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Raman and Electrical Characterization of Dielectrophoretically Deposited Single Wall Carbon Nanotubes PEHR PEHRSSON, LARS ERICSON, Naval Research Laboratory — We examine the directed assembly and electronic type sorting of single wall carbon nanotubes by dielectrophoresis and electrophoresis. We compare the deposition process for raw (unprocessed), and processed nanotubes from several surfactants. In addition, nanotubes were functionalized with biomolecules and other species of interest for sensor applications. Deposition is conducted with various electrode configurations, spacing, metals, and ac and dc electric field profiles. The deposited material is analyzed by microRaman scattering spectroscopy using 4 wavelength sources and electrically characterized by I-V and gate-voltage measurements.

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