Supporting Information

DPP Polymers with ITIC as Electron Acceptor for Polymer Solar Cells

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Table S1. Characteristics of PDPP3T:ITIC solar cells.

Ratio	Solvent	Thickness (nm)	J_{sc} (mA cm^{-2})	V_{oc} (V)	FF	PCE (%)
1:1	$CHCl_3$	75	3.5	0.77	0.57	1.5
1:1	$CHCl_3$/DIO (0.2%)	70	4.2	0.76	0.55	1.7
1:1	$CHCl_3$/*o*-DCB (0.5%)	80	2.7	0.69	0.36	0.67
1:0.5	$CHCl_3$/DIO (0.2%)	75	2.9	0.74	0.42	0.91
1:1	$CHCl_3$/DIO (0.2%)	70	4.2	0.76	0.55	1.7
1:2	**$CHCl_3$/DIO (0.2%)**	**80**	**4.2**	**0.78**	**0.59**	**1.9**
1:3	$CHCl_3$/DIO (0.2%)	80	3.5	0.76	0.58	1.6
1:2	$CHCl_3$/DIO (0.2%)	70	3.9	0.76	0.55	1.6
1:2	$CHCl_3$/DIO (0.2%)	80	4.2	0.78	0.59	1.9
1:2	$CHCl_3$/DIO (0.2%)	95	4.0	0.74	0.52	1.5

1:2	$CHCl_3$/DIO (0.2%)	110	4.1	0.76	0.58	1.8

Table S2. Characteristics of PDPP4T:ITIC solar cells.

Ratio	Solvent	Thickness (nm)	J_{sc} (mA cm^{-2})	V_{oc} (V)	FF	PCE (%)
1:1	$CHCl_3$	90	8.3	0.75	0.47	3.0
1:1	$CHCl_3$/DIO (0.2%)	60	7.4	0.77	0.58	3.3
1:1	$CHCl_3$/DIO (0.5%)	50	3.9	0.75	0.51	1.5
1:0.5	$CHCl_3$/DIO (0.2%)	90	7.1	0.77	0.54	2.9
1:1	$CHCl_3$/DIO (0.2%)	60	7.4	0.77	0.58	3.3
1:2	**$CHCl_3$/DIO (0.2%)**	**70**	**8.0**	**0.78**	**0.63**	**3.9**
1:3	$CHCl_3$/DIO (0.2%)	90	7.4	0.78	0.63	3.7
1:2	$CHCl_3$/DIO (0.2%)	60	7.3	0.78	0.63	3.6
1:2	$CHCl_3$/DIO (0.2%)	70	8.0	0.78	0.63	3.9
1:2	$CHCl_3$/DIO (0.2%)	90	7.9	0.78	0.61	3.7
1:2	$CHCl_3$/DIO (0.2%)	120	7.9	0.77	0.59	3.6

Table S3. Characteristics of PDPP5T:ITIC solar cells.

Ratio	Solvent	Thickness (nm)	J_{sc} (mA cm^{-2})	V_{oc} (V)	FF	PCE (%)
1:1	$CHCl_3$	70	7.5	0.71	0.49	2.6
1:1	$CHCl_3$/DIO (0.2%)	70	9.2	0.69	0.58	3.7
1:1	$CHCl_3$/DIO (0.5%)	80	9.4	0.69	0.54	3.5
1:0.5	$CHCl_3$/DIO (0.2%)	70	7.1	0.71	0.44	2.2
1:1	$CHCl_3$/DIO (0.2%)	60	7.4	0.77	0.58	3.3
1:1.5	$CHCl_3$/DIO (0.2%)	70	9.2	0.69	0.62	4.0
1:2	$CHCl_3$/DIO (0.2%)	80	9.1	0.69	0.61	3.8
1:1.5	$CHCl_3$/DIO (0.2%)	60	8.6	0.71	0.58	3.5
1:1.5	$CHCl_3$/DIO (0.2%)	70	9.2	0.69	0.62	4.0

1:1.5	**$CHCl_3$/DIO (0.2%)**	**80**	**9.6**	**0.69**	**0.61**	**4.1**
1:1.5	$CHCl_3$/DIO (0.2%)	100	9.7	0.69	0.55	3.7

Table S4. Characteristics of PDPP6T:ITIC solar cells.

Ratio	Solvent	Thickness (nm)	J_{sc} (mA cm^{-2})	V_{oc} (V)	FF	PCE (%)
1:1	$CHCl_3$	70	8.3	0.69	0.56	3.2
1:1	$CHCl_3$/DIO (0.2%)	60	8.7	0.70	0.57	3.5
1:1	$CHCl_3$/DIO (0.5%)	75	7.7	0.68	0.54	2.9
1:0.5	$CHCl_3$/DIO (0.2%)	60	7.1	0.69	0.50	2.4
1:1	$CHCl_3$/DIO (0.2%)	60	9.2	0.68	0.59	3.7
1:1.5	**$CHCl_3$/DIO (0.2%)**	**75**	**9.3**	**0.68**	**0.60**	**3.8**
1:2	$CHCl_3$/DIO (0.2%)	80	9.0	0.69	0.59	3.7
1:1.5	$CHCl_3$/DIO (0.2%)	60	9.1	0.69	0.60	3.8
1:1.5	$CHCl_3$/DIO (0.2%)	75	9.3	0.68	0.60	3.8
1:1.5	$CHCl_3$/DIO (0.2%)	90	9.9	0.68	0.54	3.7
1:1.5	$CHCl_3$/DIO (0.2%)	115	10.0	0.68	0.48	3.3

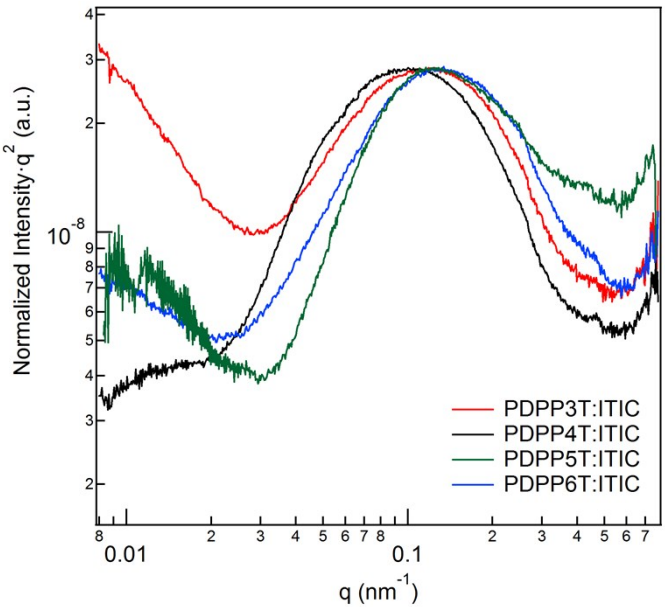

Fig. S1 R-SoXS scattering profiles at 285.2 eV of the DPP polymers blended with ITIC.

Table S5. Domain size of the blended thin films from R-SoXS.

Ratio	Location (nm^{-1})	Domain size (nm)
PDPP3T:ITIC	0.1162	27
PDPP4T:ITIC	0.1013	31
PDPP5T:ITIC	0.1202	26
PDPP6T:ITIC	0.1355	23