

# Chemically Synthesized Ammonia Free CdS Thin Film for Supercapacitor Performances

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**Abstract:** In the current study, we successfully created a thin film of Cadmium Sulphide (CdS) on stainless steel substrates using the quick and inexpensive Chemical Bath Deposition (CBD) method. Using various characterization techniques like XRD, FESEM, and EDAX, the prepared (CdS) thin film was examined for its structural, morphological, and compositional analysis. Subsequently, the CdS thin film has morphology similar to Nanoflakes, which is well adapted for supercapacitor application due to its naturally crack-free morphology. According to the X-Ray diffraction (XRD) study, the CdS thin film was naturally polycrystalline. Synthesized CdS thin film show super capacitance characteristic.

**Keywords:** Cadmium Sulphide (CdS); Chemical Bath Deposition (CBD); Supercapacitor

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