Supporting Information for

Anion-Controlled Structures and Luminescent Properties of Three Cd(II) Complexes Assembled by a 2-Substituted 8-Hydroxyquinoline Ligand

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1.1. Table S1. Selected Bond lengths [Å] and angles [º] for 1.

Cd(1)-O(2)	2.256(3)
Cd(1)-O(1)	2.261(3)

Cd(1)-O(3)	2.359(4)
Cd(1)-O(4)	2.365(3)
Cd(1)-N(1)	2.397(3)
Cd(1)-N(2)	2.438(3)

O(2)-Cd(1)-O(1)	177.68(9)
O(2)-Cd(1)-O(3)	94.36(14)
O(1)-Cd(1)-O(3)	87.67(13)
O(2)-Cd(1)-O(4)	85.70(12)
O(1)-Cd(1)-O(4)	95.44(12)
O(3)-Cd(1)-O(4)	89.72(15)
O(2)-Cd(1)-N(1)	105.81(10)
O(1)-Cd(1)-N(1)	72.05(9)
O(3)-Cd(1)-N(1)	158.88(14)
O(4)-Cd(1)-N(1)	97.80(12)
O(2)-Cd(1)-N(2)	71.26(10)
O(1)-Cd(1)-N(2)	107.55(10)
O(3)-Cd(1)-N(2)	92.78(13)
O(4)-Cd(1)-N(2)	156.95(12)
N(1)-Cd(1)-N(2)	87.98(9)
C(1)-O(1)-Cd(1)	116.8(2)
C(9)-N(1)-C(6)	120.4(3)
C(9)-N(1)-Cd(1)	127.6(2)
C(6)-N(1)-Cd(1)	111.7(2)
O(1)-C(1)-C(2)	122.6(4)
O(1)-C(1)-C(6)	120.6(3)
C(2)-C(1)-C(6)	116.8(4)
C(18)-O(2)-Cd(1)	117.8(2)
C(26)-N(2)-C(23)	119.8(3)
C(26)-N(2)-Cd(1)	128.3(2)
C(23)-N(2)-Cd(1)	111.5(2)

1.2. Table S2. Selected Bond lengths [Å] and angles [º] for 2.

Cd(1)-O(1)	2.203(3)
Cd(1)-O(2)	2.232(3)

Cd(1)-N(2)	2.322(4)
Cd(1)-N(1)	2.388(4)
Cd(1)-O(3)	2.425(3)
Cd(1)-O(3)#1	2.435(3)
Cd(2)-O(4A)	2.237(9)
Cd(2)-O(2)	2.240(3)
Cd(2)-O(1)#1	2.246(3)
Cd(2)-O(5A)	2.262(9)
Cd(2)-O(4B)	2.268(6)
Cd(2)-O(3)	2.306(3)
Cd(2)-O(5B)	2.366(6)
Cd(2)-N(3)	2.375(4)

O(1)-Cd(1)-O(2)	169.25(12)
O(1)-Cd(1)-N(2)	114.37(14)
O(2)-Cd(1)-N(2)	73.58(13)
O(1)-Cd(1)-N(1)	73.13(12)
O(2)-Cd(1)-N(1)	112.97(13)
N(2)-Cd(1)-N(1)	103.73(13)
O(1)-Cd(1)-O(3)	93.06(11)
O(2)-Cd(1)-O(3)	78.06(11)
N(2)-Cd(1)-O(3)	150.96(13)
N(1)-Cd(1)-O(3)	92.86(11)
O(1)-Cd(1)-O(3)#1	74.63(10)
O(2)-Cd(1)-O(3)#1	97.53(11)
N(2)-Cd(1)-O(3)#1	98.19(11)
N(1)-Cd(1)-O(3)#1	146.31(12)
O(3)-Cd(1)-O(3)#1	79.31(10)
O(4A)-Cd(2)-O(2)	105.4(7)
O(4A)-Cd(2)-O(1)#1	103.5(9)
O(2)-Cd(2)-O(1)#1	95.82(12)
O(4A)-Cd(2)-O(5A)	49.7(8)
O(2)-Cd(2)-O(5A)	152.2(9)
O(1)#1-Cd(2)-O(5A)	101.7(13)
O(4A)-Cd(2)-O(4B)	10.2(9)
O(2)-Cd(2)-O(4B)	115.6(4)
O(1)#1-Cd(2)-O(4B)	102.5(5)
O(5A)-Cd(2)-O(4B)	39.6(7)
O(4A)-Cd(2)-O(3)	174.1(7)
O(2)-Cd(2)-O(3)	80.46(11)
O(1)#1-Cd(2)-O(3)	76.46(11)
O(5A)-Cd(2)-O(3)	124.4(6)
O(4B)-Cd(2)-O(3)	163.9(4)

O(4A)-Cd(2)-O(5B)	68.3(8)
O(2)-Cd(2)-O(5B)	167.6(4)
O(1)#1-Cd(2)-O(5B)	96.1(4)
O(5A)-Cd(2)-O(5B)	18.8(7)
O(4B)-Cd(2)-O(5B)	58.2(3)
O(3)-Cd(2)-O(5B)	105.7(3)
O(4A)-Cd(2)-N(3)	106.7(8)
O(2)-Cd(2)-N(3)	91.51(12)
O(1)#1-Cd(2)-N(3)	145.71(12)
O(5A)-Cd(2)-N(3)	86.0(11)
O(4B)-Cd(2)-N(3)	104.4(4)
O(3)-Cd(2)-N(3)	71.81(11)
O(5B)-Cd(2)-N(3)	80.5(3)
C(18)-O(1)-Cd(1)	117.0(3)
C(18)-O(1)-Cd(2)#1	129.3(3)
Cd(1)-O(1)-Cd(2)#1	109.08(13)
C(1)-O(2)-Cd(1)	115.5(3)
C(1)-O(2)-Cd(2)	136.7(3)
Cd(1)-O(2)-Cd(2)	104.64(13)
C(35)-O(3)-Cd(2)	111.5(2)
C(35)-O(3)-Cd(1)	112.2(2)
Cd(2)-O(3)-Cd(1)	96.82(10)
C(35)-O(3)-Cd(1)#1	130.4(3)
Cd(2)-O(3)-Cd(1)#1	99.69(10)
Cd(1)-O(3)-Cd(1)#1	100.69(10)
C(24)-N(1)-C(23)	119.9(4)
C(24)-N(1)-Cd(1)	129.6(3)
C(23)-N(1)-Cd(1)	109.8(3)
C(7)-N(2)-C(6)	119.0(5)
C(7)-N(2)-Cd(1)	128.8(4)
C(6)-N(2)-Cd(1)	111.9(3)
C(41)-N(3)-C(40)	120.9(4)
C(41)-N(3)-Cd(2)	126.6(3)
C(40)-N(3)-Cd(2)	110.3(3)
C(53A)-O(4A)-Cd(2)	109.2(14)
C(53A)-O(5A)-Cd(2)	107.9(13)
O(4A)-C(53A)-O(5A)	93.2(18)
O(4A)-C(53A)-C(52A)	103.8(19)
O(5A)-C(53A)-C(52A)	158(3)
C(53B)-O(4B)-Cd(2)	93.0(7)
C(53B)-O(5B)-Cd(2)	88.6(7)
O(5B)-C(53B)-O(4B)	120.2(10)
O(5B)-C(53B)-C(52B)	123.6(13)
O(4B)-C(53B)-C(52B)	115.7(11)

Symmetry transformations used to generate equivalent atoms:
#1 -x, -y+2, -z+2

1.3. Table S3. Selected Bond lengths [Å] and angles [°] for 3.

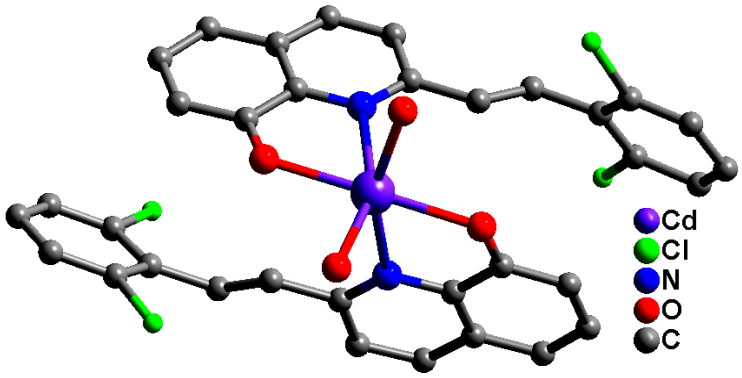
I(1)-Cd(1)	2.7159(8)
Cd(1)-O(1)	2.225(5)
Cd(1)-O(2)#1	2.257(5)
Cd(1)-O(3)	2.343(5)
Cd(1)-N(1)	2.371(6)
Cd(2)-O(2)	2.206(4)
Cd(2)-O(3)	2.239(4)
Cd(2)-O(1)	2.293(5)
Cd(2)-N(3)	2.351(5)
Cd(2)-N(2)	2.387(6)
O(2)-Cd(1)#1	2.257(5)
O(1)-Cd(1)-O(2)#1	116.5(2)
O(1)-Cd(1)-O(3)	70.11(17)
O(2)#1-Cd(1)-O(3)	75.92(17)
O(1)-Cd(1)-N(1)	73.72(18)
O(2)#1-Cd(1)-N(1)	108.01(19)
O(3)-Cd(1)-N(1)	140.69(17)
O(1)-Cd(1)-I(1)	133.31(18)
O(2)#1-Cd(1)-I(1)	106.98(12)
O(3)-Cd(1)-I(1)	106.92(12)
N(1)-Cd(1)-I(1)	108.88(14)
O(2)-Cd(2)-O(3)	138.72(18)
O(2)-Cd(2)-O(1)	97.12(19)
O(3)-Cd(2)-O(1)	70.78(17)
O(2)-Cd(2)-N(3)	124.52(19)
O(3)-Cd(2)-N(3)	73.80(17)
O(1)-Cd(2)-N(3)	138.05(19)
O(2)-Cd(2)-N(2)	72.35(19)
O(3)-Cd(2)-N(2)	146.8(2)
O(1)-Cd(2)-N(2)	98.36(19)
N(3)-Cd(2)-N(2)	99.0(2)
C(1)-O(1)-Cd(1)	117.4(4)
C(1)-O(1)-Cd(2)	130.0(4)
Cd(1)-O(1)-Cd(2)	110.6(2)
C(18)-O(2)-Cd(2)	117.9(4)
C(18)-O(2)-Cd(1)#1	133.8(4)
Cd(2)-O(2)-Cd(1)#1	108.02(18)

C(35)-O(3)-Cd(2)	116.1(4)
C(35)-O(3)-Cd(1)	126.7(4)
Cd(2)-O(3)-Cd(1)	108.37(19)
C(9)-N(1)-C(6)	119.0(6)
C(9)-N(1)-Cd(1)	129.0(5)
C(6)-N(1)-Cd(1)	112.0(4)
C(26)-N(2)-C(23)	118.7(6)
C(26)-N(2)-Cd(2)	128.4(5)
C(23)-N(2)-Cd(2)	112.2(5)
C(43)-N(3)-C(40)	120.6(6)
C(43)-N(3)-Cd(2)	127.7(4)
C(40)-N(3)-Cd(2)	111.7(4)

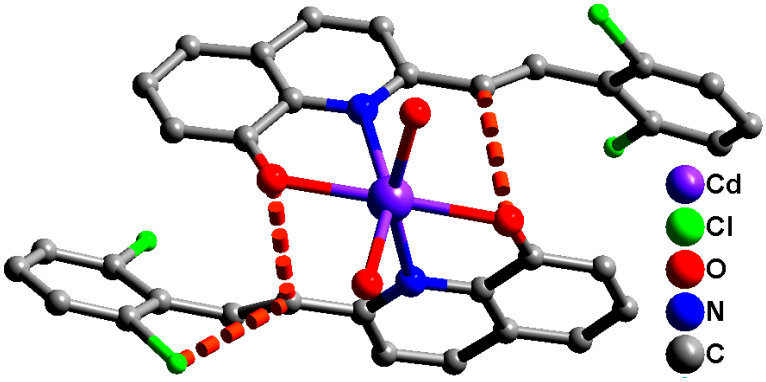
Symmetry transformations used to generate equivalent atoms:

#1 -x, y, -z+1/2

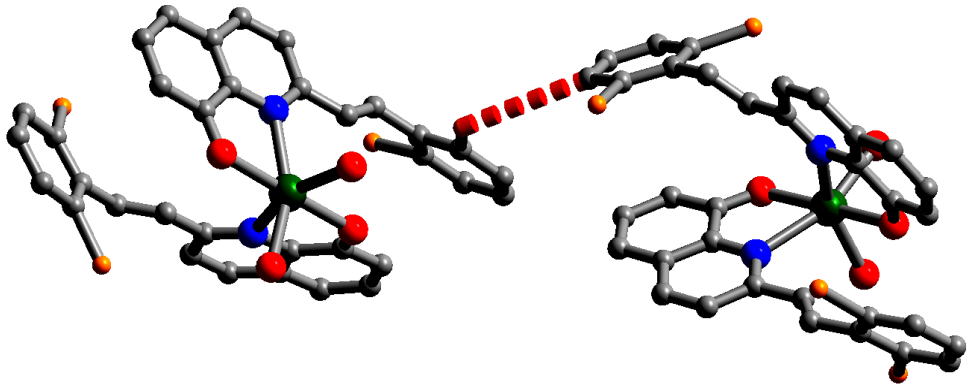
2.1. Fig. S1. Views of the coordination geometries of Cd(II) atoms in 1(H atoms omitted for clarity).



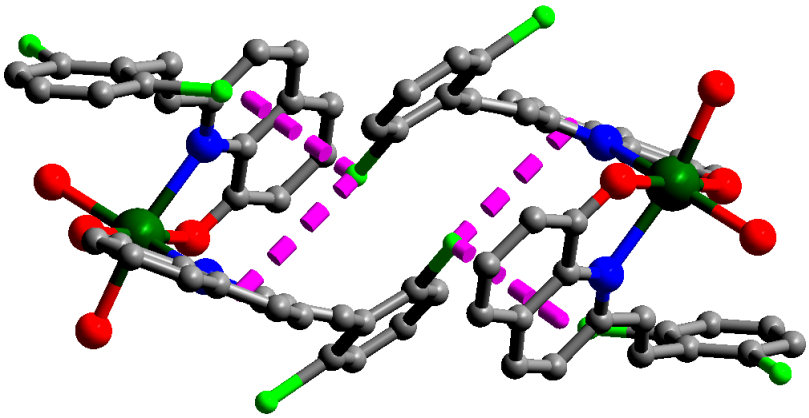
2.2. Fig. S2. Perspective views of intramolecular hydrogen bonding in 1 (H atoms omitted for clarity).



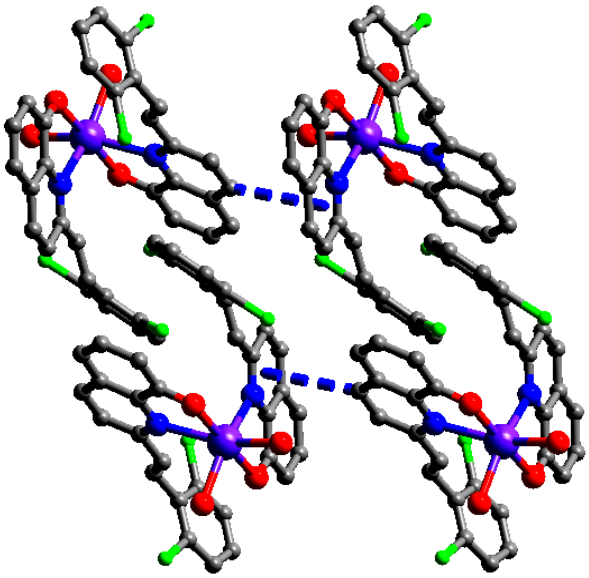
2.3. Fig. S3. Perspective views of intermolecular C-H···Cl interaction in 1 (H atoms omitted for clarity).



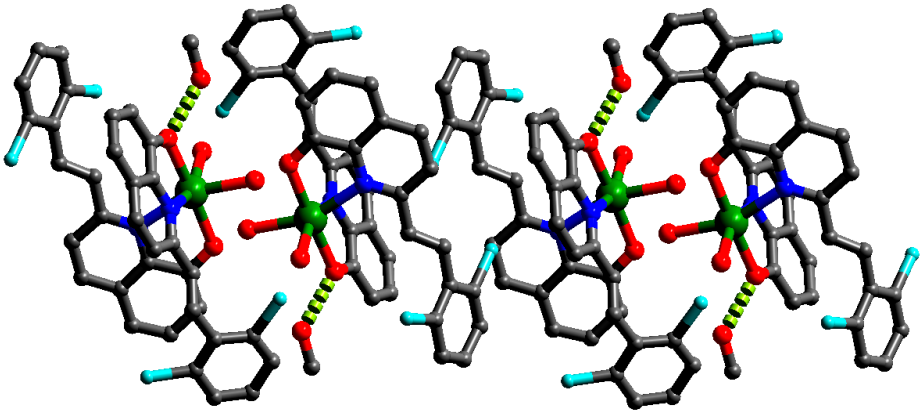
2.4. Fig. S4. Perspective views of intermolecular C-Cl···π interaction in 1 (H atoms omitted for clarity).



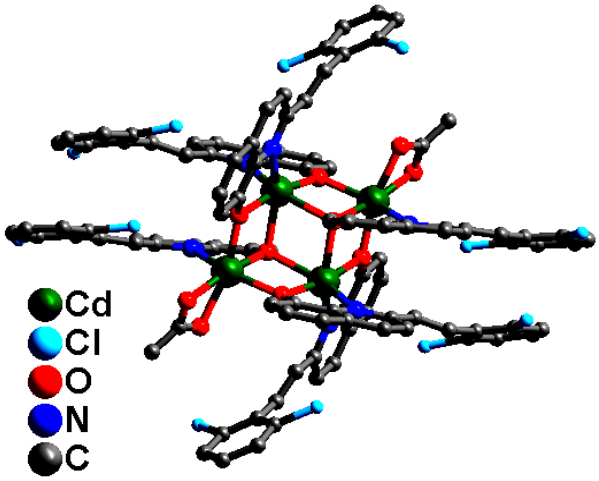
2.5. Fig. S5. Perspective views of intermolecular C-H···π interaction in 1 (H atoms omitted for clarity).



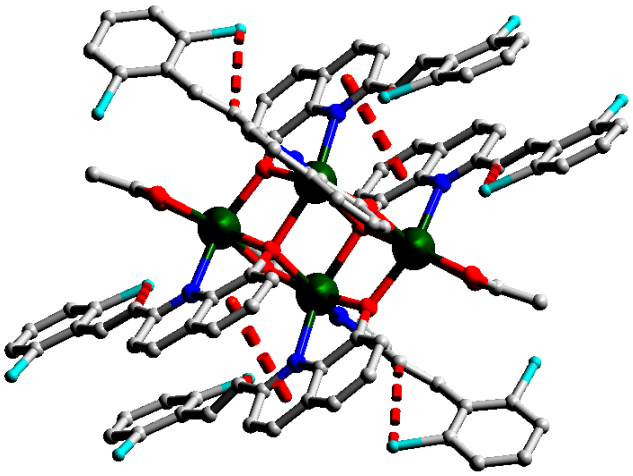
2.6. Fig. S6. Views of intermolecular hydrogen bonding between O-H groups of methanol and O atoms of quinoline units in 1



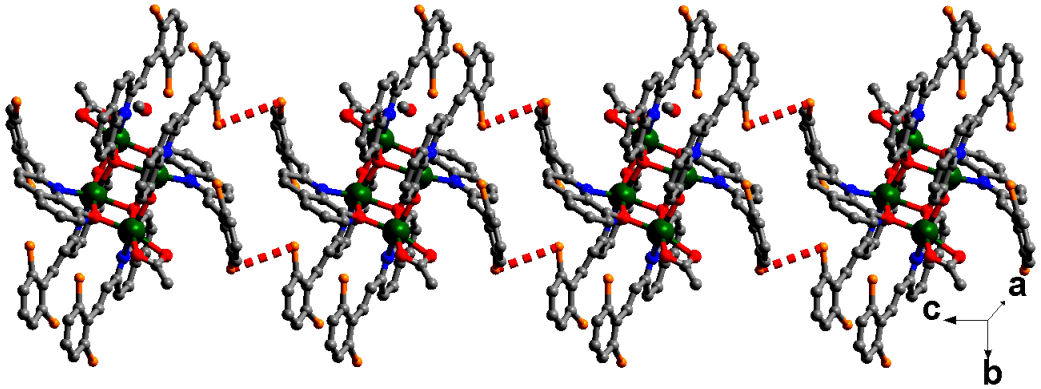
3.1. Fig. S7. Views of the coordination geometries of Cd(II) atoms in 2(H atoms omitted for clarity).



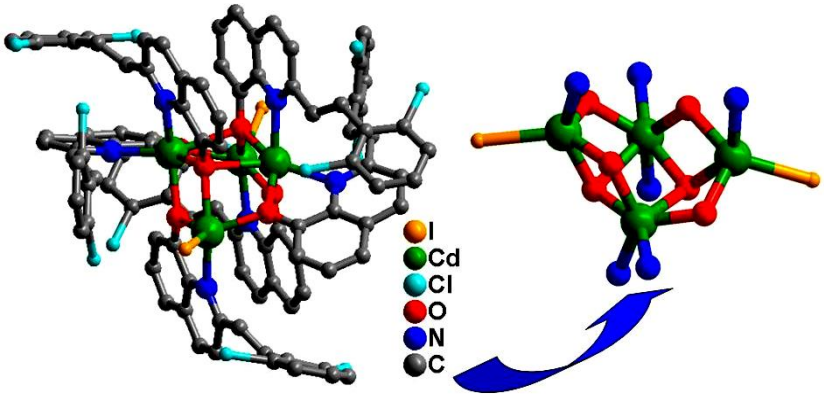
3.2. Fig. S8. Perspective views of intramolecular interaction (C–H···Cl and π···π stacking) in 2, H atoms omitted for clarity.



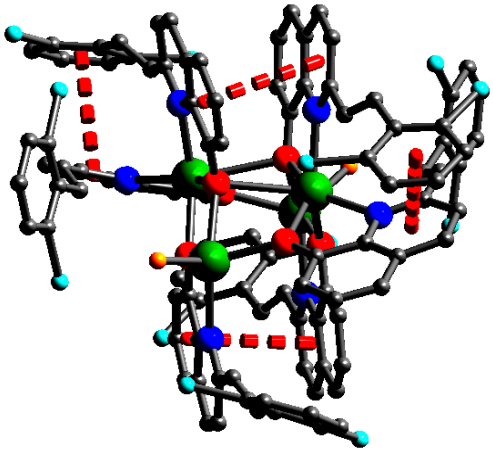
3.3. Fig. S9. Perspective views of intermolecular C-Cl2···Cl3-C interactions in 2 along c axis (H atoms omitted for clarity).



4.1. Fig. S10. Views of the coordination geometries of Cd(II) atoms in 3 (H atoms omitted for clarity).



4.2. Fig. S11. Perspective views of intramolecular π···π stacking interaction in 3, H atoms omitted for clarity.



4.3. Fig. S12. Perspective views of intermolecular C(8)–H(8A)···Cl(4) interactions in 3 (H atoms omitted for clarity).