CIRMM/LIMMS

Demos available

KAWAKATSU LAB.

[Coupling to the nano regime]

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Precision engineering department

Applied Scientific Instruments

Coupling to Nano

Touching the untouched, and seeing new landscapes of familiar objects

Detection of the vibration of small objects tell us about their mass and the field in which they are placed. Atomic Force Microscopy is one example. We are investigating various detection and control methods of vibration of micro to molecular level objects, with the main objective of implementing novel microscopy.

TEMAFM: Physics of confined 3D structures
FIM/Atom Probe: Oscillatory emission from molecules and nanocantilevers
Liquid AFM: Thick ice-like structure formation below 10 °C
All-optic AFM: Fast force curve acquisition and potential mapping

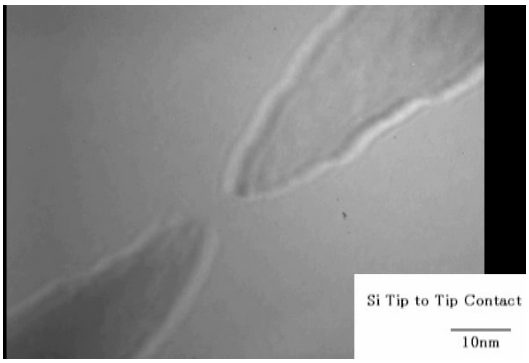

Fig.1 TEMAFM Tip to Tip

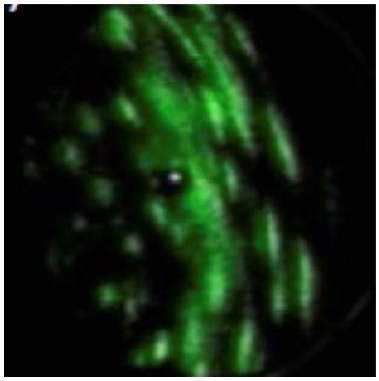

Fig.2 Vibratory motion of emission in FIM

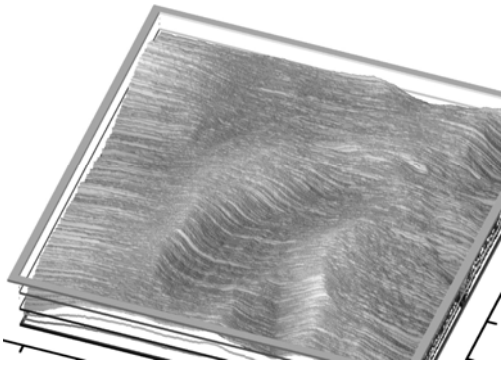

Fig. 3 Structure growth on mica in cold water .

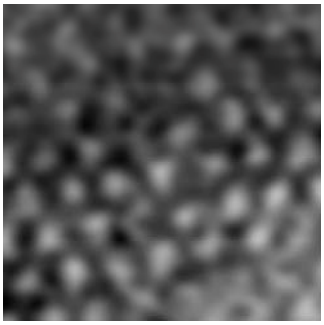

Fig.4 Submolecular features of the ice like structure on mica

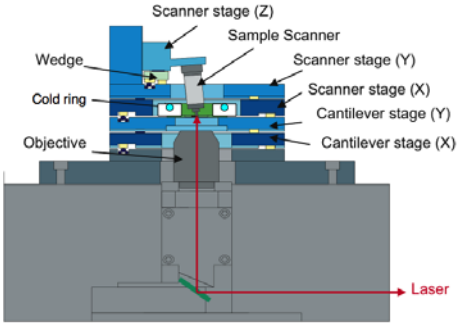

Fig.5. Variable Temperature Liquid AFM

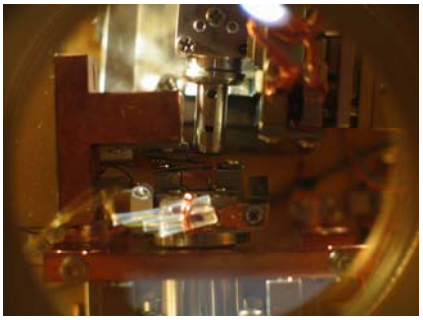

Fig.6 An all-optic UHVAFM for fast chemical identification