

Electronic Supplementary Information for :

**One pot synthesis of
poly(3-hexylthiophene)-*b*-poly(quinoxaline-2,3-diyl) rod-rod
diblock copolymer and its tunable light emission properties**

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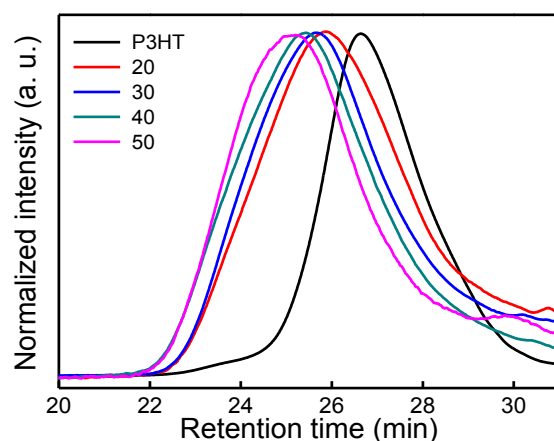


Fig. S1 Size exclusion chromatograms of **3** synthesized using different feed ratios of **2** to macroinitiator **1** with $M_n = 5.5$ kDa, $M_w/M_n = 1.17$ (The feed ratio was indicated in legend).

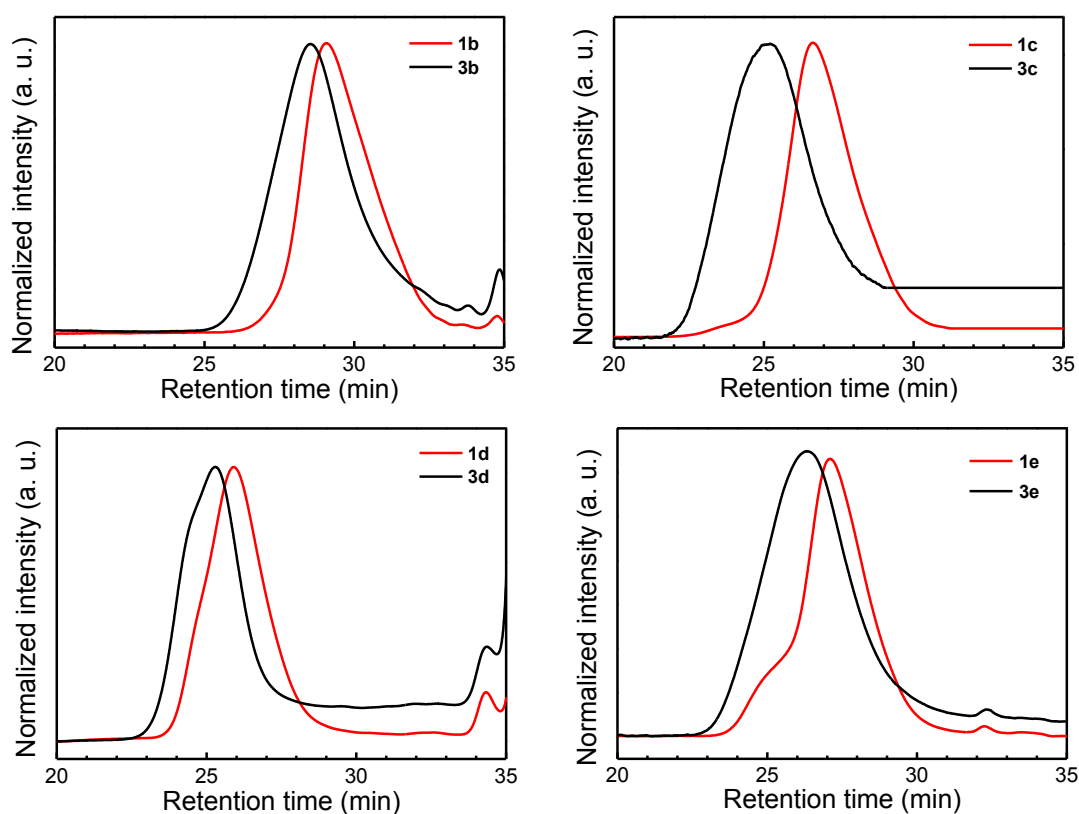


Fig. S2 Size exclusion chromatograms of macroinitiators **1b–1e**, and their respective block copolymers **3b–3e** (see Fig. 1a of main text for SEC traces of **1a** and **3a**).

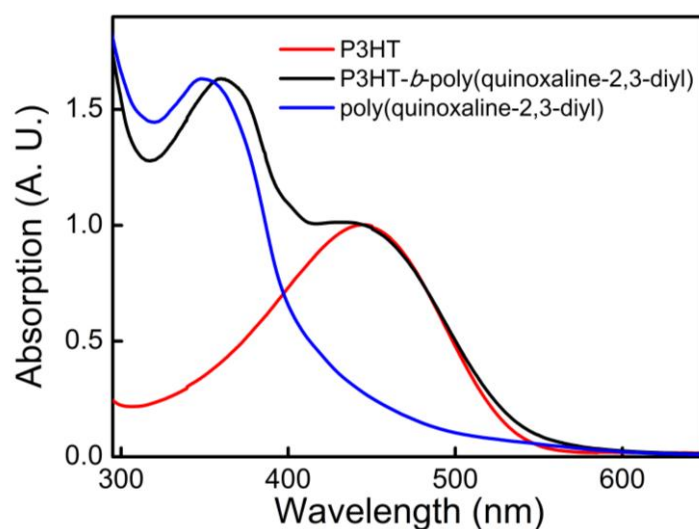


Fig. S3 Absorption spectra of P3HT, poly(quinoxaline-2,3-diyl) and P3HT-*b*-poly(quinoxaline-2,3-diyl) block copolymer (**3a**) in CHCl_3 at room temperature ($c = 0.05 \text{ mg/mL}$).

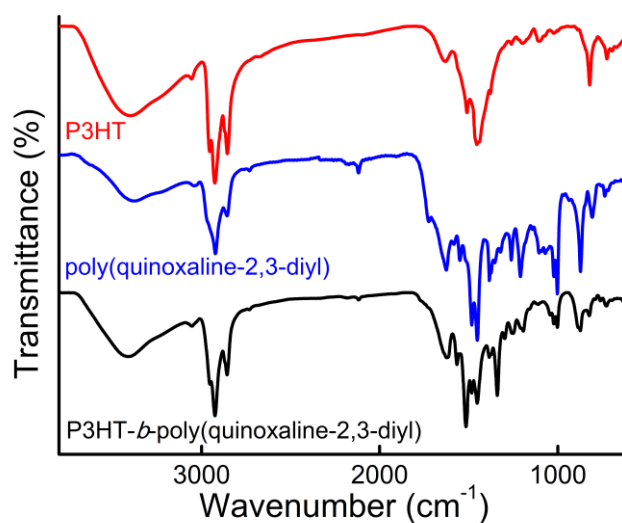


Fig. S4 FT-IR spectra of P3HT, poly(quinoxaline-2,3-diyl) and P3HT-*b*-poly(quinoxaline-2,3-diyl) block copolymer (**3a**) measured at room temperature (KBr).

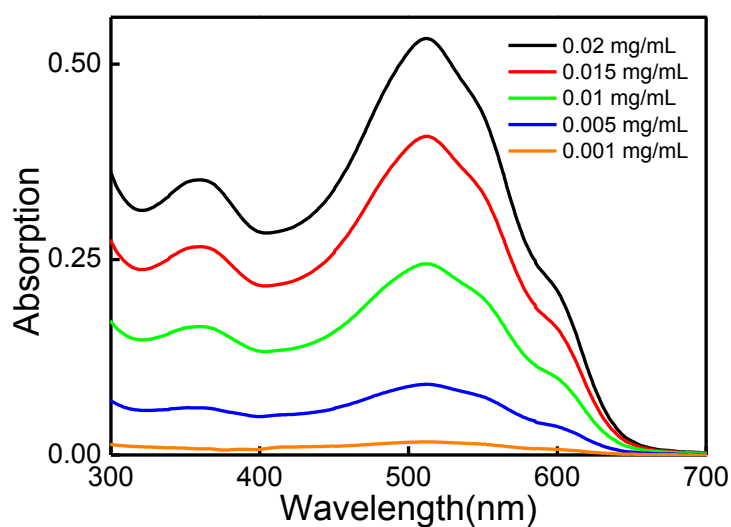


Fig. S5 Concentration dependent absorption spectra of P3HT-*b*-poly(quinoxaline-2,3-diyl) block copolymer (**3a**) in 1/4 mixture of chloroform and methanol at room temperature (v/v).

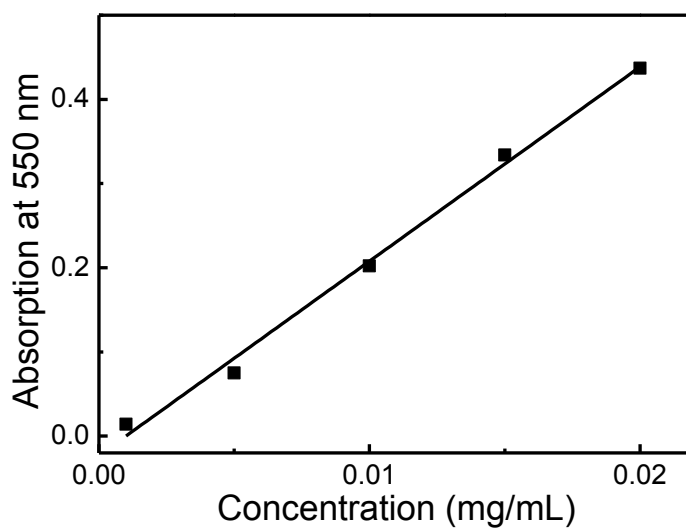


Fig. S6 Plot of absorption intensity at 550 nm of **3a** as a function of the concentration (solvent: chloroform/methanol = 1/4, v/v).

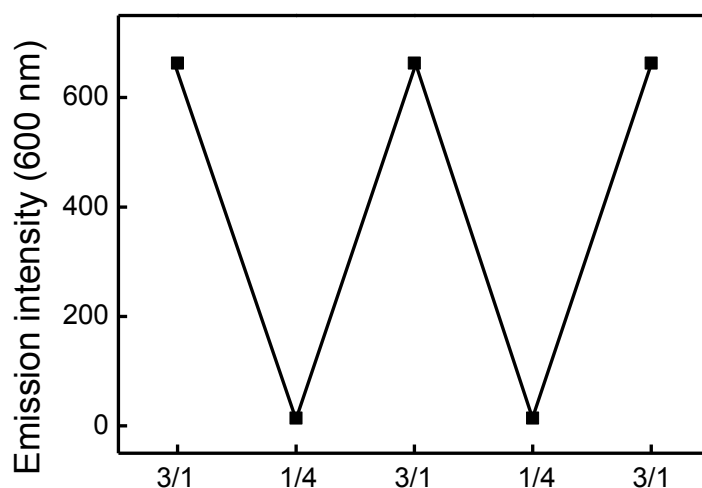


Fig. S7 Reversible emission intensity changes of P3HT-*b*-poly(quinoxaline-2,3-diyl) block copolymer **3a** in 3/1 and 1/4 mixtures of chloroform and methanol at room temperature ($c = 0.05$ mg/mL).

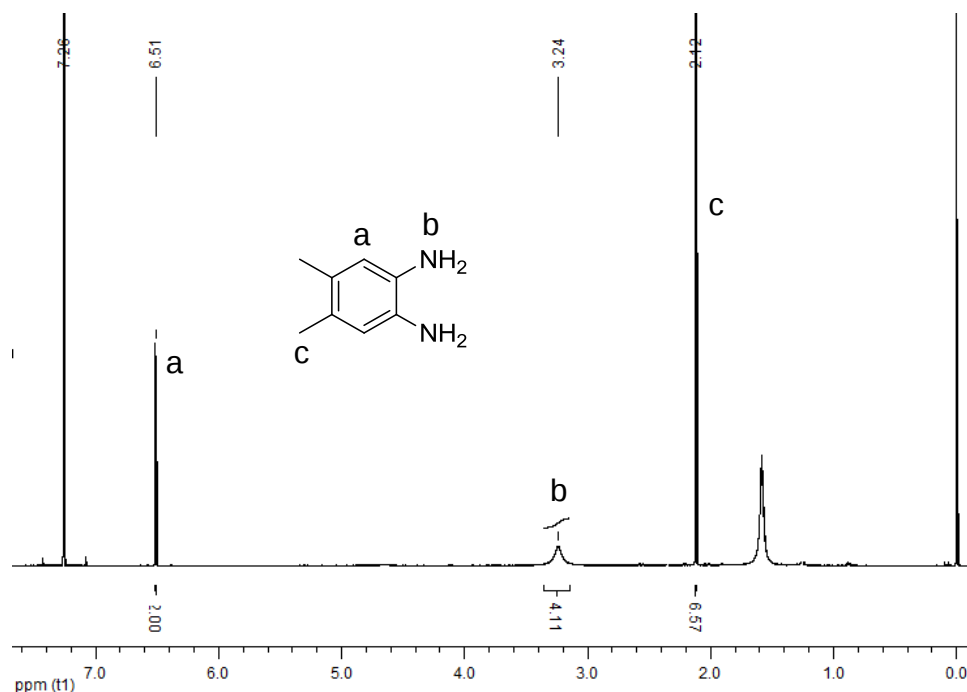


Fig. S8 ¹H NMR (600 MHz) spectroscopy of 4,5-dimethylbenzene-1,2-diamine measured in CDCl₃ at 25 °C.

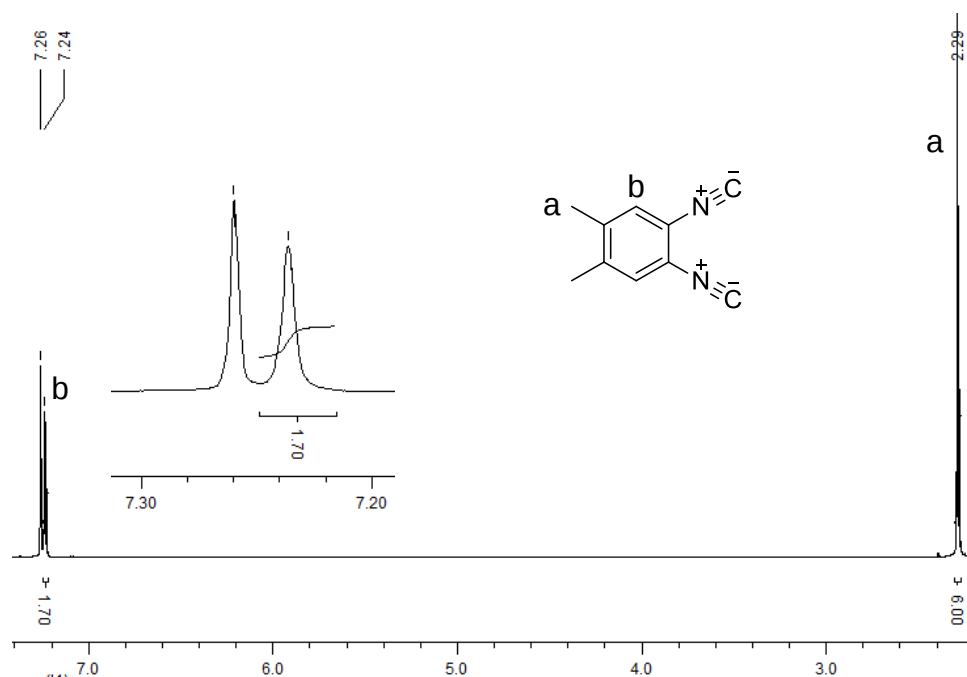


Fig. S9 ^1H NMR (600 MHz) spectroscopy of 1,2-diisocyano-4,5-dimethylbenzene (2) measured in CDCl_3 at 25 °C.

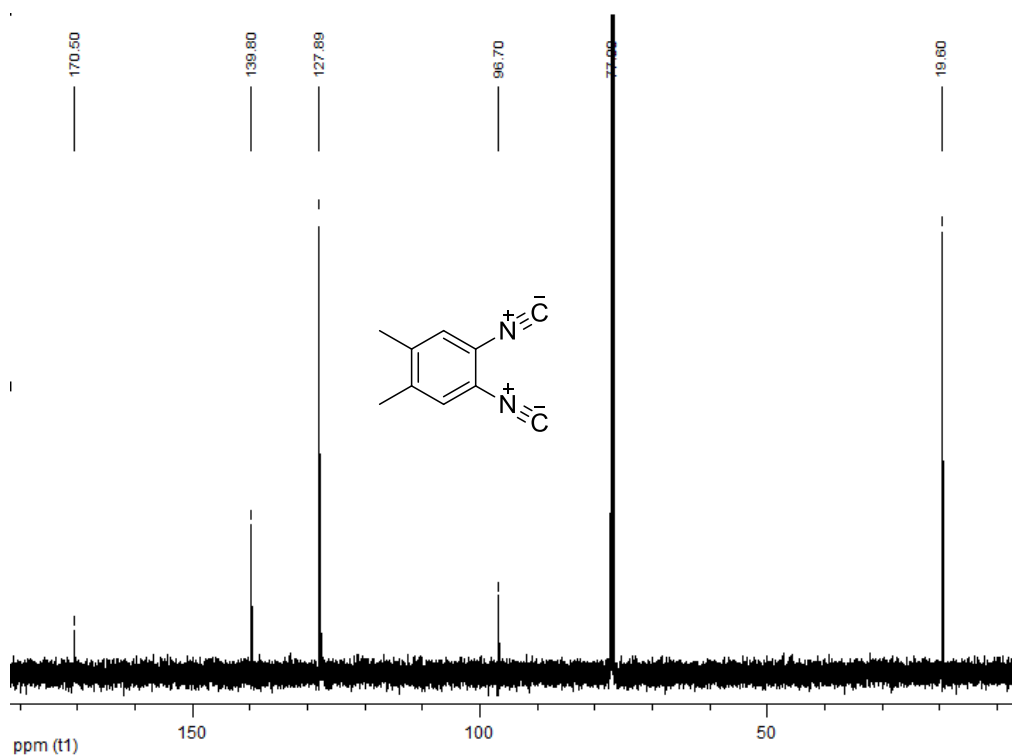


Fig. S10 ^{13}C NMR (150 MHz) spectroscopy of 1,2-diisocyano-4,5-dimethylbenzene measured in CDCl_3 at 25 °C.

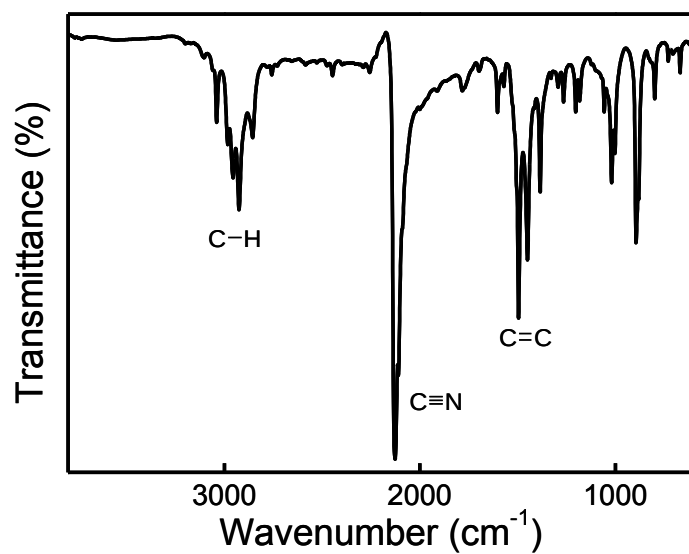


Fig. S11 FT-IR spectrum of 1,2-diisocyano-4,5-dimethylbenzene (**2**) measured at room temperature (KBr).

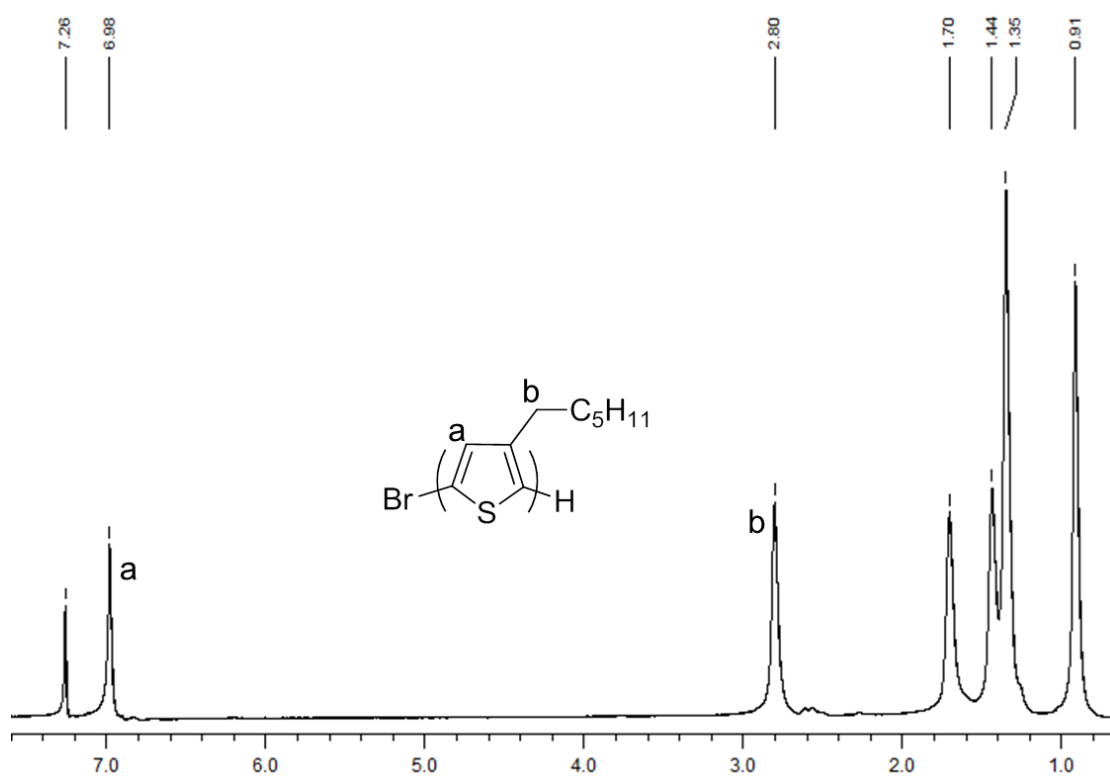


Fig. S12 ^1H NMR (600 MHz) spectroscopy of P3HT measured in CDCl_3 at 25 °C.

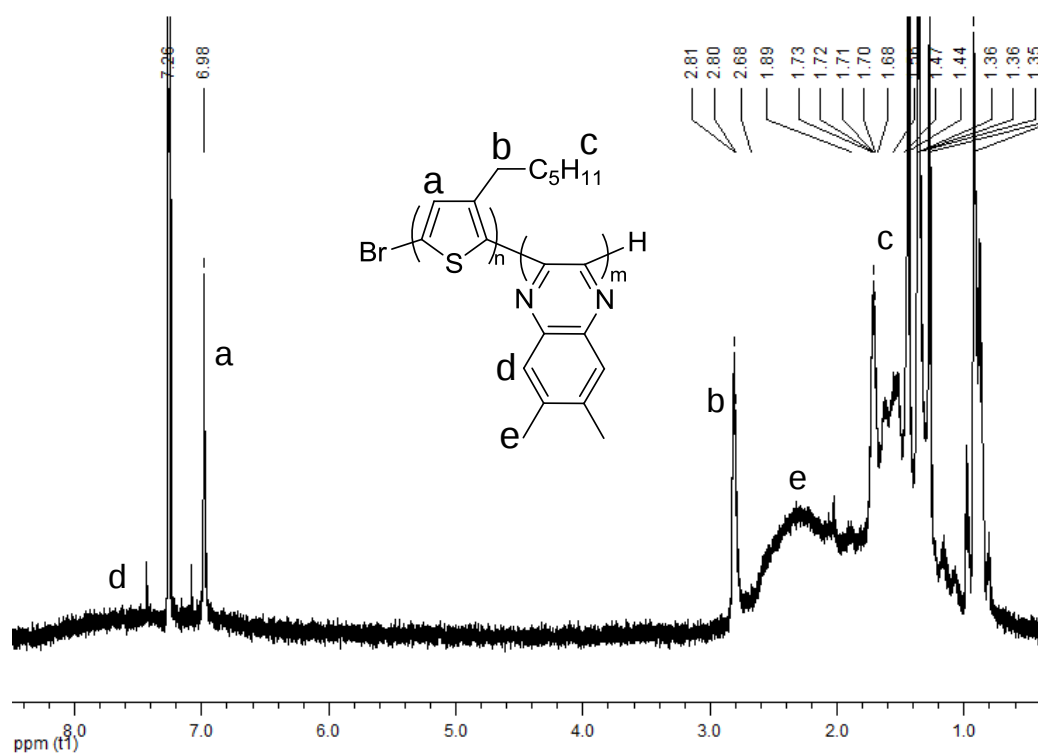


Fig. S13 ^1H NMR (600 MHz) spectroscopy of P3HT-*b*-poly(quinoxaline-2,3-diyl) measured in CDCl_3 at 25 °C.

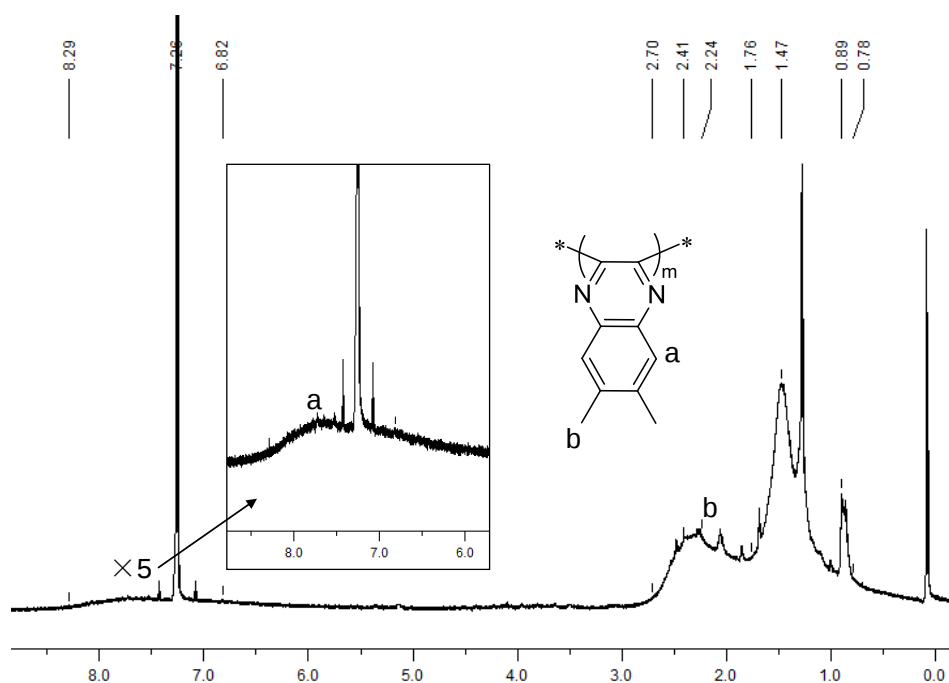


Fig. S14 ^1H NMR (600 MHz) spectroscopy of poly(quinoxaline-2,3-diyl) measured in CDCl_3 at 25 °C.

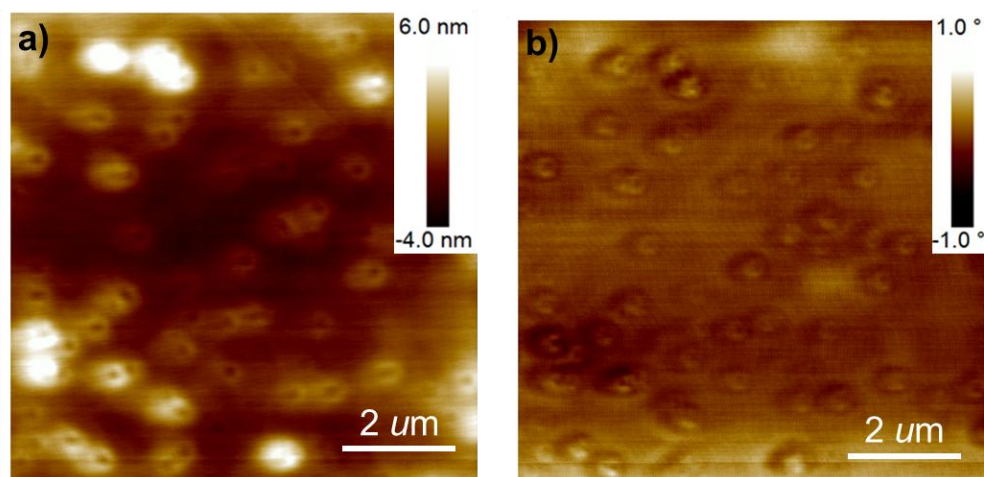


Fig. S15 Height (a) and phase (b) AFM images of the self-assembled structure of **3c**.