Electronic Supplementary Information

Phototransistors based on Donor-Acceptor conjugated polymer with high response speed
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Figure Captions:

**Figure S1.** The absorption coefficient of PBIBDF-BT polymer at different wavelength.

**Figure S2.** Photo-response properties of device based on PBIBDF-BT measured in vacuum. (a) hole-carriers transport, (b) electron-carriers transport.

**Figure S3.** AFM images near the film and OTS-treated substrate with different spin-speed. (a) 4000 rpm, (b) 5000 rpm, and (c) 6000 rpm. The thickness of films obtained from different spin-speed. (d) 83 ± 2 nm, (e) 72 ± 2 nm, (f) 63 ± 2 nm.