Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Ternary solvent for the $CH_3NH_3PbI_3$ perovskite film with uniform domain size

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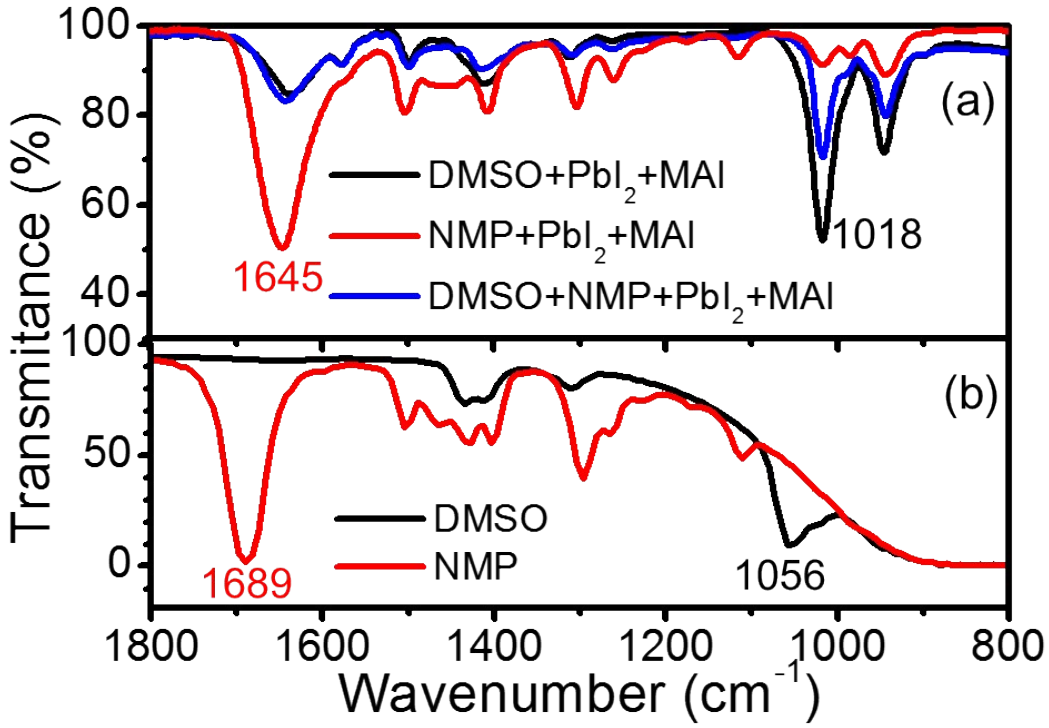

Figure S1 (a). FT-IR spectra of DMSO-PbI_2-MAI powder (black line), NMP-PbI_2-MAI powder (red line), and DMSO-NMP-PbI_2-MAI powder (blue line). (b) FT-IR spectra of the DMSO (black) and the NMP (red).

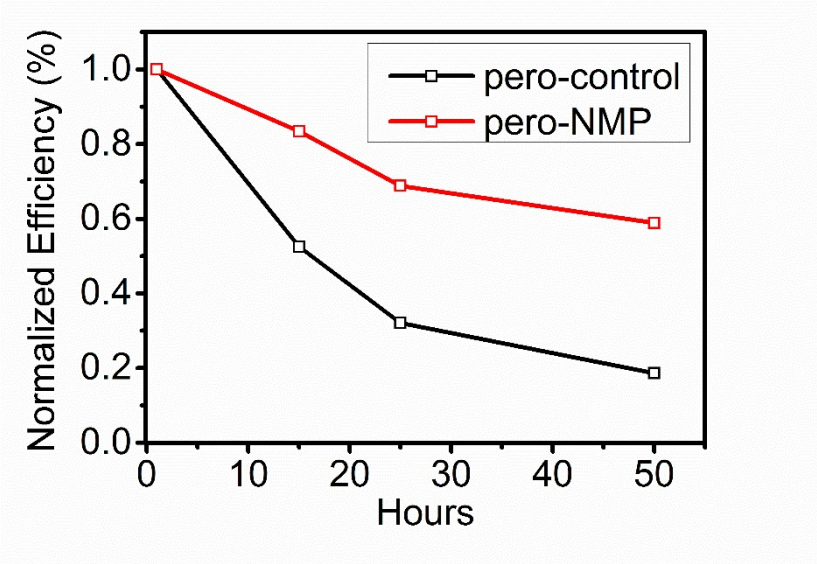

Figure S 2. The stability of the pero-control and pero-NMP devices under the one sun light soaking at 50^{o}C for 50 hours.

Table S1, the weight ratio of the PbI_2, MAI and different single solvent in the solutions.

Comment [KK]: Included the weigh ratio of GBL, DMSO and NMP only

DMSO	**MAI**	**PbI_2**
54.2%	11.8%	54.0%
GBL	**MAI**	**PbI_2**
54.9	11.5%	33.6%
NMP	**MAI**	**PbI_2**
52.5%	12.2	35.3%
DMSO + GBL	**MAI**	**PbI_2**
54.5%	11.7%	33.8%
(DMSO 26.9% + GBL 27.6%)		
DMSO + GBL + NMP	**MAI**	**PbI_2**
54.1%	11.8%	34.1%
(DMSO 21.7% + GBL 22.3 + NMP 10.1%)		
DMSO+NMP	**MAI**	**PbI_2**
53.4%	**12%**	**34.7%**
(DMSO 27.6% + NMP 25.8%)		
GBL+NMP	**MAI**	**PbI_2**
53.7%	**11.9**	**34.4%**
(GBL 28.1% + NMP 25.6%)		

Table S 2. The temperatures of the weight loss at 10% and 20% of different solutions.

		Solution	Temperature at 10% weight loss (°C)	Temperature at 20% weight loss (°C)
Pure solvent	1	DMSO	67.79	79.63
	2	GBL	87.9	102.0
	3	NMP	82.84	100.2
	4	DMSO + GBL	79.49	97.53
	5	DMSO + GBL + NMP	71.65	85.02
	6	DMSO + NMP	75.47	93.38
	7	GBL + NMP	71.65	85.02
MAI, PbI_2 and solvent	8	DMSO	95.17	110.7
	9	GBL	94.23	108.4
	10	NMP	101.4	117.4
	11	DMSO + GBL	82.88	96.10
	12	DMSO + GBL + NMP	84.84	99.01
	13	DMSO + NMP	100.4	116.4
	14	GBL + NMP	101.9	116.5