Sophisticated Analytical Instrument Facility, NEHU, Shillong

Sl. No.	Instrument	Make/ Model	Major Specifications/ Accessories available	Type of measurement/analysis available
1.	Scanning Electron Microscope	Jeol JSM 6360	Magnification: upto 3,00,000x; Resolution: 3 nm; Acc. voltage: upto 30 kV (55 steps); Maximum Specimen size: 4.0 mm; Fully computer controlled.	Surface topographic studies of microstructures on bulk specimens of biological/non-biological nature. The SEM can accommodate 4 mm diameter specimen and allows observing full coverage of specimen with X, Y and R (rotation) movements of the specimen stage.
2.	Transmission Electron Microscope	Jeol JEM 2100	Resolution: 1.4Å (Lattice) to 1.9 Å(point to point) Accelerating Voltage: 60-200 KV in 50 V steps. Tilt: $\pm 25^{o}$ Magnification: With standard specimen gives x50 to 1,500,000. High Resolution Gatan CCD Camera (2.672x2.672K). Ultramicrotome	Study of ultra-structures of biological samples; Characterization of nano particles, determination of crystal shape, angles and orientation, crystal-defect, electron diffraction studies etc.; High resolution digital micrographs on CD.
3.	Transmission Electron Microscope	Jeol JSM 100 CX II	Magnification: upto 4,50,000; Resolution: 3 Å; Ultramicrotome	Study of ultra-structures of biological samples; Characterization of nano particles, determination of crystal shape, angles and orientation, crystal-defect, electron diffraction studies etc. Normal TEM image/micrographs on plate film.
4.	Microscope with Image Analyzer	Leica DMRX Q600	Field of view: 28 mm; Magnification range: upto 250x Contrast: Bright field, dark field, phase contrast, interference contrast and fluorescence.	Measurement of proteins, lipids and DNA, reflectivity, reflectance, fluorescence; Grain counting, size and shape analysis; 3 dimensions reconstruction of slices; Liquid crystal and nuclear track measurements.
5.	FT-NMR Spectrometer	Bruker Avance II 400	Frequency: 400 MHz.	1D and 2D NMR Spectroscopy of NMR active nuclei ^{1}H, ^{13}C, ^{15}N, ^{31}P, ^{51}V, ^{55}Mn, ^{11}B etc., NOE, Solvent suppression, homo and hetero decoupling experiments, COSY, NOESY, DEPT etc.
6.	LC-Mass Spectrometer	Waters ZQ 4000	Mass Range: 20-4000 Da Resolution: 0.2 Da Ionisation method:ESI, APCI Analyser: Single quadrupole Detector: Off-axis Dynolite photomultiplier.	Structural elucidation of organic compounds and small bio-molecules, Molar mass etc.

7.	CHNSO Elemental Analyzer	Perkin Elmer 2400	Accuracy: ±0.3%; Autosampler; Ultra-microbalance; Liquid sample handling kit;	Simultaneous determination of C, H, N; and/or the determination of Sulphur and Oxygen in the samples.
8.	Atomic Absorption Spectrometer	Perkin Elmer 3110	Range: 193.7 to 780 nm Detection limit: ppm.	Trace element analysis of elements in rock/ore, oil plants, biological samples, water etc.
9.	Graphite Furnace (transversely heated)	Analytik Jena Vario 6	Range: 190 to 870 nm Detection limit: ppb.	Direct analysis of solid samples with better detection limits.
10.	Liquid Nitrogen Plant	Philips/ Stirling PLN 106	10 lit/hr.	Liquid nitrogen for R&D work.