

Electronic Supplementary Information for “A new hybrid compound based on octamolybdates
and rigid multidentate ligand: syntheses, structures and characterization”.

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This ESI includes

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Table S1. Cu-N/O Bond lengths [Å] and angles [deg] for **1**

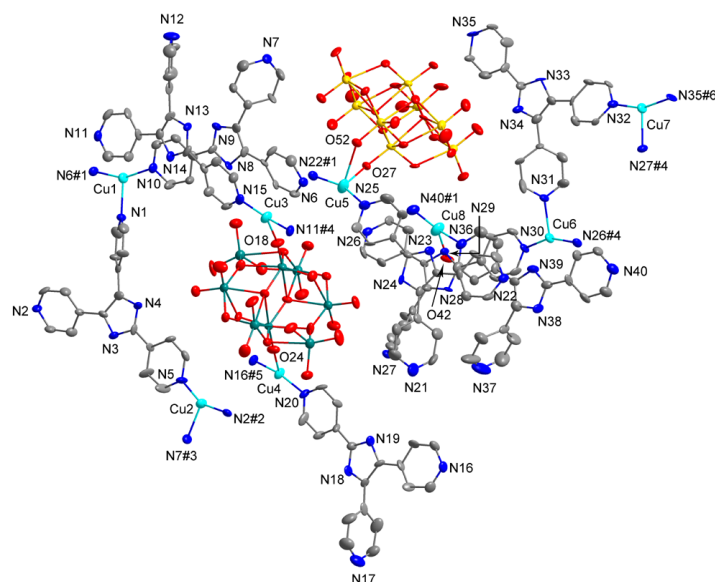
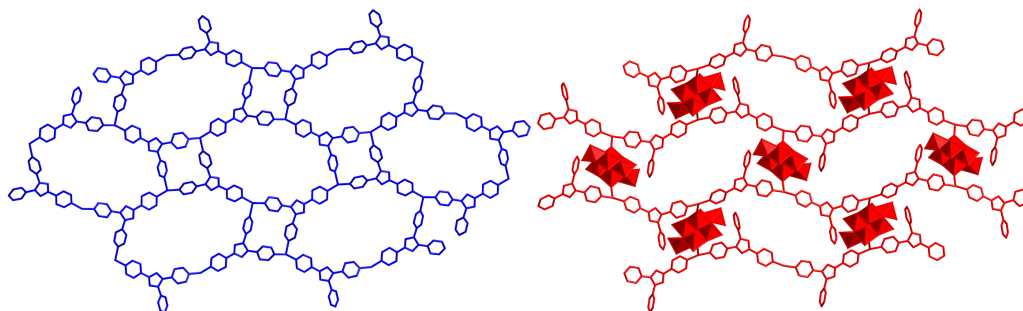


Fig. S1 ORTEP view of **1** showing the local coordination environments of Cu(I) ions and hydrogen atoms and lattice water molecules are omitted for clarity (50% probability displacement ellipsoids). Symmetry codes: #1 -x+3/2, y, z+1/2; #2 -x+1/2, y, z-1/2; #3 x-1, y, z; #4 -x+3/2, y, z-1/2; #5 -x+1/2, y, z+1/2; #6 -x+5/2, y, z-1/2.



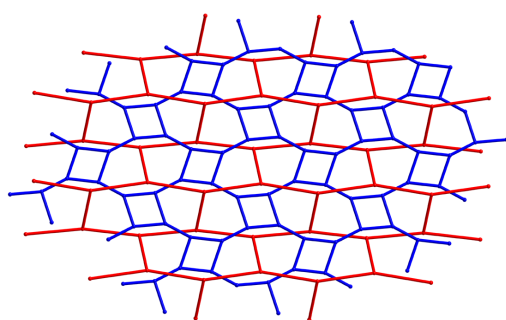


Fig. S2 Schematic representation of the 2-fold interpenetrating framework of motif A.

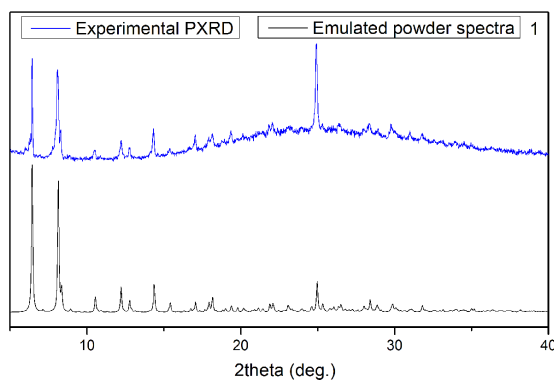


Fig. S3 PXRD pattern of **1**

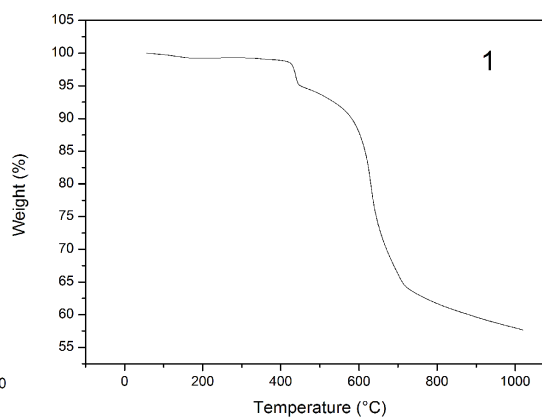


Fig. S4 Thermogravity curve of **1**.

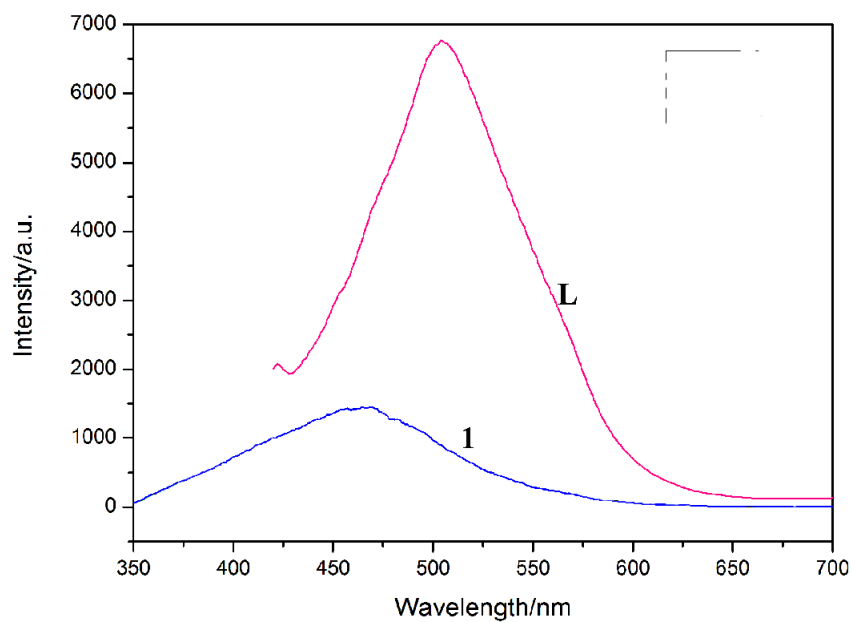


Fig. S5 Luminescent spectrum of **1**.

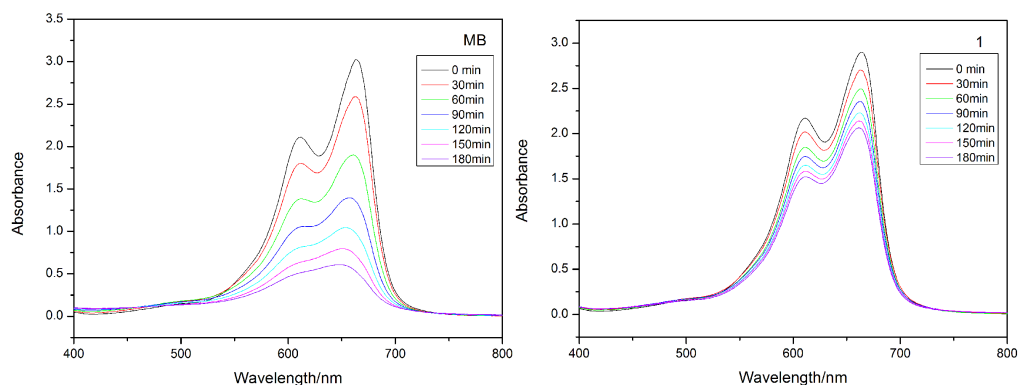


Fig. S6 Visible absorption spectra of the MB solutions (5.0×10^{-5} mol L $^{-1}$) without **1** and in the presence of **1** during the decomposition reaction under UV light irradiation.

Table S1. Cu-N/O Bond lengths [Å] and angles [deg] for **1**.

Cu(1)-N(6)#1	1.908(10)	Cu(5)-N(25)	1.916(10)
Cu(1)-N(10)	1.917(10)	Cu(5)-N(22)#1	1.920(10)
Cu(1)-N(1)	2.149(10)	Cu(5)-O(27)	2.382(8)
Cu(2)-N(2)#2	1.895(10)	Cu(6)-N(30)	1.929(9)
Cu(2)-N(5)	1.926(10)	Cu(6)-N(26)#4	1.939(9)
Cu(2)-N(7)#3	2.141(10)	Cu(6)-N(31)	2.181(10)
Cu(3)-N(11)#4	1.873(10)	Cu(7)-N(32)	1.933(10)
Cu(3)-N(15)	1.887(10)	Cu(7)-N(35)#6	1.940(9)
Cu(3)-O(18)	2.314(8)	Cu(7)-N(27)#4	2.199(10)
Cu(4)-N(16)#5	1.894(9)	Cu(8)-N(40)#1	1.891(11)
Cu(4)-N(20)	1.916(9)	Cu(8)-N(36)	1.903(11)
Cu(4)-O(24)	2.315(8)		
N(6)#1-Cu(1)-N(10)	152.6(5)	N(20)-Cu(4)-O(24)	94.3(4)
N(6)#1-Cu(1)-N(1)	101.4(4)	N(25)-Cu(5)-N(22)#1	158.2(5)
N(10)-Cu(1)-N(1)	106.0(4)	N(25)-Cu(5)-O(27)	111.0(4)
N(2)#2-Cu(2)-N(5)	154.8(4)	N(22)#1-Cu(5)-O(27)	89.3(4)
N(2)#2-Cu(2)-N(7)#3	99.6(4)	N(30)-Cu(6)-N(26)#4	155.1(4)
N(5)-Cu(2)-N(7)#3	105.6(4)	N(30)-Cu(6)-N(31)	103.2(4)
N(11)#4-Cu(3)-N(15)	165.4(5)	N(26)#4-Cu(6)-N(31)	101.8(4)
N(11)#4-Cu(3)-O(18)	93.1(4)	N(32)-Cu(7)-N(35)#6	155.9(4)
N(15)-Cu(3)-O(18)	101.4(4)	N(32)-Cu(7)-N(27)#4	99.8(4)
N(16)#5-Cu(4)-N(20)	166.2(5)	N(35)#6-Cu(7)-N(27)#4	104.2(4)
N(16)#5-Cu(4)-O(24)	98.1(4)	N(40)#1-Cu(8)-N(36)	168.6(5)

Symmetry transformations used to generate equivalent atoms: #1 -x+3/2, y, z+1/2; #2 -x+1/2, y, z-1/2; #3 x-1, y, z; #4 -x+3/2, y, z-1/2; #5 -x+1/2, y, z+1/2; #6 -x+5/2, y, z-1/2.