

Electronic Supplementary Information

Deposition of luminescence $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ on ferromagnetic mesoporous $\text{CoFe}_2\text{O}_4@m\text{SiO}_2$ nanocomposites

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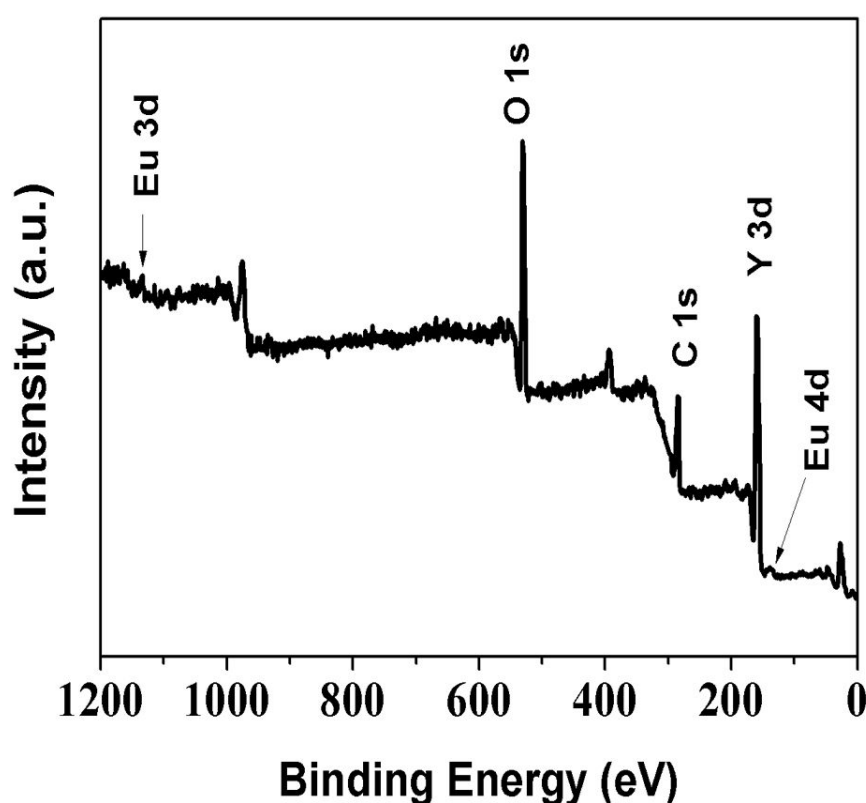


Fig. S1 XPS analysis of $\text{CoFe}_2\text{O}_4@m\text{SiO}_2@Y_2\text{O}_3:\text{Eu}^{3+}$ composites

The binding energy of Fe, Co, and Si can't be detected in the XPS.

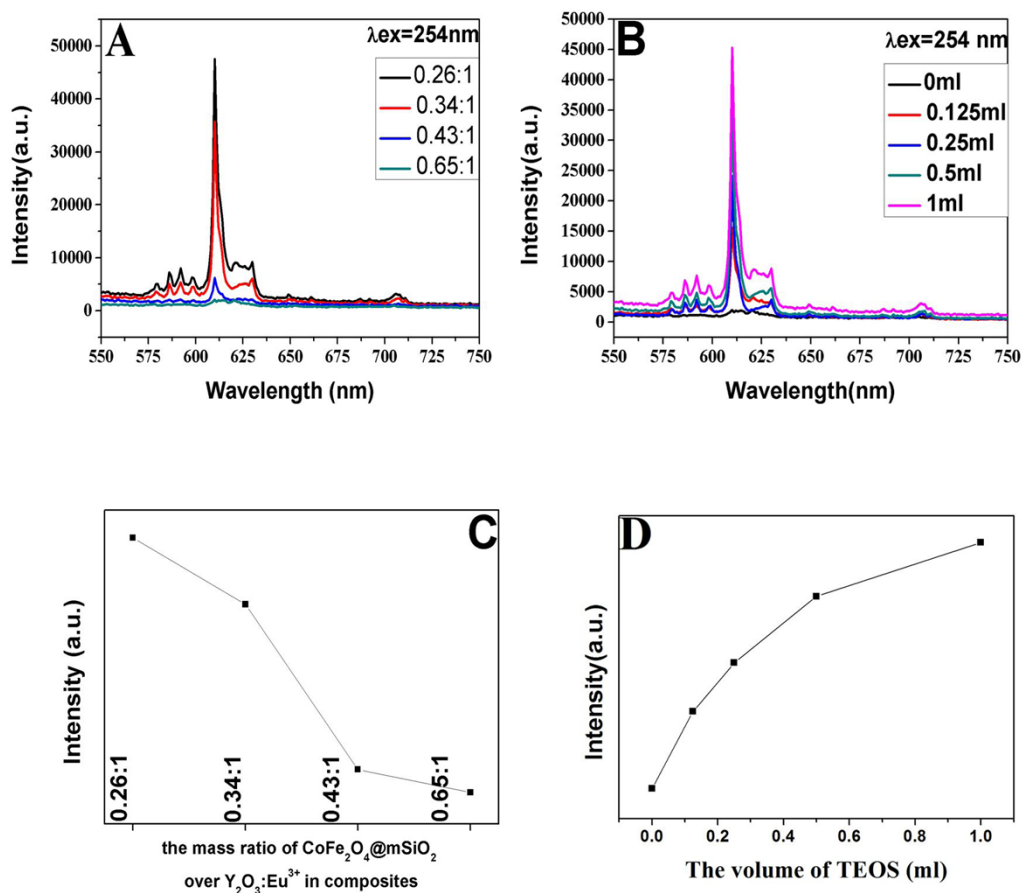


Fig. S2 The emission spectra of the composites (A) with different mass ratio of $\text{CoFe}_2\text{O}_4@m\text{SiO}_2$ over $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ in composites and (B) with different volume of TEOS and (C, D) the corresponding strongest emission peaks curve

Fig. S2A and C revealed that that the luminescent intensities declined with increasing mass ratio of $\text{CoFe}_2\text{O}_4@m\text{SiO}_2$ over $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$, which can be explained that more surface of $\text{Y}_2\text{O}_3:\text{Eu}^{3+}$ will be contacted with the ferromagnetic $\text{CoFe}_2\text{O}_4@m\text{SiO}_2$. When the ratio is 0.65:1, weak luminescent intensity is observed. Fig. S2B and D indicate that the luminescent intensities of the composites decreased dramatically with the decrease of the volume of TEOS.