

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Assessment of Mechanical Properties of Nanocomposites Via Nanoindentation and Atomic Force Microscopy** MICHAEL CASAVANT, Air Force Research Laboratory/Structural Materials Branch - University of Dayton Research Institute - Wright Brothers Institute, LIMING DAI, Department of Chemical and Materials Engineering, University of Dayton, CHENGGANG CHEN, University of Dayton Research Institute/Nonmetallic Materials, AJIT ROY, Air Force Research Laboratory/Structural Materials Branch — Considerable effort is being directed towards the development of novel composite materials to meet future challenges. The introduction of nanoparticles into composite systems holds promise for next generation composites and raises the question of the impact of scale and particle dispersion upon such systems. Nanoindentation and Atomic Force Microscopy have been used to interrogate carbon nanotubes composites and nanoclay composites with the ultimate goal of providing data to build multi-scale models of these systems. Morphology, local material response, and constitutive behavior at the nano- and submicroscales were examined. The results of these experiments, and the degree of correlation between them, will be discussed.

Michael Casavant  
Air Force Research Laboratory/Structural Materials Branch -  
University of Dayton Research Institute - Wright Brothers Institute

Date submitted: 06 Dec 2004

Electronic form version 1.4