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Optimization of the Negative Electrode in Organic Photovoltaic Devices MATTHEW REESE, National Renewable Energy Laboratory, MATTHEW WHITE, University of Colorado, Boulder, GARRY RUMBLES, DAVID GINLEY, SEAN SHAHEEN, National Renewable Energy Laboratory — A blend of poly(3-hexylthiophene) (P3HT) and [6,6]-phenyl C_{61}-butyric acid methyl ester (PCBM) is used as the active layer in a series of bulk heterojunction organic solar cells. This polymer blend serves as a test-bed to explore the significant effects on device performance of using low work function metals and/or alkali metal halides as the top, negative electrode. Work function values reported in the literature are compared with those measured for our thin films. A series of contact materials are investigated including Al, Ca/Al, Ba/Al, LiF/Al; many devices are prepared with each contact type to validate the statistical significance of the results.

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