Electronic Supplementary Information (ESI)

Eu-doped layered yttrium hydroxides sensitized by series of benzenedicarboxylate and sulphobenzoate anions

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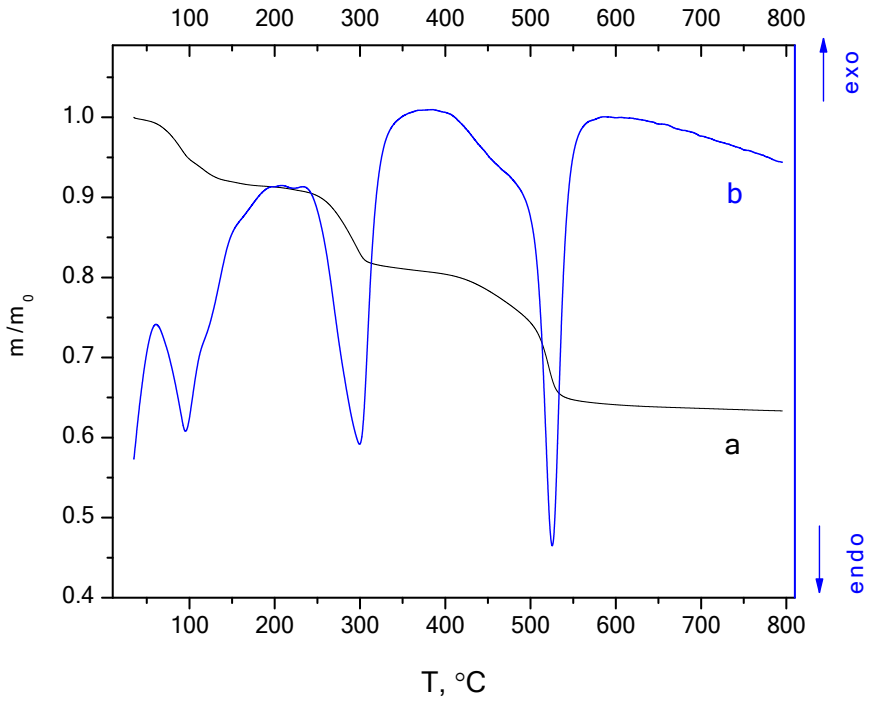

Fig. S1. Thermal analysis data for $(Y_{0.95}Eu_{0.05})_2(OH)_5NO_3$ $1.7H_2O$ compound: (a) thermogravimetric curve and (b) DTA curve.

Table S1. EDX data for the product obtained by refluxing HMTA, $NaNO_3$, $Y(NO_3)_3{\cdot}nH_2O$ and $Eu(NO_3)_3{\cdot}nH_2O$ solutions mixture.

Element	Y	Eu
Atomic content	0.95	0.05

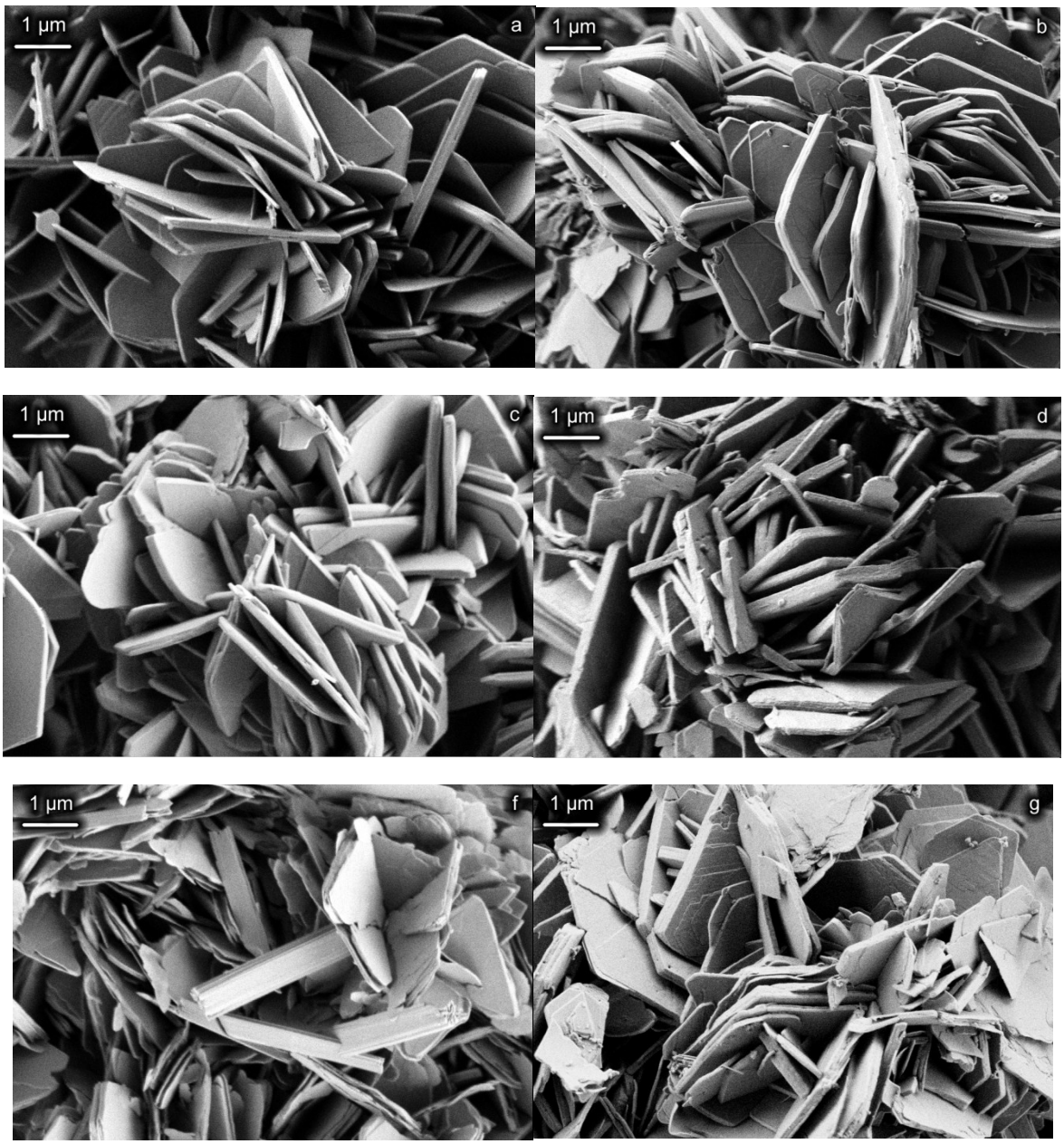

Fig. S2. SEM images of $(Y_{0.95}Eu_{0.05})_2(OH)_5NO_3 \cdot 1.7H_2O$ obtained by refluxing a HMTA, $NaNO_3$, $Y(NO_3)_3 \cdot nH_2O$ и $Eu(NO_3)_3 \cdot nH_2O$ solution mixture and the products of its ion exchange reactions with aqueous solutions of (a) phthalic, (b) isophthalic, (c) terephthalic, (d) 2-sulphobenzoic, (e) 3-sulphobenzoic and (f) 4-sulphobenzoic acid salts under HTMW treatment (200 ºC, 30 min).

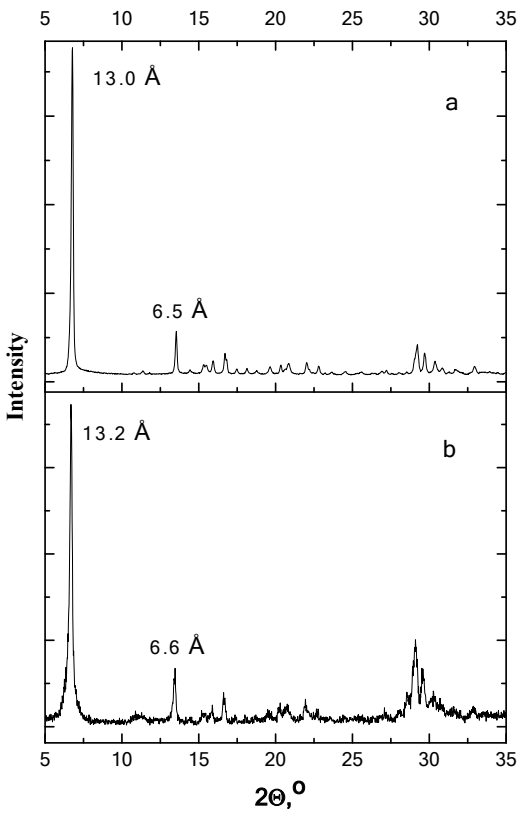

Fig. S3. X-ray diffraction patterns of (a) Y:Eu hydroxynitrate anion exchanged by potassium 4-sulphobenzoate salt; (b) the product of one-pot synthesis in the presence of 4-sulphobenzoate.

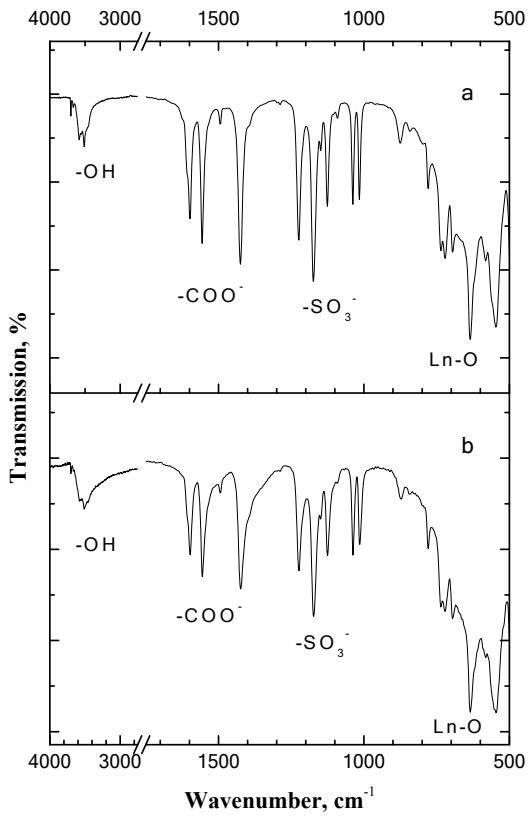

Fig. S4. Infrared spectra of (a) Y:Eu hydroxynitrate anion exchanged by potassium 4-sulphobenzoate salt; (b) the product of one-pot synthesis in the presence of 4-sulphobenzoate.

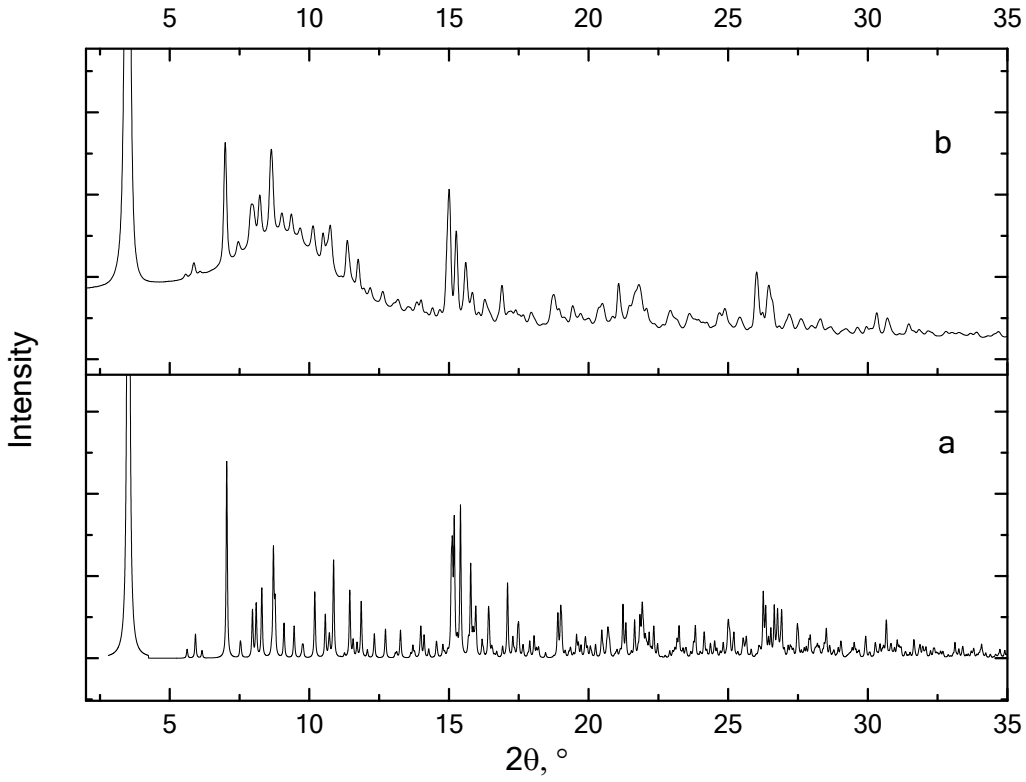

Fig. S5. (a) Calculated and (b) experimental X-ray diffraction patterns of **1** compound.

Table S2. Hydrogen bonds for **1** compound [Å and °].

D-H...A	d(D-H)	d(H...A)	d(D...A)	<(DHA)
O(13)-H(13A)...O(3)	0.896(17)	1.990(17)	2.850(4)	161(5)
O(6)-H(6)...O(13)#1	0.85	2.15	2.976(4)	164.1
O(7)-H(7)...O(3)#2	0.82	2.25	3.060(3)	166.7
O(10)-H(10)...O(3)#2	0.85	2.22	3.010(3)	155.5
O(11)-H(11)...O(2)#2	0.84	2.05	2.838(3)	155.7
O(8)-H(8)...O(13)#3	0.85	2.17	2.982(4)	159.6

Symmetry transformations used to generate equivalent atoms:

#1 -x+1,y-1/2,-z+1/2 #2 x+1,y,z #3 x+1,-y+3/2,z-1/2

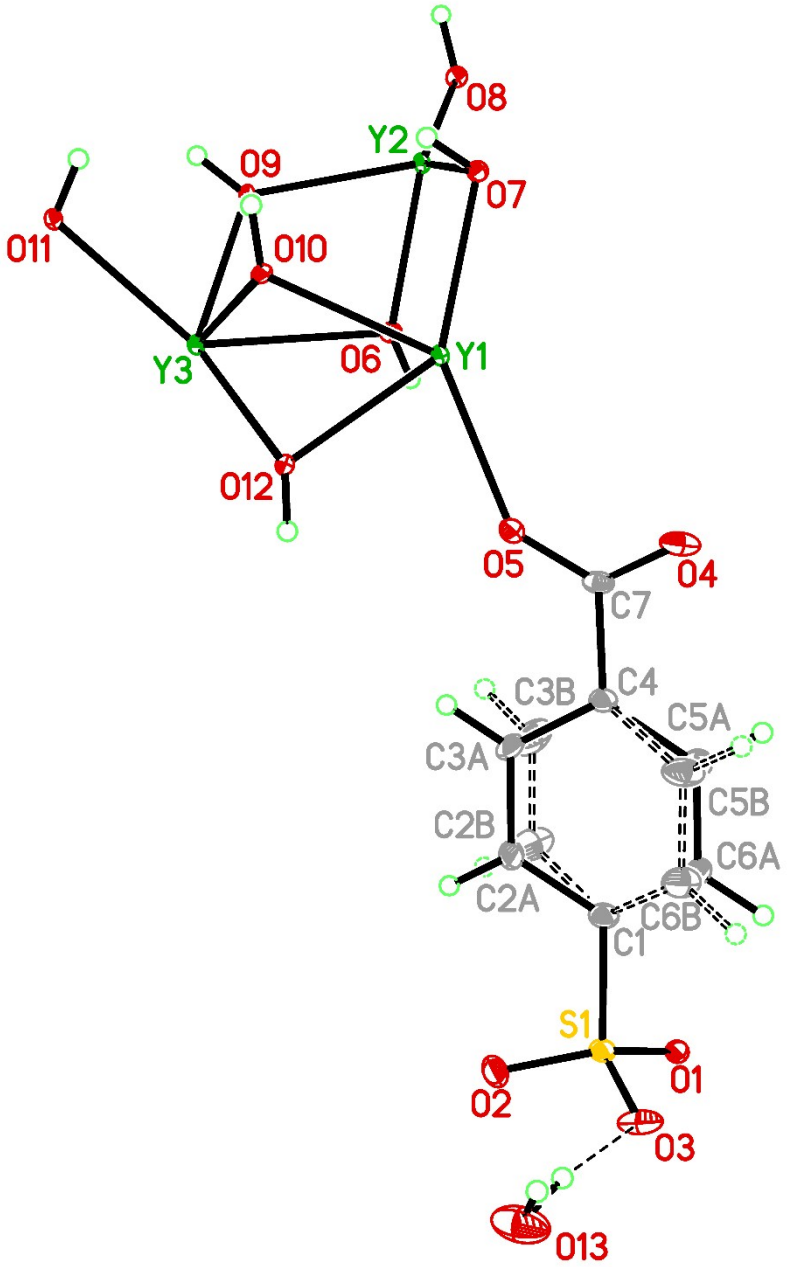

Fig. S6. Asymmetric unit of $Y_3(OH)_7(C_7H_4O_5S)\cdot H_2O$ with thermal ellipsoids drawn at a 45% probability level.