Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

A Combined Scanning Tunneling Microscope-Quartz Crystal Microbalance Investigation of Heating and Liquid-Like Behavior at a Sliding Interface[1] BENJAMIN DAWSON, JACQUELINE KRIM, North Carolina State University — The unique capabilities resulting from combining a scanning tunneling microscope and a quartz crystal microbalance have been used to characterize the heating and wear at the interface of a tungsten tip and an Indium substrate, with a change in the contact characteristics of the interface occurring for sufficient sliding speeds. The advantage of this system is the ability to probe subtle changes of a rubbing asperity contact, which will aid in developing a more complete understanding of the complex issue of heat generated via friction.

[1]This work funded by the AFOSR Extreme Friction MURI Grant FA9550-04-1-0381

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Date submitted: 21 Nov 2008 Electronic form version 1.4