

Supplementary Information

Performance Enhancement of Perovskite Solar Cells using a La doped BaSnO₃ Electron Transport Layer

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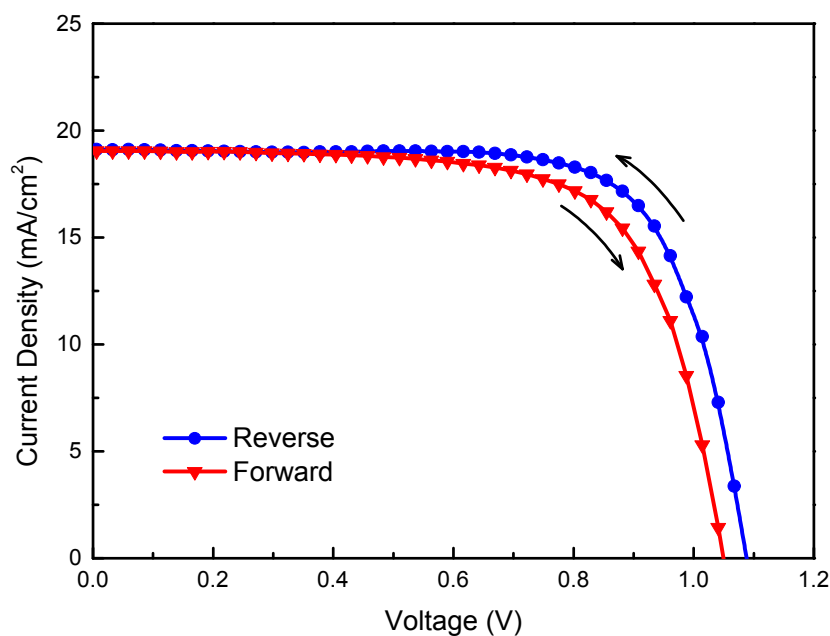


Fig. S1 J - V curves of mp-LBSO based device measured by forward scan (from short circuit to open circuit) and reverse scan (from open circuit to short circuit) under AM 1.5 illumination, 100 ms dwell time.

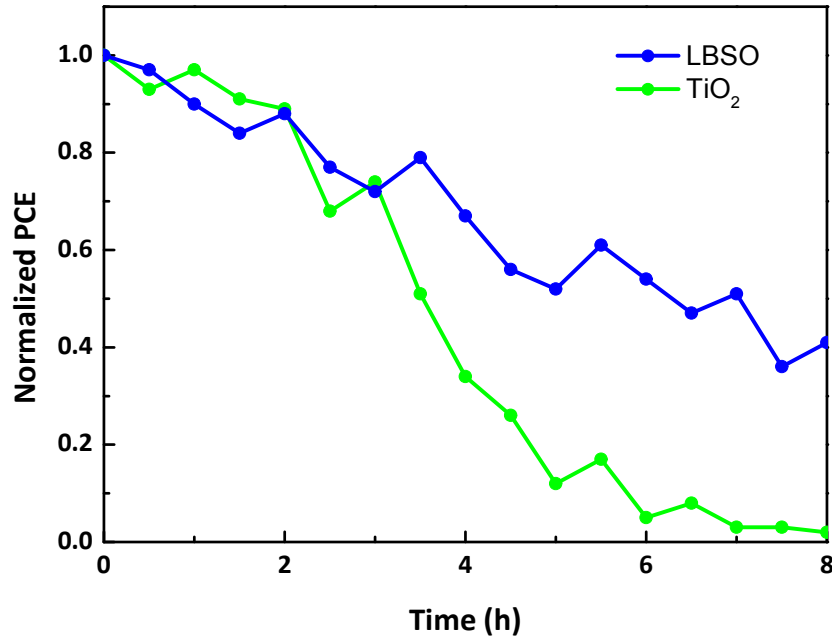


Fig. S2 Stability test of PCE degradation of TiO₂ and LBSO based unsealed devices under continuous light illumination (AM1.5) for 8 h in ambient with a relative humidity of about 30% and a temperature between 20 and 30 °C.

Table S1 Detailed device parameters for the comparison between mp-LBSO, mp-BSO and mp-TiO₂ based PSCs.

Sample No.	Mesoporous layer	PCE (%)	J_{sc} (mA cm ⁻²)	V_{oc} (V)	FF
1	LBSO	14.6	18.7	1.08	0.726
2	LBSO	14.3	18.8	1.03	0.740
3	LBSO	13.5	19.9	1.00	0.679
4	LBSO	14.9	19.7	1.07	0.707
5	LBSO	14.7	20.1	1.03	0.709
6	LBSO	15.0	20.0	1.05	0.718
7	LBSO	14.0	19.7	1.01	0.703
8	LBSO	14.3	19.8	1.02	0.707
9	BSO	12.7	18.9	1.03	0.651
10	BSO	13.4	18.9	1.04	0.686
11	BSO	13.1	18.7	1.04	0.673
12	BSO	12.2	18.3	0.99	0.671
13	BSO	13.4	18.4	1.02	0.714
14	BSO	13.1	18.7	0.98	0.715
15	BSO	12.6	18.8	1.02	0.656
16	BSO	12.9	18.7	1.01	0.686
17	TiO ₂	14.7	19.4	1.06	0.717
18	TiO ₂	14.9	19.8	1.07	0.705
19	TiO ₂	14.5	18.7	1.06	0.735
20	TiO ₂	16.2	18.9	1.09	0.787

21	TiO ₂	15.8	19.0	1.06	0.783
22	TiO ₂	15.4	18.9	1.04	0.789
23	TiO ₂	15.0	19.2	1.05	0.743
24	TiO ₂	15.8	19.1	1.05	0.784