

Abstract Submitted  
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**Systematic studies of MnO<sub>2</sub>/MWCNT nanocomposite for supercapacitor applications.** SETH GAGNON, Central Connecticut State University, RIAN TUCCI, Southern Connecticut State University, MIKAELA SANTO, RILIND ABAZI, PETER LEMAIRE, Central Connecticut State University, ELLEN SCANLEY, CHRISTINE BROADBRIDGE, Southern Connecticut State University, RAHUL SINGHAL, Central Connecticut State University, RAHUL SINGHAL COLLABORATION — We have synthesized MnO<sub>2</sub> multiwall carbon nanotube composites (MnO<sub>2</sub>-CNT) with CNT concentrations of 1, 4, and 10 mg/ml in the reaction mixture. The phase purity of the synthesized nanocomposites was evaluated using X-ray diffraction and the MnO<sub>2</sub>-CNT morphology was studied using conventional transmission electron microscopy (TEM). The electrodes of MnO<sub>2</sub>/CNT nanocomposites were prepared by coating a slurry of synthesized materials, PVDF binder, and carbon black [wt. ratio 80:10:10] onto Ni mesh. The electrodes were electrochemically characterized using cyclic voltammetry at various scan rate from 20 mV/s – 200 mV/s. The charge-discharge and cycleability studies were carried out at various current rate between 0.5A/g – 5A/g using MnO<sub>2</sub>/CNT electrodes, Pt foil, and Ag/AgCl as working, counter, and reference electrodes, respectively. The detailed results will be presented at the meeting.

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