

Biasing Voltage Dependence Of Sensitivity Of Electron Beam Evaporated SnO₂ Thin Film CO Sensor

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Summary

Thin films of tin oxide were deposited by electron beam evaporation. The effects of the sensor biasing voltage and film thickness on the CO-sensing of tin oxide thin films were investigated. The films were characterized using X-ray diffraction and X-ray photoelectron spectroscopy. All the films were found to be amorphous. The current-voltage characteristic of the sensor in air has shown that semiconductor-metal interface forms Schottky barrier. It was found that the CO-sensing properties depend on the sensor biasing voltage and film thickness. For lower biasing voltages the sensitivity was much higher than for the higher voltages. It was found that the sensitivity of the films to CO increased with the film thickness.

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