

Supplementary Information

Molecular spinterface in F₄TCNQ-doped polymer spin valves

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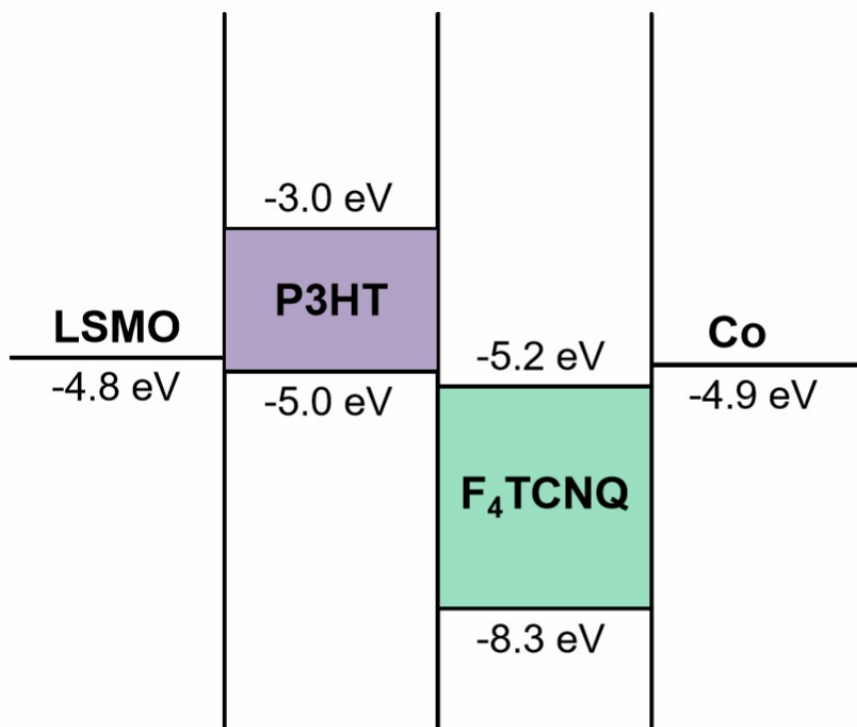


Fig. S1 Band alignment diagram of LSMO/P3HT/F₄TCNQ/Co.

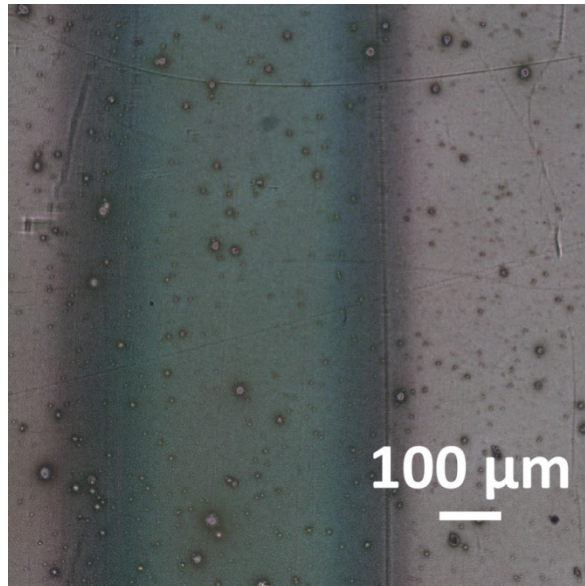


Fig. S2 Optical microscope image of F_4TCNQ -doped P3HT layer on LSMO/STO substrate. In the figure, the organic layer is relatively smooth, and the small granules are F_4TCNQ .

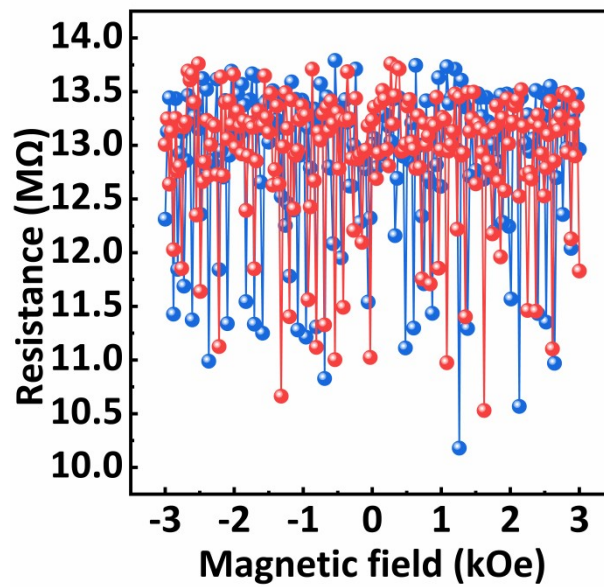


Fig. S3 MR curve of the LSMO/P3HT/Co/Au device before doping. The temperature was 2 K, and the input current was $0.03 \mu A$.

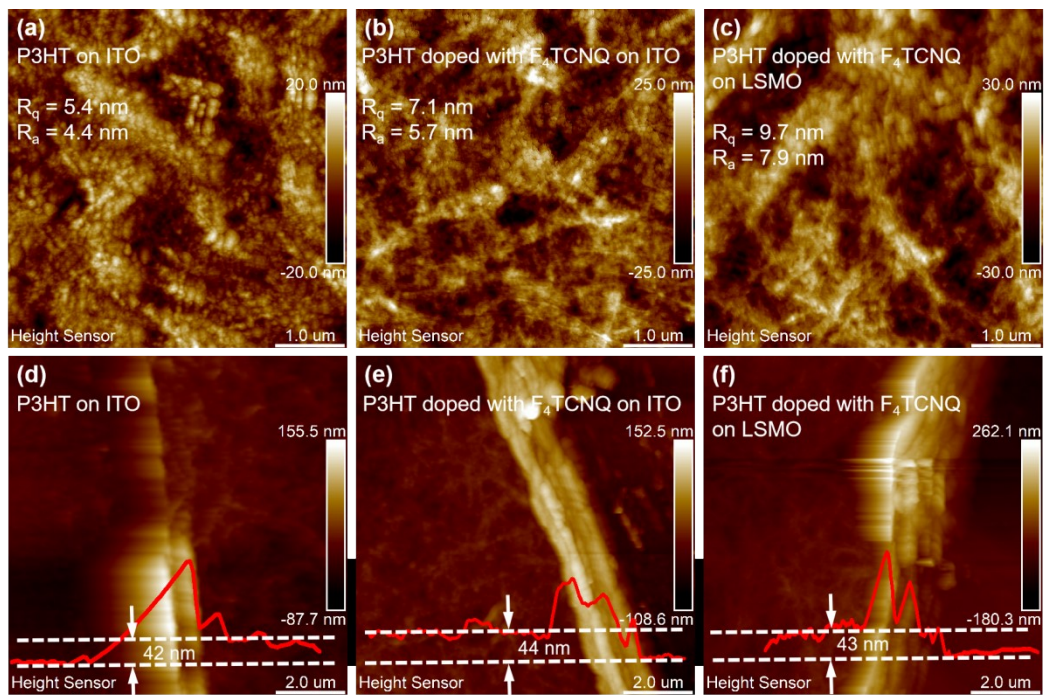


Fig. S4 AFM images of P3HT before and after F_4TCNQ doping. (a), (d) The morphology and thickness of the pristine P3HT layer on the bottom ITO electrode. (b), (e) The morphology and thickness of F_4TCNQ -doped P3HT on the bottom ITO electrode. (c), (f) The morphology and thickness of F_4TCNQ -doped P3HT on the bottom LSMO electrode.

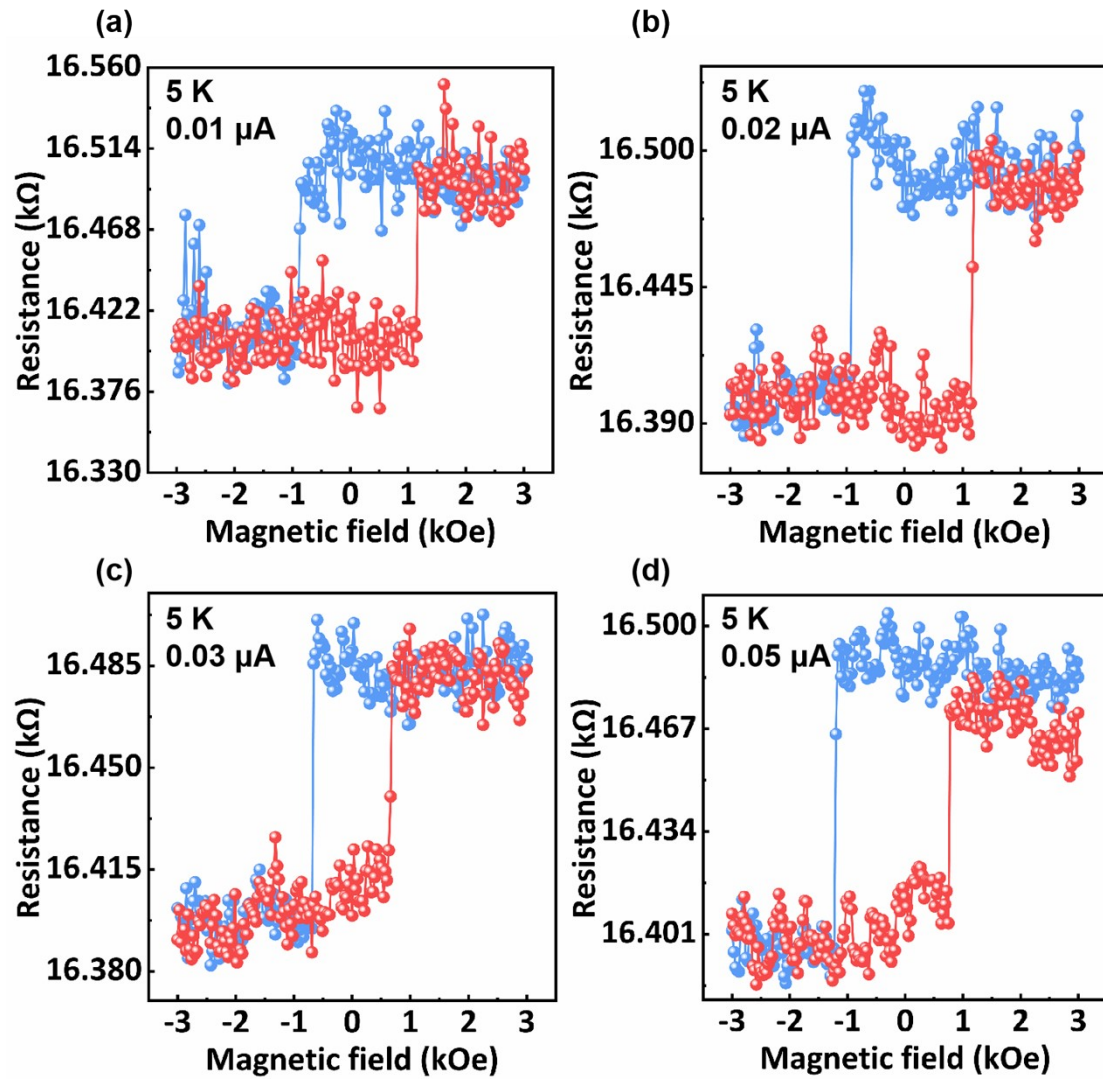


Fig. S5 MR curves of the doped ITO/P3HT/F₄TCNQ/Co/Au device at 5K. Each measurement was conducted with different currents of (a) 0.01 μA , (b) 0.02 μA , (c) 0.03 μA . and (d) 0.05 μA .

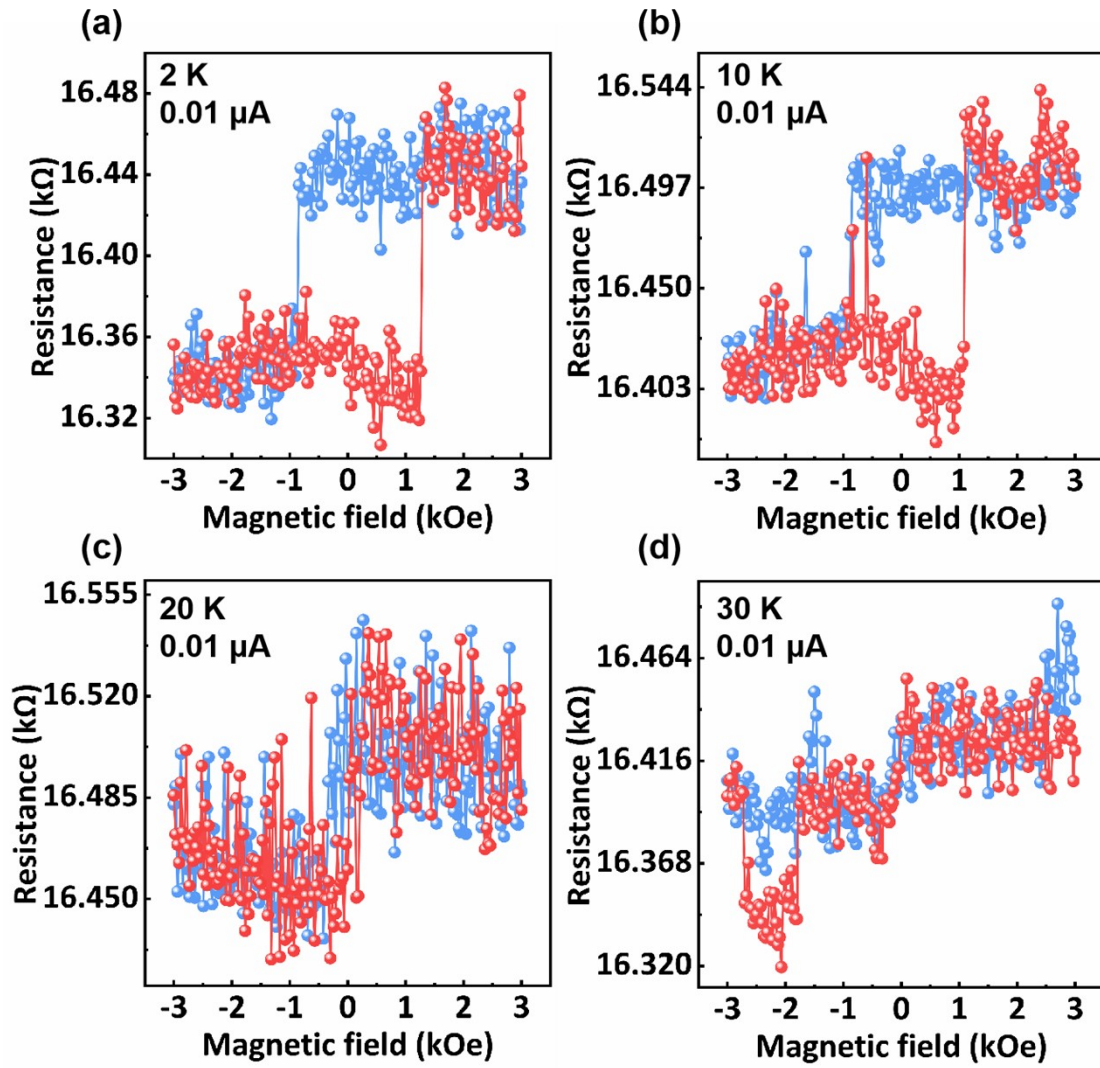


Fig. S6 MR curves of the doped ITO/P3HT/F₄TCNQ/Co/Au device with the input current of 0.01 μA. Each measurement was conducted at different temperatures of (a) 2 K, (b) 10 K, (c) 20 K, and (d) 30 K.