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Tuning Ambipolarity in a Polymer Field Effect Transistor using Graphene electrodes

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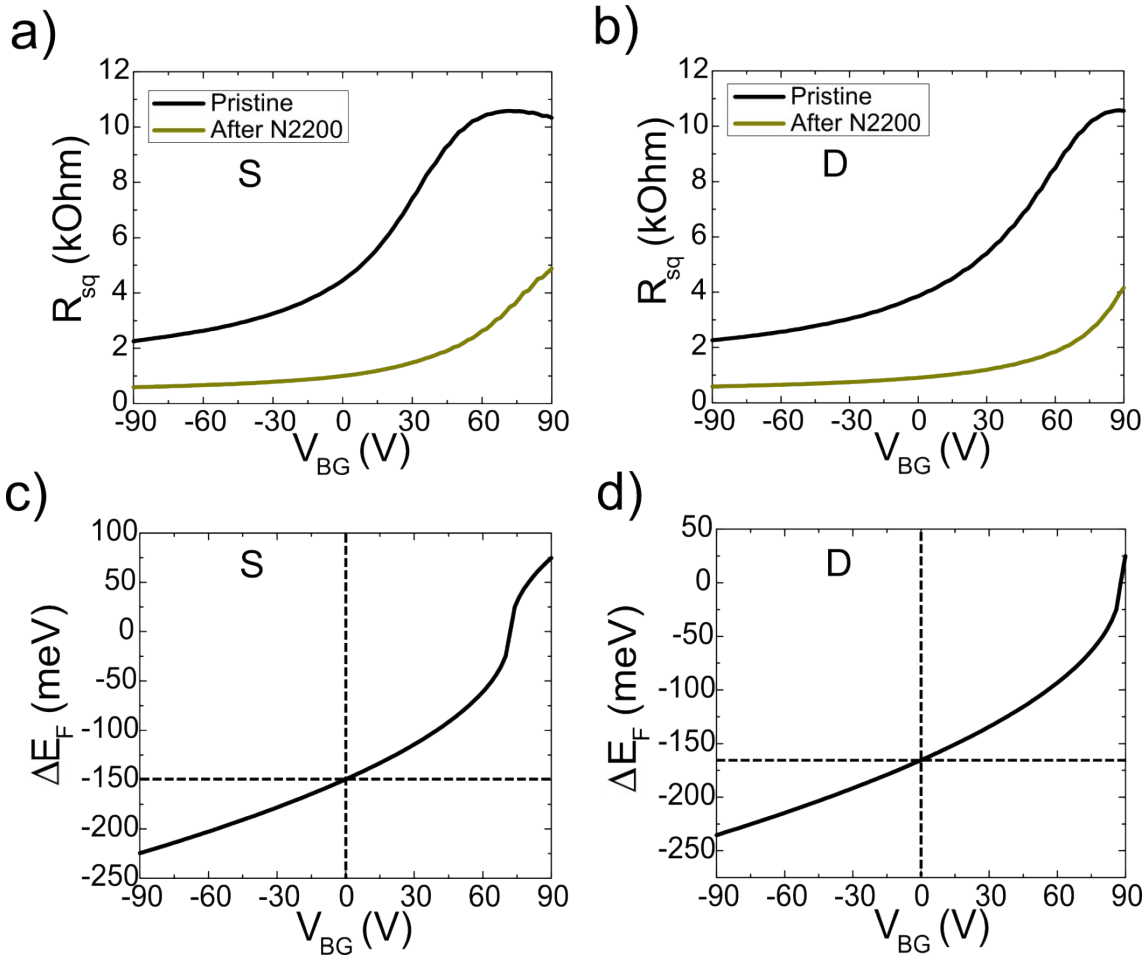

Figure S1: Square resistance of graphene source (S) and drain (D) electrodes as a function of the bottom gate voltage for pristine graphene and after N2200 deposition on top. (a) For source electrode, (b) for drain electrode. Modulation of the pristine graphene Fermi level (E_F) with the bottom gate bias for (c) source electrode (from (a)), d) drain electrode (from (b)).

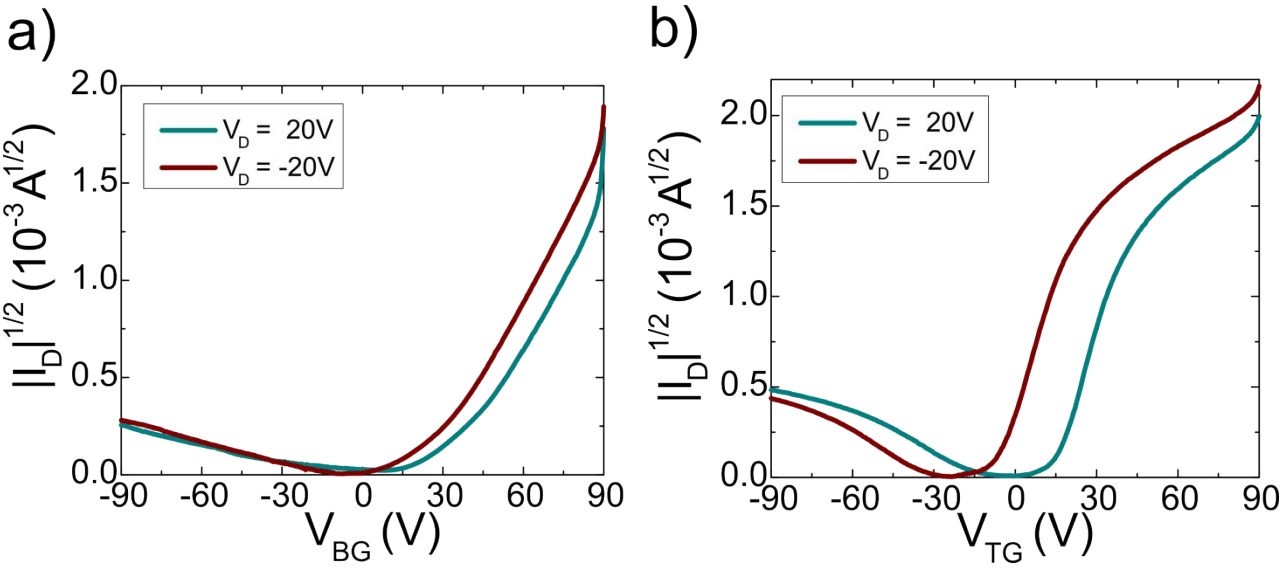

Figure S2: $\sqrt{I_D}$ vs. V_G for the curves presented in the main text (Figure 3). (a) For BGBC mode of operation, (b) for TGBC mode of operation.

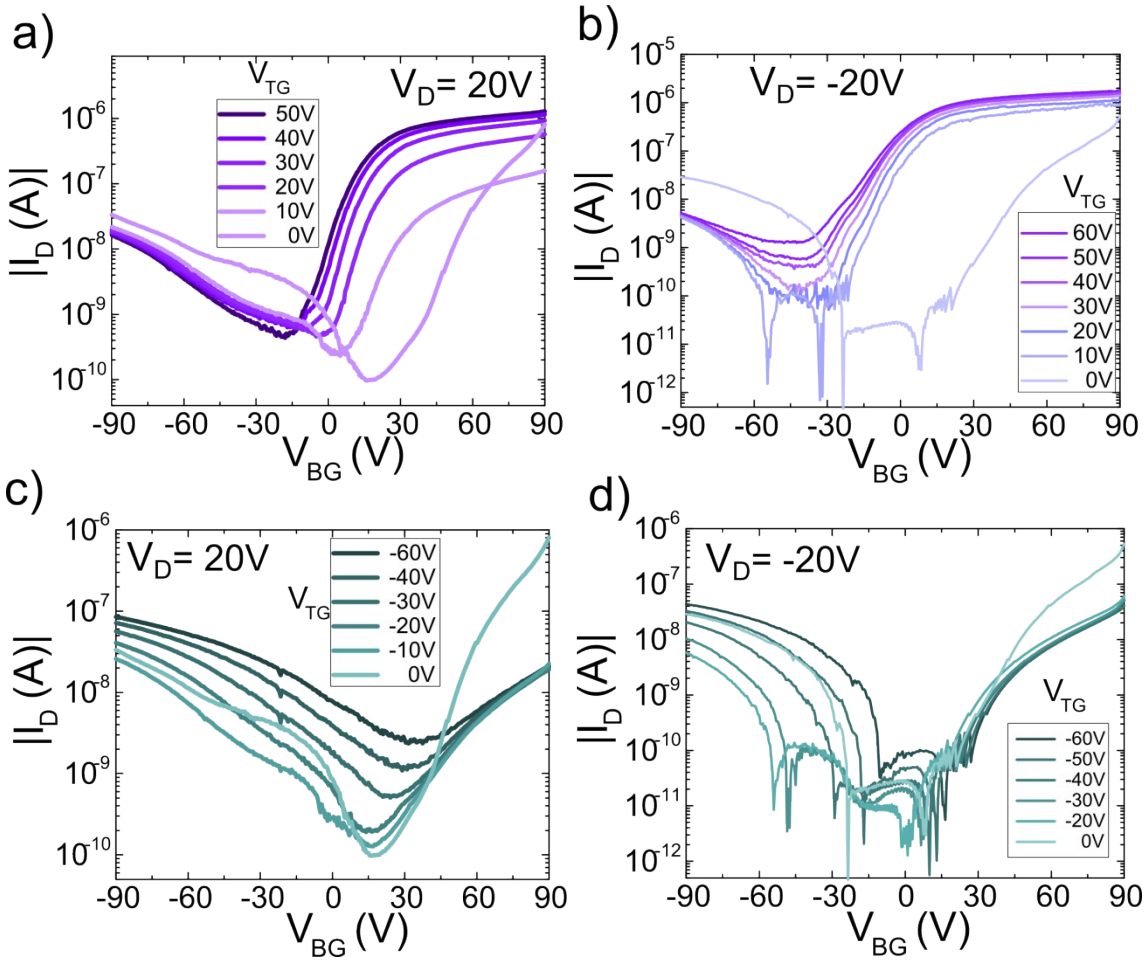

Figure S3: Dual gating operation (for graphene electrodes) with fixed positive top gate voltages while varying the bottom gate bias with (a) V_D = 20V, (b) V_D = -20V. The same with fixed negative top gate voltages while varying the bottom gate bias with (c) V_D = 20V, (d) V_D = -20V.

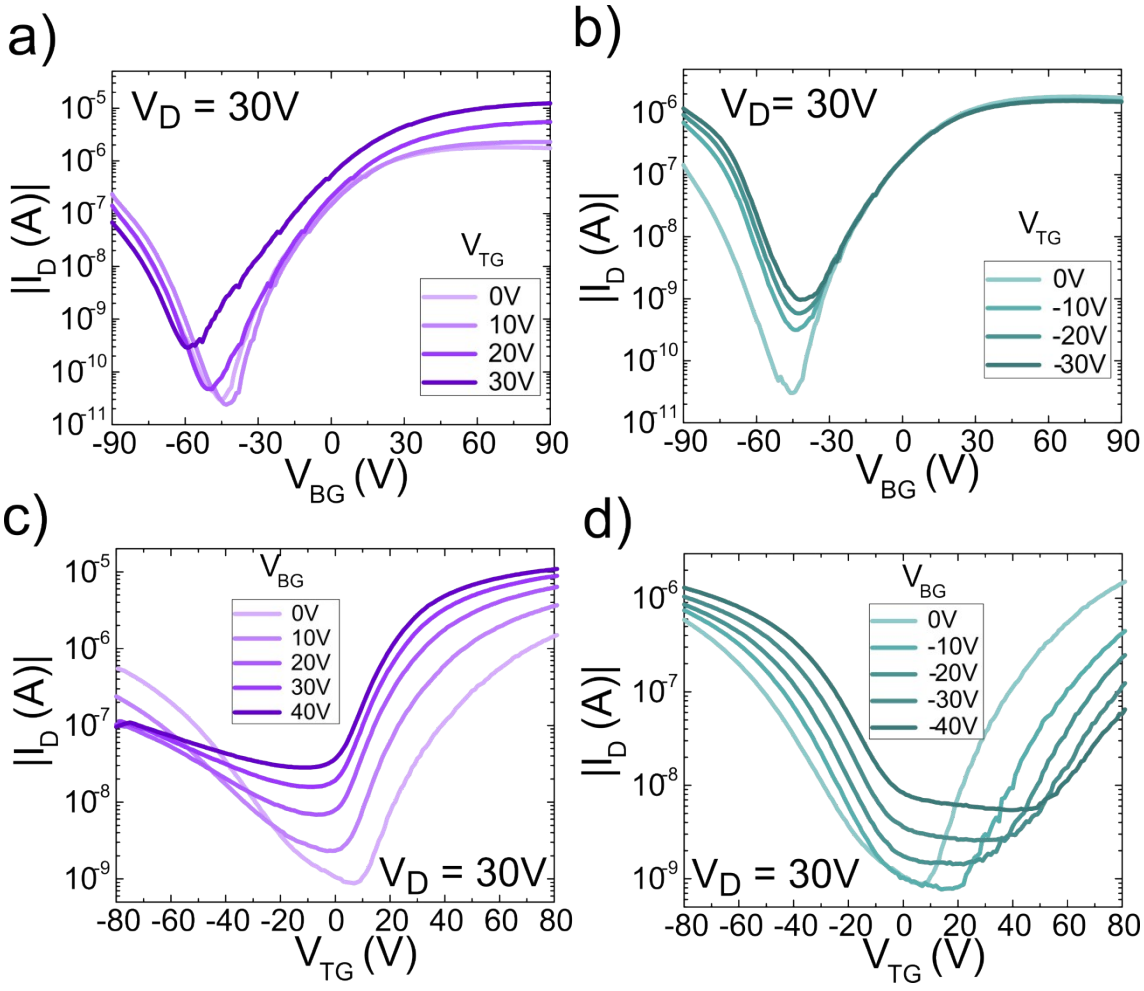

Figure S4: Dual gating operation (for Au electrodes) for V_D = 30V, with fixed positive top gate voltages (a), with fixed negative top gate voltages (b), while varying the bottom gate bias. The same with fixed positive bottom gate voltages (a), with fixed negative bottom gate voltages (b), while varying the top gate bias.

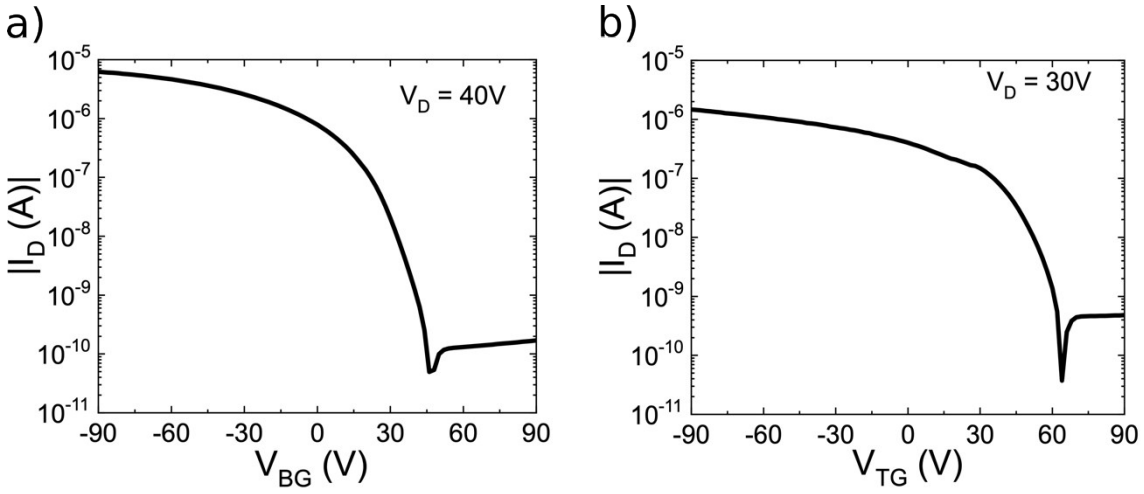

Figure S5: Transfer characteristics of a P3HT polymer transistor (with Au electrodes, W = 10000 μm; L = 10 μm) capped with (PMMA+CYTOP) top dielectric. (a) In bottom gate bottom contact operation. (b) In top gate bottom contact operation.