

A Photoluminescent Interpenetrating Diamondoid Metal–Organic Framework Based on Cu₄I₄ Clusters with High Thermal Stability

Shi-Bin Ren, Le Zhou, Jun Zhang, Yi-Zhi Li, Hong-Bin Du* and Xiao-Zeng You

State Key Laboratory of Coordination Chemistry, Nanjing National Laboratory of Microstructures, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China. E-mail: hbd@nju.edu.cn

Supporting Information

Contents:

1. Materials and methods.
2. Figure S1. An ORTEP drawing of the asymmetric unit of complex **1**.
3. Figure S2. TGA-DTA profiles for complex **1**.
4. Figure S3. XRD patterns of the simulated and the pristine complex **1**.
5. Figure S4. Solid state UV absorption spectrum of complex **1**.
6. Figure S5. The emission lifetime of complex **1**.

1. Materials and Methods

Ligand tetrakis(4-pyridyloxymethylene)methane (L) was prepared according to the literature (*Inorg. Chem.*, 2008, **47**, 9724). All other reagents and solvents were commercially purchased without further purification. Infrared spectra were obtained on a Bruker Vector 22 spectrophotometer with KBr pellets in the 4000 - 400 cm^{-1} region. Thermal analysis (TG) was carried out in a nitrogen stream using Seiko Extar 6000 TG/DTA equipment with a heating rate of 10 $^{\circ}\text{C}/\text{min}$. X-ray powder diffraction (XRPD) patterns were measured using a Rigaku D/max-RA diffractometer with Cu $K\alpha$ radiation. Photoluminescence analyses were performed on a Hitachi 850 fluorescence spectrophotometer. Solid state UV absorption spectrum was measured on a Bruker UV-2401 spectrophotometer.

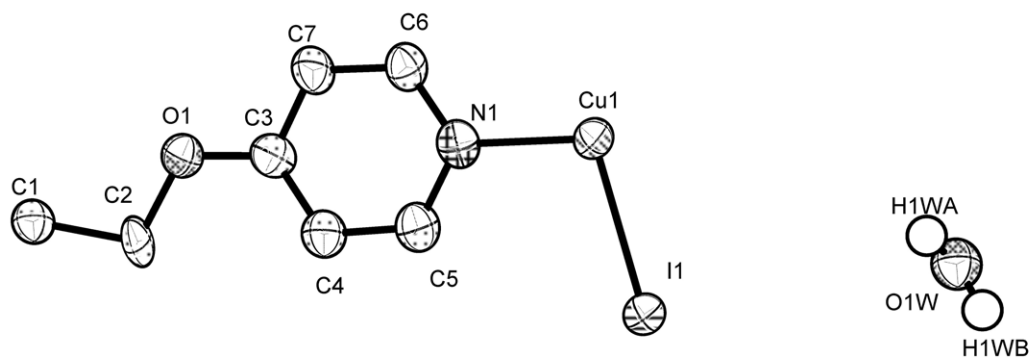


Figure S1. An ORTEP drawing of the asymmetric unit of complex **1** at the 50% probability (The H atoms of ligand **L** are omitted for clarity).

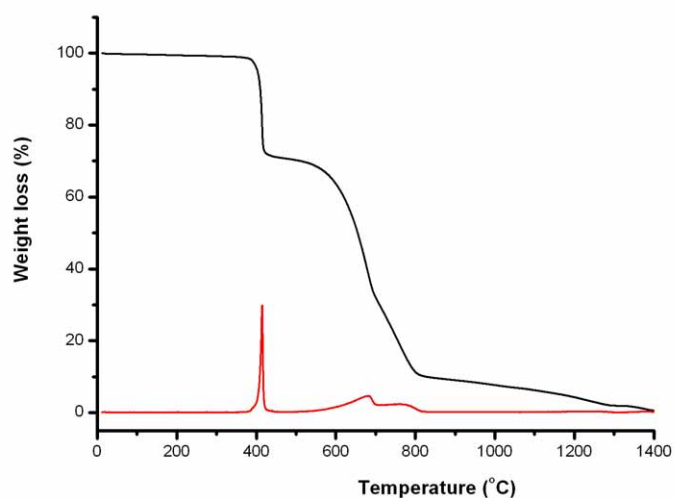


Figure S2. TGA-DTA curves of complex **1** under nitrogen.

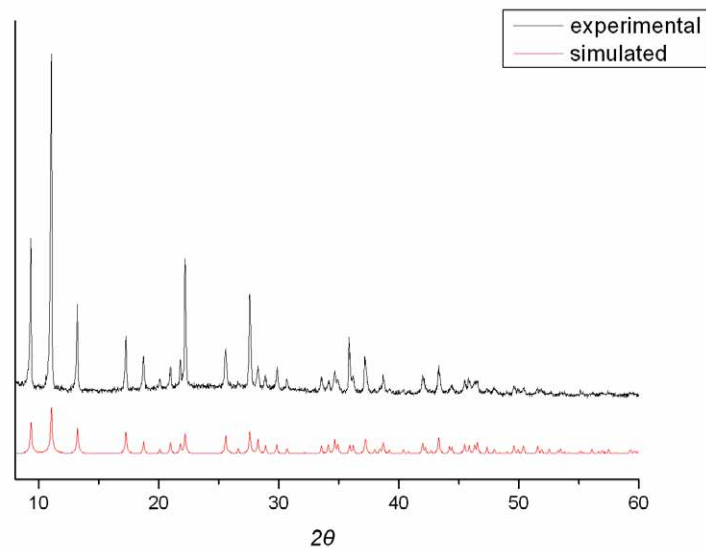


Figure S3. PXRD patterns for **1**: (a) simulated (red), (b) as-synthesized (black).

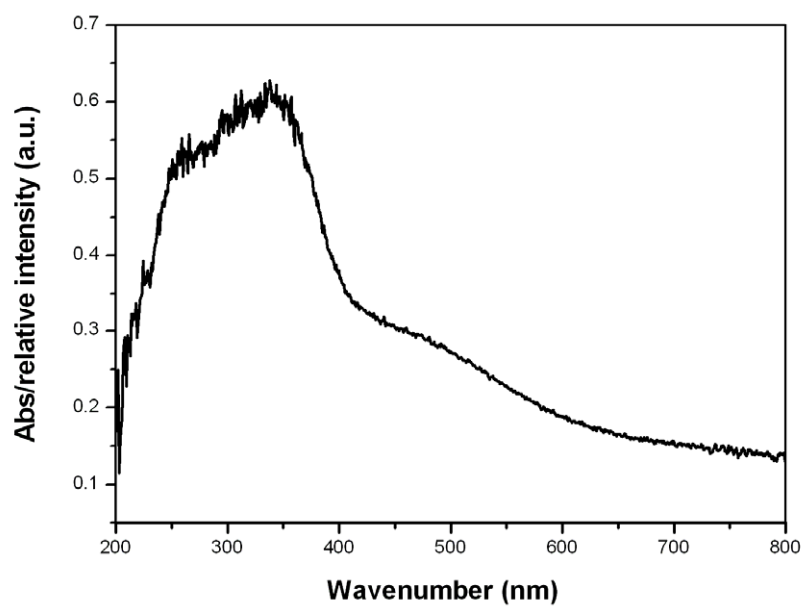


Figure S4. Solid state UV absorption spectrum of complex **1**.

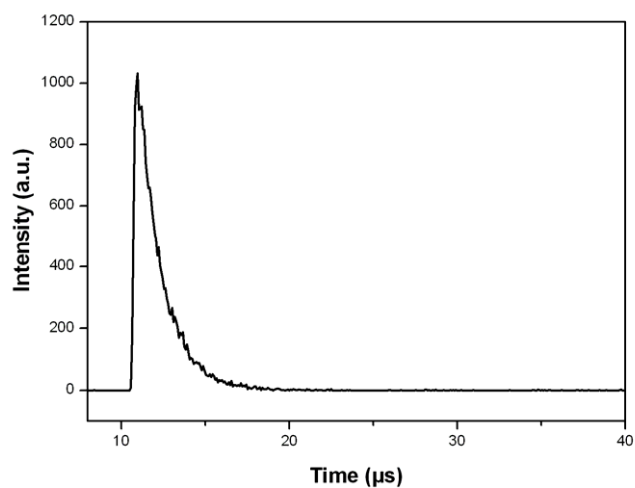


Figure S5. The luminescence decay of **1** monitored at the corresponding emission maxima at room temperature.