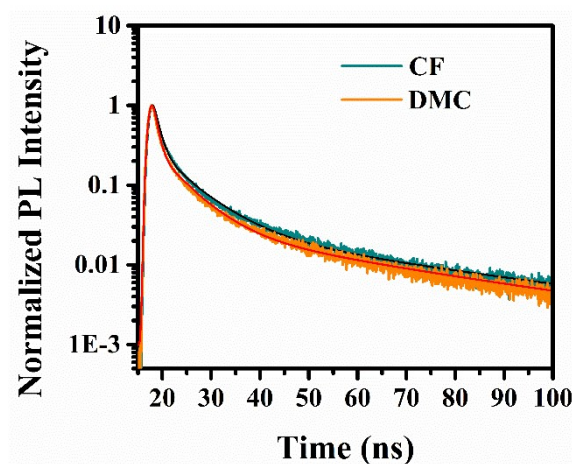


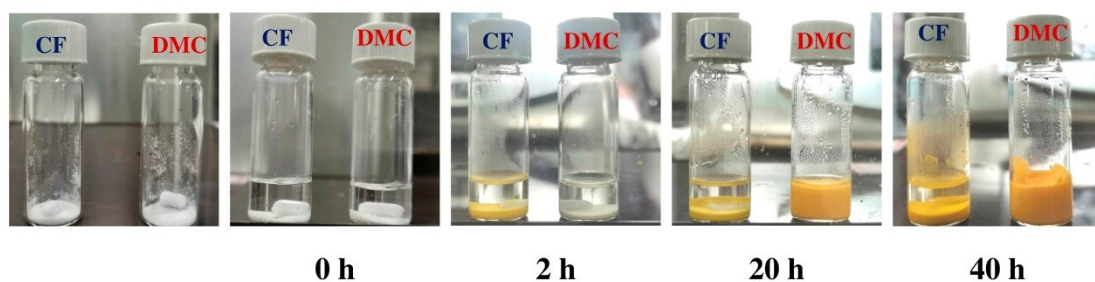
## Electronic Supplementary Information

### Morphology Optimization of Perovskite Films for Efficient Sky-Blue Light Emitting Diodes via a novel Green Anti-Solvent Dimethyl Carbonate

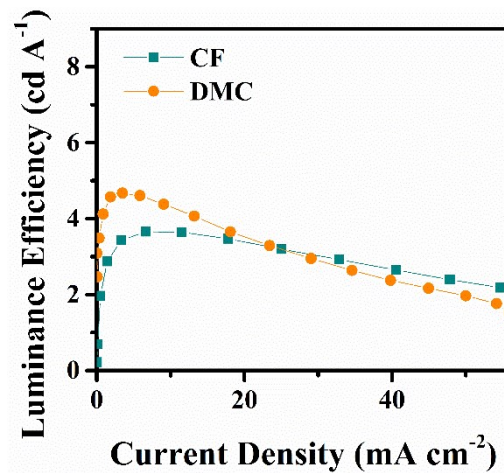
*Yong-Wen Zhang, Zheng-Liang Diao, Ji-Yang Chen, Wan-Yi Tan,\* Yan-Nan Qian, Lian-Gang Xiao  
and Yonggang Min\**



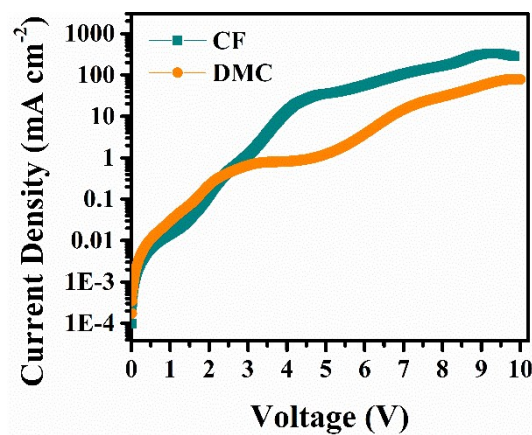
**Fig. S1** Time-resolved photoluminescence spectra of the CF-treated and the DMC-treated perovskite films on the quartz/PEDOT:PSS substrates, excited at 316 nm and probed at 490 nm.



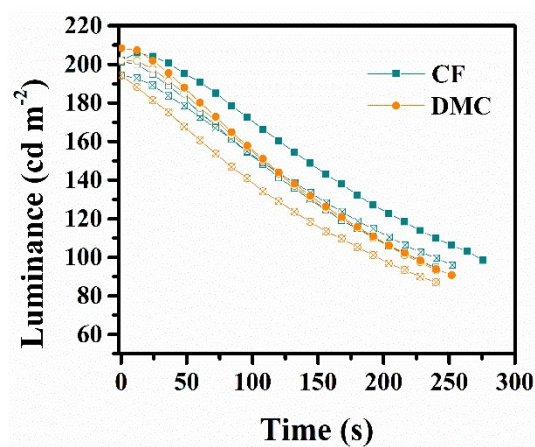
**Fig. S2** The powder of  $\text{PbBr}_2$  and  $\text{CsBr}$  in CF and DMC after stirred for a period of time.



**Fig. S3** LE- $J$  of sky-blue PeLEDs treated by CF and DMC.



**Fig. S4**  $J$ - $V$  characteristics of the hole-only devices (ITO/PEDOT:PSS/Perovskite/Poly-TPD/Ag) treated by CF and DMC.



**Fig. S5** Luminance decay characteristics of the sky-blue PeLEDs treated by CF (three devices) and DMC (three devices).

**Table S1** Time-resolved photoluminescence characterization of the perovskite films treated by CF and DMC.

Perovskite	$\tau_1$ (ns)	Fraction 1	$\tau_2$ (ns)	Fraction 2	$\tau_3$ (ns)	Fraction 3
CF-treated	7.4	36.66	45.7	25.91	1.2	37.43
DMC-treated	6.1	35.78	40.4	26.08	0.9	38.14