

Effect of growth temperature on the ZnO thin films deposited by RF magnetron sputtering

정동섭, 바수데바레디, 이형민, 김명호, 조해윤, 박진호[†]

영남대학교

(chpark@ynu.ac.kr[†])

The ZnO films were deposited by RF magnetron sputtering at various growth temperatures in the range, 200 - 500 °C. The structural, topographical, optical and electrical properties were investigated using X-ray diffraction, atomic force microscope, ultraviolet-visible spectrometer and Hall measurements respectively. XRD revealed that the change in the preferred orientation from (103) to (002) with growth temperature and exhibited hexagonal crystal structure. The optical constants such as band gap, extinction coefficient and refractive index were evaluated from transmittance and reflectance measurements. The temperature dependent electrical carrier concentration, mobility and resistivity of the ZnO films were studied. The results discussed in detail.