Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Modulating the local structure of glass to promote in situ precipitation of perovskite $CsPbBr_3$ quantum dots through introducing a network modifier

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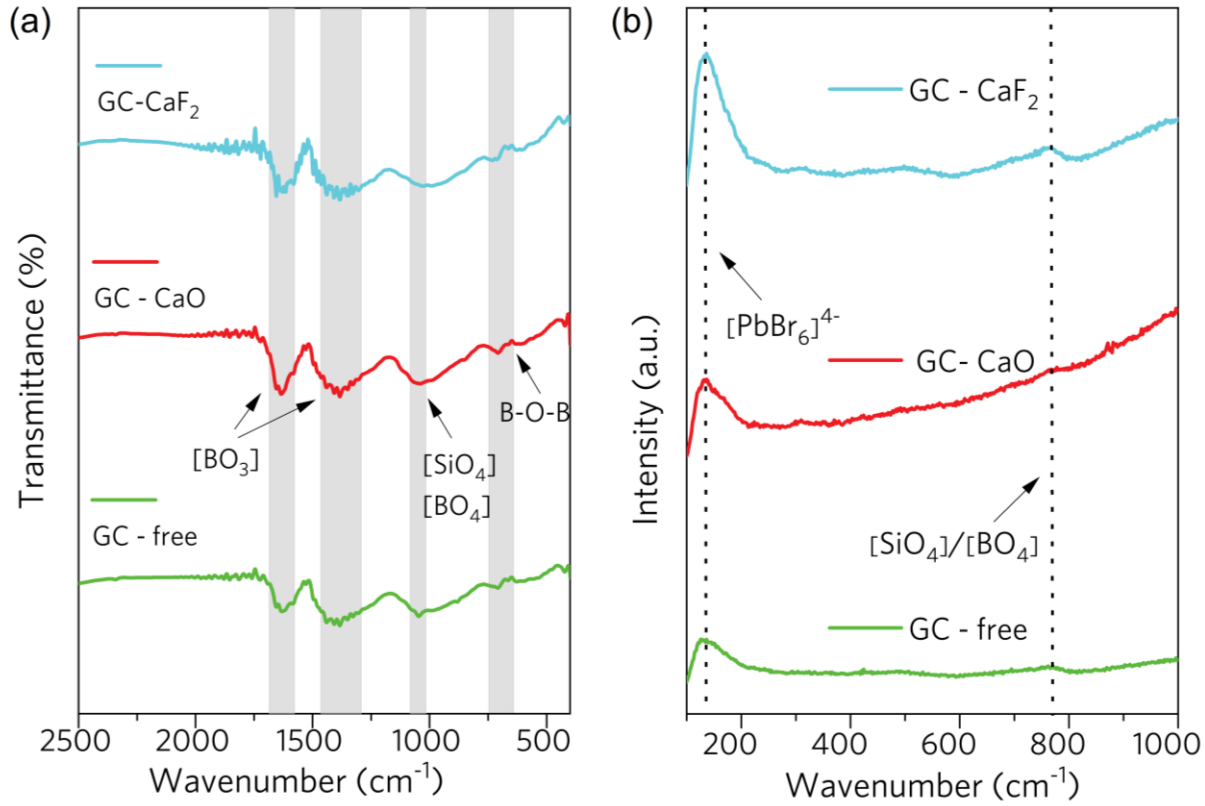

Fig. S1. (a) FT-IR spectra and (b) Raman spectra of $CsPbBr_3$ QDs@glass specimens of GC-free, GC-CaO, and GC-CaF_2.

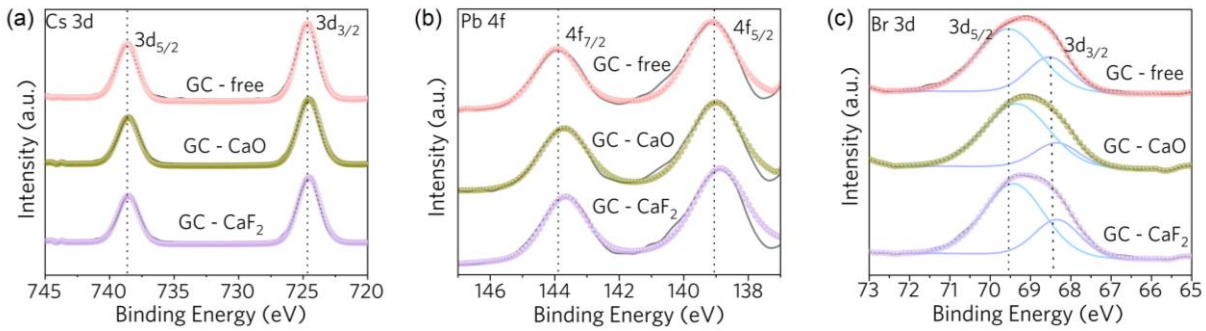

Fig. S2. XPS spectra of (a) Cs 3d, (b) Pb 4f, (c) Br (3d) of $CsPbBr_3$ QDs@glass samples of GC-free, GC-CaO, and GC-CaF_2.

Fig. S3. Photographs of $CsPbBr_3$ QDs@glass specimens of GC-CaF_2 after heat treatment at different temperatures for 10 h.

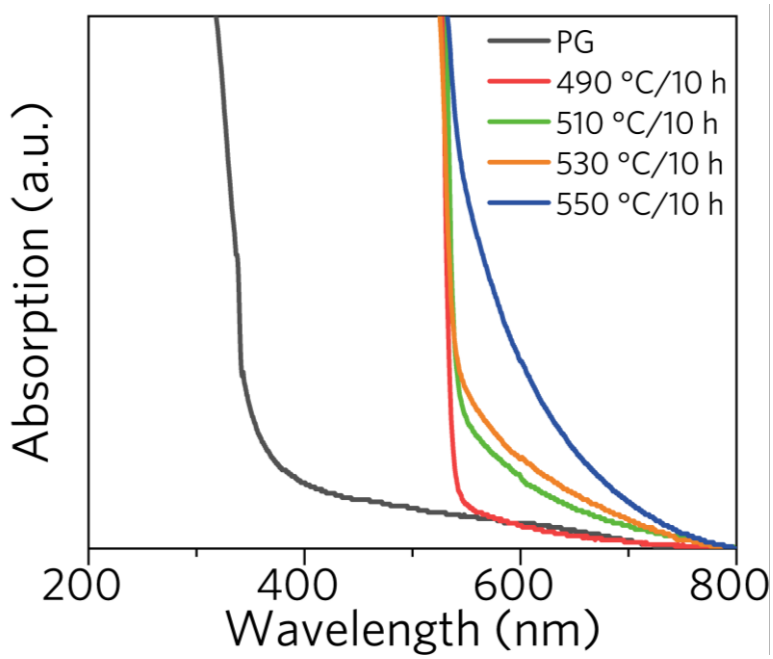

Fig. S4. Absorption spectra of PG and $CsPbBr_3$ QDs@glass specimens of GC-CaF_2 after heat treatment at different temperatures for 10 h.

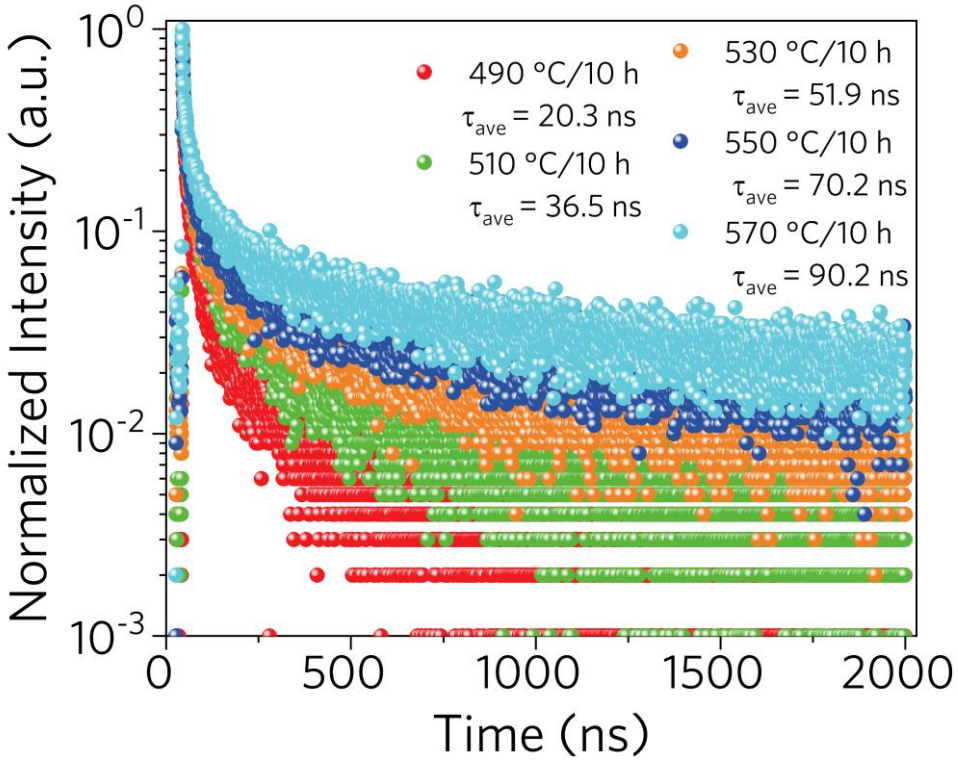

Fig. S5. Decay curves of PG and $CsPbBr_3$ QDs@glass specimens of GC-CaF_2 after heat treatment at different temperatures for 10 h (λ_{ex} = 450 nm; λ_{em} = 515 nm for 490 °C, λ_{em} = 522 nm for 510 °C, λ_{em} = 526 nm for 530~570 °C).

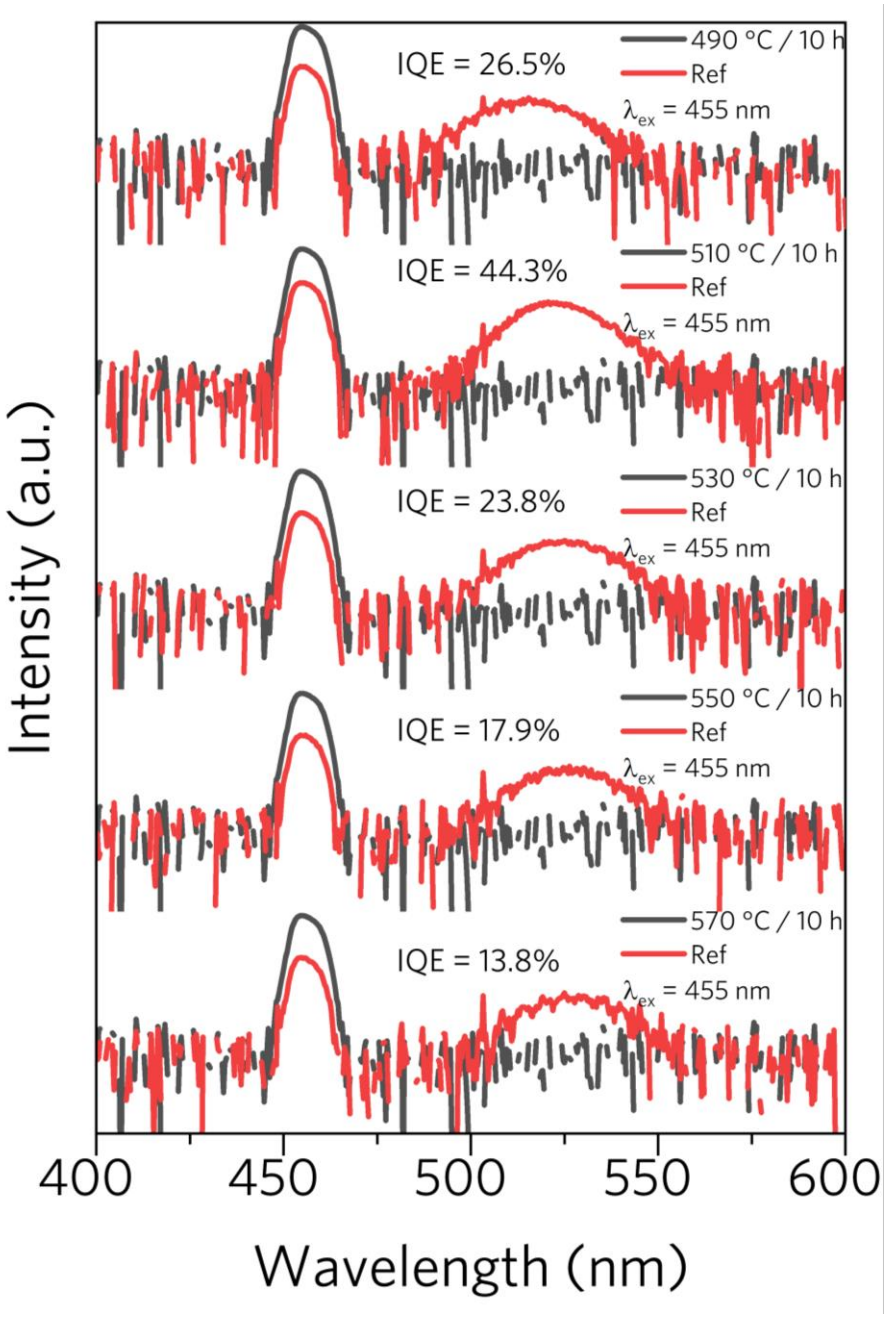

Fig. S6. IQE images of $CsPbBr_3$ QDs@glass specimens of GC-CaF_2 after heat treatment at different temperatures for 10 h under 455 nm excitation.

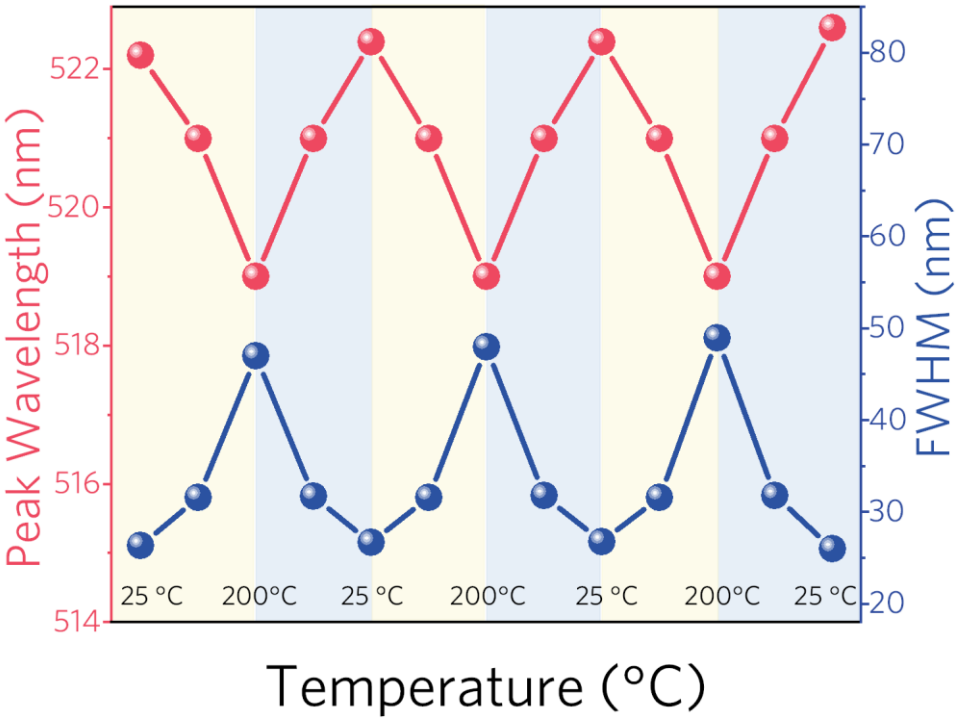

Fig. S7. The temperature-dependent variations of peak wavelengths and FWHMs of $CsPbBr_3$ QDs@glass specimen of GC-CaF_2 in three-cycle heating/cooling experiment.

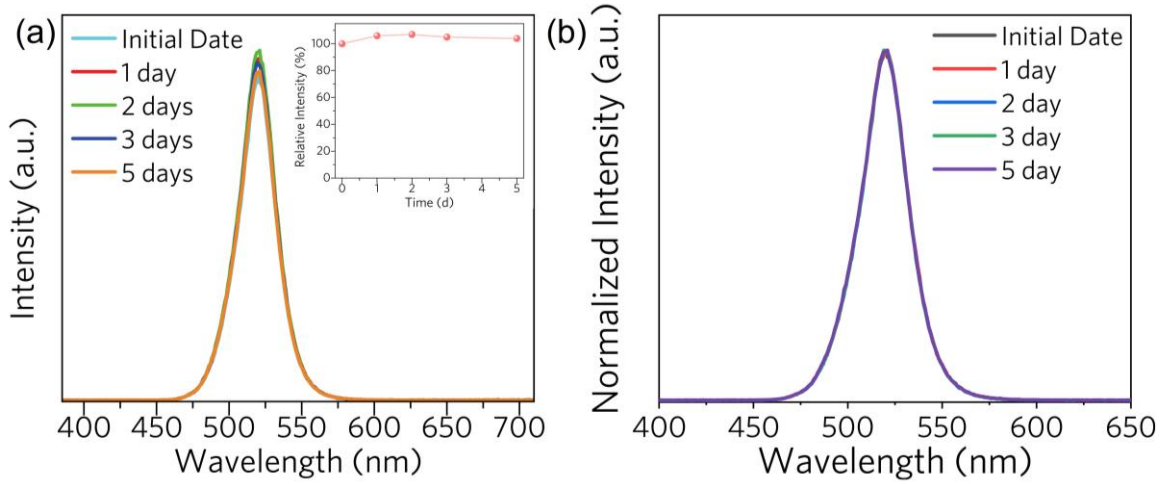

Fig. S8. (a) PL spectra intensities and (b) normalized PL spectra of $CsPbBr_3$ QDs@glass specimen of GC-CaF_2 in thermal aging experiments (The inset of Fig. S8a shows the corresponding peak intensity as a function of aging time).

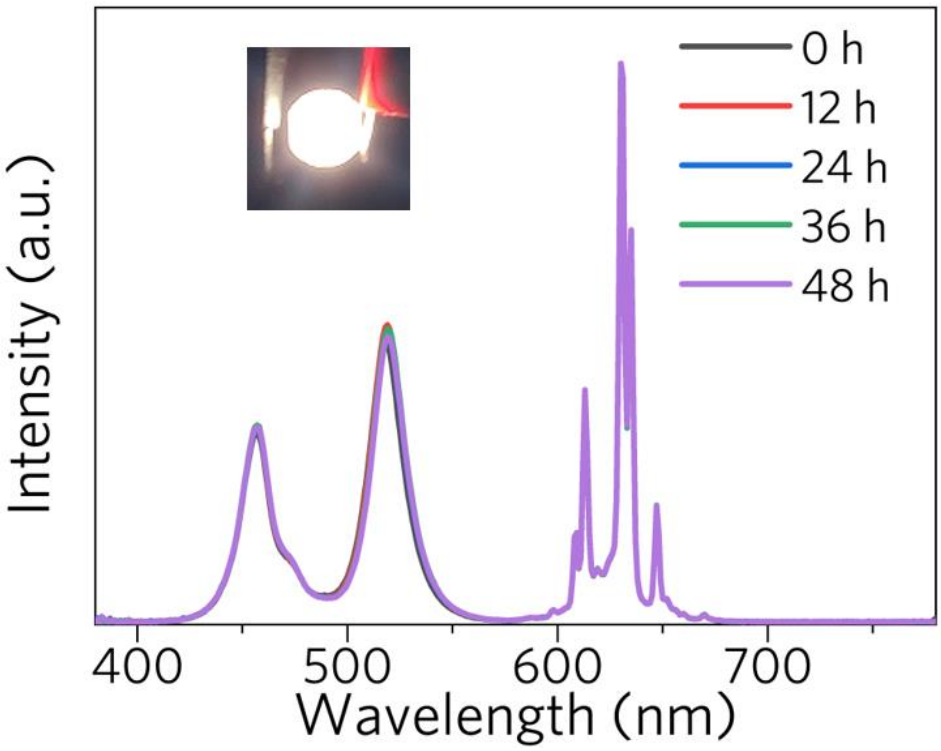

Fig. S9. Electroluminescence spectra (EL) of the as-fabricated white LEDs device at different operating times.