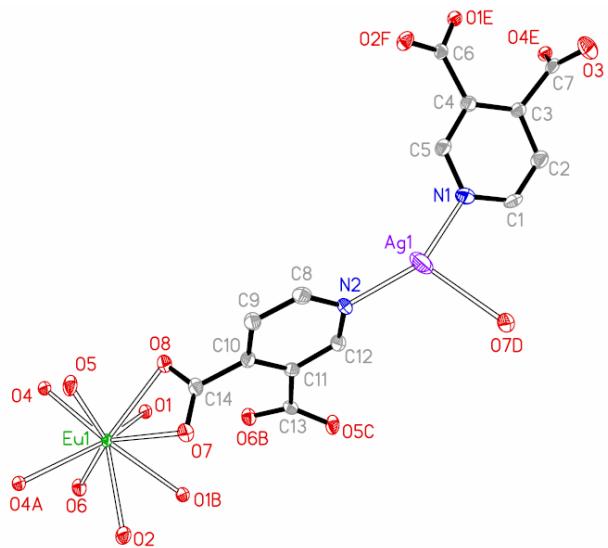


## **Supporting information**

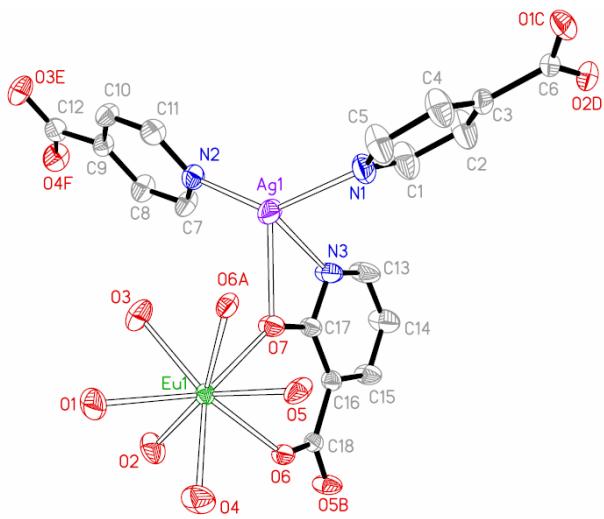
Self-assembly of three-dimensional 4d–4f coordination frameworks  
based on one-dimensional inorganic heterometallic chains and linear  
organic linkers

Xiaojun Gu and Dongfeng Xue\*



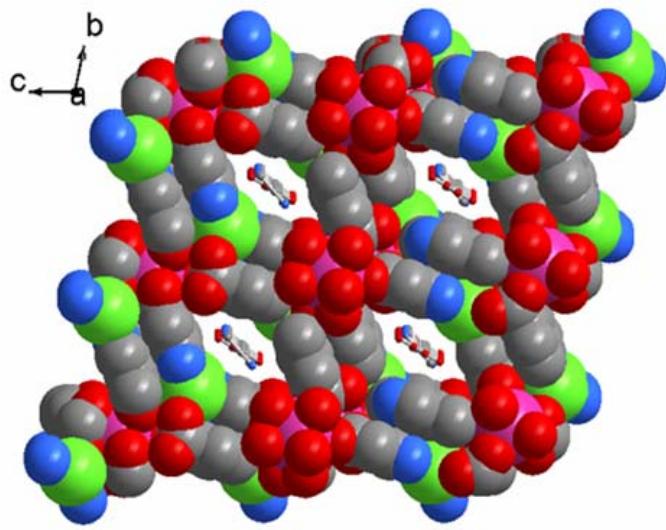
**Fig. S1** ORTEP view of **2** with 50% thermal ellipsoids. Other atoms have omitted for clarity.

Symmetry codes: A ( $-1 - x, 1 - y, -1 - z$ ); B ( $-x, 1 - y, -1 - z$ ); C ( $1 + x, y, z$ ); D ( $1 - x, 1 - y, -z$ ); E ( $1 - x, 2 - y, -z$ ); F ( $1 + x, 1 + y, 1 + z$ ).

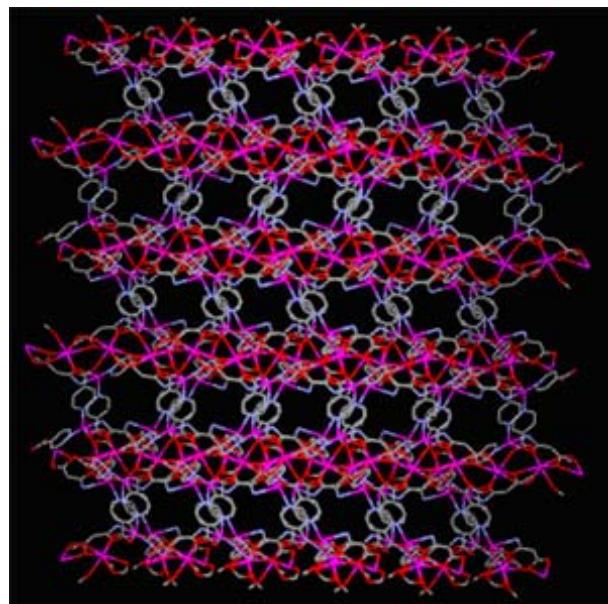


**Fig. S2** ORTEP view of **4** with 50% thermal ellipsoids. Other atoms have omitted for clarity.

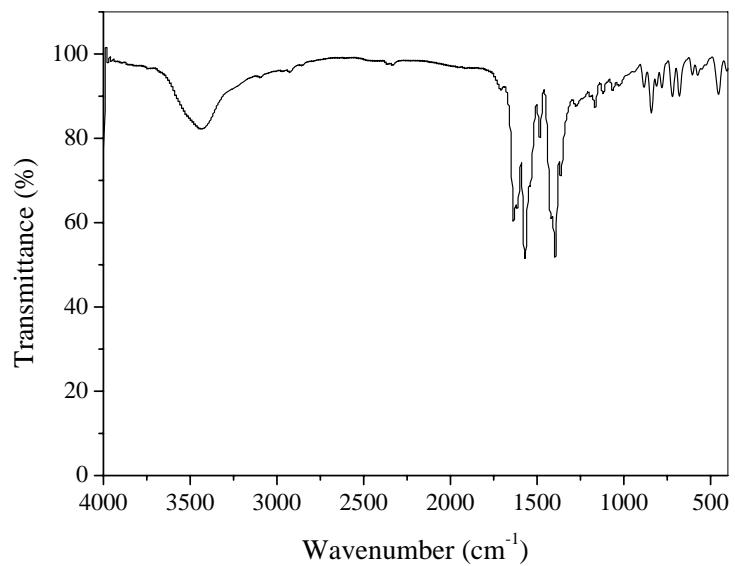
Symmetry codes: A ( $1/2 - x, 1/2 + y, z$ ); B ( $1/2 - x, -1/2 + y, z$ ); C ( $1/2 - x, 1 - y, -1/2 + z$ ); D ( $x, 1/2 - y, -1/2 + z$ ); E ( $-x, 1 - y, 1 - z$ ); F ( $-1/2 + x, 1/2 - y, 1 - z$ ).



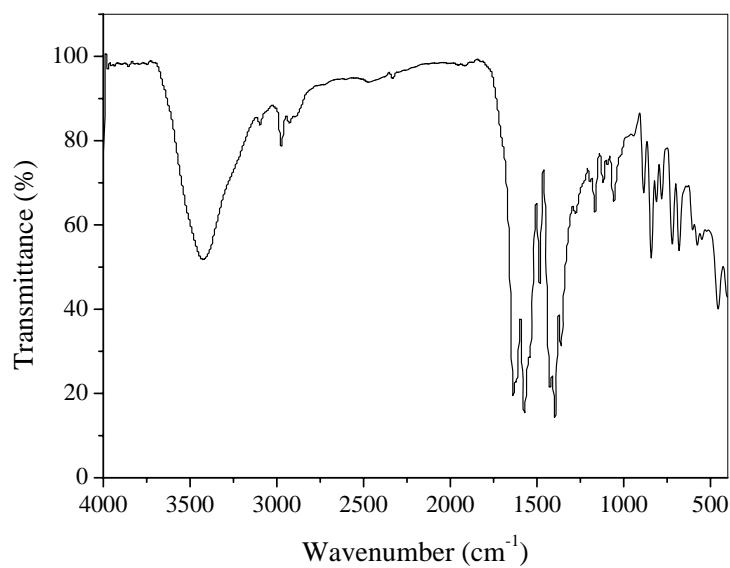
**Fig S3** Space-filling diagram of the 3D coordination framework of **1** containing 1D channels with approximate dimensions of  $8.554 \times 13.188 \text{ \AA}$  along the *a* axis.



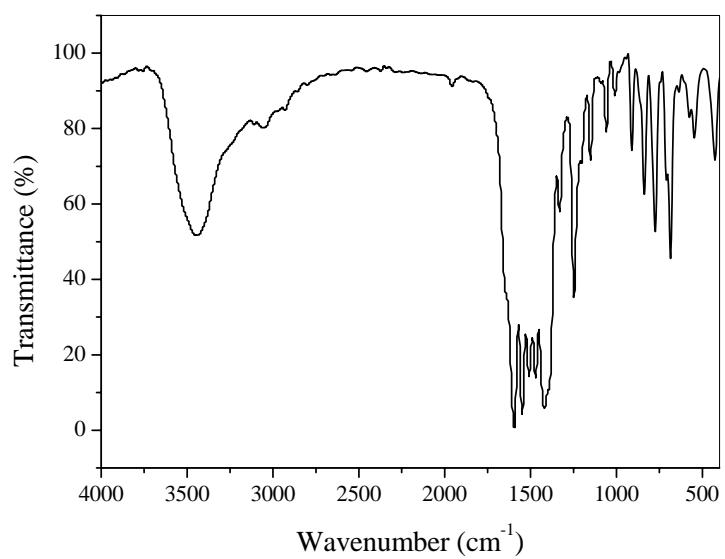
**Fig. S4** View of the 3D coordination framework of **3** with 1D channels.



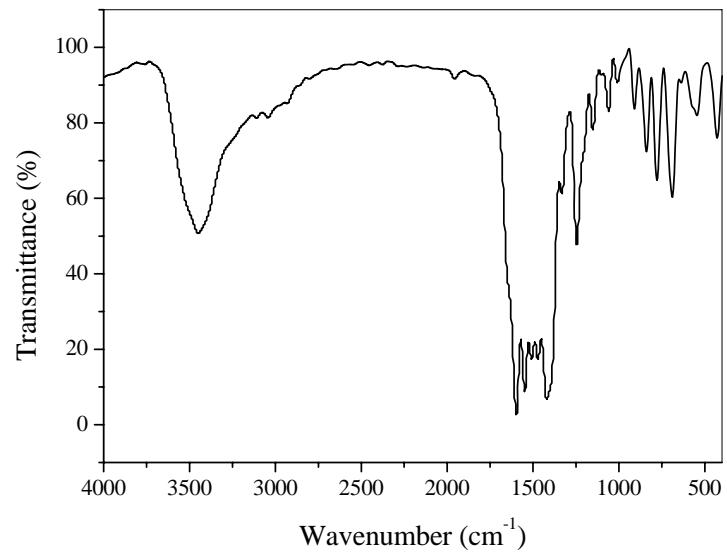
**Fig. S5** IR spectrum of **1**.



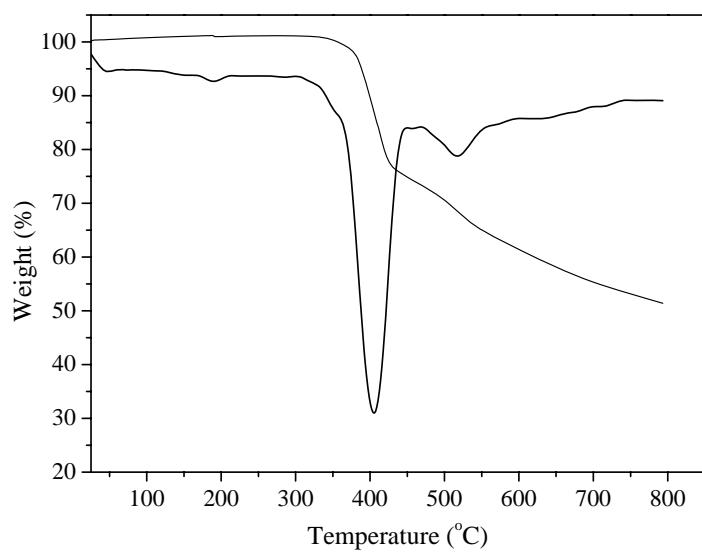
**Fig. S6** IR spectrum of **2**.



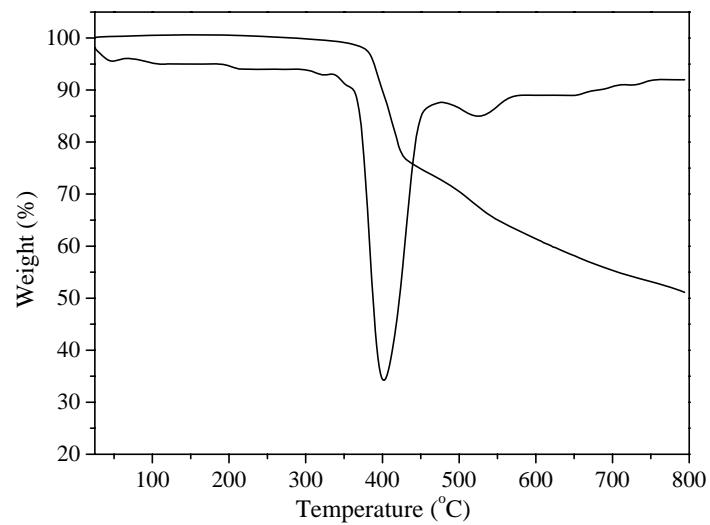
**Fig. S7** IR spectrum of **3**.



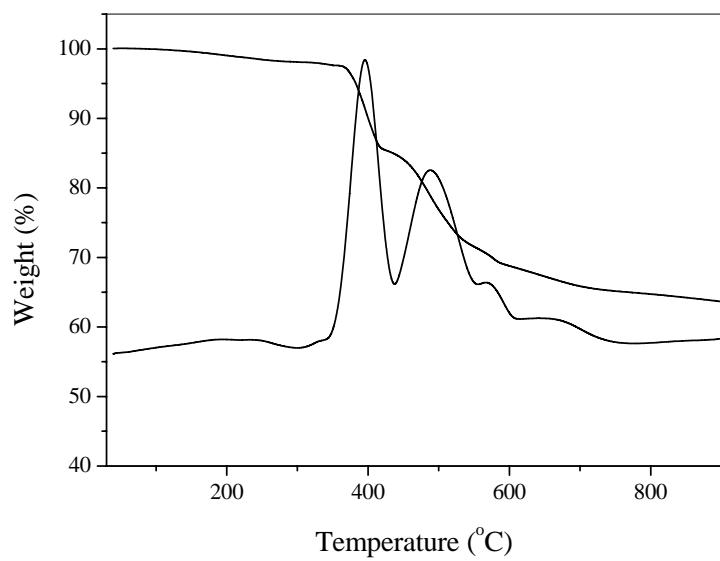
**Fig. S8** IR spectrum of **4**.



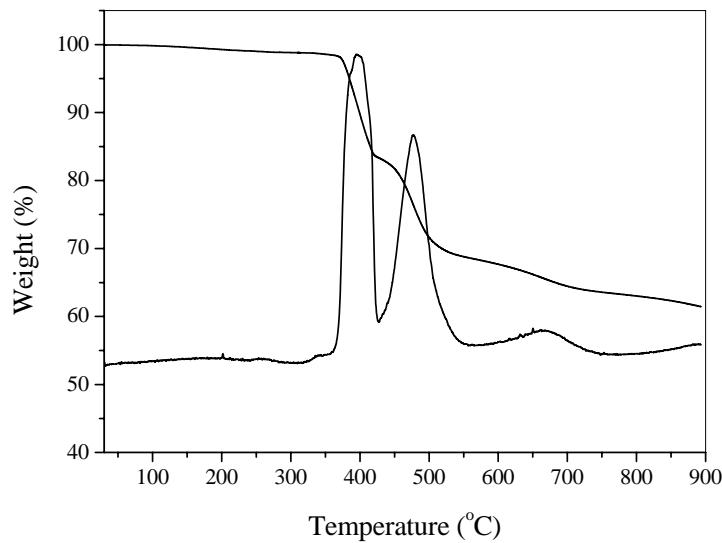
**Fig. S9** TG curve of **1**.



**Fig. S10** TG curve of **2**.



**Fig. S11** TG curve of **3**.



**Fig. S12** TG curve of **4**.