

The Effect of Aging of ZnO, AZO, and GZO films on the Microstructure and Photoelectric Property

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Abstract : RF magnetron sputtering is used on the ceramic targets, each of which contains zinc oxide (ZnO), zinc oxide doped with aluminum (AZO) and zinc oxide doped with gallium (GZO). The XRD analysis showed a preferred orientation along the (002) plane for ZnO, AZO, and GZO films. The AZO film had the best electrical properties; it had the lowest resistivity of 6.6×10^{-4} cm, the best sheet resistance of 2.2×10^{-1} Ω /square, and the highest carrier concentration of 4.3×10^{20} cm⁻³, as compared to the ZnO and GZO films.

Keywords : aging, films, microstructure, photoelectric property

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