

## **Morphological and structural properties of Cu<sub>2</sub>O/2-D photonic silicon nano structure for gas sensors**

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### **ABSTRACT**

This study consists of preparation and study of the physical, optical and electrical properties of 2D-Si and Cu<sub>2</sub>O/2D-Si thin films. The 2D-Si was introduced as a substrate by (PECE), the current density is changed (10 mA and 20 mA) and etching time is (10min). The copper oxide was deposited on the 2D-Si by PLD technique using pure copper. The physical, optical and electrical properties were studied of 2D-Si and Cu<sub>2</sub>O/2D-Si thin films to find the best thin films that could be used as gas sensor. The structure properties were studied by X-ray diffraction (XRD). All thin films were found to have multi-crystalline and cubic structures. The surface morphology is study by using atomic force microscope and field emission scanning electron microscope.