# Supporting Information

## Polyoxometalate-incorporated Metallapillararene/Metallacalixarene Metal-organic frameworks as Anode Materials for Lithium-ion Batteries

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## Contents

## 1. The molecular structure unit for 1-4.

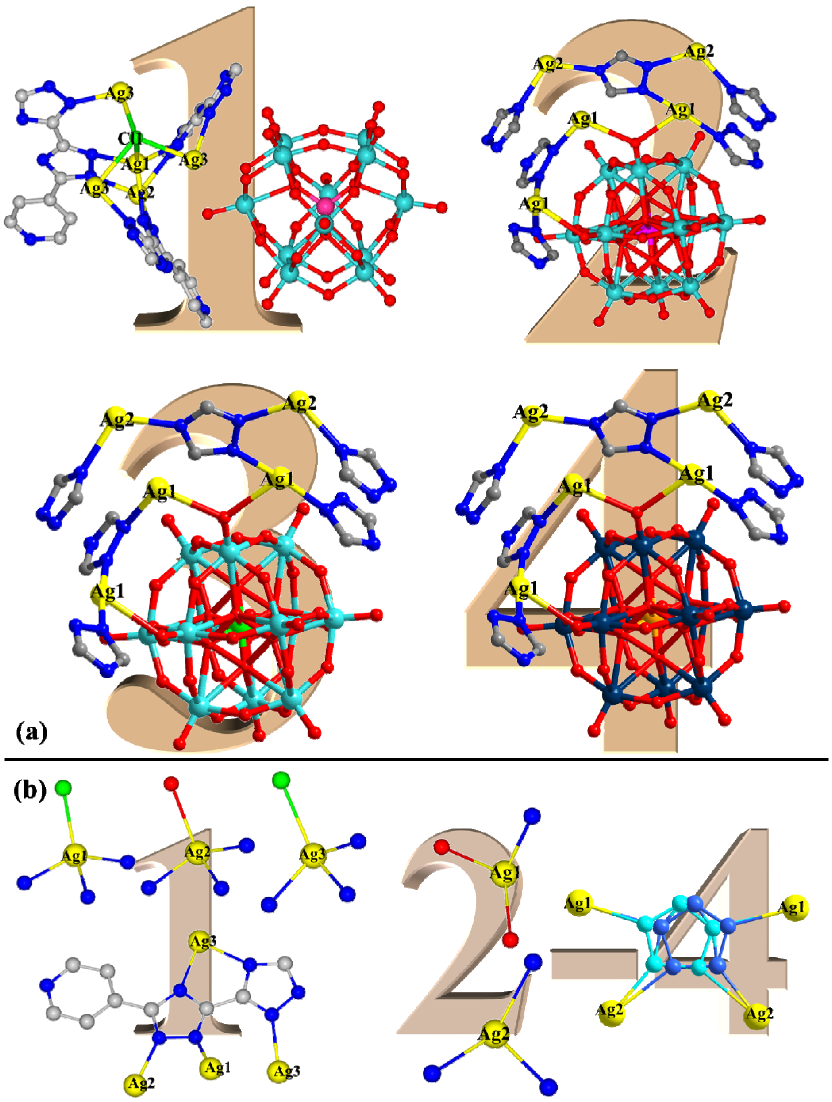


**Figure S1** (a) Combined ball and stick representation of the molecular structure unit of compounds **1-4**. All the hydrogen and water atoms have been omitted for clarity. (b) Combined ball/stick representation of coordination information of Ag ions and organic ligand (pyttz for **1** and trz for **2-4**) in compounds **1-4**.

## 2. Additional structural figures for 1.

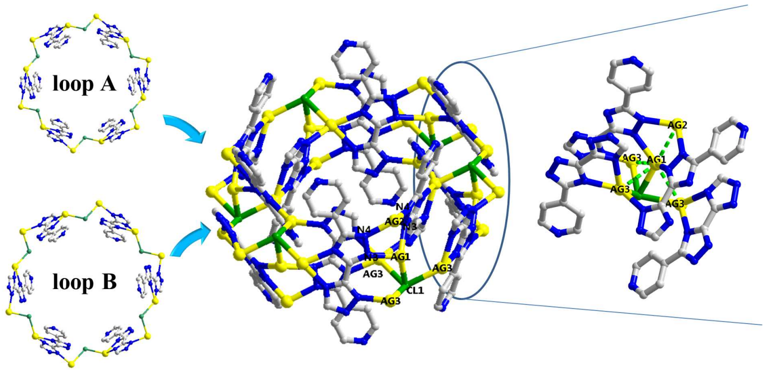


**Figure s2** Ball/stick representation of the double layer metallapillar[6]-arene constructed by loop A and B.(left) Combined ball and stick representation of argentophilic $Ag^{+}$-$Ag^{+}$ interactions.(right)

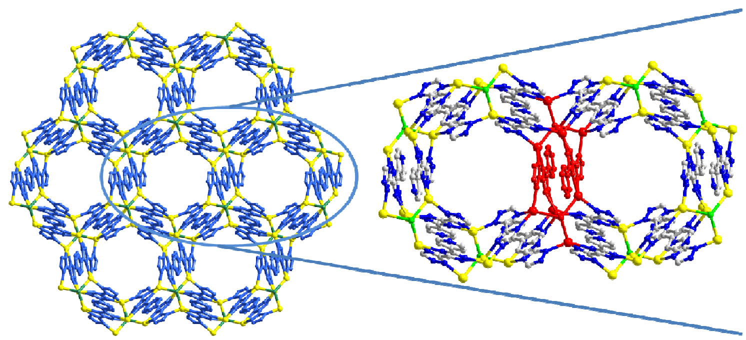

**Figure S3** Ball/stick representation the 2D pillararene -like array constructed the metallapillararene building block by sharing the sides of the inner and outer loops.

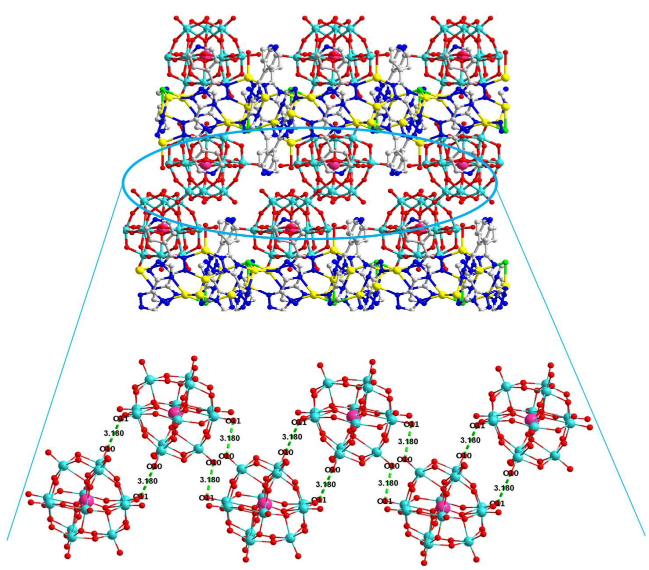

**Figure S4** Ball/stick representation of 3D supramolecular structure constructed by 2D POM-metallapillararene layers *via* the short interaction among the POMs.

## 3. Additional structural figures for 2.

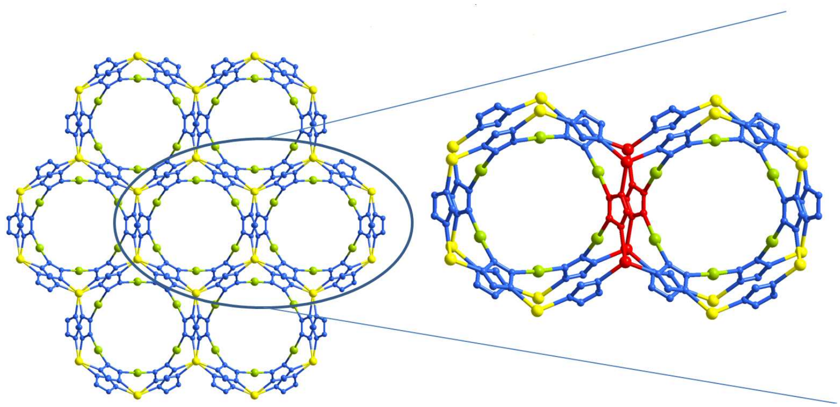

**Figure S5** Ball/stick representation the 2D calixarene-like array constructed by metallacalix[6]-arenes unit by sharing a side of itself.

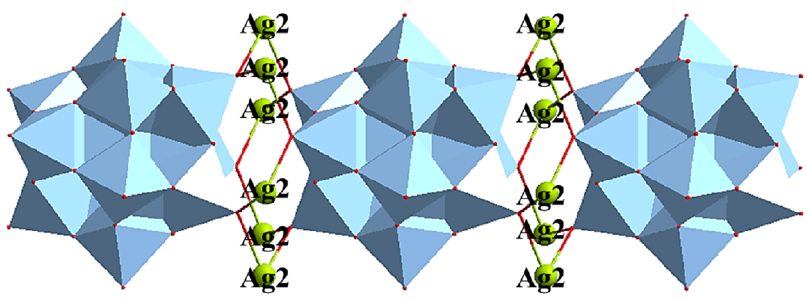


**Figure S6** Ball/stick/polyhedral representation of the 1D inorganic chains constructed by POMs and Ag ions.

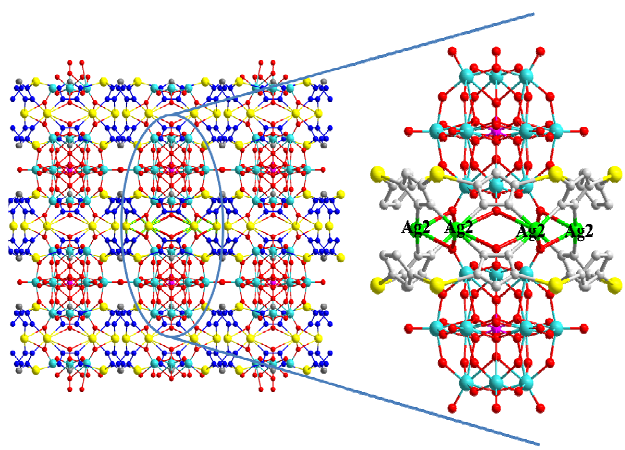


**Figure S7** Ball/stick representation of 3D structure constructed by the POM-Ag 1D chains and 2D $[Ag_2(trz)_3]_n$ networks *via* Ag-O bonds.

## 4. Additional physical characterization for compound 1-4.

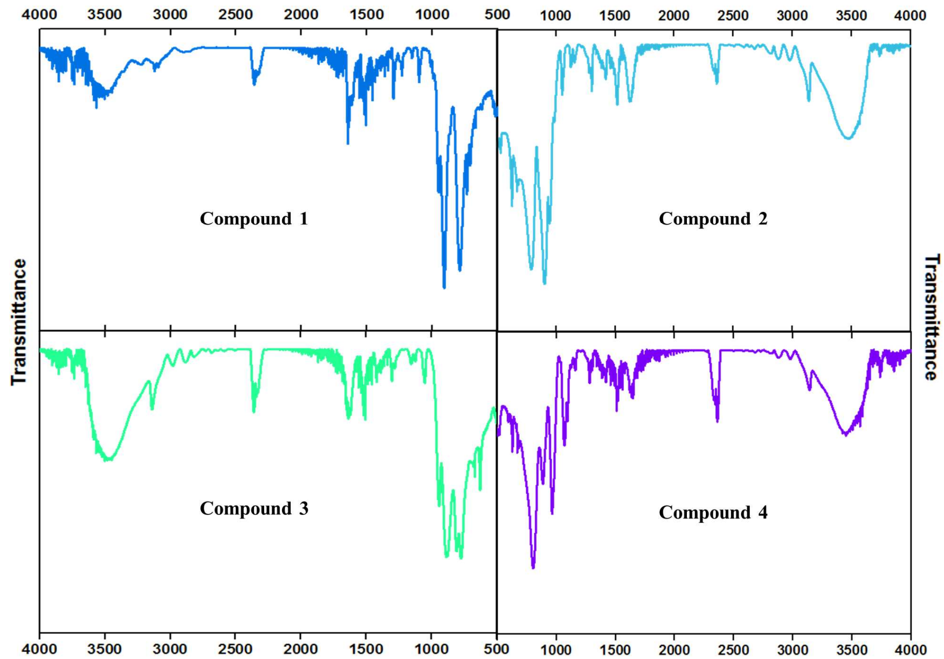


**Figure S8** IR spectra of compounds **1**-**4**.

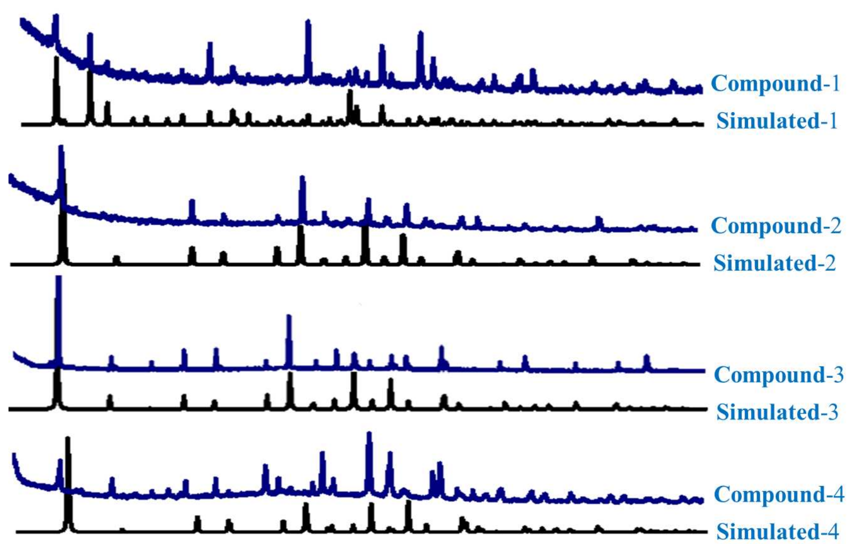


**Figure S9** The simulated and experimental PXRD patterns of compounds **1-4** in *2θ* range of 5 – 50°.

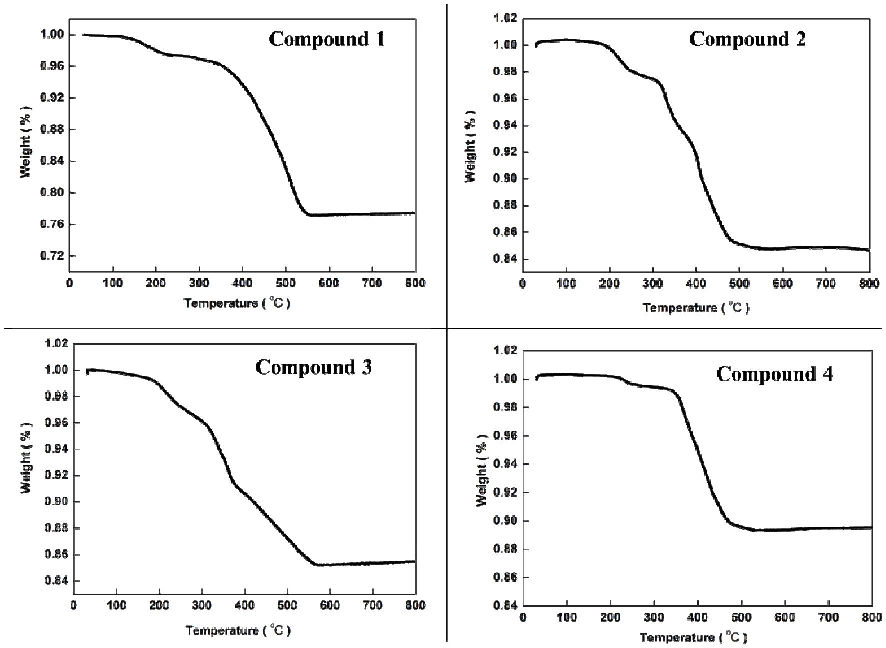


**Figure S10** The TGA curve of compounds **1-4**.

## 5. The electrochemistry performances of POM-based crystal compounds with different structures and components as anode materials.

**Table S1** The electrochemistry performances of POM-based crystal compounds as anode materials.

| Compound | First discharge capacity (mAh $g^{-1}$) | Stable discharge capacity (mAh $g^{-1}$) | current density (mA $g^{-1}$) | Ref |
|---|---|---|---|---|
| **$[Ag_5(pyttz)_3 \cdot Cl \cdot (H_2O)][H_3SiMo_{12}O_{40}] \cdot 3H_2O$** | **1344** | **520** | **100** | **This work** |
| **$[Ag_5(trz)_6][H_5SiMo_{12}O_{40}]$** | **1452** | **570** | **100** | **This work** |
| $[Ag_{26}(Trz)_{16}(OH)_4][P_2W_{18}O_{62}]$ | 1077 | 400 | 100 mA $cm^{-2}$ | [1] |
| $Na[Ag_{16}(Trz)_9(H_2O)_4][P_2W_{18}O_{62}] \cdot H_2O$ | 1094 | 400 | 100 mA $cm^{-2}$ | [1] |
| $\{[Ni_6(OH)_3(H_2O)(en)_3(PW_9O_{34})][Ni_6(OH)_3(H_2O)_4(en)_3(PW_9O_{34})](BDC)_{1.5}\}[Ni(en)(H_2O)_4]$ | 1525 | 540 | 0.25 C | [2] |

## References


[1] Li, M. T.; Cong, L.; Zhao, J.; Zheng, T. T.; Tian, R.; Sha, J. Q.; Su Z. M.; Wang, X. L., *J. Mater. Chem. A* **2017**, *5*, 3371-3376.

[2] Yue, Y.; Li, Y.; Bi, Z.; Veith, G. M.; Bridges, C. A.; Guo, B.; Chen, J.; Mullins, D. R.; Surwade, S. P.; Mahurin , S. M.; Liu, H.; Parans Paranthaman, M.; Dai, S.; *J. Mater. Chem. A*, **2015**, *3*, 22989-22995.

## 6. Additional physical characterization and data for compounds as anode material.

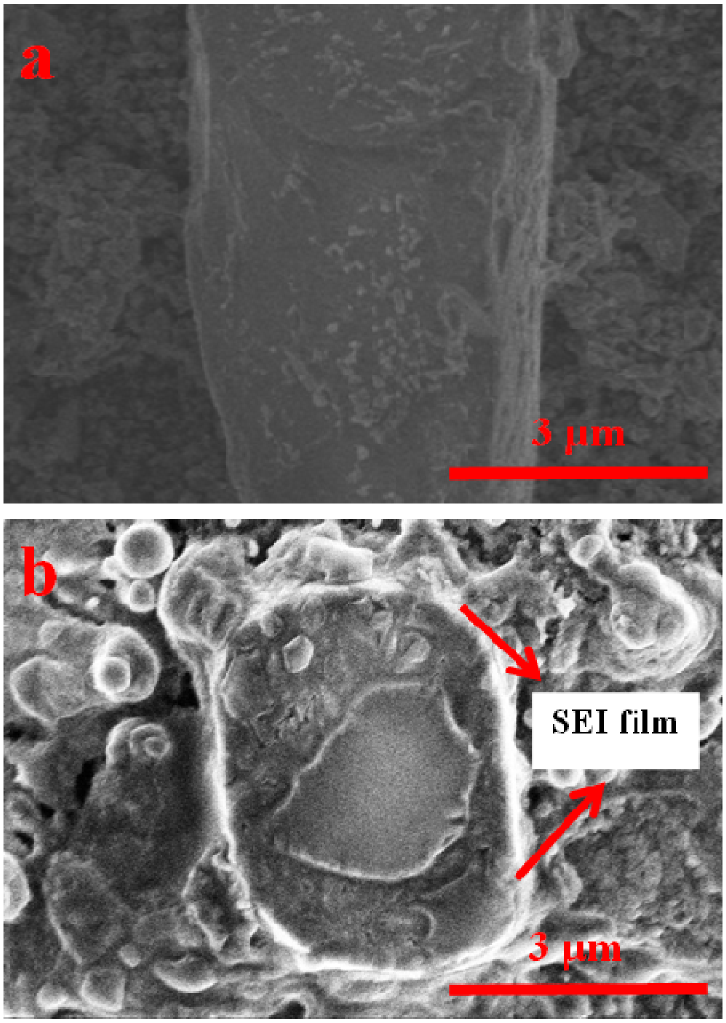


**Figure S11**. SEM images before (a) and after test (b) of the compound **2**

**Table S2** The fitting errors of the simulated equivalent circuit of **1** and **2** anodes

| | Compound **1** | Compound **2** |
|---|---|---|
| $R_e$ (Ω) | 5.36 | 5.89 |
| $R_f$ (Ω) | 21.03 | 27.49 |
| $R_{ct}$ (Ω) | 88.16 | 53.76 |
| Sum (Ω) | 114.55 | 87.14 |

## 7. Bond lengths and angles for compound 1-4. (Table S3-S6)

**Table S3** Bond lengths [pm] and angles [°] for compound **1**.

| Bond | Lengths | Bond | Lengths |
|---|---|---|---|
| C(1)-N(1) | 132.6(11) | O(5)-Mo(3) | 196.3(5) |
| C(1)-C(2) | 137.5(11) | O(6)-Mo(3) | 187.5(5) |
| C(1)-H(1) | 93 | O(6)-Mo(1) | 198.0(5) |
| C(2)-C(5) | 138.9(11) | O(7)-Mo(1) | 190.5(5) |
| C(2)-H(2) | 93 | O(7)-Mo(2) | 197.6(5) |
| C(3)-N(1) | 133.6(11) | O(8)-Mo(1) | 187.0(5) |
| C(3)-C(4) | 135.4(12) | O(8)-Mo(1)#3 | 195.2(5) |
| C(3)-H(3) | 93 | O(10)-Mo(4) | 169.0(5) |
| C(4)-C(5) | 139.1(11) | O(11)-Mo(3) | 168.1(5) |
| C(4)-H(4) | 93 | O(12)-Mo(1) | 167.4(5) |
| C(5)-C(6) | 146.9(11) | O(13)-Mo(2) | 167.5(5) |
| C(6)-N(2) | 135.0(9) | O(14)-Si(1) | 163.8(4) |
| C(6)-N(4) | 135.4(10) | O(14)-Mo(2)#3 | 231.1(4) |
| C(7)-N(3) | 133.6(10) | O(14)-Mo(1)#3 | 236.2(5) |
| C(7)-N(2) | 134.7(9) | O(14)-Mo(3)#3 | 236.3(4) |
| C(7)-C(8) | 147.0(11) | O(9)-Mo(4) | 184.0(5) |
| C(8)-N(6) | 133.3(10) | O(9)-Mo(3) | 197.6(5) |
| C(8)-N(5) | 135.7(10) | Si(1)-O(14)#2 | 163.8(4) |
| C(9)-N(5) | 132.0(10) | Si(1)-O(14)#3 | 163.8(4) |
| C(9)-N(7) | 132.1(10) | Mo(1)-O(8)#2 | 195.2(5) |
| C(9)-H(9) | 93 | Mo(1)-O(14)#2 | 236.2(5) |
| N(2)-Ag(3) | 235.4(6) | Mo(2)-O(5)#3 | 189.2(5) |
| N(3)-N(4) | 137.5(9) | Mo(2)-O(14)#2 | 231.1(4) |
| N(3)-Ag(1) | 241.9(6) | Mo(3)-O(14)#2 | 236.3(4) |
| N(4)-Ag(2) | 231.1(6) | Mo(4)-O(1)#3 | 186.5(5) |
| N(5)-Ag(3) | 240.5(7) | Mo(4)-O(3)#2 | 199.1(5) |
| N(6)-N(7) | 135.9(9) | Ag(3)-N(6)#4 | 229.4(7) |
| N(6)-Ag(3)#1 | 229.4(7) | Ag(3)-Cl#5 | 276.64(13) |
| N(7)-H(7) | 86 | Ag(3)-Ag(1)#5 | 313.83(11) |
| O(1)-Mo(4)#2 | 186.5(5) | Ag(2)-N(4)#6 | 231.1(6) |
| O(1)-Mo(4) | 201.7(5) | Ag(2)-N(4)#7 | 231.1(6) |
| O(2)-Si(1) | 162.8(8) | Ag(2)-Ag(1) | 312.15(18) |
| O(2)-Mo(4)#2 | 234.1(4) | Ag(1)-N(3)#6 | 241.9(6) |
| O(2)-Mo(4)#3 | 234.1(4) | Ag(1)-N(3)#7 | 241.9(6) |
| O(2)-Mo(4) | 234.1(4) | Ag(1)-Cl | 258.6(4) |
| O(3)-Mo(2) | 186.3(5) | Ag(1)-Ag(3)#1 | 313.83(11) |
| O(3)-Mo(4)#3 | 199.1(5) | Ag(1)-Ag(3)#5 | 313.84(11) |
| O(4)-Mo(3) | 188.0(5) | Ag(1)-Ag(3)#8 | 313.84(11) |
| Cl-Ag(3)#8 | 276.64(13) | Cl-Ag(3)#1 | 276.63(13) |

| | | | |
|---|---|---|---|
| O(5)-Mo(2)#2 | 189.2(5) | Cl-Ag(3)#5 | 276.64(13) |
| Bond | Angles | Bond | Angles |
| N(1)-C(1)-C(2) | 121.6(8) | N(3)-Ag(1)-Cl | 113.97(15) |
| N(1)-C(1)-H(1) | 119.2 | N(3)#6-Ag(1)-Ag(2) | 66.04(15) |
| C(2)-C(1)-H(1) | 119.2 | N(3)#7-Ag(1)-Ag(2) | 66.04(15) |
| C(1)-C(2)-C(5) | 118.9(8) | N(3)-Ag(1)-Ag(2) | 66.03(15) |
| C(1)-C(2)-H(2) | 120.5 | Cl-Ag(1)-Ag(2) | 180 |
| C(5)-C(2)-H(2) | 120.5 | N(3)#6-Ag(1)-Ag(3)#1 | 87.12(15) |
| N(1)-C(3)-C(4) | 121.5(8) | N(3)#7-Ag(1)-Ag(3)#1 | 167.79(15) |
| N(1)-C(3)-H(3) | 119.3 | N(3)-Ag(1)-Ag(3)#1 | 74.92(15) |
| C(4)-C(3)-H(3) | 119.3 | Cl-Ag(1)-Ag(3)#1 | 56.81(2) |
| C(3)-C(4)-C(5) | 119.7(8) | Ag(2)-Ag(1)-Ag(3)#1 | 123.19(2) |
| C(3)-C(4)-H(4) | 120.1 | N(3)#6-Ag(1)-Ag(3)#5 | 167.79(15) |
| C(5)-C(4)-H(4) | 120.1 | N(3)#7-Ag(1)-Ag(3)#5 | 74.91(15) |
| C(2)-C(5)-C(4) | 118.1(7) | N(3)-Ag(1)-Ag(3)#5 | 87.13(15) |
| C(2)-C(5)-C(6) | 121.5(7) | Cl-Ag(1)-Ag(3)#5 | 56.81(2) |
| C(4)-C(5)-C(6) | 120.3(7) | Ag(2)-Ag(1)-Ag(3)#5 | 123.19(2) |
| N(2)-C(6)-N(4) | 112.7(7) | Ag(3)#1-Ag(1)-Ag(3)#5 | 92.90(3) |
| N(2)-C(6)-C(5) | 124.6(7) | N(3)#6-Ag(1)-Ag(3)#8 | 74.91(15) |
| N(4)-C(6)-C(5) | 122.6(6) | N(3)#7-Ag(1)-Ag(3)#8 | 87.12(15) |
| N(3)-C(7)-N(2) | 114.1(7) | N(3)-Ag(1)-Ag(3)#8 | 167.80(15) |
| N(3)-C(7)-C(8) | 126.2(7) | Cl-Ag(1)-Ag(3)#8 | 56.81(2) |
| N(2)-C(7)-C(8) | 119.7(7) | Ag(2)-Ag(1)-Ag(3)#8 | 123.19(2) |
| N(6)-C(8)-N(5) | 113.9(7) | Ag(3)#1-Ag(1)-Ag(3)#8 | 92.90(3) |
| N(6)-C(8)-C(7) | 126.3(7) | Ag(3)#5-Ag(1)-Ag(3)#8 | 92.90(3) |
| N(5)-C(8)-C(7) | 119.8(7) | Ag(1)-Cl-Ag(3)#1 | 71.70(7) |
| N(5)-C(9)-N(7) | 110.6(7) | Ag(1)-Cl-Ag(3)#5 | 71.70(7) |
| N(5)-C(9)-H(9) | 124.7 | Ag(3)#1-Cl-Ag(3)#5 | 110.62(7) |
| N(7)-C(9)-H(9) | 124.7 | Ag(1)-Cl-Ag(3)#8 | 71.70(7) |
| C(1)-N(1)-C(3) | 120.2(7) | Ag(3)#1-Cl-Ag(3)#8 | 110.62(7) |
| C(7)-N(2)-C(6) | 102.1(6) | Ag(3)#5-Cl-Ag(3)#8 | 110.61(7) |
| C(7)-N(2)-Ag(3) | 114.4(5) | Mo(4)#2-O(1)-Mo(4) | 119.5(3) |
| C(6)-N(2)-Ag(3) | 143.5(5) | Si(1)-O(2)-Mo(4)#2 | 124.18(16) |
| C(7)-N(3)-N(4) | 105.3(6) | Si(1)-O(2)-Mo(4)#3 | 124.18(16) |
| C(7)-N(3)-Ag(1) | 138.1(5) | Mo(4)#2-O(2)-Mo(4)#3 | 91.5(2) |
| N(4)-N(3)-Ag(1) | 109.3(4) | Si(1)-O(2)-Mo(4) | 124.18(16) |
| C(6)-N(4)-N(3) | 105.8(6) | Mo(4)#2-O(2)-Mo(4) | 91.5(2) |
| C(6)-N(4)-Ag(2) | 143.7(5) | Mo(4)#3-O(2)-Mo(4) | 91.5(2) |
| N(3)-N(4)-Ag(2) | 110.5(4) | Mo(2)-O(3)-Mo(4)#3 | 147.2(3) |
| C(9)-N(5)-C(8) | 103.1(7) | Mo(3)-O(4)-Mo(2) | 120.4(2) |
| C(9)-N(5)-Ag(3) | 141.2(5) | Mo(2)#2-O(5)-Mo(3) | 149.9(3) |
| C(8)-N(5)-Ag(3) | 111.7(5) | Mo(3)-O(6)-Mo(1) | 120.7(2) |
| C(8)-N(6)-N(7) | 102.2(6) | Mo(1)-O(7)-Mo(2) | 120.5(2) |
| C(8)-N(6)-Ag(3)#1 | 130.9(5) | Mo(1)-O(8)-Mo(1)#3 | 151.6(3) |

| | | | |
|---|---|---|---|
| N(7)-N(6)-Ag(3)#1 | 126.0(5) | Si(1)-O(14)-Mo(2)#3 | 123.3(2) |
| C(9)-N(7)-N(6) | 110.2(6) | Si(1)-O(14)-Mo(1)#3 | 124.1(3) |
| C(9)-N(7)-H(7) | 124.9 | Mo(2)#3-O(14)-Mo(1)#3 | 92.31(16) |
| N(6)-N(7)-H(7) | 124.9 | Si(1)-O(14)-Mo(3)#3 | 125.7(2) |
| O(1)-Mo(4)-O(2) | 73.19(18) | Mo(2)#3-O(14)-Mo(3)#3 | 91.26(15) |
| N(6)#4-Ag(3)-N(2) | 142.6(2) | Mo(1)#3-O(14)-Mo(3)#3 | 90.31(15) |
| N(6)#4-Ag(3)-N(5) | 107.8(2) | Mo(4)-O(9)-Mo(3) | 155.3(3) |
| N(2)-Ag(3)-N(5) | 72.7(2) | O(2)-Si(1)-O(14)#2 | 109.51(19) |
| N(6)#4-Ag(3)-Cl#5 | 93.31(17) | O(2)-Si(1)-O(14)#3 | 109.51(19) |
| N(2)-Ag(3)-Cl#5 | 113.56(15) | O(14)#2-Si(1)-O(14)#3 | 109.43(19) |
| N(5)-Ag(3)-Cl#5 | 133.71(16) | O(2)-Si(1)-O(14) | 109.51(19) |
| N(6)#4-Ag(3)-Ag(1)#5 | 92.33(16) | O(14)#2-Si(1)-O(14) | 109.43(19) |
| N(2)-Ag(3)-Ag(1)#5 | 124.61(15) | O(14)#3-Si(1)-O(14) | 109.43(19) |
| N(5)-Ag(3)-Ag(1)#5 | 86.11(15) | O(12)-Mo(1)-O(8) | 102.8(3) |
| Cl#5-Ag(3)-Ag(1)#5 | 51.49(7) | O(12)-Mo(1)-O(7) | 101.2(2) |
| N(4)-Ag(2)-N(4)#6 | 108.02(17) | O(8)-Mo(1)-O(7) | 92.4(2) |
| N(4)-Ag(2)-N(4)#7 | 108.02(17) | O(12)-Mo(1)-O(8)#2 | 101.1(2) |
| N(4)#6-Ag(2)-N(4)#7 | 108.02(17) | O(8)-Mo(1)-O(8)#2 | 86.0(3) |
| N(4)-Ag(2)-Ag(1) | 69.11(16) | O(7)-Mo(1)-O(8)#2 | 157.4(2) |
| N(4)#6-Ag(2)-Ag(1) | 69.11(16) | O(12)-Mo(1)-O(6) | 98.8(3) |
| N(4)#7-Ag(2)-Ag(1) | 69.11(16) | O(8)-Mo(1)-O(6) | 158.0(2) |
| N(3)#6-Ag(1)-N(3)#7 | 104.63(18) | O(7)-Mo(1)-O(6) | 87.2(2) |
| N(3)#6-Ag(1)-N(3) | 104.63(18) | O(8)#2-Mo(1)-O(6) | 86.0(2) |
| N(3)#7-Ag(1)-N(3) | 104.63(18) | O(12)-Mo(1)-O(14)#2 | 170.7(2) |
| N(3)#6-Ag(1)-Cl | 113.96(15) | O(8)-Mo(1)-O(14)#2 | 85.24(19) |
| N(3)#7-Ag(1)-Cl | 113.96(15) | O(7)-Mo(1)-O(14)#2 | 73.53(18) |
| O(6)-Mo(3)-O(4) | 91.8(2) | O(8)#2-Mo(1)-O(14)#2 | 83.87(18) |
| O(11)-Mo(3)-O(5) | 100.4(2) | O(6)-Mo(1)-O(14)#2 | 73.54(18) |
| O(6)-Mo(3)-O(5) | 89.7(2) | O(13)-Mo(2)-O(3) | 102.2(3) |
| O(4)-Mo(3)-O(5) | 157.9(2) | O(13)-Mo(2)-O(5)#3 | 102.0(2) |
| O(11)-Mo(3)-O(9) | 100.9(2) | O(3)-Mo(2)-O(5)#3 | 89.7(2) |
| O(6)-Mo(3)-O(9) | 157.5(2) | O(13)-Mo(2)-O(4) | 97.0(2) |
| O(4)-Mo(3)-O(9) | 88.1(2) | O(3)-Mo(2)-O(4) | 89.7(2) |
| O(5)-Mo(3)-O(9) | 82.3(2) | O(5)#3-Mo(2)-O(4) | 160.6(2) |
| O(11)-Mo(3)-O(14)#2 | 173.7(2) | O(13)-Mo(2)-O(7) | 98.0(2) |
| O(6)-Mo(3)-O(14)#2 | 75.30(18) | O(3)-Mo(2)-O(7) | 159.6(2) |
| O(4)-Mo(3)-O(14)#2 | 74.27(18) | O(5)#3-Mo(2)-O(7) | 88.9(2) |
| O(5)-Mo(3)-O(14)#2 | 84.82(18) | O(4)-Mo(2)-O(7) | 85.1(2) |
| O(9)-Mo(3)-O(14)#2 | 83.09(18) | O(13)-Mo(2)-O(14)#2 | 167.9(2) |
| O(10)-Mo(4)-O(9) | 103.0(2) | O(3)-Mo(2)-O(14)#2 | 86.09(19) |
| O(10)-Mo(4)-O(1)#3 | 102.6(2) | O(5)#3-Mo(2)-O(14)#2 | 86.67(19) |
| O(9)-Mo(4)-O(1)#3 | 95.7(2) | O(4)-Mo(2)-O(14)#2 | 73.99(18) |
| O(10)-Mo(4)-O(3)#2 | 98.4(2) | O(7)-Mo(2)-O(14)#2 | 73.54(18) |
| O(9)-Mo(4)-O(3)#2 | 85.7(2) | O(11)-Mo(3)-O(6) | 101.2(2) |

| | | | |
|---|---|---|---|
| O(1)#3-Mo(4)-O(3)#2 | 157.9(2) | O(11)-Mo(3)-O(4) | 100.9(2) |
| O(10)-Mo(4)-O(1) | 96.7(2) | O(3)#2-Mo(4)-O(1) | 83.0(2) |
| O(9)-Mo(4)-O(1) | 158.5(2) | O(10)-Mo(4)-O(2) | 169.8(2) |
| O(1)#3-Mo(4)-O(1) | 88.1(3) | O(9)-Mo(4)-O(2) | 87.2(2) |
| O(3)#2-Mo(4)-O(2) | 82.28(17) | O(1)#3-Mo(4)-O(2) | 75.82(19) |

Symmetry transformations used to generate equivalent atoms: #1 y+1,-x+y+1,-z; #2 -x+y+2,-x+1,z; #3 -y+1,x-y-1,z; #4 x-y,x-1,-z; #5 -x+1,-y,-z; #6 -y+1,x-y,z; #7 -x+y+1,-x+1,z; #8 x-y, x,-z.

**Table S4** Bond lengths [pm] and angles [°] for compound **2**

| Bond | Lengths | Bond | Lengths |
|---|---|---|---|
| Mo(1)-O(3)#1 | 188.2(7) | Mo(1)-O(2) | 164.5(9) |
| Mo(1)-O(3) | 188.2(7) | O(6)-Mo(2)#2 | 239.3(13) |
| Mo(1)-O(1)#2 | 189.4(6) | O(8)-Mo(2)#2 | 239.1(12) |
| Mo(1)-O(1) | 189.4(6) | O(8)-Mo(2)#3 | 239.1(12) |
| Mo(1)-O(6)#3 | 238.5(10) | O(8)-Mo(2)#5 | 239.1(12) |
| Mo(1)-O(6) | 238.5(10) | Ag(1)-C(1) | 202(2) |
| Mo(2)-O(4) | 165.1(9) | Ag(1)-N(1) | 242.3(18) |
| Mo(2)-O(5)#3 | 188.6(6) | Ag(2)-N(3) | 222(3) |
| Mo(2)-O(5)#2 | 188.6(5) | N(2)-N(3) | 52(3) |
| Mo(2)-O(3) | 189.9(8) | N(2)-C(2) | 105(3) |
| Mo(2)-O(3)#4 | 189.9(8) | N(2)-C(1) | 129(3) |
| Mo(2)-O(8)#5 | 239.1(12) | N(2)-N(1) | 138(3) |
| Mo(2)-O(6)#3 | 239.3(13) | N(1)-C(1) | 62(3) |
| Si(1)-O(8)#5 | 160(2) | N(1)-N(3) | 167(3) |
| Si(1)-O(8) | 160(2) | C(2)-N(3) | 137(3) |
| Si(1)-O(6)#5 | 161.4(14) | O(6)-Mo(1)#2 | 238.5(10) |
| Si(1)-O(6)#3 | 161.4(14) | Si(1)-O(6) | 161.4(14) |
| Si(1)-O(6)#6 | 161.4(14) | O(1)-Mo(1)#3 | 189.4(6) |
| Si(1)-O(6)#2 | 161.4(14) | O(5)-Mo(2)#3 | 188.6(5) |
| Si(1)-O(6)#7 | 161.4(14) | O(5)-Mo(2)#2 | 188.6(5) |
| Bond | Angles | Bond | Angles |
| O(2)-Mo(1)-O(3)#1 | 100.4(4) | N(3)-N(2)-N(1) | 115(5) |
| O(2)-Mo(1)-O(3) | 100.4(4) | C(2)-N(2)-N(1) | 122(2) |
| O(3)#1-Mo(1)-O(3) | 159.2(7) | C(1)-N(2)-N(1) | 26.4(13) |
| O(2)-Mo(1)-O(1)#2 | 100.2(5) | C(1)-N(1)-N(2) | 68(3) |
| O(3)#1-Mo(1)-O(1)#2 | 88.2(4) | C(1)-N(1)-N(3) | 52(3) |
| O(3)-Mo(1)-O(1)#2 | 88.2(5) | N(2)-N(1)-N(3) | 16.4(13) |
| O(2)-Mo(1)-O(1) | 100.2(5) | C(1)-N(1)-Ag(1) | 43(3) |
| O(3)#1-Mo(1)-O(1) | 88.2(5) | N(2)-N(1)-Ag(1) | 110.9(14) |
| O(3)-Mo(1)-O(1) | 88.2(4) | N(3)-N(1)-Ag(1) | 95.6(12) |
| O(1)#2-Mo(1)-O(1) | 159.6(10) | N(2)-C(2)-N(3) | 19.8(17) |
| O(2)-Mo(1)-O(6)#3 | 157.1(3) | N(2)-N(3)-C(2) | 43(4) |
| O(3)#1-Mo(1)-O(6)#3 | 96.0(5) | N(2)-N(3)-C(1) | 69(4) |
| O(3)-Mo(1)-O(6)#3 | 64.1(5) | C(2)-N(3)-C(1) | 109(2) |

| | | | |
|---|---|---|---|
| O(1)#2-Mo(1)-O(6)#3 | 96.3(6) | N(2)-N(3)-N(1) | 49(4) |
| O(1)-Mo(1)-O(6)#3 | 64.2(5) | C(2)-N(3)-N(1) | 88.6(19) |
| O(4)-Mo(2)-O(3)#4 | 99.9(5) | C(1)-N(3)-N(1) | 20.7(12) |
| O(5)#3-Mo(2)-O(3)#4 | 87.8(5) | N(2)-N(3)-Ag(2) | 154(5) |
| O(5)#2-Mo(2)-O(3)#4 | 158.8(6) | C(2)-N(3)-Ag(2) | 130.3(18) |
| O(3)-Mo(2)-O(3)#4 | 87.6(4) | C(1)-N(3)-Ag(2) | 119(2) |
| O(4)-Mo(2)-O(8)#5 | 158.2(7) | N(1)-N(3)-Ag(2) | 138.8(17) |
| O(5)#3-Mo(2)-O(8)#5 | 64.1(5) | N(1)-C(1)-N(2) | 85(4) |
| O(5)#2-Mo(2)-O(8)#5 | 64.1(5) | N(1)-C(1)-N(3) | 107(4) |
| O(3)-Mo(2)-O(8)#5 | 95.7(5) | N(2)-C(1)-N(3) | 22.0(14) |
| O(3)#4-Mo(2)-O(8)#5 | 95.7(5) | N(1)-C(1)-Ag(1) | 125(4) |
| O(4)-Mo(2)-O(6)#3 | 156.0(6) | N(2)-C(1)-Ag(1) | 149(2) |
| O(5)#3-Mo(2)-O(6)#3 | 95.8(6) | N(3)-C(1)-Ag(1) | 128(2) |
| O(5)#2-Mo(2)-O(6)#3 | 95.8(6) | O(2)-Mo(1)-O(6) | 157.1(3) |
| O(3)-Mo(2)-O(6)#3 | 63.7(4) | O(3)#1-Mo(1)-O(6) | 64.1(5) |
| O(3)#4-Mo(2)-O(6)#3 | 63.7(4) | O(3)-Mo(1)-O(6) | 96.0(5) |
| O(8)#5-Mo(2)-O(6)#3 | 45.8(6) | O(1)#2-Mo(1)-O(6) | 64.2(5) |
| O(8)#5-Si(1)-O(8) | 180 | O(1)-Mo(1)-O(6) | 96.3(6) |
| O(8)#5-Si(1)-O(6)#5 | 70.7(5) | O(6)#3-Mo(1)-O(6) | 45.9(6) |
| O(4)-Mo(2)-O(3) | 99.9(5) | O(4)-Mo(2)-O(5)#3 | 101.3(6) |
| O(5)#3-Mo(2)-O(3) | 158.8(6) | O(4)-Mo(2)-O(5)#2 | 101.3(6) |
| O(5)#2-Mo(2)-O(3) | 87.8(5) | O(5)#3-Mo(2)-O(5)#2 | 89.0(6) |

Symmetry transformations used to generate equivalent atoms: #1 -x+y,y,-z; #2 y,-x+y,-z; #3 x-y,x,-z; #4 -x,-x+y,z; #5 -x,-y,-z; #6 -y,x-y,z; #7 -x+y,-x,z.

**Table S5** Bond lengths [pm] and angles [°] for compound **3**

| Bond | Lengths | Bond | Lengths |
|---|---|---|---|
| Ag(1)-N(3) | 218(4) | O(1)-Mo(1)#4 | 236.2(11) |
| Ag(2)-C(2) | 201(3) | O(2)-Mo(1)#4 | 189.9(9) |
| Ag(2)-N(1) | 241(2) | O(3)-Mo(2)#3 | 188.2(6) |
| Ge(1)-O(7)#1 | 169(3) | O(6)-Mo(1)#5 | 190.0(7) |
| Ge(1)-O(7) | 169(3) | O(6)-Mo(1)#4 | 190.0(7) |
| Ge(1)-O(1)#1 | 171.6(16) | O(7)-Mo(2)#5 | 236.0(13) |
| Ge(1)-O(1)#2 | 171.6(16) | O(7)-Mo(2)#3 | 236.0(13) |
| Ge(1)-O(1)#3 | 171.6(16) | C(1)-N(2) | 107(3) |
| Ge(1)-O(1)#4 | 171.6(16) | C(1)-N(3) | 138(4) |
| Ge(1)-O(1)#5 | 171.6(16) | N(1)-C(2) | 62(3) |
| Ge(1)-O(1) | 171.6(16) | N(1)-N(2) | 139(3) |
| Mo(1)-O(4) | 163.9(10) | N(1)-N(3) | 169(4) |
| Mo(1)-O(2)#2 | 189.9(9) | N(3)-N(2) | 52(4) |
| Mo(1)-O(2)#6 | 189.9(9) | N(3)-C(2) | 139(4) |
| Mo(1)-O(6)#3 | 190.0(7) | C(2)-N(2) | 128(4) |
| Mo(1)-O(6)#2 | 190.0(7) | Mo(2)-O(3) | 188.2(6) |
| Mo(1)-O(1) | 236.2(11) | Mo(2)-O(2)#6 | 189.9(10) |

| | | | |
|---|---|---|---|
| Mo(1)-O(1)#2 | 236.2(11) | Mo(2)-O(2) | 189.9(10) |
| Mo(2)-O(5) | 163.9(10) | Mo(2)-O(1) | 232.9(16) |
| Mo(2)-O(3)#5 | 188.2(6) | Mo(2)-O(7) | 236.0(13) |
| Bond | Angles | Bond | Angles |
| C(2)-Ag(2)-N(1) | 12.6(10) | Mo(2)#5-O(7)-Mo(2)#3 | 96.7(7) |
| O(7)#1-Ge(1)-O(7) | 180 | Ge(1)-O(7)-Mo(2) | 120.4(5) |
| O(7)#1-Ge(1)-O(1)#1 | 69.7(5) | Mo(2)#5-O(7)-Mo(2) | 96.7(7) |
| O(7)-Ge(1)-O(1)#1 | 110.3(5) | Mo(2)#3-O(7)-Mo(2) | 96.7(7) |
| O(7)#1-Ge(1)-O(1)#2 | 69.7(5) | N(2)-C(1)-N(3) | 20(2) |
| O(7)-Ge(1)-O(1)#2 | 110.3(5) | C(2)-N(1)-N(2) | 67(4) |
| O(1)#1-Ge(1)-O(1)#2 | 108.6(5) | C(2)-N(1)-N(3) | 51(4) |
| O(7)#1-Ge(1)-O(1)#3 | 110.3(5) | N(2)-N(1)-N(3) | 16.0(16) |
| O(7)-Ge(1)-O(1)#3 | 69.7(5) | C(2)-N(1)-Ag(2) | 45(4) |
| O(1)#1-Ge(1)-O(1)#3 | 71.4(5) | N(2)-N(1)-Ag(2) | 111.2(16) |
| O(1)#2-Ge(1)-O(1)#3 | 71.4(5) | N(3)-N(1)-Ag(2) | 96.0(15) |
| O(7)#1-Ge(1)-O(1)#4 | 69.7(5) | N(2)-N(3)-C(1) | 44(5) |
| O(7)-Ge(1)-O(1)#4 | 110.3(5) | N(2)-N(3)-C(2) | 67(5) |
| O(1)#1-Ge(1)-O(1)#4 | 108.6(5) | C(1)-N(3)-C(2) | 108(3) |
| O(1)#2-Ge(1)-O(1)#4 | 108.6(5) | N(2)-N(3)-N(1) | 47(5) |
| O(1)#3-Ge(1)-O(1)#4 | 180.0(4) | C(1)-N(3)-N(1) | 88(2) |
| O(7)#1-Ge(1)-O(1)#5 | 110.3(5) | C(2)-N(3)-N(1) | 20.3(15) |
| O(7)-Ge(1)-O(1)#5 | 69.7(5) | N(2)-N(3)-Ag(1) | 157(7) |
| O(1)#1-Ge(1)-O(1)#5 | 71.4(5) | C(1)-N(3)-Ag(1) | 132(2) |
| O(1)#2-Ge(1)-O(1)#5 | 180 | C(2)-N(3)-Ag(1) | 119(2) |
| O(1)#3-Ge(1)-O(1)#5 | 108.6(5) | N(1)-N(3)-Ag(1) | 139(2) |
| O(1)#4-Ge(1)-O(1)#5 | 71.4(5) | N(1)-C(2)-N(2) | 87(4) |
| O(7)#1-Ge(1)-O(1) | 110.3(5) | N(1)-C(2)-N(3) | 109(5) |
| O(7)-Ge(1)-O(1) | 69.7(5) | N(2)-C(2)-N(3) | 22.1(18) |
| O(1)#1-Ge(1)-O(1) | 180 | N(1)-C(2)-Ag(2) | 123(4) |
| O(1)#2-Ge(1)-O(1) | 71.4(5) | N(2)-C(2)-Ag(2) | 149(3) |
| O(1)#3-Ge(1)-O(1) | 108.6(5) | N(3)-C(2)-Ag(2) | 129(3) |
| O(1)#4-Ge(1)-O(1) | 71.4(5) | N(3)-N(2)-C(1) | 116(6) |
| O(1)#5-Ge(1)-O(1) | 108.6(5) | N(3)-N(2)-C(2) | 91(6) |
| O(4)-Mo(1)-O(2)#2 | 100.5(5) | C(1)-N(2)-C(2) | 146(3) |
| O(4)-Mo(1)-O(2)#6 | 100.5(5) | N(3)-N(2)-N(1) | 117(6) |
| O(2)#2-Mo(1)-O(2)#6 | 159.0(9) | C(1)-N(2)-N(1) | 121(3) |
| O(4)-Mo(1)-O(6)#3 | 100.3(6) | C(2)-N(2)-N(1) | 26.4(15) |
| O(2)#2-Mo(1)-O(6)#3 | 88.0(4) | O(3)-Mo(2)-O(2) | 157.9(8) |
| O(2)#6-Mo(1)-O(6)#3 | 88.3(6) | O(2)#6-Mo(2)-O(2) | 87.7(5) |
| O(4)-Mo(1)-O(6)#2 | 100.3(6) | O(5)-Mo(2)-O(1) | 153.8(7) |
| O(2)#2-Mo(1)-O(6)#2 | 88.3(6) | O(3)#5-Mo(2)-O(1) | 96.0(7) |
| O(2)#6-Mo(1)-O(6)#2 | 88.0(4) | O(3)-Mo(2)-O(1) | 96.0(7) |
| O(6)#3-Mo(1)-O(6)#2 | 159.3(12) | O(2)#6-Mo(2)-O(1) | 62.8(5) |
| O(4)-Mo(1)-O(1) | 154.9(4) | O(2)-Mo(2)-O(1) | 62.8(5) |

| | | | |
|---|---|---|---|
| O(2)#2-Mo(1)-O(1) | 97.8(6) | O(5)-Mo(2)-O(7) | 157.1(8) |
| O(2)#6-Mo(1)-O(1) | 62.1(6) | O(3)#5-Mo(2)-O(7) | 62.1(6) |
| O(6)#3-Mo(1)-O(1) | 97.2(7) | O(3)-Mo(2)-O(7) | 62.1(6) |
| O(6)#2-Mo(1)-O(1) | 63.2(6) | O(2)#6-Mo(2)-O(7) | 97.0(6) |
| O(4)-Mo(1)-O(1)#2 | 154.9(4) | O(2)-Mo(2)-O(7) | 97.0(6) |
| O(2)#2-Mo(1)-O(1)#2 | 62.1(6) | O(1)-Mo(2)-O(7) | 49.1(7) |
| O(2)#6-Mo(1)-O(1)#2 | 97.8(6) | Ge(1)-O(1)-Mo(2) | 120.9(8) |
| O(6)#3-Mo(1)-O(1)#2 | 63.2(6) | Ge(1)-O(1)-Mo(1)#4 | 119.2(5) |
| O(6)#2-Mo(1)-O(1)#2 | 97.2(7) | Mo(2)-O(1)-Mo(1)#4 | 97.8(5) |
| O(1)-Mo(1)-O(1)#2 | 50.2(7) | Ge(1)-O(1)-Mo(1) | 119.2(5) |
| O(5)-Mo(2)-O(3)#5 | 102.7(7) | Mo(2)-O(1)-Mo(1) | 97.8(5) |
| O(5)-Mo(2)-O(3) | 102.7(7) | Mo(1)#4-O(1)-Mo(1) | 96.8(6) |
| O(3)#5-Mo(2)-O(3) | 88.0(8) | Mo(1)#4-O(2)-Mo(2) | 137.1(7) |
| O(5)-Mo(2)-O(2)#6 | 99.4(6) | Mo(2)#3-O(3)-Mo(2) | 138.9(10) |
| O(3)#5-Mo(2)-O(2)#6 | 157.9(8) | Mo(1)#5-O(6)-Mo(1)#4 | 136.7(10) |
| O(3)-Mo(2)-O(2)#6 | 87.9(6) | Ge(1)-O(7)-Mo(2)#5 | 120.4(5) |
| O(5)-Mo(2)-O(2) | 99.4(6) | Ge(1)-O(7)-Mo(2)#3 | 120.4(5) |

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

**Table S6** Bond lengths [pm] and angles [°] for compound **4**

| Bond | Lengths | Bond | Lengths |
|---|---|---|---|
| Ag(2)-N(1) | 227(3) | W(2)-O(4)#9 | 188.5(6) |
| Ag(1)-C(2) | 210(2) | W(2)-O(4)#3 | 188.5(6) |
| Ag(1)-N(2) | 256(2) | W(2)-O(2)#9 | 188.9(8) |
| O(1)-W(1) | 188.4(6) | W(2)-O(2)#10 | 188.9(8) |
| O(1)-W(1)#1 | 188.4(6) | W(2)-O(7)#9 | 246.1(11) |
| O(2)-W(1) | 187.7(9) | W(2)-O(7)#3 | 246.1(11) |
| O(2)-W(2)#2 | 188.9(8) | N(1)-N(3) | 58(3) |
| O(3)-W(1) | 167.0(10) | N(1)-C(2) | 136(3) |
| O(4)-W(2)#3 | 188.5(6) | N(1)-N(2) | 165(4) |
| O(4)-W(2)#2 | 188.5(6) | N(1)-C(1) | 172(4) |
| O(5)-W(2) | 166.7(11) | N(3)-C(2) | 120(3) |
| O(6)-P(1) | 154(3) | N(3)-N(2) | 126(3) |
| O(6)-O(7)#1 | 176(2) | N(3)-C(1) | 136(4) |
| O(6)-O(7)#4 | 176(2) | C(2)-N(2) | 65(3) |
| O(6)-O(7) | 176(2) | O(7)-W(2)#3 | 246.1(11) |
| O(6)-W(1)#4 | 244.6(15) | P(1)-O(7)#6 | 151.3(16) |
| O(6)-W(1)#1 | 244.6(15) | P(1)-O(7)#1 | 151.3(16) |
| O(6)-W(1) | 244.6(15) | P(1)-O(7)#5 | 151.3(15) |
| O(7)-P(1) | 151.3(15) | P(1)-O(7)#7 | 151.3(15) |
| O(7)-O(7)#5 | 175(2) | P(1)-O(7)#4 | 151.3(15) |
| O(7)-O(7)#6 | 175(2) | P(1)-O(6)#7 | 154(3) |
| O(7)-W(1) | 245.6(15) | W(1)-O(2)#8 | 187.7(9) |

| | | | |
|---|---|---|---|
| O(7)-W(2)#2 | 246.1(11) | W(1)-O(1)#4 | 188.4(6) |
| Bond | Angles | Bond | Angles |
| O(7)#6-O(7)-W(2)#2 | 69.2(3) | W(1)-O(1)-W(1)#1 | 140.4(9) |
| O(6)-O(7)-W(2)#2 | 131.2(4) | W(1)-O(2)-W(2)#2 | 139.4(7) |
| W(1)-O(7)-W(2)#2 | 91.8(4) | W(2)#3-O(4)-W(2)#2 | 139.3(10) |
| P(1)-O(7)-W(2)#3 | 123.8(5) | P(1)-O(6)-O(7)#1 | 54.0(8) |
| O(7)#5-O(7)-W(2)#3 | 69.2(3) | P(1)-O(6)-O(7)#4 | 54.0(8) |
| O(7)#6-O(7)-W(2)#3 | 131.1(11) | O(7)#1-O(6)-O(7)#4 | 88.9(12) |
| O(6)-O(7)-W(2)#3 | 131.2(4) | P(1)-O(6)-O(7) | 54.0(8) |
| W(1)-O(7)-W(2)#3 | 91.8(4) | O(7)#1-O(6)-O(7) | 88.9(12) |
| W(2)#2-O(7)-W(2)#3 | 91.8(5) | O(7)#4-O(6)-O(7) | 88.9(12) |
| O(7)-P(1)-O(7)#6 | 70.7(6) | P(1)-O(6)-W(1)#4 | 123.2(5) |
| O(7)-P(1)-O(7)#1 | 109.3(6) | O(7)#1-O(6)-W(1)#4 | 131.33(13) |
| O(7)#6-P(1)-O(7)#1 | 180 | O(7)#4-O(6)-W(1)#4 | 69.2(5) |
| O(7)-P(1)-O(7)#5 | 70.7(6) | O(7)-O(6)-W(1)#4 | 131.33(13) |
| O(7)#6-P(1)-O(7)#5 | 109.3(6) | P(1)-O(6)-W(1)#1 | 123.2(5) |
| O(7)#1-P(1)-O(7)#5 | 70.7(6) | O(7)#1-O(6)-W(1)#1 | 69.2(5) |
| O(7)-P(1)-O(7)#7 | 180 | O(7)#4-O(6)-W(1)#1 | 131.33(13) |
| O(7)#6-P(1)-O(7)#7 | 109.3(6) | O(7)-O(6)-W(1)#1 | 131.33(13) |
| O(7)#1-P(1)-O(7)#7 | 70.7(6) | W(1)#4-O(6)-W(1)#1 | 92.9(7) |
| O(7)#5-P(1)-O(7)#7 | 109.3(6) | P(1)-O(6)-W(1) | 123.2(5) |
| O(7)-P(1)-O(7)#4 | 109.3(6) | O(7)#1-O(6)-W(1) | 131.33(13) |
| O(7)#6-P(1)-O(7)#4 | 70.7(6) | O(7)#4-O(6)-W(1) | 131.33(13) |
| O(7)#1-P(1)-O(7)#4 | 109.3(6) | O(7)-O(6)-W(1) | 69.2(5) |
| O(7)#5-P(1)-O(7)#4 | 180.0(4) | W(1)#4-O(6)-W(1) | 92.9(7) |
| O(7)#7-P(1)-O(7)#4 | 70.7(6) | W(1)#1-O(6)-W(1) | 92.9(7) |
| O(7)-P(1)-O(6) | 70.4(6) | P(1)-O(7)-O(7)#5 | 54.7(3) |
| O(7)#6-P(1)-O(6) | 109.6(6) | P(1)-O(7)-O(7)#6 | 54.7(3) |
| O(7)#1-P(1)-O(6) | 70.4(6) | O(7)#5-O(7)-O(7)#6 | 89.7(12) |
| O(7)#5-P(1)-O(6) | 109.6(6) | P(1)-O(7)-O(6) | 55.6(9) |
| O(7)#7-P(1)-O(6) | 109.6(6) | O(7)#5-O(7)-O(6) | 90.7(7) |
| O(7)#4-P(1)-O(6) | 70.4(6) | O(7)#6-O(7)-O(6) | 90.7(7) |
| O(7)-P(1)-O(6)#7 | 109.6(6) | P(1)-O(7)-W(1) | 124.3(8) |
| O(7)#6-P(1)-O(6)#7 | 70.4(6) | O(7)#5-O(7)-W(1) | 131.6(9) |
| O(7)#1-P(1)-O(6)#7 | 109.6(6) | O(7)#6-O(7)-W(1) | 131.6(9) |
| O(7)#5-P(1)-O(6)#7 | 70.4(6) | O(6)-O(7)-W(1) | 68.6(8) |
| O(7)#7-P(1)-O(6)#7 | 70.4(6) | P(1)-O(7)-W(2)#2 | 123.8(5) |
| O(7)#4-P(1)-O(6)#7 | 109.6(6) | O(7)#5-O(7)-W(2)#2 | 131.1(11) |
| O(6)-P(1)-O(6)#7 | 180 | C(2)-Ag(1)-N(2) | 11.7(8) |
| O(3)-W(1)-O(2)#8 | 101.1(5) | N(3)-N(1)-N(2) | 40(4) |
| O(3)-W(1)-O(2) | 101.1(5) | C(2)-N(1)-N(2) | 22.6(12) |
| O(2)#8-W(1)-O(2) | 87.2(5) | N(3)-N(1)-C(1) | 43(4) |
| O(3)-W(1)-O(1) | 102.9(7) | C(2)-N(1)-C(1) | 102(2) |
| O(2)#8-W(1)-O(1) | 87.8(6) | N(2)-N(1)-C(1) | 80.1(18) |

| | | | |
|---|---|---|---|
| O(2)-W(1)-O(1) | 156.0(7) | N(3)-N(1)-Ag(2) | 161(5) |
| O(3)-W(1)-O(1)#4 | 102.9(7) | C(2)-N(1)-Ag(2) | 120(2) |
| O(2)#8-W(1)-O(1)#4 | 156.0(7) | N(2)-N(1)-Ag(2) | 141.1(17) |
| O(2)-W(1)-O(1)#4 | 87.8(6) | C(1)-N(1)-Ag(2) | 137.2(17) |
| O(1)-W(1)-O(1)#4 | 87.2(7) | N(1)-N(3)-C(2) | 92(5) |
| O(3)-W(1)-O(6) | 159.2(7) | N(1)-N(3)-N(2) | 123(5) |
| O(2)#8-W(1)-O(6) | 93.9(6) | C(2)-N(3)-N(2) | 30.7(14) |
| O(2)-W(1)-O(6) | 93.9(6) | N(1)-N(3)-C(1) | 121(5) |
| O(1)-W(1)-O(6) | 63.1(6) | C(2)-N(3)-C(1) | 141(3) |
| O(1)#4-W(1)-O(6) | 63.1(6) | N(2)-N(3)-C(1) | 112(3) |
| O(3)-W(1)-O(7) | 158.7(6) | N(2)-C(2)-N(3) | 79(3) |
| O(2)#8-W(1)-O(7) | 64.3(4) | N(2)-C(2)-N(1) | 105(4) |
| O(2)-W(1)-O(7) | 64.3(4) | N(3)-C(2)-N(1) | 25.2(15) |
| O(1)-W(1)-O(7) | 92.5(7) | N(2)-C(2)-Ag(1) | 128(4) |
| O(1)#4-W(1)-O(7) | 92.5(7) | N(3)-C(2)-Ag(1) | 151(2) |
| O(6)-W(1)-O(7) | 42.1(6) | N(1)-C(2)-Ag(1) | 127(2) |
| O(5)-W(2)-O(4)#9 | 101.7(6) | C(2)-N(2)-N(3) | 70(3) |
| O(5)-W(2)-O(4)#3 | 101.7(6) | C(2)-N(2)-N(1) | 53(3) |
| O(4)#9-W(2)-O(4)#3 | 156.7(11) | N(3)-N(2)-N(1) | 17.1(15) |
| O(5)-W(2)-O(2)#9 | 101.6(4) | C(2)-N(2)-Ag(1) | 41(3) |
| O(4)#9-W(2)-O(2)#9 | 87.0(4) | N(3)-N(2)-Ag(1) | 110(2) |
| O(4)#3-W(2)-O(2)#9 | 88.3(5) | N(1)-N(2)-Ag(1) | 93.1(15) |
| O(5)-W(2)-O(2)#10 | 101.6(4) | N(3)-C(1)-N(1) | 16.8(14) |
| O(4)#9-W(2)-O(2)#10 | 88.3(5) | O(2)#9-W(2)-O(7)#9 | 64.1(5) |
| O(4)#3-W(2)-O(2)#10 | 87.0(4) | O(2)#10-W(2)-O(7)#9 | 93.5(5) |
| O(2)#9-W(2)-O(2)#10 | 156.7(8) | O(5)-W(2)-O(7)#3 | 159.2(3) |
| O(5)-W(2)-O(7)#9 | 159.2(3) | O(4)#9-W(2)-O(7)#3 | 93.3(7) |
| O(4)#9-W(2)-O(7)#9 | 64.2(6) | O(4)#3-W(2)-O(7)#3 | 64.2(6) |
| O(4)#3-W(2)-O(7)#9 | 93.3(7) | O(2)#9-W(2)-O(7)#3 | 93.5(5) |
| O(7)#9-W(2)-O(7)#3 | 41.7(6) | O(2)#10-W(2)-O(7)#3 | 64.1(5) |

Symmetry transformations used to generate equivalent atoms: #1 -x+y+1,-x+2,z; #2 -x+y,-x+1,z; #3 -x+1,-y+2,-z+1; #4 -y+2,x-y+1,z; #5 y,-x+y+1,-z+1; #6 x-y+1,x,-z+1; #7 -x+2,-y+2,-z+1; #8 x-y+1,-y+2,z; #9 -y+1,x-y+1,z; #10 -x+y,y,-z+1