

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Construction of a Atomic Force Microscope for low temperature measurements of nanostructures** MATTHEW PRIOR, ALEXEY ZHUKOV, GLEB FINKELSTEIN, Duke University — We have constructed an Atomic Force Microscope for low temperature studies of nanostructures. The microscope fits inside a cryostat of 1.5” bore. The scanning probe is attached to a quartz tuning fork, and the amplitude of the tuning fork oscillations is registered as the feedback signal. The scanning tip is separately contacted, which allows us to carry out scanning gating and tunneling spectroscopy measurements of nanostructures. We demonstrate room temperature scanning gating microscopy measurements of single walled carbon nanotubes. Low temperatures measurements are underway.

Matthew Prior  
Duke University

Date submitted: 07 Dec 2004

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