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2 Table S1 Tb³⁺ (Excitation: 1-5, Emission: 6-10) intraconfigurational transitions with their
3 respective peak wavelength and wavenumber

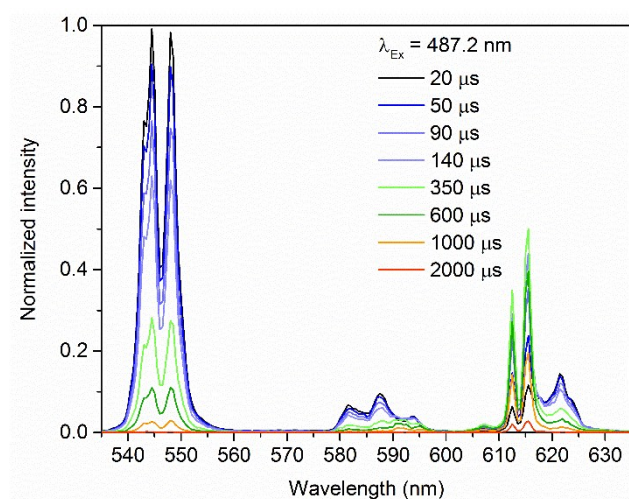
4

Transitions	Wavelength (nm)	Wavenumber (x 10 ³ cm ⁻¹)
⁷ F ₆ → ⁵ D ₄	487.0	20.5
⁷ F ₆ → ⁵ D ₃	378.5	26.4
⁷ F ₆ → ⁵ L ₁₀	370.0	27.0
⁷ F ₆ → ⁵ D ₂	359.5	27.9
⁷ F ₆ → ⁵ L ₈ , ⁵ G ₄ , ⁵ L ₇	353.5-349.0	28.3-28.7
⁵ D ₄ → ⁷ F ₅	545.0	18.3
⁵ D ₄ → ⁷ F ₄	582.0	17.2
⁵ D ₄ → ⁷ F ₃	618.0	16.2
⁵ D ₄ → ⁷ F ₂	645.0	15.5
⁵ D ₄ → ⁷ F ₁	672.0	14.9

1 **Table S2** Eu³⁺ (Excitation: 11-28, Emission: 29-31) intraconfigurational transitions with their
2 respective peak wavelength and wavenumber

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4 Transitions	Wavelength (nm)	Wavenumber (x 10 ³ cm ⁻¹)
⁷ F ₁ → ⁵ D ₀	591.5	16.9
⁷ F ₀ → ⁵ D ₀	579.5	17.3
⁷ F ₂ → ⁵ D ₁	553.0	18.1
⁷ F ₁ → ⁵ D ₁	535.5	18.7
⁷ F ₀ → ⁵ D ₁	526.5	19.0
⁷ F ₃ → ⁵ D ₂	514.5	19.4
⁷ F ₂ → ⁵ D ₂	487.0	20.5
⁷ F ₁ → ⁵ D ₂	473.5	21.1
⁷ F ₀ → ⁵ D ₂	465.0	21.5
⁷ F ₃ → ⁵ D ₃	448.0	22.3
⁷ F ₂ → ⁵ D ₃	426.0	23.5
⁷ F ₁ → ⁵ D ₃	416.0	24.0
⁷ F ₀ → ⁵ D ₃	410.5	24.3
⁷ F ₀ → ⁵ L ₆	397.0	25.2
⁷ F ₀ → ⁵ L ₇	394.0	25.4
⁷ F ₀ → ⁵ L ₈ , ⁵ L ₉ , ⁵ L ₁₀	376.5	26.6
⁷ F ₁ → ⁵ D ₄	367.0	27.2
⁷ F ₀ → ⁵ D ₄	362.5	27.6
⁵ D ₀ → ⁷ F ₂	614.8	16.3
⁵ D ₀ → ⁷ F ₃	654.0	15.3
⁵ D ₀ → ⁷ F ₄	701.0	14.3



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2 Figure S3 Time resolved emission spectra of $\text{Li}_3\text{Ba}_2(\text{Tb}_{0.999}\text{Eu}_{0.001})_3(\text{MoO}_4)_8$ upon 487.2 nm
 3 excitation