

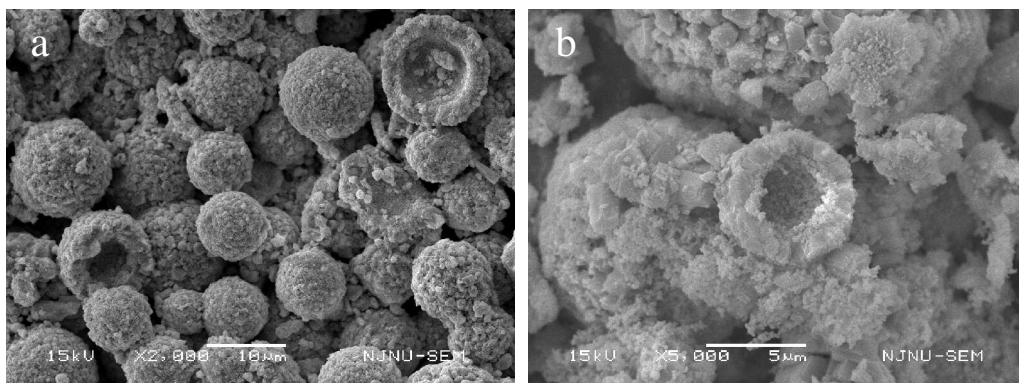
# Supporting Information

## A Facile Preparation Method of Rare Earth Phosphate Hollow Spheres and Their Photoluminescent Properties

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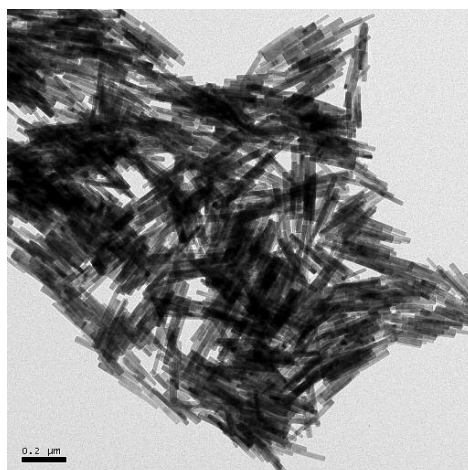
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SI-1. SEM images of  $\text{Tb}^{3+}$  or  $\text{Dy}^{3+}$  doped  $\text{GdPO}_4 \cdot \text{H}_2\text{O}$  hollow spheres

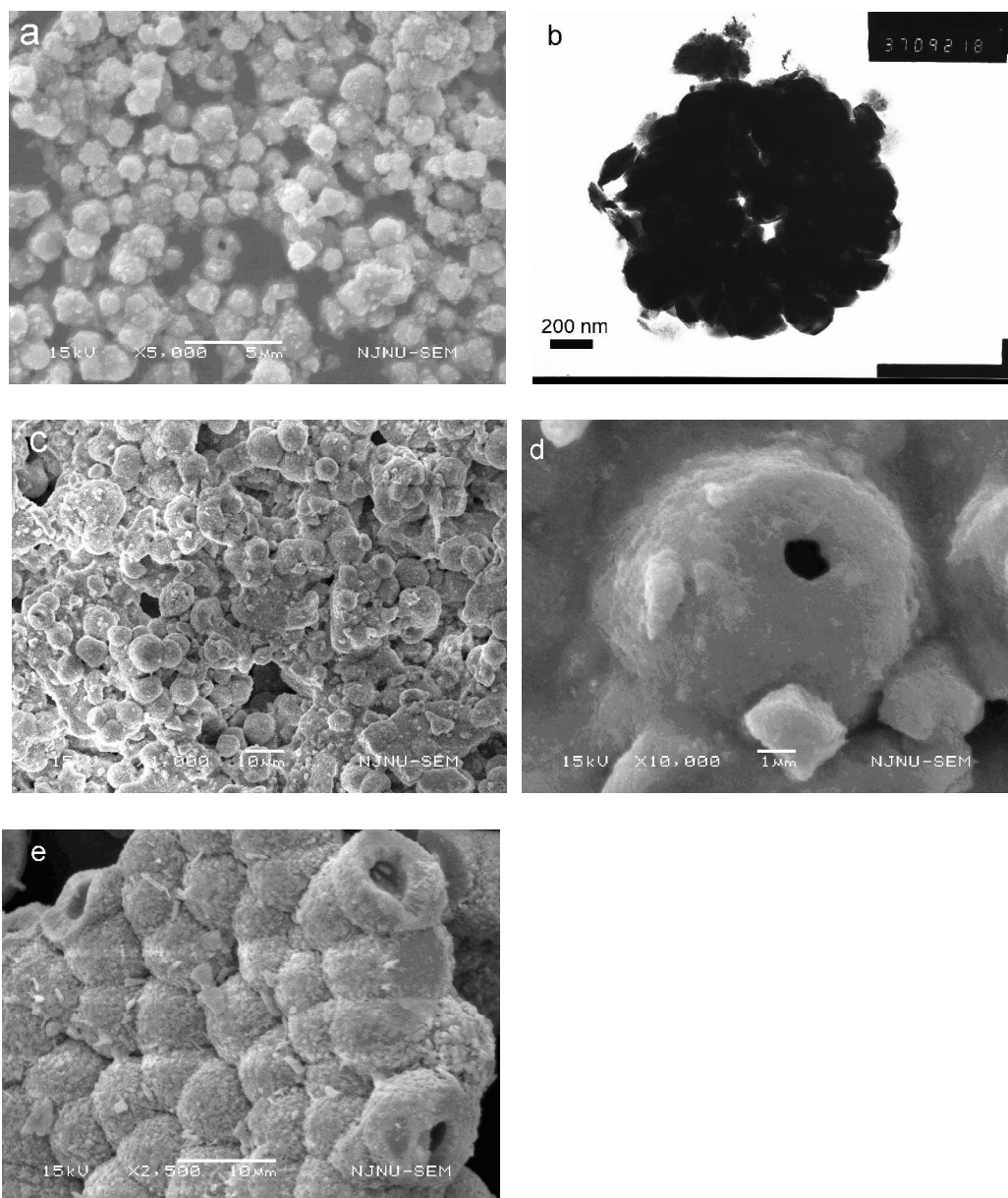


(a) SEM image of  $\text{Tb}^{3+}$  doped  $\text{GdPO}_4 \cdot \text{H}_2\text{O}$  hollow spheres. (b) SEM image of  $\text{Dy}^{3+}$  doped  $\text{GdPO}_4 \cdot \text{H}_2\text{O}$  hollow spheres.

SI-2. TEM image of  $\text{EuPO}_4 \cdot \text{H}_2\text{O}$  nanorod prepared at the same condition as experimental section, except using  $\text{H}_3\text{PO}_4$  instead of  $\text{H}_6\text{P}_4\text{O}_{13}$ .

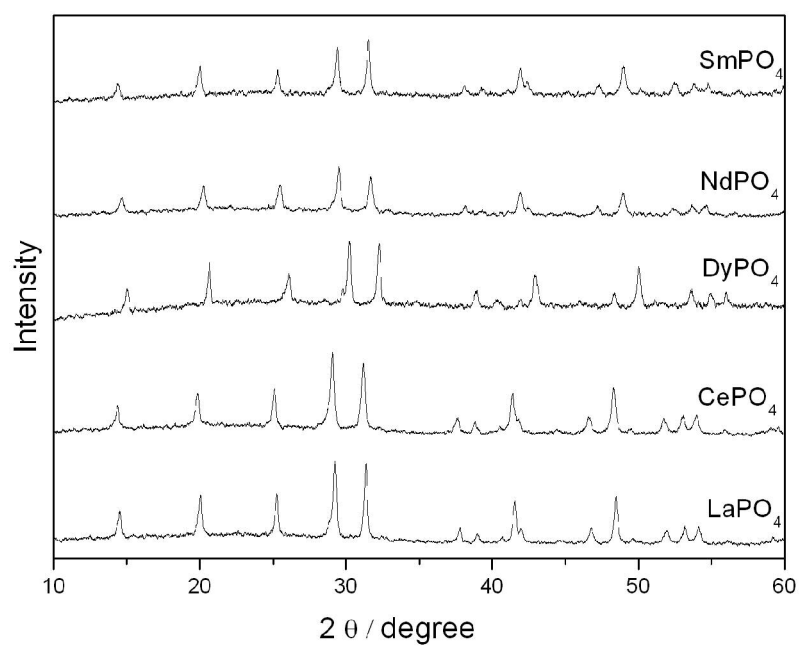


SI-3. SEM images of  $\text{DyPO}_4 \cdot 1.5\text{H}_2\text{O}$ ,  $\text{LaPO}_4 \cdot n\text{H}_2\text{O}$ ,  $\text{NdPO}_4$  hollow spheres



(a) SEM image of  $\text{DyPO}_4 \cdot 1.5\text{H}_2\text{O}$  hollow microspheres; (b) TEM image of  $\text{DyPO}_4 \cdot 1.5\text{H}_2\text{O}$  hollow microspheres; (c), (d) SEM images of  $\text{LaPO}_4 \cdot n\text{H}_2\text{O}$  hollow microspheres and an enlargement image of individual hollow sphere; (e) SEM image of  $\text{NdPO}_4$  hollow microspheres.

SI-4. XRD pattern of the different samples



XRD patterns of  $\text{SmPO}_4$  (JCPDS No.34-0537),  $\text{NdPO}_4$  (JCPDS No. 04-0644),  $\text{DyPO}_4 \cdot 1.5\text{H}_2\text{O}$  (JCPDS No. 21-0316),  $\text{CePO}_4$  (JCPDS No. 34-1380),  $\text{LaPO}_4 \cdot n\text{H}_2\text{O}$  (JCPDS No. 46-1439) hollow microspheres.