

Non contact Profilometer

Category:
C. Particle Characterisation in and ex-situ
Institute: VITO

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Short technology description

The profilometer is based on non contact interferometry. A lens system images the interferogram onto a CCD camera. The interference fringes form bands of contour of equal height on the surface. In combination with a microscope, it allows roughness measurement of surfaces with very high precision. Depending on the measurement technique used (Vertical Scanning Interferometry or Phase-Shift Interferometry) and sample flatness/roughness, a height resolution at the sub-nanometer level can be achieved.

Main Features (Equipment Capabilities):

- Measurement Techniques: optical phase-shifting and white light vertical scanning interferometry
- Measurement Capability: three-dimensional, non-contact, surface profile measurements
- Objectives: 5.0X, 10X, 50X
- Measurement Array: user-selectable, maximum array: 736 x 480
- Vertical Measurement Range: 0.1 nm to 2 mm
- RMS Repeatability: < 0.01 nm
- Vertical Resolution: < 1 Å Ra
- Lateral Spatial Sampling: ~0.11 x 0.06 µm to 3.36 x 3.92 µm
- Field-of-view: ~2.47 x 1.88 mm to 0.08 x 0.06 mm

Typical Samples & Images:



- step measurements of coatings
- 3D measurements of components, particles
- roughness measurements of surfaces
- measurement of volumes e.g. in wear studies

Any further Information: