

Supplementary Information for

Controlled Formation of Large-Area Single-Crystalline TIPS- Pentacene Arrays through Superhydrophobic Micropillar Flow- Coating

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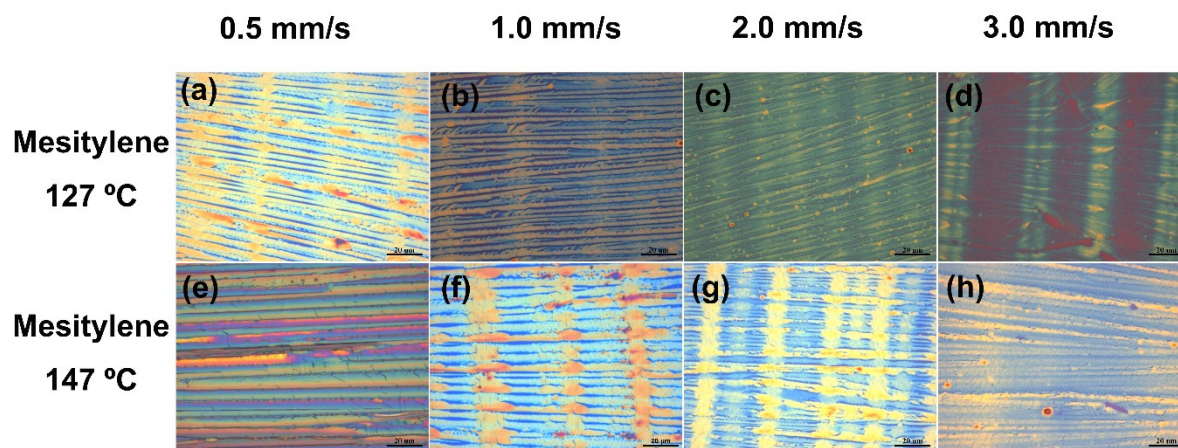


Figure S1. Optical microscopy images of superhydrophobic micropillar flow-coating (SMFC) single-crystalline arrays/thin films at different coating speeds and coating temperatures.

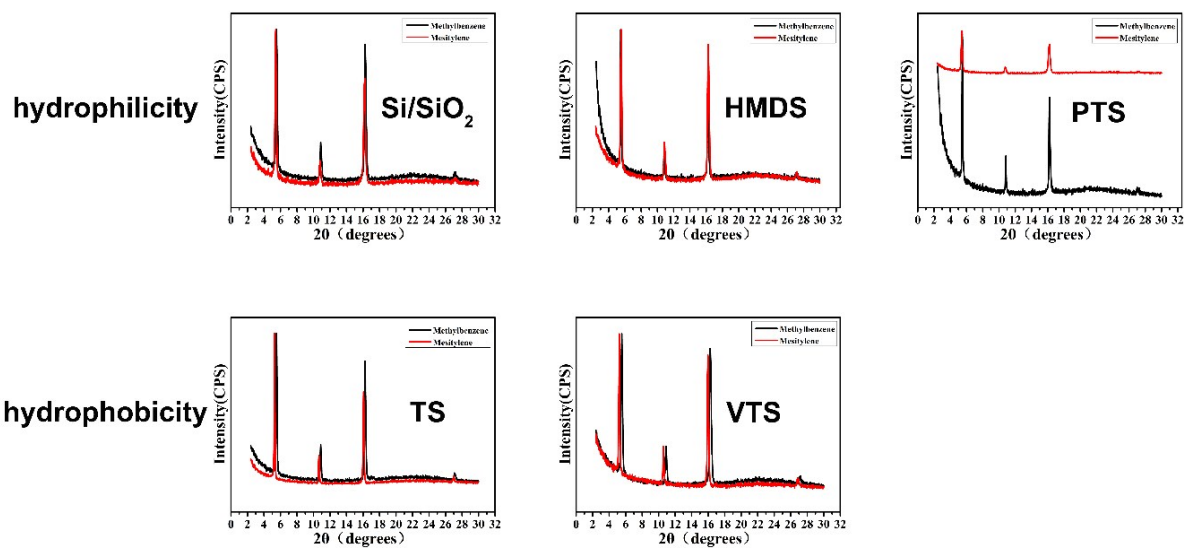


Figure S2. Out-of-plane X-ray diffraction (XRD) pattern for the coated TIPS-pentacene single-crystalline arrays/thin films at different substrates and solvents.

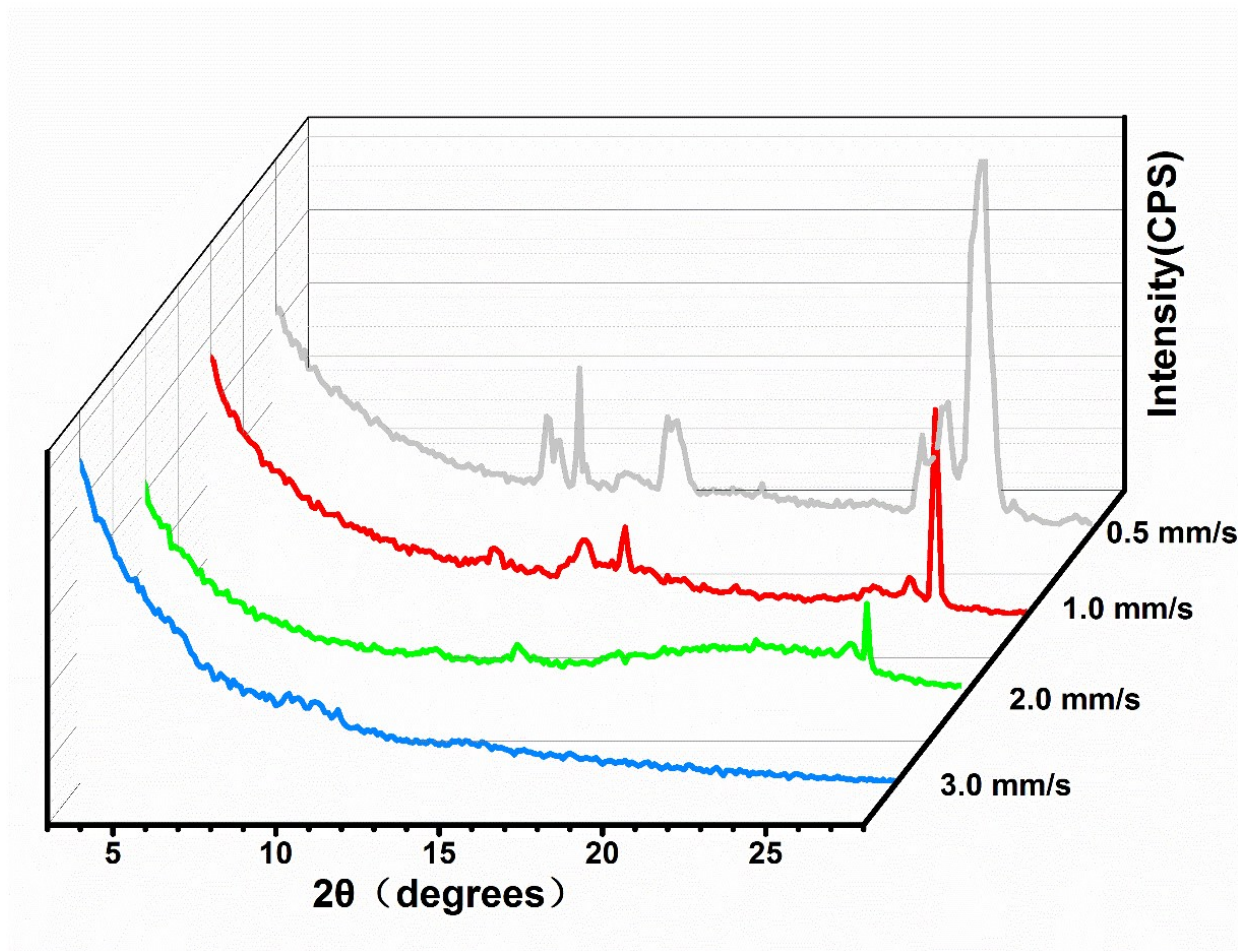


Figure S3. In-plane GIXRD patterns with near grazing angle of the incidence beam direction parallel to the array.

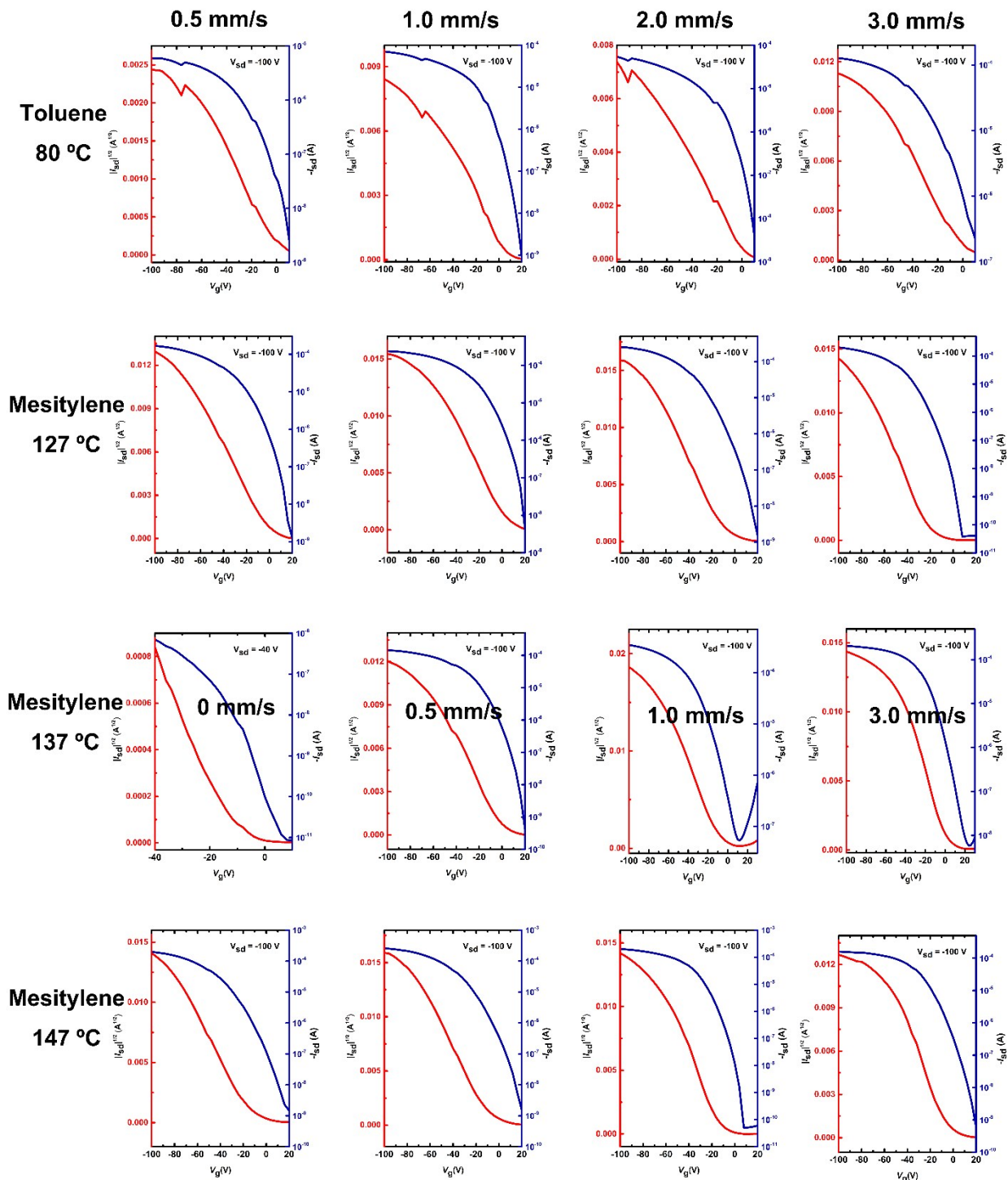


Figure S4. The transfer characteristics of the TIPS-pentacene single-crystalline arrays at different temperatures, different solvents, and different coating speeds on the PTS substrates. TIPS pentacene OFET(137 °C and 0 mm/s⁻¹, mesitylene solution) was fabricated according to the literature.^{S1}

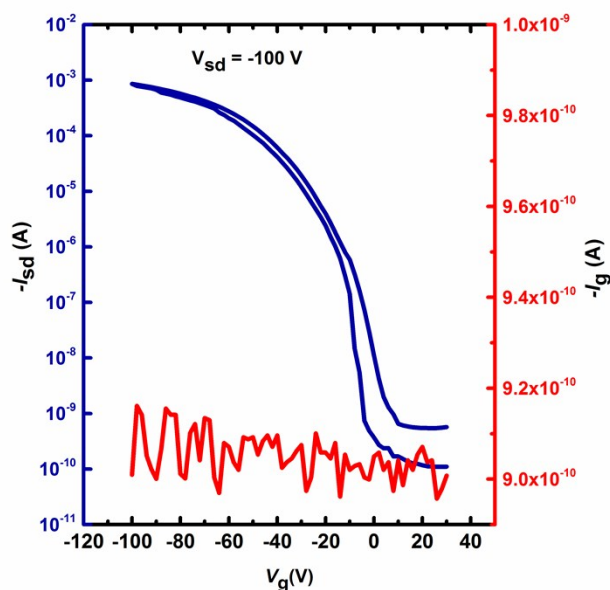


Figure S5. Gate leakage and hysteresis in the transfer curve of the TIPS-pentacene single-crystalline array at the optimized conditions on the PTS-modified substrates.

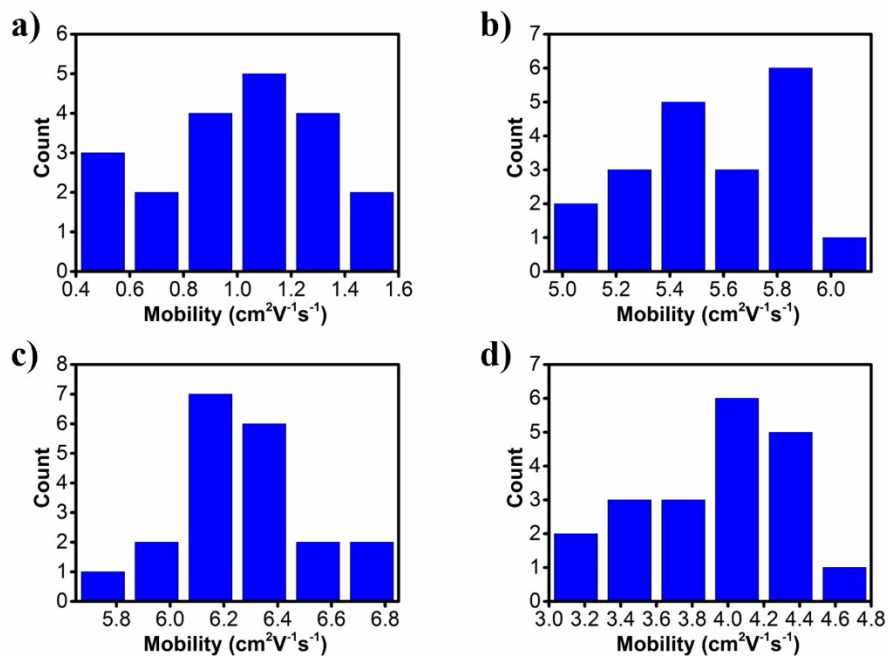


Figure S6. Statistics of the electrical characteristics of SMFC single-crystalline arrays/thin films (Coating conditions: mesitylene, 137 °C). Coating speed: a) 0.5 mm/s; b) 1.0 mm/s; c) 2.0 mm/s; d) 3.0 mm/s.

References

S1 X. Kan, C. Xiao, X. Li, B. Su, Y. Wu, W. Jiang, Z. Wang, L. Jiang, *ACS Appl. Mater. Interfaces*, **2016**, 8, 18978-18984.