Electronic Supplementary Information†

Solvent Dependent Formation of Metallogels and Single-Crystal MOFs by La(III) and Ce(III) Connectors and 3,5-Pyridinedicarboxylate

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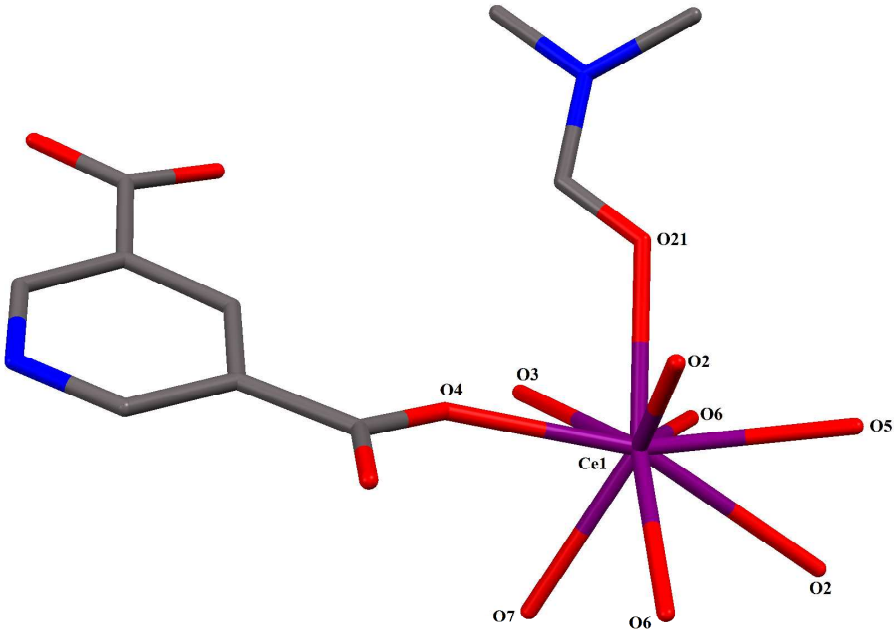

Figure S1 Coordination environment of Ce(III) ion (Hydrogen atoms are omitted for clarity). All the metal-coordinated O-sites (except for O21) are of the six surrounding 3,5-PDC linkers.

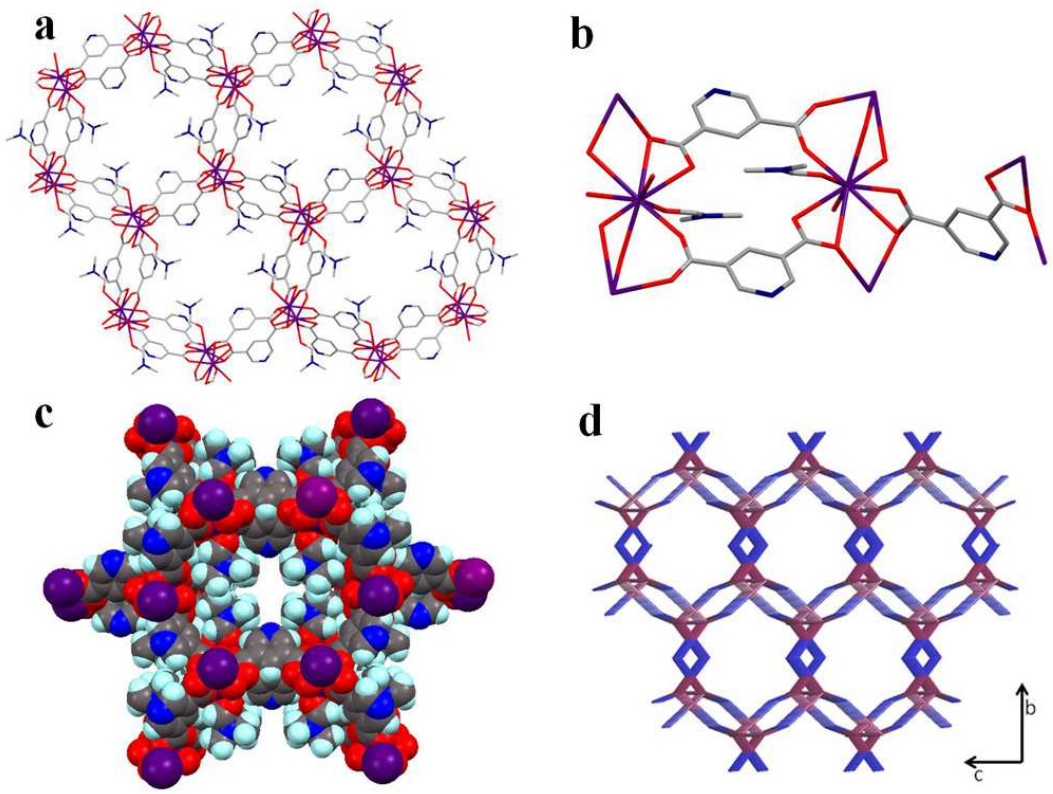

Figure S2 (a) Packing of **2** showing the hexagonal channel (down the *a*-axis). (b) The bridging between the two metal centers with their coordination environments. (c) View of the hexagonal channel formed by **2** in space-fill model, which is lined by the metal-coordinated DMF ligand and the pyridyl-N sites. (d) Simplified (node and linker) framework structure of metal complex **2** (purple = metal cluster, blue = ligand).

Table S1 Crystallographic and refinement data.

	[La(III)(3,5-PDC)$_{1.5}$(DMF)].xDMF **1**	**[Ce(III)(3,5-PDC)$_{1.5}$(DMF)].xDMF** **2**
Chemical formula	$C_{27}H_{23}La_2N_5O_{14}$	$C_{27}H_{23}Ce_2N_5O_{14}$
Formula weight	919.32	921.74
Crystal system	Orthorhombic	Orthorhombic
Space group	*Pnma*	*Pnma*
T/K	110(2)	110(2)

a/Å	8.1241(3)	8.1162(4)
b/ Å	30.3843(10)	30.2842(14)
c/ Å	15.6616(5)	15.6709(7)
α/°	90	90
β/°	90	90
γ/°	90	90
Z	4	4
V/ $Å^3$	3866.0(2)	3851.8(3)
D_{calc}/g cm^{-3}	1.579	1.589
μ /mm^{-1}	2.243	2.397
Reflns collected	24239	15168
Unique reflns	3262	2869
R1[I > 2(I)]	0.0434	0.0401
wR2 (all)	0.1085	0.1004
Goodness-of-fit	1.080	1.087
CCDC No.	979166	979167

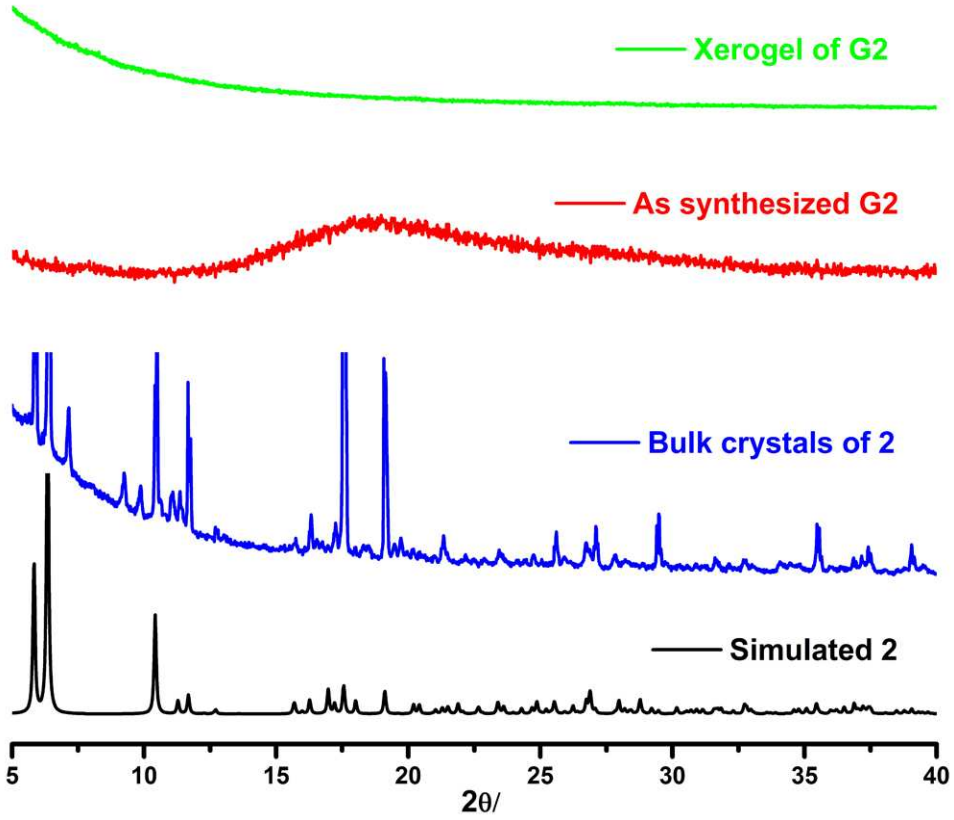

Figure S3 PXRD of as synthesized **G2** and xerogel of **G2** along with the simulated and experimental powder pattern of **2**.

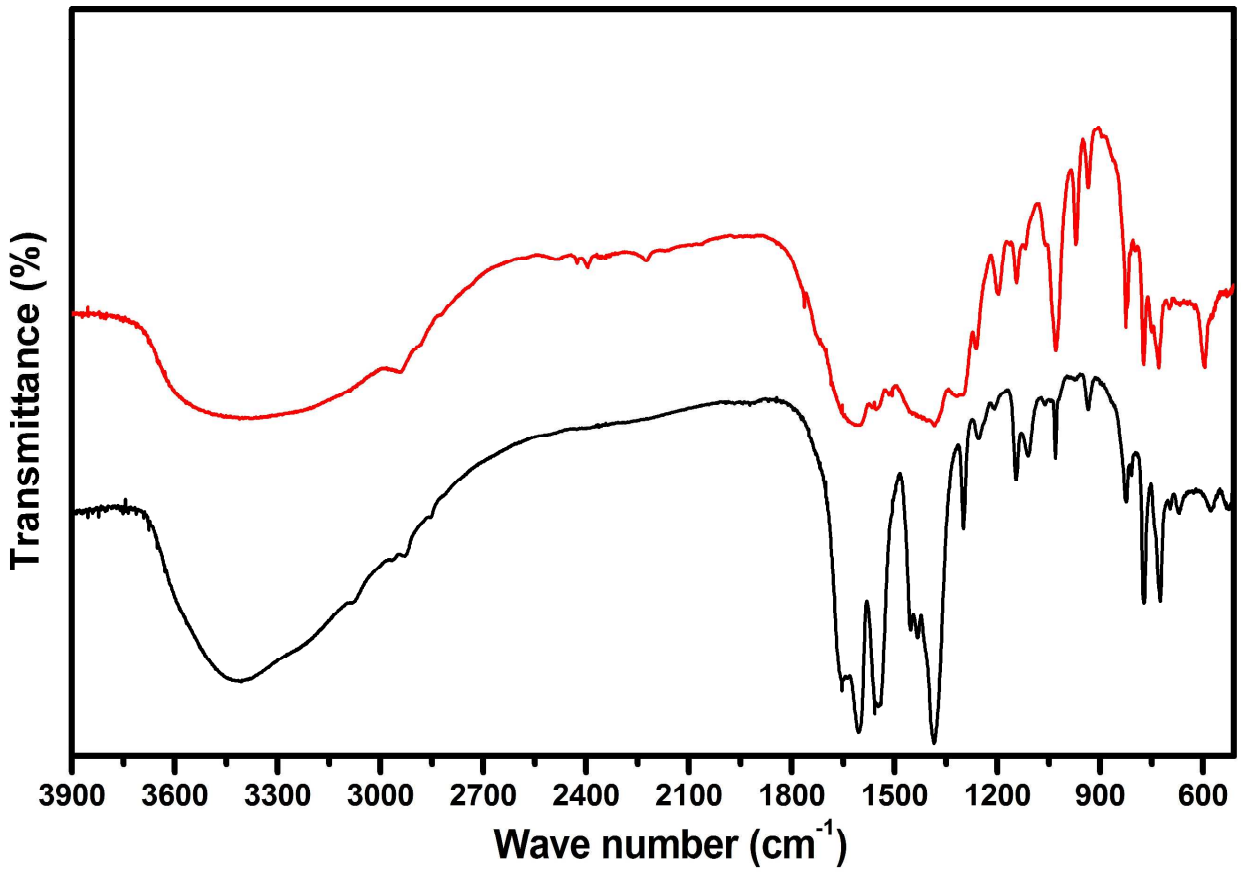

Figure S4 Comparison of FT-IR spectra of xerogel of **G1** (red) and bulk crystals of **1** (black).

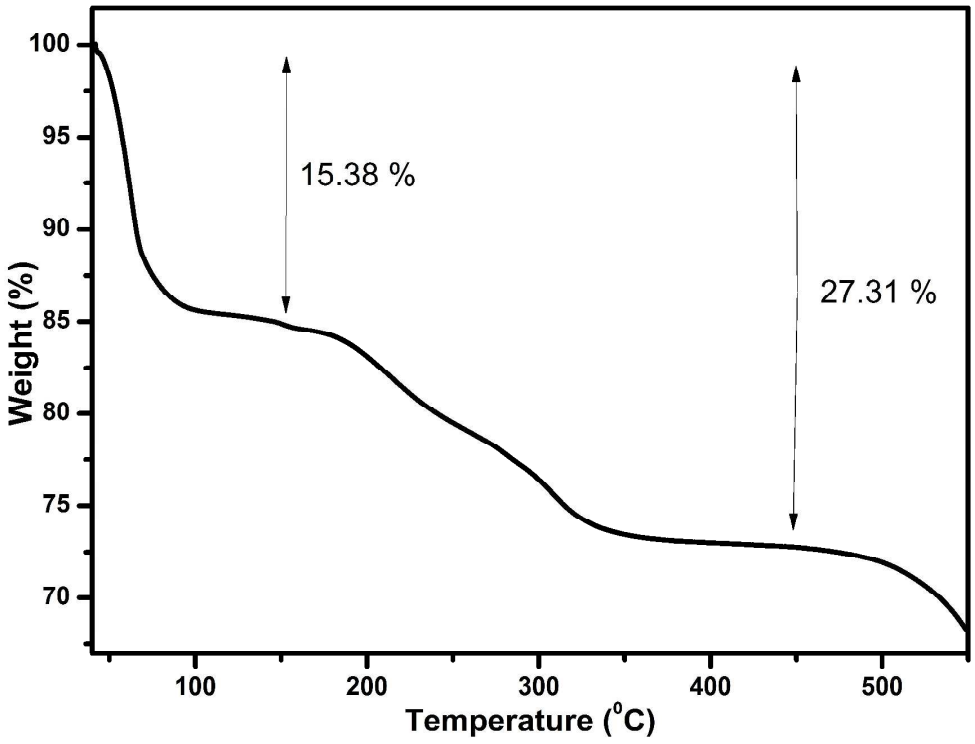

Figure S5 TGA of **1**

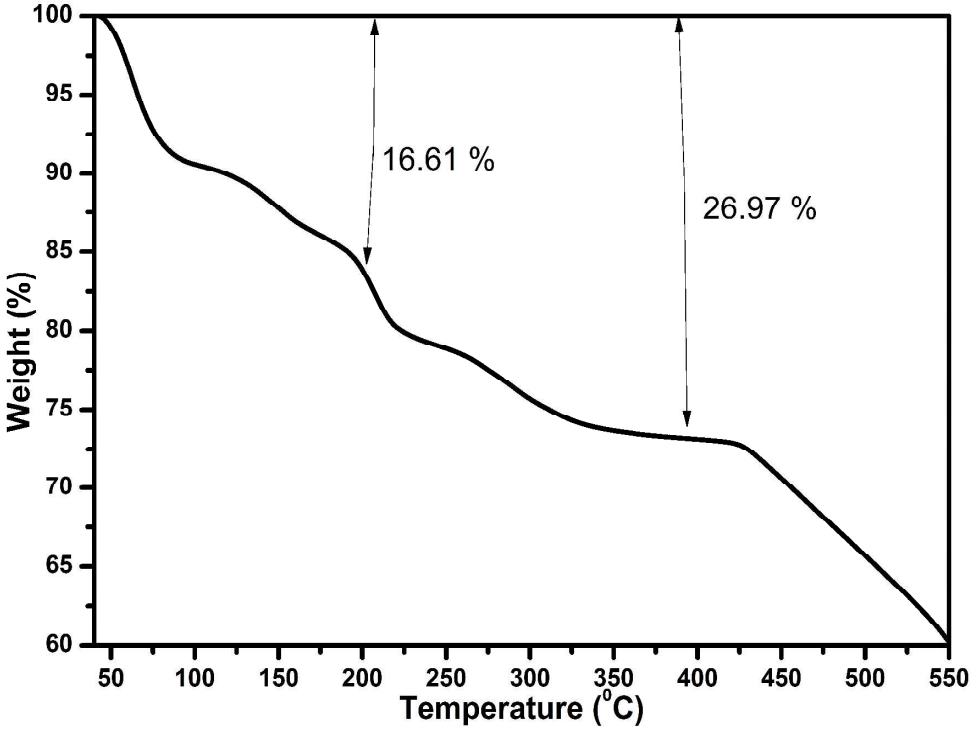

Figure S6 TGA of **2**