

## Supplementary materials

### Defect passivation with potassium trifluoroborate for efficient spray-coated perovskite solar cells in air

Chen Gao, Hui Wang, Pang Wang, Jinlong Cai, Yuandong Sun, Cong Yu, Teng Li, Xiaoshuai Zhang, Dan Liu and Tao Wang<sup>†</sup>

School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China

<sup>†</sup> Correspondence to: T Wang, E-mail: [twang@whut.edu.cn](mailto:twang@whut.edu.cn)

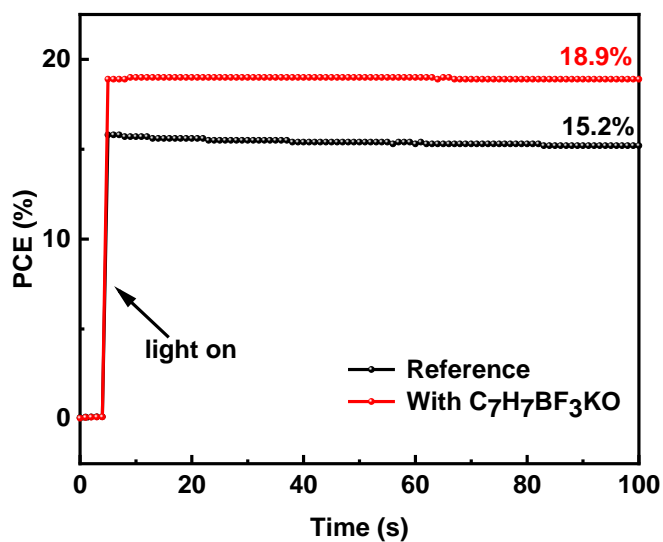


Fig. S1. Steady-state PCE at the maximum power point for the reference and C<sub>7</sub>H<sub>7</sub>BF<sub>3</sub>KO based spray-coated PSCs.

Table S1. Summary of photovoltaic performance parameters of spray-coated PSCs with different concentration of C<sub>7</sub>H<sub>7</sub>BF<sub>3</sub>KO.

C <sub>7</sub> H <sub>7</sub> BF <sub>3</sub> KO (wt%)	Scan direction	PCE <sub>max</sub> (PCE <sub>ave</sub> ) (%)	FF (FF <sub>ave</sub> ) (%)	J <sub>SC</sub> (J <sub>SCave</sub> ) (mA/cm <sup>2</sup> )	V <sub>OC</sub> (V <sub>OCave</sub> ) (V)	Hysteresis (%)
0	reverse	16.3 (14.7±1.1)	67.1 (62.0±3.9)	21.9 (21.6±0.5)	1.11 (1.09±0.02)	8.6
	forward	14.9 (12.6±1.2)	61.6 (53.8±4.5)	21.9 (21.8±0.5)	1.11 (1.07±0.02)	
0.3	reverse	18.7 (16.9±1.0)	75.8 (71.1±3.5)	21.9 (21.6±0.5)	1.13 (1.10±0.02)	3.2
	forward	18.1 (16.4±0.9)	73.4 (68.7±3.9)	21.9 (21.8±0.5)	1.13 (1.10±0.02)	
0.5	reverse	19.4 (17.6±0.8)	77.4 (72.4±2.5)	22.0 (21.8±0.3)	1.14 (1.11±0.01)	0.5
	forward	19.5 (17.6±0.9)	77.8 (72.6±3.1)	22.0 (21.9±0.3)	1.14 (1.11±0.01)	
1.0	reverse	17.8 (16.5±0.6)	72.7 (69.2±2.0)	21.9 (21.8±0.2)	1.11 (1.10±0.01)	0.6
	forward	17.9 (16.6±0.6)	72.8 (69.3±2.3)	22.0 (21.9±0.2)	1.11 (1.10±0.02)	