

Supporting Information

Upconversion luminescence of lanthanide-doped mixed CaMoO₄-CaWO₄ micro-/nano- materials

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Table S1 Assignment of transitions presented in Figures 5, 7, 8, 10, 11 and 12.

Wavelength (nm)	Wavenumber (cm⁻¹)	Transition
529	18904	$^2\text{H}_{11/2} \rightarrow ^4\text{I}_{15/2}$
551	18149	$^4\text{S}_{3/2} \rightarrow ^4\text{I}_{15/2}$
669	14948	$^4\text{F}_{9/2} \rightarrow ^4\text{I}_{15/2}$

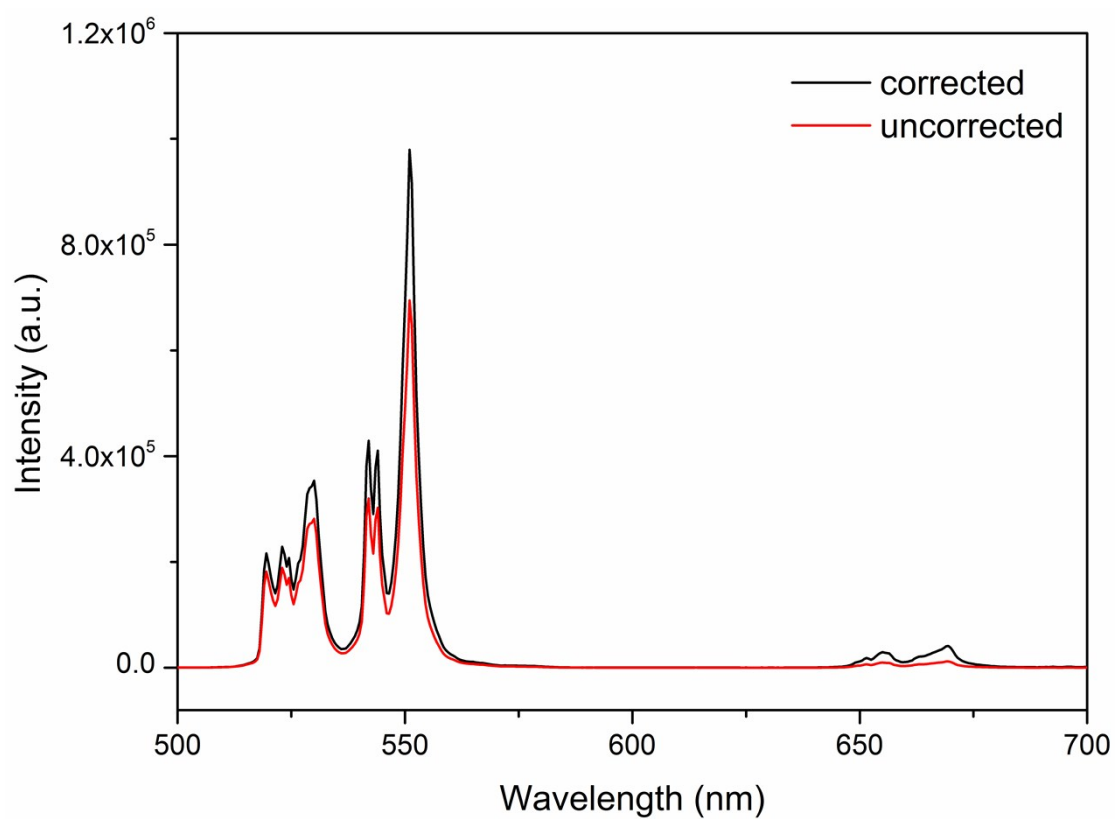


Figure S1. Uncorrected and corrected emission spectra of $\text{CaMo}_{0.8}\text{W}_{0.2}\text{O}_4: \text{Er}^{3+}, \text{Yb}^{3+}$ upconversion particles under excitation at 975 nm.

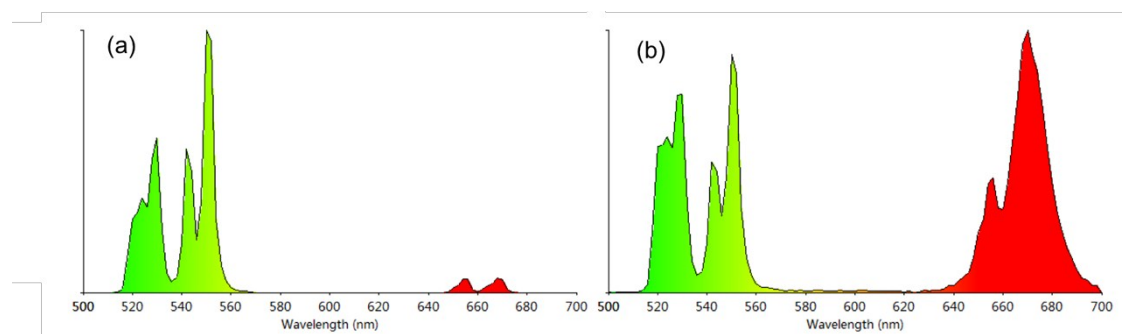


Figure S2. Emission spectrum of $\text{CaMo}_{0.8}\text{W}_{0.2}\text{O}_4: \text{Er}^{3+}, \text{Yb}^{3+}$ with rainbow curve fitted (a) sintered at 900 °C; (b) unsintered.

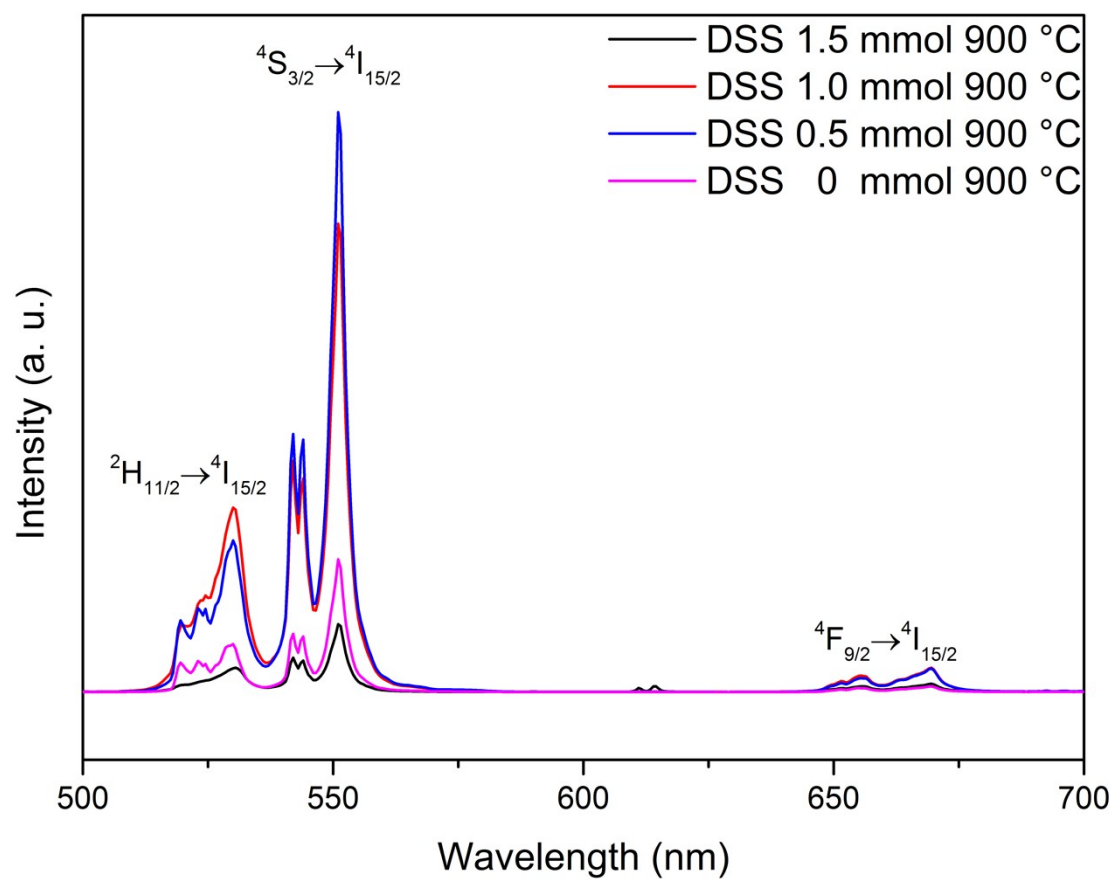


Figure S3. The PL emission spectra of samples prepared in the presence of different moles of DSS surfactant (for studying the morphology, 0.25 g of DSS was used to compare with PVP).

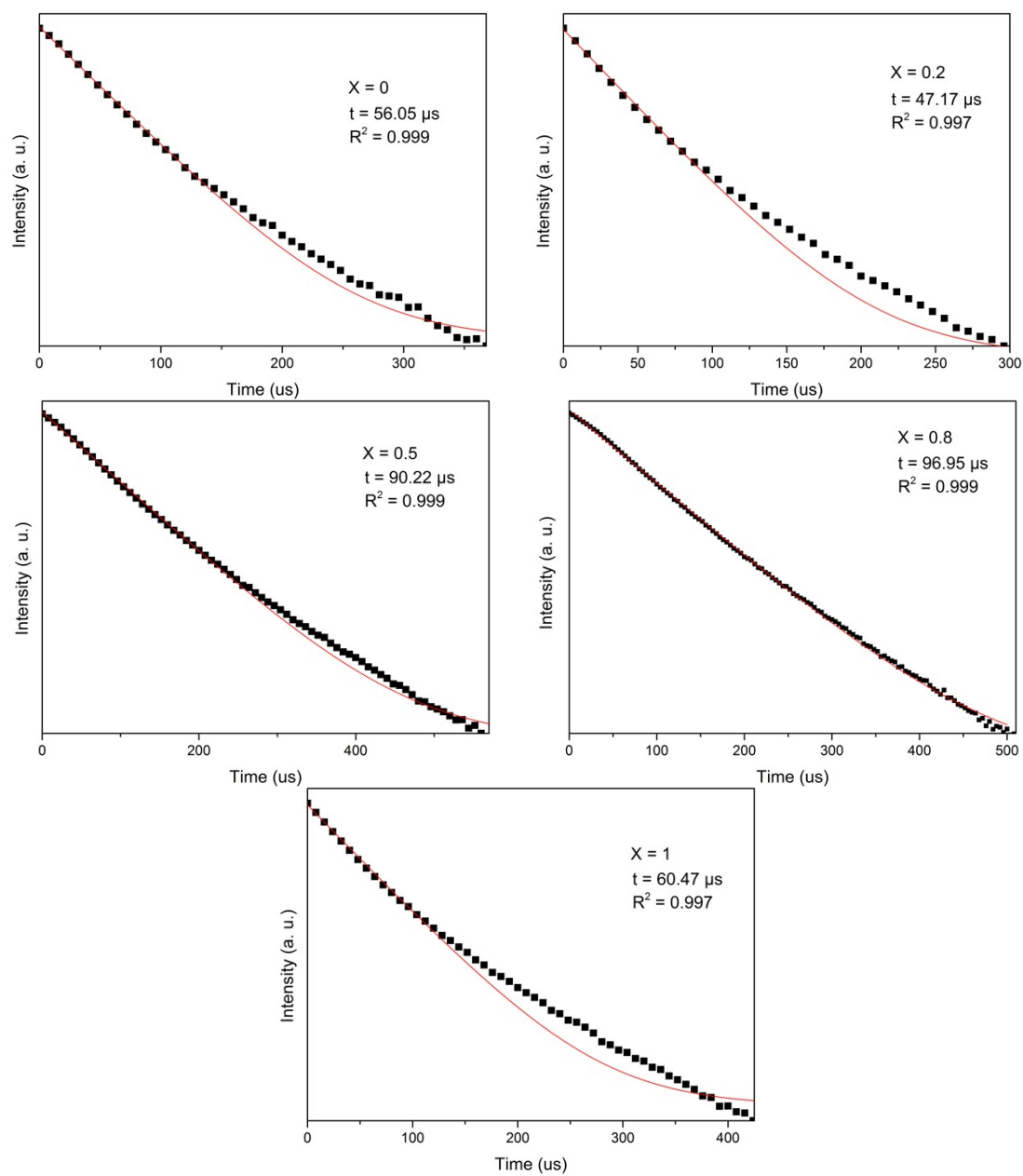


Figure S4. Decay curves of 551 nm emission of the $\text{CaMo}_x\text{W}_{1-x}\text{O}_4: \text{Er}^{3+}, \text{Yb}^{3+}$ samples.

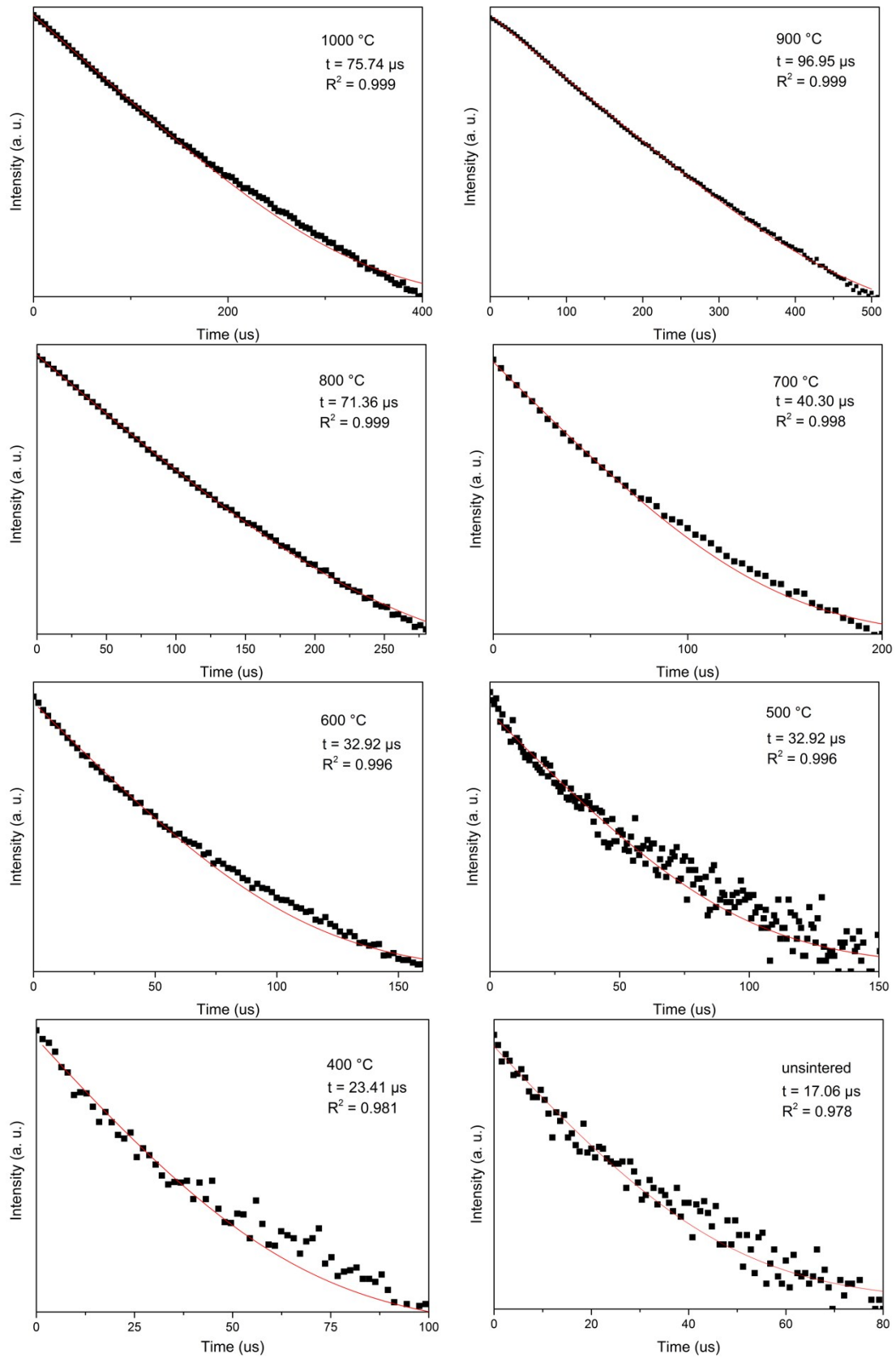


Figure S5. Decay curves of 551 nm emission of the $\text{CaMo}_{0.8}\text{W}_{0.2}\text{O}_4:\text{Er}^{3+}, \text{Yb}^{3+}$ samples after heat treatment at different temperatures.

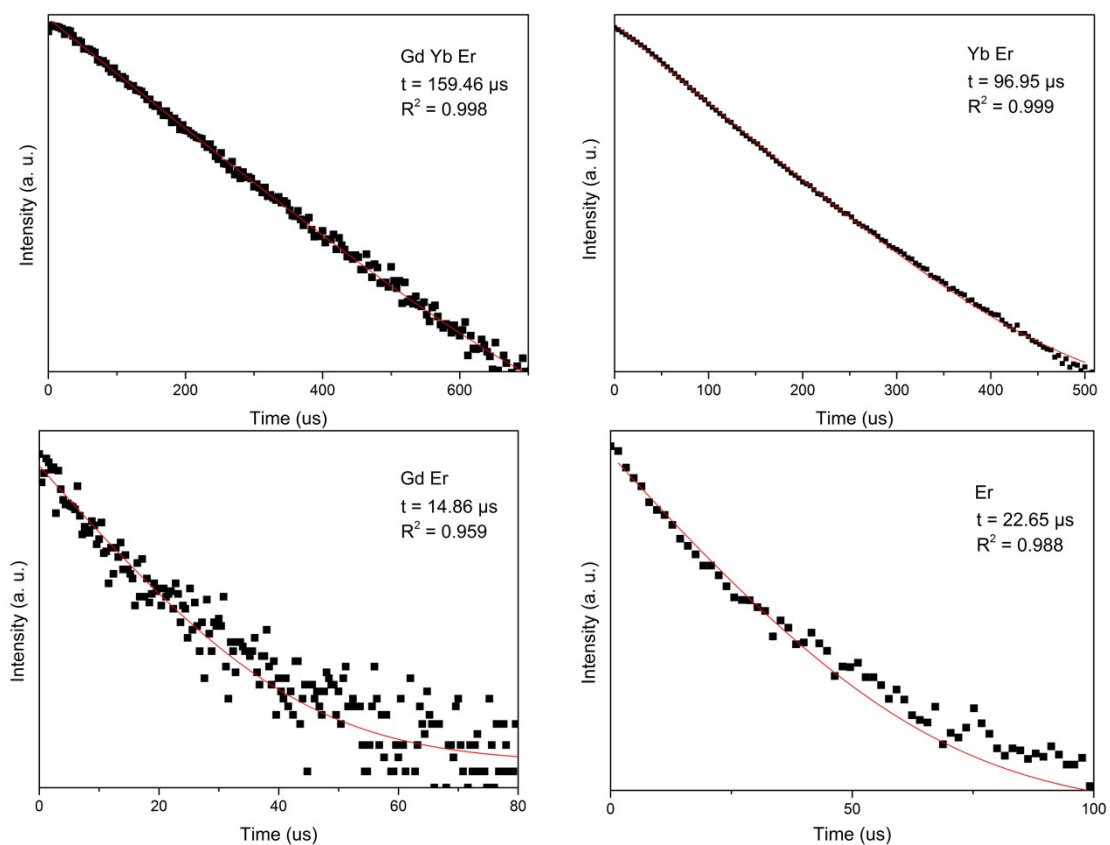


Figure S6. Decay curves of 551 nm emission of the different lanthanide-doped samples.