



XPS Study of the Band Alignment at the Interface ITO/CuI

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The band alignment at the interface of an ITO/CuI heterojunction is studied by X-ray photoelectron spectroscopy (XPS). The measurements have been performed on samples obtained under the same experimental conditions as those used to achieve organic photovoltaic cells. The CuI upper layer was 3 nm thick. The semidirect XPS technique used to measure the band offsets allows us to estimate the band discontinuities at the interface ITO/CuI: $\Delta E_v = 2.10$ eV and $\Delta E_c = 1.56$ eV. This band alignment induces an increase of the work function of the anode when the structure ITO/CuI is used as electrode in organic solar cells for instance. As a matter of fact, the measurement, by means of a Kelvin probe, of the work function of the structures ITO/CuI, shows that it is significantly higher than that of ITO alone: 5.2 eV and 4.8 eV.

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