

Fig. S1 PLD curves of $\text{Ba}_{0.99}\text{Eu}_{0.01}\text{Ca}_2\text{Si}_3\text{O}_9$ monitored at 415 and 495 nm.

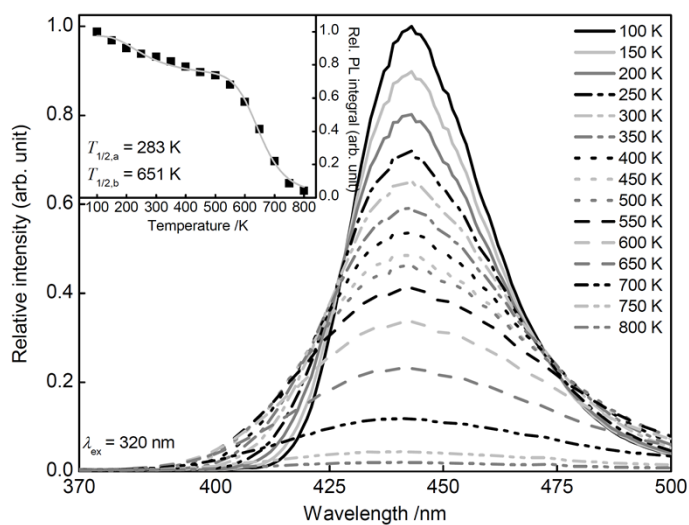


Fig. S2 PL spectra of Eu^{2+} of $\text{Ba}_{0.99}\text{Eu}_{0.01}(\text{Ca}_{0.90}\text{Mn}_{0.10})_2\text{Si}_3\text{O}_9$ from 100 to 800 K and PL integral in dependence of temperature.

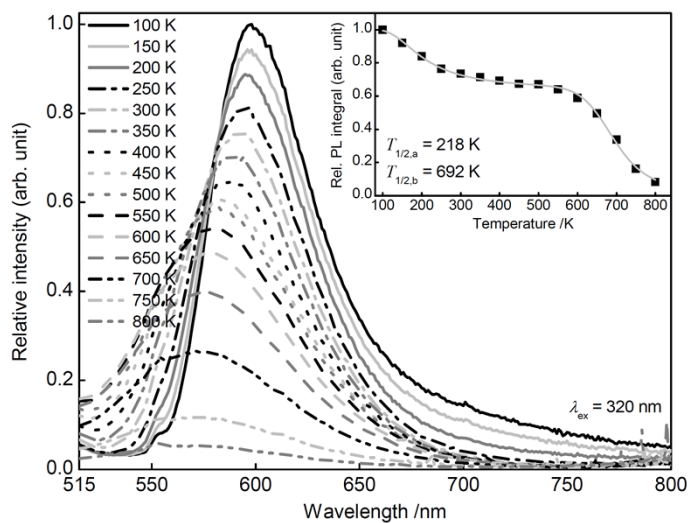


Fig. S3 PL spectra of Mn^{2+} of $\text{Ba}_{0.99}\text{Eu}_{0.01}(\text{Ca}_{0.90}\text{Mn}_{0.10})_2\text{Si}_3\text{O}_9$ from 100 to 800 K and PL integral in dependence of temperature.

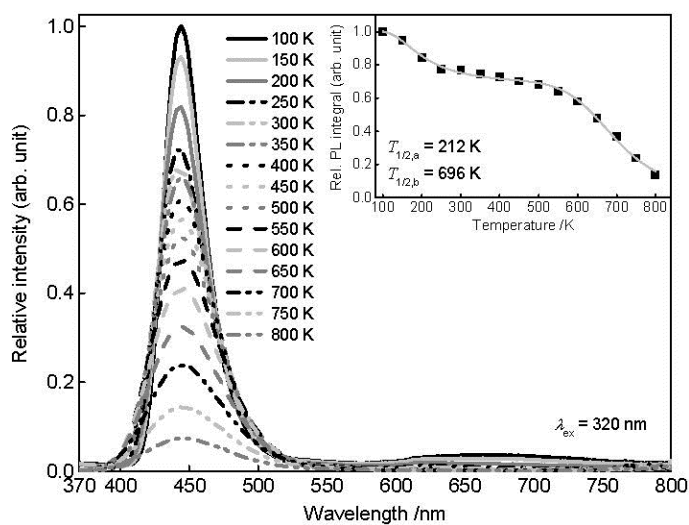


Fig. S4 PL spectra of $\text{Ba}_{0.99}\text{Eu}_{0.01}\text{Ca}_2\text{Si}_3\text{O}_9$ from 100 to 800 K and PL integral in dependence of temperature.

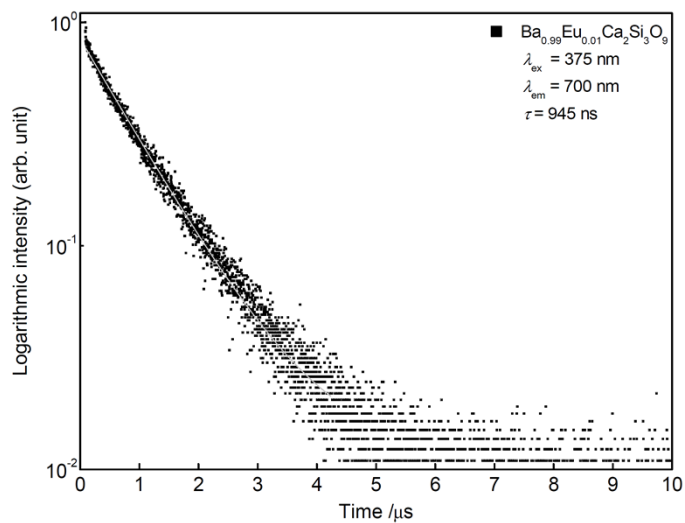


Fig. S5 PLD curve of $\text{Ba}_{0.99}\text{Eu}_{0.01}\text{Ca}_2\text{Si}_3\text{O}_9$ monitored at $\lambda_{\text{em}} = 700 \text{ nm}$ and $T = 77 \text{ K}$.

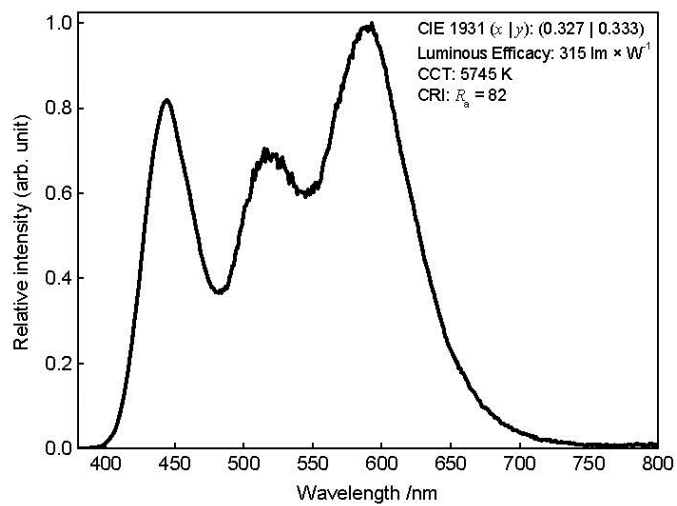


Fig S6 Simulated white emission spectrum consisting of $\text{Ba}_{0.99}\text{Eu}_{0.01}\text{Ca}_{(0.80}\text{Mn}_{0.20})_2\text{Si}_3\text{O}_9$ and $(\text{Ba}_{0.49}\text{Sr}_{0.49}\text{Eu}_{0.02})_2\text{SiO}_4$.