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Enhanced Performance in Flexible Binder-free SWCNT Membrane EDLC[1] DANHAO MA, PRALAV SHETTY, The Pennsylvania State University, KOFI ADU, The Pennsylvania State University, Altoona College, RAMAKRISHNAN RAJAGOPALAN, The Pennsylvania State University — We present 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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