

Ambient AFM™



System Specifications

Standard Scan Modes

- Intermittent Contact /Phase Contrast
- Contact
- Non-contact
- Lateral Force
- MFM
- EFM

(Any single mode standard, additional modes may be added as options.)

Optional Scan Modes

- Scanning Tunneling Microscope (STM)
- Piezo Response Force Microscope (PrFM)
- Kelvin Probe Force Microscope (KPFM)
- Scanning Spreading Resistance Microscope (SSRM)
- Conductive AFM
- Capacitance Force Microscopy (CFM)
- Force Modulation Microscopy (FMM)
- AFM Spectroscopies
- Nanoindentation
- Nanolithography

Maximum Z Resolution

- <0.03nm with 100µm×100µm scanner
- <0.01nm with 40µm×40µm scanner
- <0.005nm with 4µm×4µm scanner

Static/Dynamic RMS Cantilever Z Noise

- <25fm/√Hz noise floor with laser RF modulation

Scan Range

- 4x4x2 µm or 40x40x4 µm or 100x100x8 µm

STM Current Range

- 1pA-10nA, < 10fA/√Hz noise floor

Maximum Sample Size/Height

- 30x30x10 mm

Approach

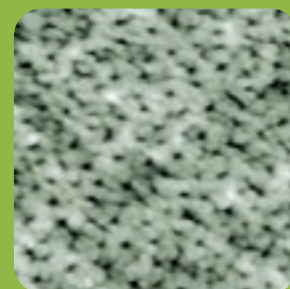
- Software controlled
- Motorized
- <50 mm range with <250 nm sensitivity

Camera

- CCD analog colour camera



HOPG



Whatman Membrane

Camera Resolution

- < 2 µm

Light Source for Optical Microscope

- White LED, adjustable from software

Signal Processing

- 16 bit ADCs /24 bit DACs
- Digital feedback with FPGA /DSP
- Simultaneous scan of 16 channels up to 4096x4096 pixels

Cantilevers

- All of the commercial cantilevers can be used

Acoustic and Vibration Isolation

- Multilayer acoustic enclosure 180° access
- 0.3Hz passive vibration isolation table

Available Options

Heating and Cooling

- Standard range between -10 and +100 °C with 0.1 °C resolution

XY Manual Stage

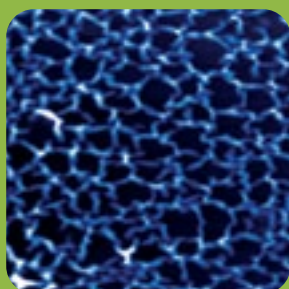
- 25x25mm with 10µm resolution

XY Motorized Stage

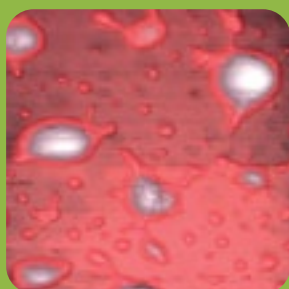
- Software controlled, 50 mm stroke, 50nm resolution

Liquid Cell

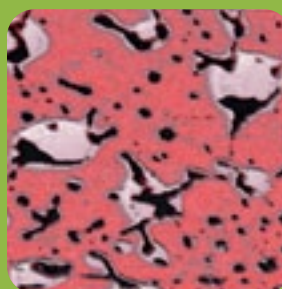
- Closed or open



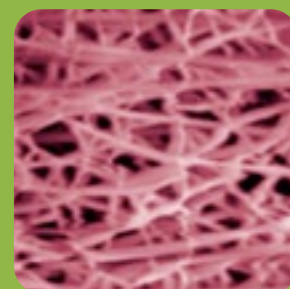
Polyethyleneimine



Phosphorylcolamine
Topography



Phosphorylcolamine
Phase Contrast



Polyvinyl Acetate

Specifications are subject to change without notice.