Atomic Force Microscopy

System Overview
Atomic force microscopy, AFM, is a high resolution scanning probe microscopy which allows the measurement of the morphology on the surface of the material. It measures the forces between the tip (probe), on the flexible cantilever, and surface at short working distance. The tip is typically less than 10nm and made of Si or Si3N4.

Specifications
- Modes of Operation: Contact and Tapping
- True resolution: several nm (depending on the tip radius)
- Lattice resolution of periodic structures: 0.01-0.02nm
- Scan Sizes: several nm to several 100µm
- Imaging condition: Ambient or vacuum
- Limitations to samples which are: liquid, hygroscopic and uncured

Typical Applications
- Nanostructures
- Polymer Materials
- Microfabricated patterns
- Phase transitions
- Surface Texture
- Crystal structures

Cross section of a 10 x 10 micron calibration grid