

Supporting Information

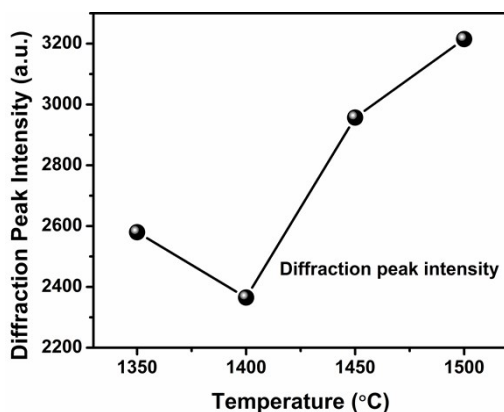


Fig. S1 Diffraction peak (at $\sim 32.8^\circ$) intensities for CSSG:3%Cr³⁺ calcined at 1350 -1500 °C.

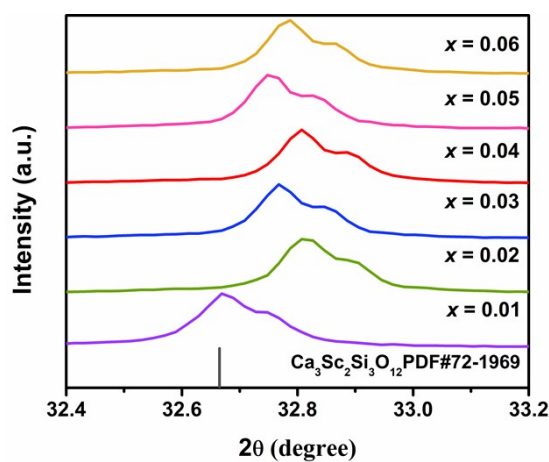


Fig. S2 Magnified XRD peaks for CSSG:xCr³⁺ with different x values.

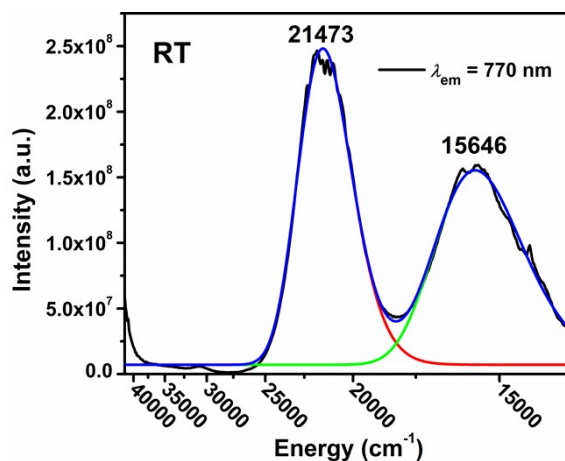


Fig. S3 PLE spectrum (black line) of ${}^4T_1({}^4F)$ and ${}^4T_2({}^4F)$ bands at room temperature fitted by a Gaussian function. Red line and green line are the Gaussian band for ${}^4T_1({}^4F)$ and ${}^4T_2({}^4F)$, respectively. Blue line is total fitted spectrum.

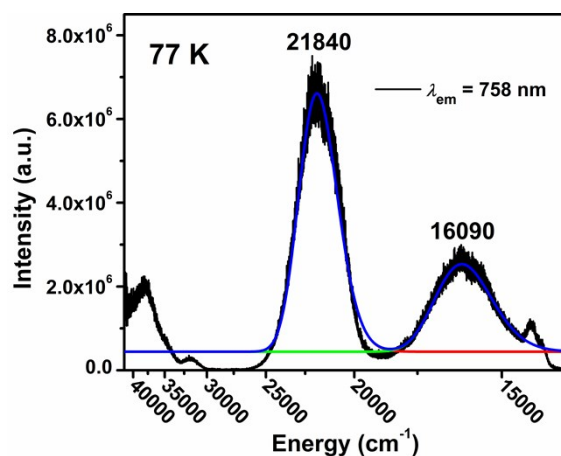


Fig. S4 PLE spectrum (black line) of ${}^4T_1({}^4F)$ and ${}^4T_2({}^4F)$ bands at 77 K fitted by a Gaussian function. Red line and green line are the Gaussian band for ${}^4T_1({}^4F)$ and ${}^4T_2({}^4F)$, respectively. Blue line is total fitted spectrum.

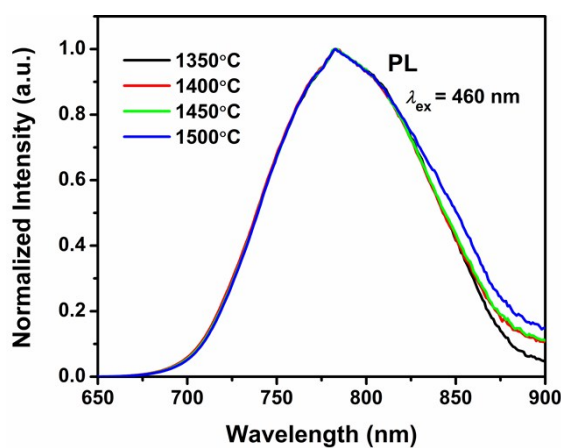


Fig. S5 Normalized PL spectra of CSSG:3%Cr $^{3+}$ calcined at 1350 -1500 °C.

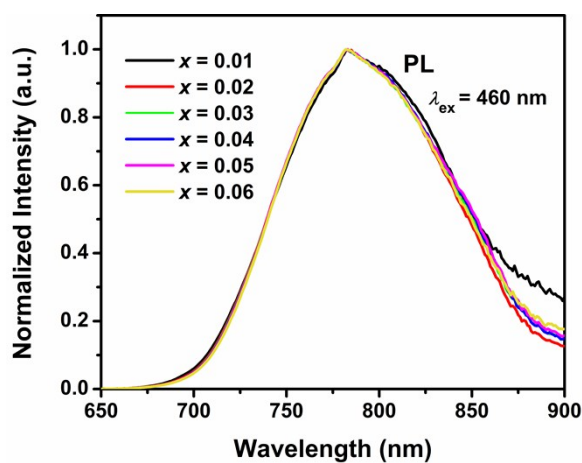


Fig. S6 Normalized PL spectra of CSSG: x Cr $^{3+}$ ($x = 0.01 - 0.06$) sintering at 1500 °C.