

SUPPLEMENTARY INFORMATION

Luminescence of BaFBr Nanoplates Codoped with Eu^{2+/3+}

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Table S1. Refined Structural Parameters of BaFBr:Eu^{2+/3+}

<i>a</i> (Å)	4.4977(5)
<i>c</i> (Å)	7.4918(16)
<i>V</i> (Å ³)	151.55(5)
<i>z</i> Ba	0.1944(4)
<i>z</i> Br	0.6474(7)
Ba–F (Å)	2.6793(17) (×4)
Ba–Br (Å)	3.394(3) (×4), 3.394(7) (×1)

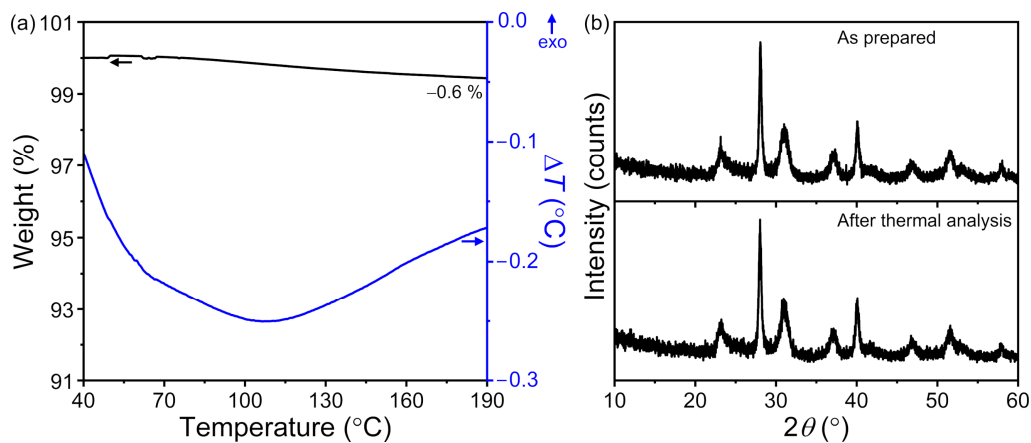


Figure S1. (a) Thermogravimetric (TGA) and differential thermal analysis (DTA) of BaFBr:Eu^{2+/3+}. Total weight loss is indicated. (b) PXRD patterns of BaFBr:Eu^{2+/3+} before and after thermal analysis. Thermal analysis was conducted under flowing nitrogen (100 mL min⁻¹) using an SDT2960 TGA–DTA analyzer (TA Instruments). ≈10 mg of sample were placed in an alumina crucible, held at 35 °C for 10 min, ramped to 190 °C at a rate of 10 °C min⁻¹, and kept at that temperature for 5 min. PXRD patterns were collected in the 10–60° *2θ* range using a step size and time of 0.012° and 0.3 s, respectively.

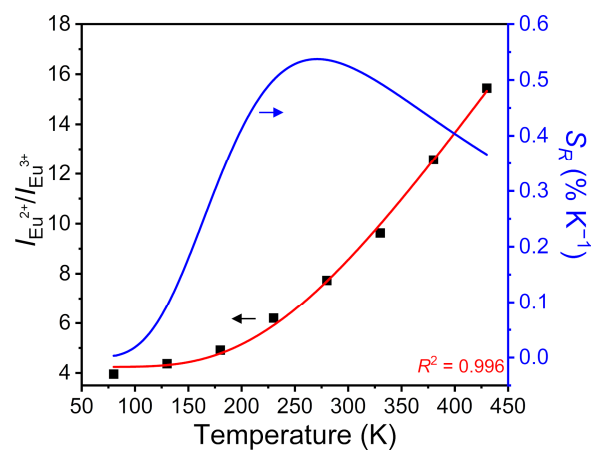


Figure S2. Temperature dependence of the ratio between the integrated intensities of the $4f^65d^1$ (1I) \rightarrow $4f^7$ and ${}^5D_0 \rightarrow$ 7F_2 emission bands of Eu^{2+} and Eu^{3+} in $BaFBr:Eu^{2+/3+}$, respectively. An exponential function of the type $A + B \exp(-C/T)$ (solid red curve) was fit to experimental ratios (solid black squares), yielding $A = 4.24(16)$, $B = 97.8(12.6)$, and $C = 936(55)$ K as fit parameters and $R^2 = 0.996$ as fit residual. This function was used to compute the relative temperature sensitivity S_R (solid blue curve).

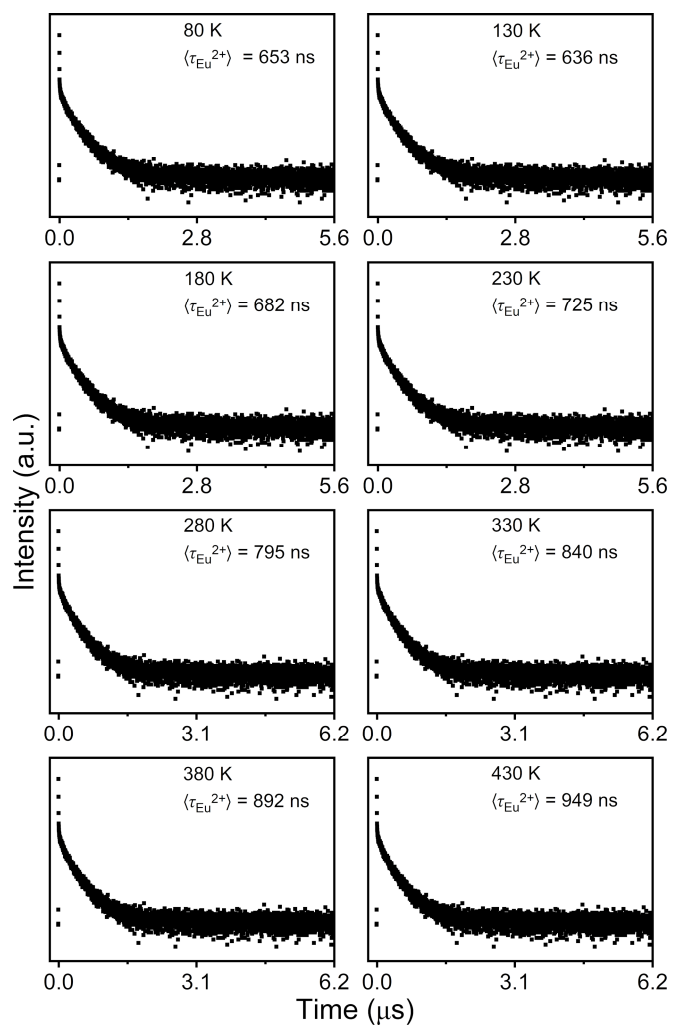


Figure S3. Variable-temperature luminescence decays of Eu^{2+} in $\text{BaFBr:Eu}^{2+/3+}$. Decays were excited at 260 nm and monitored at 392 nm. Intensity-weighted average lifetimes ($\langle\tau_{\text{Eu}^{2+}}\rangle$) are given. Decays are plotted in logarithmic scale.