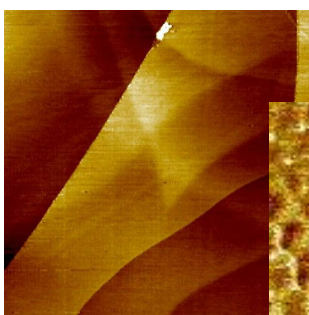




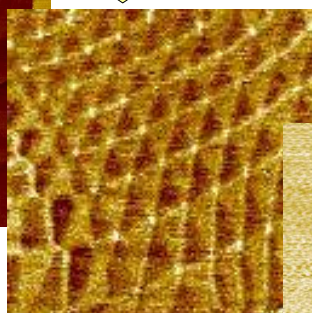
pA-STM Scanning Tunneling Microscope

A.P.E. Research s.r.l. produces an STM for low current atomic or molecular resolution imaging. Tunnelling down to 500 fA allows measurement on highly resistive SAM.

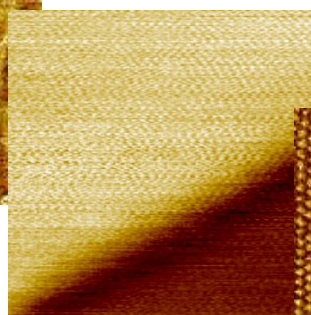
pA-STM is also suitable for AFM measurements with appropriate AFM tool option.



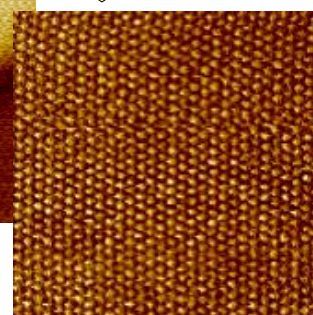
2.5 x 2.5 μm



0.8 x 0.8 μm

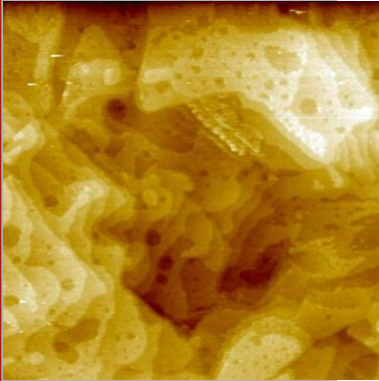


20 x 20 nm



7 x 7 nm

pA-STM



pA-STM Scanning Stage

Scanning stage with Piezoceramic Tube.

Scanner technical data:

X-Y piezo tube:

high voltage mode scan size: 10 x 10 μm ;
low voltage mode scan size: 650 x 650 nm
high voltage mode resolution: 1.5 \AA
low voltage mode resolution: 0.1 \AA

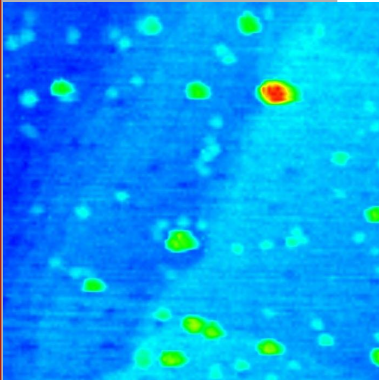
Z piezo tube:

high voltage mode scan size: 1.2 μm
high voltage mode resolution: 0.2 \AA

Translator stage data:

X-Y range: 5 x 5 mm

Z range: 13 mm (4 mm servo assisted)



STM Head

STM Head with tip holder.

The Head houses low current preamplifier with $1 \cdot 10^9$ V/A gain that make possible to get images from 2pA to 2nA. Other preamplifiers with different gain are optional on request.

SPMCU-T

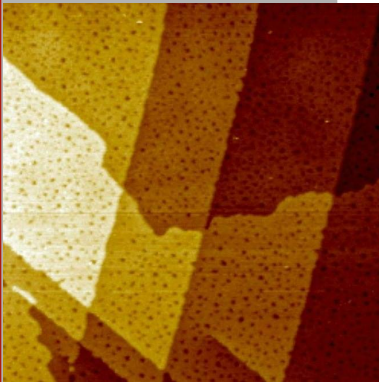
SPM Control Unit

SPM Control Unit and PC (equipped with a multi input-output board) drives the scanner, data acquisition and sample motion.

Tip to sample distance is controlled by ultra-low noise analog feedback, digitally driven by PC.

Scan generator is controlled by software, xyz axis are driven by compound DAC with resolution better than 20 bit.

High speed and temporal precision are provided by hardware timing.



HVA3-T Unit

High Voltage Amplifier

HVA is an amplifier module projected to drive A-100 Heads.

Computer and Acq. Board

Windows XP operating system; Pentium IV, 512 MB DDR SDRAM, 80 GB HDD, CD R/W, mouse, keyboard; 17 inch LCD monitor. Acquisition board and interface.

Acquisition software

Software runs under Windows XP and is composed of a multi-window applications for instrument control and data acquisition. The software comes equipped with simple filters for immediate analysis of acquired images. The software controls all the parameters of the instrument.

Accessories

AFM Tool

AFM Head is suitable for Contact Mode, Non Contact Mode and Semi-Contact Mode.

AFM Head with holder for commercial cantilevers. The holder can be removed to easy mount cantilevers. The head also houses laser, photodiode sensor with preamplifier.

Acoustic Box with floating marble Table

Characteristics and technical specifications subject to change

A.P.E. Research s.r.l.
Area Science Park
s.s. 14, Km 163,5 Basovizza
34012 Trieste, Italy

Tel. +39.040.3757905
Fax +39.040.3757906
infos@aperesearch.com
www.aperesearch.com

