## SPONSORED/SUPPORTED R&D PROJECTS

### New / Continuing / Completed Projects

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Title</th>
<th>Agency/Client</th>
<th>Amount Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Development of speciality carbon materials for novel nuclear rector</td>
<td>BARC, Mumbai</td>
<td>9.92</td>
</tr>
<tr>
<td>2.</td>
<td>Development of calibration-validation (CAL-VAL) sites at Kavartti Island</td>
<td>Department of Space, SAC, Ahmedabad</td>
<td>26.5</td>
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<tr>
<td>3.</td>
<td>Investigation study on microwave sintering of Beta Alumina tubes</td>
<td>DST</td>
<td>13.5</td>
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<tr>
<td>4.</td>
<td>Design &amp; fabrication of Filter Transmission Meter</td>
<td>DST</td>
<td>18.00</td>
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<tr>
<td>5.</td>
<td>Development of Nanostructured electrochromic films with improved performance characteristics by wet chemical techniques for smart windows</td>
<td>DST</td>
<td>7.50</td>
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<tr>
<td>6.</td>
<td>Establishment of primary standards for Vickers &amp; Brinell Hardness Scales</td>
<td>DST</td>
<td>200.00</td>
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<tr>
<td>7.</td>
<td>Synthesis and characterization of carbon nanotubes/polymer network composites</td>
<td>DST</td>
<td>6.50</td>
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<tr>
<td>8.</td>
<td>Low cost technology for high efficiency Silicon Solar Cell</td>
<td>DST, Under Indo-Bulgarian Inter Govt. Prog</td>
<td>0.87</td>
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<tr>
<td>9.</td>
<td>Generic Development of nanometrology for Nanotechnology</td>
<td>DIT</td>
<td>554.00</td>
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<td>10.</td>
<td>Assessment of effects of high particulate on pulmonary health status in selected magacities of South Asia</td>
<td>APN – Japan</td>
<td>6.91</td>
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<tr>
<td>11.</td>
<td>Ionospheres of Venus and Mars: Chemistry, dynamic thermal structure and solar wind interaction</td>
<td>Physical Research Laboratory, Ahmedabad</td>
<td>4.70</td>
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<tr>
<td>12.</td>
<td>High rate deposition of the microcrystalline silicon films using high density microwave plasma and its applications in efficient large area thin film solar cells</td>
<td>DST</td>
<td>24.65</td>
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<tr>
<td>13.</td>
<td>Integrated campaign for aerosols, gases &amp; radiation budget</td>
<td>VSSC, Thiruvanthapuram</td>
<td>16.33</td>
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<td>14.</td>
<td>Dynamics studies at the phase transition region of SmC*-Sm-A phase in electrolyte liquid crystal materials</td>
<td>DST</td>
<td>11.50</td>
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<tr>
<td>15.</td>
<td>Physico-Chemical characterization of wet deposition at NPL, New Delhi and Panthnagar in Uttaranchal</td>
<td>SEI, SWEDEN</td>
<td>2.02</td>
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</table>
### Appendix - 4, Sponsored/Supported R&D Projects

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Title</th>
<th>Agency/Client</th>
<th>Amount Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fabrication and characterization of organic light emitting diodes</td>
<td>DST (Women Scientist Scheme-A)</td>
<td>1.75</td>
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<tr>
<td>2.</td>
<td>Optical Phase Singularity and its Applications</td>
<td>DST (Women Scientist Scheme-A)</td>
<td>3.00</td>
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<td>3.</td>
<td>Development of Bandpass Interference Filters for Course Wavelength Division Multiplexing (CWDM)</td>
<td>DST</td>
<td>4.00</td>
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<td>4.</td>
<td>Pressure Induced Phase Transitions for Metrological Applications</td>
<td>DST</td>
<td>3.00</td>
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<tr>
<td>5.</td>
<td>Operation of the South Asian Regional Research Centre (SAS-RRC) for Study of Global Change Under SASCOM</td>
<td>International START Secretariat, Washington, USA</td>
<td>1.74</td>
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<tr>
<td>6.</td>
<td>Development of ultrasonic method to evaluate moisture in composite materials</td>
<td>ARDB, Bangalore</td>
<td>0.00</td>
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<tr>
<td>7.</td>
<td>Development of DNA Biosensor</td>
<td>DST</td>
<td>0.00</td>
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<tr>
<td>8.</td>
<td>Design and development of Urea-Biosensor</td>
<td>DST</td>
<td>0.00</td>
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<tr>
<td>9.</td>
<td>A study of metal oxide coatings on glass substrated by sol-gel technique</td>
<td>DST</td>
<td>2.50</td>
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<tr>
<td>10.</td>
<td>Interaction with Universities/Labs in the area of superconductivity</td>
<td>UGC</td>
<td>0.00</td>
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<tr>
<td>11.</td>
<td>Development of nonphosphors for industrial application</td>
<td>DST</td>
<td>2.00</td>
</tr>
<tr>
<td>12.</td>
<td>Studies on the effect of dynamic multiple scattering on frequency shift of spectral lines and applications</td>
<td>DST</td>
<td>3.50</td>
</tr>
<tr>
<td>13.</td>
<td>Development of plasma polymerization process and deposition system for thin film optical coatings on plastic substrates, conducting polymeric barrier membrane coatings</td>
<td>DST</td>
<td>0.00</td>
</tr>
<tr>
<td>14.</td>
<td>Planning preparation and dissemination of certified reference materials for quality assurance in analytical measurements</td>
<td>DST (NABL)</td>
<td>0.00</td>
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<tr>
<td>15.</td>
<td>Semiconductor silicon for applications in solar energy microelectronics and power electronics</td>
<td>Indo-Russia (ILTP)</td>
<td>0.00</td>
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<tr>
<td>16.</td>
<td>Coherent radio beacon experiment (CRABEX) for tomographic studies of the ionosphere on-board GSAT-II satellite</td>
<td>VSSC, Thiruvananthapuram</td>
<td>2.95</td>
</tr>
<tr>
<td>17.</td>
<td>Development of organic light emitting diodes</td>
<td>DIT</td>
<td>0.00</td>
</tr>
<tr>
<td>18.</td>
<td>Setting up of facilities for dissemination of Indian Standard Time in North-Eastern states</td>
<td>DST</td>
<td>0.00</td>
</tr>
<tr>
<td>20.</td>
<td>Study of Atmospheric Aerosols Radiation and Trace Gases Under ISRO-GBP Road Campaign during February 2003: Delhi-Hyderabad-Delhi Corridor</td>
<td>Physical Research Lab. Ahmedabad</td>
<td>0.00</td>
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</table>
Appendix - 4, Sponsored/Supported R&D Projects

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Title</th>
<th>Agency/Client</th>
<th>Amount Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>Metal induced crystallization behaviour on thin film of amorphous silicon</td>
<td>INDO-US</td>
<td>0.00</td>
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<tr>
<td>22.</td>
<td>IR spectroscopy techniques for cellulosic materials</td>
<td>Birla Management Corporation Limited</td>
<td>6.36</td>
</tr>
<tr>
<td>23.</td>
<td>Synthesis of carbon nanotubes and their applications in composites and hydrogen storage</td>
<td>Indo-Belorussian</td>
<td>0.00</td>
</tr>
<tr>
<td>24.</td>
<td>Development of injection solar cells utilizing dye sensitised nano-crystalline TiO₂ films</td>
<td>MNES</td>
<td>0.00</td>
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<tr>
<td>25.</td>
<td>To conduct inter-laboratory proficiency testing amongst the NABL accredited calibration laboratories in India</td>
<td>DST (NABL)</td>
<td>0.00</td>
</tr>
<tr>
<td>26.</td>
<td>Cloud and precipitation phenomena estimation by using different systems for propagation characteristics in microwave and millimetre wave frequency bands</td>
<td>DST</td>
<td>3.00</td>
</tr>
<tr>
<td>27.</td>
<td>A study of the formation of delta-doped silicon structures by surface phase control and solid phase epitaxy</td>
<td>DST</td>
<td>3.00</td>
</tr>
<tr>
<td>28.</td>
<td>To develop 10 pF capacitor using Quartz for use by accredited calibration laboratory</td>
<td>DST</td>
<td>0.00</td>
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<tr>
<td>29.</td>
<td>Surface order and structure studies of polymer solid interfaces</td>
<td>Indo-US</td>
<td>0.00</td>
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<tr>
<td>30.</td>
<td>Development of new formulation of indelible ink</td>
<td>Election Commission of India</td>
<td>0.00</td>
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<tr>
<td>31.</td>
<td>Development of spray forming technology of magnesium alloys</td>
<td>VSSC, Thiruvanathapuram</td>
<td>1.10</td>
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<tr>
<td>32.</td>
<td>SROSS-C2 satellite RPA aeronomy payload data management</td>
<td>ISRO</td>
<td>0.00</td>
</tr>
<tr>
<td>33.</td>
<td>Studies on fog occurrence on Delhi</td>
<td>CPCB</td>
<td>0.00</td>
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</tbody>
</table>

Completed Projects

1. Micro-patterning of solid surfaces for technological application in the field of microelectronics, sensors and displays | DST | 0.00 |
2. Design, development and fabrication of 500 kg Dead Weight Machine to calibrate the load cell used for weighing purposes | RRSL, Bangalore | 0.00 |
3. A new approach for memory effect in ferroelectric liquid crystal materials Based on charge accumulation phenomenon | DST | 0.00 |
4. Application of carbon nanotubes in composites - alignment and adhesion problems | DST/NSF | 0.25 |
5. Development of transducer elements for acoustic emission (AE) sensor | BARC | 0.00 |
6. Design & development of ceramic based oxide sensor | DST | 0.00 |
### Appendix - 4, Sponsored/Supported R&D Projects

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Title</th>
<th>Agency/Client</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Setting up of test and calibration facility for ceramic sensors</td>
<td>DST</td>
<td>0.00</td>
</tr>
<tr>
<td>8.</td>
<td>Smart electro-chromic windows for energy conservation</td>
<td>MNES</td>
<td>4.500</td>
</tr>
<tr>
<td>9.</td>
<td>Reducing uncertainties in emission of CH₄ and N₂O from livestock in India in relation to the enabling activities for initial communication to UNFCCC</td>
<td>ME &amp; F (Winrock)</td>
<td>0.00</td>
</tr>
<tr>
<td>10.</td>
<td>Measurement of CH₄ &amp; N₂O emissions from Rice/Wheat ecosystem in relation to reducing uncertainties in emission factor for enabling activities for initial communication to UNFCCC</td>
<td>ME &amp; F (Winrock)</td>
<td>0.00</td>
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<tr>
<td>11.</td>
<td>Design, development and fabrication of sensors and electrometers for the study of Maxwell current density and Schumann resonances</td>
<td>IIG, Mumbai</td>
<td>0.00</td>
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<tr>
<td>12.</td>
<td>Reducing uncertainties in emissions of CO₂, CH₄ from biomass burning in India in relation to the enabling activities for initial communication to UNFCCC</td>
<td>ME &amp; F (Winrock)</td>
<td>0.00</td>
</tr>
<tr>
<td>13.</td>
<td>Spin effects and interactions in the quantum dots</td>
<td>DST</td>
<td>0.00</td>
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<tr>
<td>14.</td>
<td>R&amp;D in non-invasive optical fiber probe based near-infrared spectroscopy (NIRS) for accessing brain activity</td>
<td>DST</td>
<td>0.00</td>
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<tr>
<td>15.</td>
<td>Agriculture sector inventory</td>
<td>ME &amp; F (Winrock)</td>
<td>0.00</td>
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</tbody>
</table>

**Note:** *(Projects Completed in 2003-04 but amount received in 2005-06)*

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Title</th>
<th>Agency/Client</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Carrying Capacity Studies of Teesta Basin in Sikkim (SODAR studies)</td>
<td>IIT, Delhi</td>
<td>0.50</td>
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<tr>
<td>2.</td>
<td>Tetrahedral amorphous carbon (ta-c) films deposited by a filtered vacuum arc discharge (FVAD) technique</td>
<td>DST</td>
<td>0.093</td>
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</table>
### CSIR NETWORKED PROJECTS

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<tr>
<th>S N</th>
<th>Name of the Project</th>
<th>Project No.</th>
<th>Date of Start</th>
<th>Proposed Date of Completion</th>
<th>Director's Nominee</th>
<th>Nodal Lab</th>
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<tbody>
<tr>
<td>1</td>
<td>Catering to specialized aerospace materials</td>
<td>CMM0001</td>
<td>01.04.2004</td>
<td>31.03.2007</td>
<td>Dr. Anil Kumar Gupta</td>
<td>NAL</td>
</tr>
<tr>
<td>2</td>
<td>Study of oceanographic processes of North Indian ocean in reference to global change</td>
<td>CMM0009</td>
<td>01.04.2003</td>
<td>31.03.2007</td>
<td>Dr. B.C. Arya</td>
<td>NIO</td>
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<tr>
<td>3</td>
<td>Developing capabilities &amp; facilities for microelectrochemical systems (Mems) and Sensors</td>
<td>CMM0011</td>
<td>01.04.2002</td>
<td>31.03.2007</td>
<td>Dr. S.T. Lakshmikumar</td>
<td>CEERI</td>
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<tr>
<td>4</td>
<td>Custom tailored special materials</td>
<td>CMM0022</td>
<td>01.04.2002</td>
<td>31.03.2007</td>
<td>Dr. Anil Kumar Gupta</td>
<td>CGCRI</td>
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<tr>
<td>5</td>
<td>Upgradation of S.I. Base units, National Standards of measurements &amp; apex calibration facilities creation of high quality network of Testing and calibration laboratories and preparation &amp; dissemination of certified reference materials</td>
<td>CMM0024</td>
<td>01.04.2004</td>
<td>31.03.2007</td>
<td>Dr. R.P. Singhal</td>
<td>NPL</td>
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<tr>
<td>6</td>
<td>Developing and sustaining high science &amp; technology for national aerospace programmes</td>
<td>COR0001</td>
<td>01.04.2005</td>
<td>31.03.2007</td>
<td>Dr. R.S. Dabas</td>
<td>NAL</td>
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<td>7</td>
<td>Development of speciality polymers</td>
<td>COR0004</td>
<td>01.04.2002</td>
<td>31.03.2007</td>
<td>Dr. S.K. Dhawan</td>
<td>NCL</td>
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<td>8</td>
<td>Development of techniques and methodologies for exploration assessment and management of ground water in hard rocks</td>
<td>COR0005</td>
<td>01.04.2002</td>
<td>31.03.2007</td>
<td>Dr. A.K. Agarwal</td>
<td>NGRI</td>
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<td>9</td>
<td>Pollution monitoring mitigation systems and devices</td>
<td>SMM0005</td>
<td>01.04.2004</td>
<td>31.03.2007</td>
<td>Dr. M.K. Tiwari</td>
<td>NEERI</td>
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<tr>
<td>10</td>
<td>Electronics for societal purposes</td>
<td>COR0007</td>
<td>01.04.2003</td>
<td>31.03.2007</td>
<td>Sh. S.K. Singhal</td>
<td>CSIO</td>
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<tr>
<td>11</td>
<td>Development of key technologies for photonics and opto electronics</td>
<td>CMM0010</td>
<td>01.04.2003</td>
<td>31.03.2007</td>
<td>Dr. S.S. Bawa</td>
<td>CGCRI</td>
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