

## Abstract

Silver, Bismuth and Manganese-doped cerium oxide composite with Activated was prepared through the solution combustion method. The crystal structure confirmation, surface morphology and optical properties of the synthesized composite material were examined using X-ray diffraction (XRD), scanning electron microscope and UV-Vis DRS spectroscopy, respectively. After sintering at 850 °C, XRD confirmed the existence of the crystalline nature of (Ag,Bi,Mn)@CeO<sub>2</sub>/AC as FCC phase. Peak shifting was observed towards a lower angle in the cerium oxide diffraction pattern expressing the doping Ag,Bi,Mn into the CeO<sub>2</sub> lattice. UV-Vis DRS indicated decreased band gap energies with Ag,Bi,Mn-addition. The prepared material was considered to check its electrochemical properties like specific capacitance, power density and energy density.