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SUPPORTING INFORMATION

Effect of anions on the self-assembly of Zn(II) with a hydrogenated Schiff base ligand: structural diversity and photoluminescent properties

Yuehong Wen,[a] Tianlu Sheng,[a] Shengmin Hu,[a] Yanlong Wang,[a] Chunhong Tan,[a] Xiao Ma,[a] Zhenzhen Xue,[a] Yong Wang,[a] and Xintao Wu*[a]

State Key Laboratory of Structure Chemistry Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, 350002, China.

E-mail: wxt@fjirsm.ac.cn; Fax: +86-591-83719238; Tel: +86-591-83719238

Table S1 Selected bond lengths (Å) and angles (°) of complex **1.**

Zn(2)-N(1)	2.081(4)	N(1)-Zn(2)-N(2)	86.29(14)
Zn(2)-N(2)	2.086(3)	N(1)-Zn(2)-Cl(3)	110.71(11)
Zn(2)-Cl(3)	2.2024(14)	N(2)-Zn(2)-Cl(3)	117.92(11)
Zn(2)-Cl(4)	2.2123(14)	N(1)-Zn(2)-Cl(4)	114.41(11)
Zn(1)-N(3)	2.026(4)	N(2)-Zn(2)-Cl(4)	106.62(11)
Zn(1)-N(4)[a]	2.056(4)	Cl(3)-Zn(2)-Cl(4)	117.08(6)
Zn(1)-Cl(2)	2.2115(14)	N(3)-Zn(1)-N(4)[a]	102.06(16)
Zn(1)-Cl(1)	2.2265(14)	N(3)-Zn(1)-Cl(2)	112.61(11)
C(9)-N(1)	1.483(6)	N(4)[a]-Zn(1)-Cl(2)	106.64(12)
C(7)-N(3)	1.346(6)	N(3)-Zn(1)-Cl(1)	106.23(11)
N(4)-Zn(1)[a]	2.056(4)	N(4)[a]-Zn(1)-Cl(1)	107.57(13)
		Cl(2)-Zn(1)-Cl(1)	120.15(6)

Symmetry codes: (a) *-x+1,-y+2,-z*.

Table S2 Selected bond lengths (Å) and angles (°) of complex **2.**

Zn(1)-N(3)	2.089(5)	N(3)-Zn(1)-Br(3)	110.76(15)
Zn(1)-N(2)	2.095(5)	N(2)-Zn(1)-Br(3)	117.17(15)
Zn(1)-Br(3)	2.3399(11)	N(3)-Zn(1)-Br(4)	114.23(15)
Zn(1)-Br(4)	2.3482(12)	N(2)-Zn(1)-Br(4)	106.82(15)
Zn(2)-N(1)	2.047(5)	Br(3)-Zn(1)-Br(4)	117.56(5)
Zn(2)-N(4)[a]	2.061(5)	N(1)-Zn(2)-N(4)[a]	102.5(2)
Zn(2)-Br(2)	2.3545(12)	N(1)-Zn(2)-Br(2)	111.64(15)
Zn(2)-Br(1)	2.3655(12)	N(4)[a]-Zn(2)-Br(2)	107.34(17)
N(4)-Zn(2)[a]	2.061(5)	N(1)-Zn(2)-Br(1)	106.98(15)
N(3)-Zn(1)-N(2)	86.3(2)	N(4)[a]-Zn(2)-Br(1)	107.26(17)
		Br(2)-Zn(2)-Br(1)	119.69(5)

Symmetry codes: (a) *-x+1, -y+1, -z*.

Table S3 Selected bond lengths (Å) and angles (°) of complex **3.**

Zn(1)-N(3)	2.118(5)	N(3)^{a}–Zn(1)–N(2)^{c}	89.35(17)
Zn(1)-N(3)^{a}	2.118(5)	N(2)^{b}–Zn(1)–N(2)^{c}	88.47(17)
Zn(1)-N(2)^{b}	2.215(4)	N(3)–Zn(1)–N(1)^{a}	86.32(19)
Zn(1)-N(2)^{c}	2.215(4)	N(3)^{a}–Zn(1)–N(1)^{a}	93.36(19)
Zn(1)-N(1)^{a}	2.255(4)	N(2)^{b}–Zn(1)–N(1)^{a}	94.88(14)
Zn(1)-N(1)	2.255(4)	N(2)^{c}–Zn(1)–N(1)^{a}	175.66(14)
N(2)-Zn(1)^{c}	2.215(4)	N(3)–Zn(1)–N(1)	93.36(19)
N(3)–Zn(1)–N(3)^{a}	179.6(3)	N(3)^{a}–Zn(1)–N(1)	86.32(19)
N(3)–Zn(1)–N(2)^{b}	89.35(17)	N(2)^{b}–Zn(1)–N(1)	175.66(14)
N(3)^{a}–Zn(1)–N(2)^{b}	90.96(16)	N(2)^{c}–Zn(1)–N(1)	94.88(14)
N(3)–Zn(1)–N(2)^{c}	90.96(16)	N(1)^{a}–Zn(1)–N(1)	81.9(2)

Symmetry codes: (a) *-x+5/4, y, -z+5/4;* (b) *x+1/4, -y, z+1/4;* (c) *-x+1, -y, -z+1.*

Table S4 Selected bond lengths (Å) and angles (^{o}) of complex **4.**

Zn(1)–N(4)	2.181(3)	N(2)–Zn(1)–Cl(2)^{a}	83.75(7)
Zn(1)–N(4)^{a}	2.181(3)	N(4)–Zn(1)–Cl(2)	88.35(8)
Zn(1)–N(2)^{a}	2.286(3)	N(4)^{a}–Zn(1)–Cl(2)	94.69(8)
Zn(1)–N(2)	2.286(3)	N(2)^{a}–Zn(1)–Cl(2)	83.75(7)
Zn(1)–Cl(2)$_{a}$	2.5339(10)	N(2)–Zn(1)–Cl(2)	92.98(7)
Zn(1)–Cl(2)	2.5339(10)	Cl(2)^{a}–Zn(1)–Cl(2)	175.76(5)
Zn(2)–N(1)^{b}	2.166(3)	N(1)b–Zn(2)–N(1)	84.71(15)
Zn(2)–N(1)	2.166(3)	N(1)^{b}–Zn(2)–N(3)	178.05(11)
Zn(2)–N(3)	2.233(3)	N(1)–Zn(2)–N(3)	96.63(10)
Zn(2)–N(3)^{b}	2.233(3)	N(1)^{b}–Zn(2)–N(3)^{b}	96.63(10)
Zn(2)–Cl(1)^{b}	2.5568(10)	N(1)–Zn(2)–N(3)^{b}	178.05(11)
Zn(2)–Cl(1)	2.5568(10)	N(3)–Zn(2)–N(3)^{b}	82.06(15)
N(4)–Zn(1)–N(4)^{a}	88.51(14)	N(1)^{b}–Zn(2)–Cl(1)^{b}	95.16(8)
N(4)–Zn(1)–N(2)^{a}	170.93(11)	N(1)–Zn(2)–Cl(1)^{b}	91.29(8)
N(4)^{a}–Zn(1)–N(2)^{a}	96.55(10)	N(3)–Zn(2)–Cl(1)^{b}	86.23(7)
N(4)–Zn(1)–N(2)	96.55(10)	N(3)^{b}–Zn(2)–Cl(1)^{b}	87.19(7)
N(4)^{a}–Zn(1)–N(2)	170.93(11)	N(1)^{b}–Zn(2)–Cl(1)	91.29(8)
N(2)^{a}–Zn(1)–N(2)	79.46(15)	N(1)–Zn(2)–Cl(1)	95.16(8)
N(4)–Zn(1)–Cl(2)^{a}	94.69(8)	N(3)–Zn(2)–Cl(1)	87.19(7)
N(4)^{a}–Zn(1)–Cl(2)^{a}	88.35(8)	N(3)^{b}–Zn(2)–Cl(1)	86.23(7)
N(2)^{a}–Zn(1)–Cl(2)^{a}	92.98(7)	Cl(1)^{b}–Zn(2)–Cl(1)	171.28(5)

Symmetry codes: (a) *-x+1, -y, z*; (b) *-x, -y, z.*

Table S5 Selected bond lengths (Å) and angles (^{o}) of complex **5.**

Zn(1)–N(3)[a]	2.135(4)	N(3)[a]–Zn(1)–N(4)[b]	89.38(12)
Zn(1)–N(4)[b]	2.161(4)	N(4)[b]–Zn(1)–O(1)	90.21(16)
Zn(1)–N(1)	2.167(4)	N(1)–Zn(1)–O(1)	88.49(14)
Zn(1)–N(2)	2.203(4)	N(2)–Zn(1)–O(1)	90.88(16)
Zn(1)–O(1)	2.210(4)	N(3)[a]–Zn(1)–O(2)	91.54(13)
Zn(1)–O(2)	2.217(4)	N(4)[b]–Zn(1)–O(2)	88.34(16)
N(3)–Zn(1)[c]	2.135(4)	N(1)–Zn(1)–O(2)	91.67(14)
N(4)–Zn(1)[d]	2.161(4)	N(2)–Zn(1)–O(2)	90.56(16)
Cl(1)–O(14)	1.412(7)	O(1)–Zn(1)–O(2)	178.55(13)
Cl(1)–O(13)	1.428(7)	O(14)–Cl(1)–O(13)	110.7(6)
Cl(1)–O(11)	1.451(7)	O(14)–Cl(1)–O(11)	111.9(7)
Cl(1)–O(12)	1.456(7)	O(13)–Cl(1)–O(11)	108.9(7)
Cl(2)–O(21)	1.378(8)	O(14)–Cl(1)–O(12)	110.5(7)
Cl(2)–O(22)	1.437(8)	O(13)–Cl(1)–O(12)	108.5(6)
Cl(2)–O(23)	1.437(8)	O(11)–Cl(1)–O(12)	106.2(6)
Cl(2)–O(24)	1.480(9)	O(21)–Cl(2)–O(22)	112.4(7)
N(3)[a]–Zn(1)–N(1)	175.45(14)	O(21)–Cl(2)–O(23)	113.1(8)
N(4)[b]–Zn(1)–N(1)	93.94(12)	O(22)–Cl(2)–O(23)	109.5(8)
N(3)[a]–Zn(1)–N(2)	94.80(13)	O(21)–Cl(2)–O(24)	108.7(8)
N(4)[b]–Zn(1)–N(2)	175.70(14)	O(22)–Cl(2)–O(24)	106.4(8)
N(1)–Zn(1)–N(2)	81.93(13)	O(23)–Cl(2)–O(24)	106.2(7)
N(3)[a]–Zn(1)–O(1)	88.39(13)		

Symmetry codes: (a) *-x+2, y+1/2, -z+1/2*; (b) *x+1, y, z*; (c) *-x+2, y-1/2, -z+1/2*; (d) *x-1, y, z*.

Table S6 Selected bond lengths (Å) and angles (°) of complex **6.**

Zn(1)–O(1)	2.072(2)	N(3)[a]–Zn(1)–N(2)	171.71(9)
Zn(1)–N(3)[a]	2.160(2)	N(4)[b]–Zn(1)–N(2)	97.89(9)
Zn(1)–N(4)[b]	2.180(3)	O(1)–Zn(1)–O(3)	177.86(8)
Zn(1)–N(2)	2.183(2)	N(3)[a]–Zn(1)–O(3)	88.30(9)
Zn(1)–O(3)	2.202(2)	N(4)[b]–Zn(1)–O(3)	86.95(9)
Zn(1)–N(1)	2.258(3)	N(2)–Zn(1)–O(3)	88.92(9)
N(3)–Zn(1)[c]	2.160(2)	O(1)–Zn(1)–N(1)	89.03(10)
N(4)–Zn(1)[d]	2.180(3)	N(3)[a]–Zn(1)–N(1)	91.63(10)
O(1)–Zn(1)–N(3)[a]	89.67(10)	N(4)[b]–Zn(1)–N(1)	176.91(9)
O(1)–Zn(1)–N(4)[b]	93.74(10)	N(2)–Zn(1)–N(1)	80.58(9)
N(3)[a]–Zn(1)–N(4)[b]	89.76(10)	O(3)–Zn(1)–N(1)	90.33(9)
O(1)–Zn(1)–N(2)	92.99(10)	C(15)–O(1)–Zn(1)	133.2(2)

Symmetry codes: (a) *x+1, y, z*; (b) *x, y-1, z*; (c) *x-1, y, z*; (d) *x, y+1, z*.

Figure S1 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **1.**

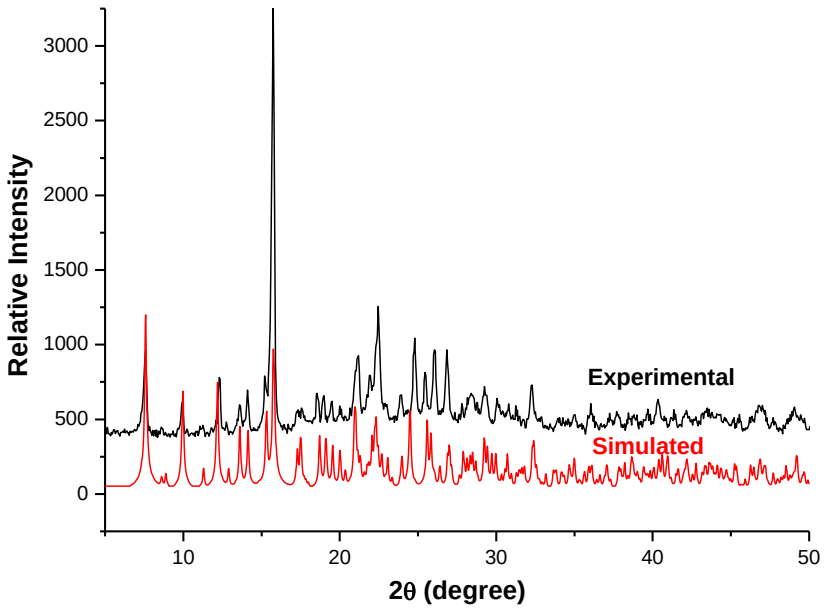

Figure S2 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **2.**

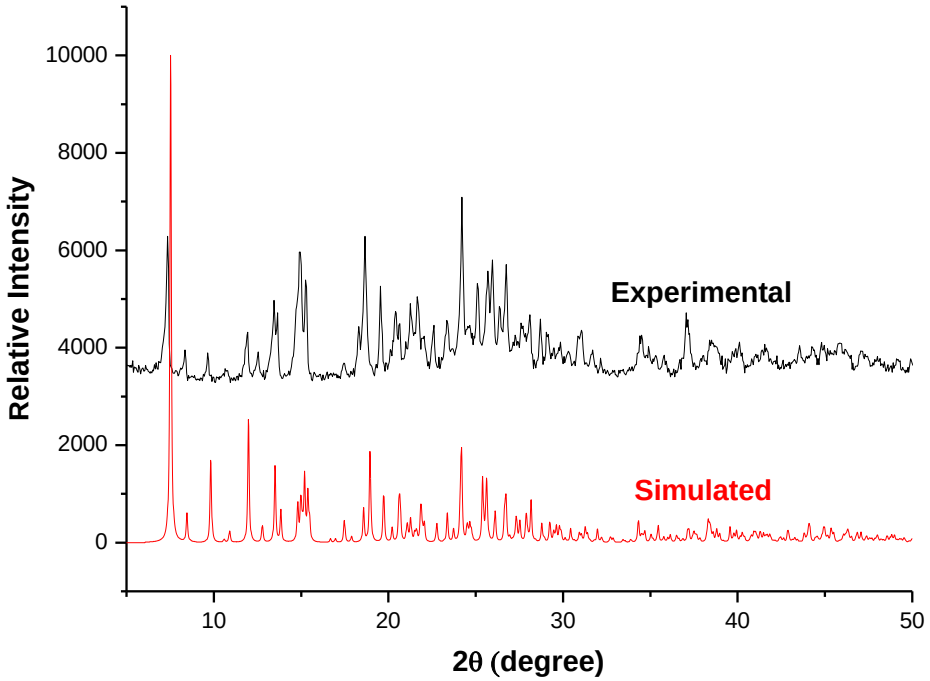

Figure S3 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **3.**

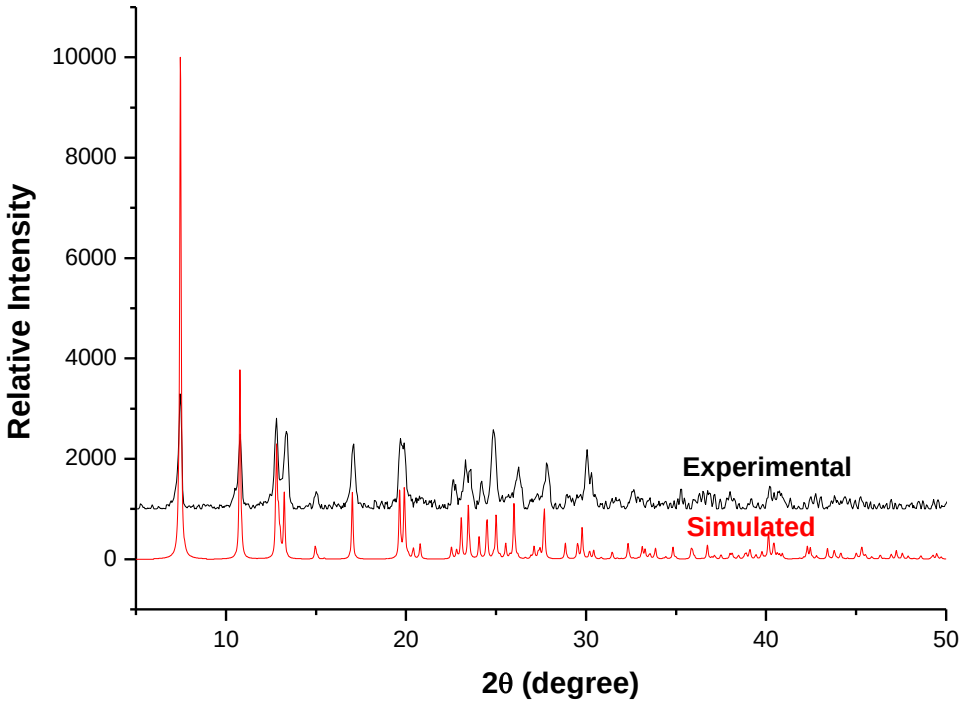

Figure S4 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **4.**

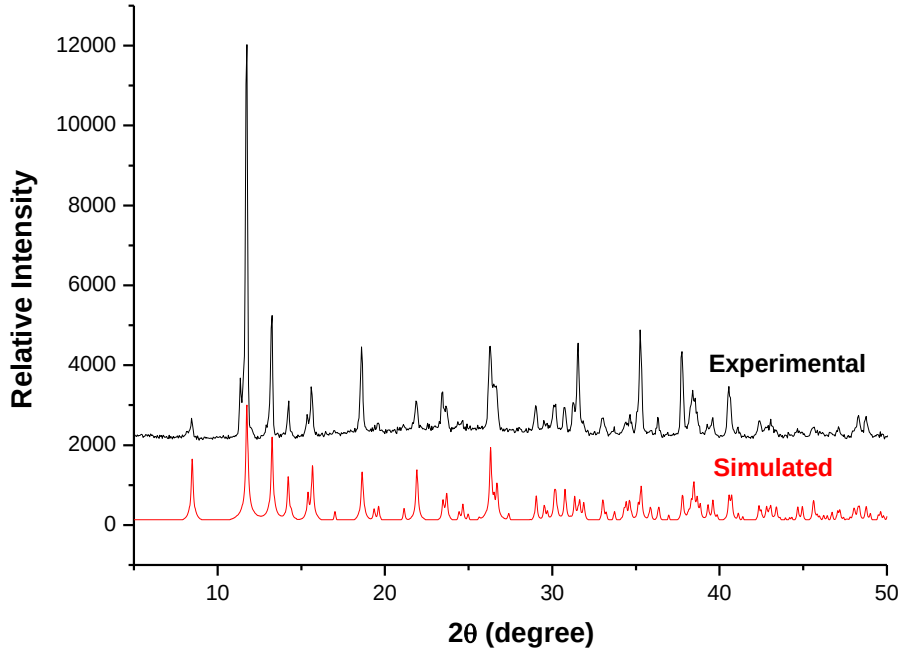

Figure S5 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **5.**

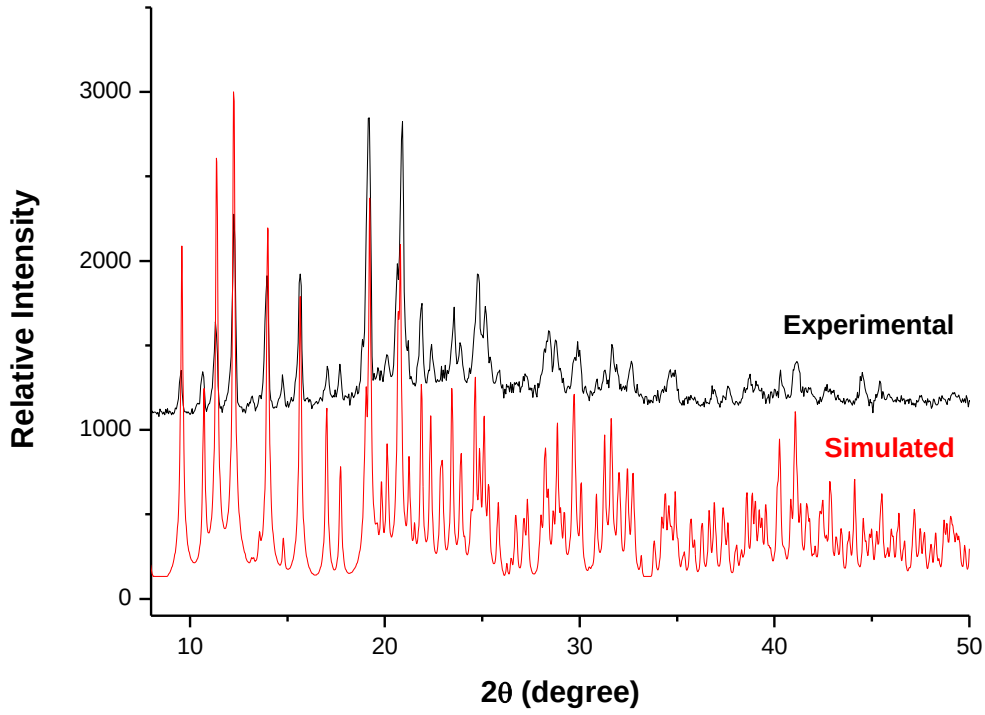

Figure S6 Comparison of experimental and calculated powder X-ray diffraction patterns of complex **6.**