

AFM - 3450

Atomic Force Microscope



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

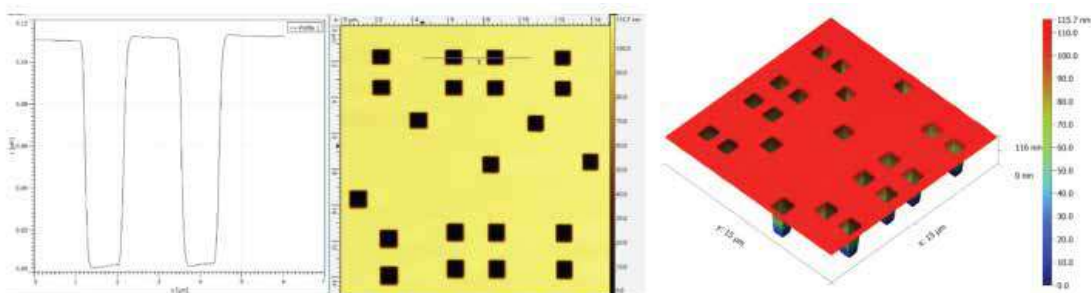
An ISO 9001 Certified Company

www.analyticalgroup.net

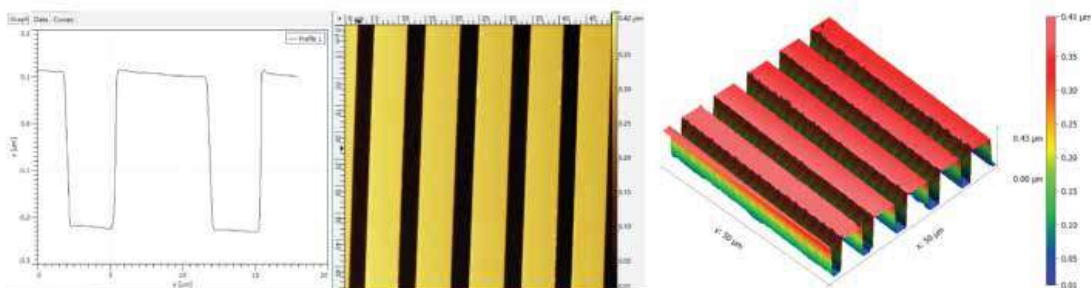
▶▶ Product Details

- The first commercial atomic force microscope in that keeps the sample stationary and the probe moves and scans;
- The sample size and weight are almost unlimited, especially suitable for the detection of very large samples;
- The sample stage is highly expandable, which is very convenient for multi-instrument combination to realize in-situ detection;
- Electric control of sample moving table and lifting table, which can be programmed with multi-point position to realize fast automatic detection;
- Gantry scanning head design, marble base, vacuum adsorption and magnetic adsorption stage;
- The motor automatically controls the intelligent needle feeding method of the piezoelectric ceramic automatic detection to protect the probe and the sample;
- High magnification auxiliary optical microscope positioning, real-time observation and positioning of probe and sample scanning area;
- Integrated scanner nonlinear correction user editor, nanometer characterization and measurement accuracy better than 98%.

▶▶ Application Case



2D raster/scan range $15\mu\text{m} \times 15\mu\text{m}$



1D raster/scan range $50\mu\text{m} \times 50\mu\text{m}$

▶▶ **Product Detail**



Operation Note

Lift the spring on the probe holder with your left hand. Then carefully insert the probe into the groove of the probe holder with the right hand, and release the probe holder with the left hand, so that the spring plate slowly clamps the probe.



Operation Note

After the probe is installed, insert the probe holder with the probe up and over the scan head. There are 3 small jacks (or 2) on the back of the probe holder. There are 3 small pins (or 2) at the bottom of the corresponding scan head.

Four-quadrant Y-position knob

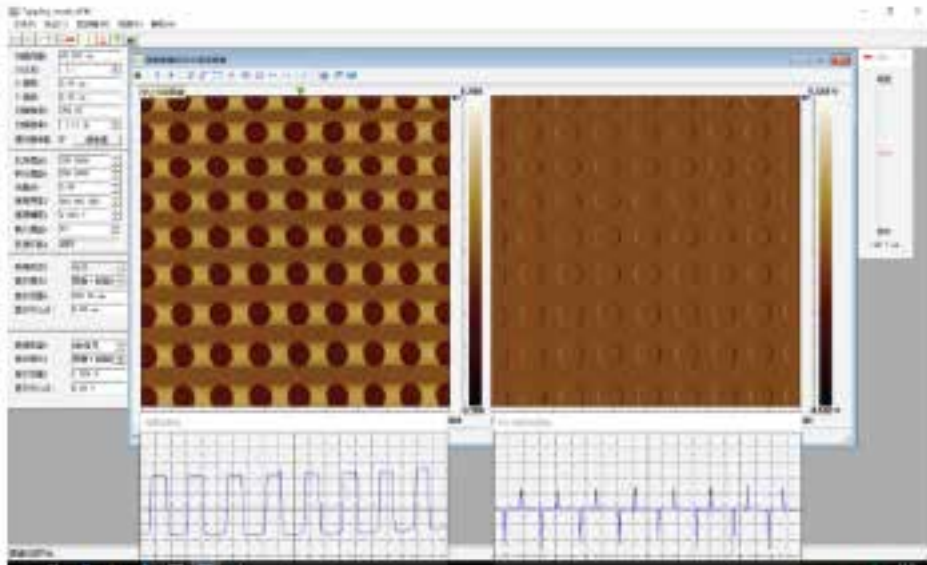
Laser X-direction position knob



Four-quadrant X-position knob

Laser Y-position knob

▶▶ Accessories

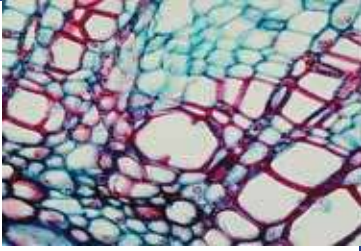
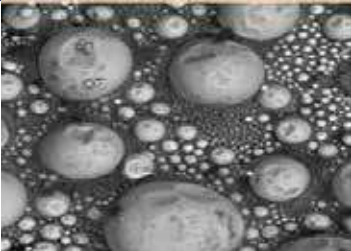



►► Specification

	AFM-3450	AFM-3450 PLUS
Work Mode	Contact Mode	Contact Mode
	Tapping Mode	Tapping Mode
	【Optional】 Friction Mode	【Optional】 Friction Mode
	Phase Mode	Phase Mode
	Magnetic Mode	Magnetic Mode
	Electrostatic Mode	Electrostatic Mode
Current Spectrum Curve	RMS-Z Curve F-Z Force Curve	RMS-Z Curve F-Z Force Curve
XY Scan Mode	Probe Driven Scanning, Piezo Tube Scanner	Sample Driven Scanning, Closed Loop Piezoelectric Shift Scanning Stage
XY Scan Range	70×70um	Closed Loop 100×100um
XY Scan Resolution	0.2nm	Closed Loop 0.5nm
Z Scan Mode		Probe Driven Scanning
Z Scan Range	5um	5um
Z Scan Resolution	0.05nm	0.05nm
Scan Speed	0.6Hz~30Hz	0.6Hz~30Hz
Scan Angle	0~360°	0~360°
Sample Weight	≤15Kg	≤0.5Kg
Stage Size	Dia.100mm	Dia.100mm
	【Optional】 Dia.200mm Dia.300mm	【Optional】 Dia.200mm Dia.300mm
Stage XY Moving	100x100mm, Resolution 1um	100x100mm, Resolution 1um
	【Optional】 200x200mm 300x300mm	【Optional】 200x200mm 300x300mm
Stage Z Moving	15mm, Resolution 10nm	15mm, Resolution 10nm
	【Optional】 20mm 25mm	【Optional】 20mm 25mm
Shock-Absorbing Design	Spring Suspension	Spring Suspension
	【Optional】 Active Shock Absorber	【Optional】 Active Shock Absorber
Optical System	Objective 5x	Objective 5x
	5.0M Digital Camera	5.0M Digital Camera
	【Optional】 Objective 10x	【Optional】 Objective 10x
	Objective 20x	Objective 20x
Output	USB2.0/3.0	USB2.0/3.0
Software	Win XP/7/8/10	Win XP/7/8/10
Main Body	Gantry Scan Head, Marble Base	Gantry Scan Head, Marble Base

►► Specification

Scanning Probe Microscope (SPM) Compared to Other Microscopies

	Optical Microscope	Electron Microscope	Scanning Probe Microscope
Max Resolution	0.18um	0.00011um	0.00008um
Remark	Oil immersion 1500x	Imaging diamond carbon atoms	Imaging high-order graphitic carbon atoms
			

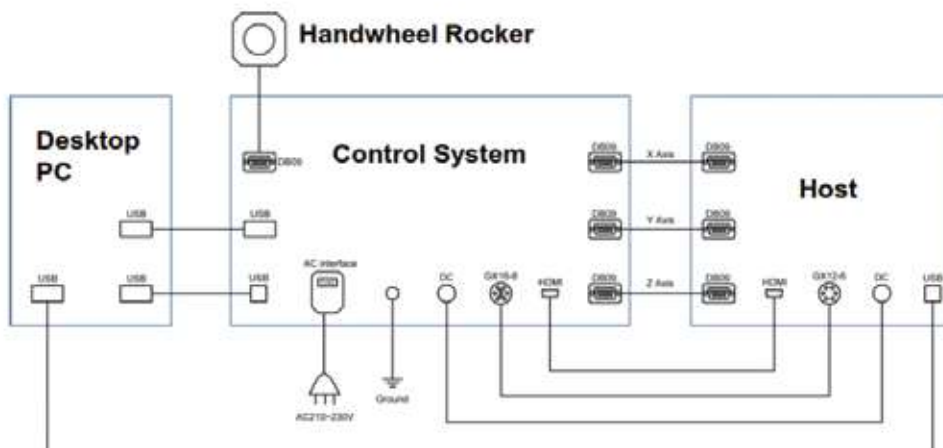
Depth of Field, Sample Preparation of Different Microscopes

	Resolution	Working Condition	Working Temperature	Damge to Sample	Inspection Depth
SPM	Atom Level 0.1nm	Normal, Liquid, Vacuum	Room or Low Temperature	None	1~2 Atom Level
TEM	Point 0.3~0.5nm Lattice 0.1~0.2nm	High Vacuum	Room Temperature	Small	Usually <100nm
SEM	6-10nm	High Vacuum	Room Temperature	Small	10mm @10x 1um @10000x
FIM	Atom Level 0.1nm	Super High Vacuum	30~80K	Damge	Atom Thickness

Force & Working Mode of Atomic Force Microscope (AFM)

Probe-Sample Interaction	Measure Signal	Information
Force	Electrostatic Force	Shape
Tunnel Current	Current	Shape, Conductivity
Magnetic Force	Phase	Magnetic Structure
Electrostatic Force	Phase	charge distribution

►► System Diagram



HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

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Our Products & Technologies



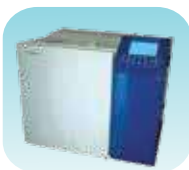
UV/VIS
Spectro 2080+
Double Beam



Infra FTIR



Optima Gas
Chromatograph
3007



Optima Gas
Chromatograph
2979 Plus



Flash
Chromatograph



Atomic Absorption
Spectrophotometer



Liquid Particle
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



HEMA 2062
Hematology
Analyzer



Micro Plate
Reader/Washer



URINOVA 2800
Urine Analyzer



Total Organic
Carbon 3800



Fully Automated
CLIA



NOVA-2100
Chemistry Analyzer



PCR/Gradient PCR/
RTPCR



TOC
Analyzer



Laser Particle
Size Analyzer



Ion Chromatograph



Water purification
system

Regulatory compliances



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2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

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Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

W: www.analyticalgroup.net
www.hplctechnologies.com
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