

High-performance organic thin-film transistors with polymer-blended small-molecular semiconductor films, fabricated using a pre-metered coating process

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ATM topographic Images

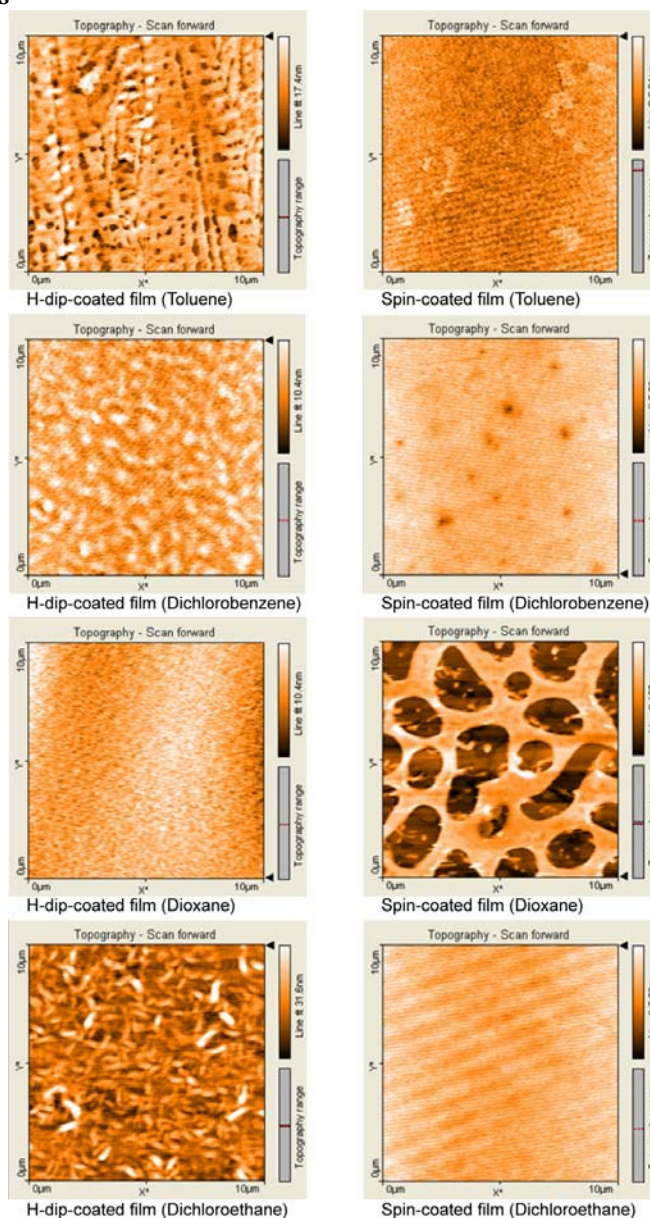
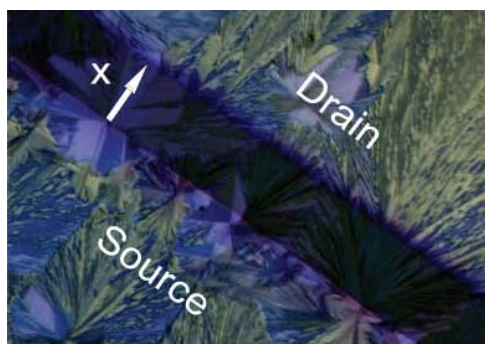


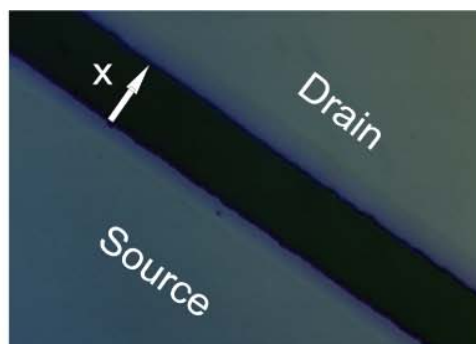
Fig.S1 The AFM topographic images showing the microscopic textures of the H-dip- (left) and spin- (right) coated TIPS-PEN:PaMS films for the four solvents used.

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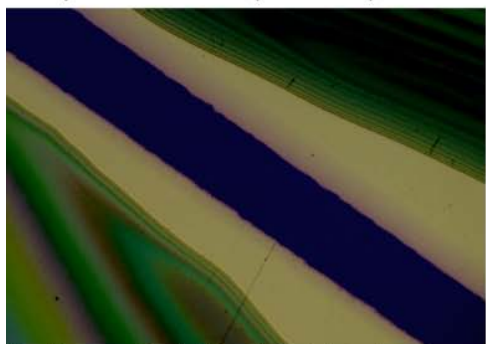
Polarised microscopic Images



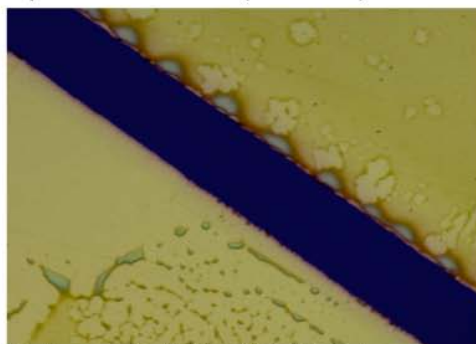
H-dip-coated film (Toluene)



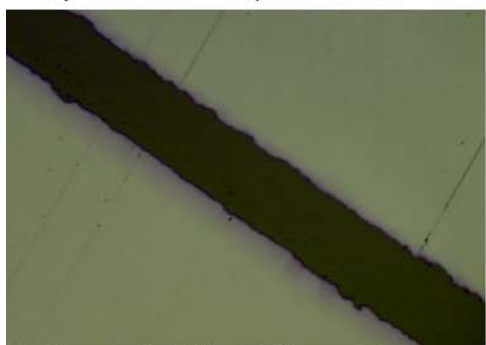
Spin-coated film (Toluene)



H-dip-coated film (Dichlorobenzene)



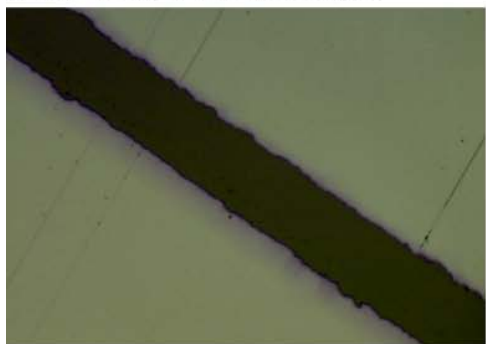
Spin-coated film (Dichlorobenzene)



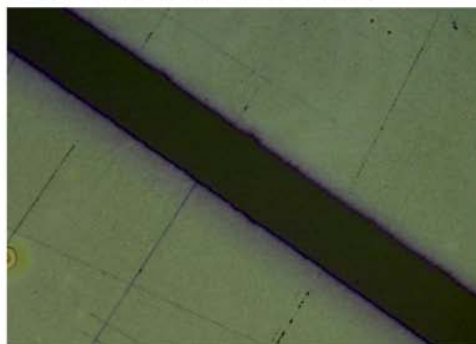
H-dip-coated film (Dioxane)



Spin-coated film (Dioxane)



H-dip-coated film (Dichloroethane)



Spin-coated film (Dichloroethane)

Fig.S2 Polarised images showing the microscopic textures of the H-dip- (left) and spin- (right) coated TIPS-PEN:PaMS films for the four solvents used.

Table S1. Summary of the dependence of the electrical performance of the fabricated TIPS-PEN:PaMS OTFTs on the solvent used.

<i>Parameter</i>	<i>Solvent (H-dip / Spin)</i>			
	<i>Toluene</i>	<i>Dichlorobenzene</i>	<i>Dichloroethane</i>	<i>Dioxane</i>
Thickness (nm)	80 / 67	70 / 62	67 / 66	87 / 73
Roughness (nm)	2.7 / 0.9	1.2 / 0.6	3.8 / 0.6	1.2 / 29.97
Avg. mobility (cm ² V ⁻¹ s ⁻¹)	0.1552±0.0182 / 0.0062±0.0003	0.0302±0.0097 / 0.0000±0.0000*	0.0126±0.0016 / 0.0000±0.0000*	0.0035±0.0021 / 0.0000±0.0000*
Max. mobility (cm ² V ⁻¹ s ⁻¹)	0.2220 / 0.0120	0.0470 / 0.0007	0.0140 / 0.0003	0.0020 / 0.0003
On/Off ratio	1.6×10 ⁵ / 1.5×10 ⁴	2.8×10 ⁴ / 3.4×10 ²	4.6×10 ⁴ / 4.7×10 ¹	7.9×10 ² / 2×10 ²
Thresholds (V)	-21.3/-27.9	-5.0 / 15.2	-15.2 / 4.1	-20.8 / -27.0

*: The values of the average and the standard deviation are lower than 1×10⁻⁴.