

Laboratory For Research Characterization Tools & Elaborate Data Analysis

ICP-Mass Spectrometer

✓ **Simultaneous multi element (most metals and some non-metals) detection capability (ppb level). Used for**

Trace metal analysis, Food Safety, Human Biomonitoring, Water Treatment



Field Emission-SEM

✓ **High brightness Schottky emitter for high-resolution/low-noise imaging.**

✓ **Powerful In-beam SE & BSE detectors enable excellent imaging at short working distances**



X-RAY Diffractometer

✓ **Bravais Lattice Symmetry, Unit Cell Parameters, Phase analysis, Epitaxy, Texture information, Rietveld refinement**

✓ **Grazing incidence X-ray diffraction (GIXD) possible for thin films**



BET Adsorption Studies

✓ **Single point & multipoint BET surface area, Adsorption Isotherms, Pore size distribution, Pore volume**

✓ **DFT, BJH, HK algorithm analysis options.**

✓ **H₂ Chemisorption (Treatment Temp: upto 1000 deg C) of catalysts, ceramics.**

✓ **High sensitivity TCD detector for TPD, TPR and TPO analysis.**



Simultaneous TGA-DSC

✓ **Simultaneous measurements of weight change (TGA) and**

differential heat flow (DSC) on the same sample. Temperature range: 25 °C to 1500 °C

✓ **Thermal stability, Melting points, Phase transitions, Crystallization, Glass Transition of Polymers**



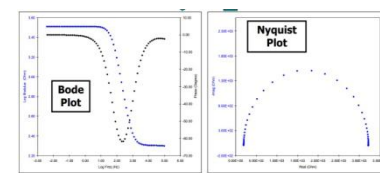
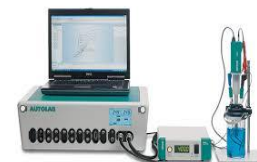
Multichannel Voltammetry

✓ **Fully functional Electrochemistry set up**

✓ **with potentiostat/galvanostat,**

✓ **Multichannel instrument**

✓ **Characterization of Solar Cells, Supercapacitors, Photovoltaics, Electrochemical Impedance Spectroscopy**



NANO-IR: AFM+IR

✓ **Traditional FTIR absorption Spectrum for chemical mapping combined with**

✓ **Nanoscale imaging capability of AFM**

Universal Testing Machine

✓ **Standard tensile and compression tests on materials, components, and structures**

Micro Particle Image Velocimetry

✓ **Micron resolution Optical method of flow visualization, Instantaneous velocity measurements in fluids**