Supporting Information

Aggregation-Tuned Charge Transport and Threshold Voltage Modulation in Poly(3-Hexylthiophene) Field-Effect Transistors

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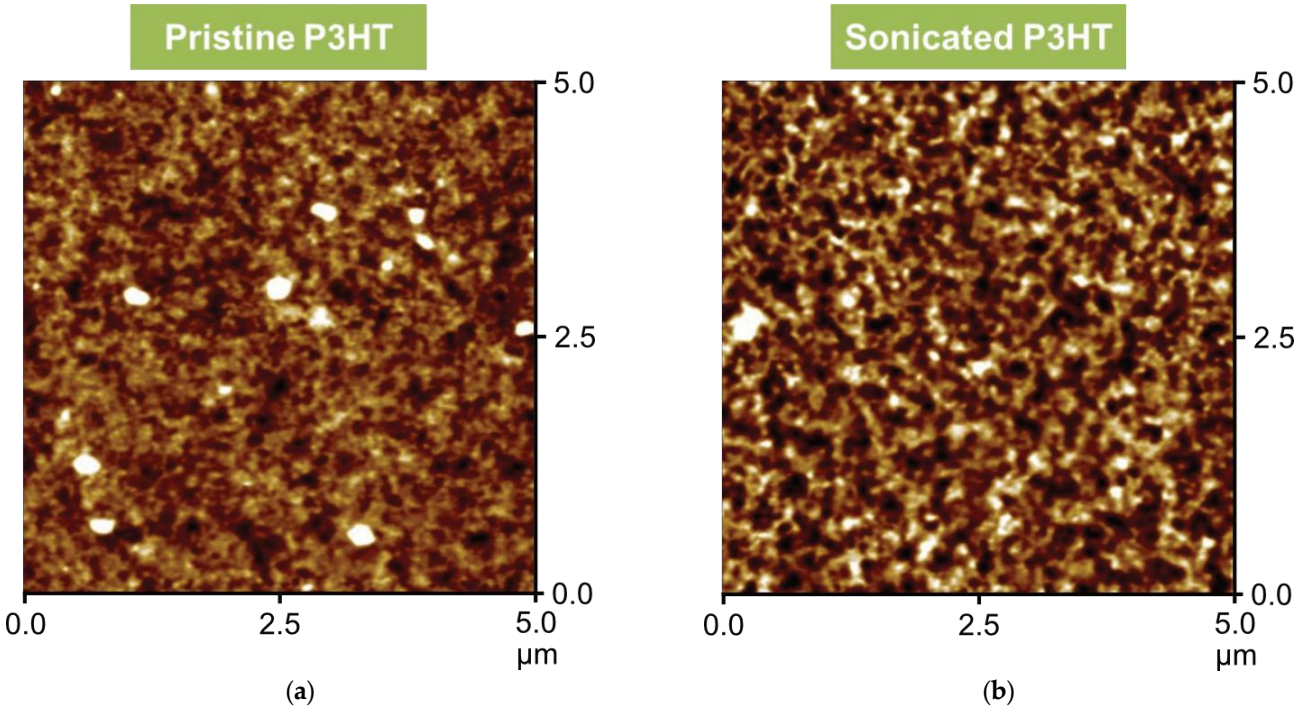
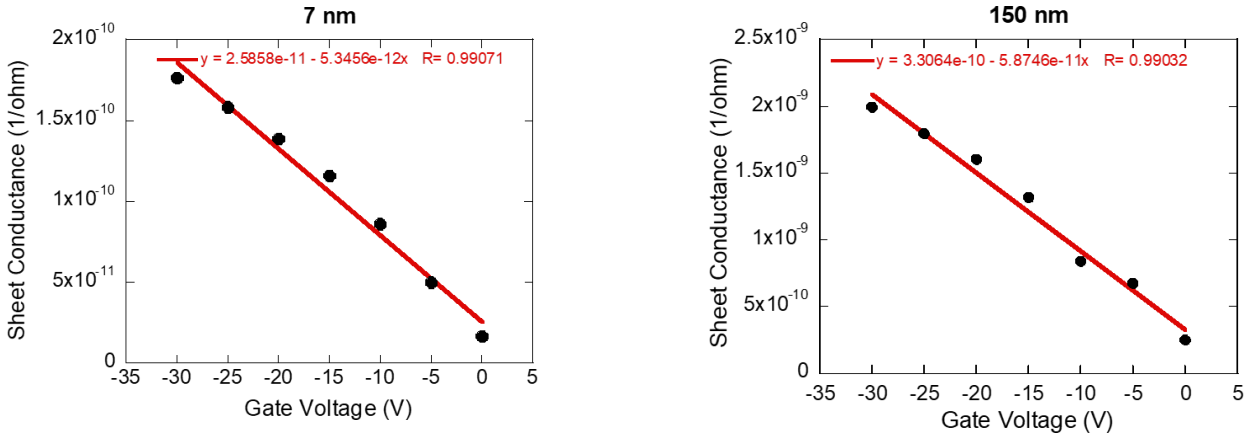


Figure S1. AFM height images of (**a**) pristine P3HT and (**b**) sonicated P3HT thin films. The sonicated film displays enhanced textural features and domain formation, consistent with the increased aggregation and crystallinity indicated by UV-Vis and XRD analysis.



(**a**) (**b**)

Figure S2. Sheet conductance as a function of gate voltage (V_G) for sonicated P3HT films with thicknesses of (**a**) 7 nm and (**b**) 150 nm. The linear fits (red lines) to the experimental data (black circles) in the linear regime effective four-contact field-effect mobilities of 3.1×10^{-4} cm²/Vs (7 nm) and 3.4×10^{-3} cm²/Vs (150 nm), respectively. The excellent linearity ($R^2 \sim 0.99$) confirms reliable extraction of transport parameters well beyond the optimum thickness range.