

Supplementary Information (SI) for Journal of Materials Chemistry C.
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Crystallographic Orientation-dependent Anisotropic Doping in Organic Single-Crystal Microplates

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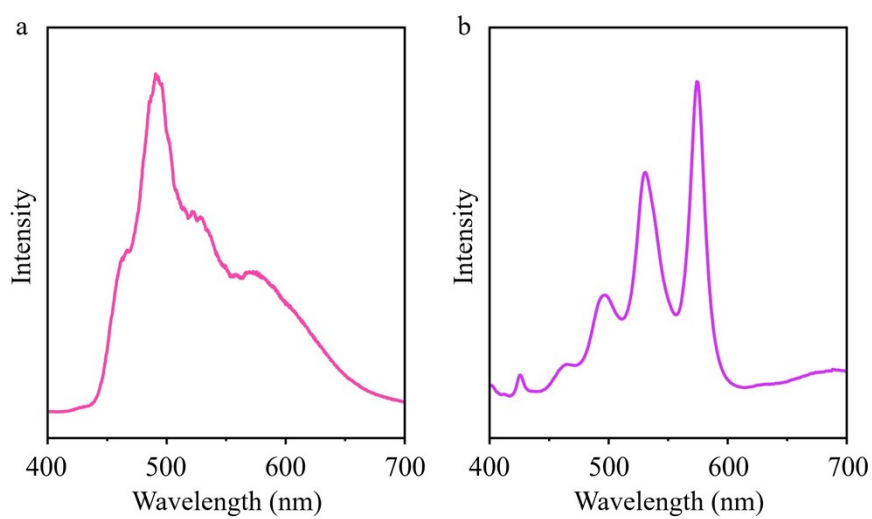


Fig. S1 (a) The fluorescence spectrum of p-MSB single crystals. (b) The absorption spectrum of Pen molecules.

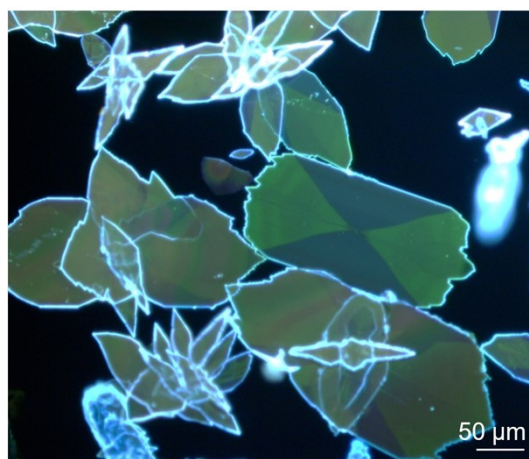


Fig. S2 The emission patterns of OSSCs obtained from the solution with the mass ratios of 5:1 at room temperature.

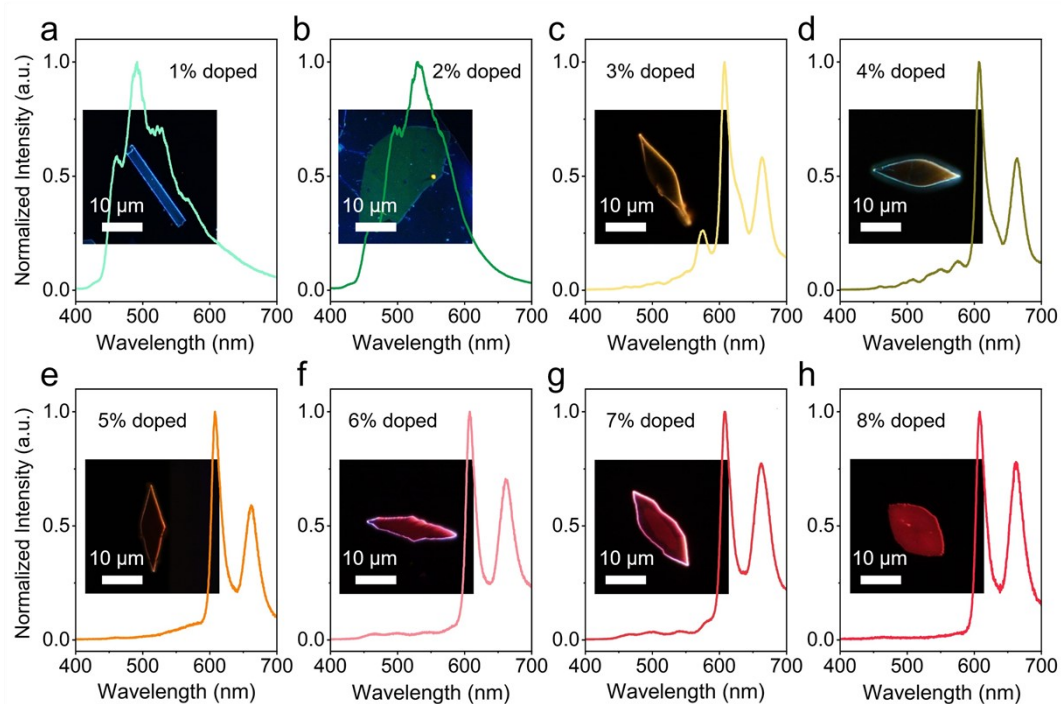


Fig. S3 Pentacene doped p-MSB single crystals with controlled pentacene doping concentration via physical vapor deposition. PL spectra of pentacene-doped p-MSB crystals with different doping concentration. Illustration: Top-view photographs under UV-light irradiation of crystals with a doping concentration of 1% to 8%.

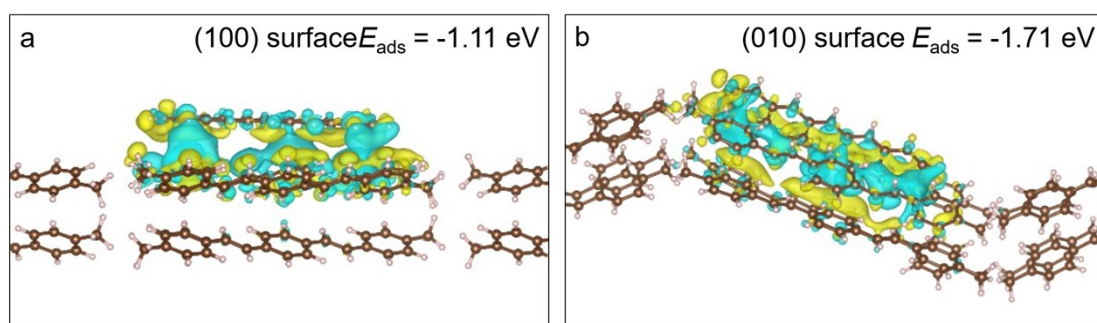


Fig. S4 The calculated adsorption energy of pentacene on (a) (100) and (b) (010) crystal surface of p-MSB.

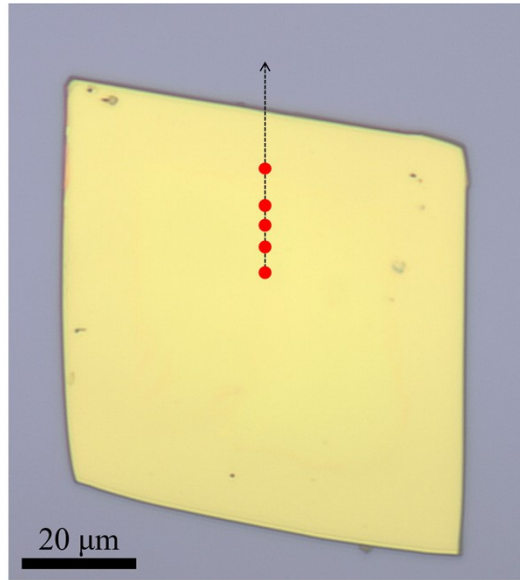


Fig. S5 Optical image of Pen-doped p-MSB single crystals obtained at growth temperature of 20 °C (1:1 mass ratio), the black arrows indicate the test direction of the optical waveguide, and the red dots indicate the measurement points.

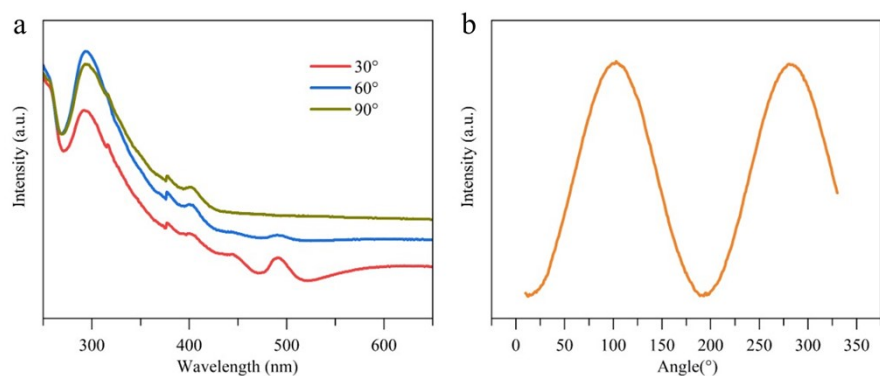


Fig. S6 Polarization absorption of Pen-doped p-MSB single crystals. (a) Polarization absorption spectra of Pen-doped p-MSB single crystals at 30°, 60° and 90°. (b) Absorption spectra of Pen-doped p-MSB single crystals at different polarization angles.

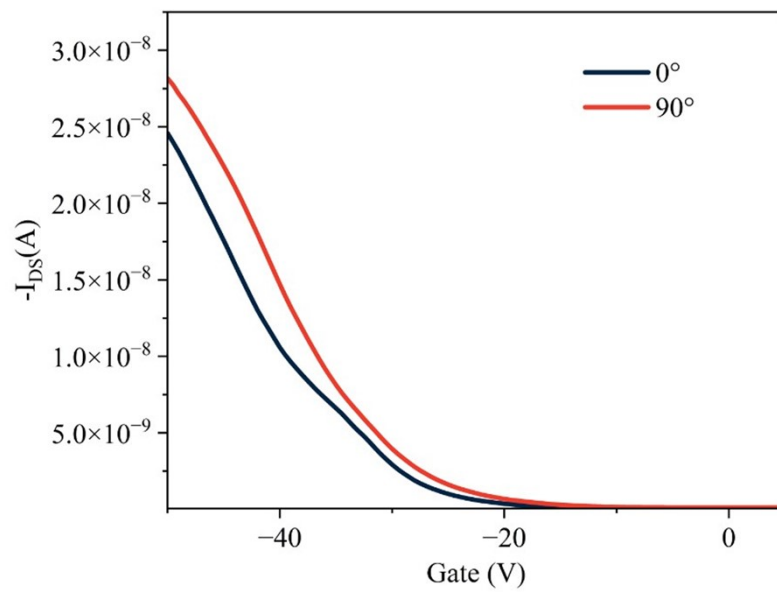


Fig. S7 The polarization electrical performance of Pen-doped p-MSB single crystals.

Table S1. The incident optical power density and the corresponding numbers of paper layers.

Layers of filter paper	Layers of weighing paper	Optical power density (mW/cm ²)
3	12	0.002
2	12	0.004
1	12	0.013
0	12	0.059
0	9	0.133
0	6	0.322
0	3	0.78