CO2 gas sensing properties of screen printed La2O3/SnO2 thick film

Abstract

The present investigation deals with the fabrication of CO2 gas sensor based on La2O3/SnO2 metal-oxide material. In this paper, the sensitive material was prepared by La2O3/SnO2 nanopowder and the addition of 1 wt. % and 3 wt. % platinum (Pt) using high-speed ball milling method. The sensitive film prepared by sensitive powder was printed on alumina (Al2O3) substrate by screen printing method. This film was characterized by X-Ray powder diffraction spectroscopy, and Field-emission scanning electron microscopy. As a result, the prepared 3 wt. % Pt/La2O3/SnO2 thick film sensitive paste exhibits a high sensitivity to increasing the CO2 gas concentration at 225 °C in air atmosphere.

Keyword: La2O3/SnO2 thick film; Screen printing; CO2 sensor; Gas sensor; Pt