

INFLUENCE OF GROWTH
CONDITIONS ON STRUCTURAL
AND OPTICAL PROPERTIES OF $Zn_{0.9}Cd_{0.1}O$ FILMS

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S u m m a r y

The influence of the magnetron power and the gas ratio Ar:O₂ on the microstructure and the optical properties of $Zn_{0.9}Cd_{0.1}O$ films is studied. The films were deposited with the use of the dc magnetron sputtering technique at a temperature of 250 °C. Atomic force microscopy (AFM) and X-ray diffraction (XRD) researches of a surface morphology demonstrated a strong influence of deposition procedure parameters on the film microstructure. The XRD analysis revealed that all grown films were polycrystalline and single-phase. The increase of the gas ratio Ar:O₂ was found to be beneficial for the crystalline structure of $Zn_{0.9}Cd_{0.1}O$ ternary alloys. Peculiarities of the control over the band gap and the surface morphology for $Zn_{0.9}Cd_{0.1}O$ ternary alloys by varying the growth parameters are discussed.