

Properties of zinc tin oxide thin film by aerosol assisted chemical vapor deposition (AACVD)

ABSTRACT

This study focuses on the properties of ZTO which have been deposited by a low-cost method namely aerosol assisted chemical vapor deposition (AACVD). The precursors used in this method were zinc acetate dihydrate and tin chloride dihydrate for ZTO thin film deposition. Both precursors were mixed and stirred until fully dissolved before deposition. The ZTO was deposited on borosilicate glass substrate for the investigation of optical properties. The films deposited have passed the scotch tape adherence test. XRD revealed that the crystal ZTO is slightly in the form of perovskite structure but several deteriorations were also seen in the spectrum. The UV-Vis analysis showed high transmittance of ~85% and the band gap was calculated to be 3.85 eV. The average thickness of the film is around 284 nm. The results showed that the ZTO thin films have been successfully deposited by the utilization of AACVD method.