Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary information

Quick synthesis, functionalization and properties of uniform, luminescent $LuPO_4$-based nanoparticles.

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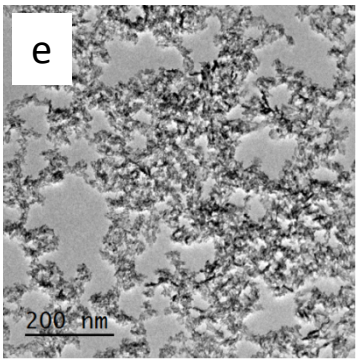
Figure S1

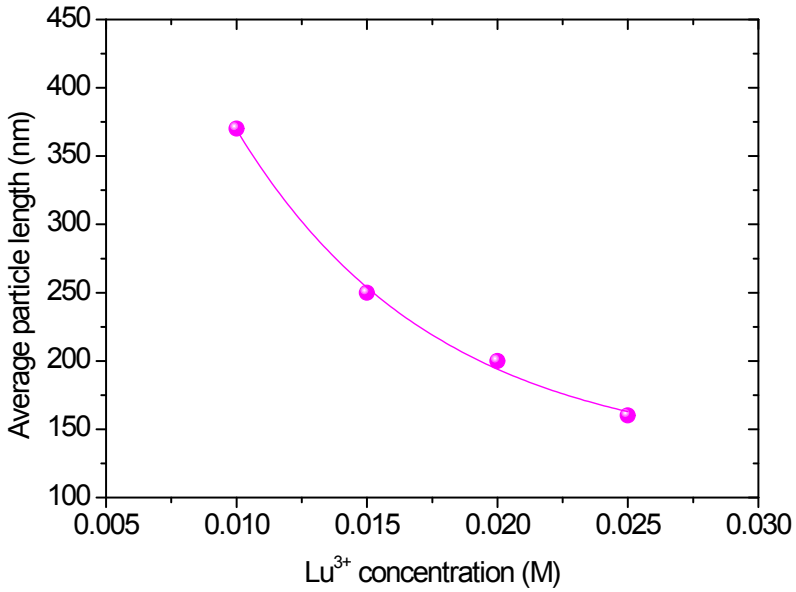
a b c

d 

f

TEM micrographs of the particles obtained after changing only one of the parameters (Lutetium acetate (0.025 M), H_3PO_4 (0.1 M), butylene glycol (total volume 5 mL), 180ºC, 30 min) necessary to obtain the elongated $LuPO_4$ nanoparticles shown in Figure 1 of the paper. Parameters changes: a) Lutetium source: Lutetium acetyl acetonate; b) Lutetium acetate concentration: 0.01 M; c) Phosphate source: [BMIM] PO_4; d) H_3PO_4 concentration = 0.05 M; e) Solvent: Glycerol, f) Solvent: ethylene glycol.

Figure S2

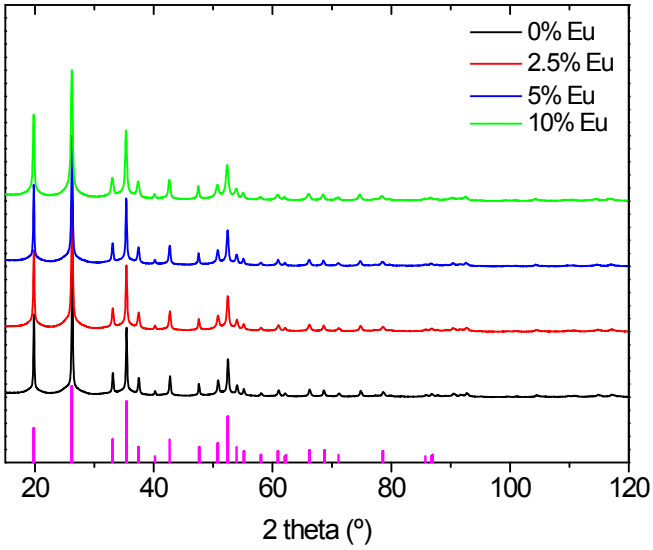


Average particle length versus concentration of Lutetium acetate used in the synthesis of $LuPO_4$ particles. The rest of synthesis conditions are identical to those given in Figure 1 of the paper.

Figure S3

TEM micrograph of $LuPO_4$ particles doped with 15% Eu^{3+} obtained in the conditions described in Figure 1 of the paper.

Figure S4



XRD patterns of $LuPO_4$ nanoparticles doped with different Eu^{3+} contents