Effects of the buffer layer inserted between the transparent conductive oxide anode and the organic electron donor

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Résumé en anglais	In optoelectronic devices, the work function of the transparent conductive oxide, which is used as anode, does not match well the highest occupied molecular orbital of the organic material, which induces the formation of a barrier opposed to hole exchange at this interface. Therefore a thin buffer layer is often used to achieve good matching of the band structure at the interface. From experimental results it can be deduced that the main effects of the buffer layer consist in a better matching of the band structure at the interface anode/organic material and in a more homogeneous organic layer growth. We show that, whatever the nature of the buffer layer-metal, oxide, organic material—the classical Schottky–Mott model allows to anticipate, at least roughly, the behaviour of the contact, even if some dipole effect are often present. A good correlation between the “metal/buffer layer” work function and the barrier Φb for hole exchange at anode/organic electron donor interfaces is obtained, as expected by the model.
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