



Contribution ID: 136

Type: Oral Presentation

Gas sensing applications of Cobalt and Indium double-doped ZnO nanoparticles prepared by sol-gel method

Tuesday, 5 July 2016 11:10 (20 minutes)

Abstract content (Max 300 words) Formatting & Special chars

The undoped and doped ZnO nanoparticles were synthesised using sol-gel method. XRD and PL were used to study the structural and optical properties of the synthesised samples. The gas sensing applications of the undoped and doped ZnO nanoparticles were performed on the Carbon monoxide (CO) gas. The structural studies showed that the synthesised samples were of ZnO wurtzite structure and indium and cobalt were successfully doped into the ZnO structure. In the optical studies the energy band gap of the doped ZnO nanoparticles were found to be smaller as compared to the undoped ZnO nanoparticles. In the gas sensing applications, the response of the doped ZnO nanoparticles were found to be higher than the response of the undoped ZnO nanoparticles. Doping with indium and cobalt was found to reduce the response\ recovery time of the ZnO nanoparticles.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

TE Mosuang, Thuto.Mosuang@ul.ac.za, University of Limpopo

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

Please indicate whether this abstract may be published online (Yes / No)

Yes

Primary author: Mr MASWANGANYE, Mpho (University of Limpopo)

Co-authors: Dr MWAKIKUNGA, Bonex (CSIR National Laser Centre); Dr RAMMUTLA, Erasmus Koena (University of Limpopo); Dr MOSUANG, Thuto (University of Limpopo)

Presenter: Mr MASWANGANYE, Mpho (University of Limpopo)

Session Classification: Division for Physics of Condensed Matter and Materials (2)

Track Classification: Track A - Division for Physics of Condensed Matter and Materials