

## **Sol-Gel Made Tungsten Oxide Mixed Tantalum Oxide Films**

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### **Abstract**

Tungsten oxide mixed tantalum oxide thin films have been prepared both by dip and spin coated techniques. The effect of preparation conditions (heating of film and pH of solution) on the optical, structural and electrochromic properties of the films have been studied. The optical, structural and electrochromic properties of the films are described and compared to each other. Results are also presented on the samples prepared by thermal treatment. Electrochemical and optical characterizations show that the tantalum concentration affects the properties of sol-gel derived films significantly.

**Keywords:** Sol-gel; Electrochromism; Structural properties; Tungsten oxide mixed tantalum oxide films