Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary Information

(3Z,3'Z)-3,3'-(Hydrazine-1,2-diylidene)bis(indolin-2-one) as a new electron-acceptor building block for donor-acceptor π-conjugated polymers for organic thin film transistors

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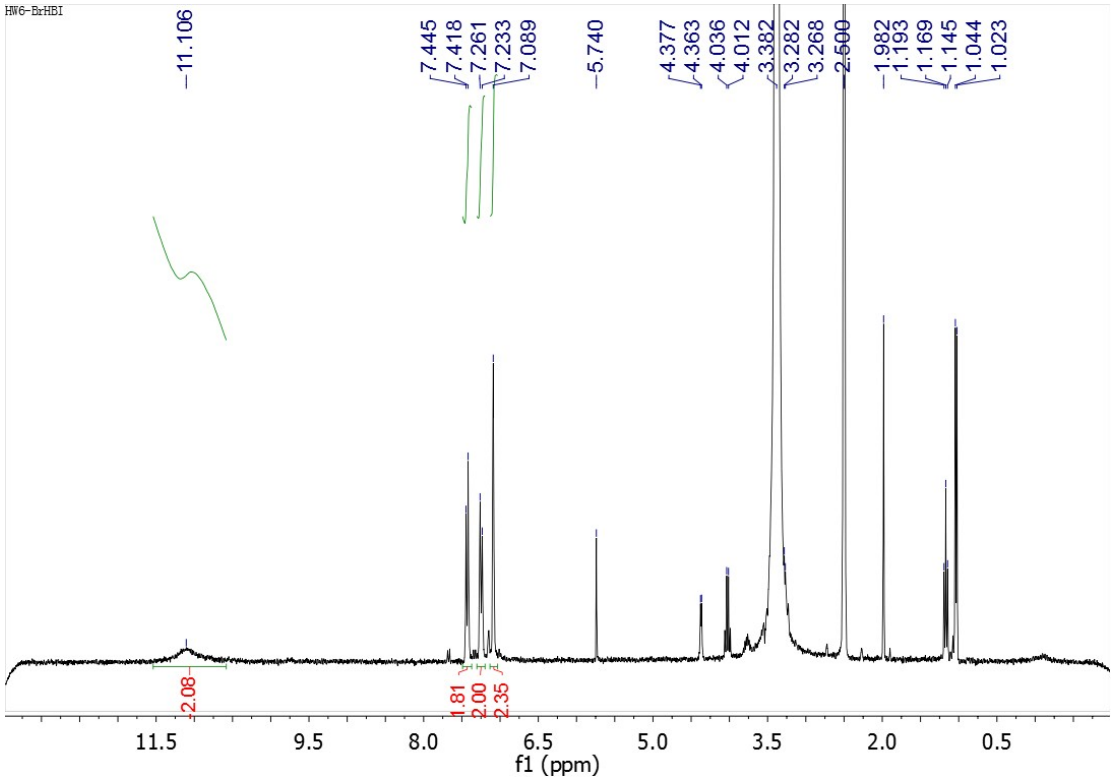

Fig. S1 The 300 MHz ^{1}H NMR spectrum of (3Z,3'Z)-3,3'-(hydrazine-1,2-diylidene)bis(6-bromoindolin-2-one) (**3**) measured in DMSO-d_6.

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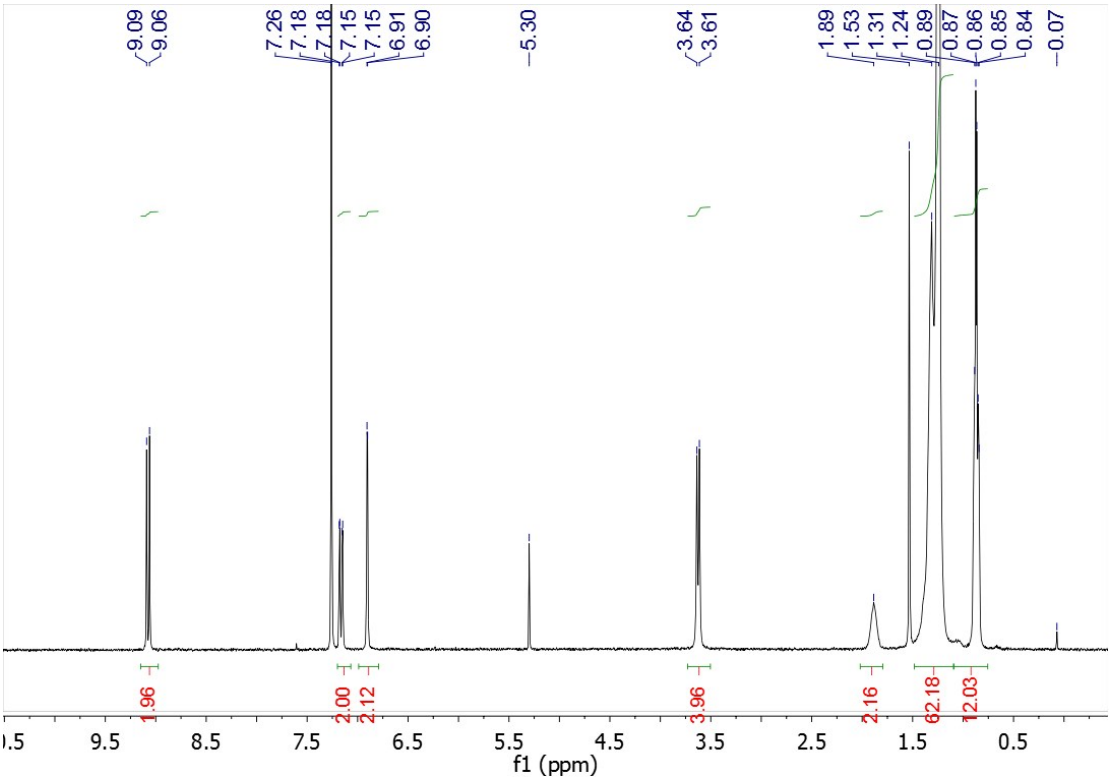

Fig. S2 The ^{1}H NMR ($CDCl_3$, 300 MHz) spectrum of (3Z,3'Z)-3,3'-(hydrazine-1,2-diylidene)bis(6-bromo-1-(2-octyldodecyl)indolin-2-one) (**4a**).

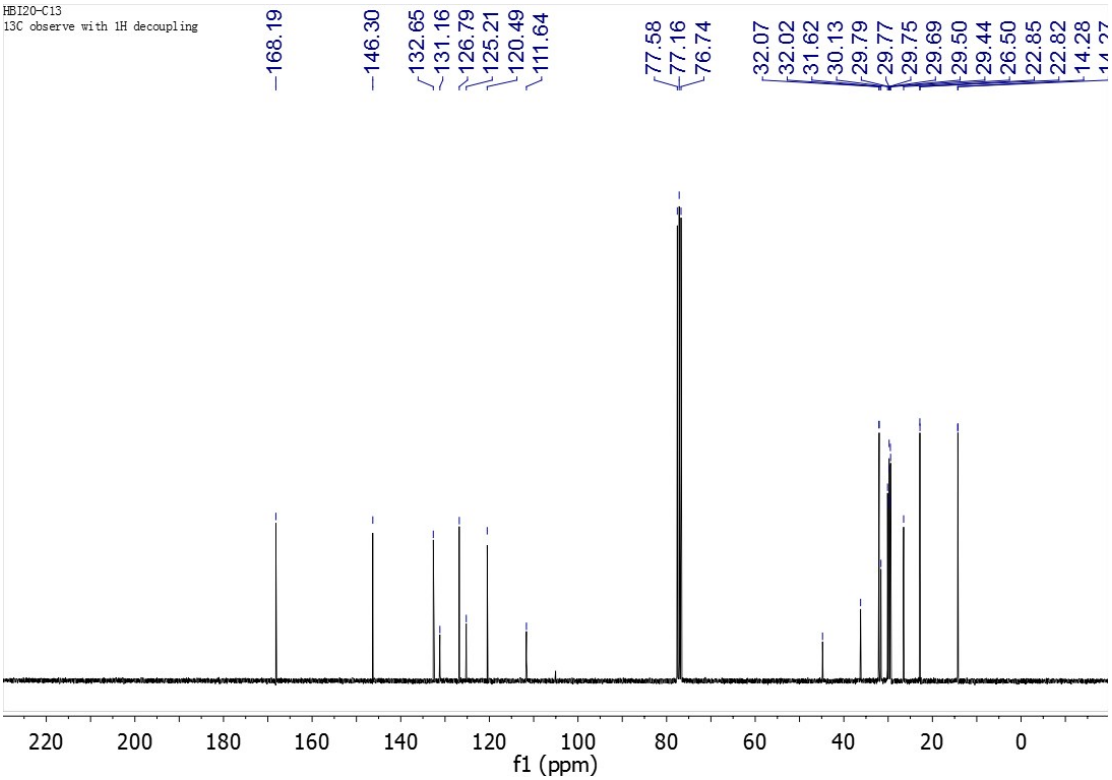

Fig. S3 The ^{13}C NMR ($CDCl_3$, 75 MHz) spectrum of (3Z,3'Z)-3,3'-(hydrazine-1,2-diylidene)bis(6-bromo-1-(2-octyldodecyl)indolin-2-one) (**4a**).

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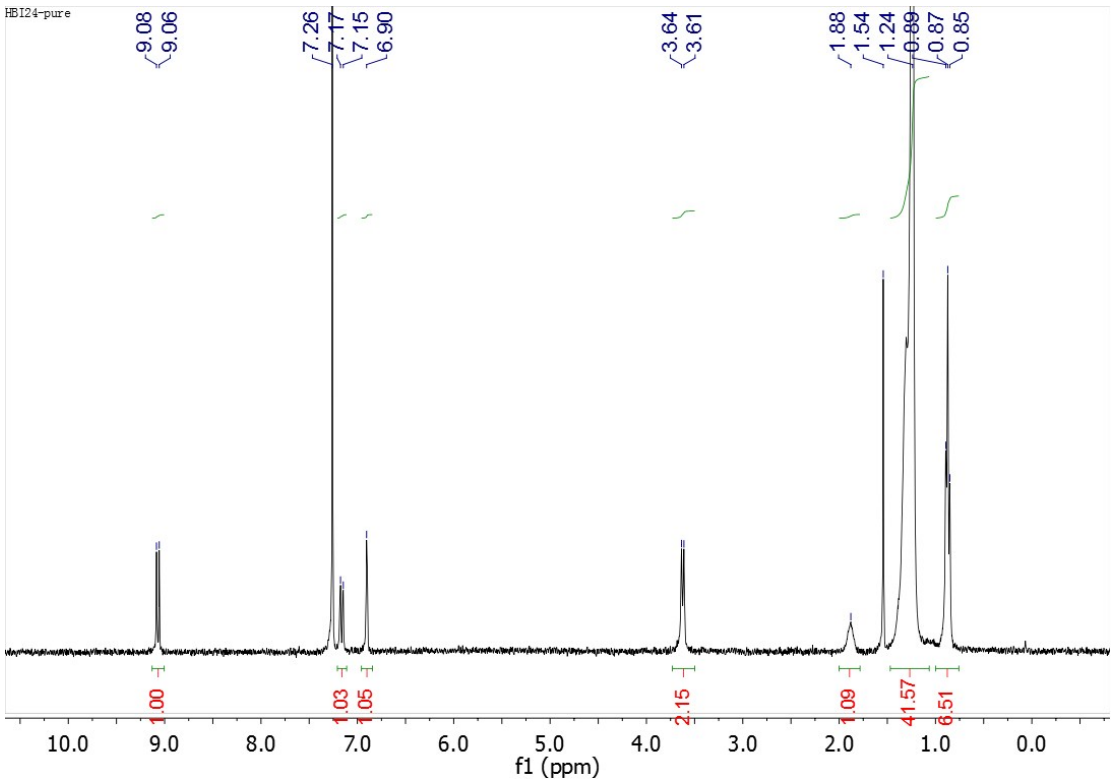

Fig. S4 The ^{1}H NMR ($CDCl_3$, 300 MHz) spectrum of (3Z,3'Z)-3,3'-(hydrazine-1,2-diylidene)bis(6-bromo-1-(2-decyltetradecyl)indolin-2-one) (**4b**).

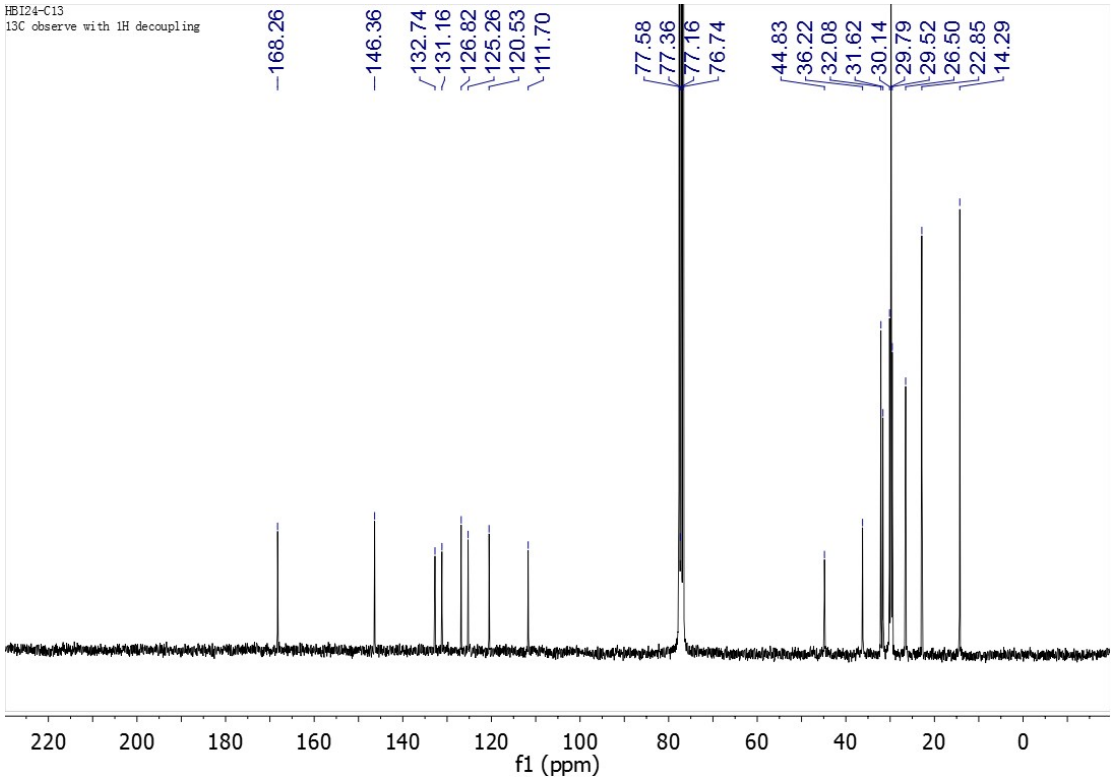

Fig. S5 The ^{13}C NMR ($CDCl_3$, 75 MHz) spectrum of (3Z,3'Z)-3,3'-(hydrazine-1,2-diylidene)bis(6-bromo-1-(2-decyltetradecyl)indolin-2-one) (**4b**).

Supplementary Information

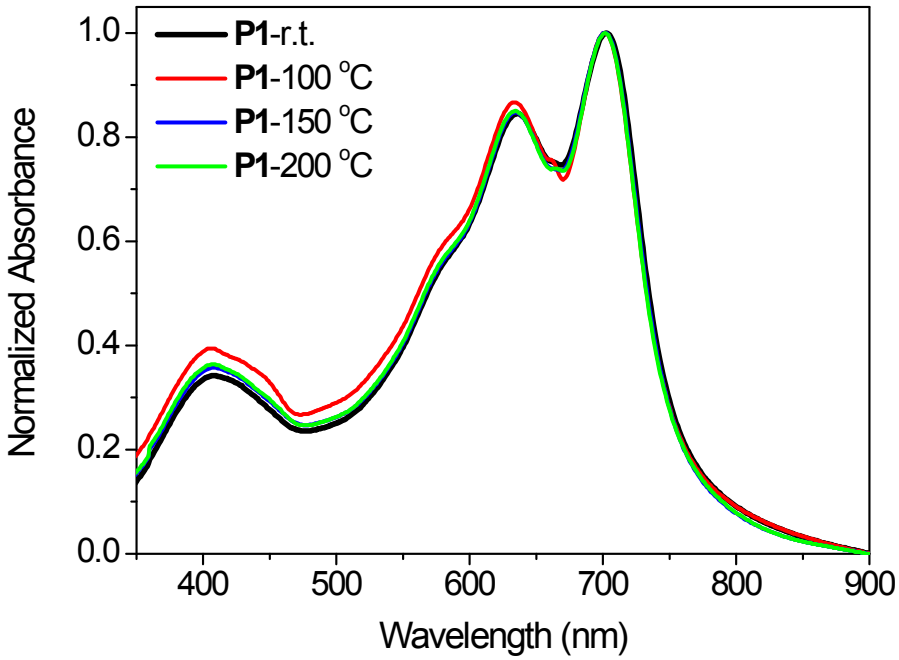

Fig. S6 Normalized UV-Vis absorption spectra of **P1** thin films spin-coated on glass substrates annealed at different temperatures (r.t. is non-annealed). λ_{max} = 702 nm (room temperature), 701 nm (100 °C), 701 nm (150 °C), and 701 nm (200 °C).

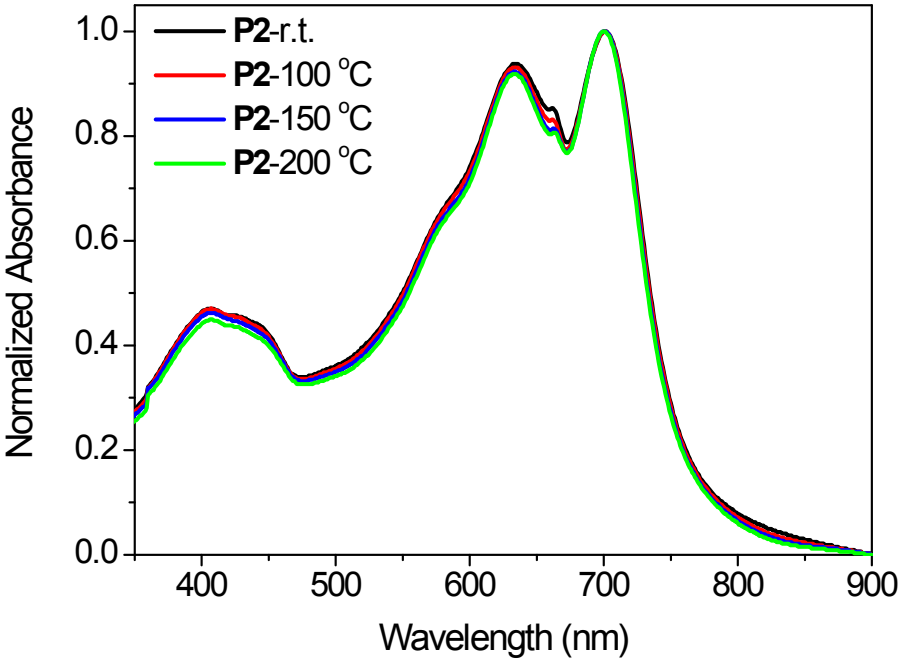

Fig. S7 Normalized UV-Vis absorption spectra of **P2** thin films spin-coated on glass substrates annealed at different temperatures (r.t. is non-annealed). λ_{max} = 701 nm (room temperature), 701 nm (100 °C), 701 nm (150 °C), and 701 nm (200 °C).

Supplementary Information

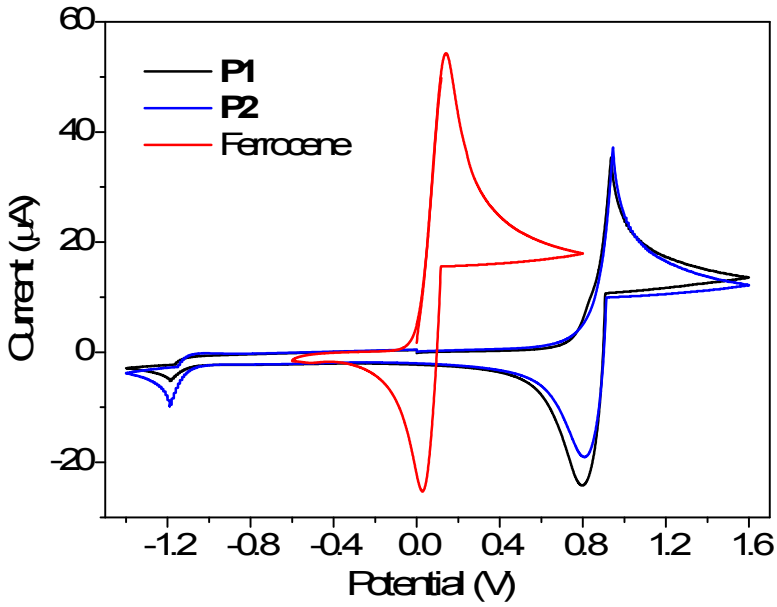

Fig. S8 Cyclic voltammograms (CV) of **P1** and **P2** films measured in 0.1 M tetrabutylammonium hexafluorophosphate in anhydrous acetonitrile at a scan rate of 50 mV s^{-1} under nitrogen. Ferrocene, which has a HOMO level of -4.8 eV, [1, 2] was used as a reference.

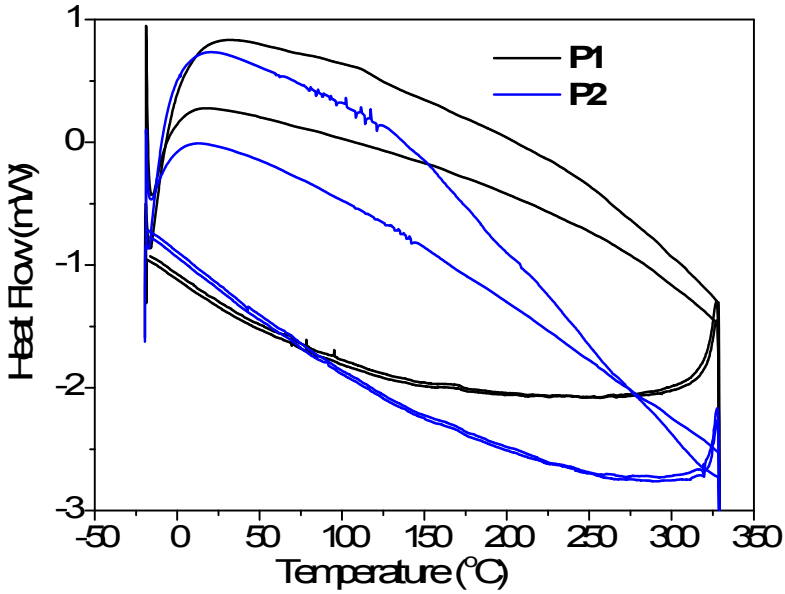

Fig. S9 Differential scanning calorimetry **(**DSC) profiles of **P1** and **P2** measured in nitrogen at a scan rate of 10 °C·min^{-1}.

Supplementary Information

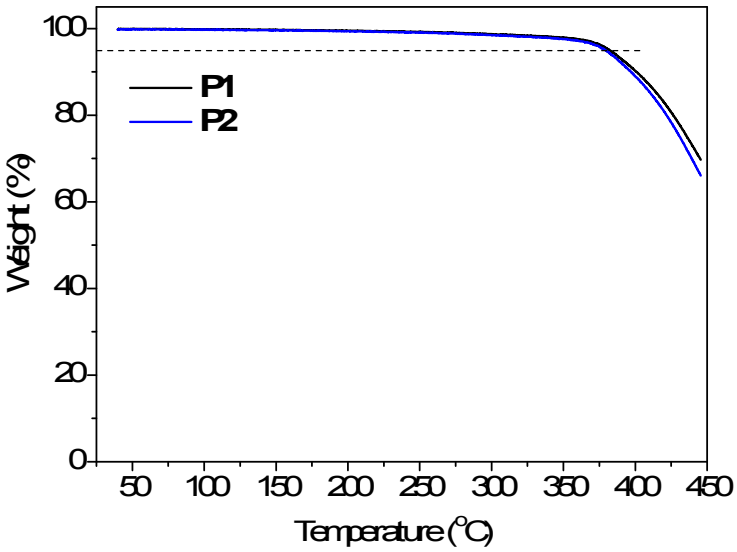

Fig. S10 Thermogravimetric analysis (TGA) of **P1** and **P2** conducted under nitrogen at a heating rate of 10 °C·min^{-1}.

References

1. J. Pommerehne, H. Vestweber, W. Guss, R. F. Mahrt, H. Bässler, M. Porsch and J. Daub, *Adv. Mater.*, 1995, **7**, 551.
2. B. W. D'Andrade, S. Datta, S. R. Forrest, P. Djurovich, E. Polikarpov and M. E. Thompson, *Org. Electron.*, 2005, **6**, 11.