

Physical Properties of ZnO Thin Films Deposited by Pulsed Laser Deposition with Temperature Modulation

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In view of the demand for growth of high-quality optical devices such as UV-light emitting sources or UV-sensing diodes, ZnO has been widely investigated because of its high optical transmittance and wide band gap with high exciton binding energy. Also ZnO is very attractive material for the diluted magnetic semiconductor, because of its high Curie temperature⁽¹⁾.

ZnO thin films can be grown by various deposition techniques. To realize device applications, high-quality thin films are needed. So we use the pulsed laser deposition (PLD) method for fabricating ZnO thin films because it is widely used in fabricating high-quality metal oxide thin films.

In this study, ZnO films were grown by PLD on Sapphire (0001) Substrates at various temperature and growth pressure and we investigate the structural properties and surface morphology of ZnO thin films by XRD, AFM measurements.

[참고문헌]

1. T. Dietl, H. Ohno, F. Matsukura, J. Cibert, and D. Ferrand, Science 287, 1019 (2000)