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Photovoltaic Cells involving Nonconjugated Conductive Polymer, Iodine-doped cis-Polyisoprene (Natural Rubber) S. JAJU, M. THAKUR, Photonic Materials Research Laboratory, Auburn University, AL — Photovoltaic cells have been fabricated using titanium dioxide/doped cis-polyisoprene/carbon on ITO glass-substrates. Photocurrents and photo-voltages for different intensities of light (from a white light bulb, emission at 300-700 nm) have been measured. Use of the iodine-doped nonconjugated conductive polymer film (absorption $\sim$ 250 to 700 nm) has led to significant enhancement of photocurrent compared to previous reports which included undoped polymer in a different cell-structure. A maximum photocurrent of about 0.20 mA was observed for a light intensity of $\sim$ 5 mW/cm^2. The maximum photo-voltage as observed was about 0.70 V for the same light intensity. Natural rubber being inexpensive these cells may provide cheaper alternatives to other reported cell structures.

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