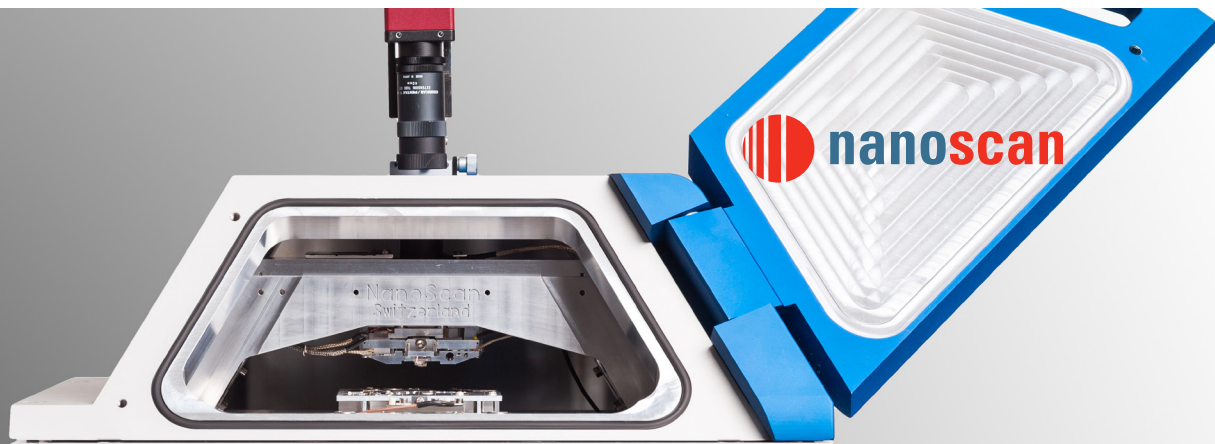


The NanoScan VLS⁸⁰ vacuum SPM



The NanoScan VLS⁸⁰

High-precision vacuum scanning probe microscope

The NanoScan VLS⁸⁰ sets the standard in high vacuum scanning probe microscopy. Automated high-accuracy and calibrated stage motion provides excellent positional reproducibility over the large 80 x 100 mm² sample stage. High-vacuum enhances the cantilever Q-factor for outstanding measurement sensitivity.

Closed-loop scanner electronics, numerous imaging modes, in-plane and out-of-plane magnetic field options all combine to provide an instrument that defines the new state-of-the-art in scanning probe microscopy.

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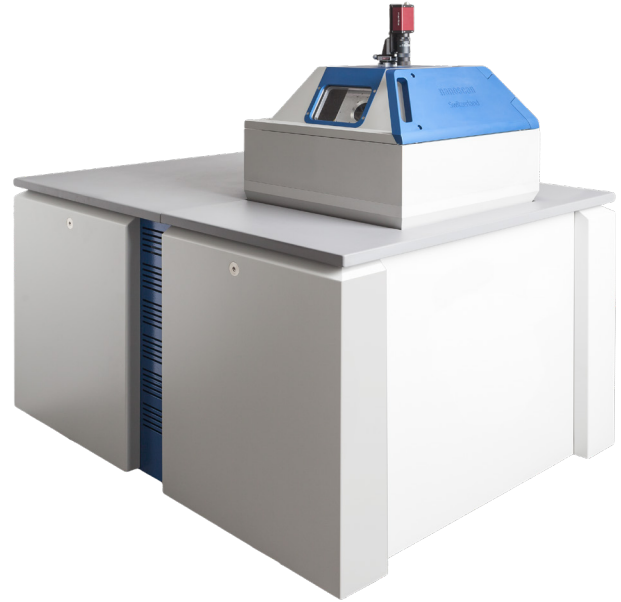
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The NanoScan VLS⁸⁰ high vacuum SPM

High-vacuum enhances the cantilever Q-factor for excellent measurement sensitivity. Moreover, many applications benefit from the removal of the water layer on the sample surface, which is responsible for the formation of a water meniscus around the tip, limiting spatial resolution and sensitivity to the thermal properties of the sample.



Non-contact AFM topography image of the NanoScan logo patterned by ion-sputtering on a Cu/Al/Si multilayer sample. Image size is $32 \times 10 \mu\text{m}^2$.



Key features

- 1 Scan range: $80 \times 80 \times 10 \mu\text{m}^3$ closed loop operation
- 2 Automated coarse positioning stage with 20 nm accuracy
- 3 High vacuum operation ($<5 \times 10^{-6}$ mbar)
- 4 Out-of-plane magnetic field option (550 mT)
- 5 In-plane 360° rotatable magnetic field option (250 mT)
- 6 All standard SPM imaging modes including multifrequency, Double-Pass, MFM, KPFM, Surface Profiler, C-AFM and SThM

Magnetic Force Microscopy

Magnetic imaging is a key strength of the VLS⁸⁰, with 550 mT out-of-plane, 250 mT in-plane 360° rotatable magnetic field options, two independent PLLs and high vacuum operation. An industry best.

MFM image of a BarraCuda Seagate HDD from 2016. Image size $500 \times 250 \text{nm}^2$.

