

Abstract Submitted
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Resonance Raman Scattering for Quantification of the Bundling of SWNTs TAO LIU, ZHIWEI XIAO, High Performance Materials Institute, Florida State University — The strong attractive van der Waals interaction induces individual SWNTs to form bundles or ropes. It has been demonstrated both experimentally and theoretically that, the various physical properties of SWNTs, e.g., photoluminescence, electrical and electronic, and mechanical, strongly depends upon their bundling states. Upon comparative studies of SWNT dispersions with the preparative ultracentrifuge method, which is a newly developed characterization technique by us for quantifying the structures of SWNTs in a dispersion, and resonance Raman scattering, we demonstrate that the bundling states for a given SWNT dispersion can be quantified with the latter technique. In this presentation, the preparative ultracentrifuge method for studying the processing-structure-property relationships of SWNT dispersion will be introduced. The mechanisms of using resonance Raman scattering to quantify the bundling states of SWNTs will be discussed.

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