

**Ag thickness effect on electrical and optical properties of flexible IZTO/Ag/IZTO  
multilayer anode grown on PET**

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grown on PET**

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**Abstract :** The characteristics of indium-zinc-tin-oxide (IZTO)-Ag-IZTO multilayer grown on a PET substrate were investigated for flexible organic light-emitting diodes. The IZTO-Ag-IZTO (IAI) multilayer anode exhibited a remarkably reduced sheet resistance of 4 ohm/sq and a high transmittance of 84 %, despite the very thin thickness of the IZTO (30 nm) layer. In addition, it was shown that electrical and optical properties of IAI anodes are critically dependent on the thickness of the Ag layer, due to the transition of Ag atoms from distinct islands to continuous films at a critical thickness (14 nm). Moreover, the IAI/PET sample showed more stable mechanical properties than an amorphous ITO/PET sample during the bending test due to the existence of a ductile Ag layer. The current density voltage-luminance characteristics of flexible OLEDs fabricated on an IAI/PET substrate was better than those of flexible OLEDs fabricated on an ITO/PET substrate. This indicates that IAI multilayer anodes are promising flexible and transparent electrodes for flexible OLEDs.