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Scanning Tunneling Microscope (STM)

A scanning tunneling microscope is a powerful tool for obtaining micrographs from conductive and semi conductive materials. The imaging technique has recently been improved for microscopy of nanostructured biomaterials on highly ordered atomic surfaces.

Features:

- Automatic mechanism to approach sample
- Automatic sample and camera moving by software
- Engraving of nanometer-scale surface by lithography
- Ability of tilting (adjusting X, Y axis in sample)
- Ability to view online height and current during scanning
- Ability to change the parameters of the PID, current and voltage during imaging
- Provide 2D and 3D images at nanometer-scale simultaneously
- Ability to measure the size of material on the image
- Hardware zoom capability for desired more detailed image
- Software zoom capability for desired area
- Ability to customize the color of image file specification
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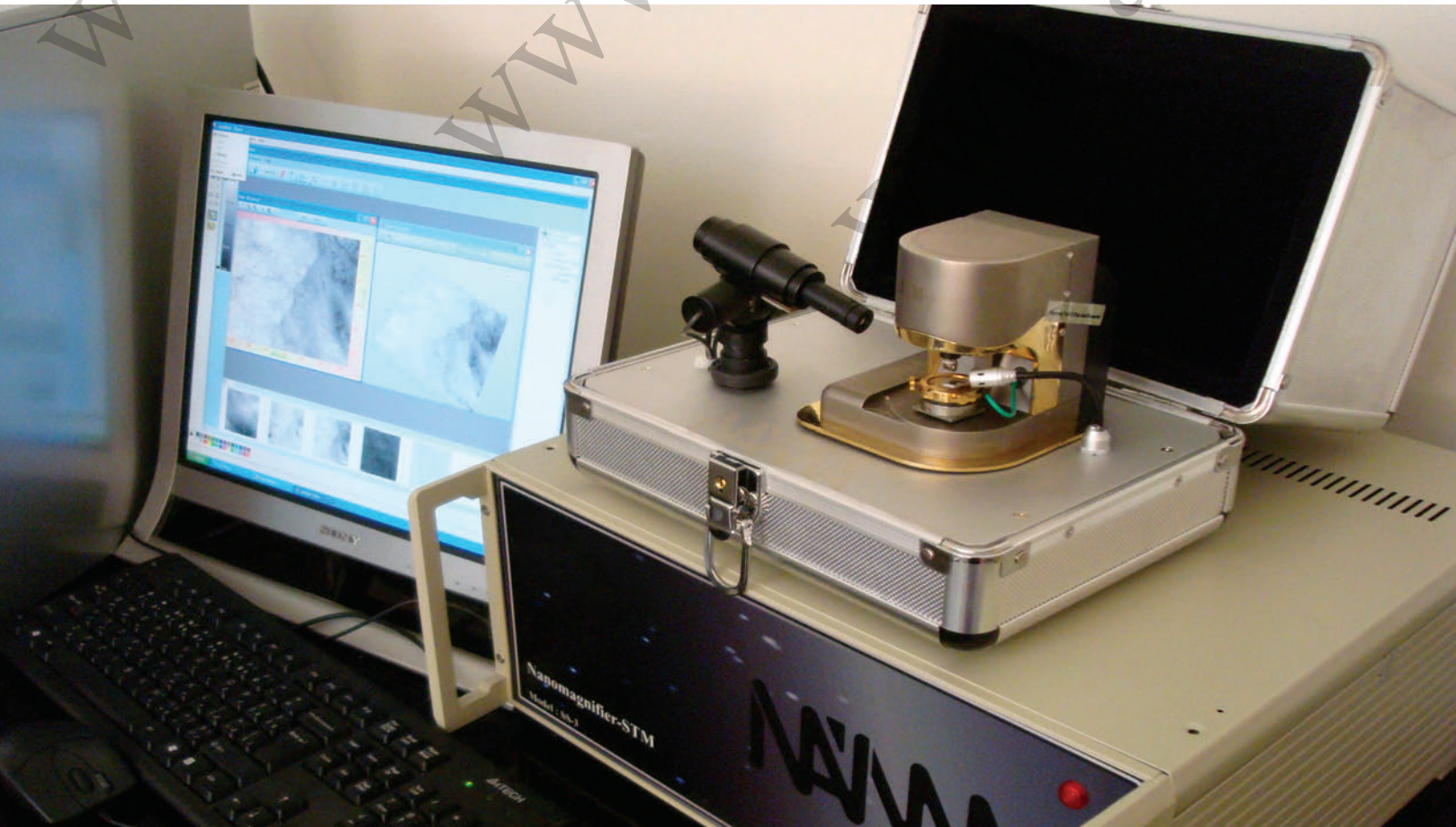
Performance

- Expandable to suite user needs
- Designed for quick and reliable measurements by experts and novices alike
- Unique price/performance ratio for research and teaching
- Mechanical Stability
- Thermal drift balance
- Low Electronic noise
- Ergonomic Design
- Windows-Based Powerful Software
- Easy Maintenance



Features:

- Capability to change size, angle and location of image by software without handling the sample and ability of automatic offset calculation
- Imaging capability in both constant height and constant current modes with minimum electronic noise
- Ability to display multiple clear and accurate 2D and 3D image files in order to compare them

STM Software	
Various charts of the scan data can be displayed simultaneously	3D view Image, Line graph, color map
Various charts of the spectroscopy (I-V, I-Z)data offline	Line Graph, first and second derivative , …
Noise Reduction and Feature Enhancement	Data filtering in three levels
Lithography Pattern	16 Color BMP and .dxf files
View all maximum scan range and change parameter	
Data Export	TXT,BMP,JPEG,GIF, …
Automatic image transfer to offline processing software Analyzer	

Electronics	
Electronics Size	55×55×18 cm
Power Supply	220 V~/ 50 Hz/ 1A
Computer Interface	16 bit Data Acquisition Hardware
Scan Speed	Up to 100 Line/s at 128 data point / line
Scan Image Rotation	0 - 360°
Sample Tilt	Automatically by software
Spectroscopy Modes	Single point measurement
Spectroscopy Data Point	Up to 2000

STM MEASUREMENT	
Maximum Scan Range	8-16 µm
Maximum Z-Range	3µm
Drive Resolution Z	0.045 nm
Drive Resolution X, Y	0.12 nm
Current Set Point	0.02 -100 nA in 3 pA steps
Imaging Modes	Constant current(Topography), Constant Height (Current)
Spectroscopy Modes	Current-Voltage, Current-Distance
Lithography Modes	Bitmap, Vector and Manual
Tip Voltage	±10 V in 0.3 mV steps
Sample Approach	Fully automatic and manual control
Sample Size	Max 20 mm diameter