

Nano-probe Electrical Measurement System

UMP-1000

The model UMP-1000 is an analyzer specially designed for the local electrical properties of the sample surface, nano-devices, etc. This system can be installed on any SEM stages. Independently, each probe is able to produce extremely fine position changes (XYZ) down to nanometer range.



Nano Probe Unit *
Stage unit optimized for use with your SEM

Notebook PC

Controller Electronics *

Features

- So compact and light multi-probe unit that can be installed on any SEM stages.
- Easy to control using notebook PC.
- Suitable for Ultrahigh-Vacuum applications.
- Unlimited resolution to produce precise positioning.

NEW Adding a **Contact Detection Function** by using Piezo Resistive Cantilever as OPTION.

Options

- SPM (STM, AFM, etc.) Function
- Bending / Tensile Strength Test Attachment
- Sample Stage Positioning Sample Heating / Cooling
- The Number of Probe (add / decrease)
- Combine with Ultrahigh Vacuum System

Example of Use

- Measurement of electrical property
- Manipulation on nano-scale



Four probes over carbon nanotube

*Contribution by Prof. Sumiyama,
Nagoya Institute of Technology.*

Component

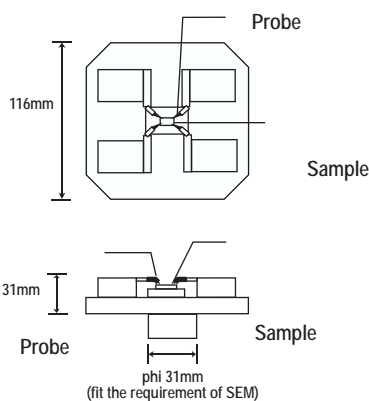
Nano Probe Unit	: 1
Controller Electronics	: 1
Notebook PC	: 1
Pt:Ir Probe	: 1
Accessories	: 1
Manual	: 1

Specifications

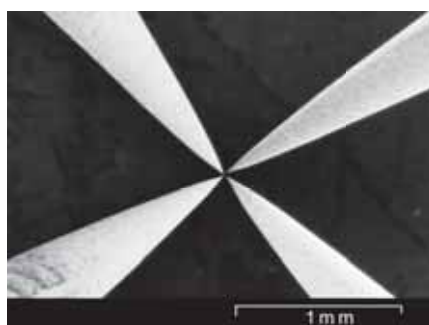
Nano Probe Unit

XY Range	
Coarse	+/- 2.5 mm in 150 nm steps
Fine	less than 1 um in 10 nm* steps
Z Range	
Coarse	+/- 1.5 mm in 150 nm steps
Fine	less than 1 um in 10 nm* steps
Sample Size	10 mm X 10 mm X 1 mm
Weight	less than 1000g

* 0.1nm resolution is possible with optional software.



The schematic drawings for a typical nano probe stage unit are shown above.
The stage unit is fabricated to fit your SEM system. Ask for details.



Controller Electronics

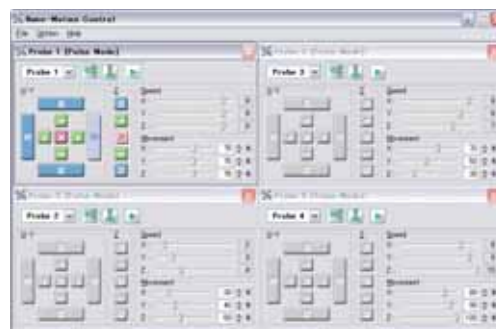
External Input	D-sub +/- 10 V
External Output	D-sub
Interface	Parallel I/O
Power Source	AC100V (50/60Hz)

Notebook PC

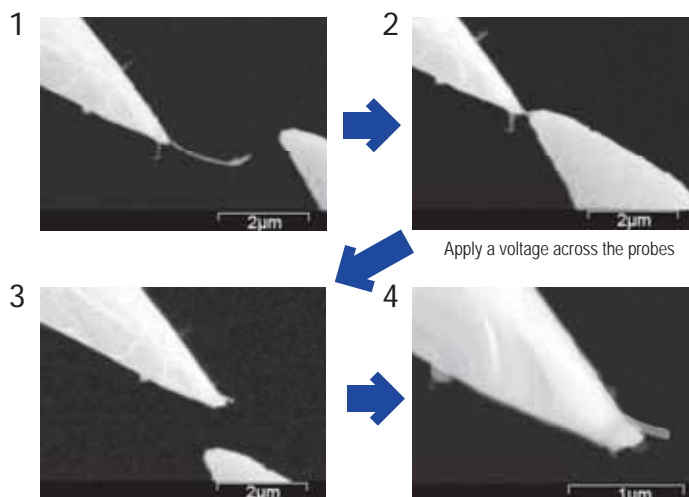
OS	Windows XP
Preinstalled exclusive software.	

Options

The Number of Probe (increase / decrease)
Sample Heating / Cooling
SPM (STM, AFM, etc.) Feedback control function
Others



Application Window



Contribution by M. Yoshimura, Ueda Lab., Toyota Technological Institute.

Instrumental components subject to change without prior notice for improvement in performance.

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