

## عنوان مقاله:

Enhanced methanol sensing performance of oblique deposited WO<sub>3</sub> thin films

## محل انتشار:

دومین کنفرانس ملی نانو ساختارها، علوم و مهندسی نانو (سال: 1396)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

E Amani - *Department of Physics, North Tehran Branch, Islamic Azad university, Tehran, Iran*

.K Khojier - *Department of Physics, Chalous Branch, Islamic Azad University, Chalous, Iran*

,S Zoriasatain - *Department of Physics, North Tehran Branch, Islamic Azad university, Tehran, Iran*

## خلاصه مقاله:

Methanol (CH<sub>3</sub>OH) is a colorless liquid with a mild odor. The wide ranges of applications, toxicity and clinical implications of methanol have made necessary to develop reliable and high-performance methanol sensors. In this paper, WO<sub>3</sub> thin films were deposited on SiO<sub>2</sub>/Si substrates by e-beam evaporation technique under normal and oblique angles and then post-annealed at 500 °C with a flow of oxygen for 4h to achieve a good crystallinity. The crystalline structure of the samples was confirmed by X-ray diffraction analysis while the physical adsorption isotherm was used to measure the porosity and effective surface area. These results reveal that the deposited sample under oblique angle shows more crystallinity, and porosity relative to the sample deposited at the normal angle. The response of the samples was tested with respect to methanol vapour with different concentrations in the temperature range of 140–260 °C. Reproducibility and stability of the samples were also investigated.

## کلمات کلیدی:

Thin film, WO<sub>3</sub>, Sensing properties, Methanol

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/743567>

