



## Influence of annealing and processing conditions on nano-structured thin films of tungsten trioxide

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Titre	Influence of annealing and processing conditions on nano-structured thin films of tungsten trioxide
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Mots-clés	crystalline structures [6], Optical constant [7], Thermal evaporation [8], Urbach tailing [9]
Résumé en anglais	<p>Transition metal oxides represent a novel class of compounds which have attracted a considerable interest in the recent literature. Among these materials, tungsten trioxide has shown great potential due to photo-oxidation of water with visible light, high photocurrent with nano-crystals and good sensing properties towards several gases. The purpose of this study is to investigate the influence of conditions of heat treatment on properties of WO<sub>3</sub> thin films prepared by hermal evaporation under vacuum. Physico-chemical properties of WO<sub>3</sub> thin layers for different heat processing conditions were determined by X-ray diffraction XRD, microprobe electronics and scanning electron microscopy (SEM).Optical measurement yieldedt ransmission and reflection measurements. The study of the physicochemical properties of thin layers of thermally post-treated tungsten trioxide showed that layers processed under vacuum have an unidentifiable structure than those annealed in air and crystallized under different crystallographic structures depending on processing temperature. Layers annealed in oxygen hadmonoclinic crystalline structures.It has been recorded that crystallinity and transmission of these films were drastically improved.</p>
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