

Supporting Information

Ambient Engineering for High Performance Organic-Inorganic

Perovskite Hybrid Solar Cells

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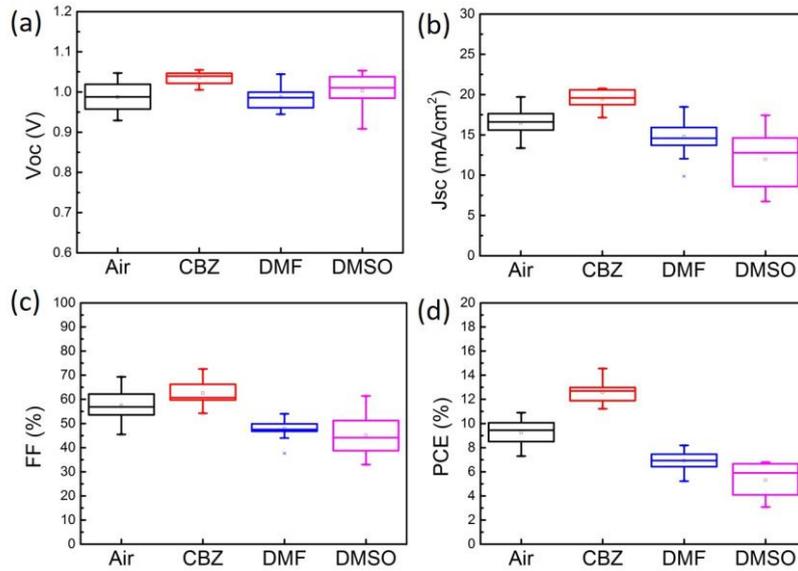


Figure S1. Statistical photovoltaic parameters (a) V_{oc} ; (b) J_{sc} ; (c) FF and (d) PCE of $\text{CH}_3\text{NH}_3\text{PbI}_3$ perovskite solar cells fabricated under different ambience (Air, CBZ, DMF and DMSO).

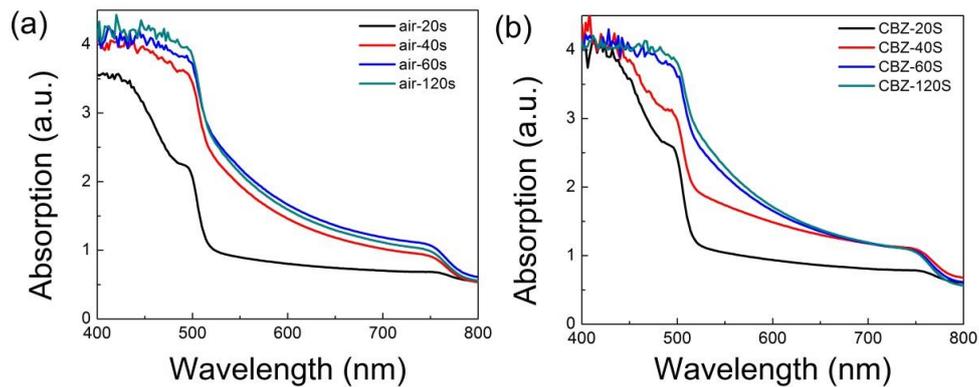


Figure S2. UV-vis absorption spectra of perovskite films fabricated under a) air and (b) CBZ with different reaction time (20s, 40s, 60s, 120s).

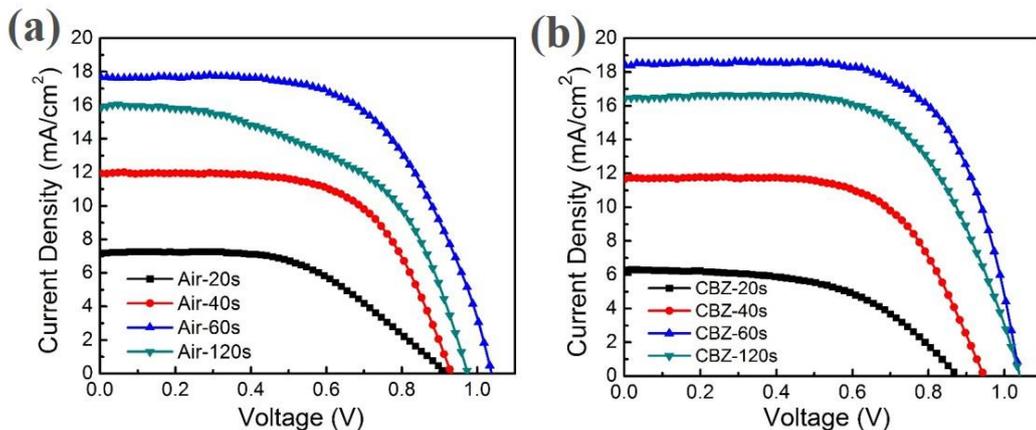


Figure S3. J - V curves of perovskite solar cells fabricated under (a) air and (b) CBZ with different reaction time (20s, 40s, 60s, 120s).

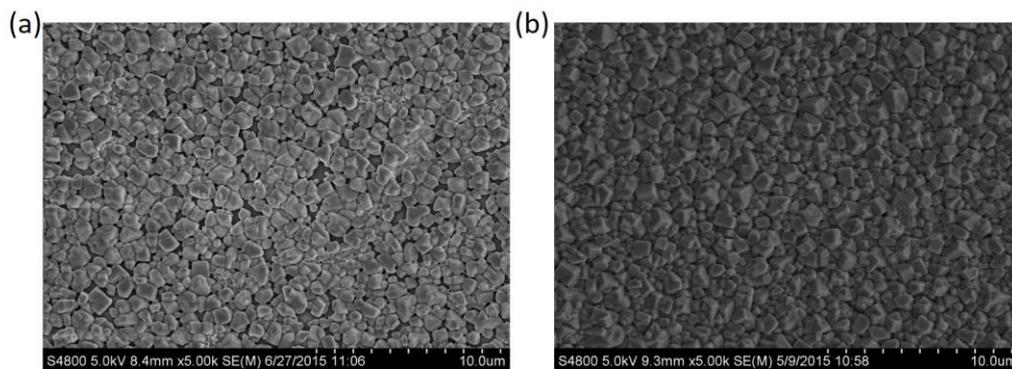


Figure S4 SEM of perovskite layer on (a) glass and (b) mesoporous TiO₂ under-layer

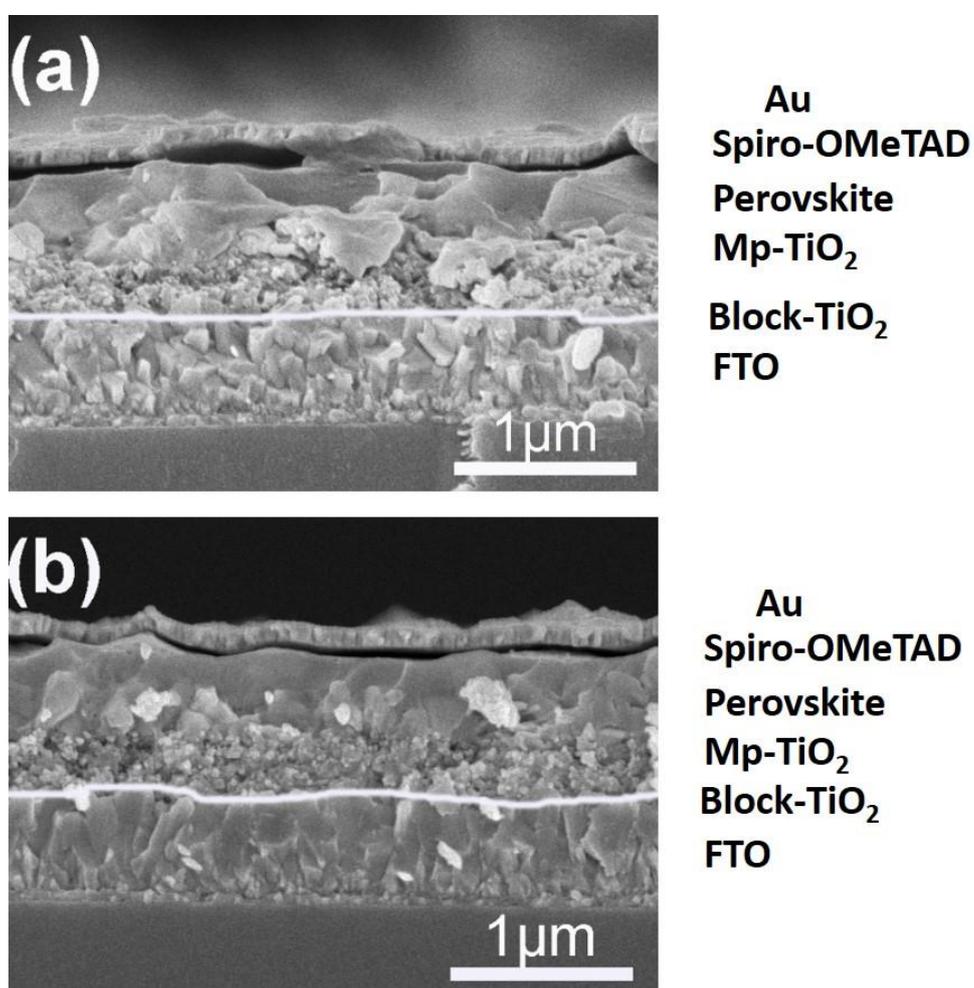


Figure S5. Cross-sectional SEM image of a complete device based on (a) air and (b) CBZ ambience.

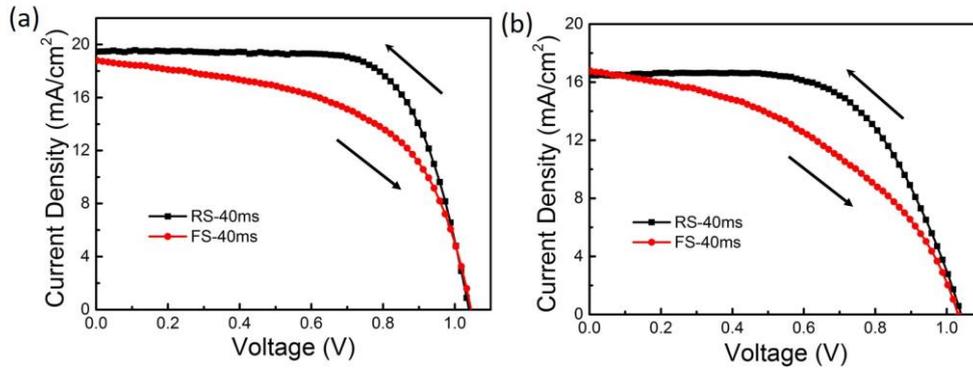


Figure S6. The J - V curves of the PSC (0.1256 cm^2) with different atmosphere (a) CBZ and (b) air obtained at different scan directions and step widths (20 mV), with fixed delay time of 40 ms.

Table S1. Efficiency parameters of the perovskite solar cell from J - V curves obtained at different scan conditions. The corresponding J - V curves are shown in Figure S6.

	V_{oc} (V)	J_{sc} (mA/cm ²)	FF (%)	PCE (%)
CBZ-RS	1.04	19.46	70.2	14.20
CBZ-FS	1.05	18.80	55.6	10.93
Air-RS	1.04	16.47	62.2	10.65
Air-FS	1.03	16.78	43.9	7.61