

## APPENDIX - 5

### SPONSORED/SUPPORTED R & D PROJECTS

(Rs. In lakhs)

Sr. No.	Title	Agency/Client	Amount Received
<b>New Projects</b>			
1	Carbon Nanotube-polymer Composites for Electromagnetic Interference Shielding and Structural Applications	DST	4.56
2	Dynamics of Memory Effect in Layered Perovskite Ferroelectric Ceramics and Ferroelectr Liquid Crystal Materials	DST	5.83
3	Development of Naonstructured Metal Oxide Gas Sensor Array for detecting chemical warfare agents	DRDO	11.31
4	Centre on Bio-Molecular Electronics	DST	648.54
5	Development of DNA Biosensor, Phase II	DST	19.57
6	Study of defect centres in Nano-Piezoelectric Materials for application in Sensors	DST (Indo-Japan)	1.50
7	Assesment of Impacts of Heat Stress On Human Health and Adaptation Studies	MNEF (Winrock International India WII)	5.38
8	Development of Rubidium Atomic Clock by NPL & SAC	DSSAC, (AHMD) Department of Space, Space Application Centre), Ahmedabad	50.00
9	Validation of OCM-II Geo-Physical Products (Optical instrument calibration)	DSSAC,(AHMD) Department of Space, Space Application Centre), Ahmedabad	20.00
10	Dispersion an Alignment of CNTs and development of CNT Reinforced composites	ASL, Hyd	48.94
11	Development of Conducting Polymer-graphite Nanoferrites Composites for Absorption dominated EMI Shielding a Material of Strategic Importance	DRDO (Defence)	5.45
12	Technically imprtant high TCR ( temperature coefficient of resistance) manganitenanometal devices for infrared/ bolometric detector applications	DST-DAAD (German Academic Exchange Serv.)	1.53
13	HPHT Synthesis and characterization of new novel physical property materials	DST (Indo-Japan)	1.25



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<b>Continuing Projects</b>			
1	Operation of the South Asian Regional Research Centre (SAS-RRC) for Study of Global Change Under SASCOM USA.	International START Secretariat, Washington,	0.00
2	To Conduct Inter-Laboratory Proficiency Testing Amongst the NABL Accredited Calibration Laboratories in India	DST (NABL)	0.00
3	Metal Induced Crystallization Behaviour on Thin Film of Amorphous Silicon	Indo-US (Fund from DST)	0.00
4	Coherent Radio Beacon Experiment (CRABEX) for Tomographic Studies of the Ionosphere on Board GSAT-II Satellite	VSSC, Thiruvananthapuram	1.74
5	Interaction with Universities/Lab in the Area of Superconductivity	UGC	0.00
6	Development of speciality carbon materials for novel nuclear reactors	BARC, Central Complex, Trombay, Mumbai	0.00
7	Proficiency Testing (PT) among National Accreditation Board for Testing and Calibration Laboratories (NABL) Accredited Laboratories in Chemical Discipline	DST (NABL)	0.00
8	SAARC-PTB Cooperation Programme	PTB-Germany	0.00
9	Development of Ultrasonic Method to Evaluate Moisture in Composite Materials	ARDB	0.00
10	Setting up of Facilities for dissemination of Indian Standard Time in North-Eastern States	DST	0.00
11	Development of Injection Solar Cells Utilizing Dye Sensitised Non-crystalline TiO <sub>2</sub> Films	MNES	0.00
12	Development of Nonophosphors for Industrial Applications	DST	0.00
13	Investigation Study on Microwave Sintering of Beta Alumina Tubes	DST	0.00
14	Establishment of primary standards for Vickers & Brinell Hardness Scales	DST	0.00
15	Low cost technology for High efficiency Silicon Solar Cell	DST, Under Indo-Bulgarian Inter Govt. Prog	0.00
16	Generic Development of Nanometrology for Nanotechnology	DIT, New Delhi	0.00
17	Assessment of Effects of High Particulate on Pulmonary pollutants Health Status in Selected Magacities of South Asia	APN, Japan	0.00



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18	Ionospheres of Venus and Mars: Chemistry, Dynamic Thermal Structure and Solar Wind Interaction	Physical Research Laboratory, Ahmedabad	0.78
19	High rate deposition of the microcrystalline silicon films using high density microwave plasma and its application to efficient to large area thin film solar cells	DST	4.50
20	Integrated campaign for aerosols, gases & radiation budget	VSSC, Thiruvanthapuram	12.00
21	Dynamics studies at the phase transition region of Sm-C* -Sm-A phase in electroclinic liquid crystal materials	DST	5.50
22	Physico-chemical characterization of wet deposition at NPL, New Delhi and Pantnagar in Uttaranchal	Stockholm Environment Institute SEI, Sweden	0.00
23	Sol-gel derived Optical Biosensor for Water Pollution Monitoring	DST	0.00
24	High Stability Atomic Fountain Clocks	DST-DAAD(German Academic Exchange Serv.)	0.00
25	Study of the mechanisms involved in enhancement of electroluminescence properties of inorganic nanophosphors	DST (Under SERC Fast Track Proposals)	0.50
26	Study on the effects of atmospheric dynamical activity in the tropical tropopause region: Implications on the stratosphere-Troposphere exchange of the minor constituents	DOS	0.00
27	Development of Carbon-Ceramic composites and the influence of oxidation at elevated temperatures on their properties	DST	4.00
28	Evaluation of emission factors and budgets of gases and particulate matter of relevance to climate change emitted by fuels particularly biomass used in India by the rural sector & small scale industries	DST	8.00
29	Formation of Alkali Metal nanostructures on reconstructed low and high index Silicon Surfaces (under SERC FAST TRACK Proposals)	DST	0.00
30	Physico-Chemical studies of metal and metal oxide nanoparticles (under SERC FAST TRACK Proposals)	DST	4.00
31	On-line approach to non-contact IR Sensor technique for estimation of sugar and its by products	DBT	0.00
32	Studies on rare earth substituted magnesium ferrite thin films and the effect of humidity on its performance	DRDO	0.00
33	High pressure Raman studies of rare earth sesquioxides (Ln=La,Ce,Pr,Nd,Sm,Eu,Gd,Tb,Dy,Ho,Er,Yb,Y)	DST	3.30



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34	Ferrofluid based electric power generator	DRDO	0.00
35	Development of DNA Biosensor for detection of Neisseria Gonorrhoea in clinical samples	DBT	0.00
36	Application of new functional conducting polymers in Nio-sensor and Nano electronic	DST ( Indo-Japan )	1.50
37	Development of white organic light emitting diodes ( WOLEDs ) for general lighting applications	DST	4.00
38	Growth and structural characterization of nearly perfect single crystals of oxide materials for scintillation applications	DST (Under Indo-Russian Joint Project)	0.00
39	Bio-sequestration and bio-impregnation of heavy metals leading to nanomaterials synthesis and decontamination of industrial effluent	DST	0.00
40	Infrared spectroscopic study for tumor diagnosis	DST	0.00
41	QA/QC support for GHG (CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O) emission measurements undertaken by different national teams under the aegis of NATCOM-SNC	MOEF (Ministry of Environment & Forest, WINROCK)	4.84
42	Determination of country specific emission factor for methane from land fills and estimation of its emission inventory under the aegis of the NATCOM-SNC	MOEF (Ministry of Environment & Forest, WINROCK)	4.74
43	Amorphous carbon thin film having nanoparticle inclusions deposited by the modified vacuum plasma arc techniques	DST	0.00
44	Development of TiO <sub>2</sub> nanocatalyst for environmental purification (Under SERC FAST Track Scheme )	DST	0.00
45	Development of carbo-graphite material for aeronautical application	DRDO (DMSRDE) (Defence Material & Store R&D Establishment)	3.40
<b>Completed Projects</b>			
1	Molecular and biochemical sensor for identification of cells and diagnosis of diseases	DST	0.00
2	Studies and formulations for upscaling the process for making porous conducting carb paper and establish pilot plant scale facilities at NMRL	NMRL (Navel Materials Research Laboratory)	0.00
3	Synthesis and characterization of carbon nano tubes/ polymer network composites	DST	2.00



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4	Development of Nanostructured electrochromic films with improved performance characteristics by wet chemical techniques for smart windows	DST	0.00
5	Synthesis and characterization of nano-size grains of Ruthenocuprates and MgB <sub>2</sub> Superconductors	DST	0.00
6	Development of Mesophase Pitch for High Performance Carbon Fibres	DRDO (DMSRDE) (Defence Material & Store R&D Establishment)	4.44
7	Development of Calibration-Validation (CAL-VAL) Sites at Kavaratti Island	DSAC, Space Application Centre (ISRO) Ahmedabad	0.00
8	Modeling of organic Opto-electronic devices LEDs and Solar Cells	DST	0.00
<b>Closed and Transferred Projects</b>			
1	Melt/Solution processable conducting poly-aniline based magnetic films	DST	0.00
2	Synthesis of organic and inorganic Nanocomposites for sensor applications	DST	0.00
3	A novel development of lab-on-chip biosensor for determination of mycotoxins in food ( mainly cereals ) - under SERC FAST Track Scheme	DST	0.00
<b>Project is completed in 2007- 08 but Amount received on 2008-09</b>			
1	Cloud and Precipitation Phenomena estimation by using different Systems for Propagation Characteristics in Micro Wave and Millimetre Wave and Millimetre Wave Frequency bands	DST	1.44
		<b>Total</b>	<b>894.56</b>



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### CSIR Network Projects

Sr. No.	Name of the Project	Project Code	Nodal Officer	Name of the Laboratory
01	R&D on Photovoltaics and other Solar Energy Applications (Supra-Institutional Project)	SIP0017	Dr P K Singh	NPL
02	Development of Advance Light Weight Metallic Materials for Engineering Applications	NWP 0028	Dr Anil Kumar Gupta/ Dr R C Anandani	AMPRI, Bhopal
03	Conducting Polymer paints and coatings for corrosion protection and shielding of concrete structures in strategic areas	NWP 0012	Dr S K Dhawan	NPL as Nodal Lab (Since Dec'2008)
04	Technology for Assessment and Refurbishment of Engineering Materials and Components	NWP 0027	Dr Sushil Kumar/ Dr Ashok Kumar	NML, Jamshedpur
05	Fabrication of LED Devices and Systems for Solid State Lighting Applications	NWP 0025	Dr S T Lakshmikumar	NPL
06	Advancement in Metrology	NWP 0045	Dr P Banerjee	NPL
07	Surface analysis of Dispenser Cathodes for High Power MWT	NWP 0024 NPL - II	Dr Mahesh Kumar	NPL as Partner Lab CEERI, Pilani as Nodal Lab
08	Design and Fabrication Capabilities for very High Power Microwave Tubes	NWP 0024 NPL - I	Dr G Bhatia	CEERI, Pilani
09	Mega-city atmospheric pollution precursor process modeling	NWP 0017	Dr M K Tiwari / Dr C Sharma	IITR, Lucknow

