

# BY Series of Scanning Probe Microscope

*High Performance*

*Multi-Function*

*Easy Operation*



**BY1000**

Scanning  
Tunneling  
Microscope

**BY2000**

Atomic  
Force  
Microscope

**BY3000**

Scanning  
Probe  
Microscope

## *High Performance*

- Atomic-scale of resolution
- Large sample size
- With a DSP inside for great performance
- Realtime operating system embedded
- Fast Ethernet connection with computer

## *Multi-Function*

- Atomic Force Microscope (AFM)
- Scanning Tunneling Microscope (STM)
- Lateral Force Microscope (LFM)
- Force Analysis: I-V Curve, I-Z Curve, Force Curve
- Online real-time 3D image for better observation
- Multi-channel signals for more sample details
- Trace-Retrace scan, Back-Forward scan
- Multi-Analysis: Granularity and Roughness
- Data load-out for further analysis

## *Easy Operation*

- Fast automatically tip-engaging
- Simple change the tipholder to switch between STM and AFM
- Full digital control, auto system status recognition
- Software-based sample movement
- Nano-Movie function: Continuous data collection, storage and replay
- Modularized design for convenience of maintenance and future upgrade

# Specifications

<b>Functions</b>	Atomic Force Microscope (AFM) Lateral Force Microscope (LFM) Scanning Tunneling Microscope (STM)
<b>Resolution</b>	AFM: 0.26nm lateral, 0.1nm vertical; STM: 0.13nm lateral, 0.01nm vertical;
<b>Technical Parameters</b>	X-Y scan scope: $\sim 10 \mu\text{m}$ Z distance: $\sim 2 \mu\text{m}$ Image Pixels: 128X128, 256X256, 512X512, 1024X1024 Scan Angle: $0\sim 360^\circ$ Scan Rate: 0.1 $\sim$ 100Hz
<b>Electronics</b>	CPU: 32-bit Digital Signal Processor (DSP) at 600MHz from Texas Instruments; Fast 16-bit DAC Fast 16-bit ADC High Voltage: 5 channel Communication Interface: 10M/100M Fast Etheret
<b>Mechanics</b>	Sample Size: Up to 45mm in diameter, 30mm thick; Engagement: Auto engagement with travel distance of 30mm and precision of 50nm;
<b>Software</b>	Online Control Software and offline Image Processing Software for Windows Vista/XP/2000/9x;

## Product List

### BY3000 Scanning Probe Microscope

Standard: STM, AFM, LFM, Contact Mode, Tapping Mode, Phase Imaging

- 1 BY3000 SPM Detector
- 2 BY3000 Controller
- 3 SPMConsole online software and Imager software (For Windows XP/Vista)
- 4  $10\mu\text{m} \times 10\mu\text{m}$  scanner
- 5 STM Tip Holder
- 6 AFM/LFM Tip Holder
- 7 10 AFM Probes: 5 For Contact Mode, 5 for Tapping Mode
- 8  $\Phi 0.25\text{mm}$  Pt-Ir for STM, 50cm
- 9 Toolbox
- 10 User's Manual (Installation and training manual included)

### BY2000 Atomic Force Microscope

Standard: AFM, LFM, Contact Mode, Tapping Mode, Phase Imaging

- 1 BY2000 AFM Detector
- 2 BY2000 Controller
- 3 SPMConsole online software and Imager software (For Windows XP/Vista)
- 4  $10\mu\text{m} \times 10\mu\text{m}$  scanner
- 5 AFM/LFM Tip Holder
- 6 10 AFM Probes: 5 For Contact Mode, 5 for Tapping Mode
- 7 Toolbox
- 8 User's Manual (Installation and training manual included)