

Supplementary Materials

Luminescence Properties of Green Phosphor $\text{Ca}_2\text{Ga}_2(\text{Ge}_{1-x}\text{Si}_x)\text{O}_7:y\%\text{Eu}^{2+}$ and Application

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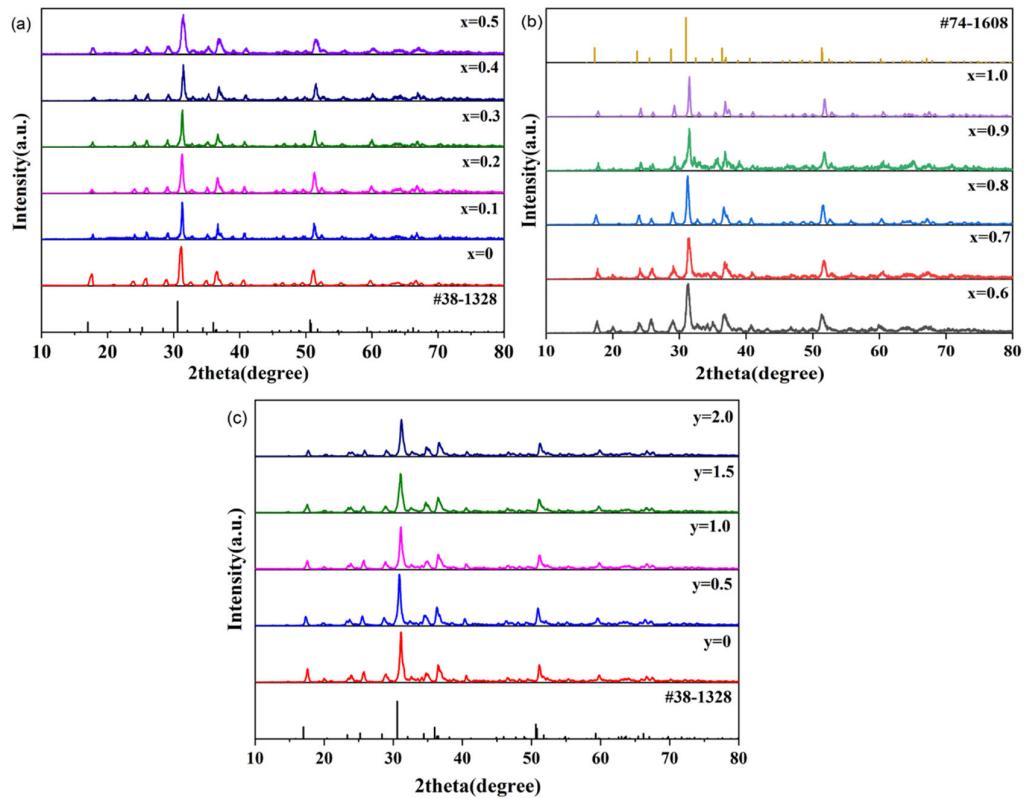


Figure S1. XRD results diagram of $\text{Ca}_2\text{Ga}_2(\text{Ge}_{1-x}\text{Si}_x)\text{O}_7:y\%\text{Eu}^{2+}$. (a) $x = 0-0.5$, $y = 1$ (b) $x = 0.6-1$, $y = 1$ (c) $x = 0.5$, $y = 0-2$.

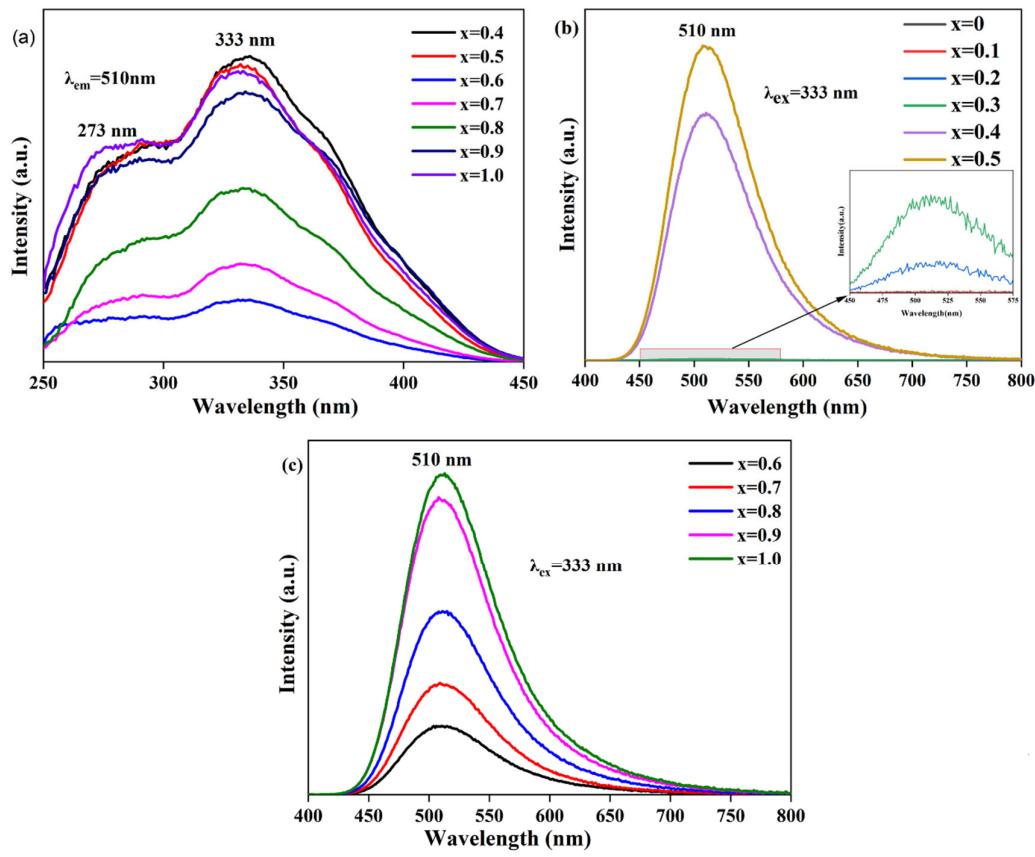


Figure S2. Excitation and emission spectra of $\text{Ca}_2\text{Ga}_2(\text{Ge}_{1-x}\text{Si}_x)\text{O}_7:1\%\text{Eu}^{2+}$. (a) Excitation spectra, $x = 0.4\text{-}1$. (b) Emission spectra, $x = 0\text{-}0.5$. (c) Emission spectra, $x = 0.6\text{-}1$.

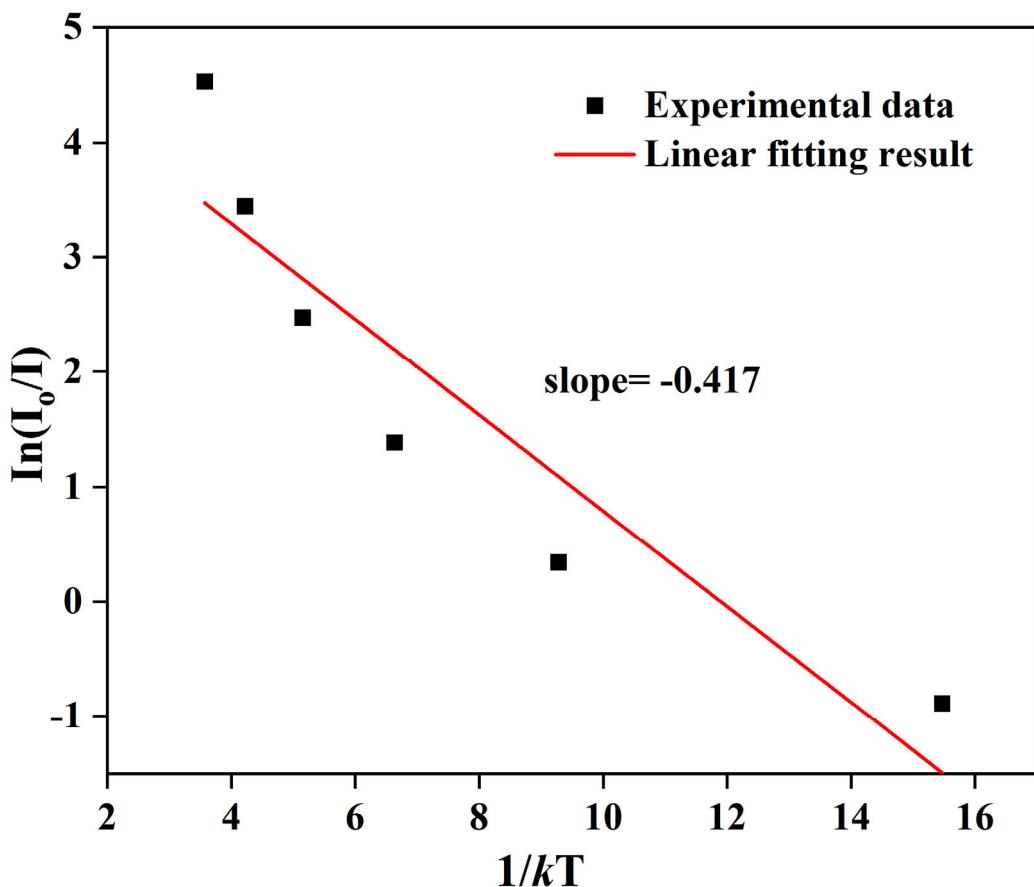


Figure S3. Data point plot of $\ln(I_0/I)$ vs $1/kT$ ($\text{Ca}_2\text{Ga}_2(\text{Ge}_{0.5}\text{Si}_{0.5})\text{O}_7:1.0\%\text{Eu}^{2+}$).

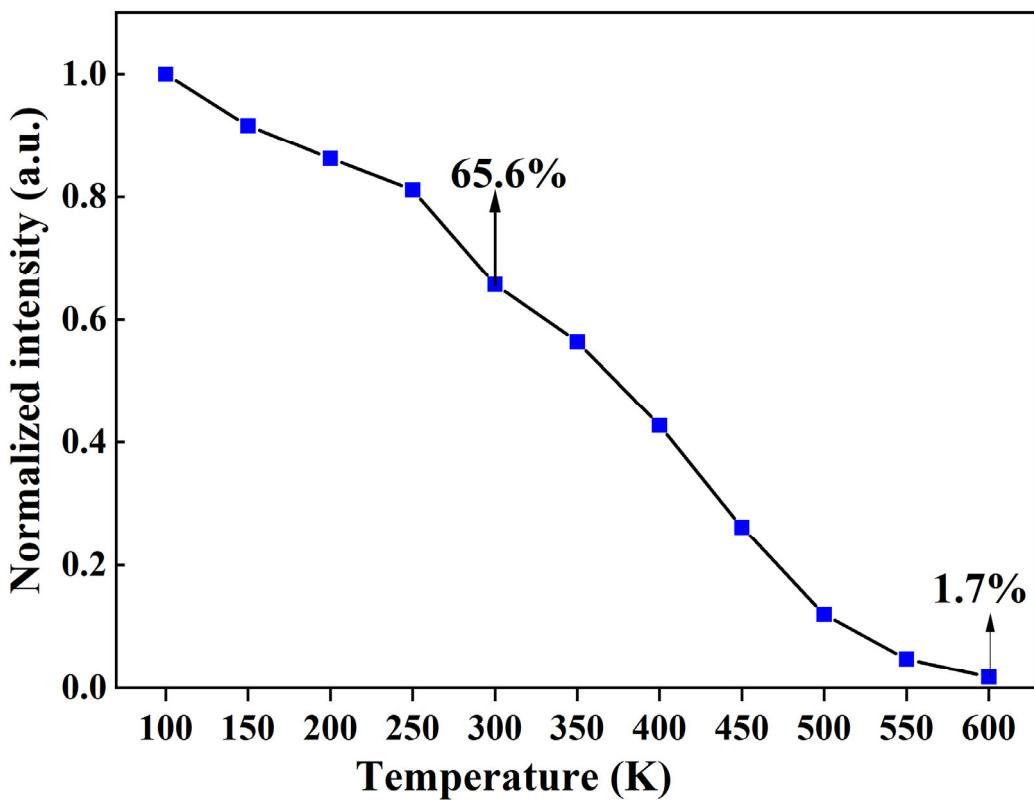


Figure S4. Normalized intensity of $\text{Ca}_2\text{Ga}_2(\text{Ge}_{0.5}\text{Si}_{0.5})\text{O}_7:1\%\text{Eu}^{2+}$ vs Temperature.

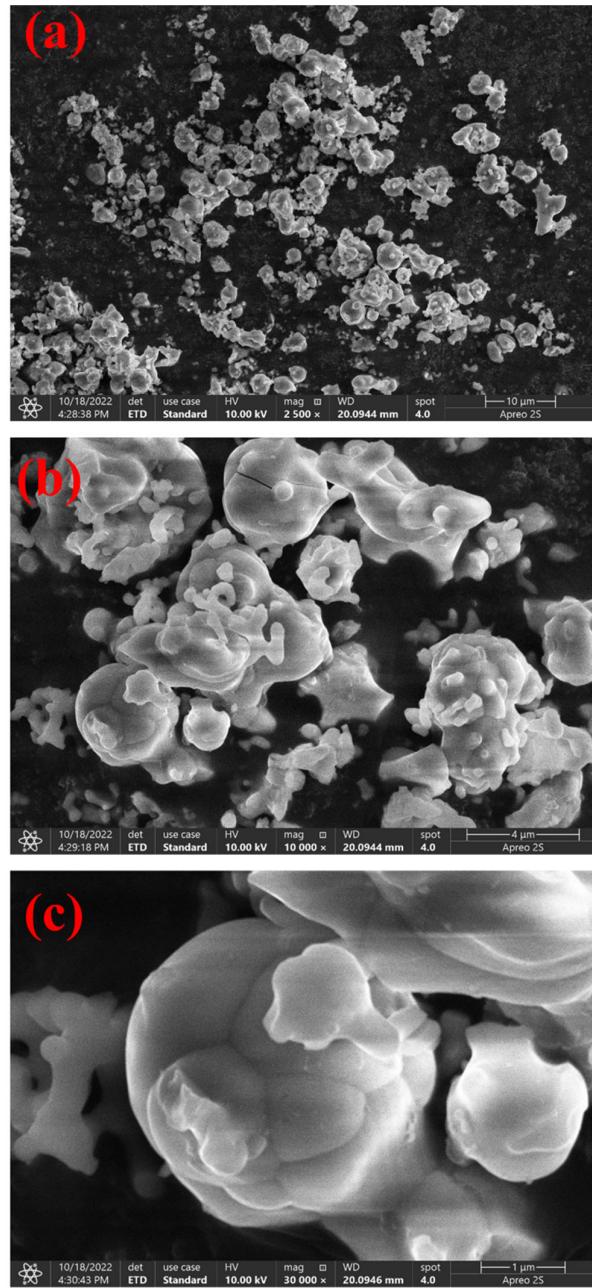


Figure S5. SEM images at different scales of $\text{Ca}_2\text{Ga}_2(\text{Ge}_{0.5}\text{Si}_{0.5})\text{O}_7:1.0\%\text{Eu}^{2+}$. (a) 10 μm (b) 4 μm (c) 1 μm .