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Synthesis and Raman characterization of Nitrogen doped single walled carbon nanotubes. ADALBERTO ZAMUDIO, ANA-LAURA ELIAS, IPICYT, Mexico, FEDERICO VILLALPANDO-PAEZ, MIT, USA, JULIO A. RODRIGUEZ-MANZO, EDUARDO CRUZ-SILVA, HUMBERTO TERRONES, IPICYT, Mexico, TAKUYA HAYASHI, Y.A. KIM, HIROYUKI MURAMATSU, MORINOBU ENDO, Shinshu University, Japan, MILDRED S. DRESSELHAUS, GENE DRESSELHAUS, MIT, USA, MAURICIO TERRONES, IPICYT, Mexico — We report the production of macroscopic amounts of long strands consisting of SWNT doped with nitrogen, using a CVD approach. We performed series of experiments varying the concentration of the nitrogen precursor in the solution, from 0.01% to 26 % by weight. The materials were characterized using scanning electron microscopy (SEM), transmission electron microscopy (TEM), high resolution TEM, and Raman Spectroscopy. We will describe the changes in the Raman spectra caused by the nitrogen content using of different laser lines. First principle calculations on the electronic and vibrational properties of the doped SWNTs with N will also be presented.

Mauricio Terrones
IPICYT. Mexico

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