

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Effect of the Hole Injection Layer on the Performance of Polymer Solar Cells KYLE RUSSELL, MARIAN TZOLOV, Department of Physics, Lock Haven University — The hole injection layer in polymer solar cells was reported to improve the performance of the devices, mainly by increase of the open circuit voltage. In this study, we will report the use of PEDOT:PSS with different concentrations, 1% and 2.4% in water, as the hole injection layer. The active layers we will use are a mixture of PCBM with either P3HT or PCPDTBT. The anode will be an ITO film on a glass substrate, and the cathode will be thermally evaporated aluminum on the polymer film. The goal is to observe if the hole injection layer increases the open circuit voltage, and if the concentration of PEDOT:PSS in water will have an effect on the open circuit voltage. We will present the current-voltage characteristics of the polymer solar cells in dark and under illumination, as well as the impedance spectra of the solar cells in the frequency range of 10-10⁶ Hz.

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Date submitted: 10 Nov 2016

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