Effect of spin coating rate and annealing temperature on the structural and optical properties of polytriarylamine (PTAA) thin fil

ABSTRACT

Spin-coating method has been used as a method to deposit polytriarylamine (PTAA) on indium tin oxide (ITO) on different spin rate ranging from 1000 RPM to 5000 RPM and was annealed at room temperature, 80 °C, 100 °C and 120 °C respectively. The investigation on structural properties was implemented through X-Ray Diffraction (XRD) and the parameters do not influence the XRD diffraction pattern which all sample exhibit a peak at 21° to 24°. SEM-EDX analysis shows large grain and many amounts of aggregates which can be observed at 1000 RPM at 100 °C while all other samples consist of the same elements. The optical properties have been studied by transmittance spectra via UV- Visible (UV-Vis) Spectroscopy and it showed that the sample exhibit below 90% transmittance while the optical bandgap is within 2.76 eV - 2.94 eV.