솔젤법으로 제작한 ZnO 박막의 광전도특성 연구

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Transparent conducting ZnO thin films deposited by a Sol-gel method

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Abstract: Nowadays, ZnO thin films are investigated as transparent conductive electrodes for use in optoelectronics devices including flat displays, thin films transistors, solar cells because of their unique optical and electrical properties. For the use as transparent conductive electrodes, a film has to have low resistivity, high absorption in the ultra violent light region and high optical transmission in the visible region. Different technologies such as electron beam evaporation, chemical vapor deposition, laser evaporation, DC and RF magnetron sputtering and have been reported to produce thin films of ZnO with adequate performance for applications. However, highly transparent and conductive doped-ZnO thin films deposited by a metal-organic decomposition method have not been reported before. In this work, the effect of dopant concentration, heating treatment and annealing in areducing atmosphere on the structure, morphology, electrical and optical properties of ZnO thin films deposited on glass substrates by a Sol-gel method are investigated.

Key Words : Sol-gel; ZnO; Optical properties,