

A chiral uranyl–Kemp’s tricarboxylate cubic framework: structure-directing effect of counterions with three-fold rotational symmetry

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Supporting Information

Experimental

Synthesis. Caution! *Uranium is a radioactive and chemically toxic element, and uranium-containing samples must be handled with suitable care and protection. Small quantities of reagents and solvents were employed to minimize any potential hazards arising both from the presence of uranium and the use of pressurized vessels for the syntheses.*

General. $[\text{UO}_2(\text{NO}_3)_2(\text{H}_2\text{O})_2] \cdot 4\text{H}_2\text{O}$ (RP Normapur, 99%) was purchased from Prolabo and Kemp’s acid was from Aldrich.

Fig. S1 Orientation of the carboxylate groups in **1** (left), **2** (middle) and **3** (right).

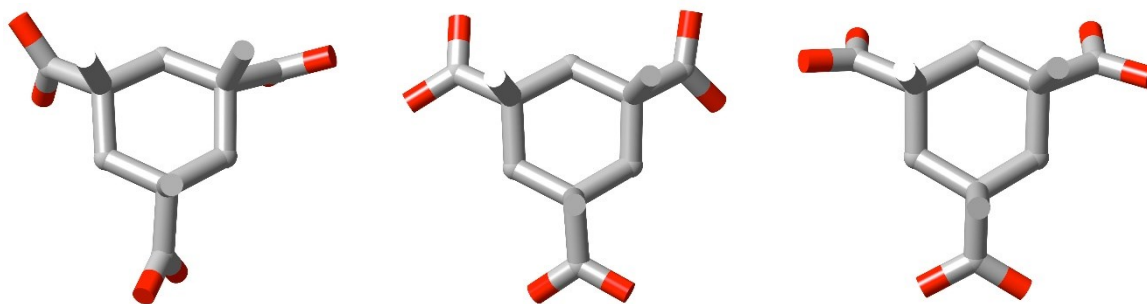


Fig. S2 One 10-membered ring built from five metal and five ligand nodes in the srs framework in **1**.

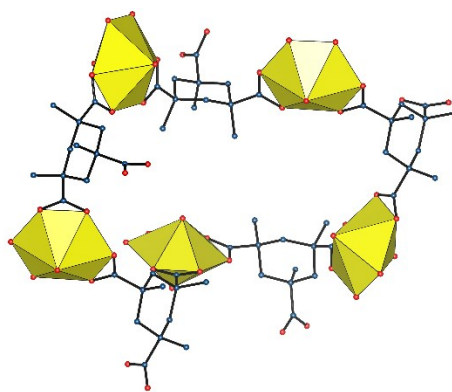


Fig. S3 The threefold-symmetric interactions between the PPh_3Me^+ cation and the $[\text{UO}_2(\text{kt})]^-$ polymer in **1** (dashed lines), viewed down $[111]$.

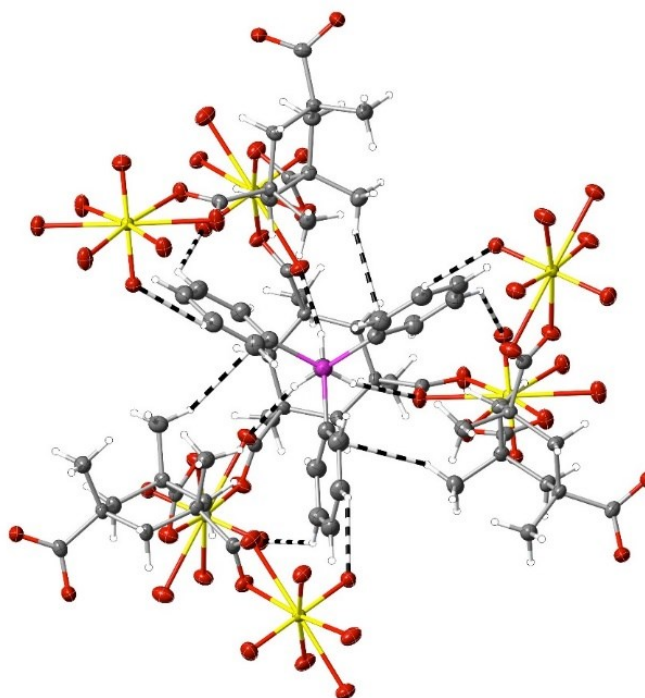


Fig. S4 The diperic section of the triperiodic $[\text{UO}_2(\text{cta})]^-$ polymer in **1**. Uranium atoms for which the O_6 equatorial coordination plane lies perpendicular to $[111]$ are coloured green.

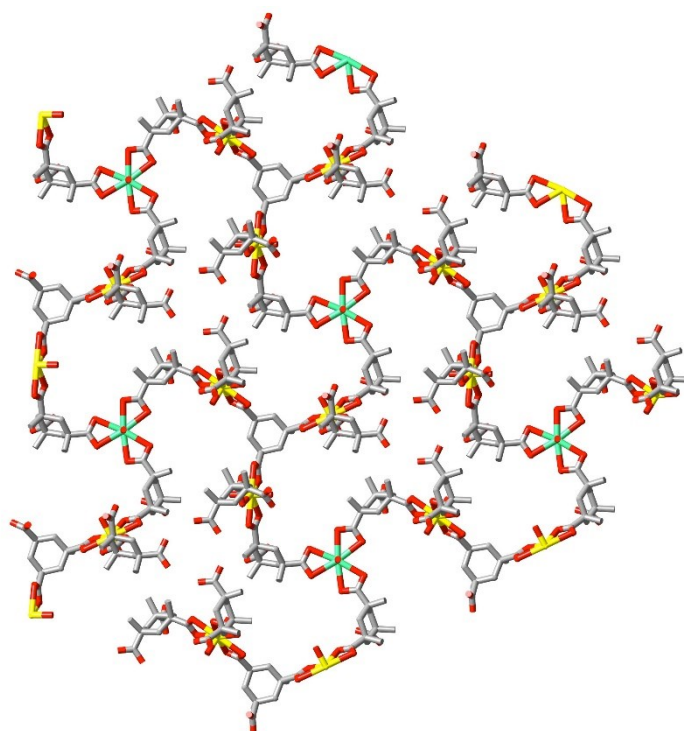


Fig. S5 Views down the three-fold rotation axes of: (a) the cta^{3-} ligand in **1**, with the $\text{O}\cdots\text{O}$ segments used to define its helicity as left-handed shown in red and (b) the PPh_3Me^+ cation, with the $\text{C}\cdots\text{C}$ segments used to define its helicity as right-handed shown in blue.

