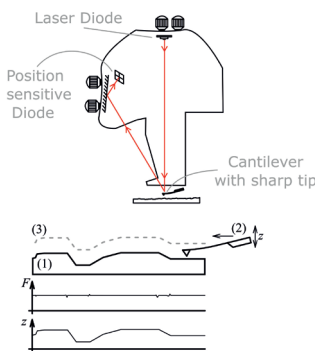


Scanning Probe Microscope

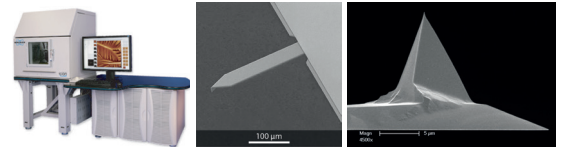
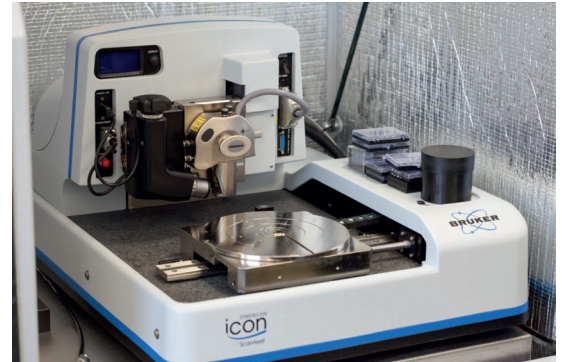
Bruker Dimension Icon

PRINCIPLE

First scanning probe microscope was invented in 1981. Its inventors (G. Binnig and H. Röhrer) have been awarded by the Nobel price in 1986. This microscope uses interaction between the sharp tip and sample surface to measure topography. If the tip is sharp enough - ideally one atom at the very end - it is able to distinguish each atoms on measured surface.



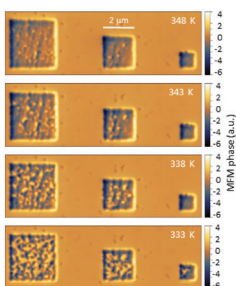
- similar principle like turntable
- able to reach atomic resolution
- tip has to measure in all desired points separately - scanning
- feedback keeps cantilever deflection (force) constant
- measured force combine attractive van der Waals forces and repulsive quantum-mechanical interactions



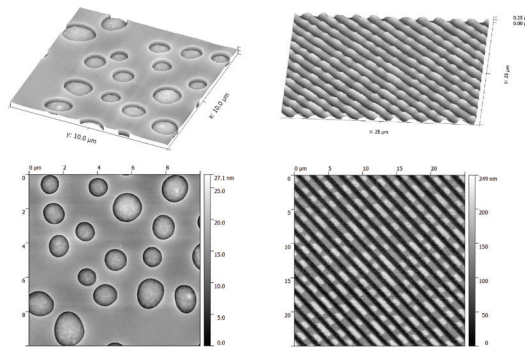
SPECIFICATION

Scanner range	90 μm (lat.) x 10 μm (vert.)
Scanner noise	< 0.15 μm (lateral) < 35 pm (vertical)
Sample size	\varnothing 210 mm x 15 mm (vert.)
Techniques	<ul style="list-style-type: none"> ScanAsyst Mode Non-contact Mode Contact Mode Tapping Mode Phase Imaging Force Spectroscopy Force Modulation PeakForce TUNA, QNM Lateral Force Microscopy Electric Field Microscopy Scanning Tunneling Microscopy Kelvin Probe Force Microscopy Magnetic Force Microscopy ...

RESULTS



MFM of FeRh squares [1]



PS Balls on LDPE

DVD record

PUBLICATIONS

[1] Schánilec, V.; Horký, M. and col. Magnetic phase transition asymmetry dependent on the spatial confinement of FeRh patterns

MORE INFO

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