## Abstract Submitted for the MAR12 Meeting of The American Physical Society

Flexible Single-wall Carbon Nanotube Membrane Symmetric Aqueous Double Layer Electrochemical Capacitor<sup>1</sup> PRALAV SHETTY, Mechanical Engineering Department, The Pennsylvania State University, University Park, PA 16802, USA, JIM KAPUL-SON, RAMAKRISHNAN RAJAGOPALAN, Materials Research Institute, The Pennsylvania State University, University Park, PA 16802, USA, KOFI ADU, Department of Physics, The Pennsylvania State University, Altoona College, Altoona, PA 16601, USA — We present preliminary results on an aqueous symmetric double layer electrochemical capacitor (EDLC) constructed with flexible binder-free single wall carbon (SWCNTs) membrane as electrodes. The capacitors were cycled from 0 to 1V @ 10 A/g for 10,000 cycles with 99.9% coulombic efficiency and 94% energy efficiency, and 100% depth of discharge. The power performance of the aqueous symmetric SWCNTs membrane capacitor is almost 100 –1000 times better than commercial non-aqueous EDLC capacitors.

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