

# Low Temperature 4-probe SPM System

## USM-1400-4P

This system is developed for local conductance measurement and 4 probe SPM operations in nano to micrometer scale range in UHV and Low temperature conditions.

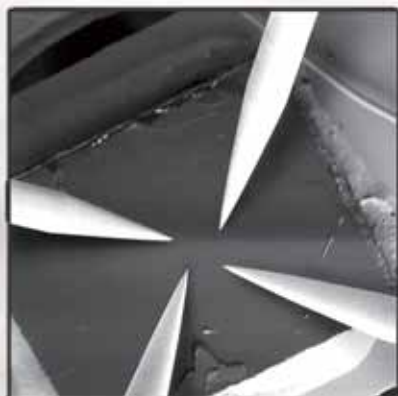
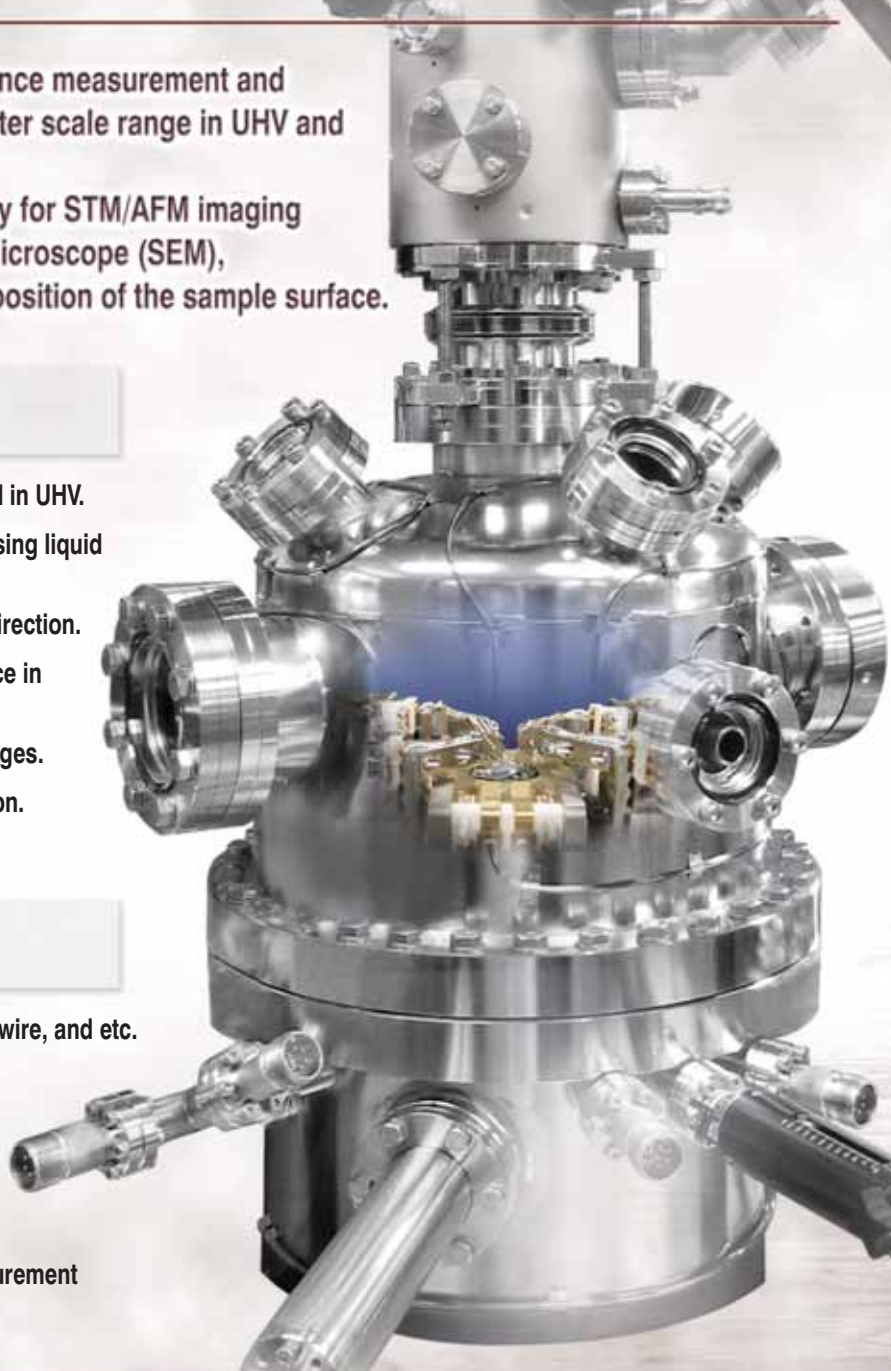
Each probe stage can be used independently for STM/AFM imaging and spectroscopy. Observing the electron microscope (SEM), each probe can be approaching to specific position of the sample surface.

### Features

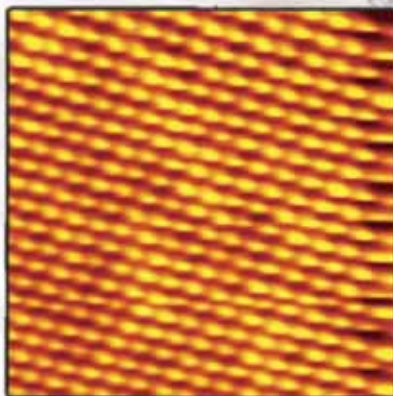
- Sample holder and probe holders can be exchanged in UHV.
- Variable temperature is possible from 2.5K to 80K using liquid helium, and 80K to RT using liquid nitrogen.
- Sample stage can be adjustable 3 mm travel in XY direction.
- Each probe position can be adjustable 3 mm distance in XYZ direction by computer controlled piezo stages.
- STM or AFM probes can be set on the any probe stages.
- All 4 probe stage can be scanned in atomic resolution.

### Application

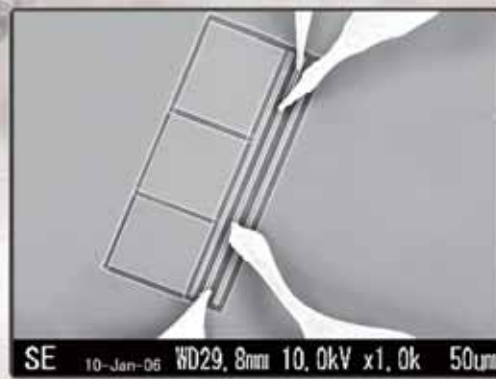
- 4 point conductivity measurement of thin film, nano wire, and etc.
- Measurement of local property of the devices
- Local potentiometry of nano structure
- STM/AFM imaging by each probe
- Further applications of SEM analysis
- Optical or electron beam excited conductivity measurement



4 point measurement



STM image on HOPG at 6.5K



Resistance of micro structure