【NS-02】

Window for nano-world : SPM
Studies of ferroelectric domain and vortex dynamics

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In the era of nano-science and technology, we are witnessing a revolutionary change in methods by which materials and devices are created. Among the challenges we are facing today are the improvement in enabling technologies for the fabrication and characterization of nano-scale materials such as scanning probe microscope (SPM). SPM proved to be a quite effective for the visualization and characterization of sub-micron size sample. Further SPM can be used for the manipulation of nano-scale devices.

The high performance SPM will have a vast impact on other discipline such as biology or chemistry as well as material science.

In this talk, progress in the development in the high resolution and high speed electrostatic force microscope (EFM) will be mentioned.

By employing a self-sensing and self-actuating cantilever of a small mass, high performance SPM is made possible. Using this EFM, we have studied ferroelectric materials for the domain dynamics. Vortex images in the ion-irradiated superconductor (BSCCO) measured by MFM will be presented.