

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Piconewton force measurement with a scanning tunneling microscope KAI-FELIX BRAUN, APARANA DESHPANDE, SAW HLA, Ohio University — The magnitude of force required to move a single atom across a crystal surface has been measured for the first time. During atomic manipulation experiments with a scanning tunneling microscope the tip height curve is recorded. Analysis of shape and period has yielded detailed knowledge about atomic movement while it is shown here that the amplitude of the manipulation curve is a measure of the interaction force between the microscopes tip and the manipulated atom on the surface. This interaction force has been measured for single Ag atoms on a Ag(111) substrate as a function of distance and amounts to several hundred piconewton.

Kai-Felix Braun
Ohio University

Date submitted: 03 Dec 2005

Electronic form version 1.4