An Eco-friendly Strategy to Improve Durability and Stability of Zwitterionic Capping Ligands Colloidal $CsPbBr_3$ Nanocrystals

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Figure S1. $CsPbBr_3$ NCs synthesized at different temperatures.

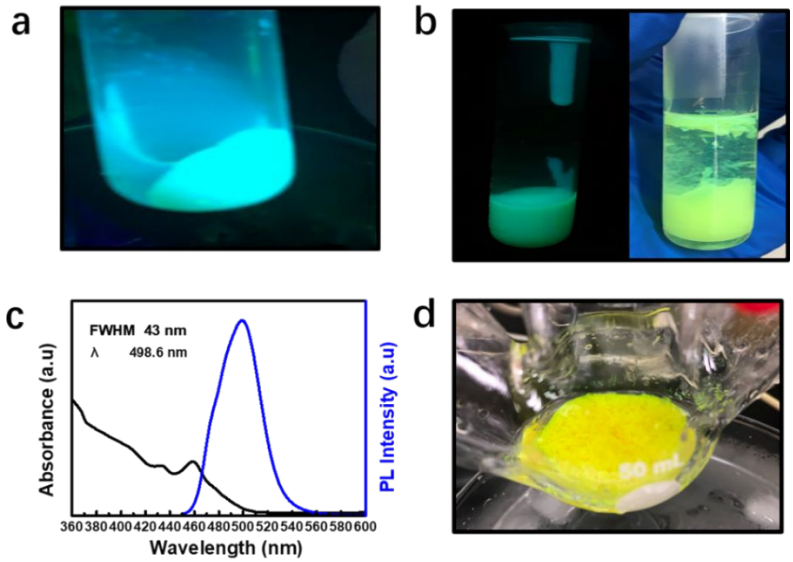

Figure S1. $CsPbBr_3$ NCs synthesized at different temperatures. (a) Flourescence picture of the C_3-sulfobetaines-$CsPbBr_3$ NCs solution synthesized at 60 ℃ excited under 365 nm UV lamp. (b) Picture of the C_3-sulfobetaines-$CsPbBr_3$ NCs crude solution synthesized at 80 ℃, crude solution excited under 365 nm UV lamp (left), crude solution dispersed in cyclohexane (right). (c) PL spectras and UV-vis absorption of the sample in (b) dispersed in cyclohexane after posttreatment. (d) Picture of the C_3-sulfobetaines-$CsPbBr_3$ NCs crude solution synthesized at 100 ℃ without TOPO.

Figure S2. XRD patterns of C_3-sulfobetaines-$CsPbBr_3$ NCs films after different times of purification.

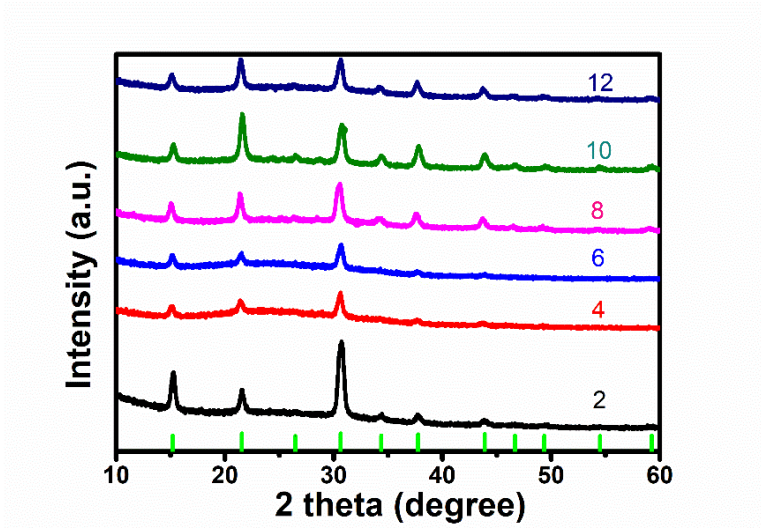

Figure S2. XRD patterns of C_3-sulfobetaines-$CsPbBr_3$ NCs films after different times of purification. Standard XRD pattern of $CsPbBr_3$ cubic phase PDF #54-0752. The number on the curve represents purified times.

Table S1. Optical properties of $CsPbBr_3$ NCs synthesized by different strategies

	Puri. Times	PL (nm)	FWHM (nm)	PLQY (%)	τ_1 (ns)	A_1 (%)	τ_2 (ns)	A_2 (%)	τ_{ave} (ns)
OA/OAm-$CsPbBr_3$ NCs	1	513.4	28	94.8	26.2	83.47	137.1	16.53	44.5
	2	518	20	28.7	-	-	-	-	-
	3	517.6	21.2	16.9	-	-	-	-	-
C_3-sulfobetaines-$CsPbBr_3$ NCs (With TOPO)	2	522.2	17	98.7	278.1	97.21	1114.7	2.79	301.4
	4	522.6	17	96.7	12.8	1.10	251.8	98.90	249.2
	8	522.2	17	84	33.1	5.13	222.9	94.87	213.1
	12	522.2	17	82	38.3	19.15	156.3	80.85	113.7