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Photoluminescence excitation spectroscopy of individual single walled carbon nanotubes JACQUES LEFEBVRE, National Research Council, JEFFERY BOND, University of Ottawa, YOSHIKAZU HOMMA, NTT Basic Research Laboratories, PAUL FINNIE, National Research Council — Photoluminescence excitation spectroscopy is an essential tool for understanding the optical properties of single walled carbon nanotubes. In many cases, such measurements are performed on large ensembles and, aside from the main spectral features, reliable assignment is most often difficult. In order to address the existence of additional emission and absorption levels/bands in PLE spectra, this work has focused on the study of individual and small ensembles of single walled carbon nanotubes. Such carbon nanotubes are grown by chemical vapor deposition on pre-patterned substrates allowing individual nanotubes to be suspended in free space. The measurements are performed in air, at room temperature, without post growth processing of the nanotubes.

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