

## Supporting Information

### Syntheses, Structures, and Photoluminescence of Zn(II), Ag(I), Cu(I) and Co(II) Coordination Polymers of a Tetrapyridyl Ligand

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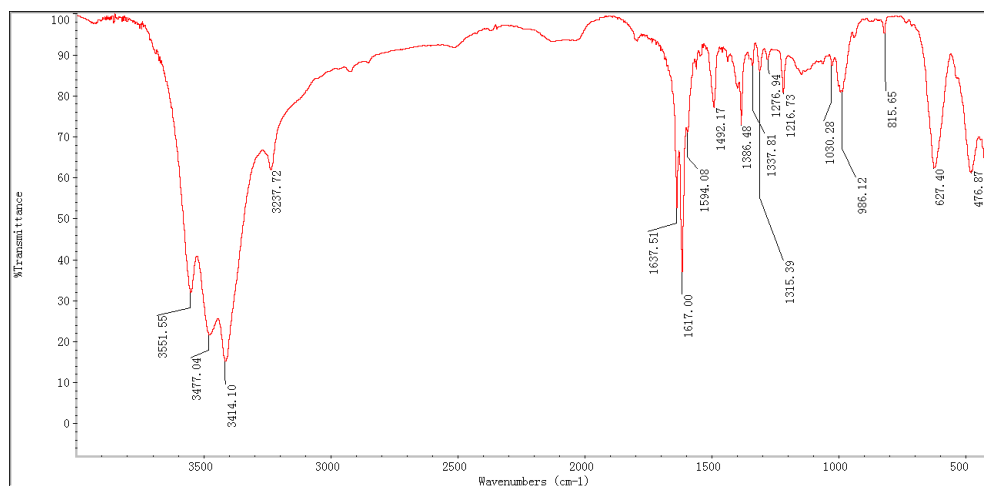
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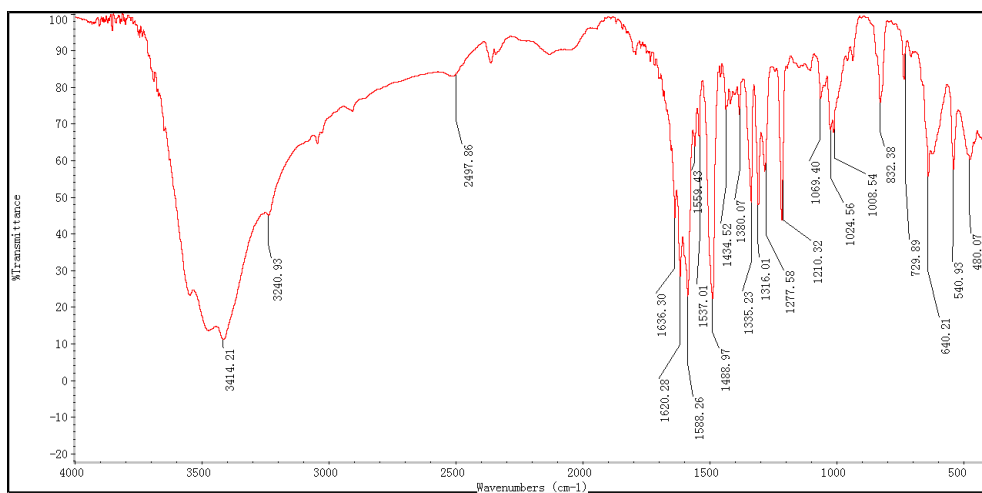
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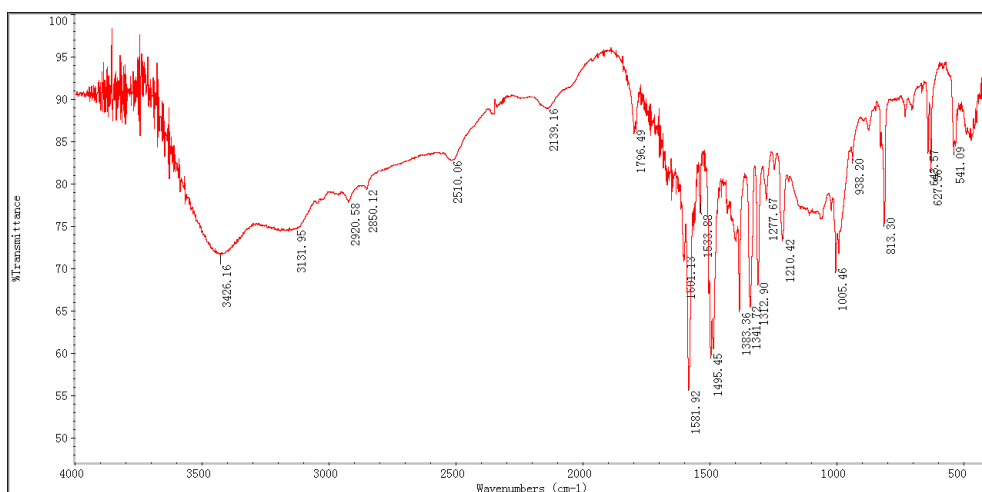


**Fig. S1.** IR spectra of Complex 1.

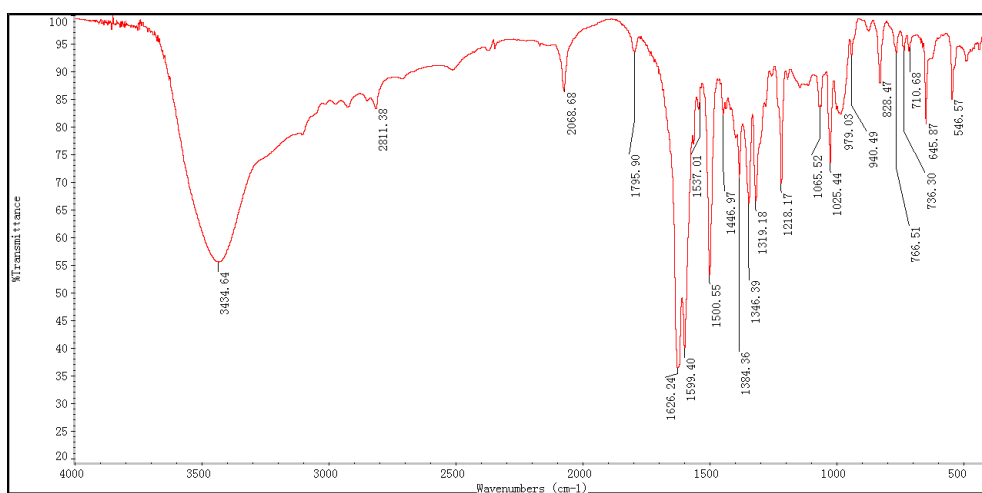
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**Fig. S2.** IR spectra of Complex 2.



**Fig. S3.** IR spectra of Complex 3.



**Fig. S4.** IR spectra of Complex 4.

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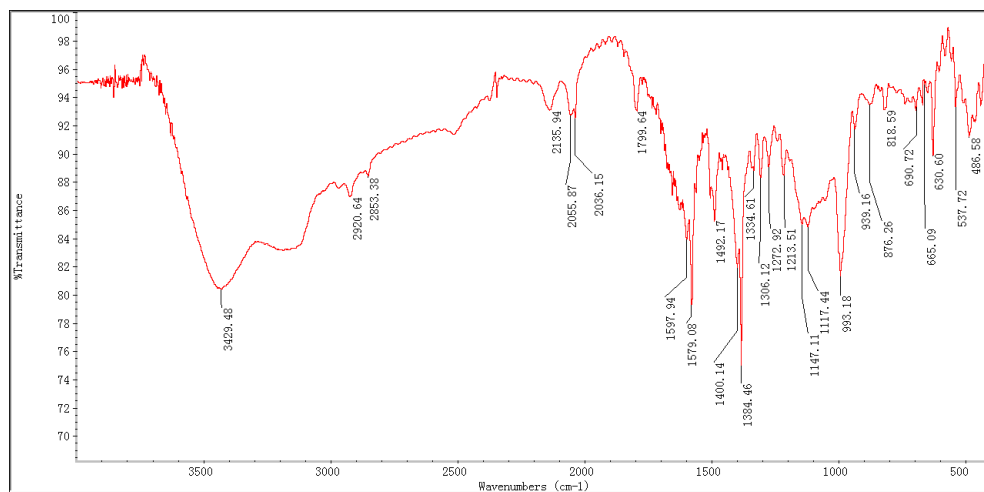


Fig. S5. IR spectra of Complex 5.

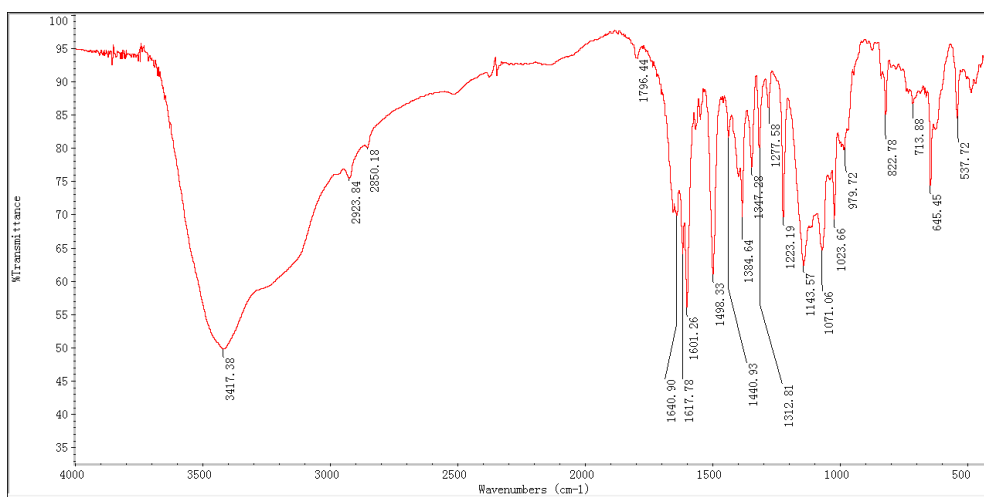
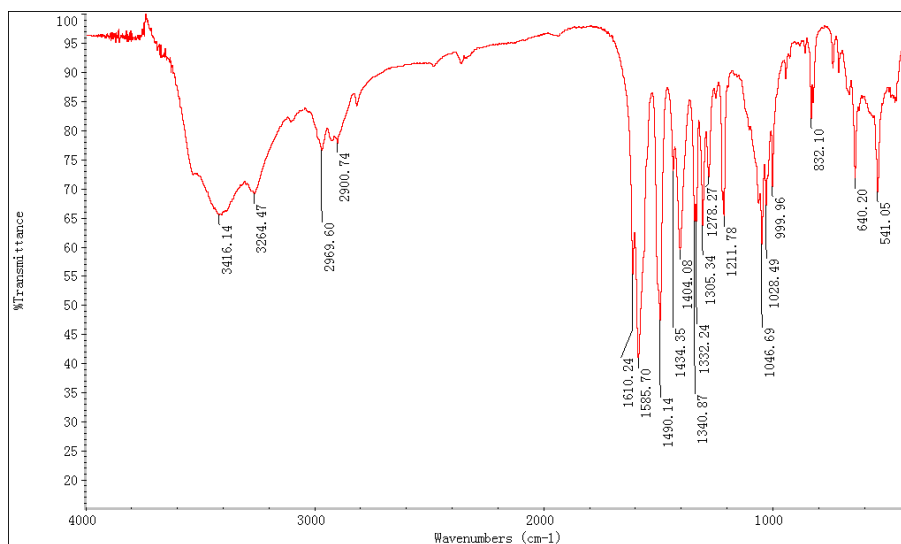
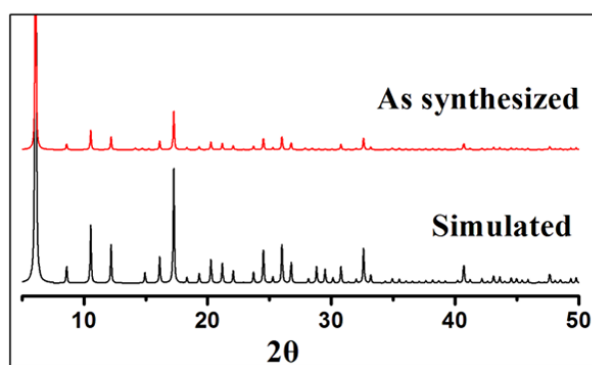


Fig. S6. IR spectra of Complex 6.

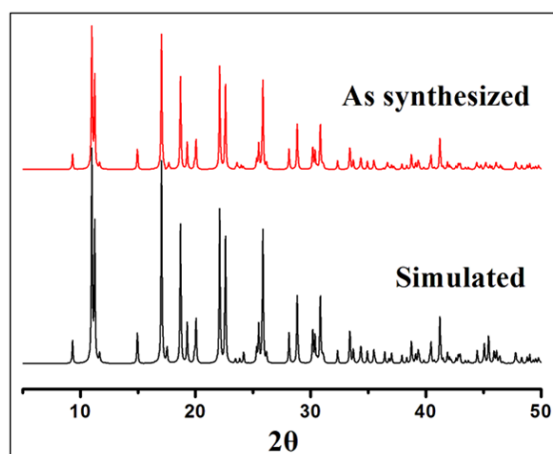
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**Fig. S7.** IR spectra of Complex 7.

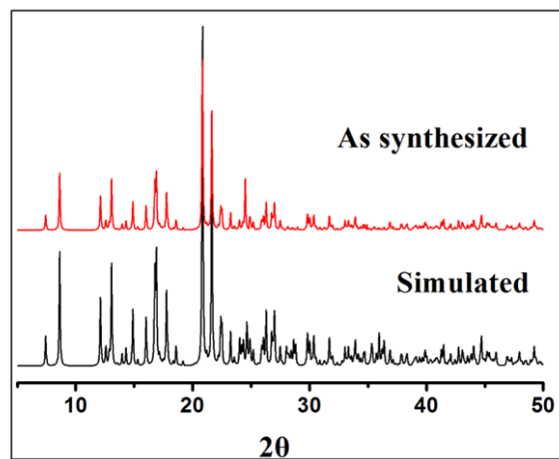


**Fig. S8.** PXRD of Complex 1.

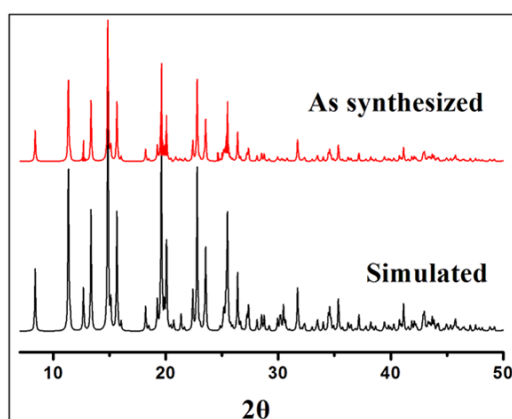


**Fig. S9.** PXRD of Complex 2.

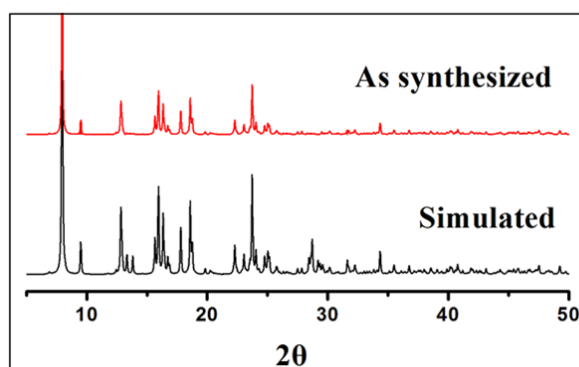
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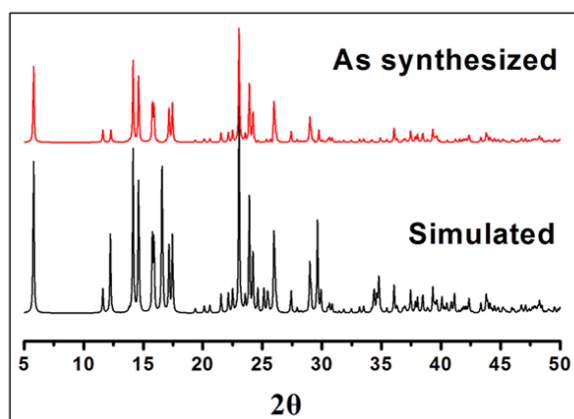
**Fig S10.** PXRD of Complex 3.



**Fig. S11.** PXRD of Complex 4.



**Fig. S12.** PXRD of Complex 6.



**Fig. S13.** PXRD of Complex 7.

**Table S1** Selected Bond lengths (Å) and Angles (°) for the metal complexes.

Complex 1							
Cu(1)-N(1)	1.939(4)	N(1)-Cu(1)-N(2)	142.00(19)	N(2)-Cu(1)-Cl(1)	108.58(14)	C(6)-N(2)-Cu(1)	123.0(4)
Cu(1)-N(2)	1.939(4)	N(1)-Cu(1)-Cl(1)	108.55(14)	C(1)-N(1)-Cu(1)	120.3(4)	C(10)-N(2)-Cu(1)	120.5(4)
Cu(1)-Cl(1)	2.3147(17)						
Complex 2							
Cu(1)-N(1)	2.045(5)	Cu(1)-Cl(1)	2.4219(19)	N(1)-Cu(1)-Cl(1)#2	115.59(16)	N(1)#1-Cu(1)-Cl(1)	115.59(16)
Cu(1)-N(1)#1	2.045(5)	Cl(1)-Cu(1)#2	2.4219(19)	N(1)#1-Cu(1)-Cl(1)#2	105.51(15)	Cl(1)#2-Cu(1)-Cl(1)	101.49(8)
Cu(1)-Cl(1)#2	2.4219(19)	N(1)-Cu(1)-N(1)#1	112.9(3)	N(1)-Cu(1)-Cl(1)	105.51(15)	Cu(1)#2-Cl(1)-Cu(1)	78.51(8)
Symmetry transformations used to generate equivalent atoms: #1 -x+1,y,-z+1				#2 -x+1,-y+1,-z+1			
Complex 3							
Cu(1)-N(3)	2.086(3)	Cu(1)-I(1)	2.5623(5)	N(5)-Cu(1)-N(2)	98.12(10)	N(2)-Cu(1)-I(1)	118.43(8)
Cu(1)-N(5)	2.090(3)	N(3)-Cu(1)-N(5)	111.69(11)	N(3)-Cu(1)-I(1)	110.32(8)		
Cu(1)-N(2)	2.106(3)	N(3)-Cu(1)-N(2)	102.81(11)	N(5)-Cu(1)-I(1)	114.48(8)		
Complex 4							
Zn(1)-O(3)	1.934(10)	Zn(1)-N(3)	2.089(9)	O(1)-Zn(1)-N(2)	106.4(4)	N(2)-Zn(1)-N(3)	110.9(4)
Zn(1)-O(1)	1.949(10)	O(3)-Zn(1)-O(1)	110.8(5)	O(3)-Zn(1)-N(3)	97.4(4)		
Zn(1)-N(2)	2.047(9)	O(3)-Zn(1)-N(2)	112.5(4)	O(1)-Zn(1)-N(3)	118.7(4)		
Complex 5							
Ag(1)-N(2)	2.255(15)	Ag(2)-N(13)	2.42(2)	N(2)-Ag(1)-N(3)#1	114.9(6)	N(12)#2-Ag(2)-N(16)	127.9(7)
Ag(1)-N(3)#1	2.265(16)	N(3)-Ag(1)#2	2.265(16)	N(2)-Ag(1)-N(7)	135.6(7)	N(11)-Ag(2)-N(16)	100.2(6)
Ag(1)-N(7)	2.316(16)	N(4)-Ag(1)#3	2.46(2)	N(3)#1-Ag(1)-N(7)	98.7(7)	N(12)#2-Ag(2)-N(13)	105.4(7)
Ag(1)-N(4)	2.46(2)	N(7)-Ag(1)#3	2.316(16)	N(2)-Ag(1)-N(4)	96.4(7)	N(11)-Ag(2)-N(13)	122.3(8)
Ag(2)-N(12)#2	2.241(14)	N(12)-Ag(2)#1	2.241(13)	N(3)#1-Ag(1)-N(4)	126.4(7)	N(16)-Ag(2)-N(13)	84.1(7)
Ag(2)-N(11)	2.283(14)	N(13)-Ag(2)#3	2.42(2)	N(7)-Ag(1)-N(4)	85.0(7)	Ag(1)#3-N(4)-Ag(1)	91.1(10)
Ag(2)-N(16)	2.324(16)	N(16)-Ag(2)#3	2.324(16)	N(12)#2-Ag(2)-N(11)	115.0(5)	Ag(1)-N(7)-Ag(1)#3	98.5(9)
Symmetry transformations used to generate equivalent atoms: #1 x-1,y,z				#2 x+1,y,z		#3 x,-y+3/2,	
Complex 6							
Co(1)-O(2)	2.098(4)	Co(4)-O(11)	2.150(4)	O(4)-Co(2)-N(2)	89.93(19)	N(3)-Co(3)-O(9)	87.25(18)
Co(1)-O(2)#1	2.098(4)	Co(4)-N(4)	2.158(5)	O(4)#2-Co(2)-N(2)	90.07(19)	O(8)#3-Co(3)-O(9)#3	86.27(17)
Co(1)-O(1)#1	2.103(4)	Co(4)-N(4)#4	2.158(5)	N(2)#2-Co(2)-N(2)	180.0	O(8)-Co(3)-O(9)#3	93.73(17)
Co(1)-O(1)	2.103(4)	O(2)-Co(1)-O(2)#1	180.000(1)	O(4)-Co(2)-O(3)	88.78(17)	N(3)#3-Co(3)-O(9)#3	87.25(18)
Co(1)-N(1)	2.155(5)	O(2)-Co(1)-O(1)#1	89.71(17)	O(4)#2-Co(2)-O(3)	91.22(17)	N(3)-Co(3)-O(9)#3	92.75(18)
Co(1)-N(1)#1	2.155(5)	O(2)#1-Co(1)-O(1)#1	90.29(17)	N(2)#2-Co(2)-O(3)	90.55(19)	O(9)-Co(3)-O(9)#3	180.0(4)
Co(2)-O(4)	2.060(4)	O(2)-Co(1)-O(1)	90.29(17)	N(2)-Co(2)-O(3)	89.45(19)	O(10)#4-Co(4)-O(10)	180.000(1)
Co(2)-O(4)#2	2.060(4)	O(2)#1-Co(1)-O(1)	89.71(17)	O(4)-Co(2)-O(3)#2	91.22(17)	O(10)#4-Co(4)-O(11)#4	86.85(17)
Co(2)-N(2)#2	2.132(5)	O(1)#1-Co(1)-O(1)	180.000(1)	O(4)#2-Co(2)-O(3)#2	88.78(17)	O(10)-Co(4)-O(11)#4	93.15(17)
Co(2)-N(2)	2.132(5)	O(2)-Co(1)-N(1)	90.22(19)	N(2)#2-Co(2)-O(3)#2	89.45(19)	O(10)#4-Co(4)-O(11)	93.15(17)
Co(2)-O(3)	2.169(4)	O(2)#1-Co(1)-N(1)	89.78(19)	N(2)-Co(2)-O(3)#2	90.55(19)	O(10)-Co(4)-O(11)	86.85(17)
Co(2)-O(3)#2	2.169(4)	O(1)#1-Co(1)-N(1)	88.08(19)	O(3)-Co(2)-O(3)#2	180.0	O(11)#4-Co(4)-O(11)	180.000(1)
Co(3)-O(8)#3	2.103(4)	O(1)-Co(1)-N(1)	91.92(19)	O(8)#3-Co(3)-O(8)	180.0(3)	O(10)#4-Co(4)-N(4)	91.18(18)
Co(3)-O(8)	2.103(4)	O(2)-Co(1)-N(1)#1	89.78(19)	O(8)#3-Co(3)-N(3)#3	90.70(19)	O(10)-Co(4)-N(4)	88.82(18)
Co(3)-N(3)#3	2.109(5)	O(2)#1-Co(1)-N(1)#1	90.22(19)	O(8)-Co(3)-N(3)#3	89.30(19)	O(11)#4-Co(4)-N(4)	94.76(19)
Co(3)-N(3)	2.109(5)	O(1)#1-Co(1)-N(1)#1	91.92(19)	O(8)#3-Co(3)-N(3)	89.30(19)	O(11)-Co(4)-N(4)	85.24(19)
Co(3)-O(9)	2.198(4)	O(1)-Co(1)-N(1)#1	88.08(19)	O(8)-Co(3)-N(3)	90.70(19)	O(10)#4-Co(4)-N(4)#4	88.82(18)
Co(3)-O(9)#3	2.198(4)	N(1)-Co(1)-N(1)#1	180.000(1)	N(3)#3-Co(3)-N(3)	180.0(4)	O(10)-Co(4)-N(4)#4	91.18(18)
Co(4)-O(10)#4	2.147(4)	O(4)-Co(2)-O(4)#2	180.00(14)	O(8)#3-Co(3)-O(9)	93.73(17)	O(11)#4-Co(4)-N(4)#4	85.24(19)
Co(4)-O(10)	2.147(4)	O(4)-Co(2)-N(2)#2	90.07(19)	O(8)-Co(3)-O(9)	86.27(17)	O(11)-Co(4)-N(4)#4	94.76(19)
Co(4)-O(11)#4	2.150(4)	O(4)#2-Co(2)-N(2)#2	89.93(19)	N(3)#3-Co(3)-O(9)	92.75(18)	N(4)-Co(4)-N(4)#4	180.0
Symmetry transformations used to generate equivalent atoms: #1 -x+2,-y+2,-z+1				#2 -x,-y+1,-z		#3 -x,-y,-z	
#4 -x+2,-y+1,-z+							
Complex 7							
Cu(1)-O(1)#1	1.9593(11)	O(1)#1-Cu(1)-N(1)	90.87(5)	N(1)-Cu(1)-N(1)#1	180.000(1)	(1)#1-Cu(1)-O(1W)	89.08(5)
Cu(1)-O(1)	1.9593(11)	O(1)-Cu(1)-N(1)	89.13(5)	O(1)#1-Cu(1)-O(1W)	79.45(5)	C(14)-O(1)-Cu(1)	122.93(11)
Cu(1)-N(1)	2.0016(12)	O(1)#1-Cu(1)-N(1)#1	89.13(5)	O(1)-Cu(1)-O(1W)	100.55(5)	C(5)-N(1)-Cu(1)	121.68(10)
Cu(1)-O(1W)	2.6787(15)	O(1)-Cu(1)-N(1)#1	90.87(5)	N(1)-Cu(1)-O(1W)	90.92(5)	C(1)-N(1)-Cu(1)	120.42(10)
O(1)#1-Cu(1)-O(1)	180.0						
Symmetry transformations used to generate equivalent atoms: #1 -x-1,-y+1,-z+1							