Preparation and Study the Characteristics of Tungsten Trioxide Thin Films for Gas Sensing Application

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ABSTRACT
In this study, Tungsten Trioxide thin films were successfully synthesized at different substrate temperatures by pulse laser deposition. Structural, morphological and electrical properties of WO$_3$ thin films, were investigated by X-ray diffraction (XRD), Atomic Force Microscope (AFM), Scanning Electron Microscope (SEM), Hall Effect and sensing measurements.

The results was indicated that WO$_3$ thin films prepared at 450°C was optimum condition where sensitivity toward H$_2$S gas has been measured, sensitivity was higher than other films preparation at (250°C, 350°C) temperature.

Keywords: Pulsed Laser Deposition (PLD), WO$_3$ thin films, Electrical