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# Physical Characterization and Electrochemical Properties of Molybdenum Oxide Thin film

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**Abstract :** There is a growing necessity of transition metal oxide thin film for many important technological applications such as smart windows gas sensors, solar cells, super capacitors etc. Among the other transition metal oxides, Molybdenum oxide is a potential material as it exhibits interesting structural, optical, chemical, electrical properties. In this investigation Molybdenum oxide thin films have been synthesized using spin coating technique. Here Molybdenum oxide thin films have been deposited on stainless steel substrate by sol-gel spin coating method. Thin film properties of deposited samples were studied by XRD ,SEM, FTIR,EDAX. Thin films were used as electrodes for supercapacitor with 0.1 M KOH electrolyte. It showed maximum capacitance of 1010 F/g for scan rate of 10 mv/sec. Also stability of the electrode was calculated. Power density and energy density were determined from galvanostatic charge-discharge analysis.

**Keywords:** Supercapacitor, Molybdenum oxide, Sol-gel Spin-coating, CV, Galvanostatic charge-Discharge.

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