

Sonication-supported synthesis of cobalt oxide assembled on an N-MWCNT composite for electrochemical supercapacitors via three-electrode configuration

ABSTRACT

The Co_3O_4 @N-MWCNT composite was synthesized by a sonication-supported thermal reduction process for supercapacitor applications. The structural and morphological properties of the materials were characterized via Raman, XRD, XPS, SEM-EDX, and FE-TEM analysis. The composite electrode was constructed into a three-electrode configuration and examined by using CV, GCD and EIS analysis. The demonstrated electrochemical value of $\sim 225 \text{ F/g}$ at 0.5A/g by the electrode made it appropriate for potential use in supercapacitor applications.