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Layer Effects of Photovoltaic Heterojunction of Fully Conjugated Heterocyclic Aromatic Rigid-rod Polymer Poly-*p*-phenylenebenzobisoxazole JEN WEI HUANG, SHIH JUNG BAI, National Sun Yat-Sen University — Poly-*p*-phenylenebenzobisoxazole (PBO) contains fully conjugated rod like backbone entailing excellent optoelectronic properties and superior stabilities. Polystyrenesulfonate:poly (2,3-*dihydrothieno*-1,4-*dioxin*) (PEDOT:PSS) is a hole transferring medium which could be spun into a thin-film between indium-tin-oxide (ITO) and PBO to exhibit highly sensitive photovoltaic (PV) effect. PEDOT:PSS and PBO formed a donor-acceptor interlayer and made photoinduced charge transfer. Optimal absorption PV cell thickness for PBO was about 71 nm. By using a layer of lithium fluoride (LiF) as an electron transferring layer, the most open circuit voltage (V_{oc}) and short circuit current (I_{sc}) were achieved at a LiF thickness of 1 nm. The V_{oc} increased from 0.7 V to 0.9 V and the I_{sc} increased one and half times.

Jen Wei Huang
National Sun Yat-Sen University

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