

Thin films of hafnium oxide of different thicknesses were deposited by electron beam evaporation. The effects of the sensor biasing voltage, electrode metal (Ag, Al, Pt and Au) and electrode configuration on the carbon monoxide (CO) sensing of hafnium oxide thin films were investigated.

It was found that the CO-sensing properties depend on the sensor biasing voltage. Hafnium oxide showed two different sensing mechanisms with the variation of biasing voltage: at lower biasing voltage the mechanism was found to be of reducing type, while at higher biasing voltage it was of oxidizing type.

Moreover it was found that the CO-sensing properties depend both on the electrode materials and configuration. The sensor response and recovery times have also been measured.