Analytical Expert in XRD, AFM & Raman Spectroscopy

Trustworthy · Professional · Innovative

MiNT-SRC
Microelectronics and Nanotechnology Shamsuddin Research Centre

MDM FAEZAHANA BINTI MOHKHTER
Assistant Engineer

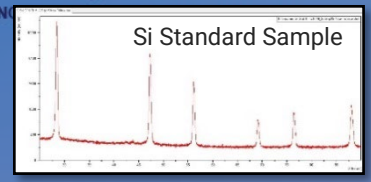
Expertise includes:
BET Surface Area Analyzer • Incident Photon-to-Current Efficiency (IPCE) • Solar Simulator • Two-Point Probe Measurement • Hall Effect Measurement • Semiconductor and Parametric Analyzer (SPA)

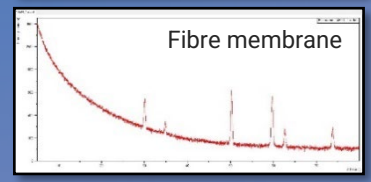
X-Ray Diffraction (XRD)

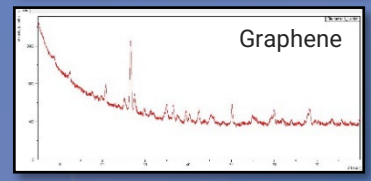
X-Ray Diffraction
(Panalytical X'pert³ Powder)

- ✓ Capable of analyzing both thin film and powder samples
- ✓ Supports Rocking Curve measurements to assess crystal quality
- ✓ Provides Reflectivity measurements for analyzing thin film thickness and density
- ✓ Identifies crystalline phases, determines crystal structures and lattice parameters
- ✓ Assesses crystallinity, estimates crystallite size and microstrain, analyzes residual stress and texture, and characterizes thin films

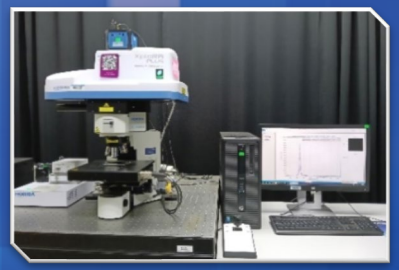
X-ray Diffraction
(Rigaku)



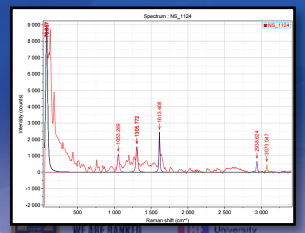




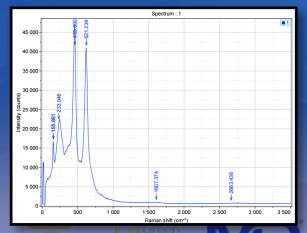
Raman Spectroscopy



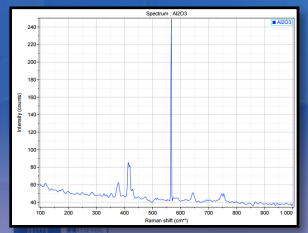
- ✓ Equipped with laser excitation wavelengths of 532 nm and 785 nm
- ✓ Confocal imaging with a spatial resolution of 0.5 µm (XY)
- ✓ Achieves spectral resolution down to 1 cm^{-1}
- ✓ Measures molecular vibrations, chemical composition, crystalline phases, stress/strain, defect disorders, doping effects, 2D materials, and more



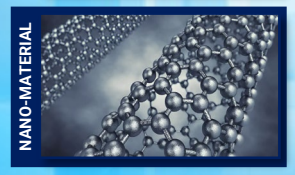
Aspirin



TiO_2

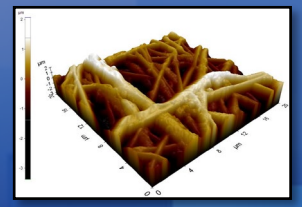


Al_2O_3

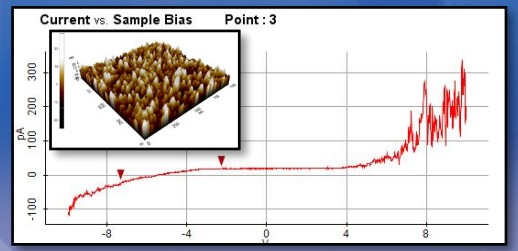


Atomic Force Microscope (AFM)

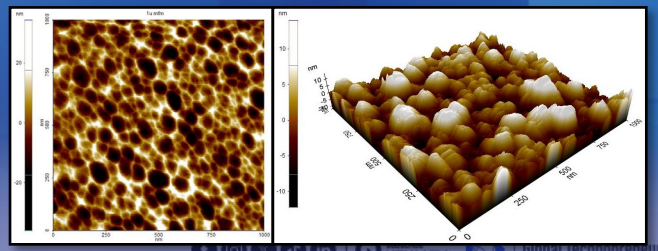
- ✓ Supports both contact and non-contact measurement modes
- ✓ Equipped with Magnetic Force Microscopy (MFM) mode
- ✓ Equipped with Conductive AFM (C-AFM) for electrical conductivity mapping
- ✓ Includes Force Spectroscopy mode for mechanical property analysis



Membrane
(topography image)



Conductive AFM (TiO_2)



Magnetic Force Microscopy (Gd-doped ZnO)