### Title:

Polyimide (PI): High-Quality Polymer Dielectric Film with the Features of Anti-Solvents, Large-Area Consistency for Field-Effect Transistors

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**Fig. S1**: AFM of images of the PI films that fabricated at (a) 2000 rpm, 30s. (b) 4000rpm, 30s. (c) 6000 rpm, 30s, (d) 8000 rpm, 30s, showing the smooth morphology of the PI films.



**Fig. S2:** The transfer and output characteristics of a typical OFET fabricated on the PI films that prepared at different conditions respectively (a) 2000 rpm, 30s. (b) 6000 rpm, 30s. (c) 8000rpm, 30s.



**Fig. S3:** AFM images of the pentacene prepared on the PI films that fabricated at different conditions respectively (a) 2000 rpm, 30s. (b) 4000 rpm, 30s. (c) 6000rpm, 30s. (d) 8000 rpm, 30s.



Fig. S4: The transfer and output characteristics of the n-channel OFET based on PDI-  $\ensuremath{\text{CN}}_2$ 



**Fig. S5:** (a) Transfer (b) Output characteristics of a typical device fabricated the PI film that prepared at 4000 rpm, 30s and dealt with solvents. (c) Transfer (d) Output characteristics of a typical device fabricated the PI film that prepared at 6000 rpm, 30s and dealt with solvents.