

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Electroabsorption of Single-Walled Carbon Nanotubes¹ W. JOSHUA KENNEDY, Z. VALY VARDENY, University of Utah — We have measured the electric field modulated absorption (EA) of single-walled carbon nanotubes (SWNT) isolated in a poly-vinyl alcohol matrix (PVA). The derivative-like structure of the EA indicates that the low energy absorption bands are excitonic in origin. We report the voltage, temperature, and polarization dependence of the EA spectrum. Additionally, the sensitivity of the EA spectrum to the energy levels of the SWNT allows us to use EA spectroscopy to observe shifts in the absorption bands of our samples induced by various external fields that are difficult to resolve using CW techniques. Several examples will be discussed.

¹Supported in part by the DOE

W. Joshua Kennedy
University of Utah

Date submitted: 30 Nov 2005

Electronic form version 1.4