**NANOTECHNOLOGY RESEARCH LABORATORY**

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| **S. No** | **List of Equipment** | **Make****&****Model** | **Purpose** |
| 1 | ***Planetery Ball Mill*** | *VBCC & VB CERAMICS* | Size reduction of powder sample to nano scale |
| 2 | ***Double Beam UV Vis Spectrophotometer with DRS*** | *PERKIN ELMER & LAMDA35* | Qualitative and quantitative analysis of liquid/ Powder/Paste/Thin films |
| 3 | ***Probe Sonicator*** | *PRO-500 &**LABMAN* | Dispersion of nano particles, degassing of liquids, disruption and speeding up dissolution, precipitation, crystallization. |
| 4 | ***Surface Area Analyser*** | *BEISORP – MINI II &MALVERN INSTRUMENTS LTD.* | Surface Area Characterization, measurement of pore diameter and total pore volume. |
| 5 | ***Particle Size & Zeta Potential Analyser*** | *ZETASIZE NANO ZS90* *& MALVERN INSTRUMENTS LTD* | Particle size analysis for micro and nano particles.Zeta Potential – Stability of nano particle, electrophoretic mobility of nanoparticle |
| 6 | ***CVD Chamber*** | *CVD TABLE TOP**& VB CERAMIC CONSULTANT* | Synthesis of Carbon Nano Tubes, Calcination of Nanoparticles, Scintering of Nanoparticles under Inert atmosphere |
| 7 | ***Atomic Force Microscope*** | *XE7 & ATOMIC FORCE MICROSCOPE* | Assessment of Surface topography, Surface smoothness and Particle size |
| 8 | ***Programmable Spin Coater*** | *SPINNXG – PI & APEX* | Substrate Preparation, Thin coating of nanoparticles |
| 9 | ***Potentiostat/Galvanostat - Millipore*** | *BIOLOGIC SP200**& FRANCE* | Elecltrochemical properties of sample – IV, CV, Cyclic Voltametry |
| 10 | ***Water System for Ultrapure Water*** | *MILLIPORE DIRECT – Q 8 UV**& MERK* | Purification of water – HPLC grade |
| 11 | ***Electro Spinning Apparatus*** | *ESPIN NANO* | Synthesis of Nan rods and Nano Fibers |
| 12 | ***X-Ray Diffractometer*** | *RIGAKU& MINI FLEX 600* | Identify the crystalline structure size and orientation.  |