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One pot easy synthesis and optical characterization of $Cd_{1-x}Co_xS$/rGO composites starting from graphite oxide by co precipitation method and its electrochemical Properties

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Abstract: $Cd_{(1-x)}Co_{(x)}S$/rGO nanocomposites were synthesized by an easy and simple one–pot co-precipitation method. The composites were characterized by using X-ray diffractometer (XRD), Fourier transform infrared (FTIR), Raman spectroscopy, Thermogravimetric Analysis (TGA). The presence of elements was confirmed by X-ray photoelectron spectroscopy. The morphological studies FE-SEM and TEM shows that the $Cd_{(1-x)}Co_{(x)}S$ nanoparticles were deposited on the surface of reduced graphene oxide sheets. The electrochemical property was studied by CV analysis, which indicates the introduction of Co ions into CdS nanoparticles on to the rGO sheets results the increase in the integral area and current. This material could be useful for energy storage devices.
Keywords: $Cd_{(1-x)}Co_{(x)}S$/rGO, composites, Co-precipitation, Optical properties, Electrochemical property.

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