

ABSTRACT

My Mphil research work is to synthesize CuZnO and CuZnO/CNT using a co-precipitation method to be used as an electrode material for a supercapacitor. Different types of characterization techniques used to analyze the crystal structure, morphology of prepared composite. FTIR shows CuO bond at 501cm^{-1} and 502cm^{-1} and ZnO bands at 465cm^{-1} , according to Fourier Transform Infrared Spectroscopy (FTIR). UV-Visible Spectroscopy reveals that the electrical properties increase as the band gap decreases. Cyclic Voltammetry and Galvanostatic charging/discharging were used to examine the electrochemical performance. At 2Ag^{-1} (CuZnO/CNT) the maximum specific capacitance was (672Fg^{-1}). The energy density of (CuZnO/CNT) reaches at 23.333Wh Kg^{-1} and a power density of 500Wkg^{-1} .