

Supporting Information

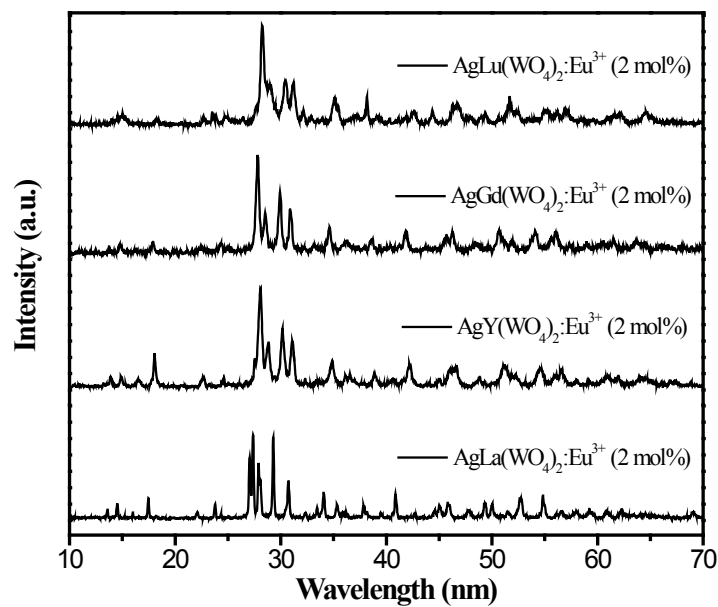


Figure S1 The XRD patterns of AgRE(WO₄)₂:Eu³⁺ (2 mol %) (RE = La, Y, Gd, Lu) samples

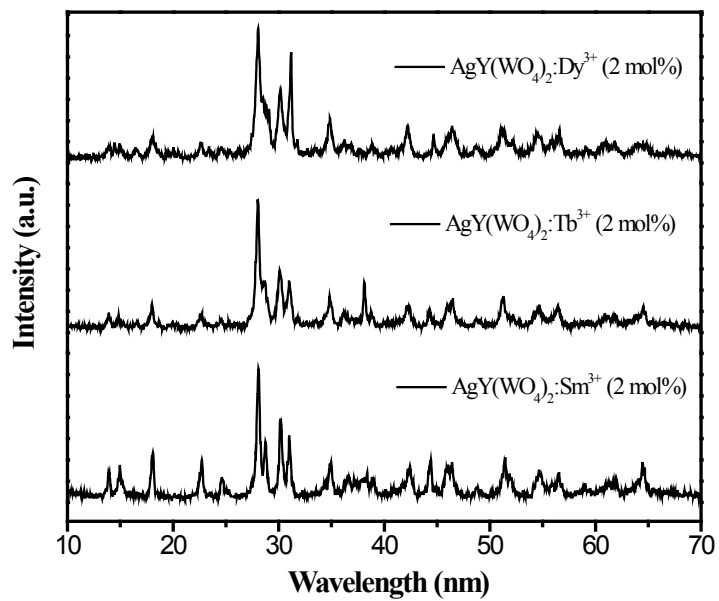


Figure S2 The XRD patterns of $\text{AgY}(\text{WO}_4)_2:\text{Ln}^{3+}$ (2 mol %) (Ln = Sm, Tb, Dy) samples

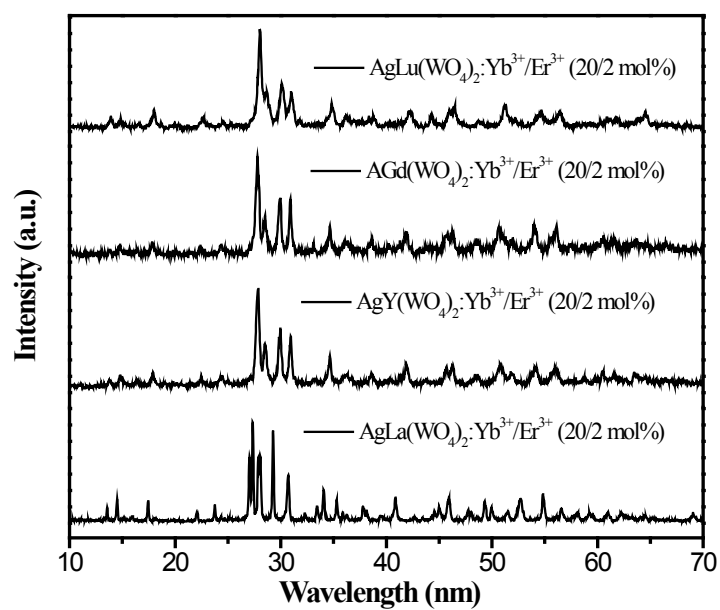


Figure S3 The XRD patterns of AgRE(WO₄)₂:Yb³⁺/Er³⁺ (2 mol %) (RE = La, Y, Gd, Lu) samples

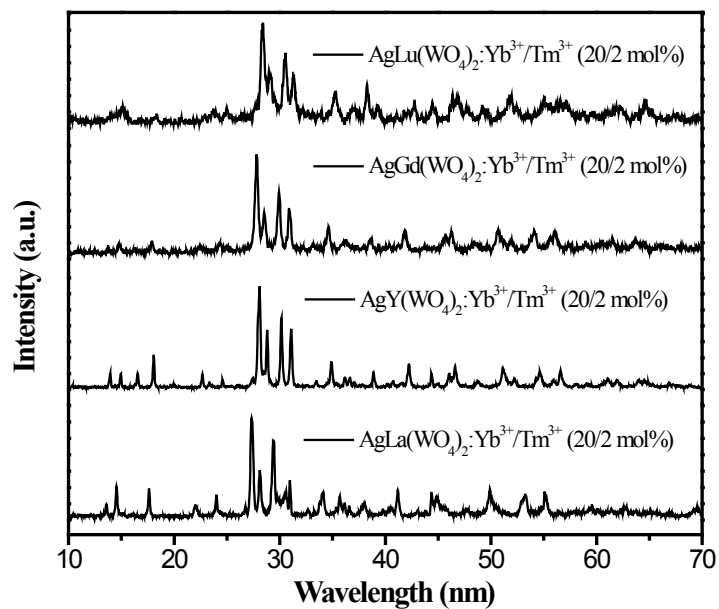


Figure S4 The XRD patterns of $\text{AgRE}(\text{WO}_4)_2:\text{Yb}^{3+}/\text{Tm}^{3+}$ (2 mol %) (RE = La, Y, Gd, Lu) samples

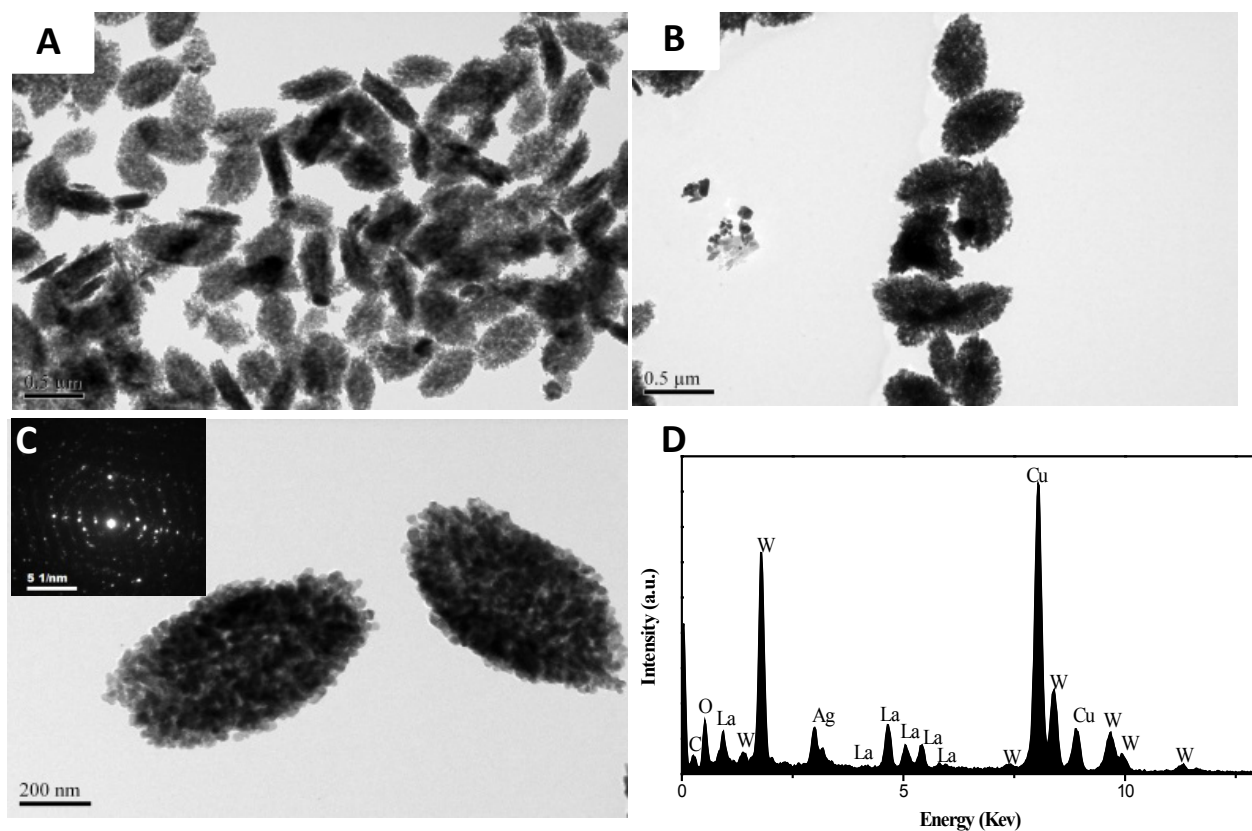


Figure S5 TEM images, SAED and EDS patterns of the $\text{AgLa}(\text{WO}_4)_2$. (A)-(C) TEM images with different magnification of the hierarchical ellipsoids (the inset of C is the corresponding SAED pattern); (D) EDS spectrum.

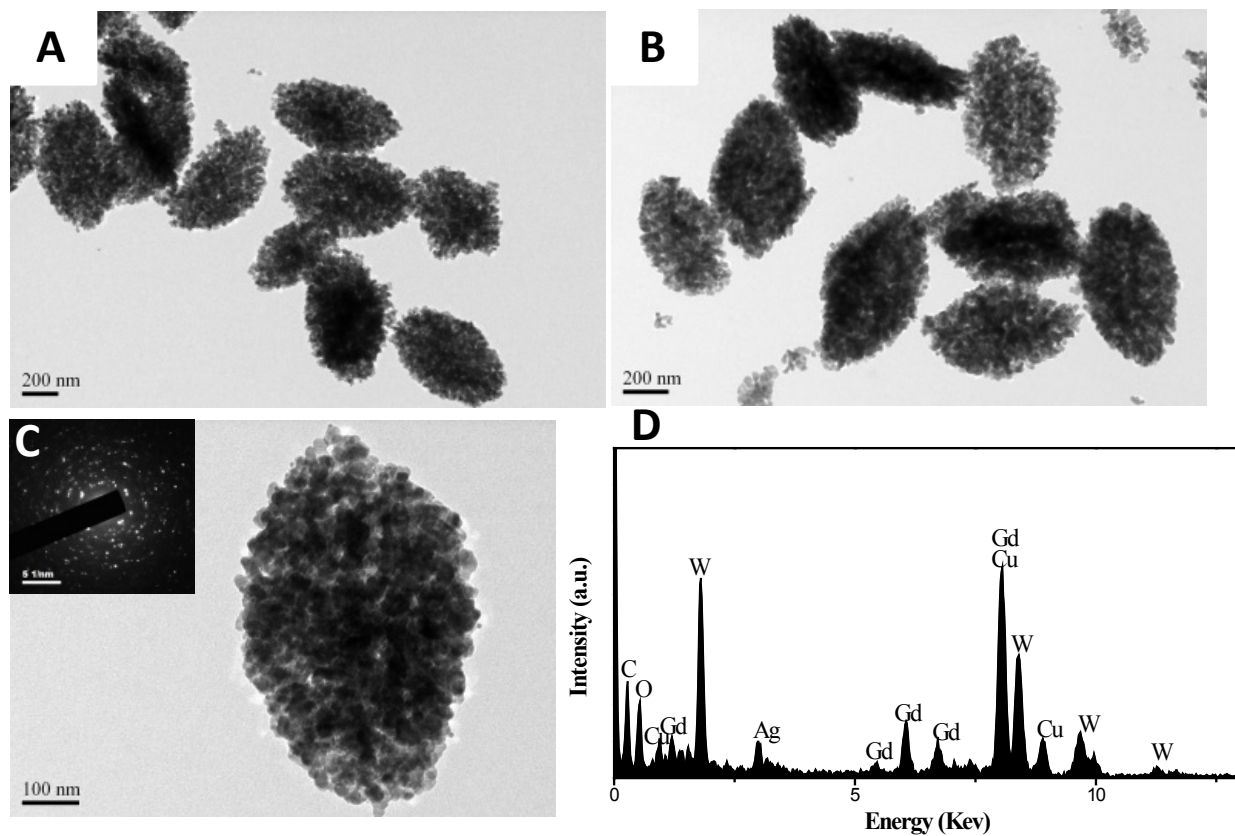


Figure S6 TEM images, SAED and EDS patterns of the $\text{AgGd}(\text{WO}_4)_2:\text{Eu}^{3+}$. (A), (B) Typical TEM images of the product; (C) A detailed view of an individual hierarchical ellipsoid (the inset is the corresponding SEAD pattern); (D) EDS spectrum.

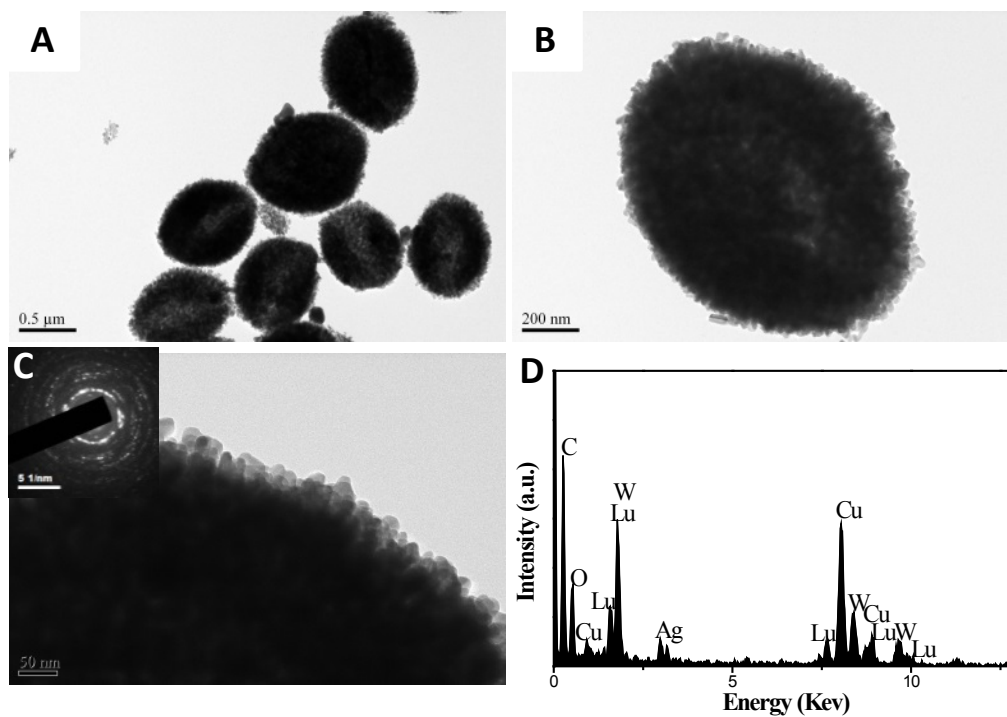


Figure S7 TEM images, SAED and EDS patterns of $\text{AgLu}(\text{WO}_4)_2$. (A) An representative TEM image of the as-obtained hierarchical architectures; (B) A detailed view of an individual sphere; (C) TEM image of the fringe of an individual microsphere (the inset is the SEAD pattern performed on the microcrystal shown in B); (D) The EDS pattern taken from (C).

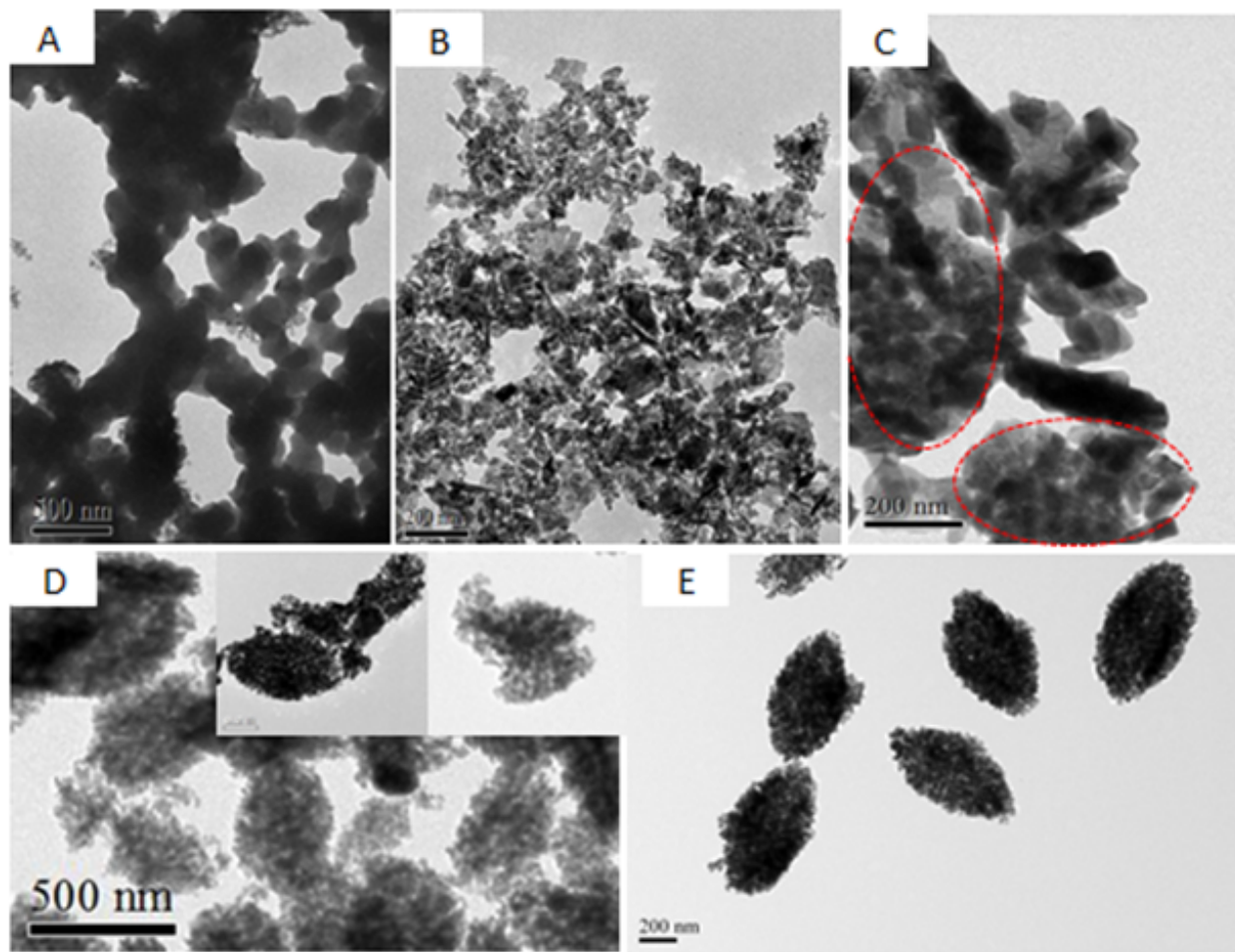


Figure S8 TEM images of $\text{AgY}(\text{WO}_4)_2$ collected at different reaction time in PVP-presence system: (A) Before hydrothermal treatment, (B) 2 hrs, (C) 4 hrs, (D) 8 hrs, (E) 48 hrs.

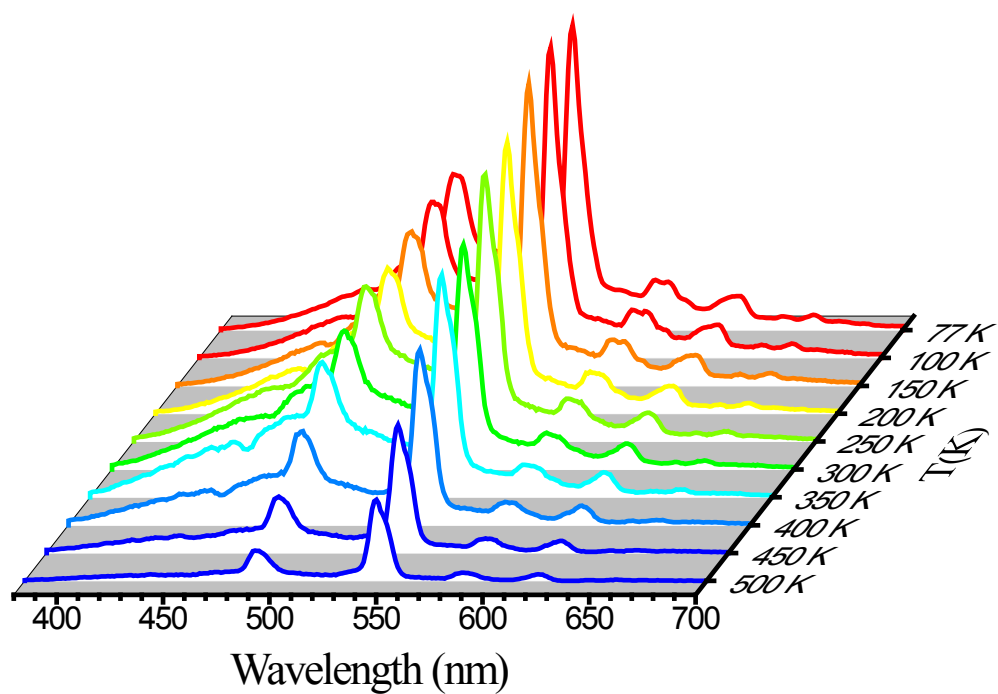


Figure S9. Temperature-dependent emission spectra ($\lambda_{\text{ex}} = 266 \text{ nm}$) of AgY(WO₄)₂:Tb (2 mol%).

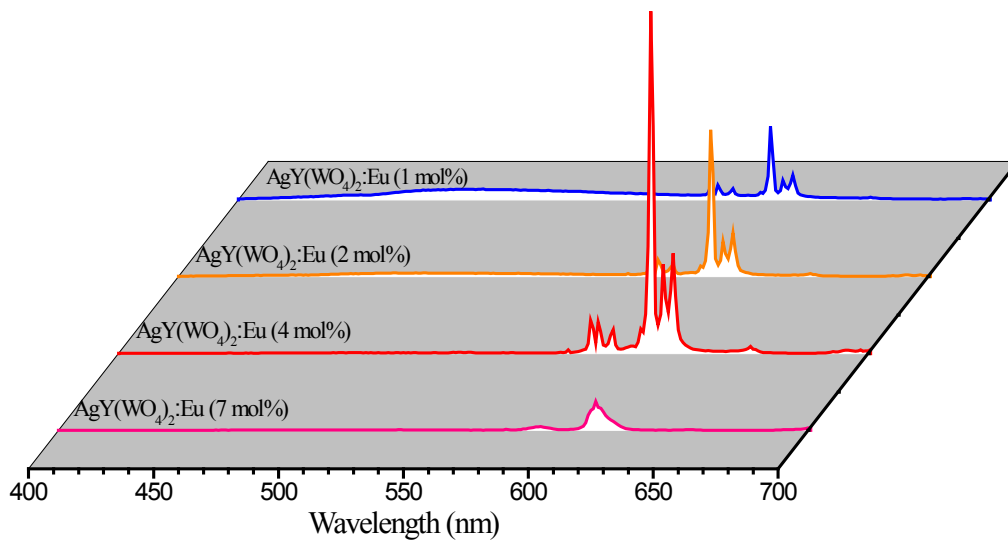


Figure S10 The emission spectra ($\lambda_{\text{ex}} = 278 \text{ nm}$) of $\text{AgY}(\text{WO}_4)_2:\text{Eu}^{3+}$ with various Eu^{3+} doping levels.

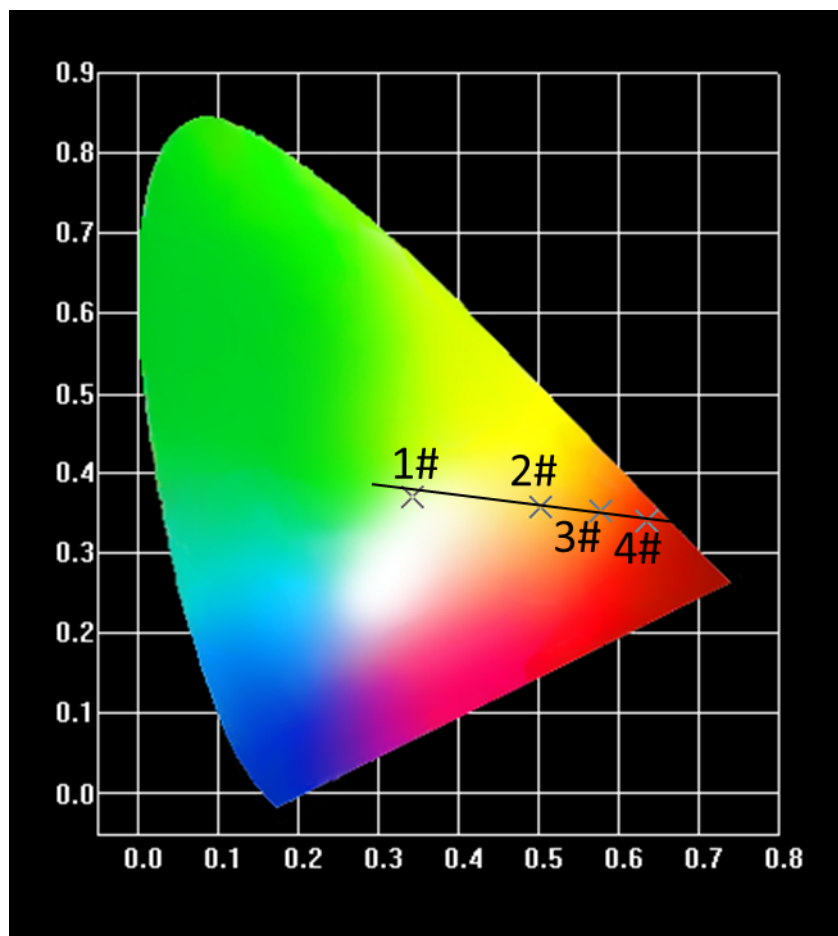


Figure S11 The CIE chromaticity diagram of AgY(WO₄)₂:Eu³⁺ (x mol %). (1) x = 1; (2) x = 2; (3) x = 4; (4) x = 7.