

Abstract Submitted  
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**Intensity dependent Raman spectra of pristine and functionalized carbon nanotubes.**<sup>1</sup> CHARLES BLACKLEDGE, Oklahoma State University, DEOKJIN YU, Oklahoma State University, MAXIM TCHOUL, Oklahoma State University, XIAOMING JIANG, Oklahoma State University, WARREN FORD, Oklahoma State University, JAMES WICKSTED, Oklahoma State University — Raman spectra of polymer functionalized and pristine single wall carbon nanotubes (SWNTs) are presented. The intensity ratio of the disorder (D band) to the tangential (G band) increases after polymer functionalization. Generally Raman spectra of ensembles of SWNTs indicate sample inhomogeneity such as the presence of many different nanotube symmetries and diameters. Laser induced changes in SWNT Raman spectra were also investigated. We observe temporally the laser induced loss of the intensities of the RBMs from small SWNTs and the metallic G band. This is attributed to selective oxidation of smaller carbon nanotubes that primarily consist of metallic SWNTs in our samples. Under identical conditions, the spectral changes of pristine samples are greater than those of polymer functionalized SWNTs. These results confirm that pristine small diameter SWNTs are more reactive than large ones.

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