

## Organic field-effect transistors of poly(2,5-bis(3-dodecylthiophen-2-yl)thieno[2,3-*b* thiophene]) deposited on five different silane self-assembled monolayers

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### Supplementary information

FETs consisted of standard Si wafer substrates with SiO<sub>2</sub> insulator and Au source and drain contacts. Substrates were initially solvent cleaned and then ozone treated. ODTS, OTS, PETS and APTS (Aldrich) were then deposited by immersing cleaned substrates into 10 mM solutions in toluene or hexadecane at 60 °C for 15 min. HMDS was deposited by refluxing at higher temperatures for 2-3 h followed by a series of washing steps. Deposition and good coverage of the SAMs was checked by contact angle measurements of HPLC grade water using a Kruss Drop Shape Analysis system DSA 10. The pBTCT had a molecular weight ( $M_w$ ) of 39 000 g mol<sup>-1</sup> and a polydispersity of 1.7, as measured by GPC against polystyrene standards. pBTCT was deposited by spin-coating under nitrogen solutions in dichlorobenzene onto the FET substrates coated with or without (reference sample) the SAMs. The devices were then dried and annealed at 100 °C for 10 min. The electrical characterization was carried out in dry N<sub>2</sub>. To measure the contact resistance, the transmission line method (TLM) was used, with channel lengths  $L$  of 2.5, 5, 10 and 20 μm.<sup>1</sup> The saturation regime mobility  $\mu_{SAT}$  was calculated from the saturation regime transfer characteristics on a plot of  $(I_D)^{1/2}$  against  $V_G$  using the equation  $I_D = \mu_{SAT}(WC_i/2L)[V_0 - V_G]^2$ .

#### Reference

<sup>1</sup> E. J. Meijer, G. H. Glinck, E. van Veenendaal, B.-H. Huisman, D. M. de Leeuw and T. M. Klapwijk, *Appl. Phys. Lett.* 2003, 82, 4576.