

Supporting Information

Surface Ligand Modification of Cesium Lead Bromide Nanocrystals for Improved Light-Emitting Performance

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Figure S1 A photograph of the no-DDAB (left) and DDAB-modified perovskite NCs (right) under daylight; both had been exposed to air for one month. Some yellow precipitation was seen from the left solution, while the right one remained clear, indicating a better colloidal stability for the DDAB-modified NC solution.

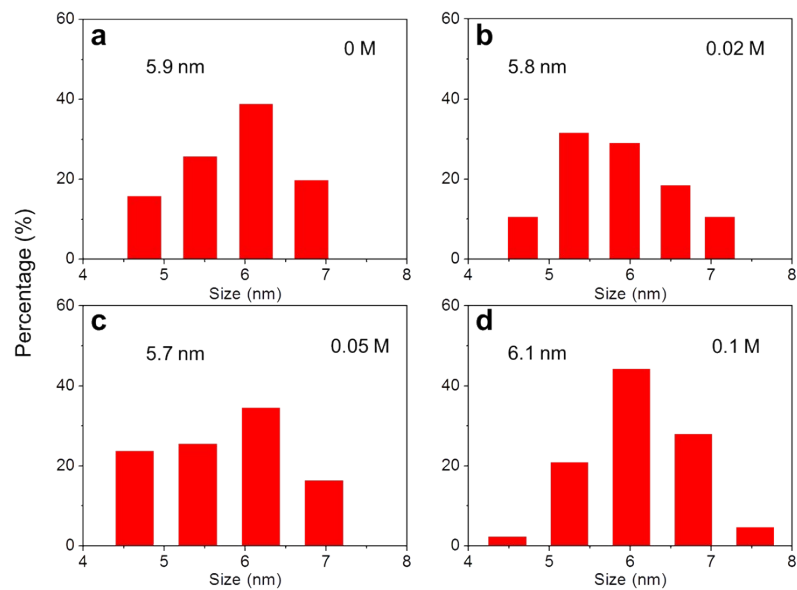


Figure S2 The size distributions of NCs according to the TEM images in Figure 2.

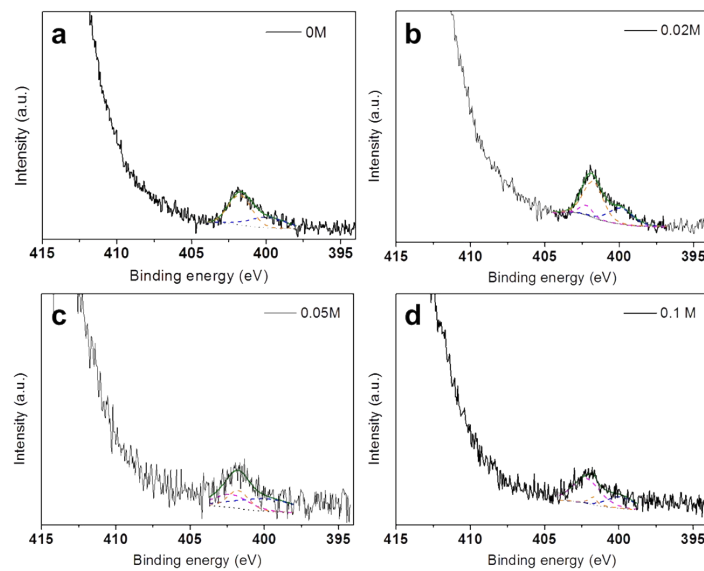


Figure S3 XPS spectra corresponding to N 1s peak of perovskite films from samples 1-4 (a)-(d).

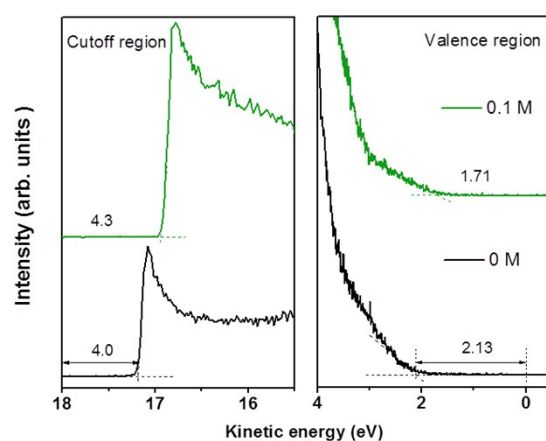


Figure S4 UPS spectra of the no-DDAB (black lines) and 0.1 M DDAB NCs (green lines).

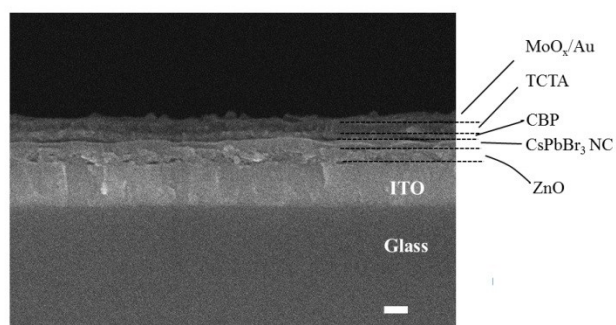


Figure S5 Cross-section SEM image of CsPbBr₃ NC-LEDs. The scale bar represents 100 nm.

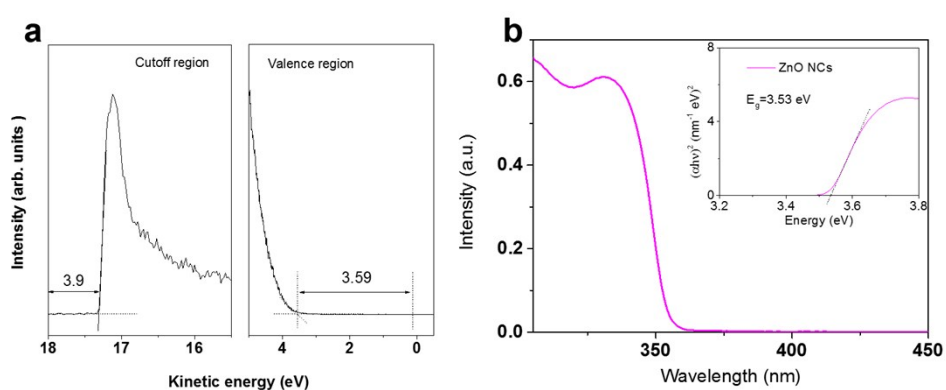


Figure S6 (a) UPS spectra of ZnO NCs. (b) Absorption of ZnO NC solution, with an inset of Tauc plot converted from absorption spectrum for bandgap estimation.

Table S1 Lifetime fitting for different CsPbBr₃ NC films

DDAB concentration (M)	τ_1 (ns)	f_1 (%)	τ_2 (ns)	f_2 (%)	τ_3 (ns)	f_3 (%)	χ^2	τ_{avg} (ns)
0	2.971	63.59	11.73	27.22	92.49	9.19	1.201	13.6
0.02	5.754	57.17	14.93	34.21	127.8	8.62	1.154	19.4
0.05	6.416	54.33	14.55	36.84	99.50	8.83	0.919	17.6
0.1	5.882	45.35	13.25	44.72	93.23	9.93	1.045	17.4

Table S2 Comparison of representative green CsPbBr₃ perovskite NC-LEDs

EL peak (nm)	Device structure	V _{on} (V)	Max. L (cd m ⁻²)	Max. EQE (%)	Max. CE (cd A ⁻¹)	FWHM (nm)	Ref.
513	ITO/ZnO/NC/CBP/TCTA/MoO ₃ /Au	4.6	10500	2.1	6	20	This work
516	ITO/PEDOT:PSS/PVK/NC/TPBi/LiF/Al	4.2	946	0.12	0.43	23	1
510	ITO/TiO ₂ /NC/F8/MoO ₃ /Au	2.8	934	0.32	\	\	2
523	ITO/ZnO/NC/TFB/MoO ₃ /Ag	~2.5	2335	0.19		19	3
512	ITO/PEDOT:PSS/Poly-TPD/NC/TPBi/LiF/Al	3.4	15185	6.27	13.3	20	4
516	ITO/ZnO/PEI/NC/CBP/TCTA/MoO _x /Au	2.4	3019	0.4	1.32	20	5
517	ITO/PEDOT:PSS/PVK/NC/TPBi/LiF/Ag	5.8	2983	0.35	1.2	18	6
515	ITO/PEDOT:PSS/Poly-TPD/NC/TPBi/LiF/Al	4.6	12090	1.194	3.106	18	7
522	GaN/MgZnO/NC/MgNiO/Au	~3	3809	2.25	2.39	18	8
515	ITO/PEDOT:PSS/PVK/NC/TPBi/LiF/Al	3	330	3.0	~9	19	9

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