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Characterization of Isolated Single-Wall Carbon Nanotubes by Raman Spectroscopy and Transmission Electron Microscopy on the Same Nanotube ANTONIO SOUZA FILHO, EDUARDO BARROS, JOSUE MENDES FILHO, UFC-Brazil, HYUNGBIN SON, JING KONG, GENE DRESSELHAUS, MILDRED DRESSELHAUS, MIT — The correlation between the structural and the vibrational properties of isolated single wall carbon nanotubes (SWNTs) is studied in this work by combined Transmission Electron Microscopy (TEM) and Raman spectroscopy experiments on the same nanotube and at the single nanotube level. The SWNTs were grown on coated TEM grids by the CVD method. Isolated SWNTs were selected and their locations mapped by using low-magnification TEM. Structural information and the electronic and vibrational properties of the selected nanotubes were obtained by a Raman spectroscopy study. High-resolution TEM measurements were used to characterize the same selected nanotubes in order to compare the structural information obtained by the two different methods and to relate it to the electronic and vibrational properties of nanotubes.

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