**Abstract**

Supercapacitors are the new generation of energy storage devices alternate to batteries because of excellent power density. Transition metal dichalacogenide nanosheet (MoS2) doped with the zinc oxide and polyanniline nanocomposites influence the transition probabilities and electronic structure. In the present study, the various concentrations of MoS2 / ZnO / PANI nanocomposites are synthesized by microwave assisted method. These nanocomposites are characterized by using X-ray diffraction (XRD), Scanning Electron microscope (SEM), High Resolution Transmission Electron Microscope (HR-TEM), Fourier Transform infrared spectroscopy (FT-IR) UV-visible (UV-Vis) absorption spectroscopy and Raman spectroscopy. The XRD results revealed that the synthesized nanocomposites are crystalline in nature. The average crystallite size of MoS2 / ZnO / PANI nanocomposites is found to be 15 nm. The electrochemical properties of the nanocomposites are studied through the cyclic voltammetry (CV), Electron impedance spectroscopy (EIS) and Galvanostatic charge- discharge (GCD) for the application of supercapacitor as an active electrode material. The MoS2 doped ZnO / PANI nanocomposites shows good cyclic stability .The electrochemical impedance and charge-discharge shows that the MoS2 / ZnO / PANI nanocomposites possess high conductivity and low charge transfer resistance. These results attributes that the synthesized nanocomposites have potential application for energy storage applications.