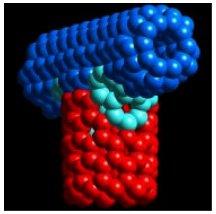
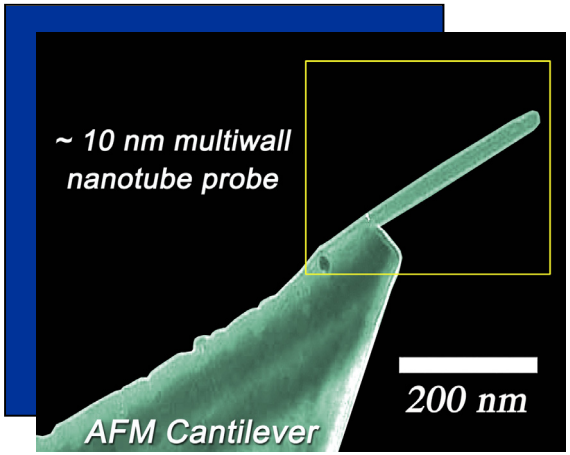
Ames Research Center

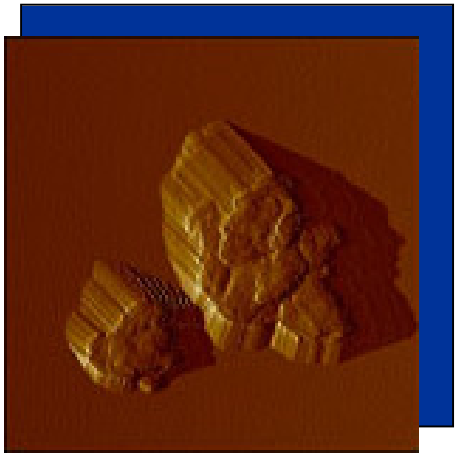
CNT in Microscopy



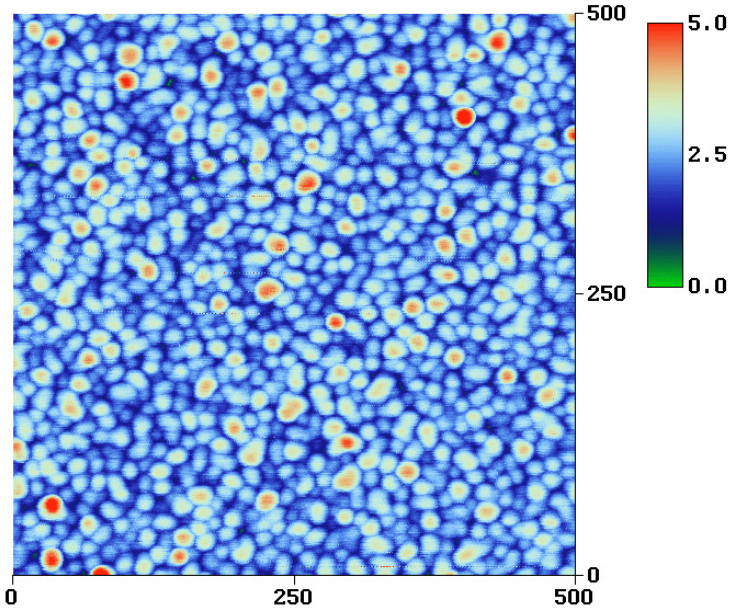
Atomic Force Microscopy is a powerful technique for imaging, nanomanipulation, as platform for sensor work, nanolithography...

Conventional silicon or tungsten tips wear out quickly. CNT tip is robust, offers amazing resolution.





Simulated Mars dust

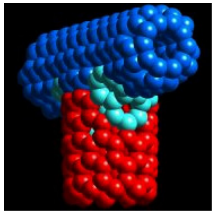


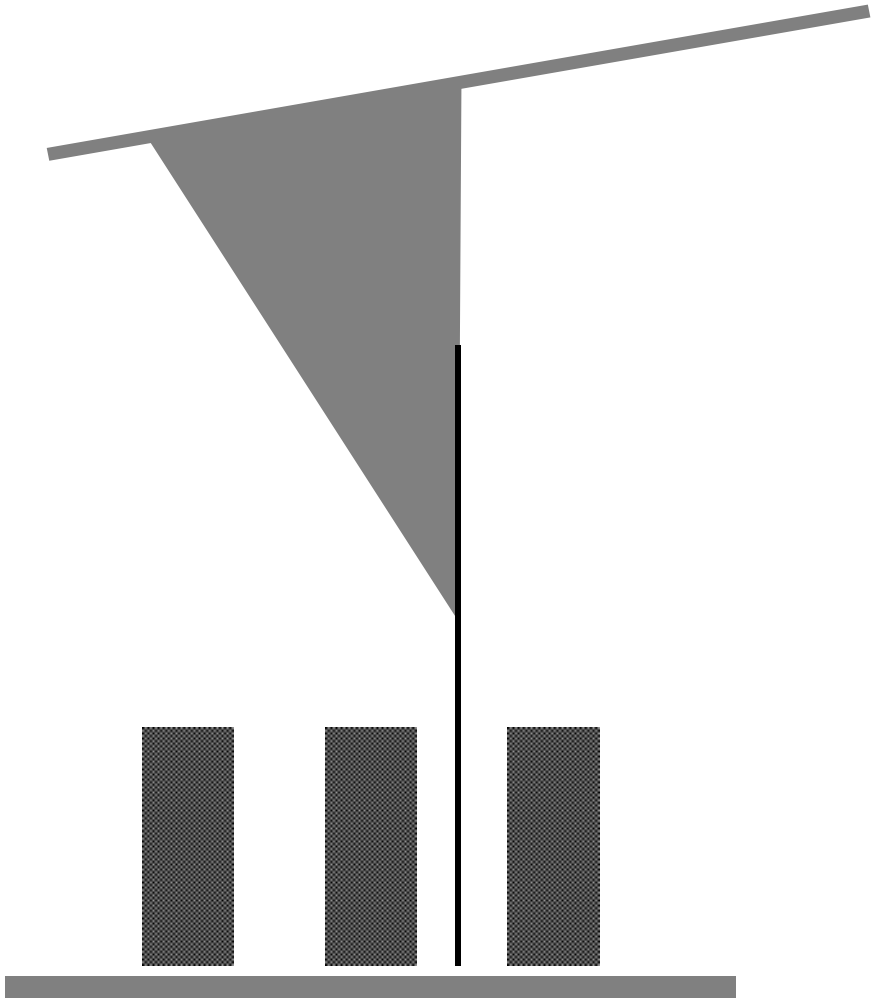
2 nm thick Au on Mica

NASA Ames Research Center
Ramsey Stevens, Lance Delzeit, Cattien Nguyen

Ames Research Center

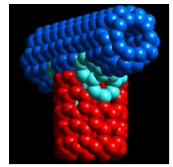
MWNT Scanning Probe



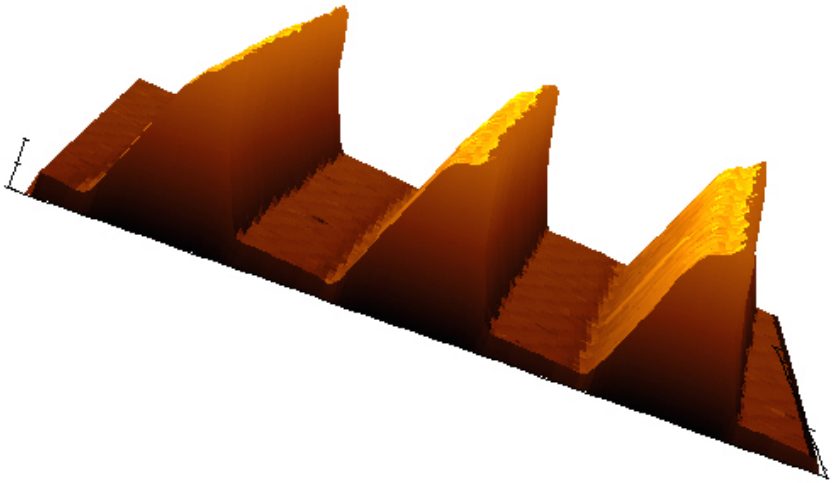


Ames Research Center

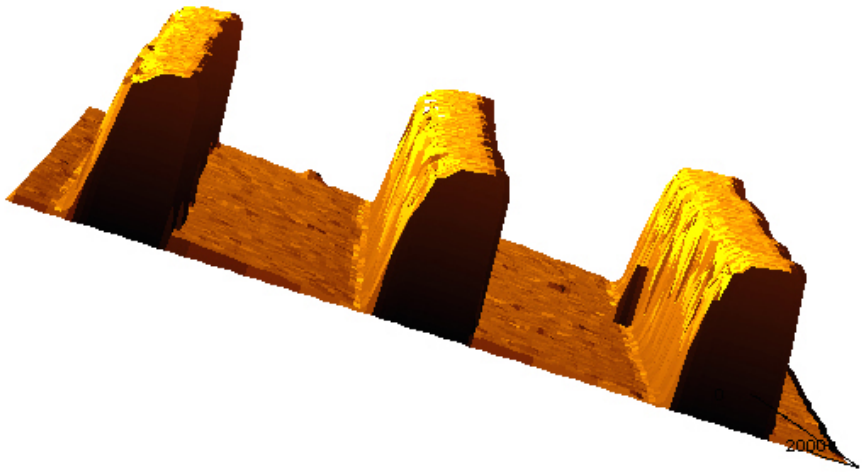
Profilometry in Integrated Circuit Manufacturing



280 nm line/space. Array of polymeric resist on a silicon substrate.



Conventional Si Pyramidal Cantilever

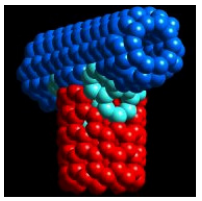


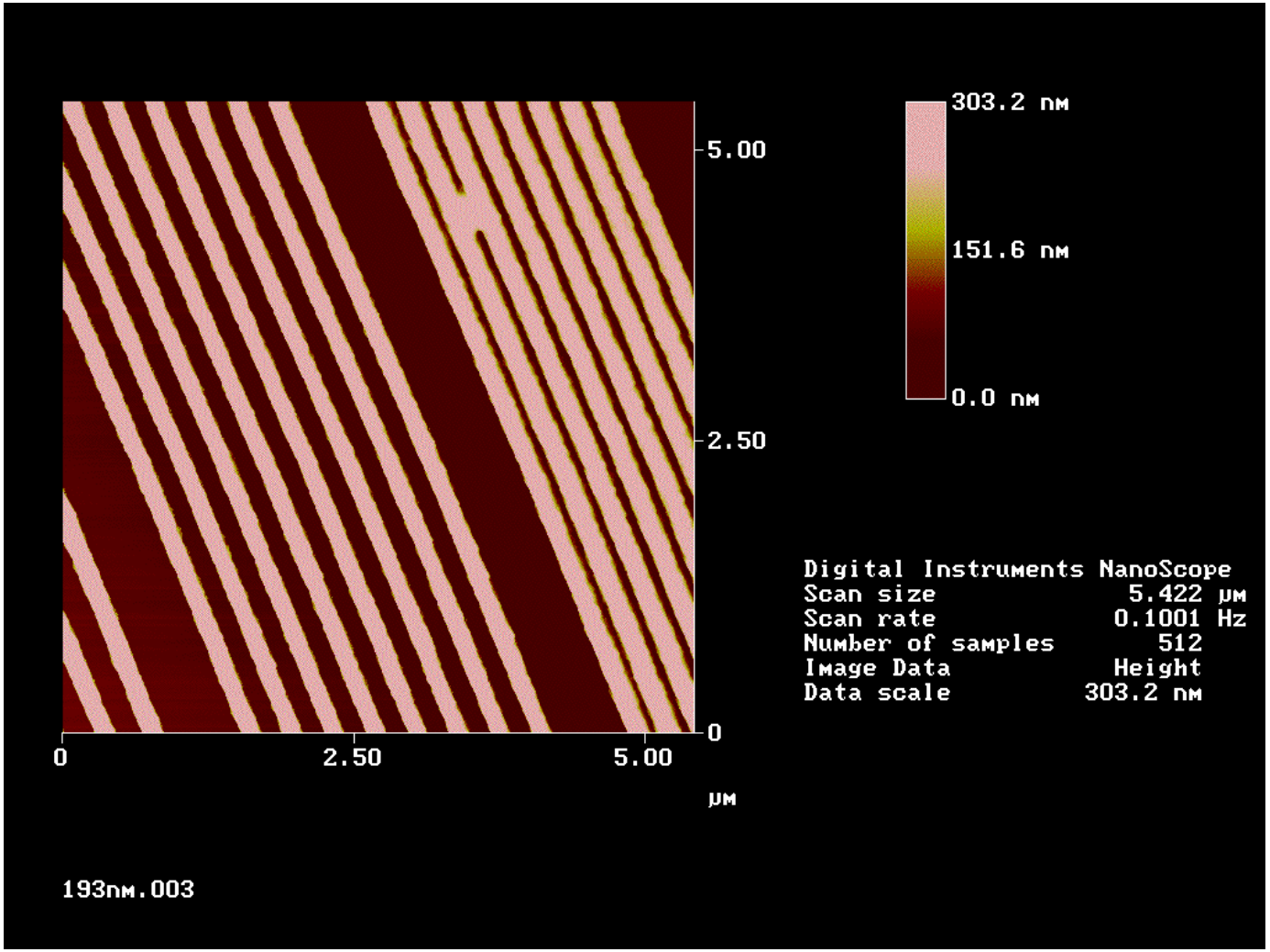
MWNT Probe

Nguyen et al., Nanotechnology, 12, 363 (2001).

Ames Research Center

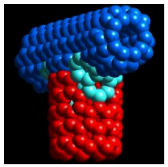
AFM Image with a MWNT Tip
193 nm IBM Version 2 Resist



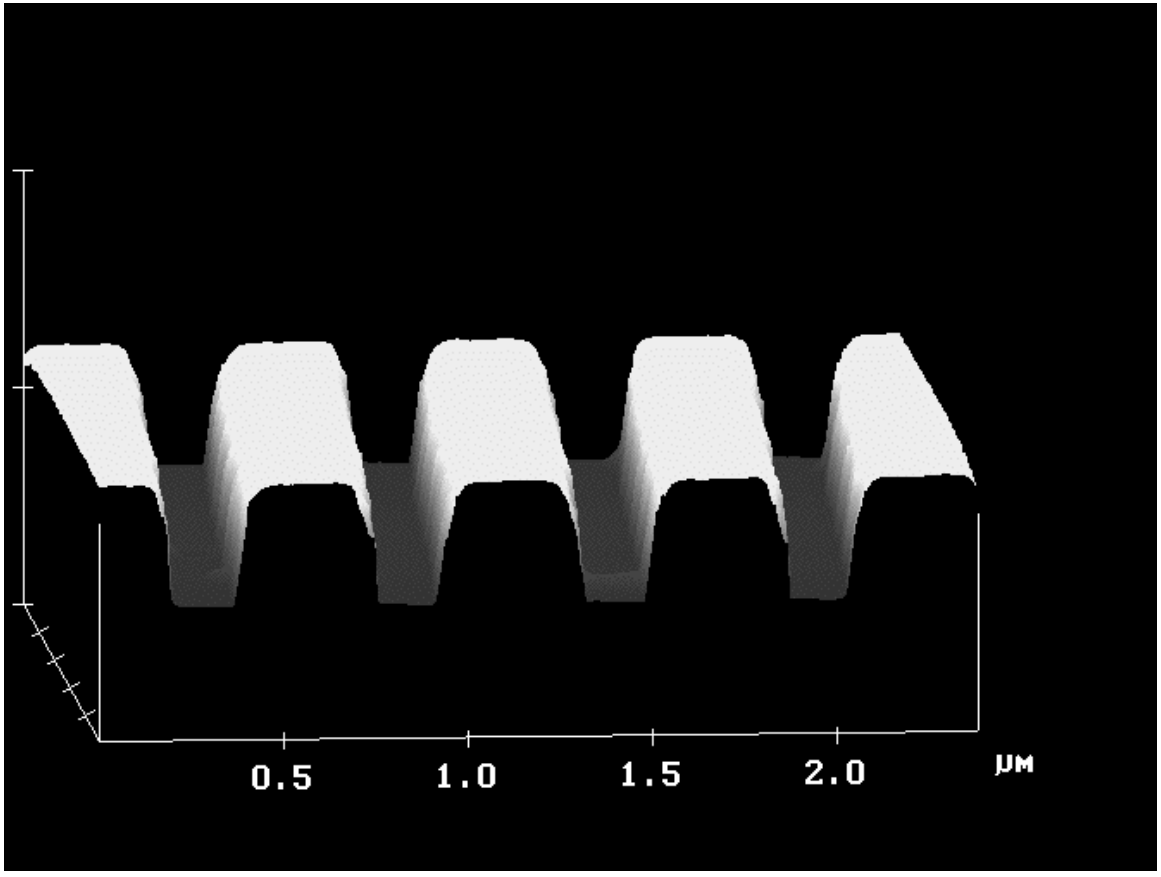


Ames Research Center

AFM Image with MWNT Tip



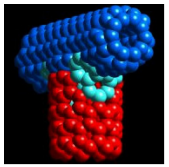
DUV Photoresist Patterns Generated by Interferometric Lithography

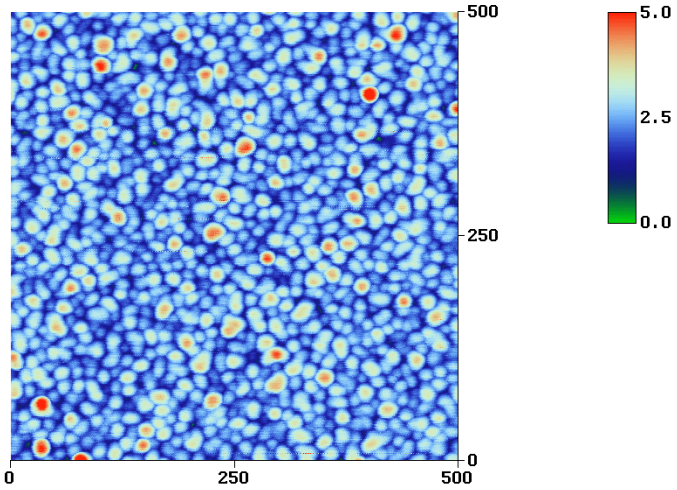


Nguyen et al., App. Phys. Lett., 81, 5, p. 901 (2002).

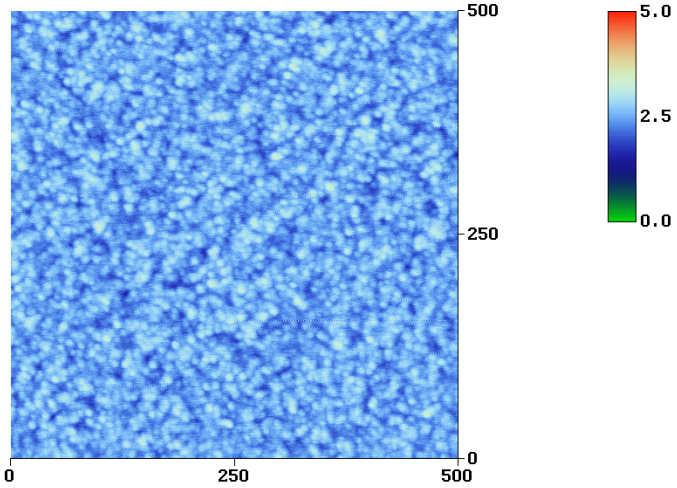
Ames Research Center

AFM Imaging with Single Wall Nanotube Tips

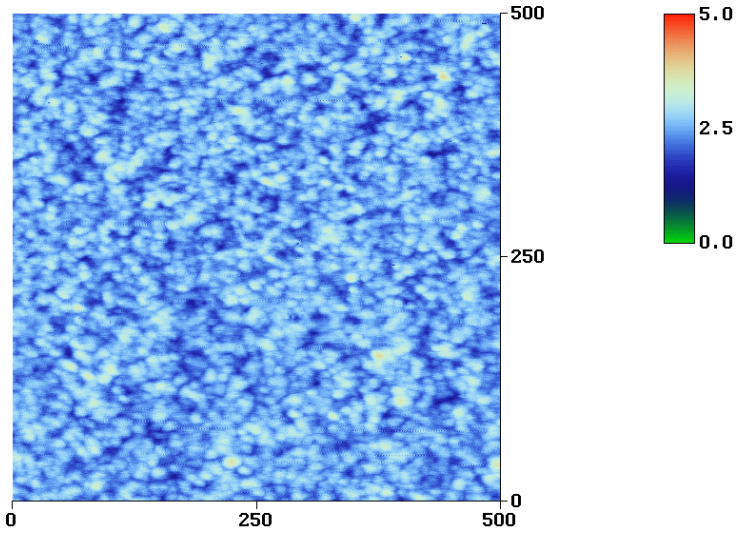




2 nm thick Au on Mica



5 nm thick Ir on Mica

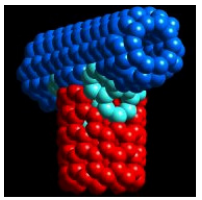


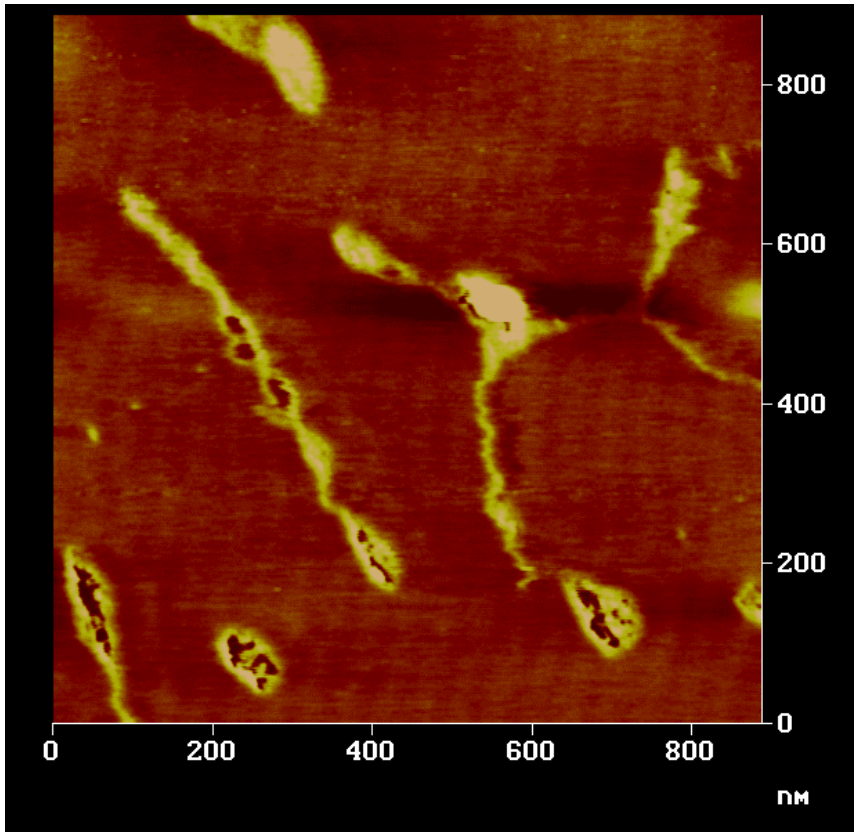
Si_3N_4 on Silicon substrate

Nguyen et al., Nanotechnology, 12, 363 (2001).

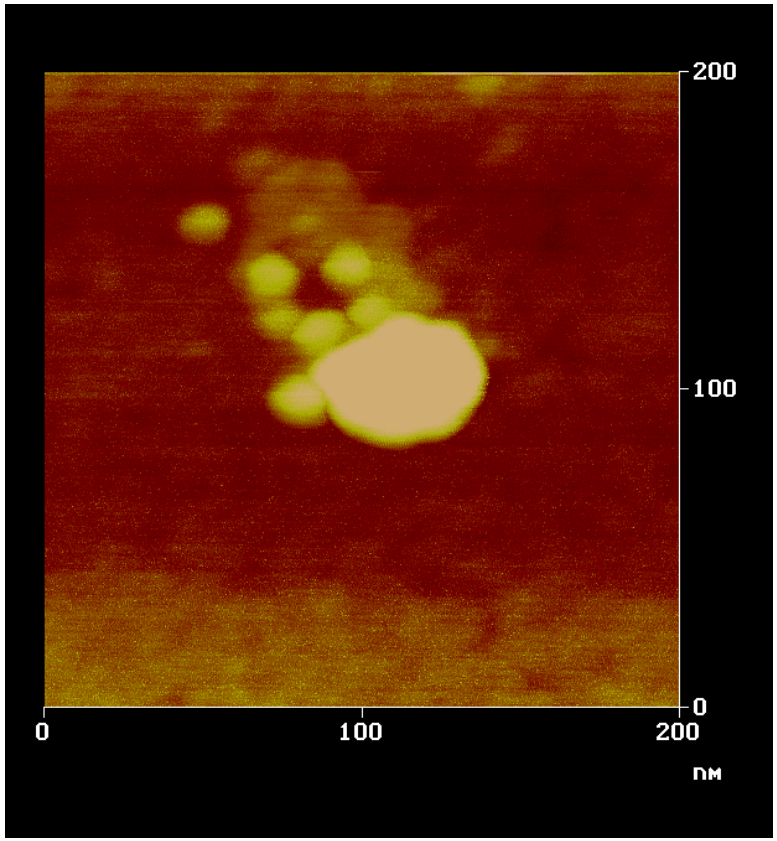
Ames Research Center

High Resolution Imaging of Biological Materials





DNA



PROTEIN