

ANALYSIS OF CURRENT-VOLTAGE CHARACTERISTICS OF CuPc BASED SOLAR CELLS

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We have fabricated ITO/CuPc/PTCBI solar cells and studied the nature of the conduction current. A comparison is made between the obtained results and those predicted by several conduction current mechanisms reported in the literature. Specifically, reports on bulk-limited, electrode-injection-limited and junction-limited results studies are discussed and compared to our experimental curves. In our devices, current appears to be injection-limited at one of the electrode-organic-layer junctions. Since ITO is thought to be work-function-matched with CuPc, it is likely that the PTCBI/Au junction determines the J-V characteristics of the device.

TOPICS + KEYWORDS: Solar cells, organic semiconductors, electron transport