nanoScience Instruments

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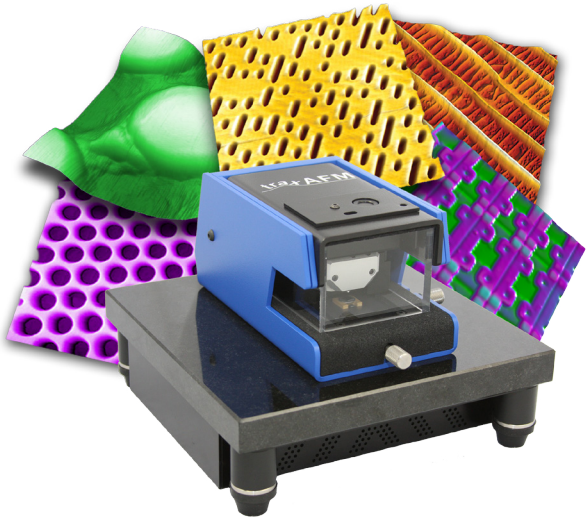
Product Synopsis
Scanning Probe Microscopy

The traxAFM

An Atomic Force Microscope for Hands-on STEM and Nanotechnology Education



Features and Benefits

- Ideal introduction to AFM
- Robust all-in-one design
- Easy to use
- Multiple imaging modes
  - Contact
  - Dynamic
  - Phase
  - Advanced modes
- Integrated controller, airflow shielding, and vibration isolation
- Simple tip and sample exchange
- User-friendly software

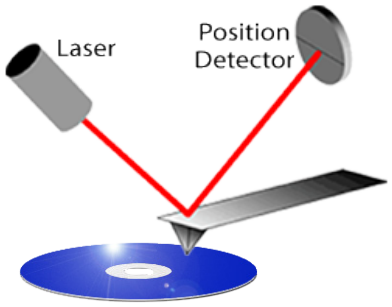
The traxAFM Atomic Force Microscope

The traxAFM from Nanoscience Instruments is the ideal atomic force microscope for education. A robust, all-in-one design allows the AFM to go into any classroom for easy access. Students quickly experience the micron and nanometer scale world.

Multiple imaging modes are standard on the traxAFM. Samples can be imaged in contact or dynamic (Tapping) mode to measure different types of materials.

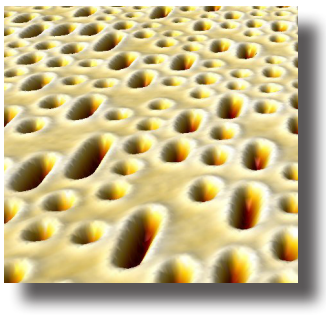
"In lecture, you can learn **about** things. In lab, you can learn how to **do** things. Engineers and scientists learn by **doing**."

Professor J. Brenner, Florida Institute of Technology



Basic schematic (above) for AFM, showing a tip scanning a bluray disk.

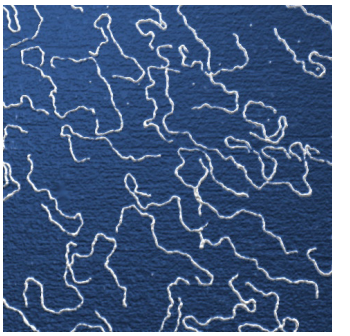
(Right) AFM image in 3D of a disk. Pits are bluray data.



The traxAFM for Nanotechnology Education and Outreach

An AFM for Your nanoScience Classroom

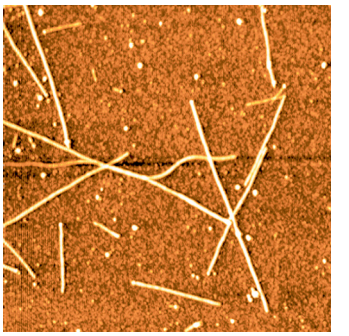
The traxAFM is ideal for your classroom setting. The system has a robust design with simple connection to a PC. No other setup is required. The traxAFM is vibrationally stable and does not need additional infrastructure. The user interface is student-friendly for ease of use in the classroom laboratory.



DNA on mica in air
Scan size: 2 µm

Visualize Biological and Nanoscale Materials

Students can make their own samples and then image them with the traxAFM in the classroom laboratory. DNA or carbon nanotubes can be imaged in contact or dynamic mode on the micron scale.

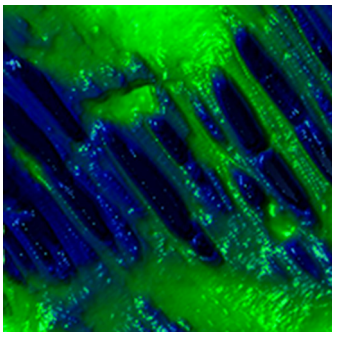


Multiwall carbon nanotubes
Scan size: 3 µm

Measure Surface Structures and Properties

The surface structure and mechanical properties of polymers like polytetrafluoroethylene (PTFE) can be characterized with the traxAFM. Increases in surface roughness and loss of modulus can be seen with the AFM. Deformation of nodular structures can be imaged as the material is mechanically stressed by stretching the sample.

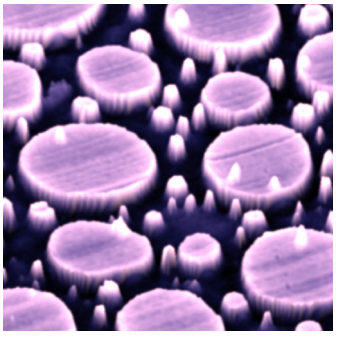
Phase imaging of block copolymers illustrates material differences that can be qualitatively measured with the traxAFM.



Expanded PTFE
AFM image
rendered in 3D
Scan size: 10 µm

Teach Surface Chemistry and Physics

The traxAFM engages students learning about kinectics and molecular interactions using force spectroscopy modes.



PMMA and SBR
copolymer blend
AFM image in 3D
Scan size: 20 µm

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Nanoscience Instruments provides surface science, microscopy and nanotechnology solutions to customers in academia, research, and industrial markets. Our customers benefit from our products' ease of use, user-friendly interface, and low cost of ownership. Our team of scientists and engineers have backgrounds in chemistry, biochemistry, materials science, physics, and engineering in a diverse combination to provide support and service to help our customers find the solutions they need.

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