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Electrical characterization of polymer solar cells CHRISTOPHER GREEN, ZANE COHICK, MARIAN TZOLOV, Lock Haven University of Pennsylvania — Polymer solar cell devices were fabricated using a mixture of the polymer PCPDTBT, PCBM, and 1,8-diiodooctane. The films were spin coated on ITO patterned substrates and covered with a hole injection layer. The film drying was performed at varied annealing temperatures and times. These devices were characterized utilizing current-voltage characteristics and the fill factor was determined. Devices were tested under dark and bright conditions using a xenon lamp. The current-voltage characteristics were modeled with an equivalent circuit yielding values for the shunt and series resistances. The variations in performance due to the changes in annealing temperatures and drying times were studied. Impedance spectroscopy was used to determine the dielectric constant of the active film.

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