# *Supporting Information for*

# Metal-Organic Coordination Architectures of Bis(1,2,4-triazole) Ligands Bearing Different Spacers: Syntheses, Structures and Luminescent Properties

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**Table S1** Selected Bond Distances (Å) and Angles (deg) for Complexes **1**~**6**

| | | | |
|---|---|---|---|
| | | **1** | |
| Cd(1) - N(1) | 2.345(5) | Cd(1) - N(4) | 2.317(5) |
| Cd(1)-O(1) | 2.388(6) | | |
| N(4)-Cd(1)-O(1) | 82.06(19) | N(4)-Cd(1)-N(1) | 90.12(18) |
| $N(4)^{\#1}$-Cd(1)-O(1) | 97.94(19) | $N(4)^{\#1}$-Cd(1)-N(1) | 89.88(18) |
| $N(1)^{\#1}$-Cd(1)-O(1) | 96.5(2) | N(1)-Cd(1)-O(1) | 83.5(2) |
| | | **2** | |
| Hg(1)-N(3) | 2.455(12) | Hg(1)-Br(3) | 2.4610(17) |
| Hg(1)-Br(2) | 2.4712(16) | | |
| N(3)-Hg(1)-Br(3) | 95.5(3) | N(3)-Hg(1)-Br(2) | 96.5(3) |
| Br(3)-Hg(1)-Br(2) | 167.96(7) | | |
| | | **3** | |
| Mn(1)-N(3) | 2.300(4) | Mn(1)-Cl(1) | 2.525(2) |
| $N(3)^{\#1}$-Mn(1)-$N(3)^{\#2}$ | 95.3(2) | N(3)-Mn(1)-$N(3)^{\#2}$ | 84.7(2) |
| $N(3)^{\#2}$-Mn(1)-$N(3)^{\#3}$ | 180.00 | $N(3)^{\#1}$-Mn(1)-Cl(1) | 91.78(12) |
| N(3)-Mn(1)-Cl(1) | 88.22(12) | | |
| | | **4** | |
| Cu-N(1) | 2.035(4) | Cu-Cl(1) | 2.8104(18) |
| $N(1)^{\#1}$-Cu-N(1) | 87.3(2) | $N(1)^{\#1}$-Cu-$N(1)^{\#2}$ | 92.7(2) |
| N(1)-Cu-$N(1)^{\#2}$ | 87.3(2) | $N(1)^{\#1}$-Cu-Cl(1) | 89.83(11) |
| N(1)-Cu-Cl(1) | 90.17(11) | | |
| | | **5** | |
| Cd(1)-N(1) | 2.344(4) | Cd(1)-$N(1)^{\#2}$ | 2.345(4) |
| Cd(1)-$O(2)^{\#2}$ | 2.432(15) | Cd(1)-O(2) | 2.441(15) |
| N(1)-Cd(1)-$N(1)^{\#2}$ | 83.0(2) | $N(1)^{\#1}$-Cd(1)-$N(1)^{\#2}$ | 97.0(2) |
| N(1)-Cd(1)-$O(2)^{\#3}$ | 99.7(3) | $N(1)^{\#1}$-Cd(1)-$O(2)^{\#3}$ | 80.3(3) |
| $N(1)^{\#2}$-Cd(1)-$O(2)^{\#3}$ | 79.4(3) | $N(1)^{\#3}$-Cd(1)-$O(2)^{\#3}$ | 100.6(3) |
| N(1)-Cd(1)-O(2) | 101.1(3) | $N(1)^{\#1}$-Cd(1)-O(2) | 78.9(3) |
| $N(1)^{\#2}$-Cd(1)-O(2) | 79.9(3) | $N(1)^{\#3}$-Cd(1)-O(2) | 100.1(3) |
| $O(2)^{\#3}$-Cd(1)-O(2) | 148.5(6) | $O(2)^{\#2}$-Cd(1)-O(2) | 31.5(6) |
| | | **6** | |
| Cd(1)-N(1) | 2.307(5) | Cd(1)-N(7) | 2.350(5) |
| Cd(1)-N(4) | 2.405(5) | | |
| $N(1)^{\#1}$-Cd(1)-$N(7)^{\#1}$ | 86.69(17) | $N(1)^{\#1}$-Cd(1)-N(7) | 93.31(17) |
| $N(1)^{\#1}$-Cd(1)-N(4) | 91.38(17) | N(1)-Cd(1)-N(4) | 88.62(17) |
| $N(7)^{\#1}$-Cd(1)-N(4) | 86.18(17) | N(7)-Cd(1)-N(4) | 93.82(17) |

Symmetry code for **1**: #1 -x,-y+2,-z+1. for **3**: #1 -x+1,-y+1,-z; #2 -x+1,y,-z; #3 x,-y+1,z. for **4**: #1 -x+1,-y,-z; #2 -x+1,y,-z. for **5**: #1 -x,-y,-z; #2 x,-y,z; #