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Acetone Sensing Properties of Nanostructured Copper Oxide Films on Glass Substrate

Abstract

Copper oxide nanostructured films were synthesized via a chemical synthesis (SCS) method and annealed in low vacuum. The morphological properties were investigated using scanning electron microscopy (SEM). The elaborated sensor structures based on CuO/Cu₂O films were tested to 100 ppm of acetone vapor. It was observed that by applying different temperatures for rapid thermal annealing the surface morphology of the films can be modified, as well as the composition of the films, which leads to the changes in gas response value for the tested gases. The possibility of controlling the sensitivity of the sensors by changing the RTA treatment temperature and the operating temperature was demonstrated.