Electronic Supplementary Information for Dalton Transactions

Electronic Supplementary Information (ESI)

The first continuous silver polyhedra framework containing four kinds of coordination spheres

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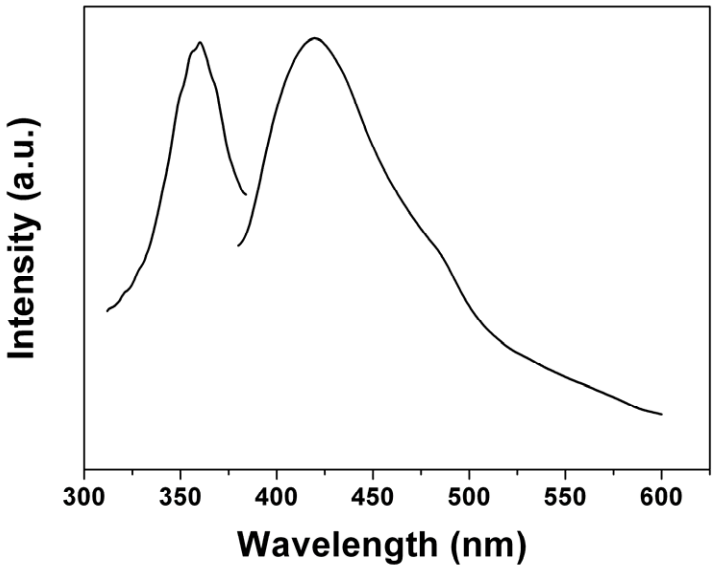
Figure S1. Photoluminescence spectra of **HL** at room temperature.

Figure S2. IR spectra of **HLJU-1**

Figure S3. TG curve of **HLJU-1**



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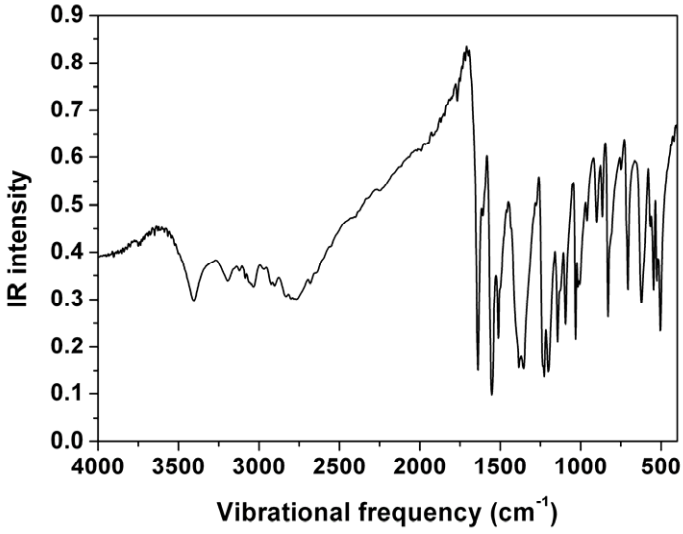

Figure S2. IR spectra of **HLJU-1**.

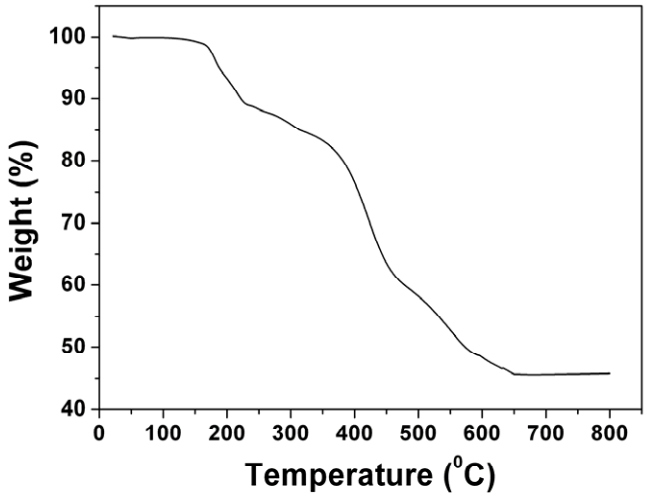

Figure S3. TG curve of **HLJU-1**.

TG analysis.

The TGA curve of **HLJU-1** shows two main steps of weight losses. The first step completes at 247 °C, which corresponds to the release of aqua ligands and ligating nitrate ions. The observed weight loss of 11.54% is close to the calculated value (11.80%). Further decomposition occurred at 247–660 °C with the weight loss of 42.83% attributing to the loss of host component (calcd 43.40%).

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Table S1 Selected bond distances (Å) and angles (º) for complex **HLJU-1**[a]

Ag(1)-O(8)	2.338(3)	Ag(3)-Ag(3)^{iii}	3.2748(8)
Ag(1)-O(1)^{i}	2.428(4)	Ag(4)-O(12)^{iv}	2.354(3)
Ag(1)-O(1)	3.001(5)	Ag(4)-O(14)	2.519(4)
Ag(1)-O(2)	2.526(4)	Ag(4)-O(16)	2.540(5)
Ag(1)-O(9)^{ii}	2.960(5)	Ag(4)-O(9)	2.577(3)
Ag(1)-O(17)^{ii}	2.544(4)	Ag(4)-O(10)	2.858(5)
Ag(1)-O(16)^{ii}	2.565(5)	Ag(4)-O(13)	2.596(4)
Ag(2)-O(1)	2.651(3)	Ag(4)-O(2)v	2.672(4)
Ag(2)-O(4)	2.425(3)	Ag(4)-Ag(5)	3.3802(8)
Ag(2)-O(6)	2.632(3)	Ag(5)-O(9)	2.552(3)
Ag(2)-O(8)	2.436(3)	Ag(5)-O(5)v	2.568(3)
Ag(2)-O(15)	2.452(4)	Ag(5)-O(12)	2.582(3)
Ag(2)-O(1W)	2.462(5)	Ag(5)-O(12)^{iv}	2.588(3)
Ag(3)-O(6)^{iii}	2.300(3)	Ag(5)-O(10)^{iv}	2.588(4)
Ag(3)-O(5)	2.396(3)	Ag(5)-O(2)^{v}	2.624(4)
Ag(3)-O(10)^{iii}	2.430(3)	Ag(5)-O(4)^{v}	2.651(4)
Ag(3)-O(14)^{iii}	2.670(3)	Ag(5)-O(8)^{v}	2.836(3)
Ag(3)-O(4)	2.465(3)		
O(8)-Ag(1)-O(1)^{i}	116.18(13)	O(12)^{iv}-Ag(4)-O(14)	122.58(12)
O(8)-Ag(1)-O(2)	85.30(12)	O(12)^{iv}-Ag(4)-O(16)	148.15(13)
O(1)^{i}-Ag(1)-O(2)	127.03(13)	O(14)-Ag(4)-O(16)	89.24(14)
O(8)-Ag(1)-O(17)^{ii}	123.29(12)	O(12)^{iv}-Ag(4)-O(9)	91.00(11)
O(1)^{i}-Ag(1)-O(17)^{ii}	90.38(14)	O(14)-Ag(4)-O(9)	108.87(11)
O(2)-Ag(1)-O(17)^{ii}	118.60(12)	O(16)-Ag(4)-O(9)	75.67(12)
O(8)-Ag(1)-O(16)^{ii}	137.70(13)	O(12)^{iv}-Ag(4)-O(13)	107.58(12)
O(1)^{i}-Ag(1)-O(16)^{ii}	105.96(14)	O(14)-Ag(4)-O(13)	49.88(11)
O(2)-Ag(1)-O(16)^{ii}	71.79(12)	O(16)-Ag(4)-O(13)	93.75(14)
O(1)-Ag(1)-O(2)	50.35(12)	O(2)^{v}-Ag(4)-O(14)	157.61(15)
O(1)-Ag(1)-O(8)	81.85(12)	O(2)^{v}-Ag(4)-O(16)	69.82(15)
O(1)-Ag(1)-O(9)^{ii}	115.76(12)	O(9)-Ag(4)-O(2)^{v}	74.44(13)
O(1)-Ag(1)-O(16)^{ii}	107.31(12)	O(9)-Ag(4)-O(13)	157.11(11)
O(1)-Ag(1)-O(17)^{ii}	153.79(12)	O(10)-Ag(4)-O(9)	52.17(11)
O(1)-Ag(1)-O(1)^{i}	83.59(12)	O(14)-Ag(4)-O(10)	72.85(11)
O(2)-Ag(1)-O(9)^{ii}	70.23(12)	O(10)-Ag(4)-O(13)	116.88(12)
O(9)^{ii}-Ag(1)-O(1)^{i}	160.64(13)	O(10)-Ag(4)-O(16)	111.60(12)
O(9)^{ii}-Ag(1)-O(16)^{ii}	68.79(14)	O(12)^{iv}-Ag(4)-O(10)	79.95(11)
O(9)^{ii}-Ag(1)-O(17)^{ii}	71.86(14)	O(2)^{v}-Ag(4)-O(10)	121.49(12)
O(8)-Ag(1)-O(9)^{ii}	70.13(12)	O(2)^{v}-Ag(5)-O(12)	146.95(12)
O(17)^{ii}-Ag(1)-O(16)^{ii}	50.04(12)	O(2)^{v}-Ag(5)-O(10)^{iv}	117.72(12)
O(1)-Ag(2)-O(1W)	105.91(15)	O(2)^{v}-Ag(5)-O(12)^{iv}	75.74(13)
O(1)-Ag(2)-O(4)	75.33(13)	O(2)^{v}-Ag(5)-O(5)^{v}	133.85(13)
O(1)-Ag(2)-O(6)	164.36(12)	O(2)^{v}-Ag(5)-O(4)^{v}	71.56(12)
O(1)-Ag(2)-O(8)	87.87(13)	O(2)^{v}-Ag(5)-O(8)^{v}	74.23(12)
O(1)-Ag(2)-O(15)	84.60(15)	O(2)^{v}-Ag(5)-O(9)	75.66(13)
O(4)-Ag(2)-O(8)	95.50(12)	O(4)^{v}-Ag(5)-O(9)	141.29(12)
O(4)-Ag(2)-O(15)	79.75(12)	O(4)^{v}-Ag(5)-O(12)	140.85(11)

O(4)-Ag(2)-O(6)	99.50(12)	$O(4)^{v}$-Ag(5)-$O(10)^{iv}$	67.44(12)
O(8)-Ag(2)-O(6)	77.84(11)	$O(4)^{v}$-Ag(5)-$O(12)^{iv}$	104.59(12)
O(8)-Ag(2)-O(15)	171.90(11)	$O(4)^{v}$-Ag(5)-$O(5)^{v}$	75.76(12)
O(4)-Ag(2)-O(1W)	171.20(14)	$O(4)^{v}$-Ag(5)-$O(8)^{v}$	81.88(11)
O(8)-Ag(2)-O(1W)	93.26(14)	$O(8)^{v}$-Ag(5)-O(9)	69.66(11)
O(15)-Ag(2)-O(1W)	91.65(15)	$O(8)^{v}$-Ag(5)-O(12)	110.16(10)
O(15)-Ag(2)-O(6)	109.29(13)	$O(8)^{v}$-Ag(5)-$O(10)^{iv}$	138.84(11)
O(6)-Ag(2)-O(1W)	81.51(13)	$O(8)^{v}$-Ag(5)-$O(12)^{iv}$	145.32(12)
$O(6)^{iii}$-Ag(3)-O(5)	147.47(12)	$O(8)^{v}$-Ag(5)-$O(5)^{v}$	69.62(12)
$O(6)^{iii}$-Ag(3)-$O(10)^{iii}$	122.65(12)	O(9)-Ag(5)-$O(5)^{v}$	115.59(10)
O(5)-Ag(3)-$O(10)^{iii}$	82.78(11)	O(9)-Ag(5)-O(12)	75.62(10)
$O(6)^{iii}$-Ag(3)-O(4)	122.03(11)	$O(5)^{v}$-Ag(5)-O(12)	74.35(11)
O(5)-Ag(3)-O(4)	82.50(11)	O(9)-Ag(5)-$O(12)^{iv}$	86.44(10)
O(5)-Ag(3)-$O(14)^{iii}$	79.50(14)	$O(5)^{v}$-Ag(5)-$O(12)^{iv}$	145.04(10)
$O(10)^{iii}$-Ag(3)-O(4)	72.91(12)	O(12)-Ag(5)-$O(12)^{iv}$	86.49(11)
$O(14)^{iii}$-Ag(3)-O(4)	147.11(11)	O(9)-Ag(5)-$O(10)^{iv}$	149.22(10)
$O(6)^{iii}$-Ag(3)-$O(14)^{iii}$	86.29(13)	$O(5)^{v}$-Ag(5)-$O(10)^{iv}$	76.47(10)
$O(10)^{iii}$-Ag(3)-$O(14)^{iii}$	77.69(13)	O(12)-Ag(5)-$O(10)^{iv}$	81.36(11)
$O(2)^{v}$-Ag(4)-$O(12)^{iv}$	78.82(14)	$O(12)^{iv}$-Ag(5)-$O(10)^{iv}$	71.86(10)
$O(2)^{v}$-Ag(4)-O(13)	121.43(15)		

[a] Symmetry Code: i, -x+1,-y,-z; ii, x+1,y,z; iii, -x+1,-y+1,-z+1; iv, -x,-y+1,-z+1; v, x-1,y,z.