



Copper (II) oxide thin film for methanol and ethanol sensing

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Abstract- A nanostructured copper (II) oxide film deposited by reactive DC-magnetron sputtering technique, has been studied for static sensor response towards methanol and ethanol by operating temperature and analyte concentration modulations. The optimum operating temperature (T_{opt}) for the sensing of methanol and ethanol is observed to be 350 °C and 400 °C, respectively. The maximum sensitivity observed for 2500 ppm methanol and ethanol is 29% and 15.4% respectively. Another important observation is that the sensitivity time reduces with analyte concentrations, where as recovery time increases. The response time of 2500 ppm methanol and ethanol is 235 s and 247 s correspondingly.

Index term: Copper (II) Oxide thin films, sputtering, gas sensing, response time and recovery time.