

Abstract Submitted  
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**Photovoltaic Cells Involving Nonconjugated Conductive Polymer, Iodine-doped Styrene-Butadiene-Rubber (SBR)** JUSTIN VAN CLEAVE, MRINAL THAKUR, Photonic Materials Research Laboratory, Auburn University, AL — Photovoltaic cells have been fabricated using titanium dioxide/iodine-doped Styrene-Butadiene-Rubber/ carbon on indium-tin-oxide coated PET substrates. Photo-currents and photo-voltages were measured for varying intensities of light from a white light bulb, with emission from 300 to 700 nm. Iodine-doped SBR has absorption in the range of  $\sim 250$  to 750 nm. The cells as fabricated were characterized and were found to show significantly higher conversion efficiencies than previously reported. For an incident light intensity of about  $5 \text{ mW/cm}^2$  a maximum photo-current density of about  $0.2 \text{ mA/cm}^2$  and photo-voltage of about 0.8 V were recorded. The low cost of nonconjugated conductive polymers including SBR may provide a cheaper alternative to other materials for photovoltaic applications.

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