Supporting Information

Synthesis and optoelectronics properties of diblock copolymer of P3HT containing thiol-side chain and its hybrid nanocomposite

Yisha Qiao, Yixuan Du, Yinfeng Liu, Yunbo Li*

School of Materials Science & Engineering, Shanghai University, Shanghai 200444, China. Email: liyunb@shu.edu.cn

Experimental section


Figure S1 shows the spectrum of $^1$H NMR (500 MHz, CDCl$_3$): 7.26 (s, 1H), 6.99 (t, 2H), 6.81 (s, 1H), 2.81 (m, 2H), 2.59(m, 3H), 1.74(m, 2H), 1.53-1.33 (m, 4H).

Figure S1. $^1$H NMR spectrum of 3-[6-(4-methoxyphenoxy)hexyl]thiophene.
2. Synthesis of 2, 5-dibromo-3-(6-bromohexylthiophene).

Figure S2 shows the spectrum of $^1$H NMR (500 MHz, CDCl3): 7.26 (s, 1H), 6.99 (t, 2H), 3.77 (s, 1H), 3.67 (t, 2H), 2.31 (t, 2H), 1.87 (m, 2H), 1.25-1.53 (m, 6H).

3. Synthesis of diblock copolymer poly(3-hexylthiophene)-b-poly(3-(6-bromohexylthiophene))

Figure S3 shows the spectrum of $^1$H NMR (500 MHz, CDCl3): 6.98 (s, 1H), 3.71(t, 2H), 2.82(t, 2H), 1.73(m, 2H), 1.50(m, 4H).
4. Synthesis of diblock copolymer poly(3-hexylthiophene)-b-poly(3-(6-thiolhexyl thiophene)) (DP-P3HT-SH)

Figure S4 shows the spectrum of $^1$H NMR spectra of magnified region of DP-P3HT-SH peak at 2.61 ppm.

![NMR spectra](image)

Figure S4. $^1$H NMR spectra of magnified region of DP-P3HT-SH peak at 2.61 ppm.