

MAR10-2009-008445

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Sorting Category: 16.9 (C)

The effect of surface heterogeneity on the mechanical properties of single wall carbon nanotube carpets E.C. MALDONADO, M.W. ROTH, University of Northern Iowa — The results presented and discussed involve Material Point Method (MPM) simulations of single wall carbon nanotube (SWNT) carpets with varying surface heterogeneity. Specifically, we use deterministic MPM simulations to explore the effect of the degree of randomness of the SWNT array on peeling and adhesive properties as well as the degree clumping of the carpets acting under the constraint of guided motion of the carpet substrate. The bulk elastic properties of the tubes and substrate are taken into account and the system's behavior is characterized through calculations involving dynamics and energetics.

Prefer Oral Session
 Prefer Poster Session

Michael Roth
rothm@uni.edu
University of Northern Iowa

Date submitted: 22 Nov 2009

Electronic form version 1.4