

School Of Engineering Sciences and Technology

S.No	Equipment Name	Applications
1	mXRD	Even trace amounts of crystalline phases in solid inorganic materials can be detected
2	Surface area analyser	N2 adsorption-desorption isotherms, Specific surface area, and pore characteristics of solid inorganic materials can be recorded
3	Differential Scanning Calorimetry	Endothermic events, heat absorbed: Melting, glass transition, dehydration.
		Exothermic events, heat released: Crystallization, curing, oxidation, chemical reactions of solid materials can be recorded (up to 7500 °C)
4	Impedance Analyser	The electrical impedance (resistance, capacitance, and inductance) of solid materials can be measured across varying frequencies
5	Creep Testing Machine	Creep behavior of metallic samples can be recorded
6	Rockwell + Brinell Hardness Tester	Hardness of materials can be measured
7	Micro Hardness Tester	Hardness of materials can be measured
8	Magnetron Sputter Deposition systems	Deposition of thin films (metals and metal oxides)

9	Thermal Measurement System	Thermal conductivity of solid samples can be measured
10	UV-Vis spectrometer	UV-Vis spectra of samples can be measured
11	Electro polishing Unit	Polishing for ultrasmooth surfaces
12	Pin on disc Wear test Rig with friction monitor	Wear characteristics of solid materials can be measured
13	Scanning Electron Microscopes	Micrographs, crystallographic information (EBSD) and compositional information of solid samples can be recorded; Biological samples can also be imaged, provided the sample is properly prepared.
14	X-ray Diffractometer	Crystallographic characterization of powder and solid samples can be carried out
15	Analytical TEM	Imaging, high-resolution imaging, STEM, composition characterization can be carried out
16	Focused Ion Beam	Thin sample preparation of solid samples; crossection sample preparation of solid samples.
17	Vacuum Induction Melting	Alloying melting
18	Zetasizer	Stability (Zeta Potential) of colloidal solutions can be measured.
19	Electrochemical workstations	Electrochemical behavior of materials can be measured.
20	Scanning Probe Microscope	AFM, PFM, SKPM, MFM and STM analysis of nanomaterials can be carried out.

21	UTM	Stress-strain behaviour of bulk samples can be measured
22	Ball mills	Alloy powders can be prepared
23	Nano indentors	High throughput nanoscale mechanical behavior of solid materials can be recorded