

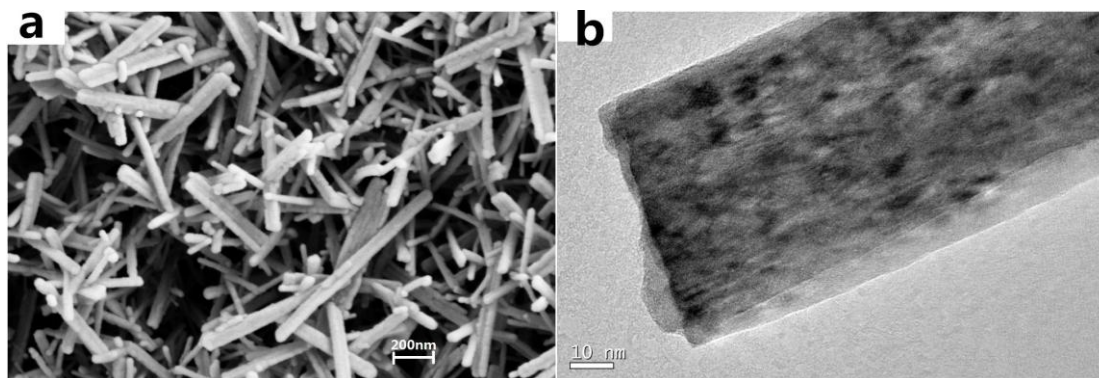
Electronic Supplementary Information

Novel Rod- $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ @ $0.01\text{YVO}_4:\text{Eu}^{3+}$ with Open Core/Shell Nanostructure and “Off-and-On” Fluorescent Performance

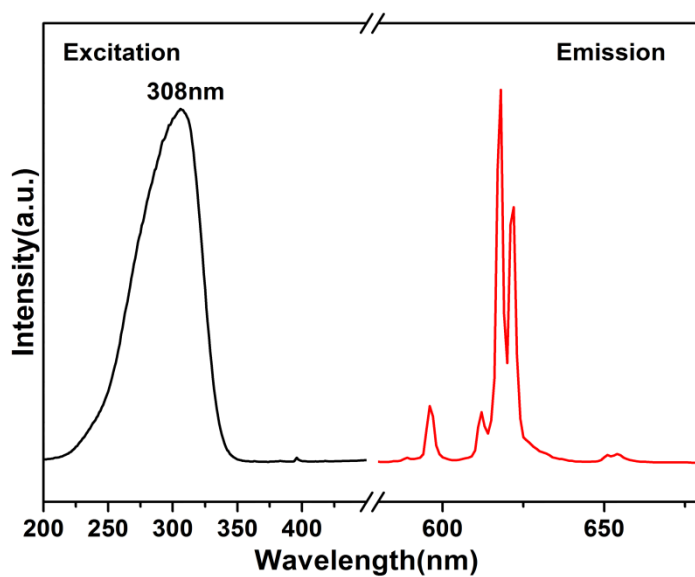
Nianchen Han,^a Xueshan Gao,^a Guang Lu,^a Daiwen Zeng,^a Xia Wan,^a Shaolong Tie,^{*a} and Sheng Lan^{*b}

^a College of Chemistry & Environment, South China Normal University; Guangzhou Key Laboratory of Materials for Energy Conversion and Storage, Guangzhou, Guangdong, 510006, China.

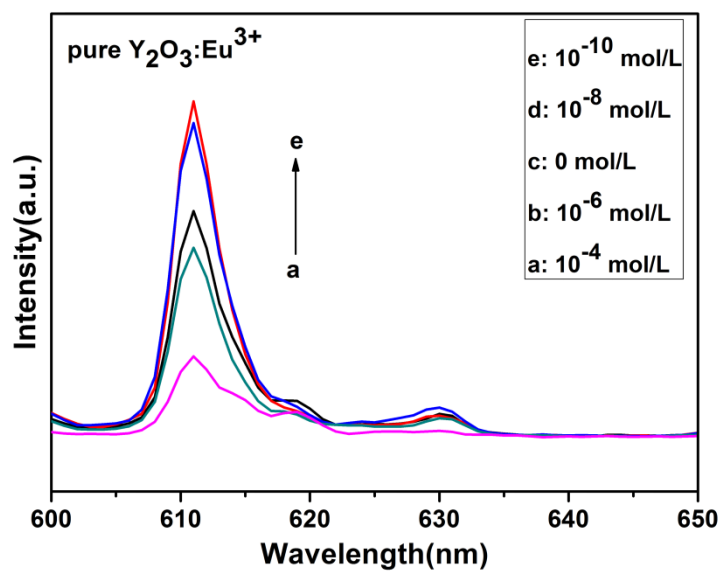
^b College of Information & Optoelectronic Science and Engineering, South China Normal University; Guangdong Provincial Key Laboratory of Nanophotonic Functional Materials and Devices, Guangzhou, 510006, China.



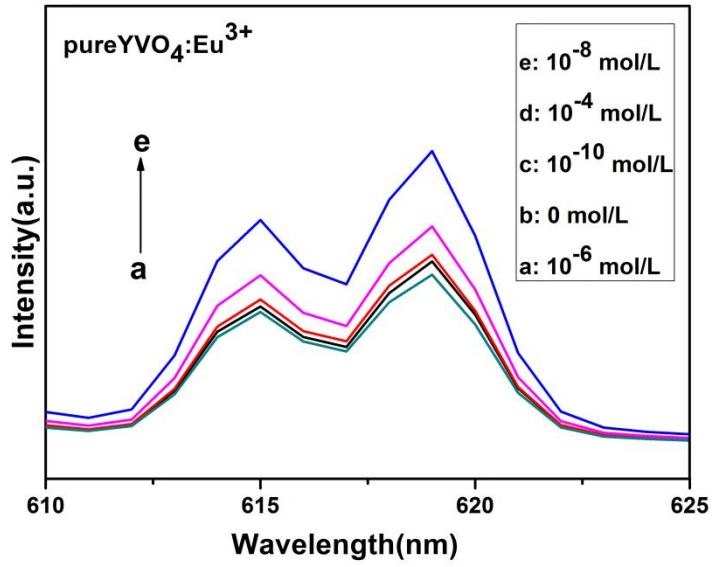
S1. SEM and HR-TEM images of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}@0.4\text{YVO}_4:\text{Eu}^{3+}$.



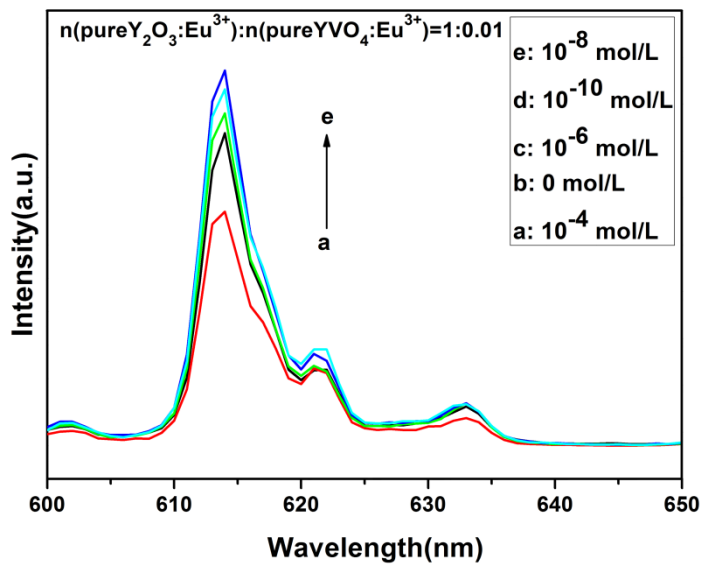
S2. Excitation (left) and emission (right) spectra of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}@0.4\text{YVO}_4:\text{Eu}^{3+}$.



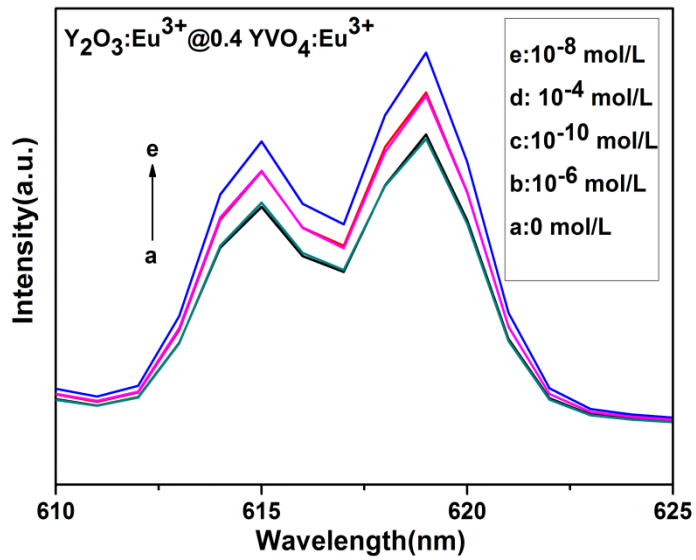
S3. Fluorescence response of pure $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ in the presence of increasing concentration of Cu^{2+} .



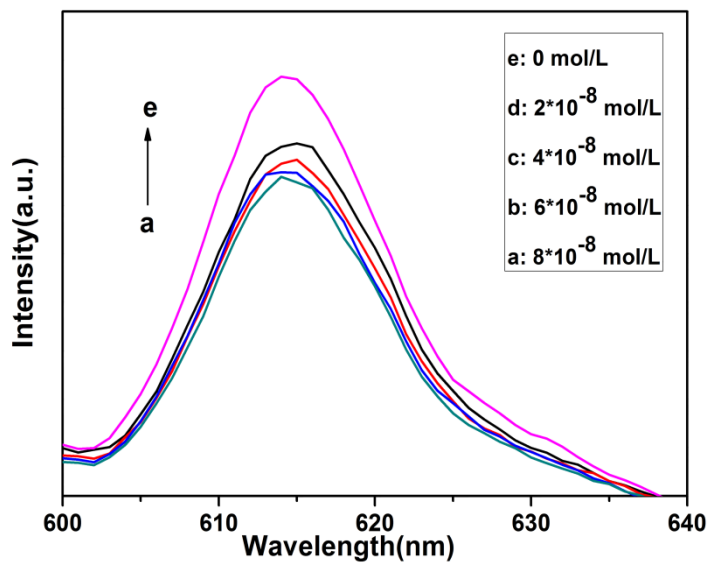
S4. Fluorescence response of pure $\text{YVO}_4:\text{Eu}^{3+}$ in the presence of increasing concentration of Cu^{2+} .



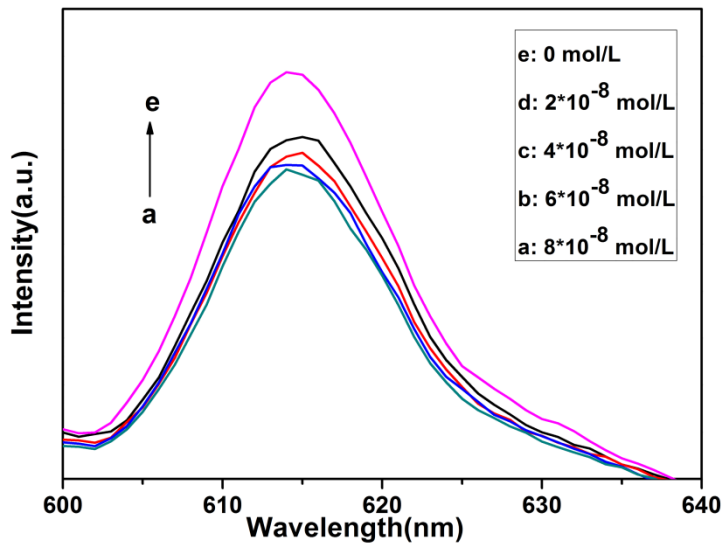
S5. Fluorescence response of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ and $0.01\text{YVO}_4:\text{Eu}^{3+}$ in the presence of increasing concentration of Cu^{2+} .



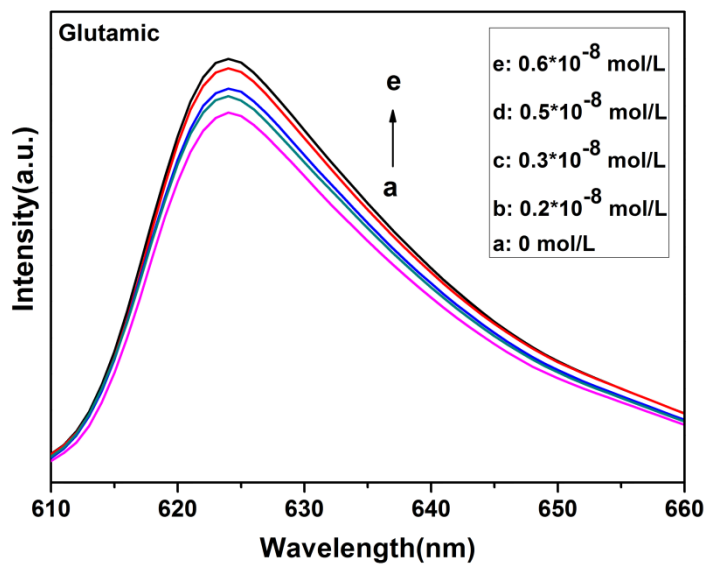
S6. Fluorescence response of Y₂O₃:Eu³⁺@ 0.4YVO₄:Eu³⁺ in the presence of increasing concentration of Cu²⁺.



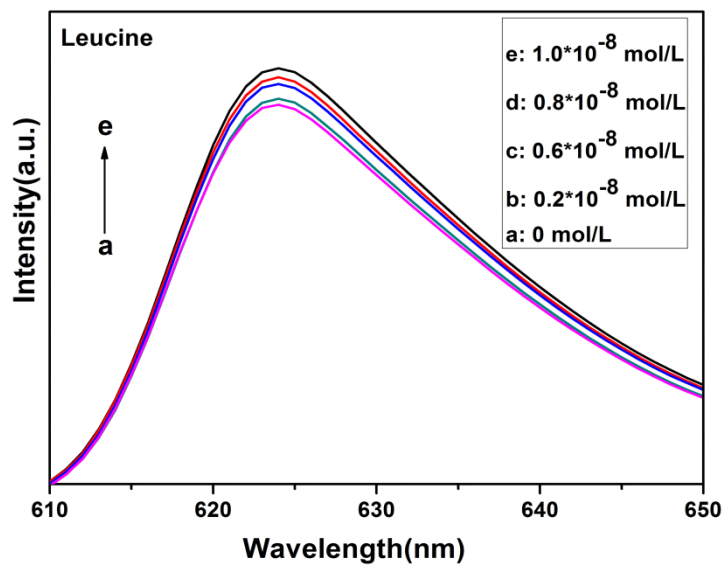
S7. Fluorescence response of rod-Y₂O₃:Eu³⁺@ 0.01YVO₄:Eu³⁺ in the presence of increasing concentration of Cu²⁺ (2 , 4 , 6 and 8* 10⁻⁸ mol/L).



S8 Fluorescence response of rod- $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ @ $0.01\text{YVO}_4:\text{Eu}^{3+}$ in the presence of increasing concentration of Cu^{2+} (2 , 4 , 6 and 8×10^{-10} mol/L).



S9. Fluorescence response of rod- $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ @ $0.01\text{YVO}_4:\text{Eu}^{3+}-\text{Cu}^{2+}$ (10^{-8} mol/L) in the presence of increasing concentration of glutamic.



S10. Fluorescence response of rod-Y₂O₃:Eu³⁺@0.01YVO₄:Eu³⁺-Cu²⁺ (10⁻⁸ mol/L) in the presence of increasing concentration of leucine.