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# SUPERCAPACITANCE PERFORMANE OF ELECTROCHEMICALLY DEPOSITED COBALT OXYHYDROXIDE NANOSTRUCTURED THIN FILMS: EFFECT OF THICKNESS

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**Abstract**

Nanostructures of cobalt oxyhydroxide (CoOOH) thin films with different thicknesses have been electrochemically deposited onto copper substrates and employed as an electrode material in supercapacitor. The properties of cobalt oxyhydroxide thin film electrode were investigated using X-ray diffraction (XRD), fourier transform infrared spectroscopy (FT-IR), scanning electron microscopy (SEM) and cyclic voltammetry techniques. The specific capacitance was dependent on the electrode thickness due to morphological changes occurred during the deposition. A maximum specific capacitance of 240 F $g^{-1}$ was achieved in 1.5 M KOH electrolyte with the electrode thickness of 930 nm.

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**Keywords**: CoOOH; Electrodeposition; Thin-films; Supercapacitor; Surface morphology.

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