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

Supporting Information

Energy Transfer from Self-Trapped Excitons to Rare Earth in Cs_2ZrCl_6 Perovskite Variant

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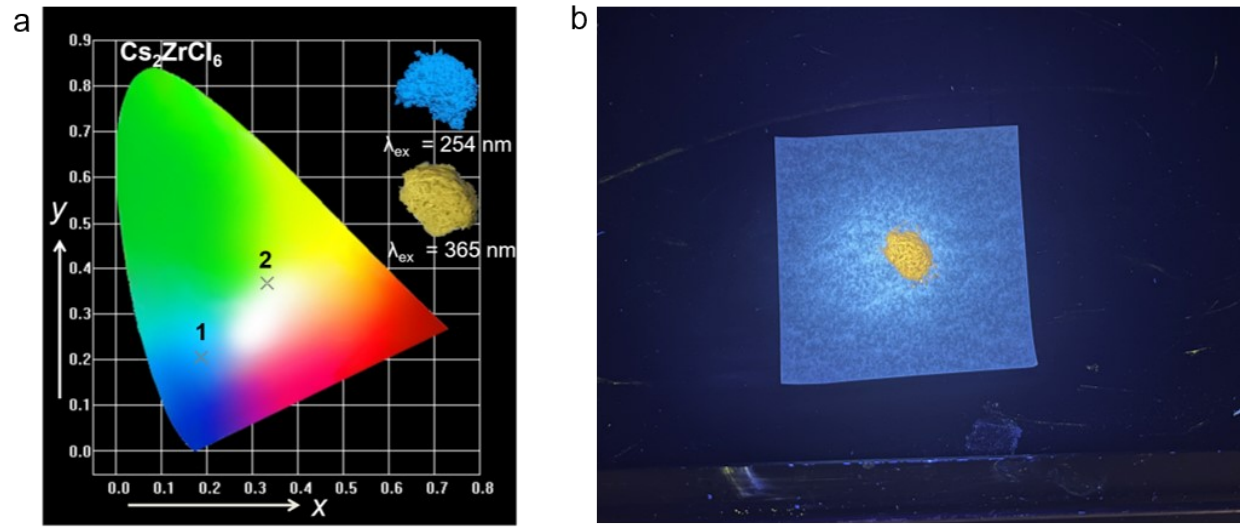

Fig. S1. (a) The CIE chromaticity diagram and digital photographs of Cs_2ZrCl_6. (λ_{ex} = 265 nm and 339 nm corresponding to point 1 and 2, respectively). (b) The original photograph of Cs_2ZrCl_6 excited by a 365 nm UV lamp.

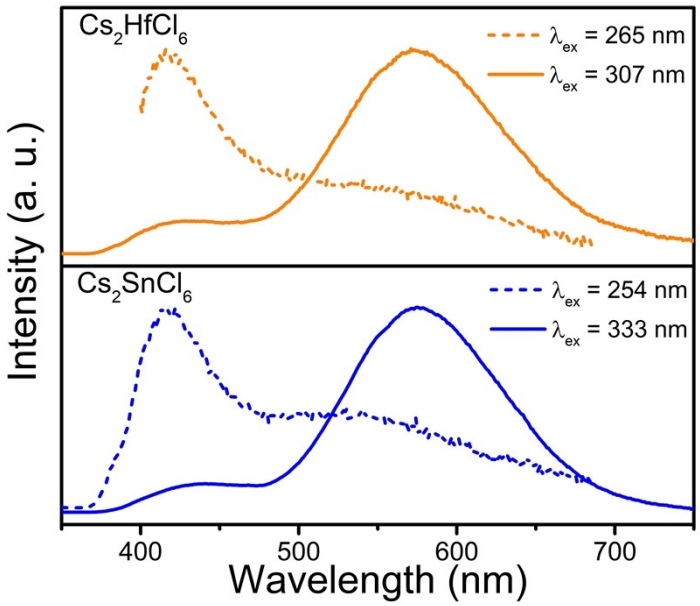

Fig. S2. The PL spectra of Cs_2HfCl_6 and Cs_2SnCl_6.

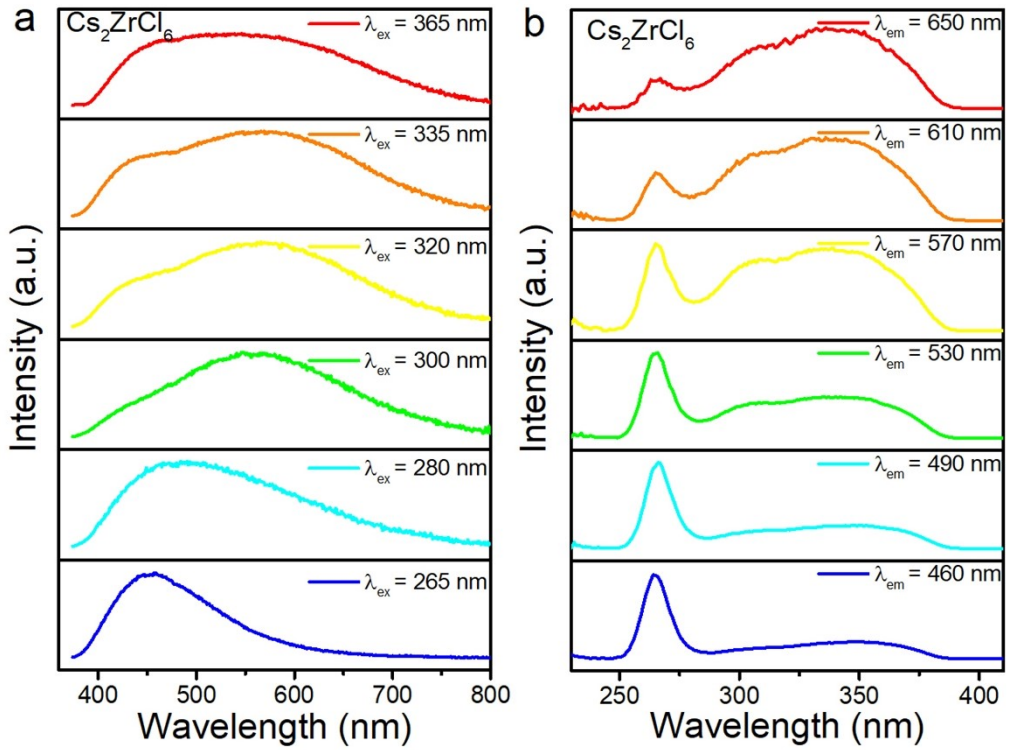

Fig. S3. Wavelength-dependent (a) PL and (b) PLE spectra of Cs_2ZrCl_6.

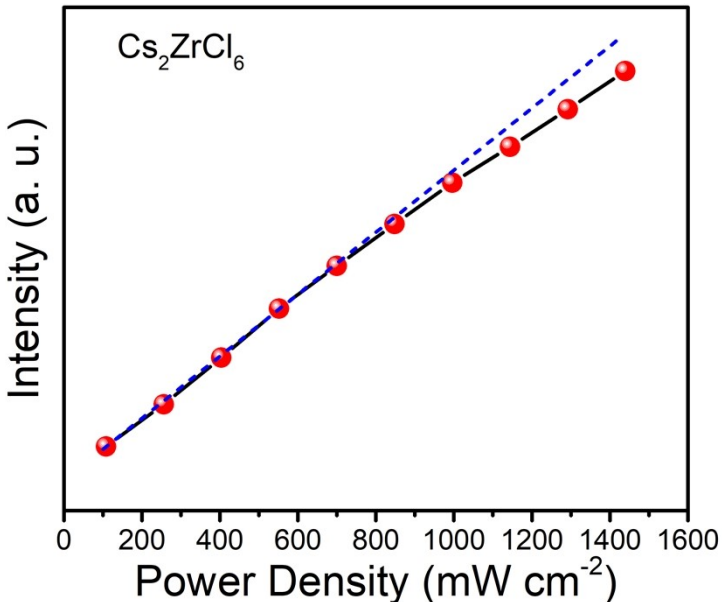

Fig. S4. Dependence of the emission intensity at the defect band of Cs_2ZrCl_6 on the excitation intensity (108-1440 mW/cm^{-2}) at 300 K (λ_{ex} = 375 nm).

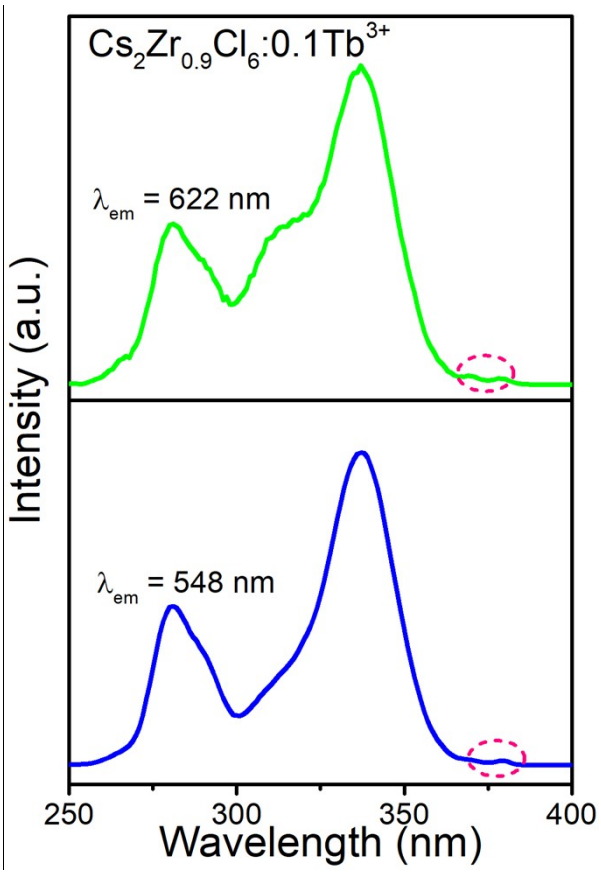

Fig. S5. The PLE spectra of Tb^{3+} monitored at 548 nm and 622 nm of $Cs_2Zr_{0.9}Cl_6:0.1Tb^{3+}$.

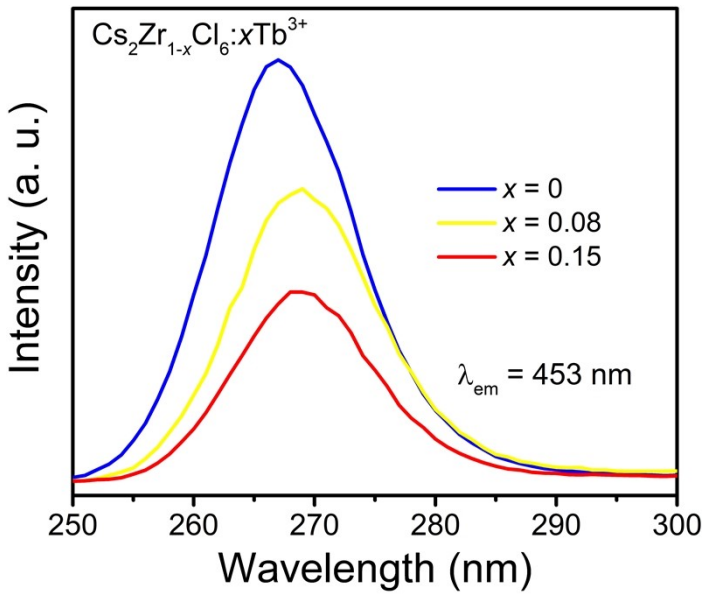

Fig. S6. The PLE spectra of STEs for $Cs_2Zr_{1-x}Cl_6:xTb^{3+}$.

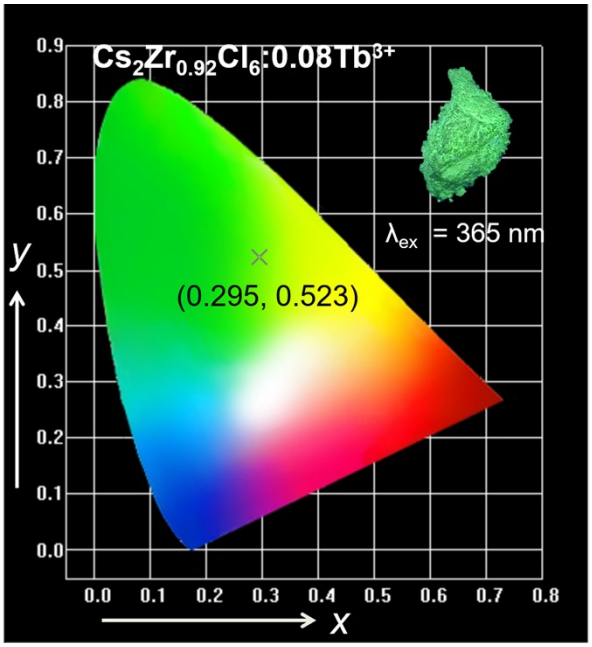

Fig. S7. The CIE chromaticity diagram and digital photograph of $Cs_2Zr_{0.92}Cl_6$:0.08Tb^{3+}. (λ_{ex} = 339 nm).

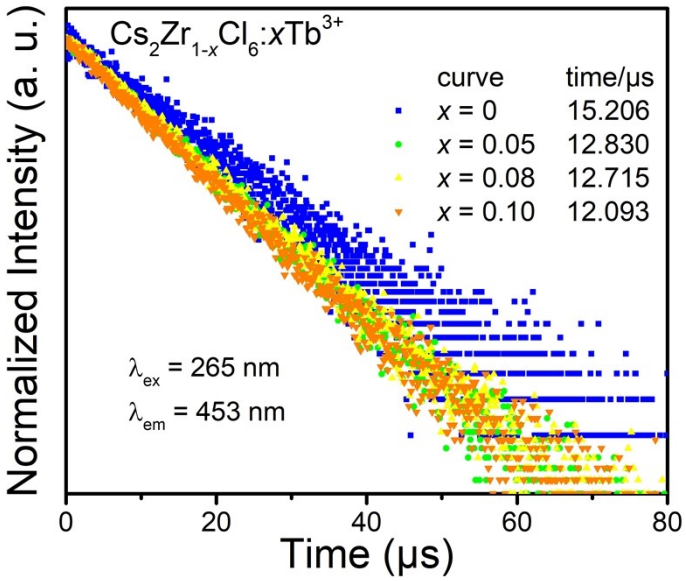

Fig. S8. Normalized PL decay curves of $Cs_2Zr_{1-x}Cl_6$:$x$$Tb^{3+}$ (x = 0, 0.05, 0.08, and 0.10) excited at 265 nm and monitored at 453 nm.

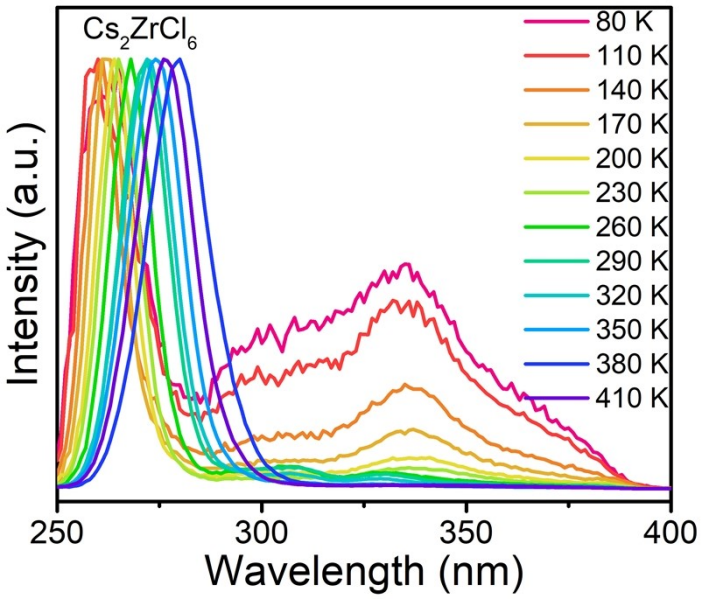

Fig. S9. Normalized temperature-dependent PLE spectra of Cs_2ZrCl_6 monitored by STEs emission.