Temperature-Dependent Hall Effect Studies of AZO Thin Films

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Abstract. Understanding of how the defects interact with each other and affect the properties of ZnO:Al thin films is one of great importance for improving their performance as a transparent conductive oxide. In the present work we studied the effect of annealing on the carrier concentration and Hall mobility of under-stoichiometric ZnO:Al films. Samples have been deposited by magnetron rf and dc co-sputtering from ceramic and metallic targets with the same Zn(98%)/Al(2%) concentration. Raman spectra taken prior and after temperature-dependent Hall measurements, fulfilled the understanding of the mosaic of defect changes.