

ATOMIC FORCE MICROSCOPY (AFM)

MANUFACTURER : Omicron Nanotechnology

MODEL : VT UHV STM/AFM

Samples

- Samples size : $9 \times 5 \text{ mm}^2$ or 7 mm diameter maximum
- Thickness: 2 mm maximum
- Lateral resolution: atomic

Analysis

- Modes :
 - o STM : current feedback
 - o AFM: true non-contact mode (frequency feedback, system with quartz resonator and PLL to follow the resonance)
- Designed to work under UHV and produce images with atomic resolution for either operating modes (STM and AFM). The sample surface cleaning is performed in-situ via direct or indirect heating or by ion sputtering. The main advantage of this system is its ability to perform measurements within a wide range of temperatures, between 25 K and 1500 K.

Applications

- Surface-induced polymerization reactions
- Studies of surface processes
- Analysis of metals, semi-conductors and superconductors with atomic resolution
- Studies of surface phase change transitions
- Studies of inter-molecular interactions; self-assembly, self-organizing

Characteristics

- Measurement pressure: less than 3×10^{-11} mbar.
- Measurement temperature : 25 K to 1500 K
- Maximum X and Y scanning dimensions: 12 μm , Z: 1.5 μm
- LEED – Auger Electronic Spectroscopy
- VACSCAN MKS Mass Spectrometer
- ISE 10 ion source (Argon, Hydrogen, Oxygen)
- System of gas injection for experiments regarding deposition and molecular growth on any substrate