

Supporting Information

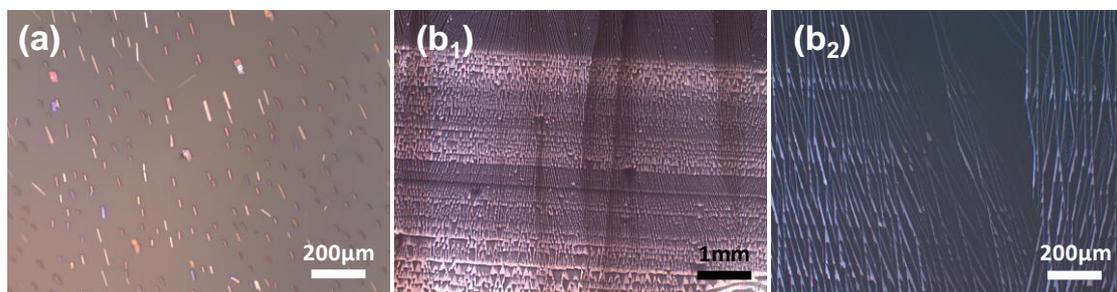


Figure S1: POM images of TIPS-pentacene crystals prepared by zone-casting TIPS-pentacene/toluene solution. The concentrations were (a) 2 mg/ml and (b) 5 mg/ml, respectively. (b₁) and (b₂) were POM images taken from different zones of the substrate. The casting speed was 50 μm/s. Discrete TIPS-pentacene crystals were observed when the concentration was low (2 mg/ml). The continuous crystals with poor orientation were obtained at 5 mg/ml.

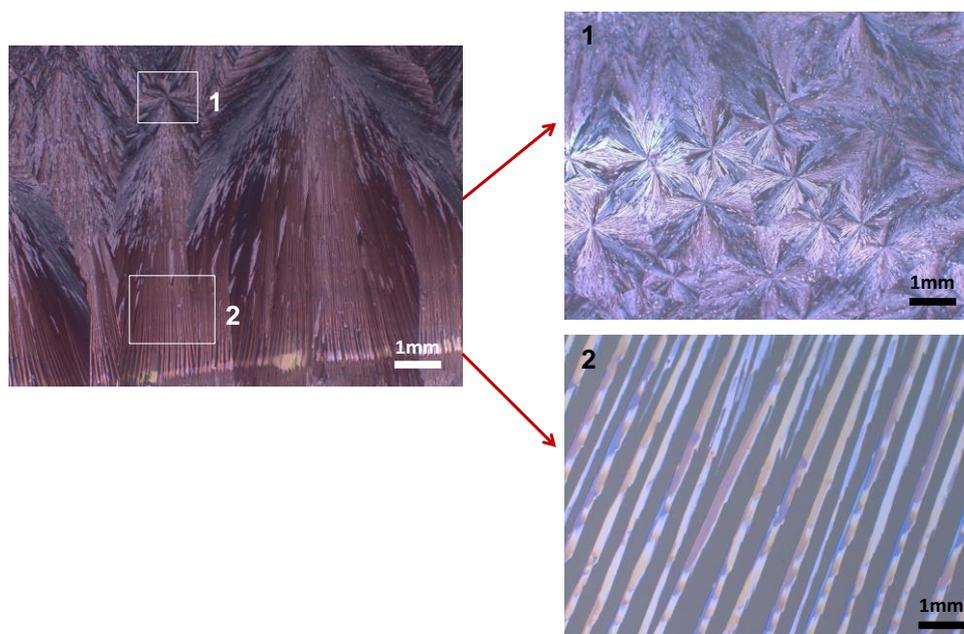


Figure S2: POM images showing the transition from TIPS-pentacene spherulites to oriented crystalline array. The images were taken from the edge of the substrate, where the zone-casting procedure started. The right images indicated typical POM images of the spherulites and aligned crystals.

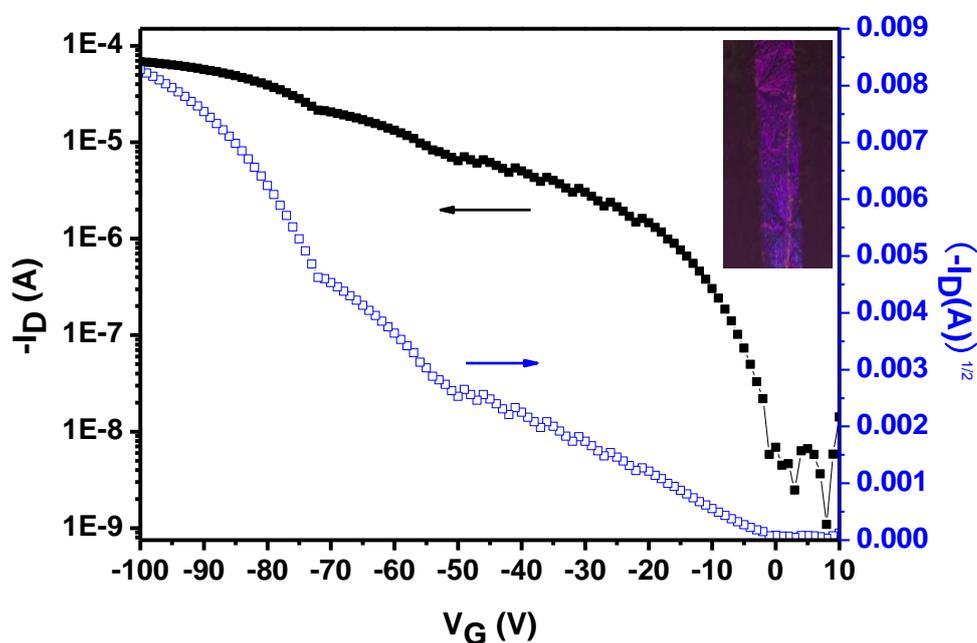


Figure S3: Typical characteristic transfer curve of OFET based on non-oriented TIPS-pentacene. The insert indicated the POM image of TIPS-pentacene crystals between the source and drain electrodes. The semiconductor layer was prepared by drop-casting TIPS-pentacene/ $CHCl_3$ solution (5mg/ml) on the substrate. The calculated field effect mobility was $0.086 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$.