Abstract:

Nickel Manganese Oxide ($NiMn_2O_4$) composite was synthesized by Co-Precipitation method. X-ray diffraction (XRD) confirmed the composite belong to $NiMn_2O_4$. Fourier Transform Infrared Spectroscopy (FTIR) revealed that the bands below than $800cm^{-1}$ are attributed to Ni-Mn bonds. UV-Visible Spectroscopy (UV-Visible) shows that the electrical properties increased as band gap reduced. Nanoparticles morphology of prepared composite was confirmed by Scanning Electron Microscope (SEM). Electrochemical performance examined through Cyclic Voltammetry and Galvanostatic charging/discharging. The maximum specific capacitance ($390Fg^{-1}$) was calculated at $1Ag^{-1}$. $NiMn_2O_4$ shows good cyclic stability and reversibility. The $NiMn_2O_4$ achieved $54Whkg^{-1}$ energy density and $500Wkg^{-1}$ power density.