Supplementary Material

Measuring the impact of spin-triplet exciton orientation on photocurrent in an organic transistor

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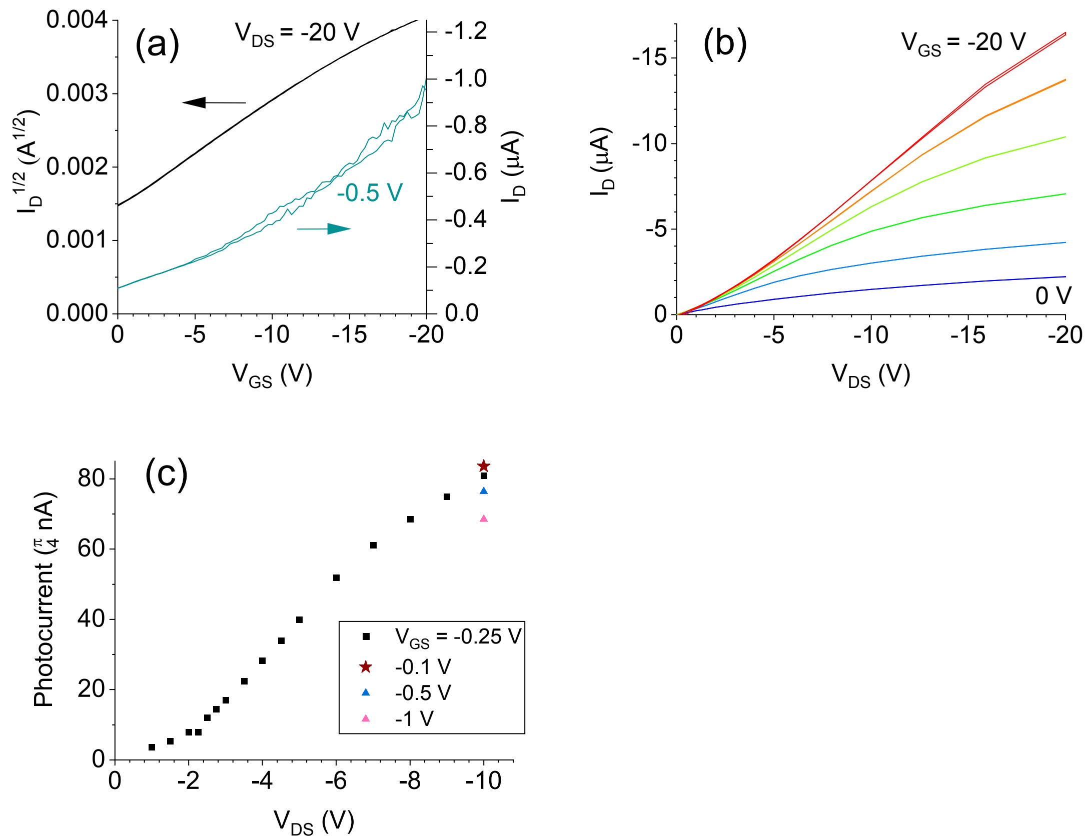

Figure S1 Current-voltage characteristics of the bottom contact top gate transistor used to measure magneto-photocurrent in main paper. Forward and reverse data are shown for each sweep, the low hysteresis makes the sweeps indistinguishable at scale in most of the data. (a) Transfer characteristics for linear and saturation regimes. (b) Output characteristics for gate-source bias from 0 V to -20 V in steps of -4 V. In the linear regime, the device shows suppressed current at high gate bias likely due to the large contact resistance caused by bulk resistance through the crystal thickness. (c) Plot of the photocurrent as a function of bias at 550 nm. Bias sources for photocurrent are limited to ±10 V. The bias conditions to measure the device were chosen to maximize signal while limiting noise within the saturation regime to provide a stable measurement and predictable underlying behavior of the transistor.

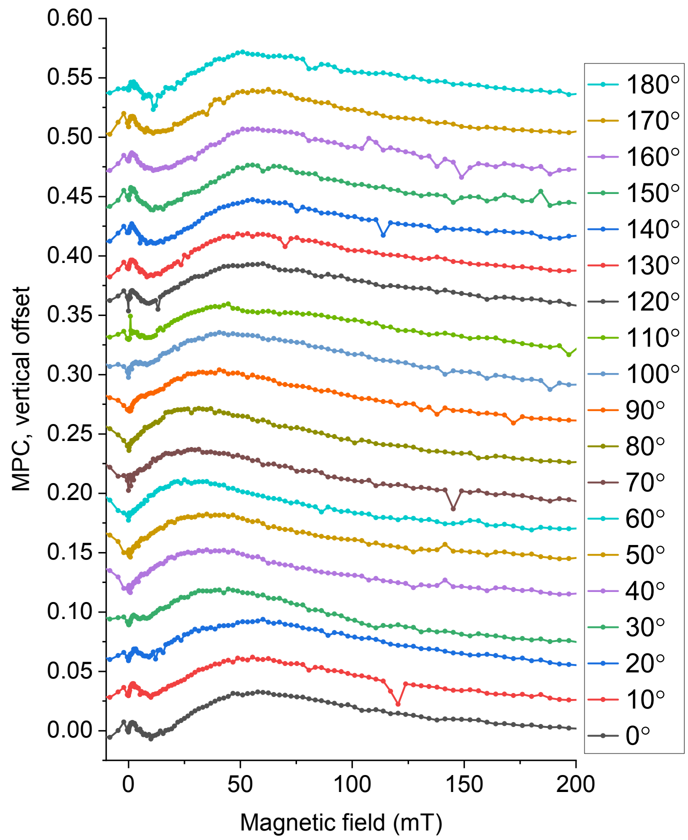

Figure S2: Magneto-photocurrent (MPC) data used to plot Figure 2 in the main text, each line offset from the one below by 0.03. Data point density decreases from 0 mT to 200 mT, so that a larger data set was collected near low-field structural features in the data. Magnetic field direction is relative to the sample holder.

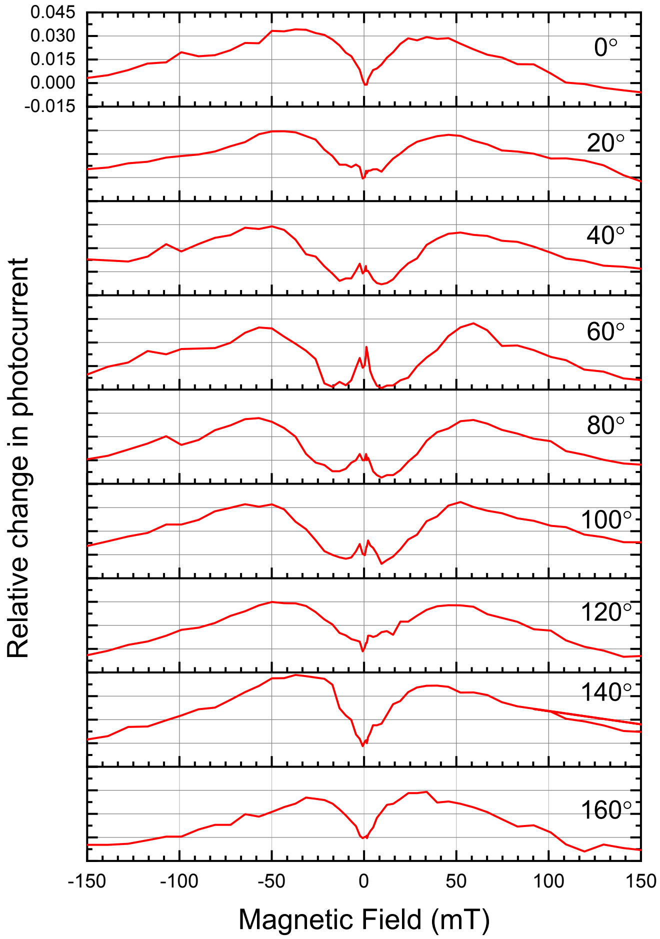

Figure S3: Magneto-photocurrent measured for a sample with palladium drain and source contacts. Magnetic field angle is relative to device holder. Y-axes for each plot are identical to the 0° plot.