

Supplementary Information

Syntheses, structures, photoluminescence, and magnetic properties of (3,6)- and 4-connected lanthanide metal-organic frameworks with a semi-rigid tricarboxylate ligand

Shengqun Su^{ab}, Song Wang^{ab}, Xuezhi Song^{ab}, Shuyan Song^a, Chao Qin^a, Min Zhu^{ab}, Zhaomin

Hao^{ab}, Shuna Zhao^{ab}, Hongjie Zhang^{*a}

^a State Key Laboratory of Rare Earth Resource Utilizations, Changchun Institute of Applied Chemistry,

Chinese Academy of Sciences, Changchun 130022, P. R. China.

Tel.: +86 431 85262127; fax: +86 431 85698041. E-mail address: hongjie@ciac.jl.cn (H.-J. Zhang).

^b Graduate School of the Chinese Academy of Sciences, Beijing, 100039, P. R. China.

Compound	D-H...A	d(D-H)	d(H...A)	d(D...A)	∠(D-H...A)
7'	O12-H12C...O7 [x-1, y, z-1]	0.821	1.968	2.687	145.81
	O12-H12B...O3 [x, y, z-1]	0.821	2.249	3.009	154.05
	O12-H12B...O9 [x, y, z-1]	0.821	2.569	3.055	119.17
	O11-H11B...O7 [-x+1, -y+1, -z+2]	0.820	1.967	2.754	160.63
	O11-H11C...O10	0.820	2.333	2.929	130.11
	O11-H11C...O8 [-x, -y+1, -z+2]	0.820	2.432	3.033	130.87
	O10-H10C...O1 [-x, -y+1, -z+2]	0.819	2.266	2.798	123.08
	O10-H10B...O1 [x-1, y, z]	0.819	2.074	2.812	149.82

Table. S1 Hydrogen-bond geometries for compounds 7' (in Å and °).

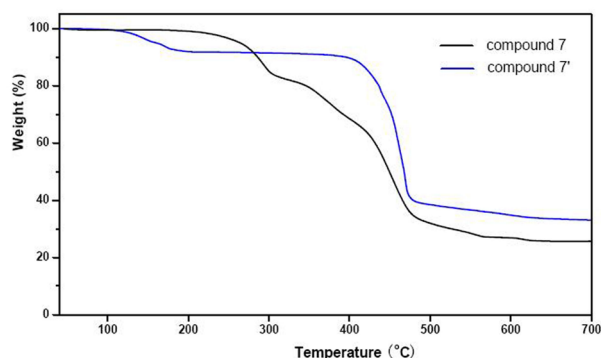


Fig. S1. TGA curves of 7 and 7'.

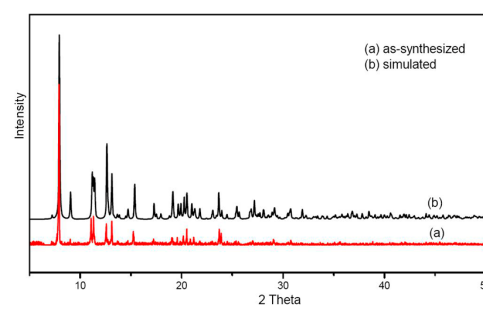
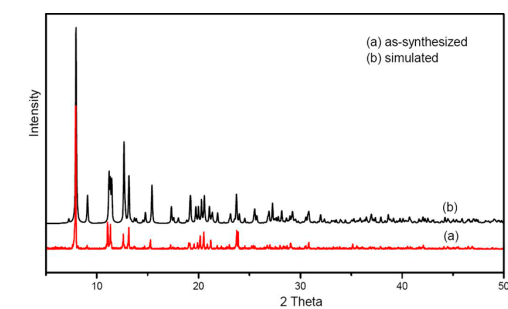
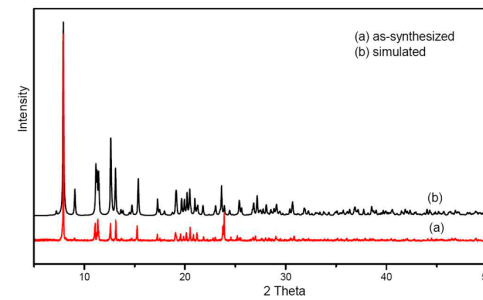
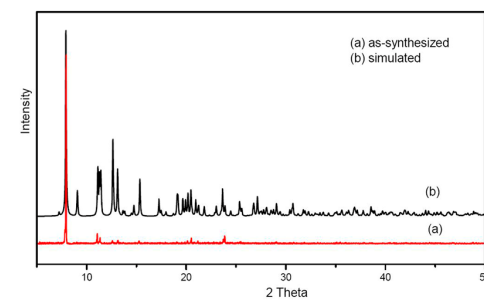
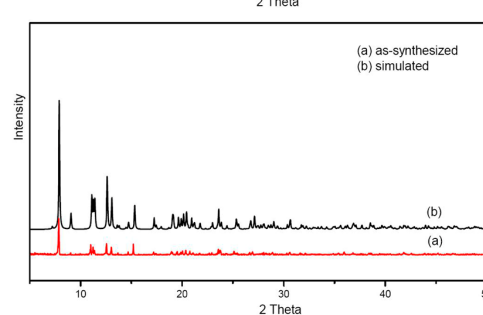
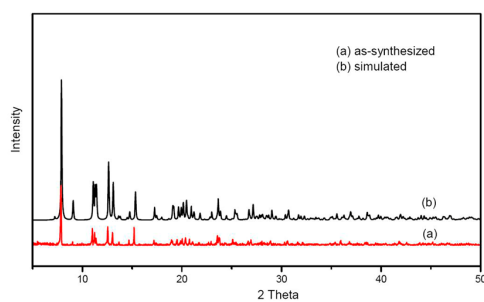
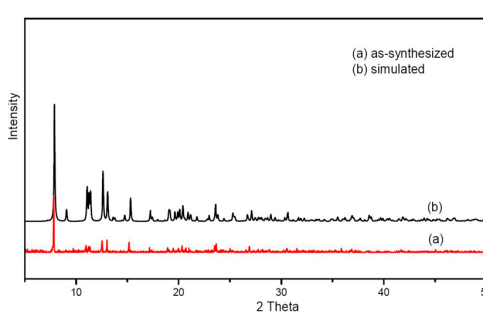
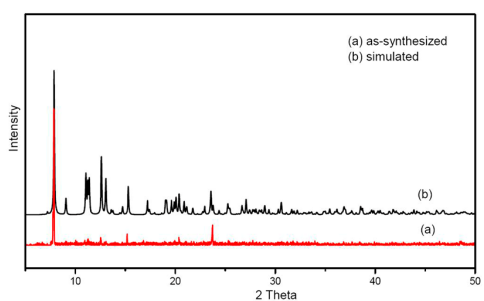
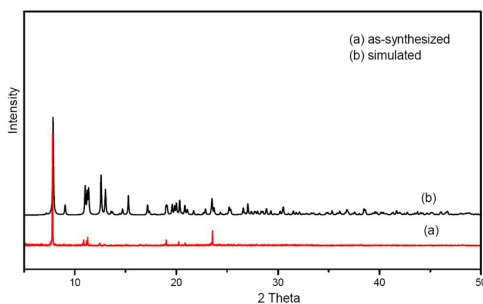
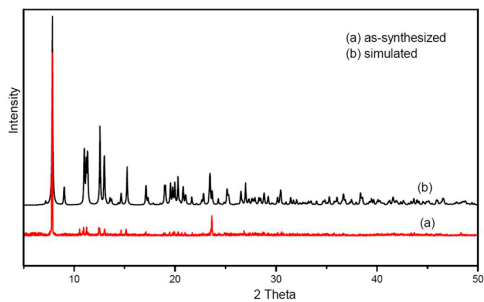
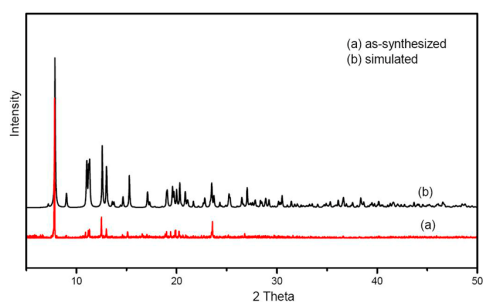
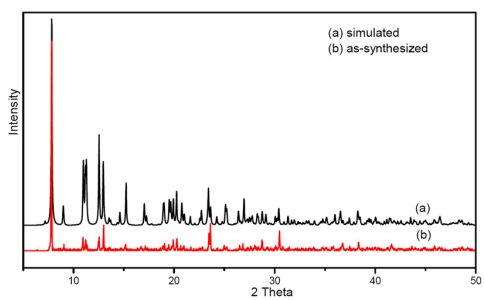


Fig. S2. The X-ray powder diffraction patterns for **1-12**.

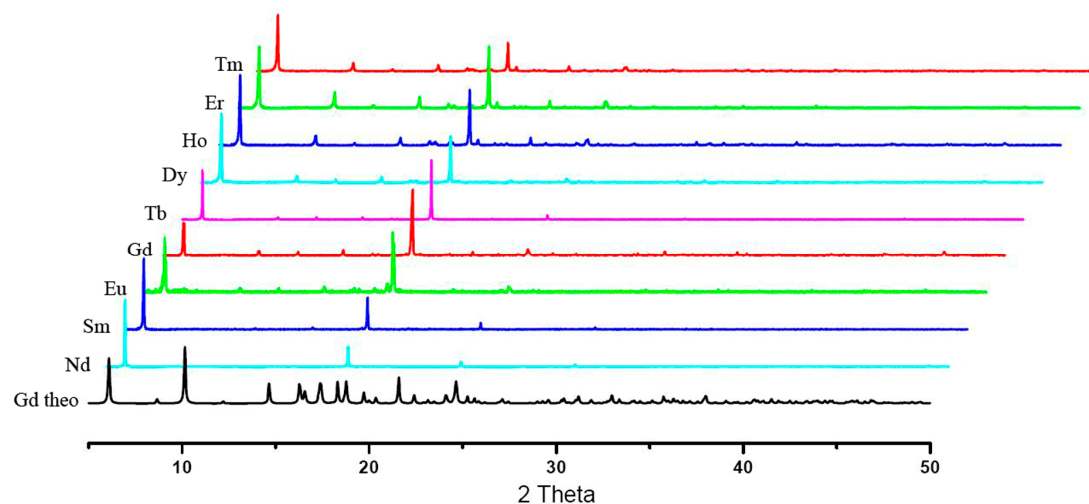


Fig. S3. The X-ray powder diffraction patterns for **7'** and $[\text{Ln}(\text{L})(\text{H}_2\text{O})_3]$ (Ln = Nd, Sm, Eu, Tb, Dy, Ho, Er, Tm).

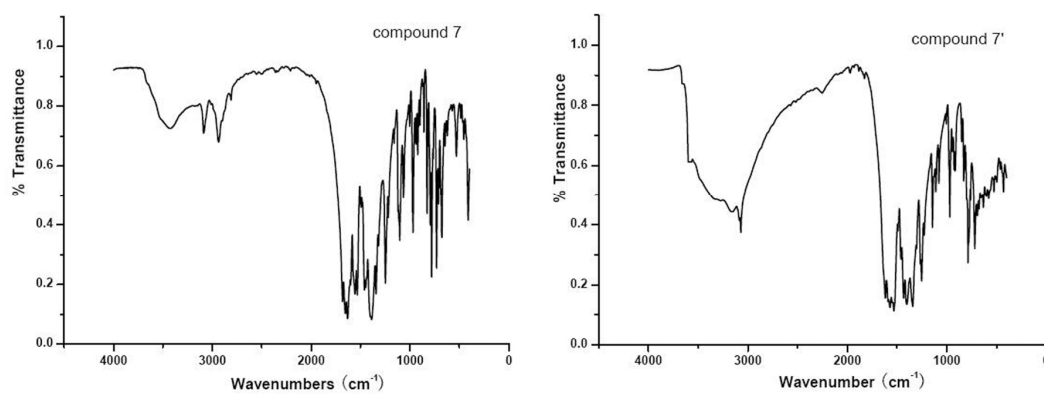


Fig. S4. IR spectra of **7** and **7'**.

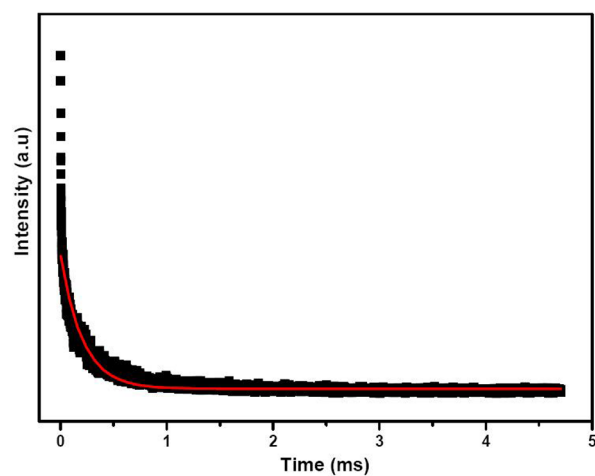


Fig. S5. The luminescent decay curves of **6** at room temperature.