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Accessible surface area in filter deposited, single wall carbon nanotube films¹ RAJIB K. DAS, BO LIU, RYAN M. WALCZAK, ANDREW G. RINZLER, University of Florida — A convenient process for fabricating thin, homogeneous, transparent films of single wall carbon nanotubes (SWNTs), with potential application as electrodes in organic light emitting diodes and photovoltaic devices, was described in 2004[1]. Among the advantages claimed for such films was the high surface area contact afforded by the nanotubes. Recent measurement of the density for such films shows them to possess nearly 60% of the crystallographic hexagonal close pack density for nominally 1.36 nm diameter SWNTs. Such dense packing does not bode well for infiltration of the films with viscous electro-active polymers by e.g. spin coating. Hence, while the films in principle possess large surface areas, it is not necessarily accessible. To improve this circumstance we have developed a simple, controllable method for modifying the open porosity of the films. We will describe the method and its characterization by imaging, sheet resistance and electrochemical capacitance measurements. [1] Z. Wu et al. Science 305, 1273 (2004)

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Andrew G. Rinzler
University of Florida

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