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**Raman characterization of electronic transition energies of metallic single-wall carbon nanotubes** HYUNGBIN SON, Department of Electrical Engineering and Computer Science, MIT, Cambridge, MA, ALFONSO REINA CECCO, Department of Materials Science And Engineering, MIT, Cambridge, MA, JING KONG, Department of Electrical Engineering and Computer Science, MIT, Cambridge, MA, MILDRED DRESSELHAUS, Department of Electrical Engineering and Computer Science and Department of Physics, MIT, Cambridge, MA — Theoretical studies using extended tight-binding model are shown to reproduce the optical transition energies of single-wall carbon nanotubes (SWNTs) obtained by experimental studies. However, some of the optical transitions for metallic SWNTs predicted by theory are not reported in previous experimental studies. We present that Raman characterization on a large number of individual SWNTs reveals these missing optical transitions. The intensity variations of different optical transitions are attributed to electron-phonon matrix elements.

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