

Growth Behavior of Ga-Doped ZnO Thin Films on Au/SiNx/Si(001) Substrate Grown by RF Sputtering

김주현, 이무성, 강현철

조선대학교 신소재공학과

This paper reports the synthesis and characterization of ZnO:Ga nano-structures deposited on Au/SiNx/Si(001) by radio-frequency sputtering. The effect of the temperature on the microstructure of the as-grown ZnO:Ga thin films was examined. The growth mode of ZnO:Ga nano-structures can be explained by the profile coating, i.e. the ZnO nano-structures were formed with a morphological replica of Au seeds. Initially, the ZnO:Ga nano-structures were overgrown on top of Au nano-crystals. Small ZnO:Ga nano-dots were then nucleated on hexagonal ZnO:Ga discs.

Keywords: ZnO, Ga-doping, Au seed, RF sputtering