

Abstract Submitted  
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**Performance of Multi Walled Carbon Nanotubes Grown on Conductive Substrates as Supercapacitors Electrodes using Organic and Ionic liquid electrolytes** ANDREW WINCHESTER, SUJOY GHOSH, BEN TURNER, Southern Illinois University Carbondale Department of Physics, X.F. ZHANG, Northeastern University Boston, SAIKAT TALAPATRA, Southern Illinois University Carbondale Department of Physics — In this work we will present the use of Multi Walled Carbon Nanotubes (MWNT) directly grown on inconel substrates via chemical vapor deposition, as electrode materials for electrochemical double layer capacitors (EDLC). The performance of the MWNT EDLC electrodes were investigated using two electrolytes, an organic electrolyte, tetraethylammonium tetrafluoroborate in propylene carbonate ( $\text{Et}_4\text{NBF}_4$  in PC), and a room temperature ionic liquid, 1-butyl-3-methylimidazolium hexafluorophosphate (BMIM- $\text{PF}_6$ ). Cyclic voltammetry, galvanostatic charge-discharge, and electrochemical impedance spectroscopy measurements to obtain values for the capacitance and internal resistance of these devices will be presented and compared.

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