Supporting Information

Title: A Series of Three-Dimensional Lanthanide Coordination Polymers with Rutile-Like and Unprecedented Rutile-Related Topologies

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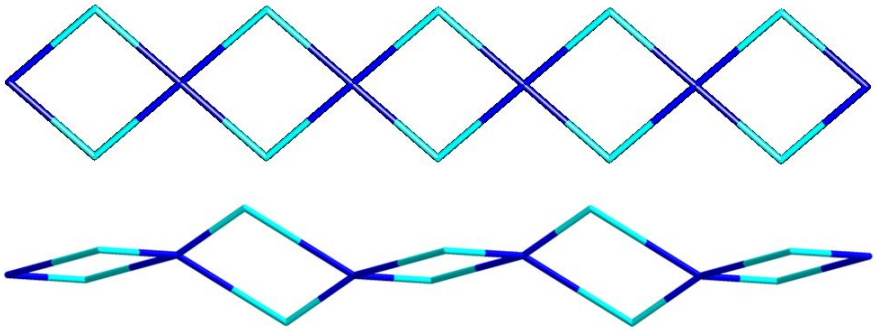

Figure S1. The chains that form square channels in rutile (TiO_2) (top) and **1** (bottom).

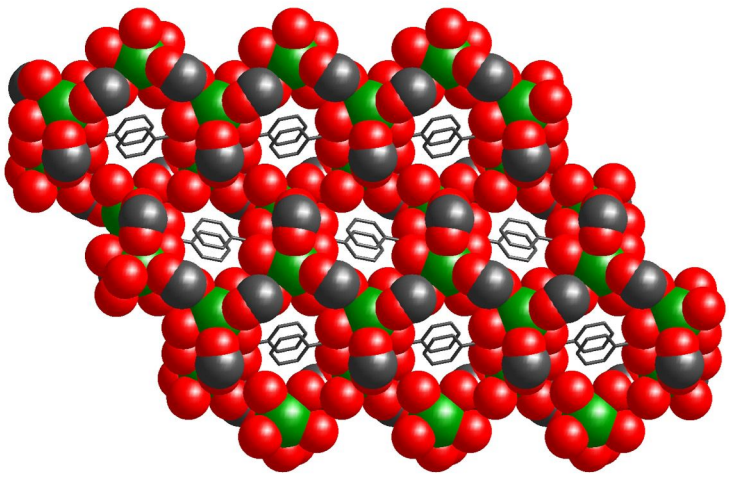

Figure S2. Ball presentation of compound **4** to show the channel occupied by one-end coordinated bc ligands.

Thermogravimetric Analyses.

TG-DTA measurements were representatively carried out for compounds **1** and **4** (Figure S3). The TG curve of **1** exhibits one-step weight loss in the range 380–650 °C (63.66%), corresponding to the loss of organic groups (calcd. 63.80%). The DTA curve also confirms that the network of compound **1** is stable below 375°C. Complex **4** first lost weight corresponding to one coordinated water molecule (observed 3.78%, calcd. 3.96%) from 270 to 330°C, followed by a significant weight loss from 430 °C to 675°C attributed to the release of organic components (observed 57.76%, calcd. 57.69%). Three endothermic peaks (307, 520, and 645°C) in the DTA curve also record the weight loss processes of various groups. To study the thermal stability of **4**, the simple was heated at 350°C in nitrogen for half an hour to dehydrate the coordination water. The IR of dehydrated simple is similar with that of original one except that the peak at 3222 cm^{-1} disappeared, which may mean that the structural skeleton of **4** is remained after removal of the coordinated water molecules.

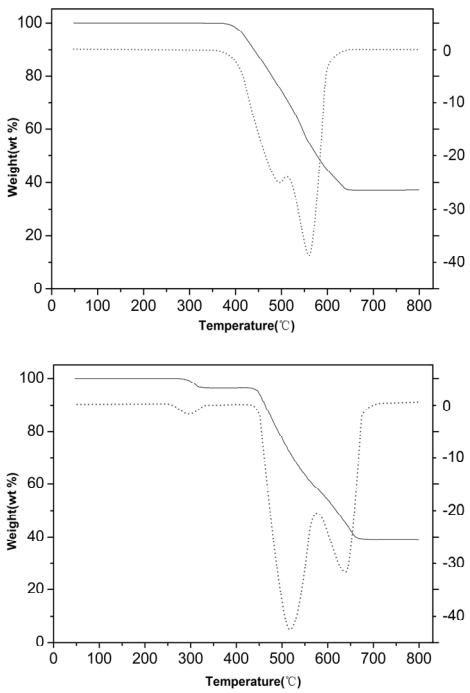

Figure S3 TG-DTA curves of compounds **1** (top) and **4** (bottom).