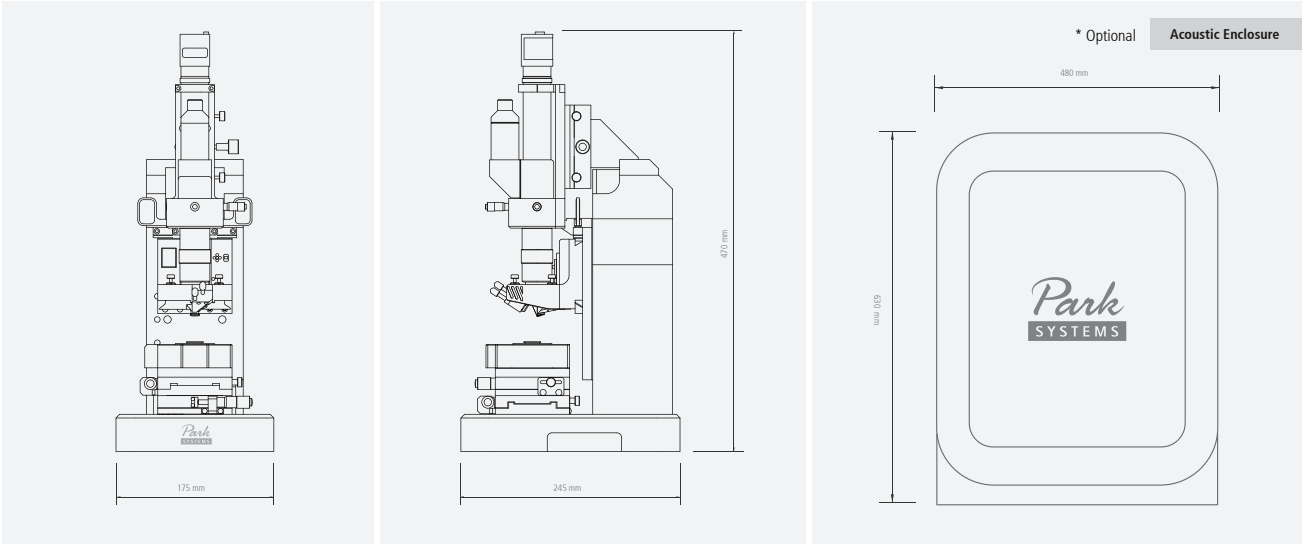


Scanner	Z scanner	XY scanner	Stage		
	Flexure guided high-force scanner Scan range: 12 µm (optional 25 µm)	Single module flexure XY-scanner with closed-loop control Scan range: 50 µm × 50 µm (optional 10 µm × 10 µm or 100 µm × 100 µm)	XY stage travel range: 13 mm x 13 mm Z stage travel range: 29.5 mm		
Vision		Sample Mount	Electronics	Signal processing	Integrated functions
Direct on-axis vision of sample surface and cantilever Field-of-view: 480 µm × 360 µm (with 10x objective lens) CCD: 1.2 M pixel (default), 5 M pixel (optional); Field-of-view: 840 µm x 630 µm)		Sample size: Up to 100 mm Thickness: Up to 20 mm		ADC: 20 channels 16-bit ADCs for X, Y, and Z scanner position sensor DAC: 21 channels 16-bit DACs for X, Y, and Z scanner positioning	Active Q control (optional) Cantilever spring constant calibration (optional) Signal Access Module (optional)
Options/Modes	Topography Imaging	Magnetic Properties	Dielectric/Piezoelectric Properties	Electrical Properties	Mechanical Properties
	<ul style="list-style-type: none">Non-ContactContactTapping	<ul style="list-style-type: none">Magnetic Force Microscopy (MFM)Tunable Magnetic Field MFM	<ul style="list-style-type: none">Piezoresponse Force Microscopy (PFM)PFM with High VoltagePiezoresponse Spectroscopy	<ul style="list-style-type: none">Conductive AFM (C-AFM)I/V SpectroscopyKelvin Probe Force Microscopy (KPFM)KPFM with High VoltageScanning Capacitance Microscopy (SCM)Scanning Spreading-Resistance Microscopy (SSRM)Scanning Tunneling Microscopy (STM)Photo Current Mapping (PCM)Electrostatic Force Microscopy (EFM)	<ul style="list-style-type: none">Force Modulation Microscopy (FMM)NanoindentationNanolithographyNanolithography with High VoltageNanomaniipulationLateral Force Microscopy (LFM)Force Distance (F/d) SpectroscopyForce Volume Imaging
	Thermal Properties	Chemical Properties			
	<ul style="list-style-type: none">Scanning Thermal Microscopy (SThM)	<ul style="list-style-type: none">Chemical Force Microscopy with Functionalized TipEC-AFM			
Software	Park SmartScan™	XEI	Accessories		
	<ul style="list-style-type: none">AFM system control and data acquisition softwareAuto mode for quick setup and easy imagingManual mode for advanced use and finer scan control	<ul style="list-style-type: none">AFM data analysis softwareStand-alone design—can install and analyze data away from AFMCapable of producing 3D renders of acquired data	<ul style="list-style-type: none">Electrochemistry CellUniversal Liquid Cell with Temperature ControlTemperature Controlled StagesGlove BoxMagnetic Field Generator		



Note: All specifications are subject to change without notice. Please visit our website for the most up-to-date specifications.

Committed to Contribute to Impactful Science and Technological Development

More than 25 years ago, the foundations of Park Systems were laid at Stanford University, where Park Systems’ founder, Dr. Sang-il Park, worked in Prof. Calvin Quate’s group; the group that invented the world’s first AFM. After years of development, Dr. Park introduced the first commercial AFM to the world, thus starting the successful path of Park Systems. With good foresight, a superior product and keen business acumen, Park has positioned themselves as the dominant industry leader in AFM Nanoscale Metrology and in 2020, Park Systems will roll out their most exciting line of AFM products in their history.

Park Systems continuously strives to live up to the innovative spirit of its origin. Throughout its long journey, the company has been committed to provide advanced, accurate, and reliable AFM instrumentation, with revolutionary features such as True Non-Contact™ mode and PinPoint™ Nanomechanical AFM. Cutting-edge AFM automation features, like SmartScan™, make Park Systems AFMs not only extremely easy to use, but they also enable users to obtain outstanding results faster, more efficiently, and more accurately.

Park Systems
Enabling Nanoscale Advances

Park Systems Corporate Headquarters: +82-31-546-6800
Park Systems Europe: +49 (0) 621-490896-50
Park Systems Taiwan: +886-3-5601189

Park Systems Americas: +1-408-986-1110
Park Systems Japan: +81-3-3219-1001

Park Systems China: +86-10-6254-4360
Park Systems SE Asia: +65-66347470

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SYSTEMS
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ATOMIC FORCE MICROSCOPE



Park XE7

The most affordable research grade AFM with flexible sample handling





Park XE7

The economical choice for innovative research

Park XE7 has all the state-of-the-art technology you have come to expect from Park Systems, at a price your lab can afford. Designed with the same attention to detail as our more advanced models, XE7 allows you to do your research on time and within budget.

Accurate XY Scan by Crosstalk Elimination

- Two independent, closed-loop XY and Z flexure scanners
- Flat and orthogonal XY scan with low residual bow
- Accurate height measurements without any need for software processing

The Most Extensible AFM Solution

- The most comprehensive range of SPM modes
- The largest number of sample measurement options
- The best option compatibility and upgradeability in the industry

User Experience-Driven Software and Hardware Features

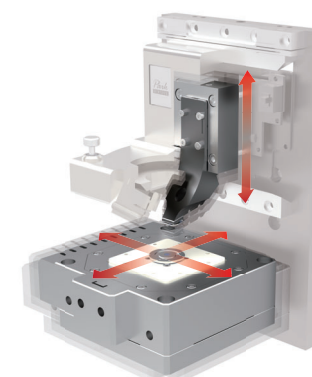
- Open side access for easy sample or tip exchange
- Easy, intuitive laser alignment with pre-aligned tip mount
- Park SmartScan™ - AFM operating software versatile enough to empower both novices and power users alike toward great nanoscale research

Park XE7

AFM Technology

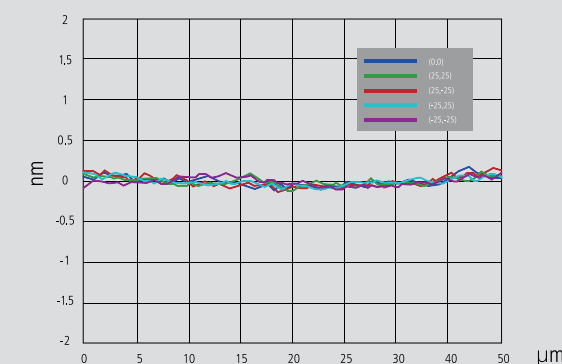
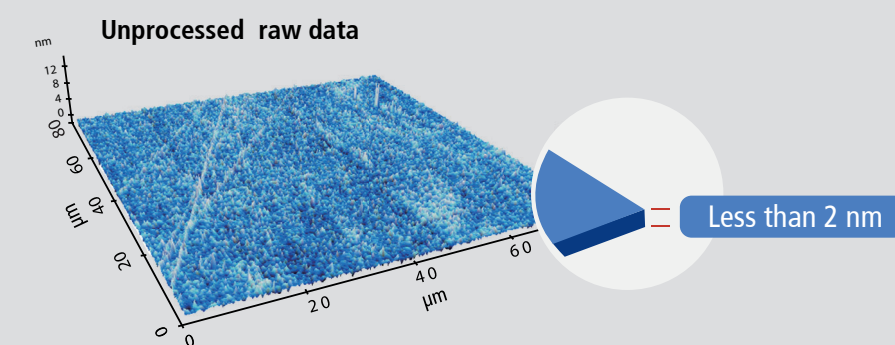
Flat Orthogonal XY Scanning without Scanner Bow

Park's Crosstalk Elimination scanner structure removes scanner bow, allowing flat orthogonal XY scanning regardless of scan location, scan rate, and scan size. It shows no background curvature even on flattest samples, such as an optical flat, and with various scan offsets. This provides you with a very accurate height measurement and precision nanometrology for the most challenging problems in research and engineering.



Decoupled XY and Z Scanners

The fundamental difference between Park and its closest competitor is in the scanner architecture. Park's unique flexure based independent XY scanner and Z scanner design allows unmatched data accuracy in nano resolution in the industry.



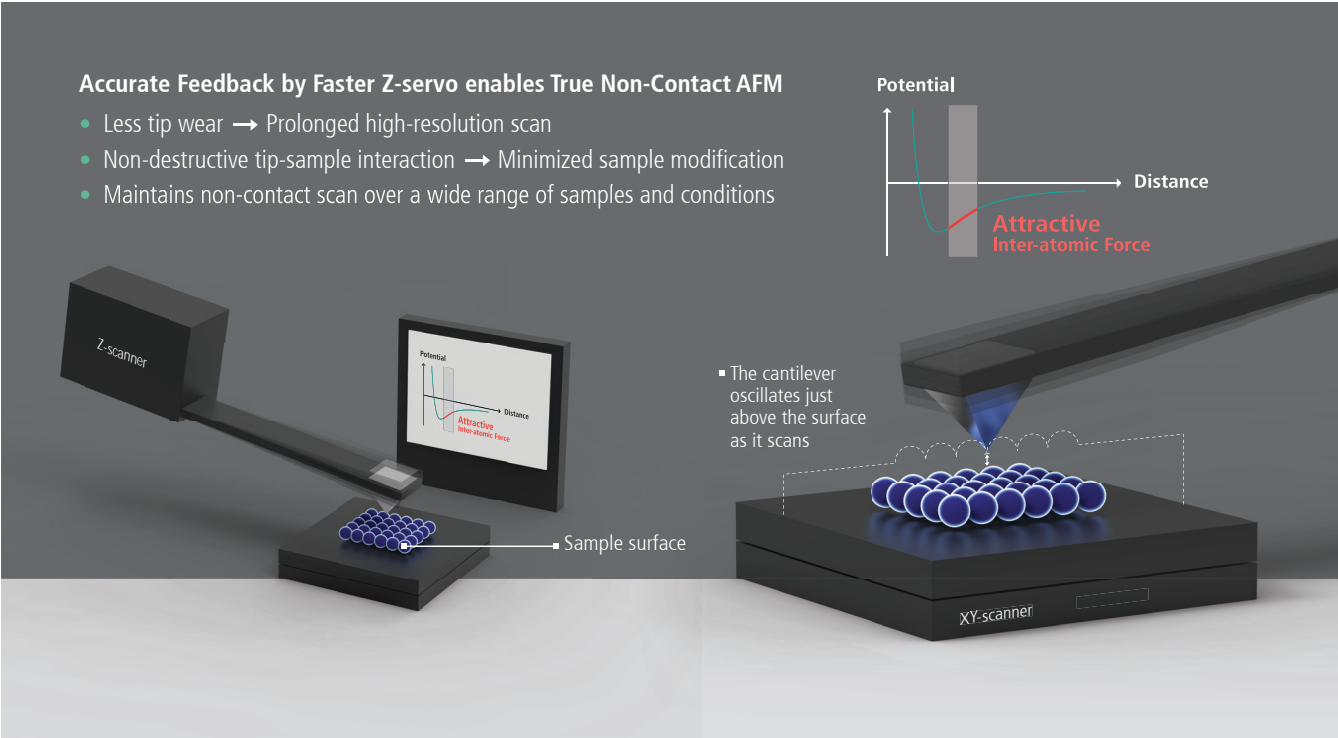
Accurate Surface Measurement

"Flat" sample surface as it is!

- Low residual bow
- No need for software processing
- Accurate results independent of scan location

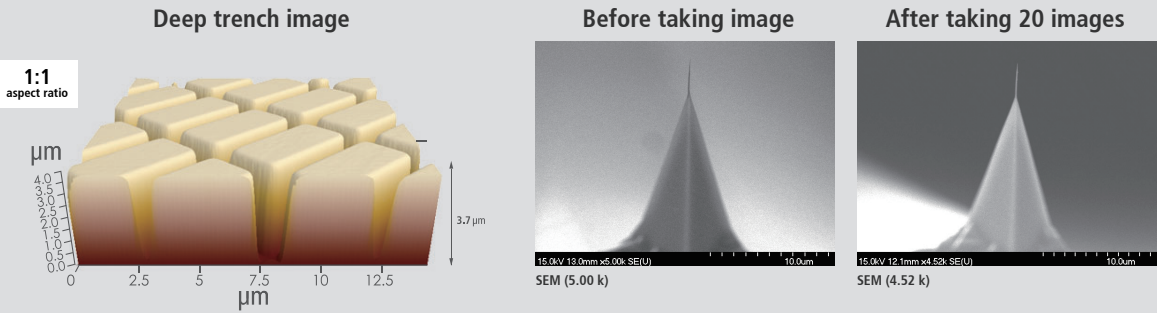
True Non-Contact™ Mode

True Non-Contact™ Mode is a scan mode unique to Park AFM systems that produces high resolution and accurate data by preventing destructive tip-sample interaction during a scan.



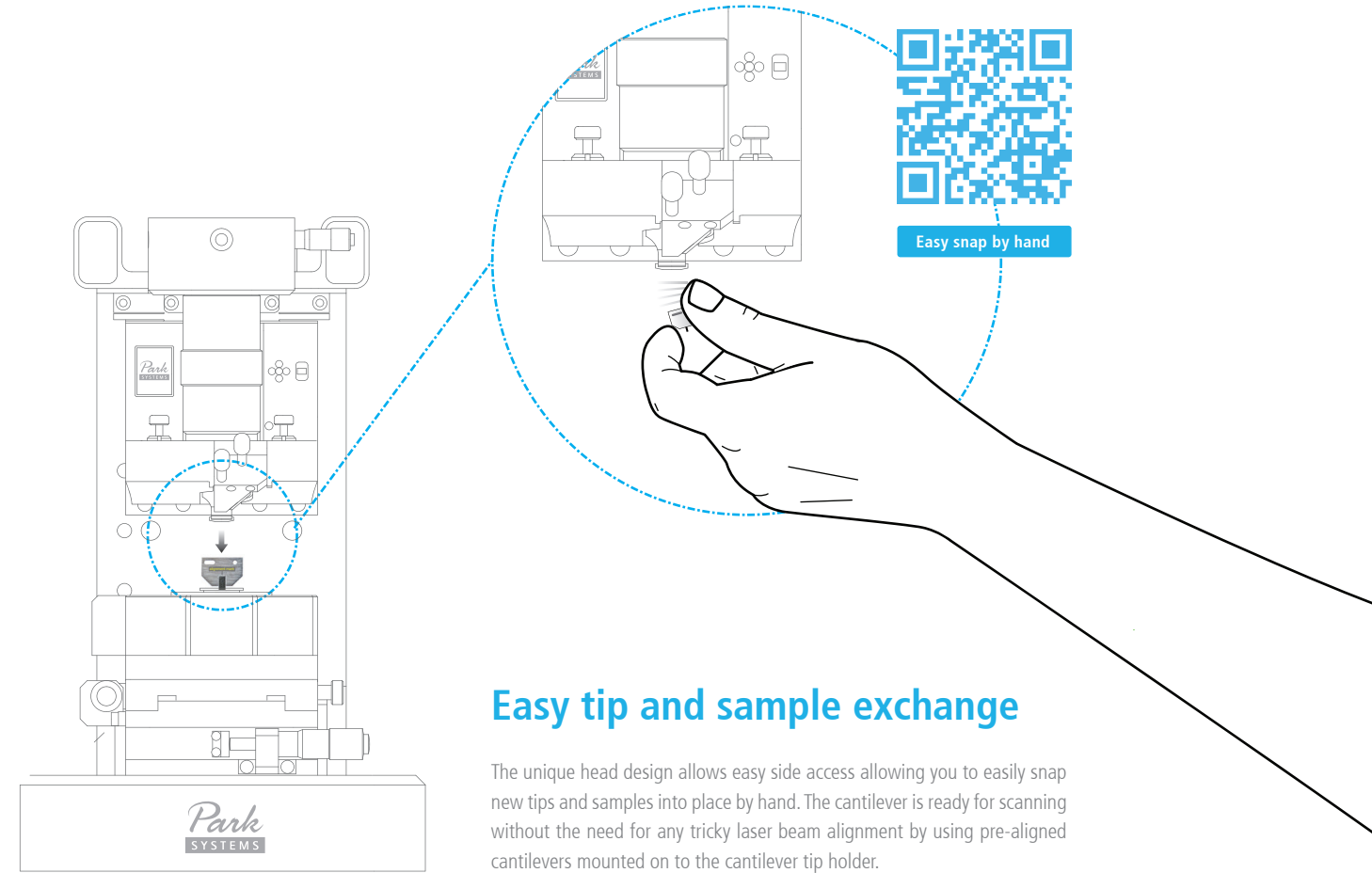
True Non-Contact™ Mode Preserves Tip Sharpness

AFM tips are so brittle that touching a sample will instantly reduce the resolution and quality of the image they produce. For soft and delicate samples, the tip will also damage the sample and result in inaccurate sample height measurements, something that can cost you valuable time and money. True Non-Contact™ mode, a scan mode unique to Park AFMs, consistently produces high resolution and accurate data while maintaining the integrity of the sample.



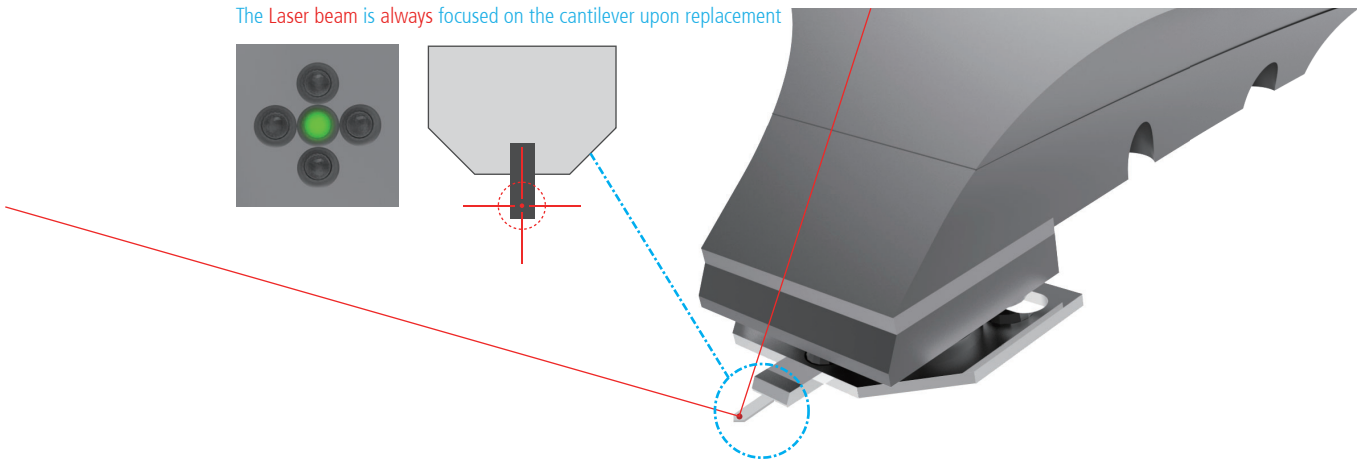
Park XE7

Why the world’s most accurate small sample AFM is also the easiest to use



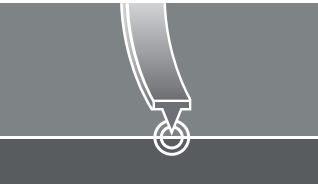
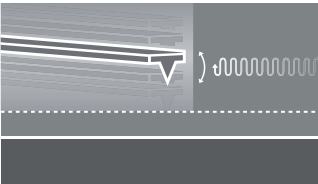
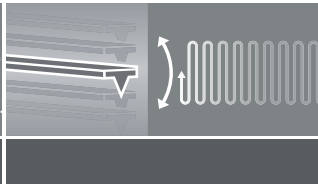
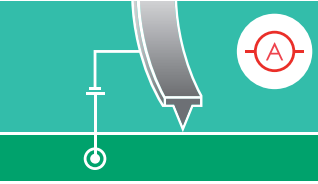
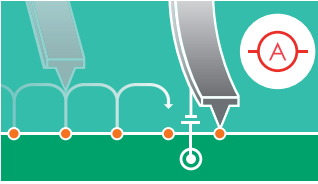
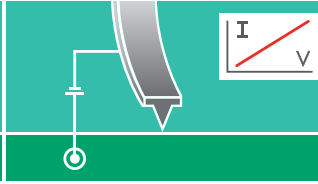

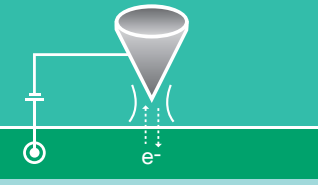
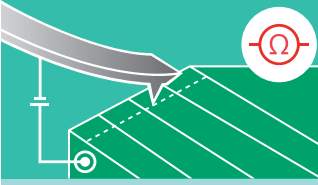

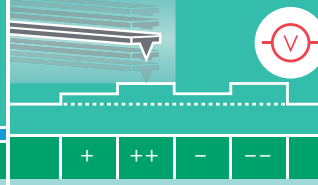
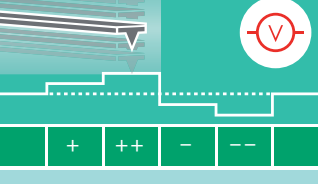
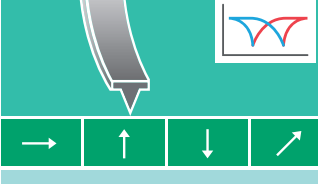
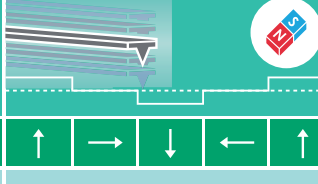



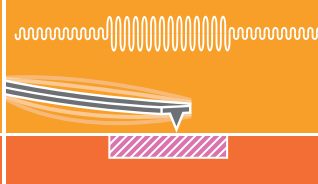
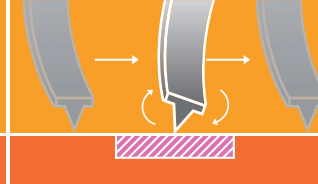



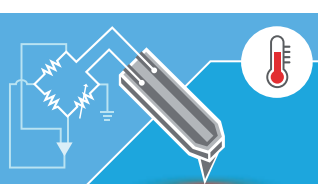
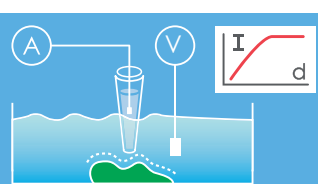

Easy, intuitive laser beam alignment

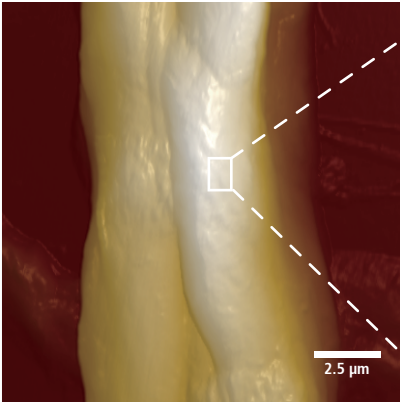
With our advanced pre-aligned cantilever holder, the **laser beam** is focused on the cantilever upon placement. Furthermore, the natural on-axis, top-down view allows you to easily find the laser spot. Since the laser beam falls vertically onto the cantilever, you can intuitively move the laser spot along the X- and Y-axis by rotating two positioning knobs. As a result, you can easily find the laser and position it onto the position-sensitive photodiode using our operation software’s beam alignment user interface. From there, all you will need is a minor adjustment to maximize the signal prior to starting data acquisition.



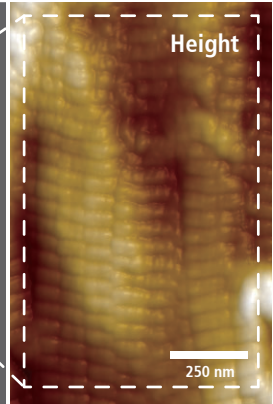
Park Atomic Force Microscopy Modes

Get the data you need with Park's selection of scanning modes

TOPOGRAPHY IMAGING	 Contact	 Non-Contact	 Tapping	
	 Conductive AFM	 PinPoint Conductive AFM	 IV Spectroscopy	 Photocurrent Mapping
	 Scanning Tunneling Microscopy	 Scanning Spreading Resistance Microscopy	 Scanning Capacitance Microscopy	 Electrostatic Force Microscopy
	 Kelvin Probe Force Microscopy	 Piezoresponse Force Microscopy	 Magnetic Force Microscopy	 Tunable Magnetic Field MFM
ELECTRICAL / MAGNETIC PROPERTIES	 Force Distance Spectroscopy	 PinPoint Nanomechanical	 Force Modulation Microscopy	 Lateral Force Microscopy
	 Nanoindentation	 Nanolithography	 Nanomanipulation	
	 Scanning Thermal Microscopy	 Scanning Ion Conductance Microscopy	 NOT AVAILABLE FOR THIS PRODUCT	
NANOMECHANICAL PROPERTIES				
OTHER PROPERTIES				



2.5 μm



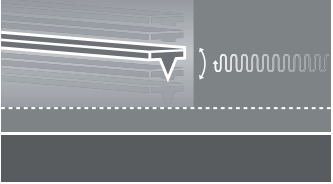
Height

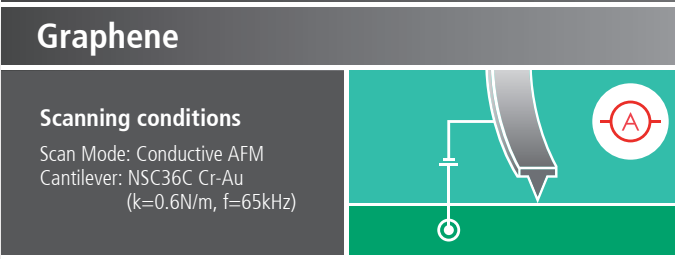
250 nm

Animal Hair with Skin

Scanning conditions

Scan Mode: Non-Contact
Cantilever: AR5T-NCHR
($k=42\text{N/m}$, $f=330\text{kHz}$)



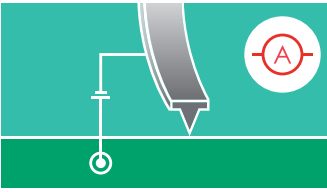


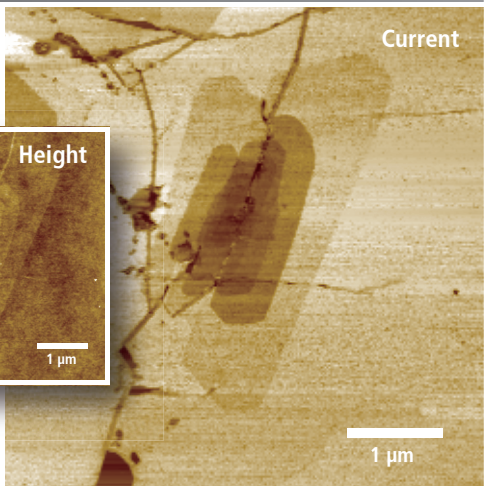
2.5 μm

Graphene

Scanning conditions

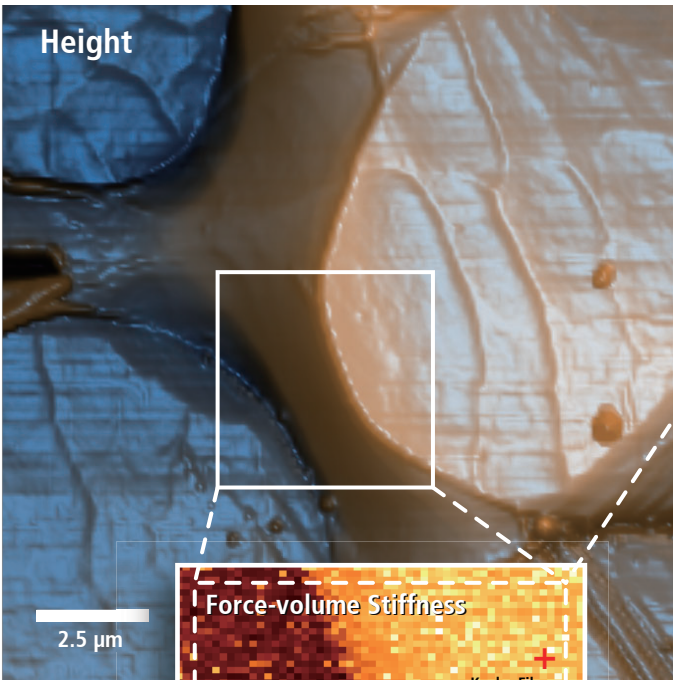
Scan Mode: Conductive AFM
Cantilever: NSC36C Cr-Au
($k=0.6\text{N/m}$, $f=65\text{kHz}$)



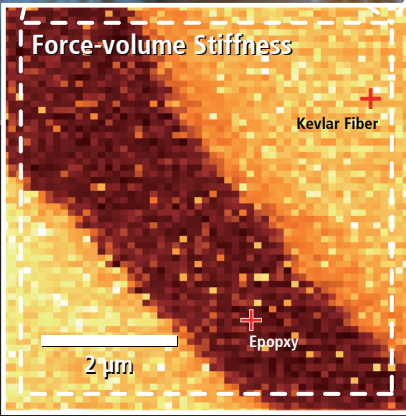


Current

1 μm



2.5 μm



Force-volume Stiffness

Kevlar Fiber


Epoxy

2 μm

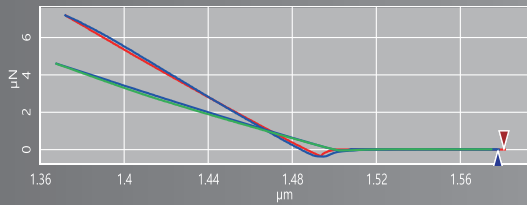
Kevlar Fiber

Scanning conditions

Scan Mode: Non-Contact, F/d Mapping
Cantilever: Diamond probe
($k=151\text{N/m}$, $f=50\text{kHz}$)



F/d spectroscopy



μN

μm

F/d mapping Conditions

- Mapping points: 64×64
- F/d curve pixel: 1024
- Force limit: 6V
- Approach speed: $1\mu\text{m/sec}$
- Retract speed: $1\mu\text{m/sec}$

Legend: Kevlar fiber (red), Epoxy (green)