

Poster-Session

Optimization of zinc-tin-oxide permeation barrier layers on flexible substrates

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The longtime stability of organic electronics, such as OPV is challenging due to high sensitivity of organic materials against moisture and oxygen. Most state-of-the-art technologies are using rigid glass as an encapsulant. Polymeric films may preserve flexibility and low weight of the OPV compared to glass but the intrinsic water vapor permeability of polymeric films is high. To reach the water vapor and oxygen permeation barrier requirements coatings of transparent thin oxide layers are necessary. One proven material is zinc-tin-oxide (ZTO) deposited in a roll-to-roll reactive magnetron sputtering process. The poster presents the impact of layer thickness and chemical composition of ZTO-layers on the water vapor transmission rate (WVTR) as well as optical properties. Additionally, the influence of using a metallic target compared to a ceramic target on layer properties will be shown.