

Supporting Information

Effect of Cesium Chloride Modification on Film Morphology and UV-induced stability of Planar Perovskite Solar Cells

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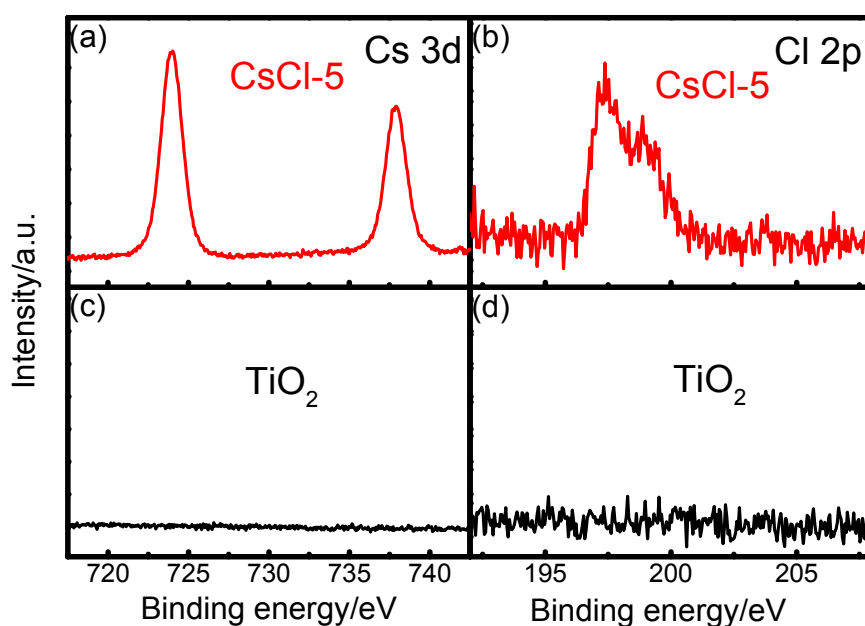


Fig. S1. The high resolution XPS of CsCl on TiO₂ compact layer with the concentration of 5mg/ml. (a)(c) The spectra of Cs 3d_{5/2} and Cs 3d_{3/2}; (b)(d)The spectra of Cl 2p.

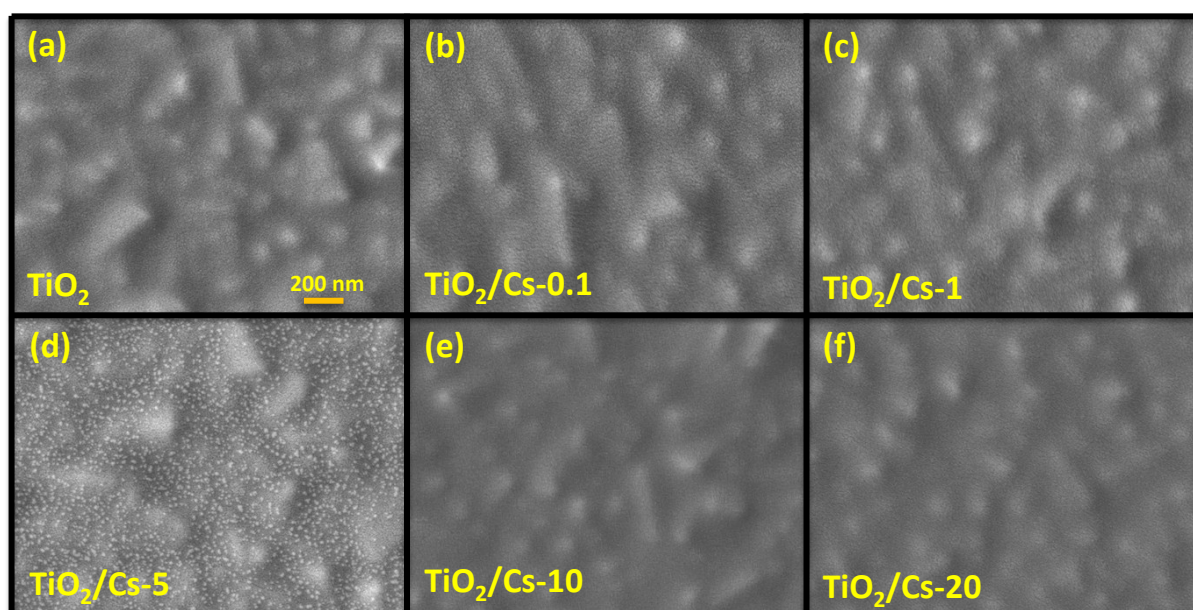


Fig. S2. Top-down SEM images of CsCl on TiO₂ compact layer with the different concentration.

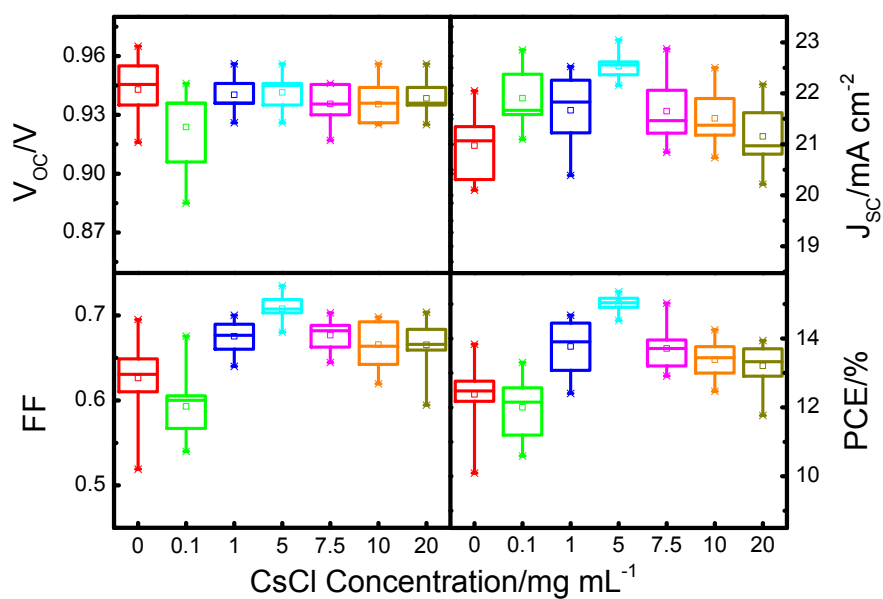


Fig. S3. Device performances with different CsCl concentration.

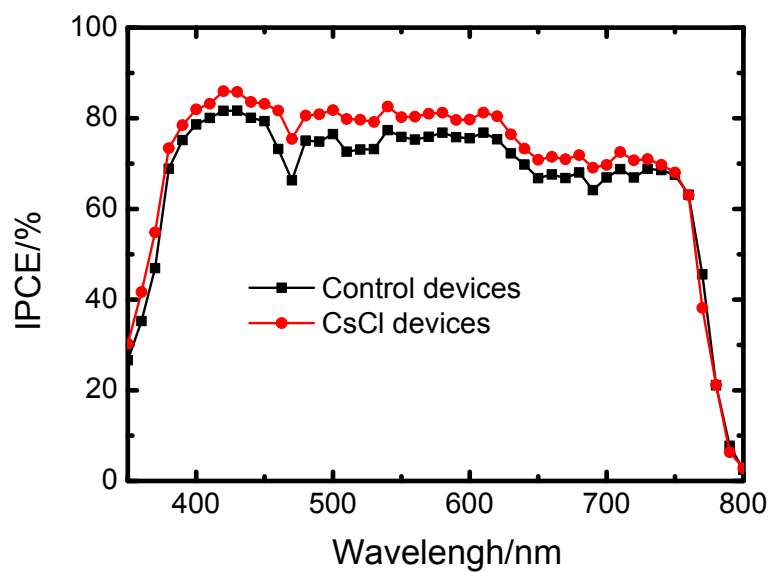


Fig. S4. IPCE results for CsCl modified devices and control devices.

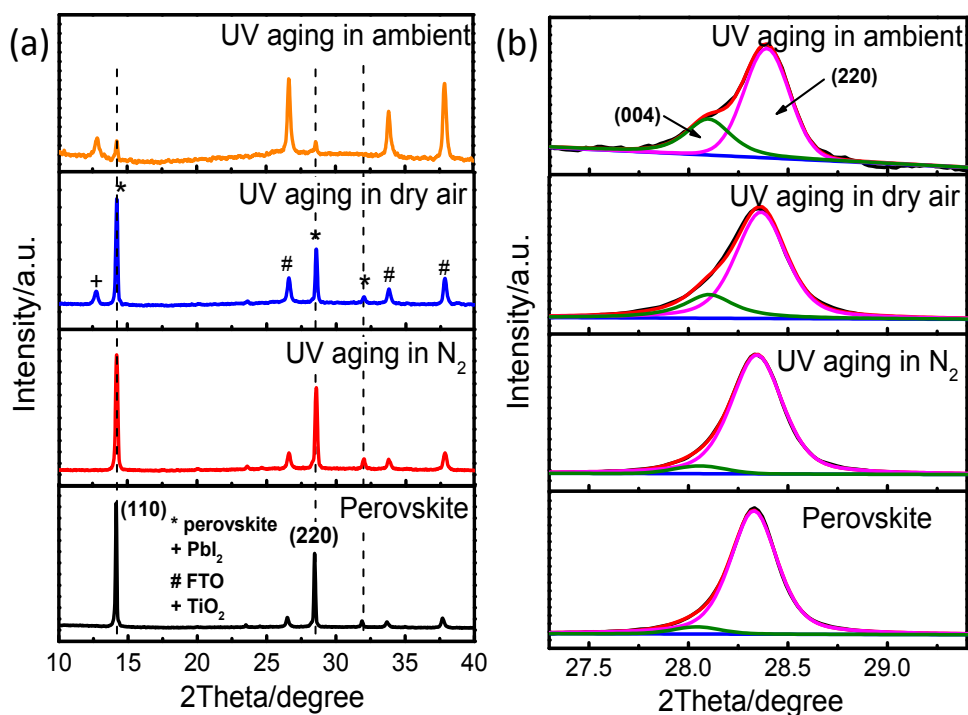


Fig. S5. XRD patterns of (a) perovskite film deposited on compact TiO₂ layer with UV aging in different condition, (b) (004)(220) diffraction peaks for perovskite film.

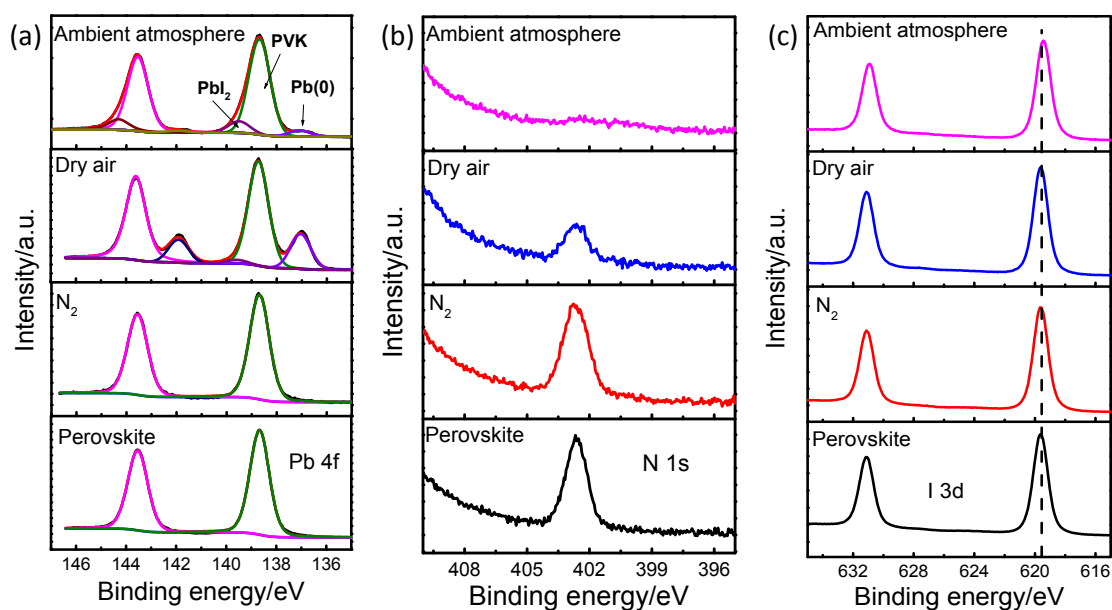


Fig. S6. The high resolution XPS of perovskite on TiO₂ layer w/ and w/o UV aging in different atmosphere. (a) The spectra of Pb 4f, (b) The spectra of N 1s, (c) The spectra of I 3d.

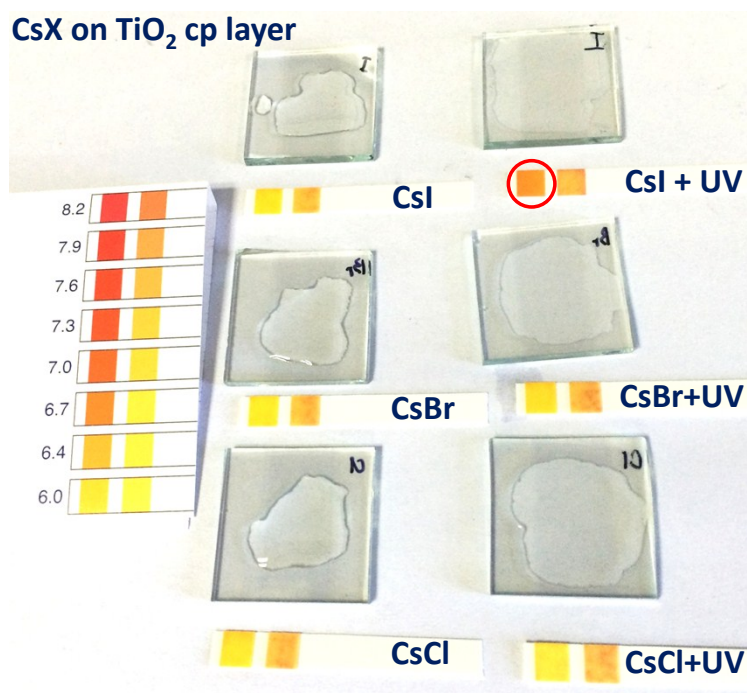


Fig. S7. Digital camera picture for pH value changes of CsCl, CsBr and CsI water solution on TiO₂ films before and after UV aging

Table S1. ICP-MASS results for the different stages in the process of preparation.

Samples	Cs/ nmol	Pb/nmol	Cl/nmol	I/nmol
TiO ₂ w/o CsCl	0.001	0.000	0.020	0.010
TiO ₂ w/ CsCl	3.998	0.000	4.980	1.414
Perovskite before annealing w/o CsCl	0.007	60.43	77.28	101.2
PVK before annealing w/ CsCl	1.250	62.30	84.59	105.4
PVK after annealing w/o CsCl	0.181	63.40	5.150	108.8
PVK after annealing w/ CsCl	1.480	59.00	5.770	101.0
PVK powder blade from films w/o CsCl	0.058	29.50	0.786	52.56
PVK powder blade from films w/ CsCl	0.170	42.80	1.210	74.53