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Supplemental Information

A New Intrinsic Tunable Phosphor: Polymorphism and Structure Specific Blue-White Luminescence in $K_3YSi_2O_7$

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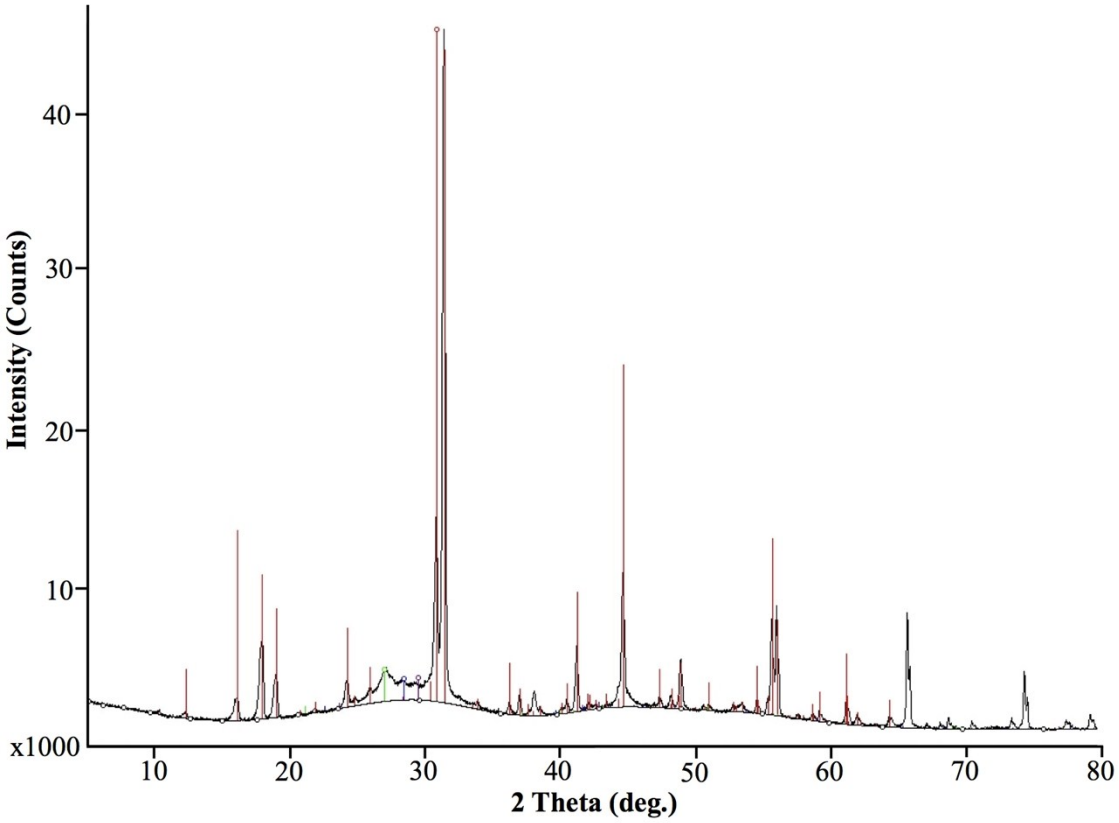

Figure S-1. PXRD pattern of $K_3YSi_2O_7$ (**2**). The observed pattern is in good agreement with the calculated pattern with a small amount of three types of SiO_2. The calculated pattern is the red overlay, and the green, blue, and purple overlays are SiO_2.

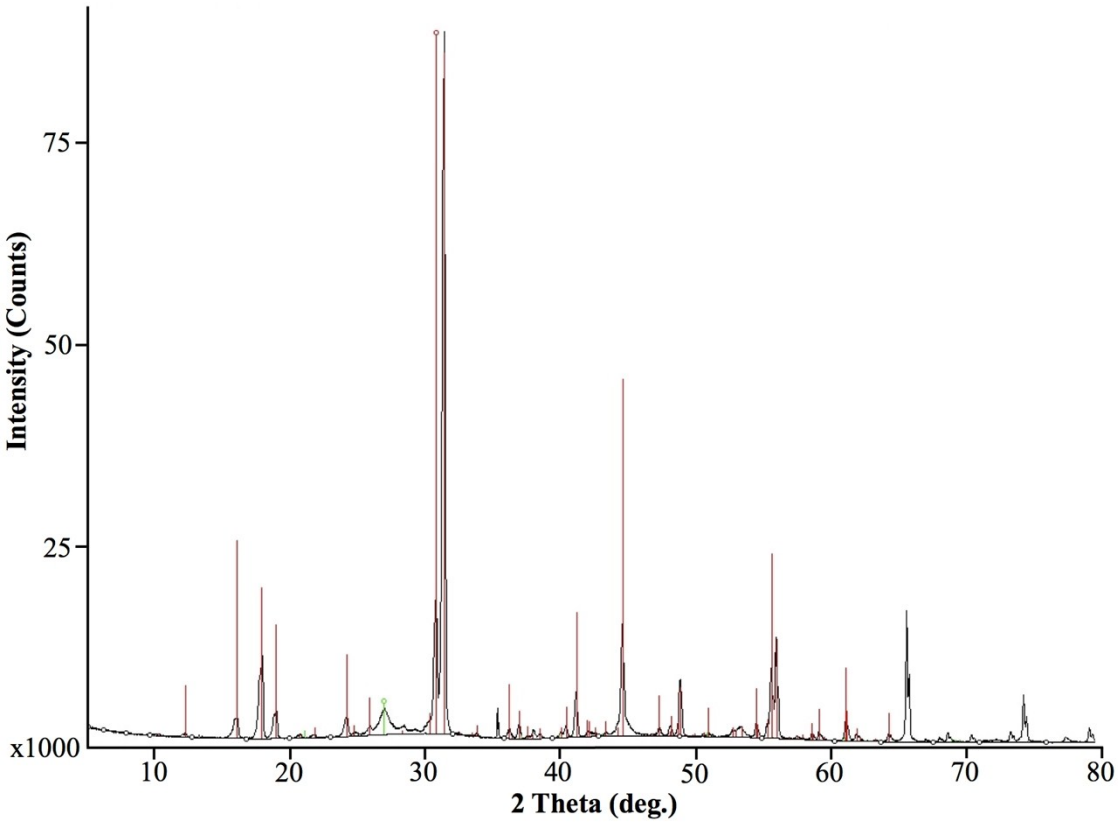

Figure S-2. PXRD pattern of $K_3YSi_2O_7$ doped with 10 % Dy and 0.1 % Eu (**2-Dy,Eu**). The observed pattern is in good agreement with the calculated pattern with a small amount of SiO_2. The calculated pattern is shown in red and the SiO_2 is shown in green.

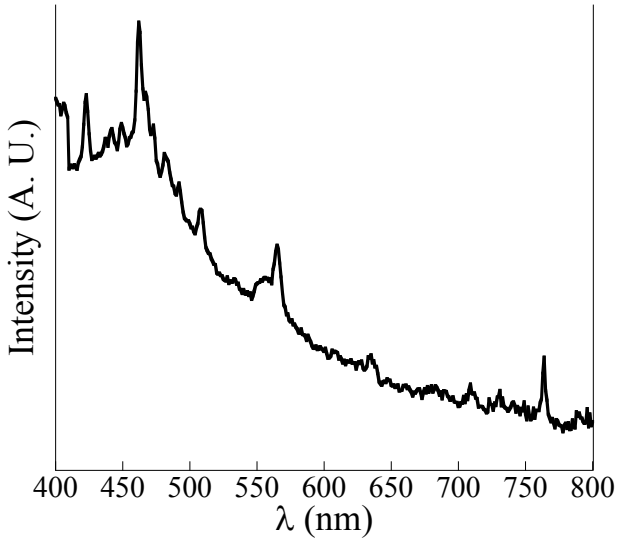

Figure S-3. Emission spectrum used for the CIE analysis at an excitation λ of 254 nm for polymorph **2**.

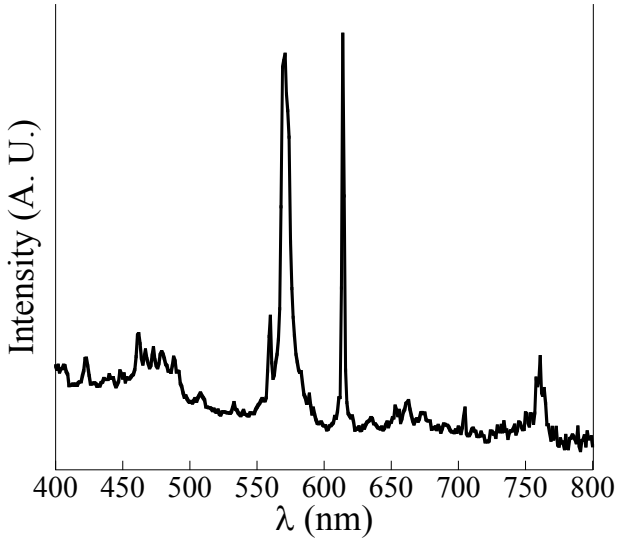

Figure S-4. Emission spectrum used for the CIE analysis at an excitation λ of 254 nm of $K_3YSi_2O_7$:10%Dy,0.1%Eu (**2-Dy,Eu**).

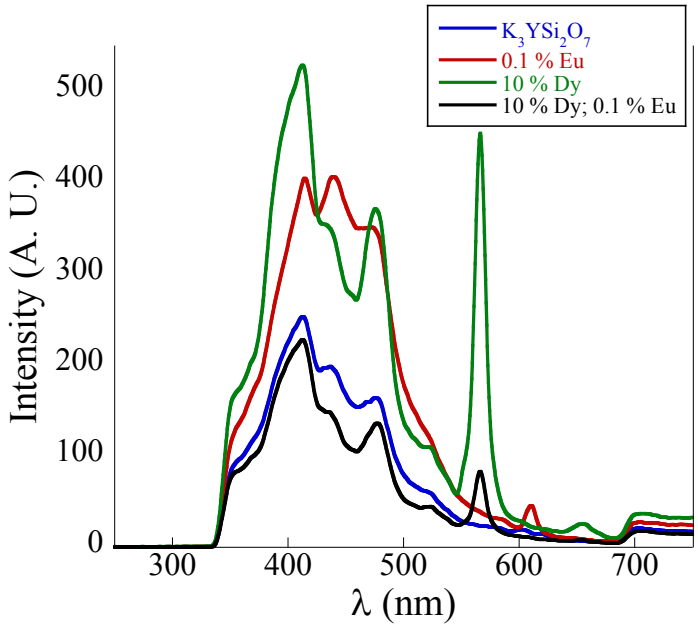

Figure S-5. Emission spectra of polymorph **2**, **2-Dy**, **2-Eu**, and **2-Dy,Eu** at an excitation λ of 280 nm. The cut off at ~350 nm is due to the use of a filter to prevent the excitation wavelength to enter the detector.

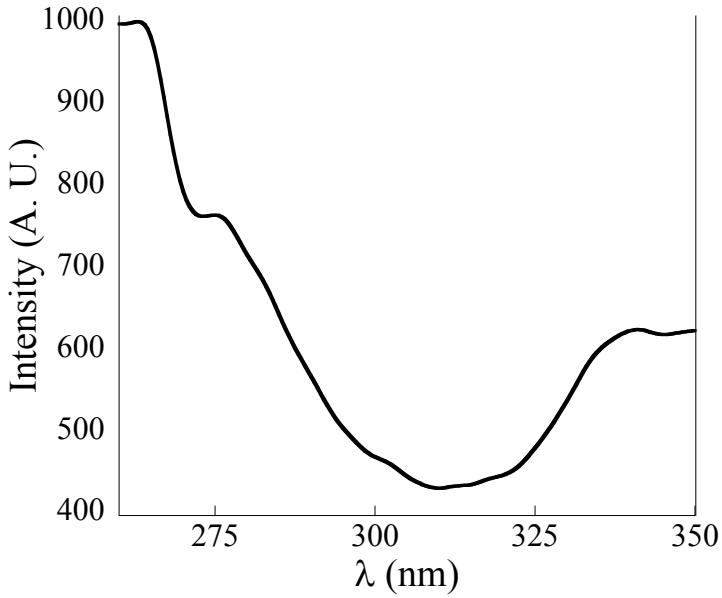

Figure S-6. Excitation spectra of **2-Dy,Eu** at an emission λ of 401 nm.