Onkar Singh et al., J Material Sci Eng 2012, 1:3
http://dx.doi.org/10.4172/2169-0022.S1.007

OMICS Group Conferences
Accelerating Scientific Discovery

International Conference and Expo on
Materials Science & Engineering

October 22-24, 2012 DoubleTree by Hilton Chicago-North Shore, USA

Sensing response of Indium doped zinc oxide nanostructures

Onkar Singh and Ravi Chand Singh
Guru Nanak Dev University, India

Synthesis and sensing response of pure and indium doped zinc oxide has been reported in this work. We adopted a chemical route to synthesize pure and doped ZnO. We have started with a 0.2M solution of $ZnCl_2$ prepared in distilled water, in this solution indium chloride was added by weight. Then resulting solution was precipitated by adding an ammonium hydroxide drop wise at room temperature. The precipitates thus obtained were separated from rest of the liquids by filtering and were dried into powder at 120°C. Then the powders were sintered at temperature of 500°C for three hours.

To understand the structure, we subjected the synthesized materials to XRD and FESEM. The XRD study reveals the ZnO crystallizes into wurtzite hexagonal geometry and from the FESEM images, it is observed that pure and doped ZnO has morphed into different nanostructures. Then from these powders different sensors have been fabricated to check sensing response towards ethanol. The addition of dopant has altered the morphology of ZnO. Moreover, it has also affected the sensing response for ethanol appreciably.

Biography

Onkar Singh received his M.Sc. physics degree from Guru Nanak Dev University, Amritsar, India in 2006. Presently he is pursuing for Ph.D. in the field of nano sized metal oxide materials and gas sensors at the same institute. Till now he has published 12 papers in reputed international journals.

garhikang@gmail.com