

Supporting information

Blue to ultraviolet upconversion properties of Pr^{3+} doped $\text{Sr}_2\text{MgSi}_2\text{O}_7$ phosphor

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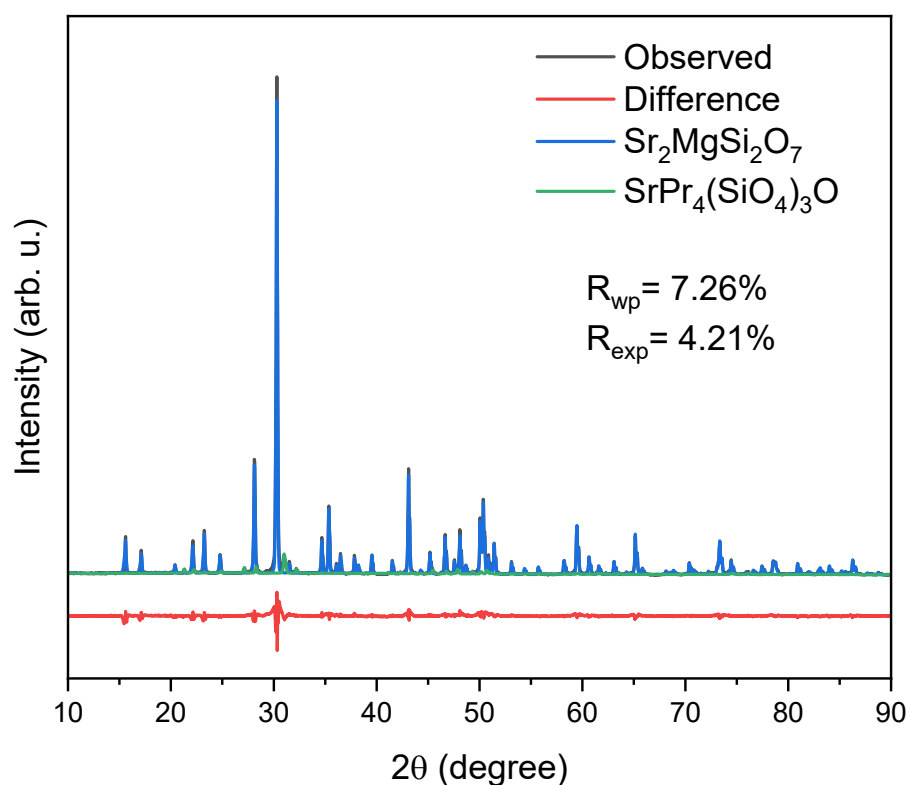


Figure S1. The results of the Rietveld refinement analysis of the $\text{Sr}_2\text{MgSi}_2\text{O}_7:3\%\text{Pr}^{3+}$ XRD powder pattern using Profex software.

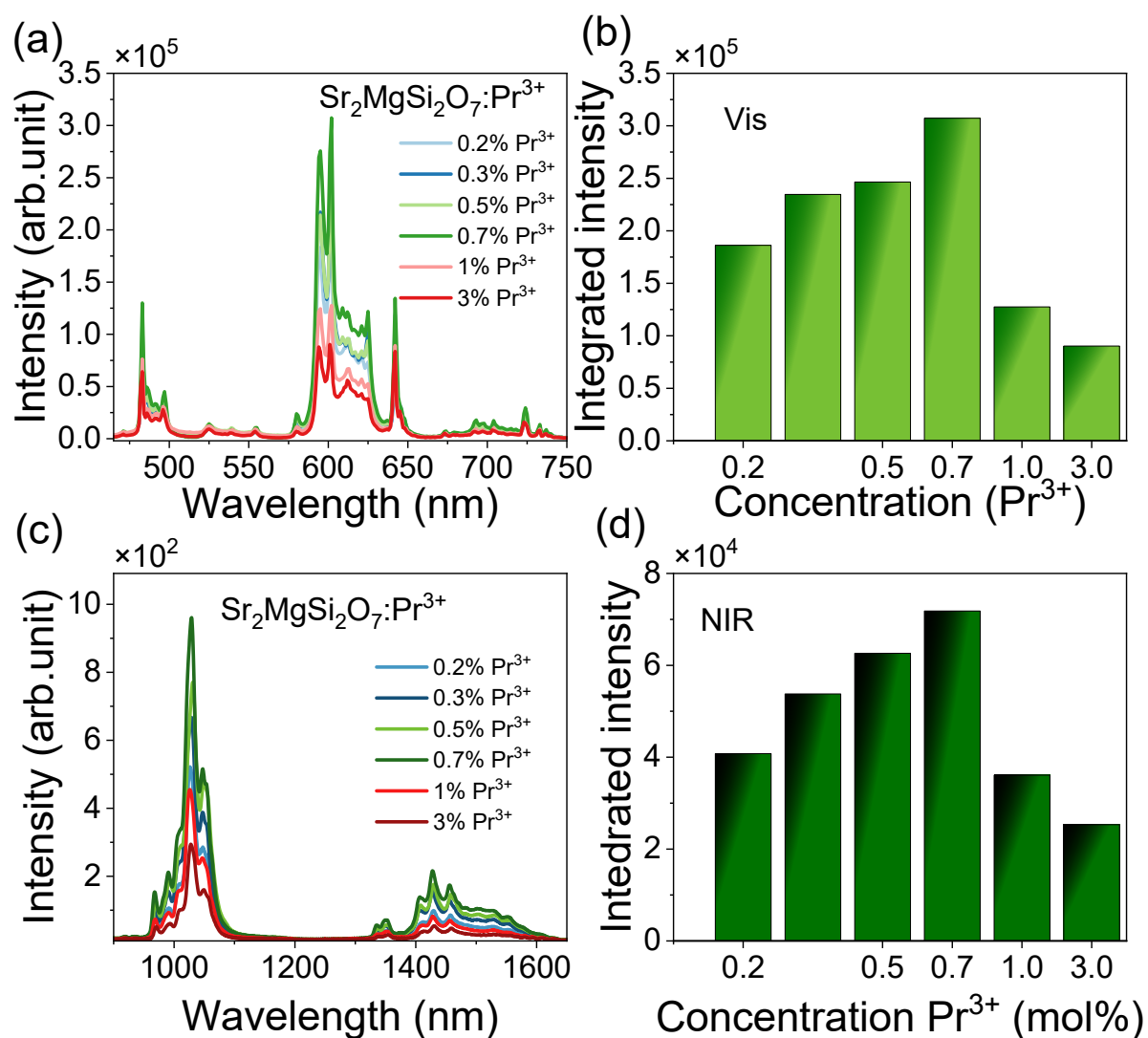


Figure S2. Luminescence spectra in the visible (a) and NIR (c) ranges under 444 nm excitation for different activator concentrations. Integrated luminescence intensity in the visible (b) and NIR (d) ranges as a function of activator concentration.

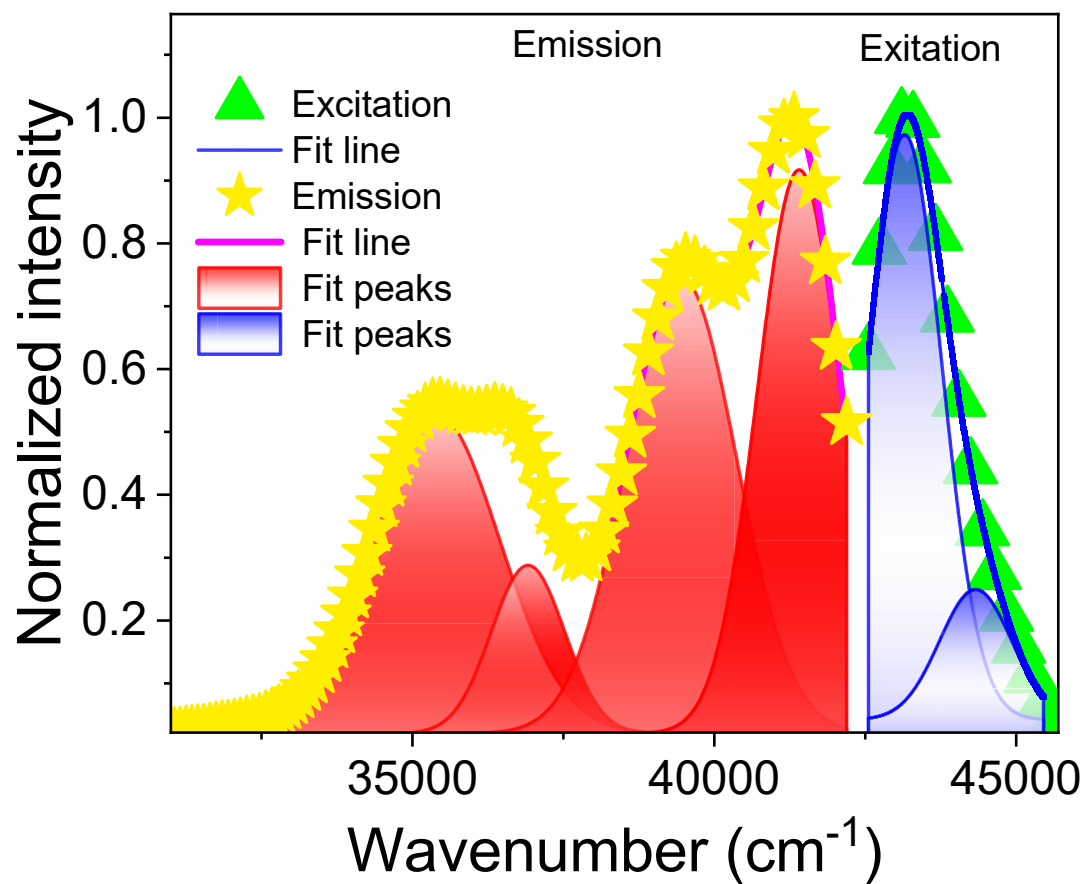


Figure S3. Excitation spectrum of $\text{Sr}_2\text{MgSi}_2\text{O}_7:0.7\%\text{Pr}^{3+}$ crystallites monitoring 243 nm emission (triangles) and emission spectrum excited with 232 nm (stars).

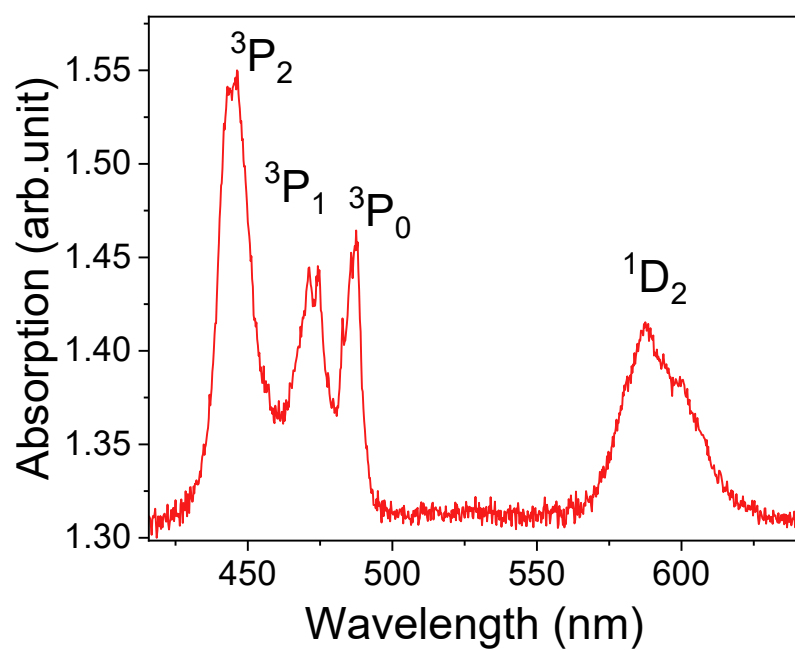


Figure S4. Absorption spectrum of $\text{Sr}_2\text{MgSi}_2\text{O}_7:0.7\%\text{Pr}^{3+}$ crystallites at room temperature.