

Abstract Submitted
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Raman spectroscopy and imaging of surface and suspended carbon nanotubes¹ KATE KAMINSKA, NRC, Ottawa, JACQUES LEFEBVRE, NRC, Ottawa, D. GUY AUSTING, NRC, Ottawa, JEFFERY BOND, University of Ottawa, PAUL FINNIE, NRC, Ottawa — Freely suspended single walled carbon nanotubes show enhanced photoluminescence and Raman signals compared with those from nanotubes on surfaces. We prepared suspended carbon nanotubes by chemical vapor deposition on lithographically patterned substrates. The nanotubes were of the order of 100 microns in length with suspended segments ranging from 1 to 20 microns. Individual nanotubes and bundles were characterized with both Raman spectroscopy and scanning electron microscopy. Raman signals from suspended and non-suspended segments of the same nanotube were detected with up to a tenfold signal enhancement observed for the suspended segments. The effect of suspension is clearly illustrated in spatially resolved confocal images of nanotubes extending over many microns.

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