

Abstract Submitted  
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**A one-step method for synthesizing MnO<sub>2</sub>/GO at room temperature for supercapacitor applications** JUSTIN FAGNONI, IAN WATERS, PETER K. LEMAIRE, RAHUL SINGHAL, Department of Physics and Engineering Physics, Central Connecticut State University, New Britain CT 06050 — We have synthesized MnO<sub>2</sub>/graphene Oxide (GO) composite at room temperature by dissolving appropriate amount of KMnO<sub>4</sub> and 10 mg GO in a solution of deionized water (DI): ethanol (3:1), followed by continuous stirring for 1 hour. The resulting precipitate was washed with DI water several times and dried overnight to obtain MnO<sub>2</sub>/GO powder. The X-ray diffraction studies confirm the phase purity of synthesized MnO<sub>2</sub>/GO powder. Thermal characterizations of MnO<sub>2</sub>/GO powder were carried out using differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA). The electrochemical characterizations were carried out in an aqueous solution of 1M sodium sulfate, using MnO<sub>2</sub>/GO coated onto Ni mesh as working electrode, Pt as counter electrode, and Ag/AgCl as reference electrode. The capacitance of MnO<sub>2</sub>/GO electrodes were found about 160 F/g, 140 F/g, and 115 F/g at a charge-discharge current rate of 1A/g, 500 mA/g, and 300 mA/g, respectively. The detailed results will be presented at the APS New England section's March 2018 meeting..

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