**Measurement of:** Surface properties of thin films

**Equipment:** Scanning Probe Microscope

**Property Measured:** Surface morphology and other measurements such as particle size and roughness etc, spatial variation of magnetic forces on a sample surface using MFM, variations in the electric field gradient above a sample using EFM

**Photograph (small size)**

**Basic Principle:** Scanning probe microscope (SPM) defines a broad group of instrument used to image and measure properties of material surfaces. A sharp tip scans over the surface of sample that can be moved in xyz- direction by piezoelectric scanner. A feedback loop controls the distance between tip and sample, which is evaluated by computer and results in topographical image of the sample.

**Capabilities:**

- 2D and 3D imaging of surface of thin films using tapping and contact mode
- Measurement of surface properties such as particle size, surface roughness and step height etc.
- Imaging of spatial variation of magnetic forces on a sample surface using MFM,
- Imaging of variations in the electric field gradient above a sample using EFM

**Sample Requirement:**

Thin film samples with dimension (10x10x2)mm (film+substrate)