

**# Electronic Supplementary Information (ESI):**

**Synthesis of Cubic Ordered Mesoporous  $\text{YPO}_4\text{:Ln}^{3+}$  and Their  
Photoluminescence Properties**

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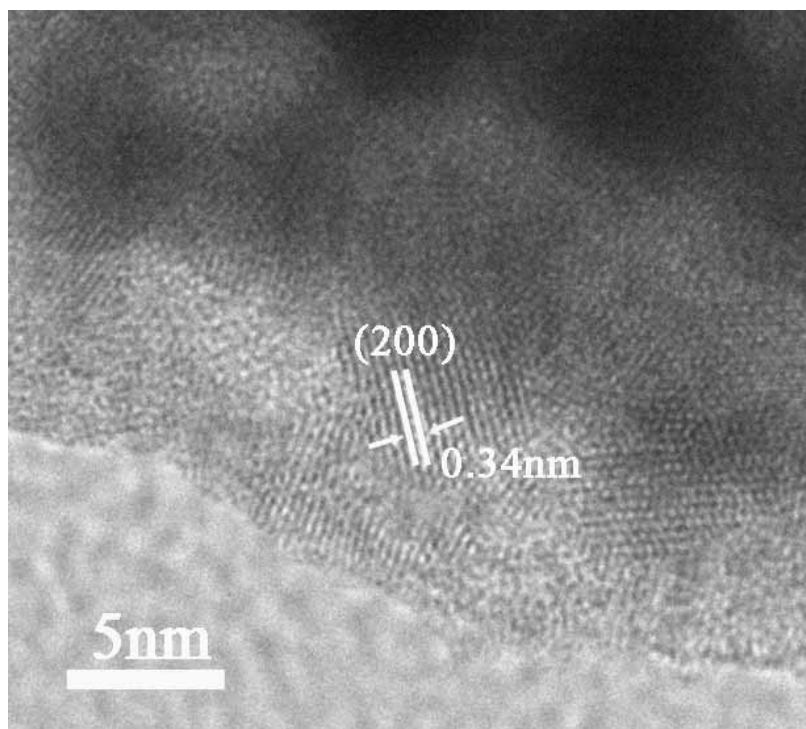
**Figure ESI 1.** HRTEM image of mesoporous  $\text{YPO}_4$  material.

**Figure ESI 2.** EDS of cubic ordered mesoporous  $\text{YPO}_4$  material.

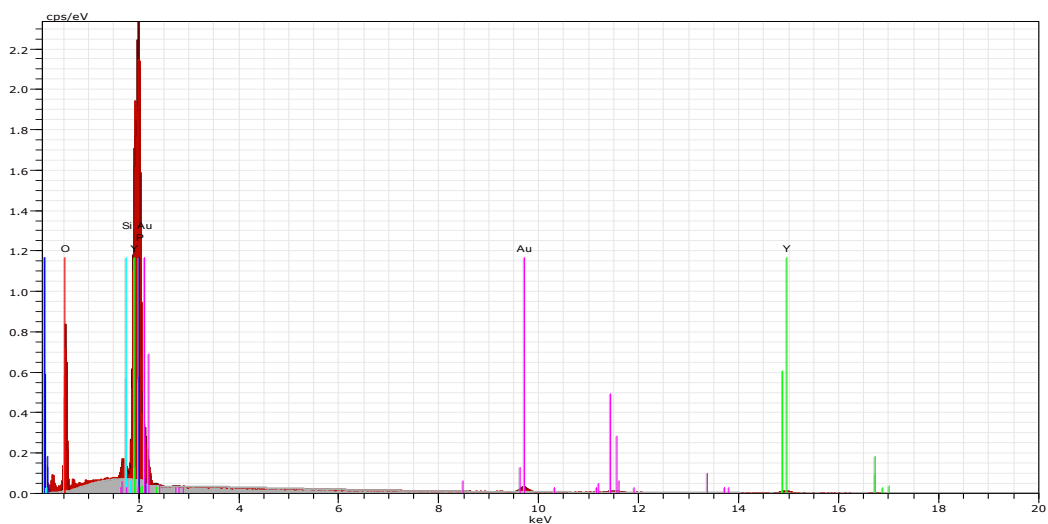
**Figure ESI 3.** Small-angle XRD patterns of mesoporous  $\text{YPO}_4$  and  $\text{YPO}_4\text{:Ln}^{3+}$ .

**Figure ESI 4.** Wide-angle XRD patterns of mesoporous  $\text{YPO}_4$  and  $\text{YPO}_4\text{:Ln}^{3+}$ .

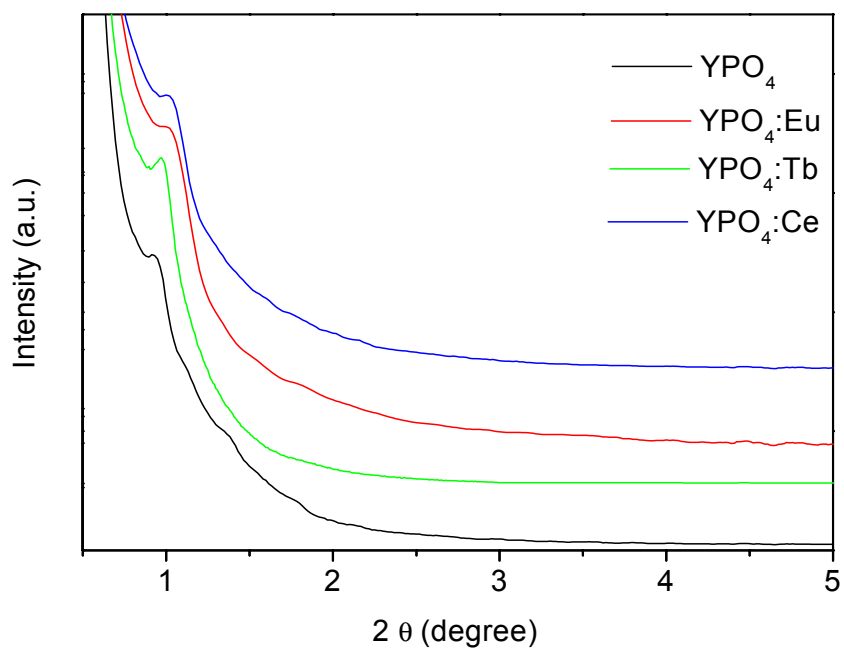
**Table ESI 1.** Physisorption data of mesoporous  $\text{YPO}_4\text{:Ln}^{3+}$  materials.



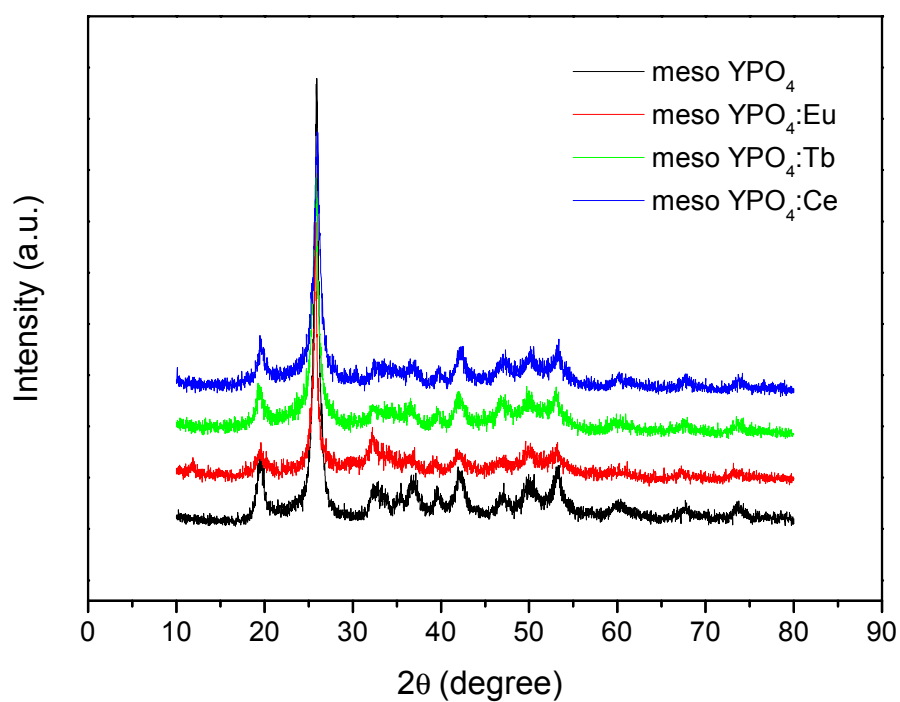
**Figure ESI 1.** HRTEM image of mesoporous YPO<sub>4</sub> material.



**Figure ESI 2.** EDS of cubic ordered mesoporous YPO<sub>4</sub> material.



**Figure ESI 3.** Small-angle XRD patterns of cubic ordered mesoporous  $\text{YPO}_4$ ,  $\text{YPO}_4:5\%\text{Eu}^{3+}$ ,  $\text{YPO}_4:5\%\text{Tb}^{3+}$ , and  $\text{YPO}_4:5\%\text{Ce}^{3+}$ .



**Figure ESI 4.** Wide-angle XRD pattern of cubic ordered mesoporous  $\text{YPO}_4$ ,  $\text{YPO}_4:5\%\text{Eu}^{3+}$ ,  $\text{YPO}_4:5\%\text{Tb}^{3+}$ , and  $\text{YPO}_4:5\%\text{Ce}^{3+}$ .

**Table ESI 1.** Textual structure properties of cubic ordered mesoporous  $\text{YPO}_4$ ,  $\text{YPO}_4:\text{Eu}^{3+}$ ,  $\text{YPO}_4:\text{Tb}^{3+}$ , and  $\text{YPO}_4:\text{Ce}^{3+}$ .

Sample	BET surface area ( $\text{m}^2/\text{g}$ )	Pore volume ( $\text{cm}^3/\text{g}$ )	Pore size (nm)	Wall thickness (nm)
Meso $\text{YPO}_4$	114	0.15	4.3	4.1
Meso $\text{YPO}_4:5\%\text{Eu}^{3+}$	104	0.16	4.0	4.0
Meso $\text{YPO}_4:5\%\text{Tb}^{3+}$	118	0.20	3.7	4.1
Meso $\text{YPO}_4:5\%\text{Ce}^{3+}$	104	0.30	3.9	3.0