**Abstract**

Polyaniline (PAni)/MnWO4 nanocomposite was successfully synthesized by in situ polymerization method under ultrasonication and the MnWO4 was prepared by surfactant assisted ultrasonication method. The thermal stability of PAni was determined by TG/DTA (Thermo Gravimetric/ Differential thermal analysis). The structural and morphological features of PAni, MnWO4 and PAni/MnWO4 composite was analyzed using Fourier transform infrared spectrometry, X-ray diffraction (XRD), scanning electron microscope (SEM) and Transmission electron microscope (TEM) images. The electro-chemical properties of PAni, MnWO4 and its composites with different weight percentage of MnWO4 loading were studied through cyclic voltammetry (CV) for the application of supercapacitors as active electrode materials. From the cyclic voltammogram, 50% of MnWO4 impregnated PAni showed a high specific capacitance (SC) of 481 F/g than their individual counterparts of PAni (396 F/g) and MnWO4 (18 F/g). The galvanostatic charge–discharge studies indicate the in situ polymerized composite shows greater specific capacitance (475 F/g) than the physical mixture (346 F/g) at a constant discharge current of 1 mA/cm2 with reasonable cycling stability. The charge transfer resistance (Rct) of PAni/MnWO4 composite (22 ohm) was calculated using electrochemical impedance spectroscopy (EIS) and compared with its physical mixture (58 ohm).