Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Photoluminescence from suspended individual ^{13}C-enriched nanotubes[1] T. SHIMADA, A. YOKOYAMA, A. ISHII, J. SHIOMI, S. MARUYAMA, Y.K. KATO, The University of Tokyo — We investigate isotope effects on the electronic structure of single-walled carbon nanotubes by photoluminescence microscopy. In order to suspend nanotubes for luminescence measurements, trenches are formed on SiO_2/Si substrates by electron beam lithography and dry etching processes. No-flow chemical vapor deposition is used to grow carbon nanotubes with small amounts of isotopically enriched ethanol with 99% ^{13}C. Optical measurements are done in air at room temperature using a laser scanning confocal microscope with a wavelength tunable Ti:sapphire laser as an excitation source. We have successfully identified suspended ^{13}C-enriched nanotubes by photoluminescence imaging and assigned their chirality with excitation spectroscopy.

[1]This work is supported by the Mitsubishi Foundation, Ogasawara Foundation, Ishikawa Carbon Foundation, KAKENHI, and Global COE Program of MEXT, Japan.

T. Shimada
The University of Tokyo

Date submitted: 17 Nov 2011 Electronic form version 1.4