# Supporting Information

# A Thiazolothiazole-Based Semiconducting Polymer With Well-Balanced Hole and Electron Mobilities

**Masahiko Saito and Itaru Osaka***

Department of Applied Chemistry, Hiroshima University, 1-4-1 Kagamiyama, Higashi-Hiroshima, Hiroshima 739-8527, Japan; iosaka@hiroshima-u.ac.jp
*Correspondence: iosaka@hiroshima-u.ac.jp; Tel.: +81-082-424-7744

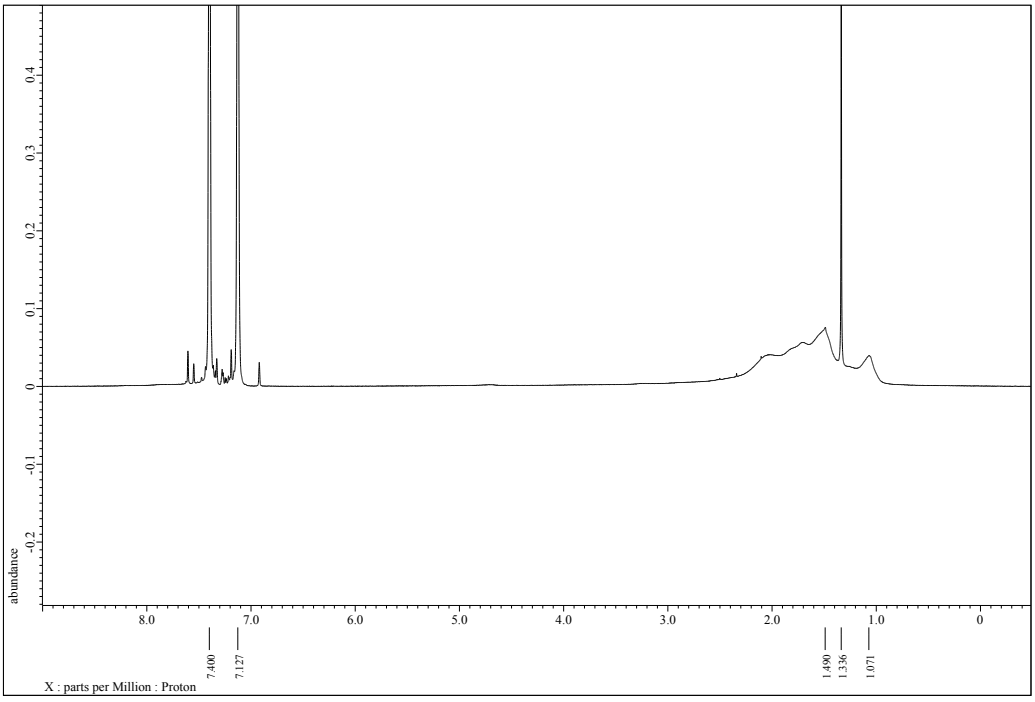


**Figure S1.** $^{1}$H-NMR spectra of PTzTBI in *o*-dichlorobenzen-*d*4

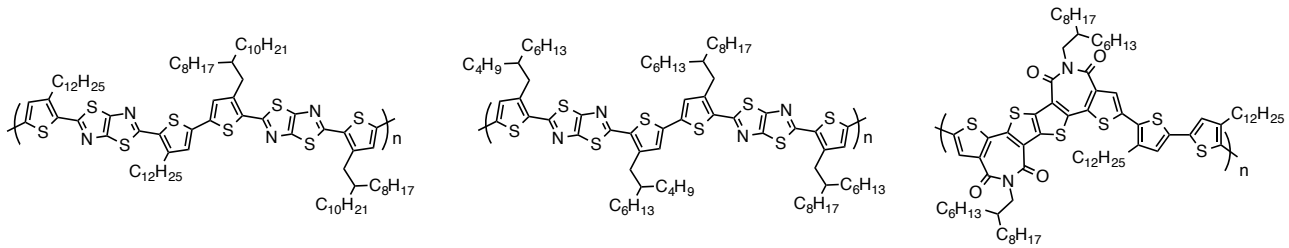


**Figure S2.** Molecular structures of TzTz-thiophene copolymers (PTzBT-12OD and -BOHD) and a TBI-based polymer (PTBI2TR).

**Table S1.** Detailed X-ray diffraction parameters of PTzBI, PTzBTs, and PTBI2TR.

| Polymer | $d_l$ (Å) [b] | $L_l$ (Å) [c] | $d_\pi$ (Å) [d] | $L_\pi$ (Å) [e] |
|---|---|---|---|---|
| PTzTBI | 20.8 | 25 | 3.57 | 16 |
| PTzBT-12OD | 24.9 | 35 | 3.52 | 28 |
| PTzBT-BOHD | 20.6 | 31 | 3.57 | 24 |
| PTBI2TR | 25.6 | 24 | 3.59 | 15 |

[a] Face-on crystallite was extracted from the lamellar structure (100) along the $q_{xy}$ axis and the π–π stacking (010) along the $q_z$ axis. [b] *d*-Spacing corresponds to the lamellar structure of the face-on crystallite calculated from the peak along the $q_{xy}$ axis. [c] Coherence length estimated from the Scherrer's equation ($L_l = 2\pi/\text{fwhm}$) for lamellar structure of the face-on crystallite. [d] *d*-Spacing corresponds to the π–π stacking of the face-on crystallite calculated from the peak along the $q_z$ axis. [e] Coherence length estimated from the Scherrer's equati on ($L_\pi = 2\pi/\text{fwhm}$) for π–π stacking of the face-on crystallite.