

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Deposition of Carbon Nanotube Networks for Electronics Applications GARRETT WADSWORTH, TETYANA IGNATOVA, SLAVA ROTKIN, Lehigh University — The development of a simple though reliable deposition technique for Carbon Nanotube Networks on substrates would advance the production of working Carbon Nanotubes (CNT) field effect transistors and other electronic devices immeasurably. Our investigation of different methods and processes which would be able to reliably create conductive networks of CNTs was in the effort to achieve this goal. Samples were prepared using different stabilizing solutions such as aqueous Sodium Cholate and Dichloromethane along with several processes of physical application to create a network on various substrates. Characterization using several instruments, including a Keithley Semiconductor Characterization Station for transport measurements, SEM, and AFM was performed to gauge their conductivity and the relation to the sample morphology. The most consistent deposition of CNTs on SiO₂/Si, SiN/Si and glass substrates occurs when using aqueous Sodium Cholate as the stabilizing solution, etching using a strong acid and rinsing to remove Cholate crystals.

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Date submitted: 25 Nov 2008

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