

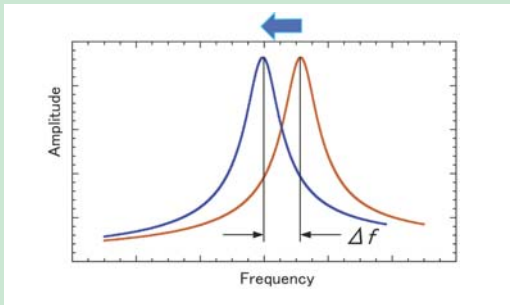
Easy-to-use Advanced Technologies

Non-Contact Mode

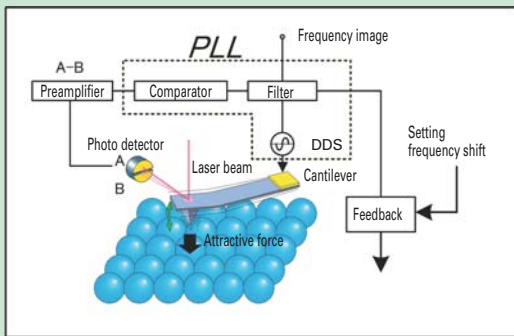
Point

Standard configuration

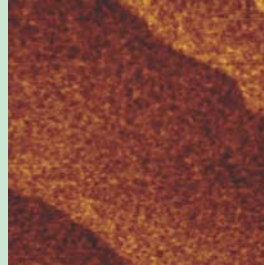
In this mode, the cantilever vibrates by itself at a resonant frequency and when the cantilever is approached to the sample, a vibration peak at the resonant frequency is shifted to a lower-frequency due to an attractive force between the cantilever and sample. To maintain this shift constant, frequency feedback is made.



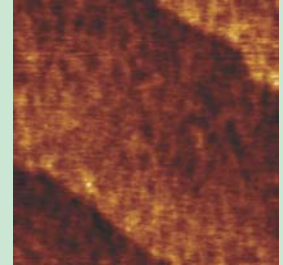
To set the frequency of the cantilever beam to the resonant frequency any time, PLL (Phase Locked Loop) is used. The FM detection method with PLL is a standard configuration of JEOL SPMs, which is an unprecedented feature of JEOL SPMs.



High resolution



Non-Contact mode



AC mode

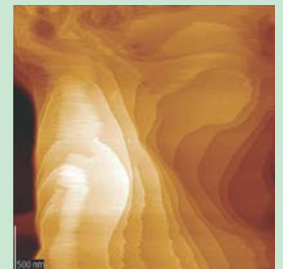
Example of imaging of Si steps

In Non-Contact mode, a higher-resolution image is obtained than in AC mode.

Damage-less



Non-Contact mode



AC mode

Example of imaging of n-alkane film on polyimide

In Non-Contact mode, an image is obtained without damaging the sample surface.

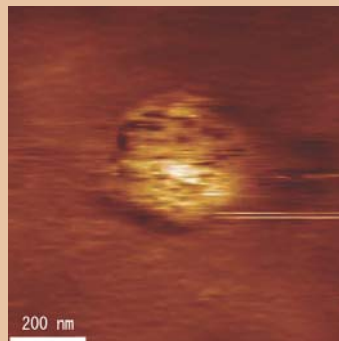
Vacuum evacuation

Option

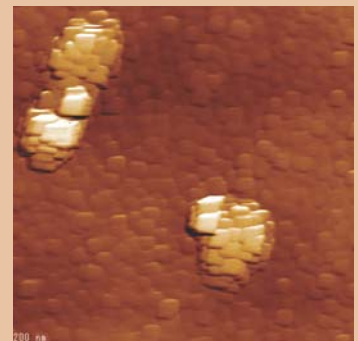
You can start evacuation by just pressing the Start button on the evacuation system controller. A Pirani gauge and a Penning gauge can be automatically switched, enabling the atmospheric pressure to high pressures to be accurately measured. Also, you can stop the evacuation system by one-button operation, from stopping to venting the pump automatically; thus eliminating cumbersome valve open/close operations.



High vacuum obtainable using a button on the controller.



Imaging under the air



Imaging under the vacuum

Example of imaging of recrystallized glass

In the imaging under the air, a true topographic shape cannot be obtained due to water adsorbed onto the sample surface. In the vacuum environment, this water desorbs, enabling crystalline facets to be observed.

Data courtesy of Dr. Yoshitaka Mitsuda, Univ. of Tokyo.