

STRUCTURAL, OPTICAL, ELECTROCHEMICAL PROPERTIES OF NANO GRAPHENE OXIDE/NIO NANO COMPOSITE SUITABLE FOR SUPER CAPACITOR APPLICATIONS.

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ABSTRACT

In this paper, NiO nanoparticles Graphene sheet was prepared by hydrothermal synthesis method, which is one of the simplest techniques. The prepared NiO nanoparticles graphene sheets were characterized, and XRD analysis confirms the crystallinity and phase purity of the sample. There is a band gap between the UV and visible spectra of the sample at 3.25 eV. Mesoporous morphology of the material was discovered through SEM micrographs. This mesoporous morphology may be due to an increase in the material's surface-to-mass ratio, which may increase the material's specific capacitance. The electrochemical performance of the as-prepared nanocomposite materials was measured. The CV-Cyclic voltammetry GO/NiO nanocomposite. It shows that at a current density of 0.5 Ag⁻¹, the capacitor exhibits a higher specific capacitance of 707.56 Fg⁻¹ and is a suitable material for electrode application in a super capacitor as described.

KEYWORDS: Nano Composite, Nickel Oxide, Graphene Oxide, Super Capacitor Application.

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