

Electronic Supplementary Information for:

**Polymer coated template confinement CsPbBr_3 perovskite quantum
dots composite**

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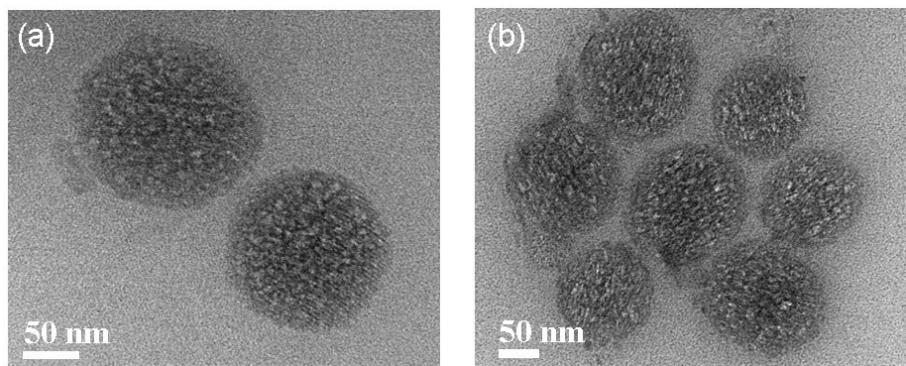


Fig. S1 TEM images of (a) $\text{CsPbBr}_3@\text{SiO}_2$ and (b) $\text{CsPbBr}_3@\text{SiO}_2/\text{CLA}$.

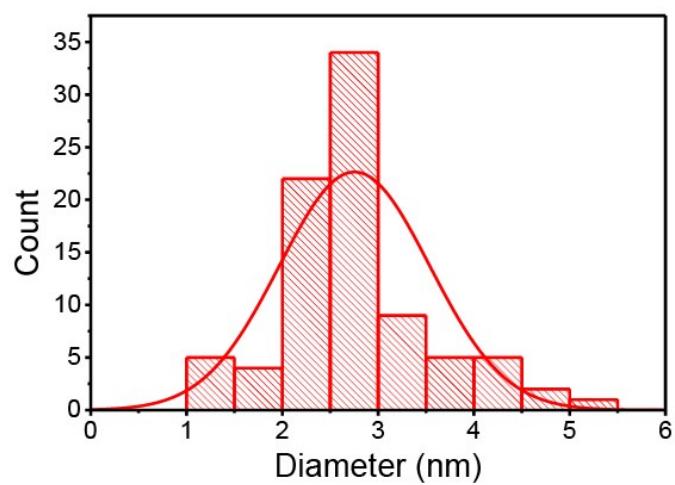


Fig. S2 Size distribution of CsPbBr_3 QDs in mesoporous SiO_2 microspheres.

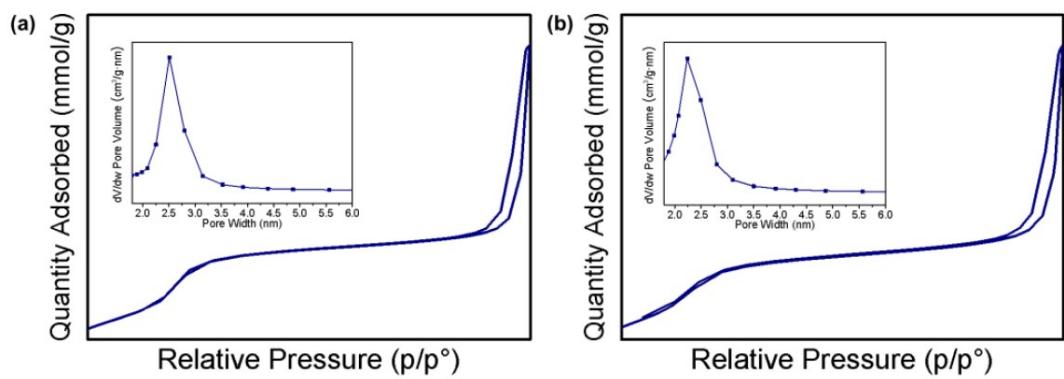


Fig. S3 Adsorption-desorption curve and BJH pore diameter distribution of (a) SiO_2 and (b) $\text{CsPbBr}_3@\text{SiO}_2$.

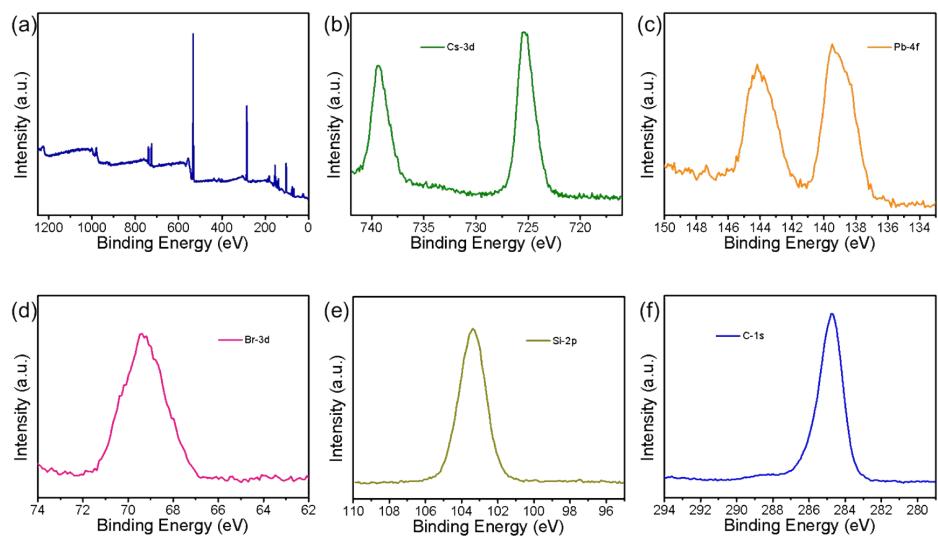


Fig. S4 XPS analysis of (a) $\text{CsPbBr}_3@{\text{SiO}_2}/\text{Poly-CLA}$ and zoom-in scans highlighting of (b–f) Cs, Pb, Br, Si, and C elements.

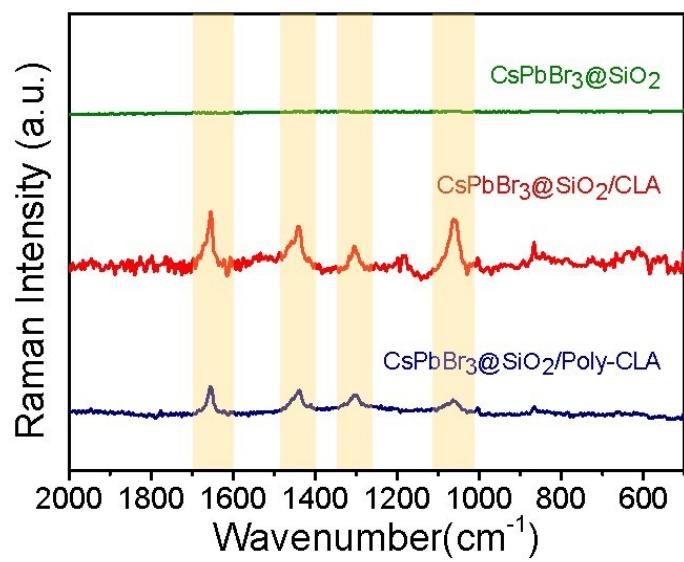


Fig. S5 Raman spectra of $\text{CsPbBr}_3@\text{SiO}_2$, $\text{CsPbBr}_3@\text{SiO}_2/\text{CLA}$ and $\text{CsPbBr}_3@\text{SiO}_2/\text{Poly-CLA}$.

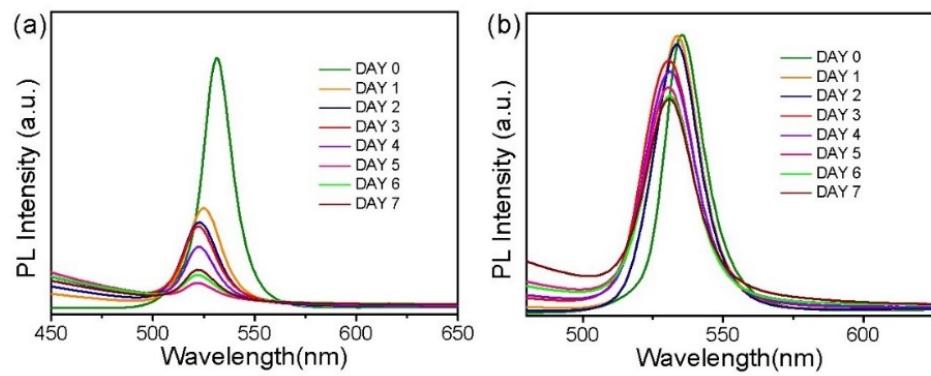


Fig. S6 PL emission of (a) $\text{CsPbBr}_3@\text{SiO}_2/\text{CLA}$ and (b) $\text{CsPbBr}_3@\text{SiO}_2/\text{Poly-CLA}$ in water.

Table S1 BET surface area and BJH cumulative volume of pores of mesoporous SiO_2 microspheres and $\text{CsPbBr}_3@\text{SiO}_2$.

Sample	BET Surface Area (m^2/g)	BJH cumulative volume of pores (m^3/g)
SiO_2	1,093.42	1.60
$\text{CsPbBr}_3@\text{SiO}_2$	724.53	1.09