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

Supporting Information for

Ambipolar Charge Transport in an Organic/Inorganic van der Waals *p-n* Heterojunction

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1. Langmuir curve of PDVT-10

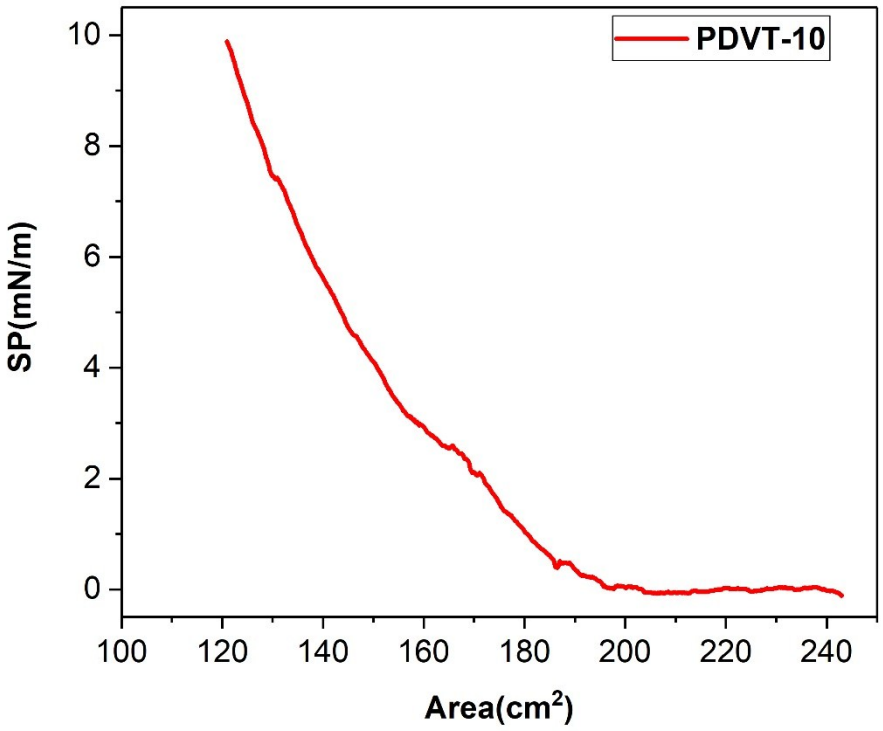

Figure S1. Surface pressure versus area isotherm of PDVT-10 (spreading solution of 4 mg of PDVT-10 in 1 mL of *o*-dichlorobenzene) on a water subphase.

2. Output characteristics of the PDVT-10/MoS_2 ambipolar *p*–*n* heterojunctions.

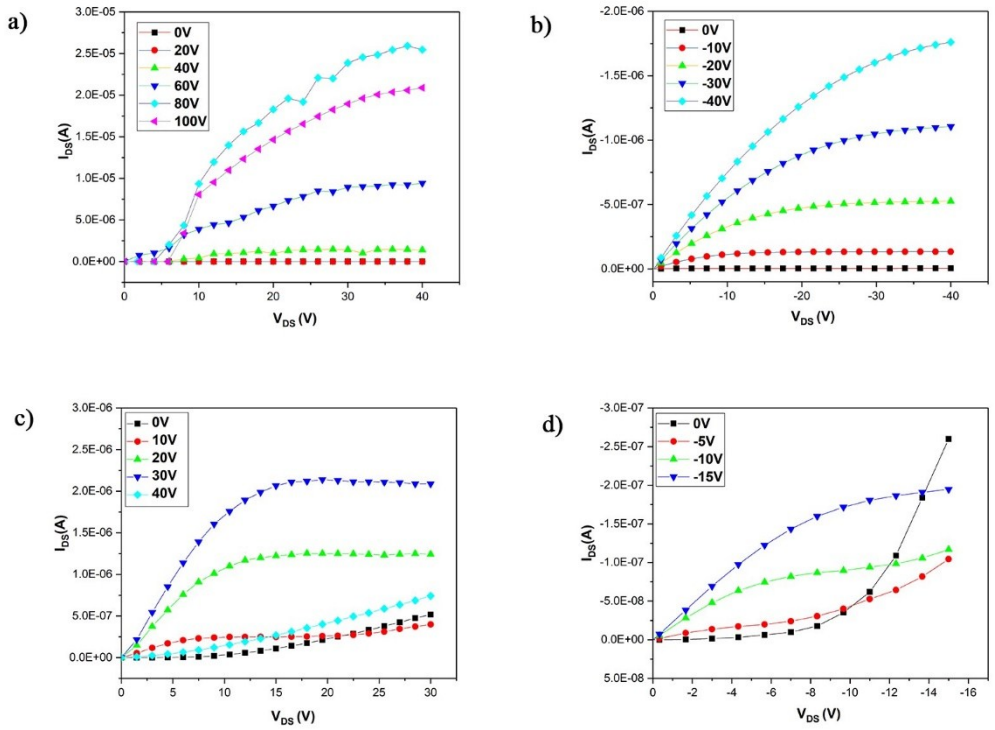

Figure S2. Output characteristics of the PDVT-10/MoS_2 ambipolar *p*–*n* heterojunctions. (a) Output characteristics of MoS_2. (b) Output characteristics of PDVT-10. (c, d) Output characteristics of the *p*-*n* junction.

3. Absorption spectra of PDVT-10, MoS_2 and the junction

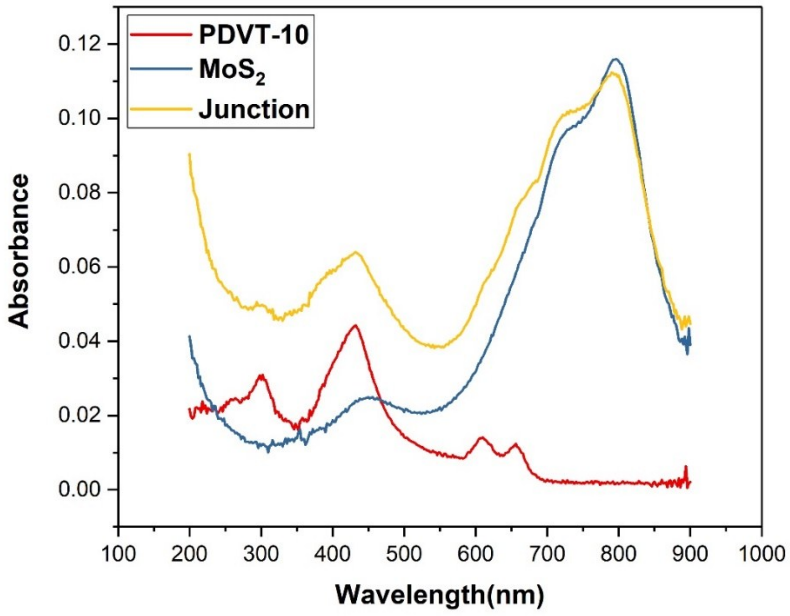

Figure S3. UV-Vis-NIR spectra of PDVT-10, MoS_2 and the junction.

4. UPS spectra of PDVT-10.

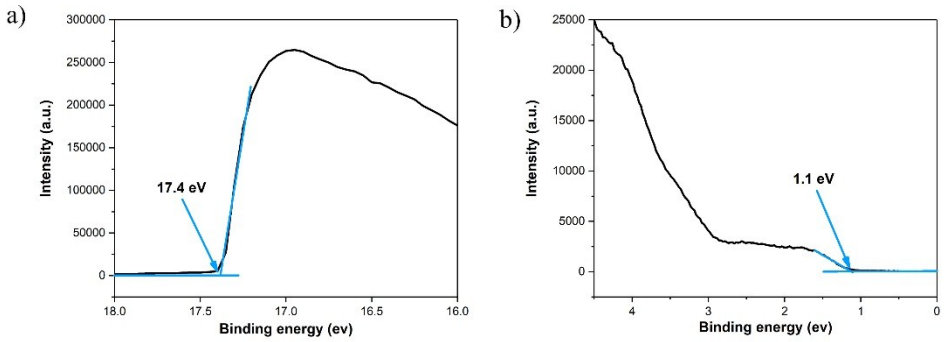

Figure S4. UPS spectra of PDVT-10.

5. Hole mobility as a function of gate voltage.

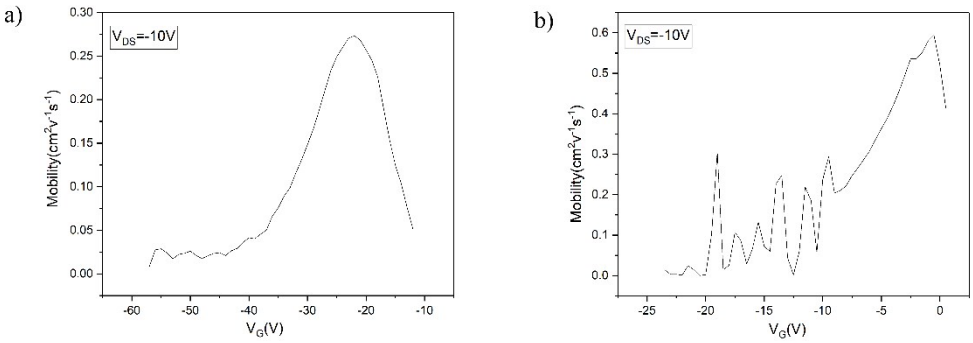

Figure S5. A plot of hole mobility as a function of gate voltage. (a) PDVT-10. Within -60 V<V_{GS}<-40 V, the mobility was calculated with the saturated equation. Within -40 V<V_{GS}<10 V, the mobility was calculated with the liner equation. (b) The junction. Within -25 V<V_{GS}<-12 V, the mobility was calculated with the saturated equation. Within -12 V<V_{GS}<0 V, the mobility was calculated with the liner equation.