

CSIR laboratories and centres

2393. SHRI GARIKAPATI MOHAN RAO: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the details of the Council of Scientific and Industrial Research (CSIR) laboratories and centres in the country, location-wise;

(b) the achievements of the laboratories during the last three years;

(c) whether Government proposes to set up more such laboratories in the country; and

(d) if so, the details thereof, State-wise including Andhra Pradesh and Telangana States?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY (DR. JITENDRA SINGH): (a) The details of the Council of Scientific and Industrial Research laboratories and outreach centres in the country, location-wise are given in Statement-I (See below).

(b) Laboratory-wise achievements are given in Statement-II (See below).

(c) No, Sir.

(d) Does not arise.

Statement-I*The details of CSIR laboratories and outreach centres*

Sl. No.	Name of the Institute
1.	CSIR-AMPRI (CSIR-Advanced Materials and Processes Research Institute), Bhopal
2.	CSIR-CBRI (CSIR-Central Building Research Institute), Roorkee
3.	CSIR-CCMB (CSIR-Centre for Cellular and Molecular Biology), Hyderabad
4.	CSIR-CDRI (CSIR-Central Drug Research Institute), Lucknow
5.	CSIR-CECRI (CSIR-Central Electrochemical Research Institute), Karaikudi
6.	CSIR-CEERI (CSIR-Central Electronics Engineering Research Institute), Pilani
7.	CSIR-CFTRI (CSIR-Central Food Technological Research Institute), Mysore
8.	CSIR-CGCRI (CSIR-Central Glass and Ceramic Research Institute), Kolkata
9.	CSIR-CIMAP (CSIR-Central Institute of Medicinal and Aromatic Plants), Lucknow
10.	CSIR-CIMFR (CSIR-Central Institute of Mining and Fuel Research), Dhanbad

Sl. No.	Name of the Institute
11.	CSIR-CLRI (CSIR-Central Leather Research Institute), Chennai
12.	CSIR-CMERI (CSIR-Central Mechanical Engineering Research Institute), Durgapur
13.	CSIR-CRRI (CSIR-Central Road Research Institute), New Delhi
14.	CSIR-CSIO (CSIR-Central Scientific Instruments Organisation), Chandigarh
15.	CSIR-CSMCRI (CSIR-Central Salt & Marine Chemicals Research Institute), Bhavnagar
16.	CSIR-IGIB (CSIR-Institute of Genomics & Integrative Biology), Delhi
17.	CSIR-IHBT (CSIR-Institute of Himalayan Bioresource Technology), Palampur
18.	CSIR-IICB (CSIR-Indian Institute of Chemical Biology), Kolkata
19.	CSIR-IICT (CSIR-Indian Institute of Chemical Technology), Hyderabad
20.	CSIR-IIIM (CSIR-Indian Institute of Integrative Medicine), Jammu
21.	CSIR-IIP (CSIR-Indian Institute of Petroleum), Dehradun
22.	CSIR-IMMT (CSIR-Institute of Minerals and Materials Technology), Bhubaneswar
23.	CSIR-IMTECH (CSIR-Institute of Microbial Technology), Chandigarh
24.	CSIR-IITR (CSIR-Indian Institute of Toxicological Research), Lucknow
25.	CSIR-NAL (CSIR-National Aerospace Laboratories), Bengaluru
26.	CSIR-NBRI (CSIR-National Botanical Research Institute), Lucknow
27.	CSIR-NCL (CSIR-National Chemical Laboratory), Pune
28.	CSIR-NEERI (CSIR-National Environmental Engineering Research Institute), Nagpur
29.	CSIR-NEIST (CSIR-North-East Institute of Science and Technology), Jorhat
30.	CSIR-NGRI (CSIR-National Geophysical Research Institute), Hyderabad
31.	CSIR-NIO (CSIR-National Institute of Oceanography), Goa
32.	CSIR-NIIST (CSIR-National Institute for Interdisciplinary Science and Technology), Thiruvananthapuram
33.	CSIR-NISCAIR (CSIR-National Institute of Science Communication and Information Resources), New Delhi
34.	CSIR-NISTADS (CSIR-National Institute of Science Technology and Development Studies), New Delhi
35.	CSIR-NML (CSIR-National Metallurgical Laboratory), Jamshedpur
36.	CSIR-NPL (CSIR-National Physical Laboratory), New Delhi
37.	CSIR-SERC (CSIR-Structural Engineering Research Centre), Chennai

List of Outreach Centres of CSIR laboratories

Lab	Outreach centre
CSIR-CBRI	New Delhi
CSIR-CECRI	Chennai
	Mandapam
	Tuticorin
CSIR-CEERI	Chennai
CSIR-CFTRI	Hyderabad
	Lucknow
	Mumbai
CSIR-CGCRI	Ahemdabad
	Khurja
CSIR-CIMAP	Bangalore
	Hyderabad
	Pantnagar
	Purara
CSIR-CIMFR	Bilaspur
	Nagpur
	Ranchi
	Roorkee
CSIR-CLRI	Ahmedabad
	Jalandhar
	Kanpur
	Kolkata
CSIR-CMERI	Ludhiana
CSIR-CSIO	Chennai
	New Delhi
CSIR Hqs.	CSEU, Pune
CSIR-CSMCRI	Mandapam
CSIR-IIIM	Srinagar

Lab	Outreach centre
CSIR-NEERI	Chennai
	New Delhi
	Hyderabad
	Kolkata
	Mumbai
CSIR-NEIST	Imphal
	Itanagar
CSIR-NIO	Kochi
	Mumbai
	Visakhapatnam
CSIR-NML	Chennai

Statement-II*Laboratory-wise Recent Major Achievements of CSIR*

Sl. No.	Name of the Institute	Recent Major Achievements
1.	CSIR- AMPRI (CSIR-Advanced Materials and Processes Research Institute), Bhopal	<ul style="list-style-type: none"> Aluminium-metal metal matrix based light weight brake drums for automobiles; Aluminium foam core sandwich panels; Fly ash-based cementitious materials; Red mud-based X-ray shielding panels and blocks; and Modified bushes and hammer tips for Sugar mills.
2.	CSIR -CBRI (CSIR-Central Building Research Institute), Roorkee	<ul style="list-style-type: none"> Disaster Mitigation: Post-Earthquake Reconnaissance Survey- Sikkim Earthquake; Anti-termite barrier for new buildings; Fire Safe Polymeric Composite Panels; and Engineering of Landslide Disaster Mitigation.
3.	CSIR-CCMB (CSIR-Centre for Cellular and Molecular Biology), Hyderabad	<ul style="list-style-type: none"> New Gene Discovered for Early Onset Chronic Pancreatitis; Photo dynamic therapy agent-two times more potent than currently available FDA approved PDT drug-useful for treatment of cancer; Signal Transduction pathways in human health and disease; RNA binding proteins and gene regulation;

Sl. No.	Name of the Institute	Recent Major Achievements
		<ul style="list-style-type: none"> Genetic evidence for recent population mixture in India; Indian origin of the European Romani populations; Genetic variation increases the risk of leprosy in Indian population; Novel Molecular Diagnostics for Eye Diseases and Low Vision Enhancement Devices; and Improved Samba Mahsuri (rice variety).
4.	CSIR-CDRI (CSIR-Central Drug Research Institute), Lucknow	<ul style="list-style-type: none"> Potential Leads available for licensing/ licensed for diseases like Osteoporosis, Thrombosis, Diabetes & Dyslipidemia, Cancer and Tuberculosis; Spermicidal & Anti-trichomonal contraception; Process know-how of antihyperglycemic CDR-134-D123; Licensing of L-Pac, Ephedrine and pseudoephedrine technology; Plant-derived single molecule (K058) for rapid bone fracture healing oral drug; and An alternative treatment for post-menopausal osteoporosis - <i>Withaferin A</i>.
5.	CSIR-CECRI (CSIR-Central Electrochemical Research Institute), Karaikudi	<ul style="list-style-type: none"> Nitride-based multilayer coated 31 6L SS as a Human Body Implant; Electrochemical Defluorinator; Li-ion supercapacitor; Solid oxide fuel cells; Zinc bromide redox flow battery; and Electrochemical preparation of Calcium Gluconate.
6.	CSIR-CEERI (CSIR-Central Electronics Engineering Research Institute), Pilani	<ul style="list-style-type: none"> 42 GHz, 200kW Gyrotron; Ksheer Scanner- system for detection of synthetic adulteration in raw milk; Online surface inspection module for hot rolled steel strips; NIRS-based on-line instrument for quality assessment in edible oil industry; System for grading and sorting of mangoes based on weight and external features; 25kV/5kA Sealed-off PSS and 40 kV/3 kA Thyatron; VUV/UV Excimer Sources for Water Purification; 25kV/5kA Sealed-off PSS and 40 kV/3 kA Thyatron; and Electrodes for Milk Analyzer.

Sl. No.	Name of the Institute	Recent Major Achievements
7.	CSIR-CFTRI (CSIR-Central Food Technological Research Institute), Mysore	<ul style="list-style-type: none"> • Transcription of omega3 rich plant, chia (<i>salvia hispanica</i>); • Algae-mediated CO₂ sequestration for climate change mitigation and conversion to value-added products; • Palm fat containing palm oil nutraceuticals and emulsifier property; and • Shelf-stable dehydrated egg paneer cubes and egg crunchy bites.
8.	CSIR-CGCRI (CSIR-Central Glass and Ceramic Research Institute), Kolkata	<ul style="list-style-type: none"> • Rare-earth doped optical fibres for high power laser applications; • Mesoporous alumina thin films with hexagonal and cubic symmetries as catalyst support; • Fabrication technology for advanced glasses; • TiB-TiN composite coatings for implant applications; • Diamond-like thick film for RF transparent window; • Supercontinuum light source based on Photonic Crystal Fibre; and • Ceramic membrane based high capacity modules for pretreatment of turbid water for polishing of iron and arsenic contaminated water using micro filtration technique.
9.	CSIR-CIMAP (CSIR-Central Institute of Medicinal & Aromatic Plants), Lucknow	<ul style="list-style-type: none"> • Carbon Sequestration potential of aromatic plants; • New varieties of Medicinal and Aromatic Plants viz. CIMAP Sil-9, CIMAP Bio-G-171, CIMAP- Khus 22, and CIMAP Khus 15; • Natural Lip Balm (in association with CSIR-NBRI); • Crop diversification in vetiver through intercropping for higher productivity; • Public Private Partnership model for contractual cultivation of <i>Artemisia annua</i>; • Vetiver (Khus) Bio-village for rural income enhancement; and • Economic analysis of Menthol mint cultivation at farmers' field.
10.	CSIR-CIMFR (CSIR-Central Institute of Mining & Fuel Research), Dhanbad	<ul style="list-style-type: none"> • High concentration fill technology on utilization of fly ash as a filling material for underground coal mines; • Tracking and monitoring system using RFID tags for disaster management in underground mines; • Highwall mining; • Mine Plan and EMP for Karwar project of Indian Navy; and • Coal Carbonization.

Sl. No.	Name of the Institute	Recent Major Achievements
11.	CSIR-CLRI (CSIR-Central Leather Research Institute), Chennai	<ul style="list-style-type: none"> • Mineral-free Eco-benign tanning; • Salt free tanning; • Solid waste for treatment of liquid waste; • Process for Treatment of wastewater using Fluidised Immobilized Carbon Catalytic Oxidation Reactor; • Technology Upgradation of Ethiopian Tanneries; and • Smart Leather.
12.	CSIR-CMERI (CSIR-Central Mechanical Engineering Research Institute), Durgapur	<ul style="list-style-type: none"> • Five-axis CNC milling machine; • μ-EDM Prototype machine; • Autonomous Intelligent Robotic Wheel Chair; • Mobile Bridge Inspection Unit; • 100% Biofuelled Tractor; and • Steel Plant Skelp Mill Mechanization.
13.	CSIR-CRRI (CSIR-Central Road Research Institute), New Delhi	<ul style="list-style-type: none"> • Microscopic Traffic Simulation Model for Speed-flow Equations and Roadway capacity for high speed corridors; • Traffic studies for junction improvement on major road corridors in Ahmedabad; • Guidelines for construction of roads, culverts, and bridges in cyclone prone areas; • Infrastructure Information System in GIS environment for maintenance of Bridges on National and State Highways; • Evaluation of Bus Rapid Transit corridor Performance from Ambedkar Nagar to Moolchand intersection; and • Evaluation of Old Railway bridges for increase in the axle loads due to freight wagons; and cold mix technology.
14.	CSIR-CSIO (CSIR-Central Scientific Instruments Organisation), Chandigarh	<ul style="list-style-type: none"> • Head-up displays for Aircraft variants: Tejas-Navy Light combat aircraft; • Head-up display for Hindustan Jet Trainer Aircraft; • Long period fibre gratings based isolation filter; • Recovery of pure ZnO nanoparticles from spent Zn-MnO₂ alkaline batteries; Sensors and Instrumentation for Pesticide Estimation; • Detailed Slope stability analysis of Khakri Landslide; • Electrostatic Sprayer for agricultural applications; and • Extraction of nano-diamonds from waste materials.

Sl. No.	Name of the Institute	Recent Major Achievements
15.	CSIR-CSMCRI (CSIR-Central Salt & Marine Chemicals Research Institute), Bhavnagar	<ul style="list-style-type: none"> • Self-regulation of photovoltaic module temperature; • Biofuel from microalgae; • Microbial synthesis of Green plastic-polyhydroxyalkanoates (PHA) using Jatropha Biodiesel waste residues; • Pharma grade synthetic anionic clay; • Hollow fibre ultrafiltration membranes; • Production of Potash fertilizers through selective K⁺ precipitation; • Trans-esterification of edible, non-edible and used cooking oils for biodiesel production using calcined layered double hydroxides as reusable base catalysts; and • Large scale demonstration of efficacy of liquid fertilizer sap from seaweeds.
16.	CSIR-IGIB (CSIR-Institute of Genomics & Integrative Biology), Delhi	<ul style="list-style-type: none"> • New diagnostic method for detecting airway diseases; • Molecule from Herbal origin for treatment of Bronchial Asthma (in collaboration with other CSIR laboratories viz. IICB, IIM, IITR and IICT); • Technology for Biochemical Oxygen Demand Sensor; • Establishment of 6 E-Health Centres; • Inhibitors of IL-4 and IL-5 for the treatment of Bronchial asthma (in collaboration with other CSIR Laboratories IICB and IITR); and • Complex patterns of genomic admixture within Southern Africa.
17	CSIR-IHBT (CSIR-Institute of Himalayan Bioresource Technology), Palampur	<ul style="list-style-type: none"> • Technology for production of unique autoclavable Super Oxide Dismutase (SOD) enzyme, used in cosmetic, food and pharmaceutical industries; • Baseline information on select protected areas of Himachal Pradesh; • Value added products from apple pomace; • Virus-free Apple rootstock; • High purity steviol glycosides from Stevia rebaudiana; • Him Sphurti (CSIR-IHBT-T-01) a high yielding cultivar of China hybrid tea; and • Thornless Rose

Sl. No.	Name of the Institute	Recent Major Achievements
18.	CSIR-IICB (CSIR-Indian Institute of Chemical Biology), Kolkata	<ul style="list-style-type: none"> • Molecule from Herbal origin for treatment of Bronchial Asthma (in collaboration with other CSIR laboratories viz. IGIB, IIIM, IITR and IICT); • Easy test for visceral Leishmaniasis and post-kala-azar Dermal Leishmaniasis; • Inhibitors of IL-4 and IL-5 for the treatment of Bronchial asthma (in collaboration with other CSIR Laboratories IGIB and IITR); and • DBETH: a Database of Bacterial Exotoxins for Human.
19.	CSIR-IICT (CSIR-Indian Institute of Chemical Technology), Hyderabad	<ul style="list-style-type: none"> • Molecule from Herbal origin for treatment of Bronchial Asthma (in collaboration with other CSIR laboratories viz. IICB, IGIB, IIIM, and IITR); • Conversion of waste plastics to fuel; • Process for fluoroelastomer Kel-F-800; • Process for FEP-resin; • Catalyst system for Nitrotriazolone; • Technology transfer of 4-tert-butyl toluene and 4-tert butyl benzoic acid; • Self-Organizing Maps: A novel technology to minimize mosquito borne diseases; and • Process know-how for preparation Profenfos.
20.	CSIR-IIIM (CSIR-Indian Institute of Integrative Medicine), Jammu	<ul style="list-style-type: none"> • Molecule from Herbal origin for treatment of Bronchial Asthma (in collaboration with other CSIR laboratories viz. IICB, IGIB, IITR and IICT).
21.	CSIR-IIP (CSIR-Indian Institute of Petroleum), Dehradun	<ul style="list-style-type: none"> • Catalyst Thoxcat ES for sweetening of LPG; • Process for Dodecane Fraction from Straight-run Kerosene; • Soaker visbreaking technology; Study for development & production of Ramrocket Fuel as per GOST 12308-09; • Eco-friendly process for converting waste plastics to transportation fuel and petrochemicals; • Production of Bio-jet fuels from jatropa; • Simultaneous production of US grade gasoline and pure benzene from FCC C6 Heart Cut; and • Solvent de-oiling plant at Numaligarh Refinery Limited.

Sl. No.	Name of the Institute	Recent Major Achievements
22.	CSIR-IITR (CSIR-Indian Institute of Toxicology Research), Lucknow	<ul style="list-style-type: none"> • Inhibitors of IL-4 and IL-5 for the treatment of Bronchial Asthma (in collaboration with other CSIR Laboratories IGIB and IICB); • Induction of Reactive Oxygen Species, mitochondrial damage and autophagy in lung epithelial cancer cells by iron oxide nanoparticles; • Effect of long term exposure of cypermethrin on adult rats; • Biodegradable Poly (vinyl alcohol)-polyethylenimine nano composites for enhanced gene expression <i>in vitro</i> and <i>in vivo</i>. • Edible oil adulterants, argemone oil and butter yellow, as aetiological factors for gall bladder cancer • Particulate matter concentration in ambient air and its effects on lung functions among residents in the National Capital Region; and • New synthetic methods and its application towards the synthesis of bio-active scaffolds.
23.	CSIR-IMMT (CSIR-Institute of Minerals and Materials Technology), Bhubaneswar	<ul style="list-style-type: none"> • Flow-sheets of beneficiation of low-grade iron ores; • Green technology for producing iron using hydrogen plasma; • Large scale milling process for production of Oxide dispersion strengthened steel powder; • Novel $\text{Sm}_2\text{Ti}_2\text{O}_7/\text{SmCrO}_3$ Composite for degradation of Rhodamine R6G dye; • High-strength nano-crystalline Mg-Al powder synthesized by mechanical alloying; • Nickel recovery from refinery electrolyte; • Tungsten carbide cast composites for neutron shielding of Tokamak type fusion reactor walls; • Production of ferro-nickel from chromite overburden/ nickel laterite ore by thermal plasma process; and • High temperature diffusion conducting ceramic coatings as steel by Electrophoretic deposition for active corrosion protection.
24.	CSIR-IM Tech (CSIR-Institute of Microbial Technology), Chandigarh	<ul style="list-style-type: none"> • Recombinant Streptokinase (rSK) –CSIR's Second-Generation Clot Buster transferred to Epygen Biotech Pvt. Ltd., Mumbai; • Third Generation Clot Buster-Clot-Specific Streptokinase (CSSK); • Better vaccines for tuberculosis; • Decoding of mango, pomegranate pathogens; and • Phenotypic characterization of Streptomyces strains.

Sl. No.	Name of the Institute	Recent Major Achievements
25.	CSIR-NAL (CSIR-National Aerospace Laboratories), Bengaluru	<ul style="list-style-type: none"> • Successful flight of Five seat general civil aviation aircraft (CNM-5)- the country's first Public-Private Partnership in the development of civil aircraft; • Manufacturing Technology for advanced composites; • 12.88 meter Doppler Weather Radar for ISRO at Cherrapunji; • 'DHVANI' - an indigenous advanced target training system for the Indian Army; and • Drishti' - capable of measuring visibility down to 5 meters installed at airports of Delhi, Lucknow and Kolkata.
26.	CSIR-NBRI (CSIR-National Botanical Research Institute), Lucknow	<ul style="list-style-type: none"> • New insecticidal proteins from plants; • Natural Strawberry red colour from plants; • Differential effects of Arsenic on essential amino-acids in rice grains; • Transgenic crop plants and genes for resistance to insect pests; • NBRI-Comprehensive Cotton Genomic Database; • Improved Betelvine Production Technology; • Antifungal (Antidandruff) herbal product; and • Vertical Gardening - Scope Unlimited in Limited Space.
27.	CSIR-NCL (CSIR-National Chemical Laboratory), Pune	<ul style="list-style-type: none"> • Synthesis and characterization of furanoid amino acids; • Synthesis of Benzodiazepinyl phosphonates as clostripain inhibitors; • Polyimide resin technology for BrahMos supersonic missile system; and • Shape and size selective functional nanoparticles from Cellulose.
28.	CSIR-NEERI (CSIR-National Environmental Engineering Research Institute), Nagpur	<ul style="list-style-type: none"> • Land treatment and disposal of effluent from automobile industry using high rate transcription system; • Hydroplume- high rate circular secondary clarifies for wastewater treatment; • Inter linkages of air quality, climate change, and health with recourse to molecular modeling and tracking analysis of regional transport of air pollution; • Hand-pump attached iron removal plants for potable water; • Solar energy based electrolytic defluoridation unit for potable water supply; and • CETP scale electro-oxidation plant.

Sl. No.	Name of the Institute	Recent Major Achievements
29.	CSIR-NEIST (CSIR-North-East Institute of Science and Technology), Jorhat	<ul style="list-style-type: none"> • Exploration and screening of bacterial diversity in North-East India- potential application in bio-control; • Survey, isolation and preliminary characterization of microbial populations and southern Brahmaputra Corridor of Assam; • Genetic diversity of antimicrobial agents producing Streptomyces isolated from protected forest area of Assam and Arunachal Pradesh; • New analogues of drugs and intermediates; • Natural polymer based nano-composites and biodegradable polymers; • Seismic hazard-risk evaluation and earthquake precursor related studies; • Utilization of Plant and Waste Materials of North-East India to a Value Added Product: Environment Friendly Technology; • Low cost process for fluoride removal from contaminated water specific to NE region for public use; and • Anti-Arthritis: Herbal formulation for Arthritis treatment.
30.	CSIR-NGRI (CSIR-National Geophysical Research Institute), Hyderabad	<ul style="list-style-type: none"> • First seismological evidence of active-fault beneath Tehri Dam; • Gravity and magnetic studies over a part of Krishna-Godavari Basin; • Delineation of groundwater potential zones in Deccan traps covered Godavari rift zone; • Sustainable solution for geogenic contamination through arsenic in groundwater of western Bihar; • Scientific drilling near Koyna reveals the thickness of Deccan Traps and nature of underlying basement rocks; • First Finding of Native Gold from the Chromitites of the Nuggihalli Schist Belt, Dharwar Craton, South India; • Imaging mantle lithosphere for diamond prospecting; and • Xenon as Internal Standard for the Accurate Determination of Trace Elements in Water Samples by ICP-MS.

Sl. No.	Name of the Institute	Recent Major Achievements
31.	CSIR-NIIST (CSIR-National Institute for Interdisciplinary Science and Technology), Thiruvananthapuram	<ul style="list-style-type: none"> • Glass-free LTCC tapes for microwave substrate applications; • vapor cooled MgB_2 current leads and Nd based bulk superconductor; • Photo active nano titanium oxide coatings on solar panels; • Commercial release of AutoCAST-XI with Virtual Casting Technology; • Family size compact anaerobic digester cum biogas plant; • Commercialization of compact anaerobic digester cum biogas plant; • Demonstration plants for bioextraction of coir fibre, banana fibres and pineapple leaf fibre; • Coir fibre composite for furniture; • Development of Indian Standards for North East Ginger; and • Fresh ginger processing unit at Wyanad.
32.	CSIR-NIO (CSIR-National Institute of Oceanography), Goa	<ul style="list-style-type: none"> • Launching of new multi-disciplinary Oceanographic Research Vessel RV Sindhu Sadhana • Autonomous Vertical Profiler; • Observational evidence of lower-frequency Yanai waves in the central equatorial Indian Ocean; • Hydrothermal plumes over the Carlsberg Ridge, Indian Ocean; • Bio-prospecting of a few brown seaweeds for their cytotoxic and antioxidant activities; • Deep-sea mining: Economic, technical, technological, and environmental considerations for sustainable development; • Autonomous profiling device to monitor remote water bodies; and • Survey revealing large remnant of a grounded vessel off Candolim Beach, Goa.
33	CSIR-NISCAIR (CSIR-National Institute of Science Communication and Information Resources), New Delhi	<ul style="list-style-type: none"> • NISCAIR-published journal Indian Journal of Fibre & Textile Research included in Thomson Reuters Web of Science; • Two books entitled 'Constructing Culture of science: Communication of Science in India & China, 'Quality Education & Excellence in Science Research in Indian University'; • Publication of scholarly journals; and • Publication of popular science magazines, 'Science Reporter', 'Vigyan Pragati', and 'Science ki Duniya'.

Sl. No.	Name of the Institute	Recent Major Achievements
34	CSIR-NISTADS (CSIR-National Institute of Science, Technology and Development Studies), New Delhi	<ul style="list-style-type: none"> • India S&T Report 2010-11; • Book entitled • ‘Strategic Thinking’ published; and • Book entitled • ‘Agro-biodiversity Conservation in Indian Central Himalaya: On Farm (<i>In-situ</i>) Practices’ published by German publisher.
35	CSIR-NML (CSIR-National Metallurgical Laboratory), Jamshedpur	<ul style="list-style-type: none"> • GMI-based Portable Magnetic Sensing Device for Detection of Carburization of Structural Components of Petrochemical / Refinery Industry; • Setting up an Industrial scale Column (2.5 m dia.) to Andhra Baryte Corpn. Pvt. Ltd, Cuddapah; • Production of Standard grade Ferrosilicon using Banded Hematite-Quartzite (BHQ)/Banded Hematite Jasper (BHJ) and Jhama coal; • Recovery of metallic alloys and slag as valuable product from spent catalyst residue; • Improved coke based Energy Efficient Brass Melting Furnace for the artisans of Moradabad; and • Anti-tarnishing lacquer for copper and its alloys.
36.	CSIR-NPL (CSIR-National Physical Laboratory), New Delhi	<ul style="list-style-type: none"> • Transfer of critical technology of Rubidium atomic frequency standard for space applications to ISRO; • Programmable Josephson Voltage Standard; • Porous Conducting Carbon Paper For Fuel Cell; • CNT incorporated light weight carbon foam; and • Organic Light Emitting Devices.
37.	CSIR-SERC (CSIR-Structural Engineering Research Centre), Chennai	<ul style="list-style-type: none"> • Smart energy harvesters from ambient structural vibration for seismic mitigation and health monitoring of civil infrastructure; • Structural Health Monitoring schemes for Civil Engineering Infrastructure in India using Smart Sensing Technologies; • Technical report on development of probabilistic seismic hazard map of India; • Stress Analysis of 24” Dia. Gas Pipeline at proposed Coastal Road crossing at Dronagiri, Navi Mumbai; • Condition assessment of distressed PSC girder of span 3 and recommendations on retrofitting of off-shore tanker terminal of Vishakhapatnam Port Trust; and • Eco-friendly Concrete Composites for Structural Applications.