

Optical Spectroscopy of Individual Carbon Nanotubes

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Electronic and optical properties of single-walled carbon nanotubes depend sensitively on the nanotube chirality. Single tube spectroscopy provides a powerful tool to probe the chirality-dependent physics in nanotubes. In the talk, I will discuss our recent progress on optical spectroscopy of individual carbon nanotubes. I will describe a high-throughput optical imaging and spectroscopy technique that enables in-situ characterization of single tubes on substrate and in functional devices. I will also show that systematic spectroscopy of individual double-wall nanotubes indicate strong electronic coupling between the inner- and outer-wall tubes that vary strongly with the nanotube chirality.