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

SUPPORTING INFORMATION

Precipitating $CsPbBr_3$ quantum dots in boro-germanate glasses with dense structure and inert environment toward high stable and efficient narrow-band green emitter for wide-color-gamut liquid crystal display

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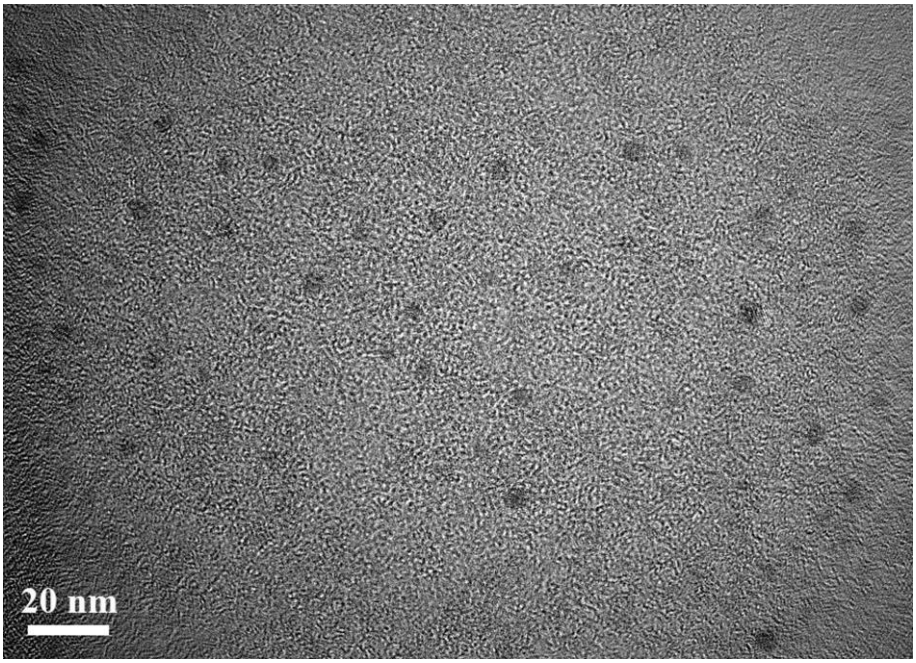

Figure.S1. TEM image of $CsPbBr_3$ QDs@glass (460 °C/10 h) sample.

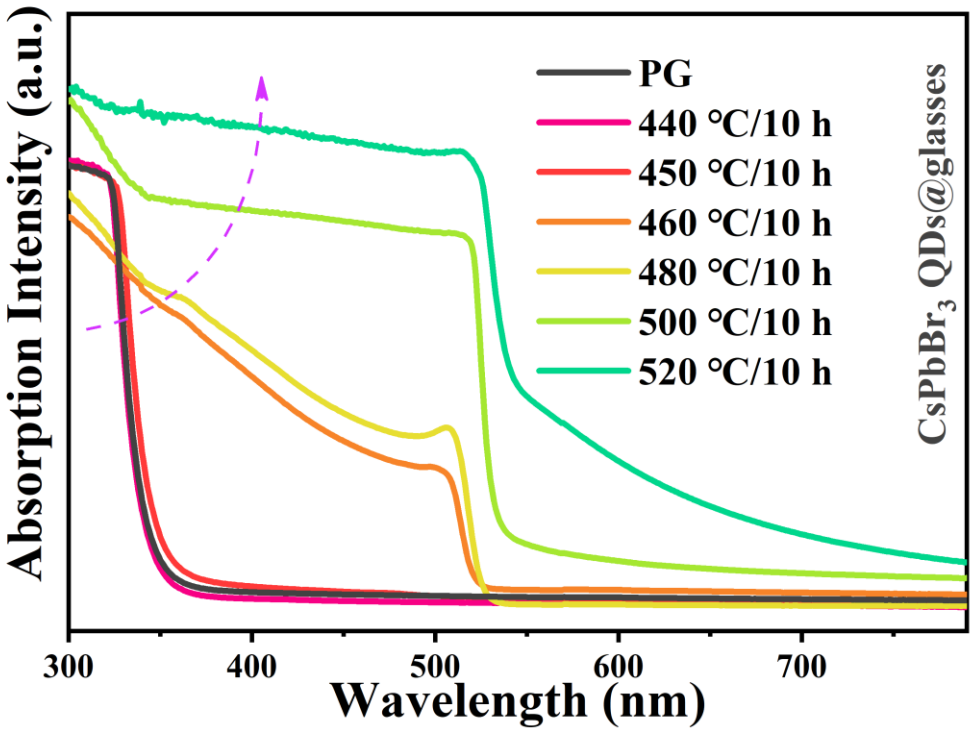

Fig. S2. The absorption spectra of a series of $CsPbBr_3$ QDs@glass samples, those samples are obtained at different heat-treated temperature (440~520 °C) for 10 hours.

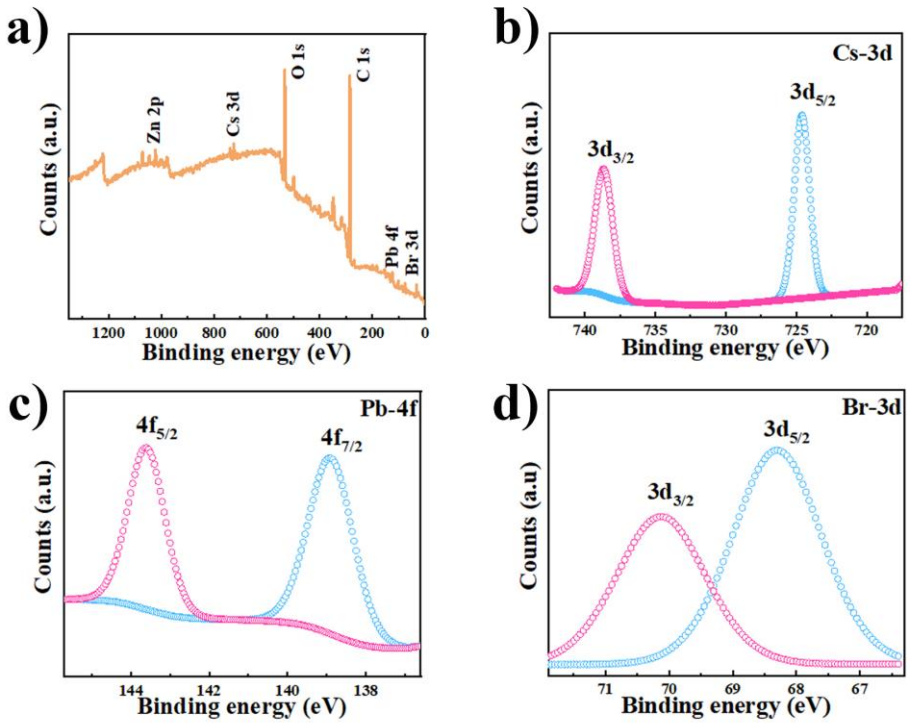

Fig. S3. (a) XPS survey of $CsPbBr_3$ QDs@glass (460 °C/10 h). (b-d) The high-resolution XPS analysis corresponding to Cs 3d, Pb 4f, Br 3d, respectively.

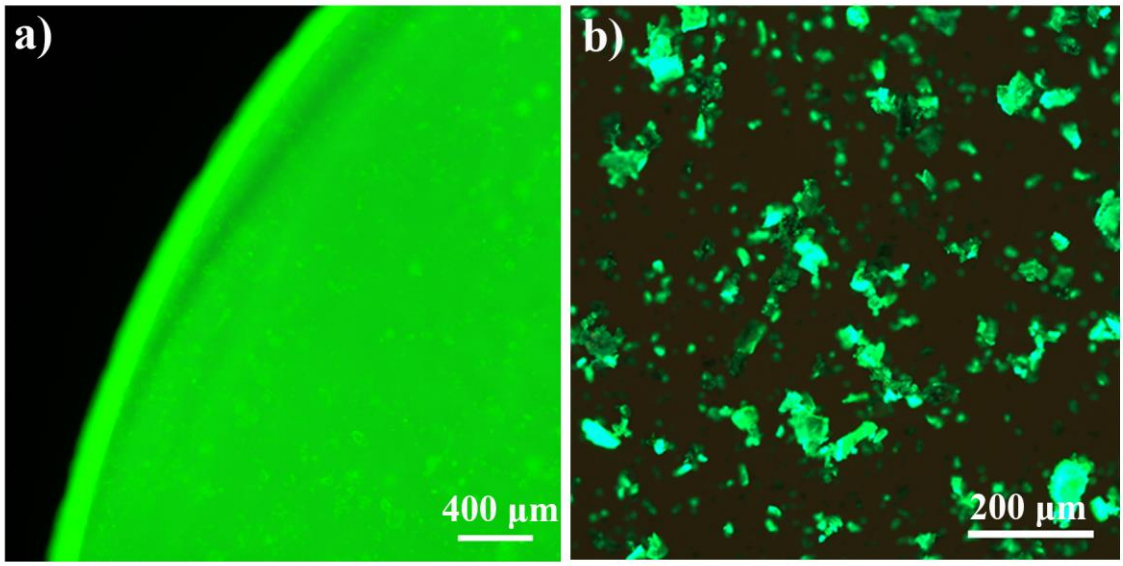

Fig. S4. (a) Optical microscope photograph of bulk $CsPbBr_3$ QDs@glass (460 °C/10 h). (b) Optical microscope photograph after grinding the corresponding bulk $CsPbBr_3$ QDs@glass into powder.

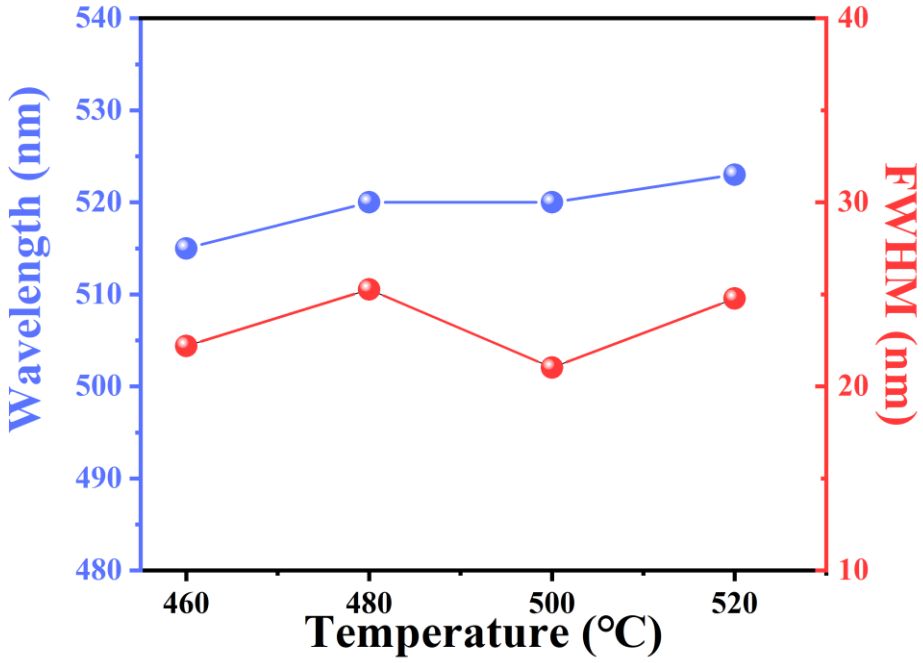

Fig. S5. Peak wavelength and FWHM variations of $CsPbBr_3$ QDs@glass samples dependence of heat-treatment temperature.

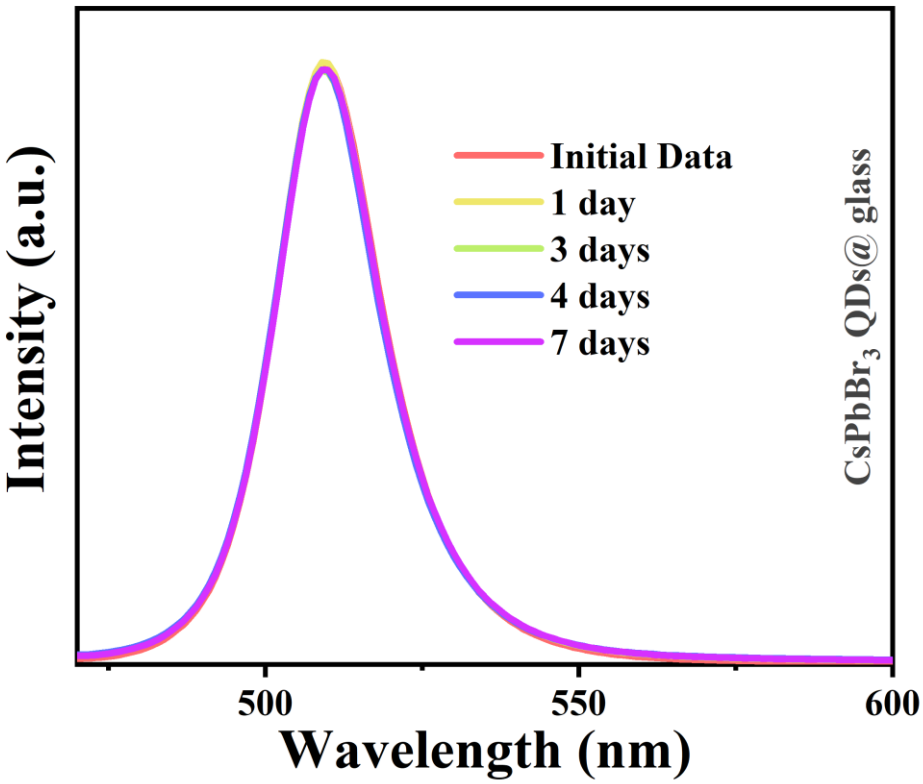

Fig. S6. PL spectra of $CsPbBr_3$ QDs@glass (460 °C/10 h) in thermal aging experiment with 100 °C for different times.

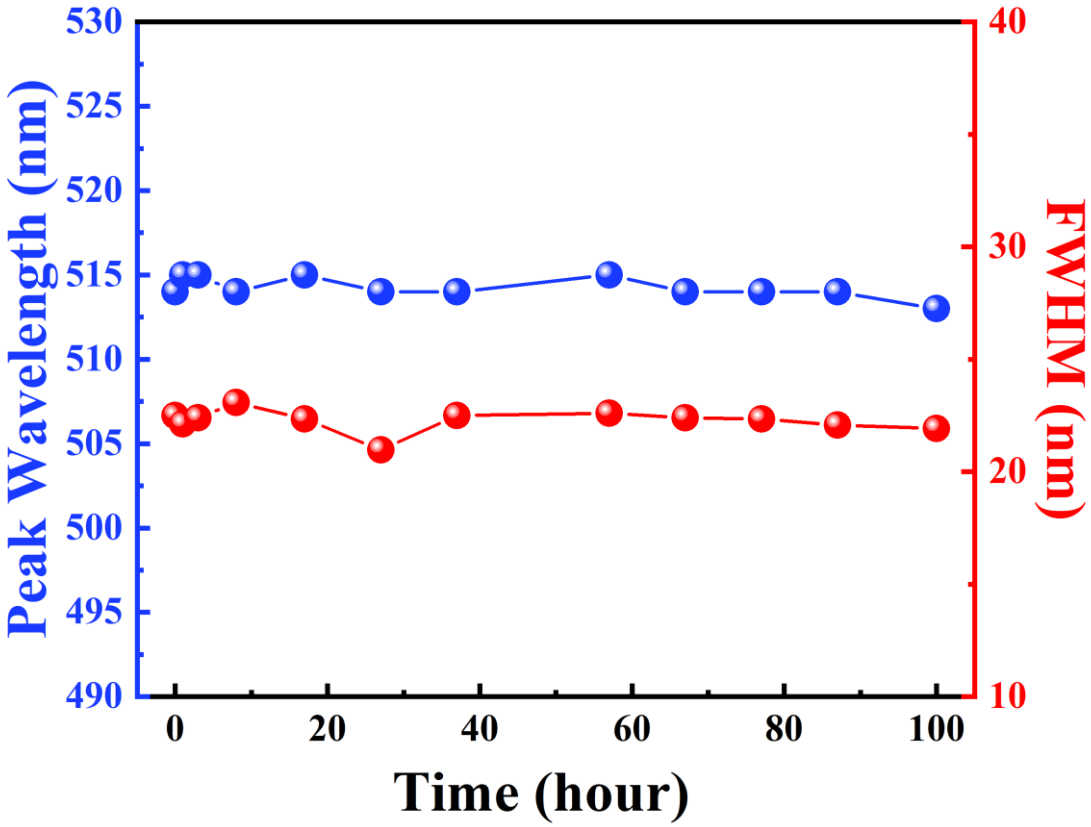

Fig. S7. Peak wavelength and FWHM variations of $CsPbBr_3$ QDs@glass (460 °C/10 h) in the time-dependent UV light irradiation experiment.

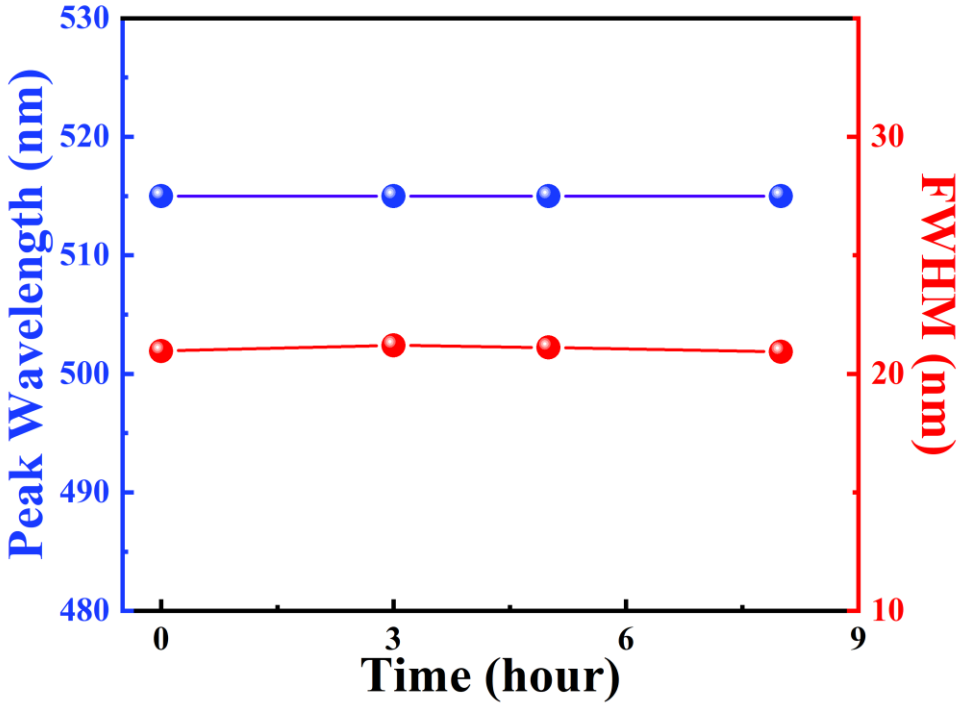

Fig. S8. The change of peak wavelength and FWHM in $CsPbBr_3$ QDs@glass (460 °C/10 h) sample in the time-dependent blue light irradiation experiment.

Table S1. CIE color coordinates of the as-fabricated $CsPbBr_3$ QDs@glass based green-emitting LED device under various forward-bias currents.

Serial number	Driven current (mA)	CIE coordinates	
		x	***y***
1	20	0.1681	0.6788
2	30	0.1653	0.6878
3	40	0.1662	0.6814
4	50	0.1650	0.6816
5	60	0.1624	0.6892
6	70	0.1620	0.6880
7	80	0.1634	0.6782
8	90	0.1628	0.6760
9	100	0.1646	0.6653
Chromaticity shift		**Δx = 0.0035**	**Δy = 0.0035**

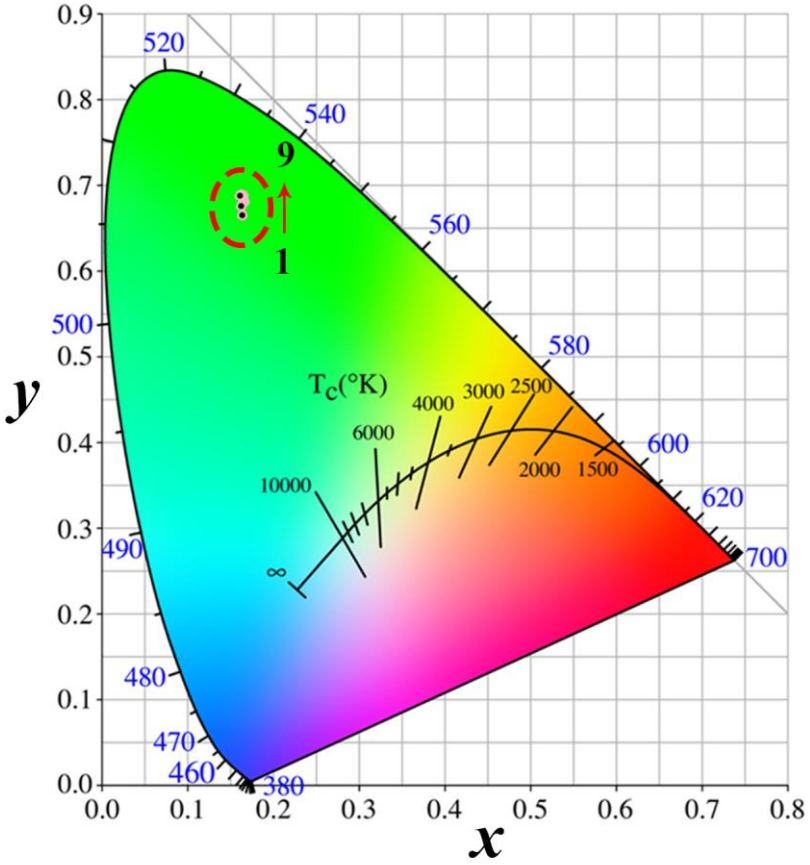

Fig. S9. CIE chromaticity coordinates of the as-fabricated $CsPbBr_3$ QDs@glass based green-emitting LED device under various forward-bias currents, number 1-9 represents different driven currents in Table S1.