

## Nanotechnology Research Centers In India

<u>S.No</u>	<u>Research Centers</u>	<u>Research Areas</u>	<u>URL</u>
<u>1.</u>	<b>Bhabha Atomic Research Center, Trombay, Mumbai, Maharashtra.</b>	<ol style="list-style-type: none"> <li>1. Use of Nano-fluids to suppress natural circulation instability and to enhance circulation rate.</li> <li>2. Use of Nano Gold in Nanomedicine.</li> <li>3. Formation of redox active nanoselenium on Reactions of oxidizing free radicals with Selenourea.</li> <li>4. Nanocrystalline materials</li> <li>5. Reactive plasma spray synthesis of nanocrystalline aluminum oxide</li> <li>6. Characterization of Nano Zirconia Based Materials</li> </ol>	<a href="http://www.barc.ernet.in/">http://www.barc.ernet.in/</a>
<u>2.</u>	<b>Center of Materials for Electronics Technology, Pune, Maharashtra.</b>	<ol style="list-style-type: none"> <li>1. Generation of nano powders in a TAP reactor.</li> <li>2. Glass/polymer nanocomposites for optoelectronics.</li> <li>3. Quantum Dots.</li> <li>4. Nanomaterials for photonics.</li> <li>5. Refractory metal nanopowders</li> <li>6. Nanomaterials based thick film sensors</li> </ol>	<a href="http://www.cmet.gov.in/">http://www.cmet.gov.in/</a>
<u>3.</u>	<b>Central Electronics Research Institute, Pilani, Rajasthan.</b>	<ol style="list-style-type: none"> <li>1. Silicon Nanoparticles</li> <li>2. Nanocrystals</li> <li>3. Nanoparticles by Chemical Vapor deposition for Nanoelectronic devices.</li> <li>4. Nanosensors</li> <li>5. Nanophotonics</li> <li>6. NanoBiosensors</li> <li>7. Self-Assembly based NanoLithography</li> <li>8. Dip Pen Nanolithography</li> <li>9. MEMS</li> </ol>	<a href="http://www.ceeri.res.in/">http://www.ceeri.res.in/</a>
<u>4.</u>	<b>Central Scientific Instruments Organization, Chandigarh, Punjab.</b>	<ol style="list-style-type: none"> <li>1. DNA Nano Wire.</li> <li>2. BioMEMS</li> <li>3. Biomolecular motors</li> <li>4. Carbon nanotubes</li> <li>5. Nanoparticle based drug delivery systems.</li> </ol>	<a href="http://www.csio.nic.in/">http://www.csio.nic.in/</a>

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<u>5.</u>	Defence Materials and Stores Research and Development Establishment, Gwalior, Madhya Pradesh.	1. Fabrication of Nanoparticles Arrays	<a href="http://www.drdo.org/">http://www.drdo.org/</a>
<u>6.</u>	Institute of Fundamental Research, Mumbai, Maharashtra.	1. Molecular Motors 2. Nanorods and nanotubes 3. Superconductivity in nanostructured metals 4. Raman spectroscopy of nanostructured systems 5. High resolution electron microscopy	<a href="http://www.tifr.res.in/">http://www.tifr.res.in/</a>
<u>7.</u>	National Center for Biological Sciences, Bangalore, Karnataka.	1. Structural DNA analysis & BioNanotechnology. 2. Molecular machines by manipulating of nucleic acid assemblies. 3. Understanding chromatin remodeling and transcription control at the nanoscale	<a href="http://www.ncbs.res.in/">http://www.ncbs.res.in/</a>
<u>8.</u>	National Chemical Laboratories, Pune, Maharashtra.	1. Catalysis with Hierarchically Ordered Nanoporous Materials 2. Catalysis, High Field Solid State NMR Studies and Nanoscience / Nanotechnology 3. Materials Science Engineering and Nanotechnology 4. Synthesis of monocrystalline polysaccharide nanoparticles 5. Development of PP-clay nanocomposites 6. Interactions in nano-magnet arrays 7. Nucleic acid and peptide based nanoscience/nanotechnology 8. DNA Nanotechnology	<a href="http://www.ncl-india.org/">http://www.ncl-india.org/</a>
<u>9.</u>	National Metallurgical Laboratories, Jamshedpur, Jharkhand	1. Nanotechnology and nanoparticle characterization 2. Study of aggregation, flocculation and coagulation in nano-dispersed system 3. Development of Nanocrystalline soft magnetic materials	<a href="http://www.nmlindia.org/">http://www.nmlindia.org/</a>

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<u>10.</u>	National Physical Laboratories, New Delhi	<ol style="list-style-type: none"> <li>1. Nanophase luminescent materials and devices.</li> <li>2. Preparation of Nanophosphors.</li> <li>3. Development of nanocrystalline host lattices based on sulfide materials</li> <li>4. Nanocrystalline luminescent materials</li> </ol>	<a href="http://www.nplindia.org/">http://www.nplindia.org/</a>
<u>11.</u>	Raman Research Institute, Bangalore, Karnataka	<ol style="list-style-type: none"> <li>1. Controlled switching of the Nonlinearity from optical limiting to absorption saturation in silver nanoclusters.</li> <li>2. Quantum measurement</li> <li>3. Gold Nanoparticles</li> <li>4. Nanomaterials &amp; Nanoparticles in photonics</li> <li>5. Nanoclusters for the study of measurement of non-linear properties</li> <li>6. Nanotechnology &amp; study of wetting &amp; lubricating properties</li> <li>7. Protein folding and water conduction through nanopores and nanomembranes</li> <li>8. Behaviour of water at nanoscale</li> <li>9. Nano &amp; pico second laser excitation</li> </ol>	<a href="http://www.rri.res.in/">http://www.rri.res.in/</a>
<u>11.</u>	Regional Research Laboratories, Trivandrum, Kerala	<ol style="list-style-type: none"> <li>1. Nano and Self-Assembled Polymeric Materials and Composites</li> <li>2. Self-organization of Polyurethanes for Nano-structured Architectures</li> <li>3. Conducting Nanofibres for opto-electronics.</li> <li>4. Nanocomposites</li> <li>5. Nanomaterials</li> <li>6. Custom tailored special materials-nano structured Inorganic materials for novel electronic, magnetic, optical, structural and transducer application</li> </ol>	<a href="http://w3rrlt.csir.res.in/">http://w3rrlt.csir.res.in/</a>

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<u>12.</u>	S.N.Bose National Centre for Basic Sciences (DST), Kolkata, West Bengal.	<ol style="list-style-type: none"> <li>1. Carbon nanotubes</li> <li>2. Molecular Electronics</li> <li>3. Electronic &amp; structural properties of nanomaterials.</li> <li>4. Nano-Quasars</li> <li>5. Magnetism in nano-materials</li> </ol>	<a href="http://boson.bose.res.in">http://boson.bose.res.in</a>
<u>13.</u>	Saha Institute of Nuclear Physics, Kolkata, West Bengal.	<ol style="list-style-type: none"> <li>1. Nanocomposites &amp; Nanocrystalline materials</li> <li>2. Phase transformation and quantum confinement effects have been studied in a few nanocrystalline materials and nanoparticles</li> <li>3. Nanoscale coatings</li> <li>4. Simulation study of multi-atom tips and estimation of resolution in atomic force microscopy</li> </ol>	<a href="http://www.saha.ac.in/">http://www.saha.ac.in/</a>
<u>14.</u>	Solid State Physics Laboratory, New Delhi.	<ol style="list-style-type: none"> <li>1. MEMS development</li> </ol>	<a href="http://www.drdo.org/">http://www.drdo.org/</a>