

Abstract Submitted
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Synthesis and Characterization of MnO₂/MWCNT nanocomposite for supercapacitor applications WILLIAM TUXBURY, RILIND ABAZI, SETH GAGNON, ARKID KONI, PETER LEMAIRE, RAHUL SINGHAL, Central Connecticut State University — We have synthesized MnO₂ multiwall carbon nanotube composite (MnO₂-CNT) for supercapacitor applications. The synthesized materials were physically characterized using X-Ray diffraction and UV-visible spectroscopy techniques. A slurry was prepared using synthesized materials, PVDF binder, and carbon black in a ratio of 80:10:10, using ethanol as solvent. The slurry was then coated onto Ni mesh and dried to get the electrodes. The electrodes were electrochemically characterized using cyclic voltammetry, charge-discharge and cycleability studies. From the cyclic voltammetry measurements, it is apparent that the electrodes remain stable at high scan rates (10 mV/s – 300 mV/s). The charge-discharge measurements shows the specific capacitance to be 142.5 F/g, 135.75 F/g, 126.5 F/g, 119.25 F/g, 113.5 F/g and 107.82 F/g for current density of .5 A/g, 1 A/g, 2 A/g, 3 A/g, 4 A/g and 5 A/g respectively. The detailed results will be presented at the meeting.

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