

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Modeling and simulation of adhesion between carbon nanotubes and surfaces** ALPER BULDUM, NABA RAJ PAUDEL, Department of Physics, The University of Akron, Akron, OH 44325, TOSHIYUKI OHASHI, Honda Research Institute USA, Inc., Columbus, OH, 43212, LIMING DAI, Department of Chemical and Materials Engineering, University of Dayton, — There have been also many experimental studies which were performed to compare the adhesion properties of carbon nanotubes with that of a gecko's foot on smooth surfaces. Yurdumakan et al. measured the adhesive force of multiwalled carbon nanotube hairs and found it to be 200 times higher than that observed for gecko foot-hairs. Here, we present theoretical investigations of CNTs interacting with surfaces. We study the deformation of CNTs and evaluate their adhesion similar to the experimental investigation of a gecko's foot. To study the deformation behavior and adhesion of CNTs, atomistic simulations of capped armchair (10, 10) nanotubes with two different lengths are performed on rigid and relaxed graphite surfaces. Simulations were also performed for different orientations of the nanotube with respect to the graphite surface to study the angular dependence of adhesion and deformation.

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Date submitted: 13 Dec 2007

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