



Nitrogen oxides and ammonia sensing characteristics of SILAR deposited ZnO thin film

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Abstract

Pure and Sn, Ni doped ZnO thin films were deposited on glass substrates using a novel successive ionic layer adsorption and reaction (SILAR) method at room temperature. Microstructures of the deposited films were optimized by adjusting growth parameters. The variation in resistivity of the ZnO film sensors was performed with rapid photothermal processing (RPP). The effect of rapid photothermal processing was found to have an important role in ZnO based sensor sensitivity to NO₂, NH₃. While the undoped ZnO film surface exhibited higher NH₃ sensitivity than that of NO₂, an enhanced NO₂ sensitivity was noticed for the ZnO films doped with Sn and higher NH₃ sensitivity was obtained by Ni doping.