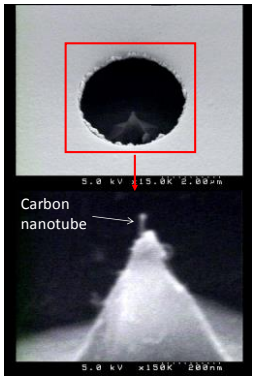
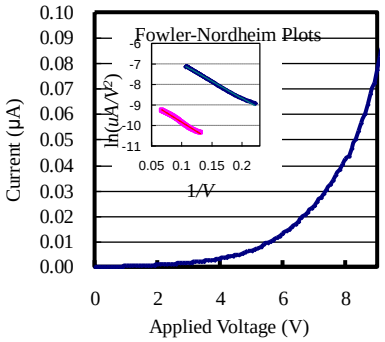
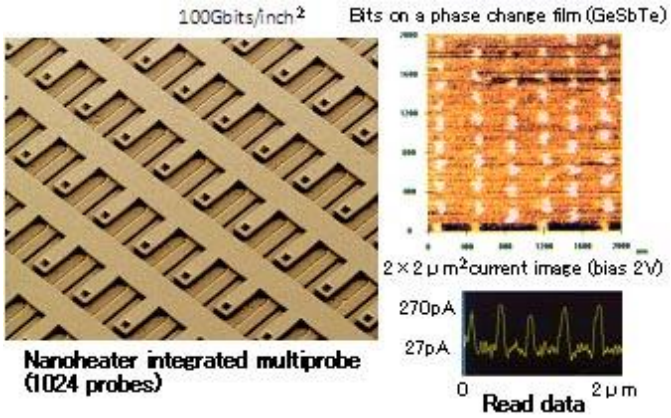
Poster 6

Nanomachining (T.Ono et.al.)

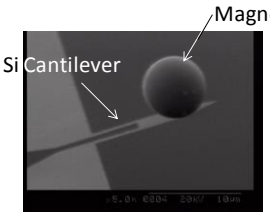




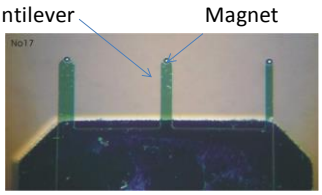
A gated Si emitter with a carbon nanotube (CNT). CNT is selectively grown at the Si emitter. Typical IV characteristic.



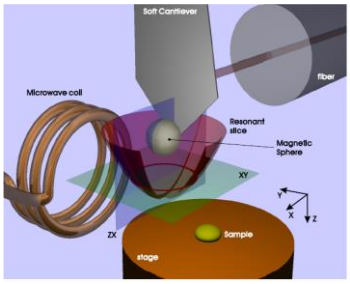
Prototype of multi-probe recording head is shown. Recording is demonstrated on a phase change medium.



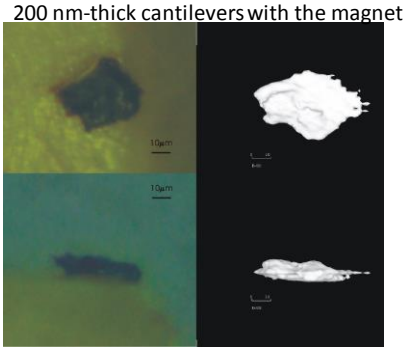
Nanocantilever with a NdFeB magnet



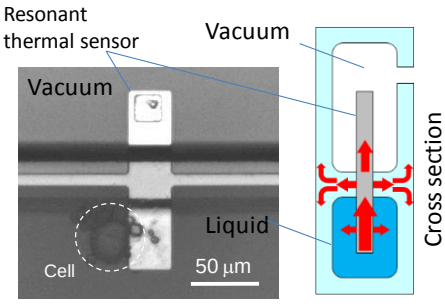
200 nm-thick cantilevers with the magnet

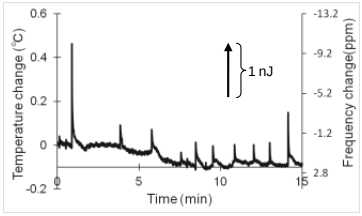


Working principle of MRFM



Demonstrated MRFM imaging of electron spin: Detection of radical (sample DPPH)

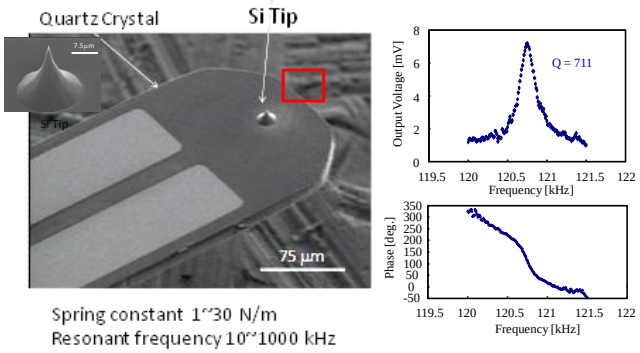




Heat detection of brown fat cell

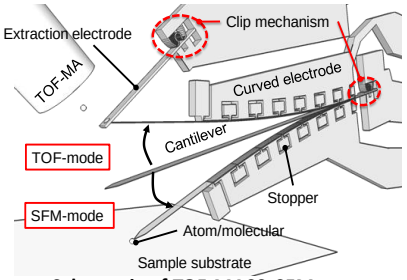
Resonant thermal sensor for single cell and demonstrated detection of heat from a brawn fat cell.

Microprobes for magnetic resonance force microscopy (MRFM), the working principle, and demonstrated 3D-imaging of radical density. (Collaborative with JEOL)

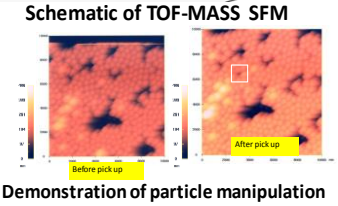


Spring constant 1~30 N/m
Resonant frequency 10~1000 kHz

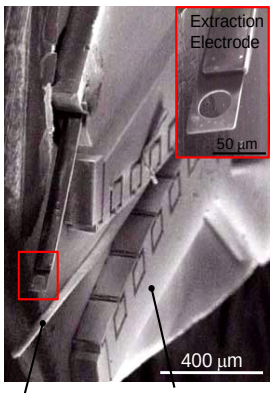
Quarts crystal cantilever with Si tip for liquid AFM, and the demonstrated self-detection and self-excitation.



Schematic of TOF-MASS SFM



Demonstration of particle manipulation



Fabricated TOF-MASS

A probe for time-of-flight scanning force microscopy, manipulation of a 200 nm-diameter bead is demonstrated.