

AFM – Atomic Force Microscopy

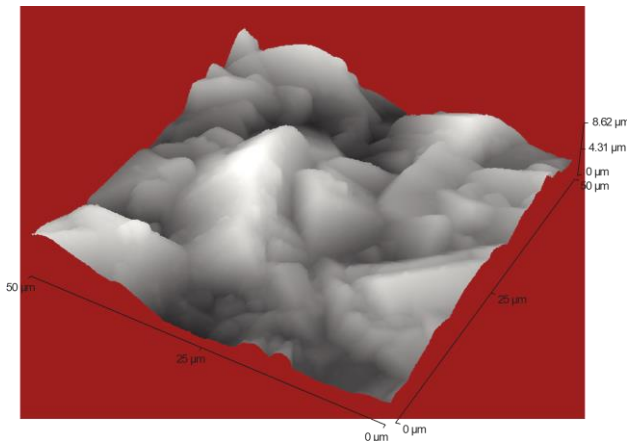
By atomic force microscope, a three-dimensional, digital image of a sample surface can be created. A tip-mounted needle (cantilever) scans the surface of the sample, and measures the deflection by means of a laser beam and a segmented photodiode, generating a three-dimensional image of the surface. The resolution can ideally be few Å, so it is of the order of magnitude of large atoms. This method is also suitable for electrically non-conductive substances and for investigations in liquids.

Specifications:

- "Contact mode" measurements: the repulsive van der Waals forces are measured
- "Non-Contact mode" measurements: the attractive van der Waals forces are measured
- Max. measuring range: 100x100µm
- Max. height difference: 10 µm
- The instrument is equipped with a measuring head that can be used to inspect a liquid-film-covered sample and furthermore allows in-situ observation of layer growth
- The device can be placed directly onto large samples

Sample requirements:

- solid
- flat (if possible)
- large sample size are possible to be investigated
- maximum roughness in the measuring section: 10 µm



AFM image of a TiB₂ layer

Application:

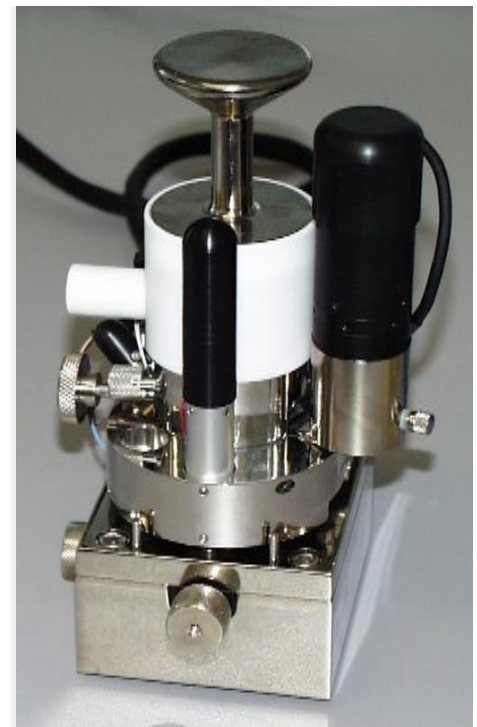
- Three-dimensional representations of surfaces
- Roughness analysis

Specifications:

- Non-destructive measurement of soft surfaces
- Profile analysis
- In situ - observation of processes such as crystallization and layer growth
- On site measurements on large samples

Further equipment:

- Measuring head for measurements in liquids



CEST Kompetenzzentrum für elektrochemische Oberflächentechnologie GmbH

Viktor-Kaplan-Str. 2
2700 Wiener Neustadt
Tel: +43/2622/22266-0
Fax: +43/2622/22266-50
Email: office@cest.at
www.cest.at