

Experimental investigation and simulation of hybrid organic/inorganic Schottky diodes

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Abstract. We have investigated electronic transport in hybrid organic/inorganic Schottky diodes. In order to derive from basic principles the transport properties of the organic semiconductors, we have use a two-dimensional drift-diffusion simulator which properly accounts for transport in both organic and inorganic layers. We have calculated the I - V characteristics of Ag/PTCDA/GaAs Schottky diodes as a function of PTCDA thickness and compared the results with experimental *in situ* measurements. The interplay between barrier height, PTCDA thickness, space-charge-limited current, and image charge is outlined.

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