synthesis of tungsten-di-sulfide quantum dots.
- xxiv. CSIR-AMPRI, Bhopal is working develop a technology for utilising paddy and wheat straw as raw materials for "manufacturing hybrid greenwood", which may be used as a substitute of wood or particle board.
- xxv. CSIR-NPL, New Delhi has designed a low-pressure chemical vapour deposition (LPCVD) device that allows high quality, single-layer graphene to be grown.
- xxvi. CSIR-NML, Jamshedpur has developed a novel nanocomposite that has shown potential to be used as a regenerative bone graft especially in regions that need high strength.
- xxvii. CSIR-CBRI, Roorkee has investigated the mechanical and durability studies of nano-engineered fly ash concrete using various concrete mixes containing fly ash, silica nanoparticles and silica fume (SF).
- xxviii. Consultancy Development Centre (CDC), an autonomous institution of DSIR set up for promotion, development and strengthening of consultancy skills and capabilities in the country including enhancement of export of consultancy and professional services. During the period under report, CDC has undertaken 08 major activities.
- xxix. The National Research Development Corporation (NRDC), a Public Sector Enterprise under DSIR was assigned 109 new processes, signed 52 Memorandums of Understanding. Corporation had a gross income of Rs. 2023 lakhs (*as per pre-revised account policy*) during financial year 2018-19.
- xxx. Central Electronics Limited (CEL) is a Public Sector Enterprise under DSIR,



has been the pioneer in the country for manufacturing of the many strategic electronic components for Solar energy, Defense, Space and Atomic energy. Company has recorded production of Rs. 229.73 Crore and an annual sales of Rs. 232.55 Crore in FY 2018-19.

xxxi. Under 'Swachh Bharat Mission' of the Government, Department organized various activities within the office premises with active participation of officers and staff under DSIR-Swachhta Action plan.