Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Carbon nanotube/carbon nanotube composite AFM probes prepared using ion flux molding[1] GRACE CHESMORE, Santa Clara University, CARROLLYN ROQUE, Carbon Design Innovations, RICHARD BARBER, Santa Clara University — The performance of carbon nanotube-carbon nanotube composite (CNT/CNT composite) atomic force microscopy (AFM) probes is compared to that of conventional Si probes in AFM tapping mode. The ion flux molding (IFM) process, aiming an ion beam at the CNT probe, aligns the tip to a desired angle. The result is a relatively rigid tip that is oriented to offset the cantilever angle. Scans using these probes reveal an improvement in image accuracy over conventional tips, while allowing higher aspect ratio imaging of 3D surface features. Furthermore, the lifetimes of CNT-CNT composite tips are observed to be longer than both conventional tips and those claimed for other CNT technologies. Novel applications include the imaging of embiid silk.

[1]Supported by the Clare Boothe Luce Research Scholars Award and Carbon Design Innovations

Grace Chesmore
Santa Clara University

Date submitted: 05 Nov 2015 Electronic form version 1.4