

## Supporting Information

### Highly Photoluminescent $\text{CsPbBr}_3/\text{CsPb}_2\text{Br}_5$ NCs@TEOS nanocomposite in light-emitting diodes

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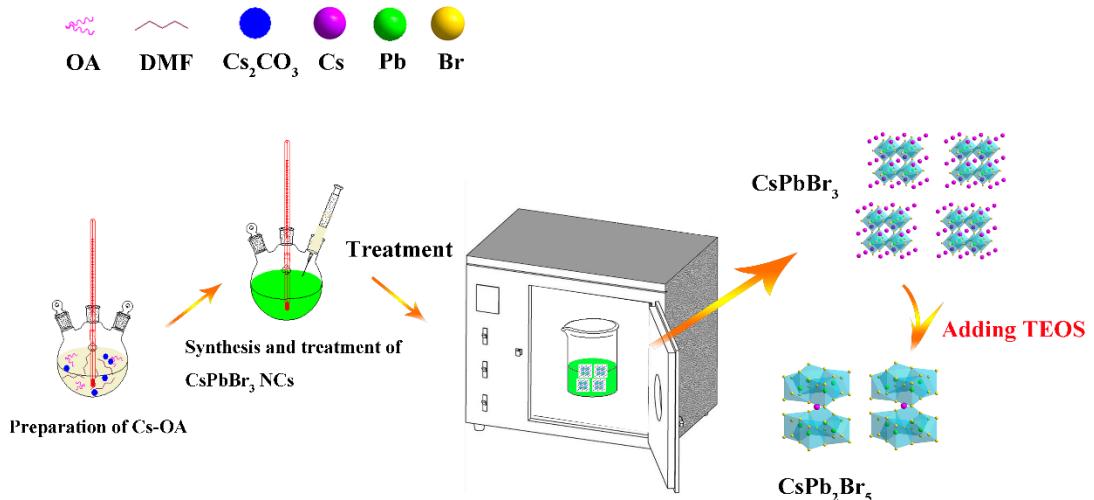
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**Table S1.** Preparation of  $\text{CsPbBr}_3/\text{CsPb}_2\text{Br}_5$  NCs@TEOS nanocomposite by adding different amounts of TEOS to  $\text{CsPbBr}_3$  NCs solution.

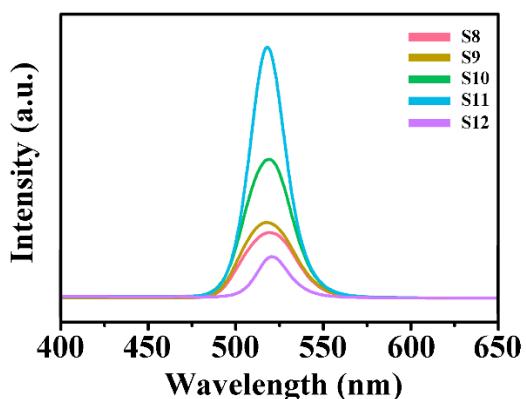
CsPbBr <sub>3</sub> NCs solution (%)	TEOS (%)	Product
25	75	CsPbBr <sub>3</sub> –CsPb <sub>2</sub> Br <sub>5</sub> NCs@TEOS nanocomposite
33	67	CsPbBr <sub>3</sub> –CsPb <sub>2</sub> Br <sub>5</sub> NCs@TEOS nanocomposite
50	50	CsPbBr <sub>3</sub> NCs@TEOS nanocomposite
67	33	CsPbBr <sub>3</sub> –CsPb <sub>2</sub> Br <sub>5</sub> NCs@TEOS nanocomposite
75	25	CsPbBr <sub>3</sub> –CsPb <sub>2</sub> Br <sub>5</sub> NCs@TEOS nanocomposite

**Table S2.** Performance parameters of perovskite nanocrystals prepared by different modification/coating materials.

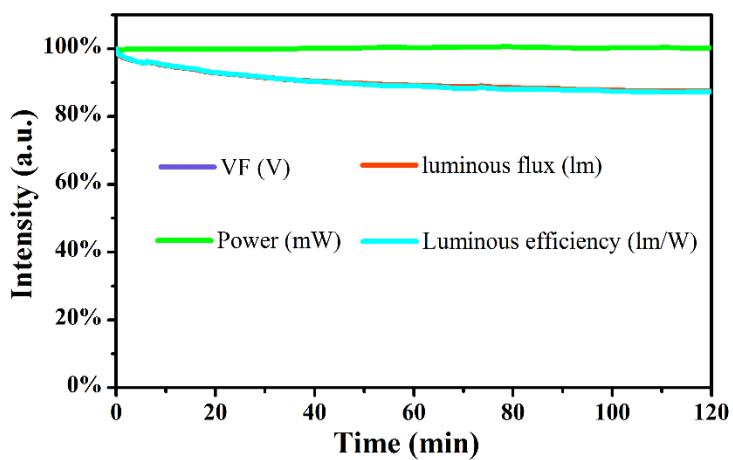
Modification/ coating	PLQY	CIE	Luminous efficiency	References
water-induced	46.4%	(0.321, 0.334)	/	(18)
HNTs	56.4%	(0.34, 0.32)	/	(22)
h-BN NSs	43%	(0.372, 0.322)	/	(23)
$\text{SiO}_2$	89%	(0.36, 0.35)	$94 \text{ lm W}^{-1}$	(24)
LP/ $\text{SiO}_2$	90%	/	/	(25)
TMOS	/	(0.32, 0.30)	$63.5 \text{ lm W}^{-1}$	(38)
TEOS	42%	(0.3363, 0.3419)	$57.65 \text{ lm W}^{-1}$	This work



**Figure S1.** The synthesis process of  $\text{CsPbBr}_3/\text{CsPbBr}_3\text{--}\text{CsPb}_2\text{Br}_5$  NCs@TEOS nanocomposite.



**Figure S2.** PL spectra of  $\text{CsPbBr}_3/\text{CsPbBr}_3\text{--}\text{CsPb}_2\text{Br}_5$  NCs@TEOS nanocomposite coated with different concentrations of TEOS.



**Figure S3.** WLED stable emission spectra.