

**[Supporting Information]**

**Influence of citrate on phase transformation and photoluminescence  
properties in LaPO<sub>4</sub> and LaPO<sub>4</sub>: Eu**

An-Ping Wu,<sup>a</sup> He Bai,<sup>a</sup> Jin-Rong Bao,<sup>\*a</sup> Kui-Suo Yang,<sup>a</sup> Li-Na Feng,<sup>a</sup> Yang-Yang Ma,<sup>a</sup> Yan Qiao,<sup>a</sup>

Wen-Xian Li,<sup>a</sup> Ying Liu,<sup>a</sup> and Xiao-Wei Zhu<sup>\*b</sup>

a.School of Chemistry and Chemical Engineering, Inner Mongolia University, Hohhot 010021, China,

b.College of Pharmacology, Inner Mongolia Medical University, Hohhot 010059, China

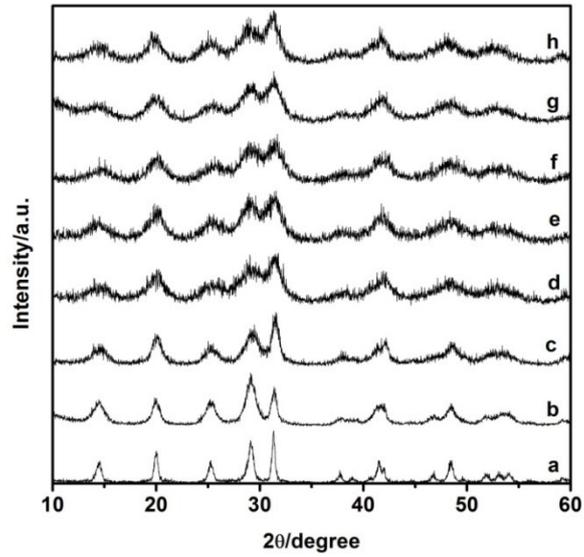


Fig. S1 XRD pattern of the CePO<sub>4</sub> prepared with different citrate concentration at 100 °C: (a) 0, (b) 0.2, (c) 0.5, (d) 1.0, (e) 1.2, (f) 1.5 (g) 2.0, (h) 3.0 mmol.

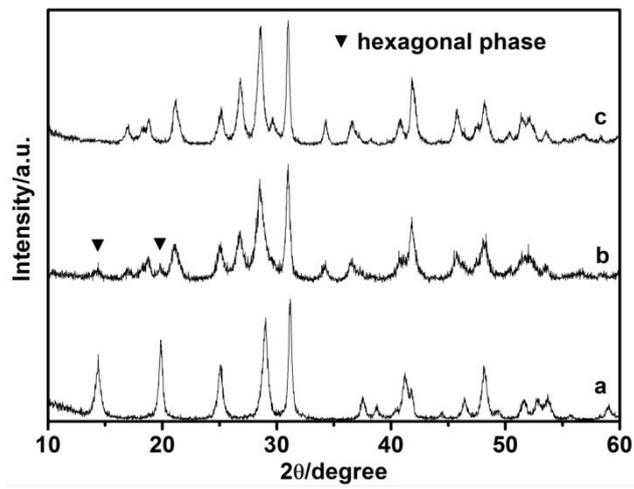


Fig. S2. The XRD patterns of the LaPO<sub>4</sub> prepared at different reaction temperatures: (a) 100°C, (b) 150°C, (c) 170 °C.

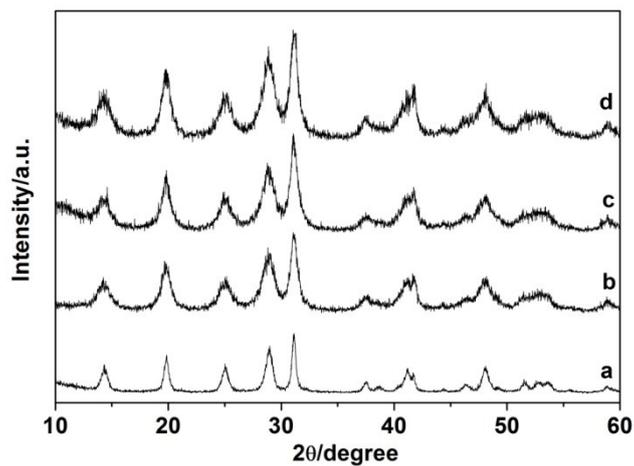


Fig. S3 XRD patterns of the  $\text{LaPO}_4$  prepared with different pH values at 100 °C: (a) pH=1.0, (b) pH=5.0, (c) pH=7.0, (d) pH=9.0.

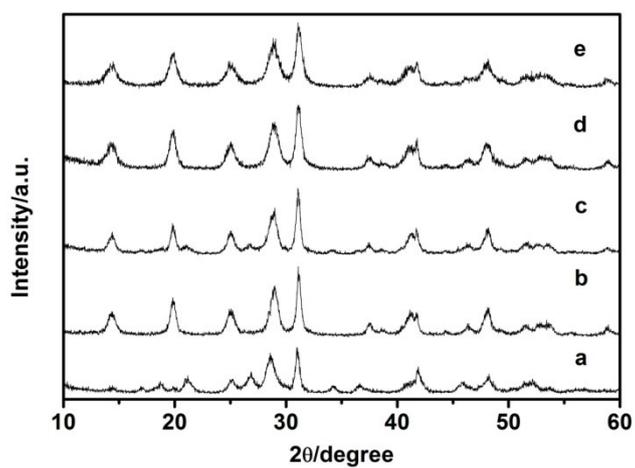


Fig. S4 XRD patterns of the  $\text{LaPO}_4$  prepared with different pH values at 170 °C: (a) pH=1.0, (b) pH=2.0, (c) pH=3.0, (d) pH=5.0, (e) pH=9.0.

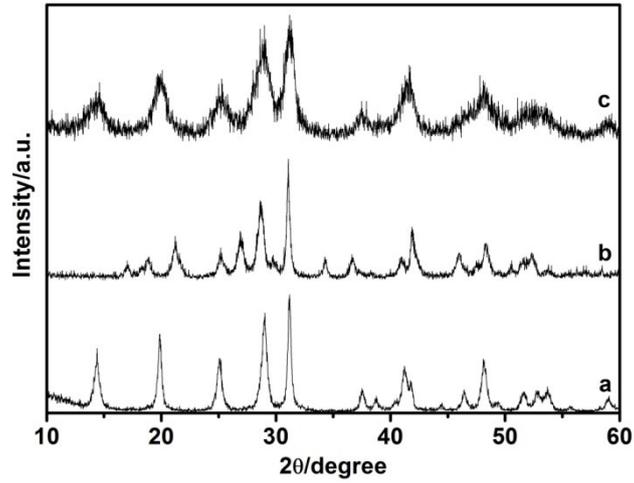


Fig. S5 XRD pattern of the  $\text{LaPO}_4:\text{Eu}$  with different citrate concentration: (a) 0, (b) 0.8, (c) 3.0 mmol.

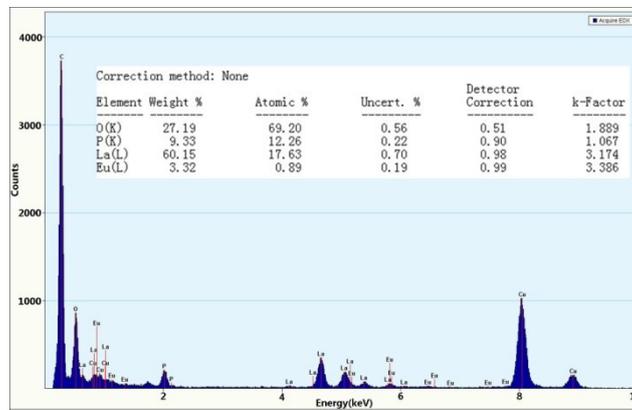


Fig. S6 EDX spectrum of the monoclinic phase  $\text{LaPO}_4:\text{Eu}$  prepared with citrate-induced.

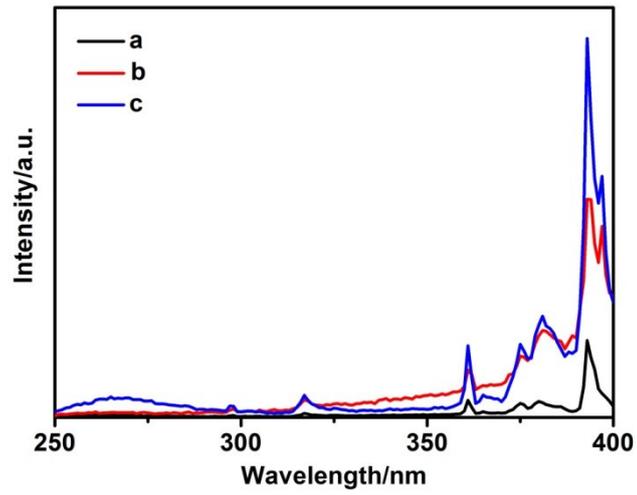


Fig. S7 Excitation spectra of LaPO<sub>4</sub>:Eu with different phase: (a) hexagonal phase prepared without citrate, (b) monoclinic phase prepared with citrate-induced, (c) hexagonal phase prepared with citrate-induced.

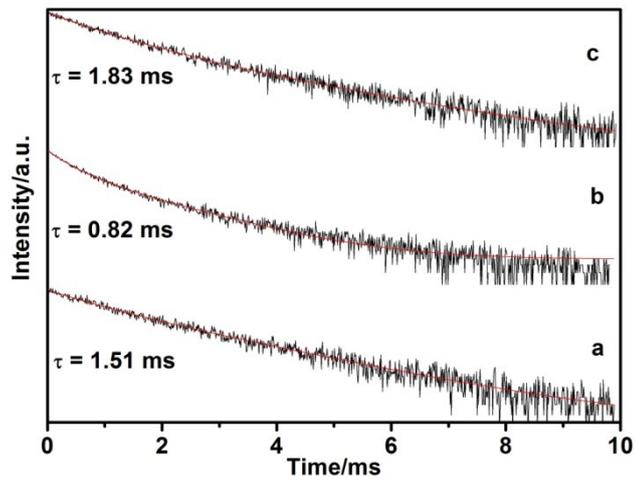


Fig. S8 The photoluminescence fitting curves of LaPO<sub>4</sub>:Eu with different phase: (a) hexagonal phase prepared without citrate, (b) monoclinic phase prepared with citrate-induced, (c) hexagonal phase prepared with citrate-induced.