

New Transparent Conducting Al-doped ZnO Films by Liquid Source Misted Chemical Deposition Method

김길호, 신중원, 우성일*, 정원호¹
한국과학기술원;

¹Vacuum Technology and Service Corporation
(siwoo@kaist.ac.kr*)

The TCOs most widely used in optoelectronic devices, flat panel display applications are crystalline indium tin oxide, amorphous indium tin oxide, as it combines good electrical conductivity in the visible range. However, a stable supply of ITO may be difficult to achieve for the recently expanding market for optoelectronic devices because of the cost and scarcity of indium, the principal material of ITO. To obtain improved transparency with a good electrical conductivity, new TCO materials have been developed as alternatives to the commercial ones. For a solution to these problems, extensive studies have been carried out on partially substituted compounds of ZnO. Al doped ZnO (AZO) is widely studied in TCOs materials as it shows good electrical, optical, and luminescent properties. Many deposition techniques were applied to synthesize ZnO thin films. However, these conventional thin film deposition methods have several disadvantages. In order to overcome these problems, we have designed LSMCD method. In this study, we focused on the fabrication of aluminum-doped ZnO thin films using the LSMCD at low temperature.