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Raman Spectroscopy of isolated double wall carbon nanotubes with different metallic and semiconducting configurations.[1] FEDERICO VILLALPANDO, Department of Materials Science and Engineering, MIT. , DANIEL NEZICH, Department of Physics, MIT , YOONG AHM KIM, Faculty of Engineering, Shinshu University. , DAISUKE SHIMAMOTO, Faculty of Engineering,Shinshu University , HIROYUKI MURAMATSU , Institute of Carbon Science and Technology, Shinshu University , TAKUYA HAYASHI , Faculty of Engineering, Shinshu University , JING KONG, Department of Electrical Engineering and Computer Science, MIT , ENDO MORIBU, Faculty of Engineering, Shinshu University , MAURICIO TERRONES, Advanced Materials Department, IPICYT , MILDRED DRESSELHAUS, Department of Physics and 2. Department of Electrical Engineering and Computer Science, MIT — We have developed an experimental technique to obtain the Raman spectra from individual double wall carbon nanotubes (DWNT). A chemical vapor deposition (CVD) derived sample of DWNTs is dispersed into solution and placed on a Si substrate. The Si substrate contains lithographic markers that allow us to record the exact location of individual and isolated DWNTs and obtain their Raman spectra with various laser energies. The laser energy can be in resonance with the inner and/or the outer layers of the same DWNT. We report on the differences between individual DWNTs with different metallic and semiconducting configurations and compare our results to previous experiments performed on DWNT bundles.

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