

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Mechanical response of carbon nanotube turfs under lateral strains¹ MELINDA LOPEZ, California State University San Marcos, DAVID BAHR, Washington State University — Carbon nanotubes (CNTs) have a broad array of applications due to their remarkable mechanical, electrical, and thermal properties. In particular, they have been observed to possess the greatest tensile and elastic moduli of any tested material. A great deal of research has been conducted on the mechanical properties of single carbon nanotubes under stress. However, very little mechanical studies have been performed on large collections of carbon nanotubes deposited on substrates, or “turfs,” under different strains. In this work, we examine these mechanical responses by nanoindentation. The data show that a CNT turf at 0% strain has a higher elastic modulus than when at 3.5% strain. This may be attributed to the change in CNT density of the turfs as lateral strain is applied to the substrate.

¹Supported by NSF Research Experience for Undergraduates grant numberEEC-0754370.

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Date submitted: 29 Dec 2009

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