

OPTIMIZATION OF THE TECHNOLOGY OF CREATING SENSITIVE GAS SENSORS BASED ON ZINC OXIDE

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Abstrac – The main achievements in the development of resistive type gas sensors are analyzed, in particular, the creation of nanostructures based on metal oxides, which make it possible to significantly improve the performance characteristics of the sensors. Experimental samples of the gas sensor based on ZnO were obtained by magnetron sputtering on direct current. The effectiveness of the gas sensor system for recognition and analysis of gases and their mixtures has been established. A study of the sensitivity of experimental samples to the influence of the target gas CO was carried out. The target gas concentration varied from 50 to 150 ppm. It was established that the ZnO-based gas sensor exhibits the highest sensitivity at a target gas concentration of 100 ppm. The sensitivity of the gas sensor increases with increasing exposure time to the target gas.

Keywords – direct current magnetron sputtering method, gas sensor, gas sensor sensitivity, zinc oxide