

## Multifunctional Probe Microscopy Platform

# AFM100 Series

Innovation, Correlation, Reliability, Performance

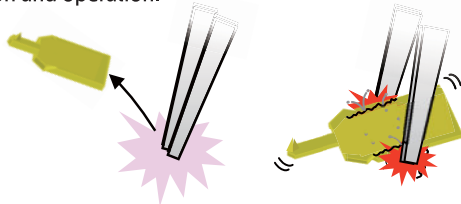
The AFM100 Series is Hitachi's next generation probe microscopy platform. The AFM100 Plus and AFM100 systems that make up this series have been designed to expand the capabilities and performance of atomic force microscopy, while providing an easy-to-use platform suitable for users of all experience levels. Experience the finest reliability and innovation with the AFM100 Series.



### Pre-mounted cantilevers make replacement EASY Options ▶▶ Innovation & Reliability

#### Challenges for handling conventional cantilevers

- It is difficult to grasp a cantilever with traditional forceps due to its small size.
- Cantilevers are very easily damaged with a slight amount of pressure.
- Variation in mounting position can cause issues with orientation and operation.



Simple & Streamlined

#### Pre-mounted cantilevers streamline the process for higher efficiency and consistency

- Simple one-step tip-mounting procedure
- Easy to handle without risk of physical damage
- Guaranteed consistency of tip orientation
- Reliable mechanical and electrical properties



### Automated measurement & analysis with one-click autopilot function ▶▶ High-Throughput Performance

#### Accomplish measurements and analysis with one click!

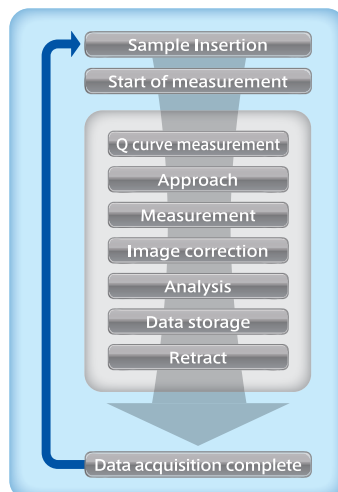
- Automatic multipoint measurement within a sample
- Continuous measurement of multiple samples

#### ▶ Overall throughput improvement

#### Automatic adjustments with RealTune® II

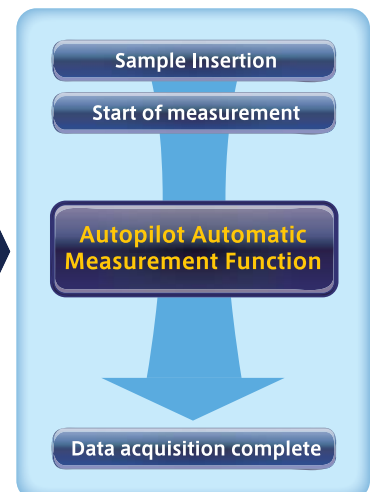
RealTune® II: A function for automated parameter adjustments

- ▶ Automated optimization of imaging conditions
- SIS: Sampling Intelligent Scan
- ▶ Excellent tip-sample tracking even with high aspect ratio surface features
- ▶ Reduced probe wear and longer life



[ Conventional measurement procedure ]

Vs. 1-Click and You're Done



[ AutoPilot automatic measurement ]

# Correlative and Comprehensive Imaging plus Analysis with SAEMic.

## Correlative SEM-EDS Analysis with our AFM Marking Function

Options

Analyze the same region of interest (ROI) with SEM, EDS, and AFM: More Information = Better Results!

Automated AFM Marking Features with Navigation Software.

[Evaluating AFM-KFM-SEM-EDS of Aluminum Alloy before and after Corrosion]

AFM

SEM-EDS

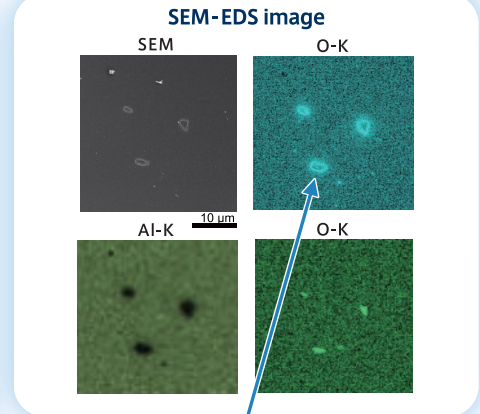
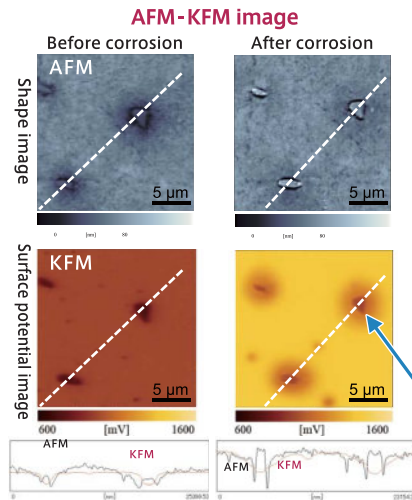
Easily navigate to the AFM ROI with SEM

Correlate and complement the interpretation of AFM physical properties with elemental analysis, secondary electron imaging, reflected electron imaging, and more

# SAEMic.

Scanning Atomic and Electron Microscopy

SAEMic is a generic term for SEM-AFM correlative analysis recommended by Hitachi High-Tech.



- Potential increase around inclusion due to corrosion effect
- This difference may be due to oxidation (hydroxylation)

### AFM100 Plus / AFM100 System Specifications

	AFM100 Plus	AFM100
Detection System/Light Source	Optical lever/SLD (Super luminescent diode)	
Lever holder	Premount holder*, multi-holder*	
Basic Specifications	RMS noise level: $\leq 0.03$ nm, in-plane drift: $\leq 0.03$ nm/sec	
Sample size	Max. 35 mm $\phi$ , thickness 10 mm, (max. 50 mm sq., thickness 20 mm)*	
Scanner (Scan range)*	(XY:20 $\mu$ m/Z:1.5 $\mu$ m, XY:100 $\mu$ m/Z:15 $\mu$ m, XY:150 $\mu$ m/Z:5 $\mu$ m)*(Included with a 5-year warranty)	
Light microscope	Microscope with zoom function (Field of view XY:1.8 x 1.38 to 0.26 x 0.2 mm)* Simple optical microscope (Field of view XY:1.6 x 1.2 mm)*	Simple optical microscope (field of view XY:1.6 x 1.2 mm)
Basic functions	AFM, DFM, PM, FFM, SIS-shapes/properties, Q-value control	AFM, DFM, PM, FFM, SIS-shapes
Vibration isolation and noise isolation mechanism	Passive vibration isolation air table and sound-proof cover	Standard tabletop
Sample transfer mechanism	Manual Stage XY: $\pm 2.5$ mm, Impact Stage Set (Conductive Type)*	
Measurement environment	Atmosphere, in liquid*, heated* (room temperature to 250 °C), heated in liquid* (room temperature to 60 °C)	
Other functions	Self-check function, software download service, AFM marking*	
Power Supply Specifications	AC 100 V $\pm$ 10 V, 15 A, 1 line, D inoculated grounded receptacle	

\* The asterisk (\*) in the table indicates feature is optional. \*\*For detailed specifications, please refer to the product specification sheet.

To AFM100 Plus Web site



## Science for a better tomorrow

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Notice: For correct operation, follow the instruction manual when using the instrument.

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