

Supplementary Materials

An Alternative to Chlorobenzene as a HTM solvent for High Performance Perovskite Solar Cells

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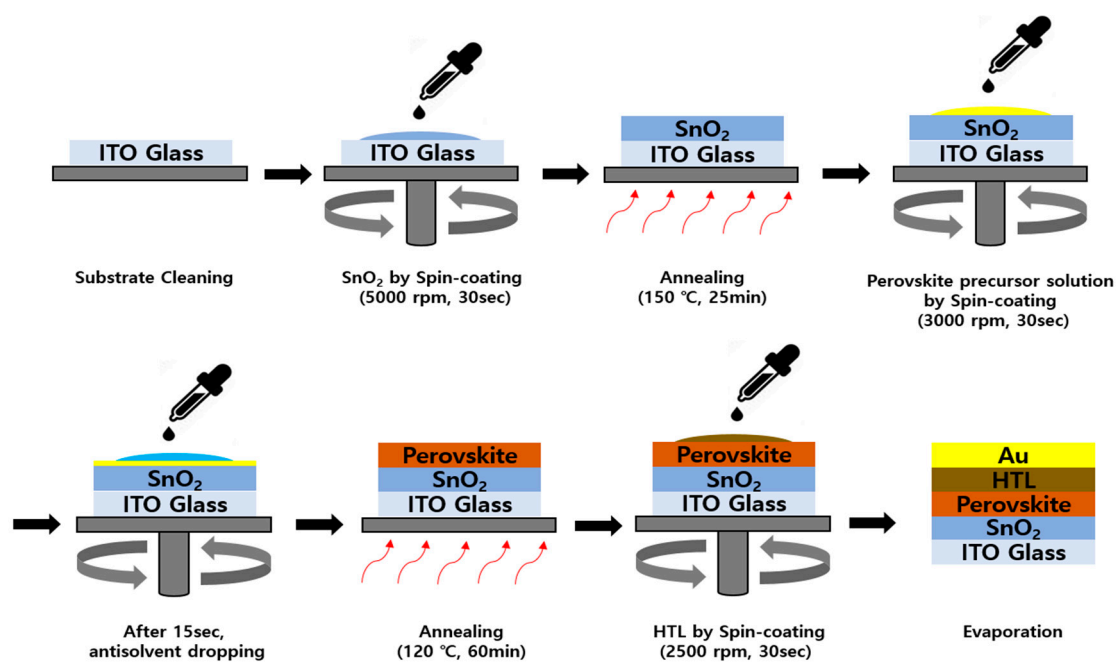


Figure S1. PSCs fabrication process

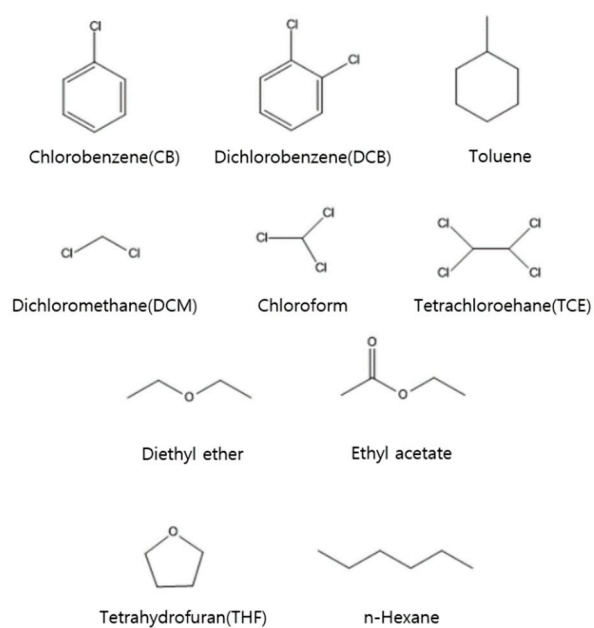


Figure S2. Chemical structure of the solvent.

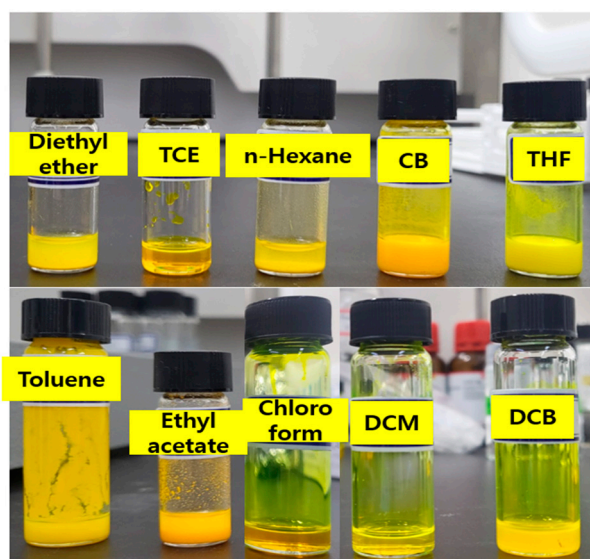


Figure S3. Appearance of TOP-HTM- α 2 after dissolving the solvent.

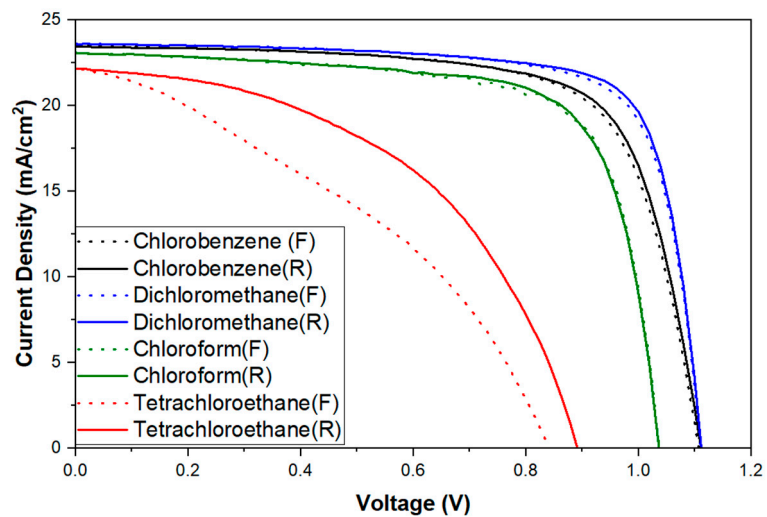


Figure S4. Density-voltage characteristic of PSCs using TOP-HTM- α 2 with different solvents.

Table S1. Summary of detailed performance parameters of PSCs.

Sample	J_{sc} (mA/cm ²)	V_{oc} (V)	FF (%)	PCE (%)
Chlorobenzene	23.42	1.110	71.77	18.67
Dichloromethane	23.58	1.111	76.97	20.18
Chloroform	23.33	1.039	72.31	17.26
Tetrachloroethane	22.15	0.891	49.32	9.72

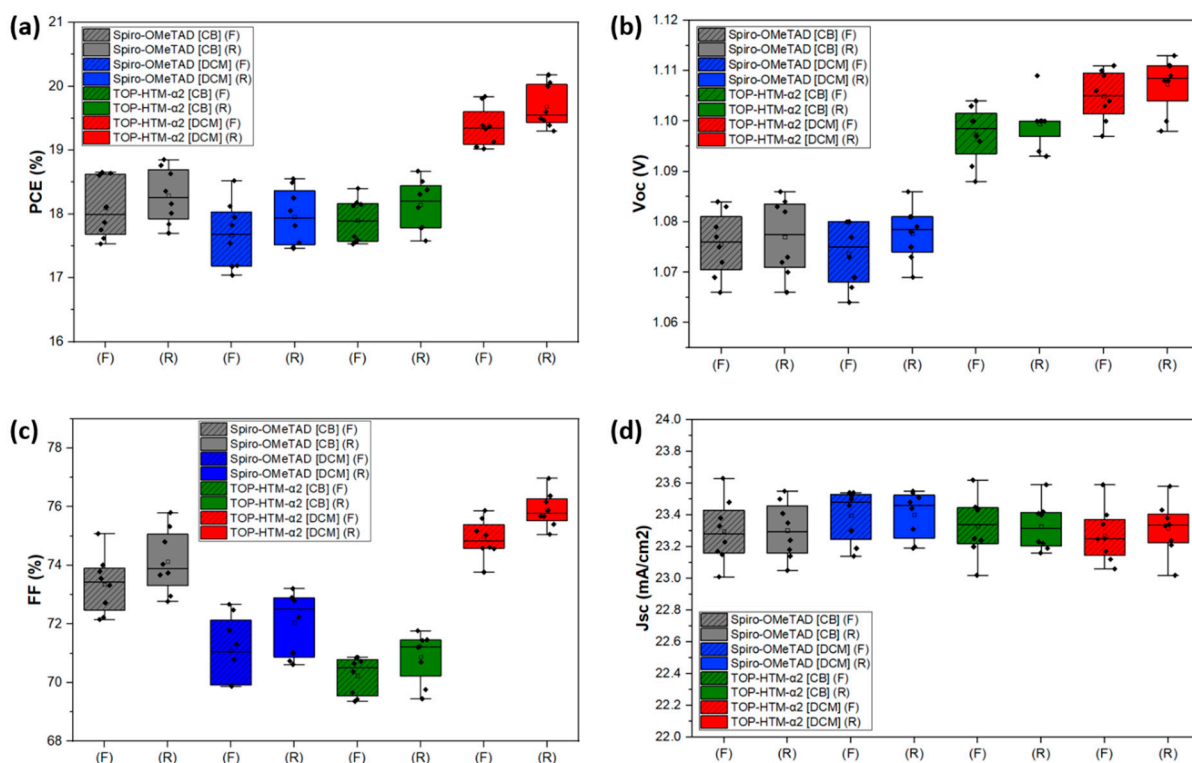


Figure S5. Box plot: (a) PCE, (b) Voc, (c) FF, and (d) Jsc for PSCs

Table S2. Summary of detailed performance parameters of PSCs.

Sample		J _{sc} (mA/cm ²)	V _{oc} (V)	FF (%)	PCE (%)
Spiro-OMeTAD [CB]	Foward	23.30±0.00019 (23.38)	1.076±0.0062 (1.084)	73.35±0.98 (73.55)	18.10±0.47 (18.65)
	Reverse	23.30±0.00017 (23.41)	1.077±0.0076 (1.086)	74.14±1.08 (75.06)	18.29±0.43 (18.85)
Spiro-OMeTAD [DCM]	Foward	23.40±0.00016 (23.54)	1.074±0.0066 (1.077)	71.06±1.19 (72.48)	17.67±0.52 (18.52)
	Reverse	23.40±0.00015 (23.54)	1.078±0.0053 (1.081)	72.05±1.08 (72.88)	17.96±0.44 (18.55)
TOP-HTM- α 2 [CB]	Foward	23.33±0.00018 (23.44)	1.098±0.0062 (1.097)	70.25±0.65 (70.87)	17.90±0.35 (18.40)
	Reverse	23.33±0.00015 (23.42)	1.100±0.0049 (1.100)	70.88±0.84 (71.77)	18.14±0.39 (18.67)
TOP-HTM- α 2 [DCM]	Foward	23.27±0.00017 (23.58)	1.105±0.0049 (1.110)	74.89±0.68 (75.60)	19.37±0.31 (19.81)
	Reverse	23.32±0.00016 (23.58)	1.007±0.0052 (1.111)	75.90±0.59 (76.97)	19.69±0.34 (20.18)