

Abstract Submitted  
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**Electric field dependence of photoluminescence from individual single-walled carbon nanotubes**<sup>1</sup> S. YASUKOCHI, T. MURAI, T. SHIMADA, S. CHIASHI, S. MARUYAMA, Y.K. KATO, The University of Tokyo — Using suspended single-walled carbon nanotubes, we investigate electric field effects on photoluminescence. Trenches are fabricated on SiO<sub>2</sub>/Si substrates, and Pt is deposited for electrical contacts. Carbon nanotubes are grown by patterned chemical vapor deposition. These devices operate as back-gate field effect transistors, allowing application of electric fields on as-grown ultraclean nanotubes. Individual suspended carbon nanotubes are identified by taking photoluminescence images using a home-built laser-scanning confocal microscope. After determining the chirality by photoluminescence excitation spectra, we measure gate voltage dependence of photoluminescence. We observe quenching of photoluminescence intensity and shifts of emission wavelength as gate voltages are applied.

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