Electronic Supplementary Material (ESI) for CrystEngComm.
This journal is © The Royal Society of Chemistry 2019

Electronic Supplementary Information

Pyridylphosphine supported Ag(I) and Cu(I) complexes for detection of alcohols and nitriles via structural transformations from 1D to 0D

Yue Wang*[a], Yongfang Shi*[b], Xiaochuan Zou[a], Yucen He[a], and Xia Wang[a]

[a] (*College of Biological and Chemical Engineering, Chongqing University of Education, Chongqing* 400067, *China*)

[b] (*Fujian Institute of Research on the Structure of Matter, State Key Laboratory of Structural Chemistry, Chinese Academy of Sciences, Fuzhou* 350002, *China*)

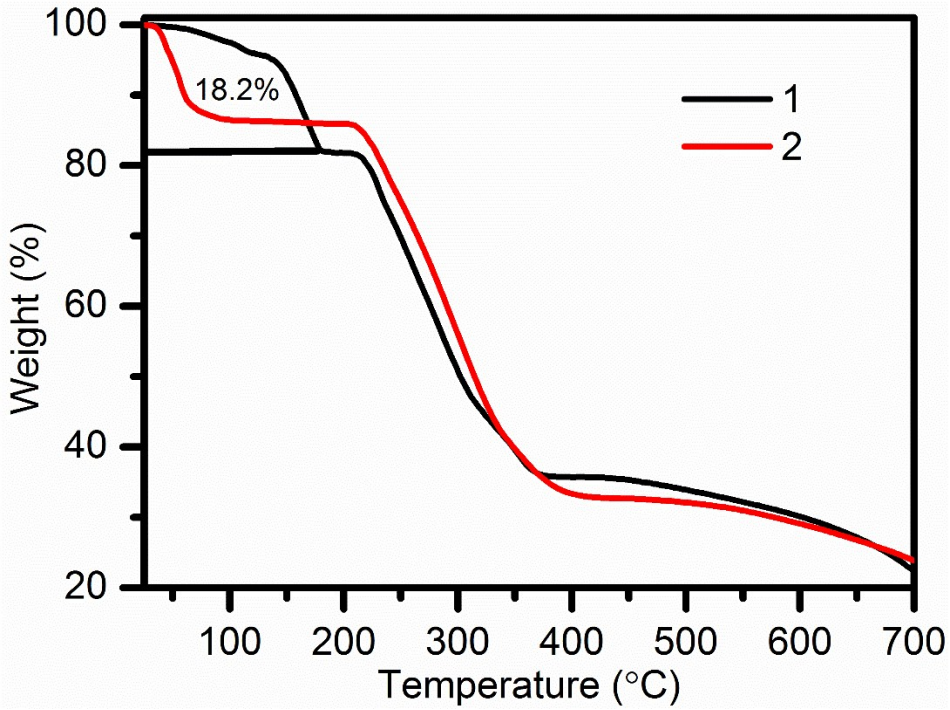

Fig. S1 The TGA curves of the as made samples **1** and **2**.

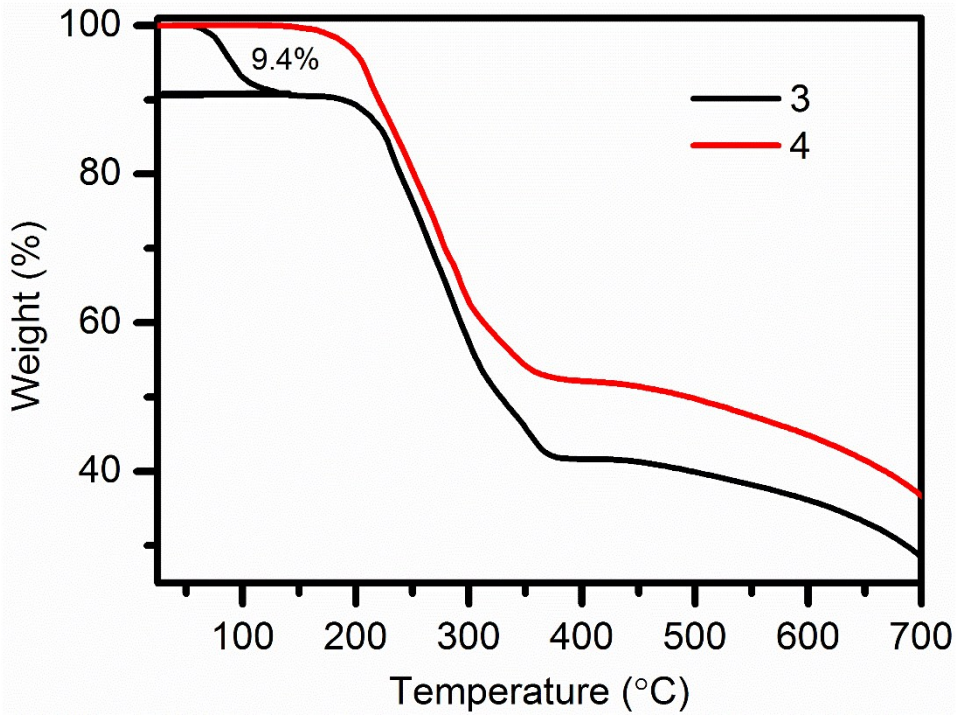

Fig. S2 The TGA curves of the as made samples **3** and **4**.

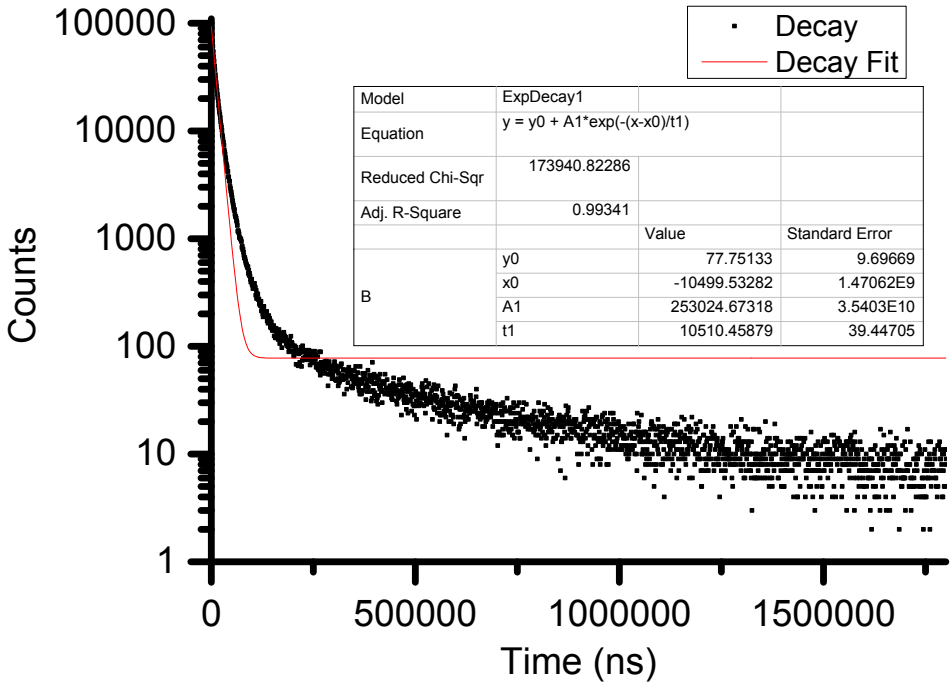

Fig. S3 Luminescent decay spectrum of complex **2** in solid state at 298 K.

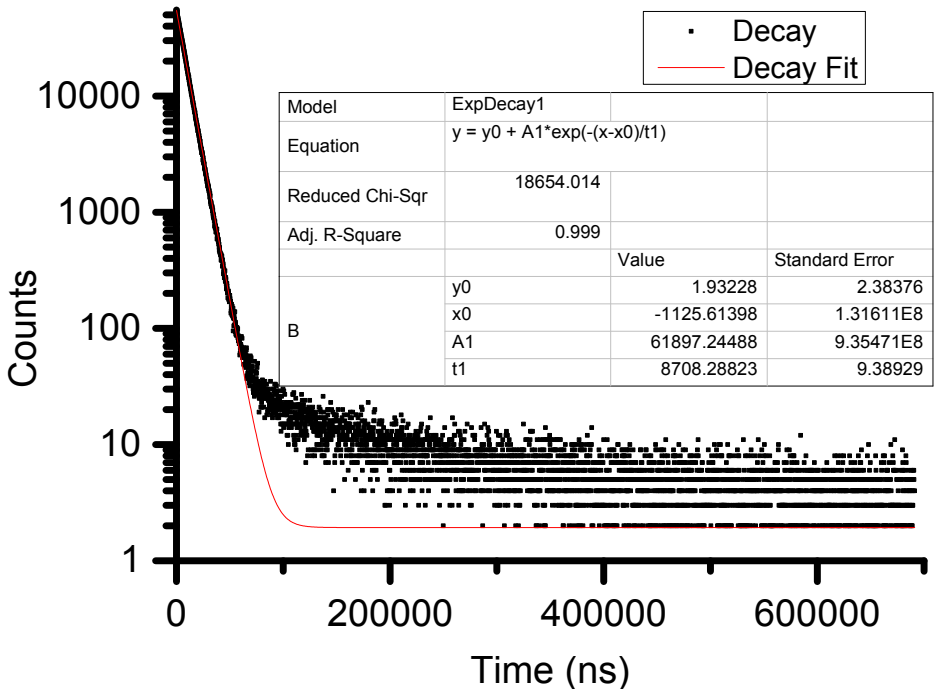

Fig. S4 Luminescent decay spectrum of complex **4** in solid state at 298 K.

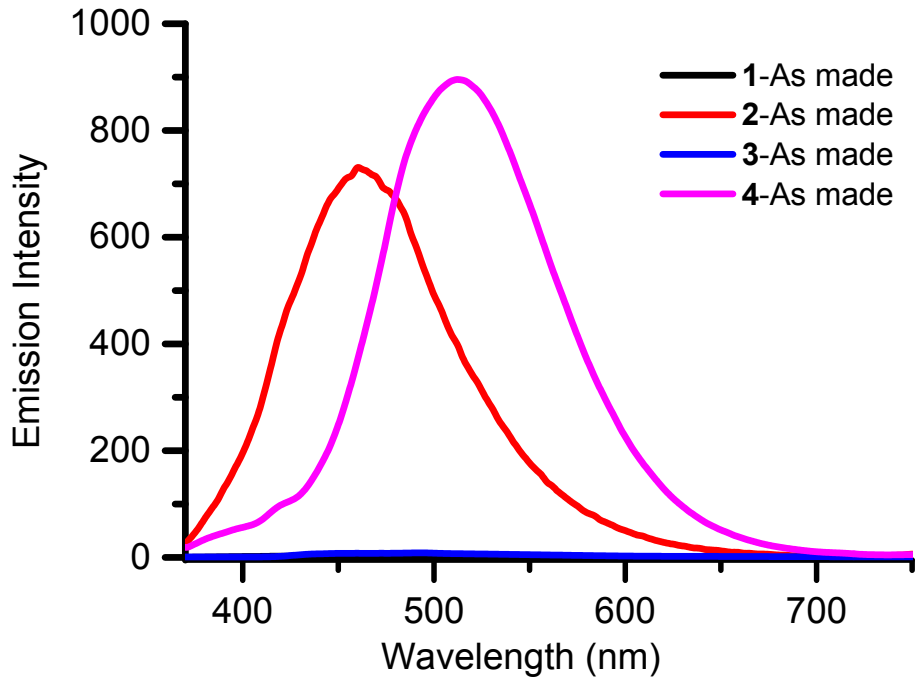

Fig. S5 Solid-state emission spectra of fresh prepared compound **1**–**4** at ambient temperature.

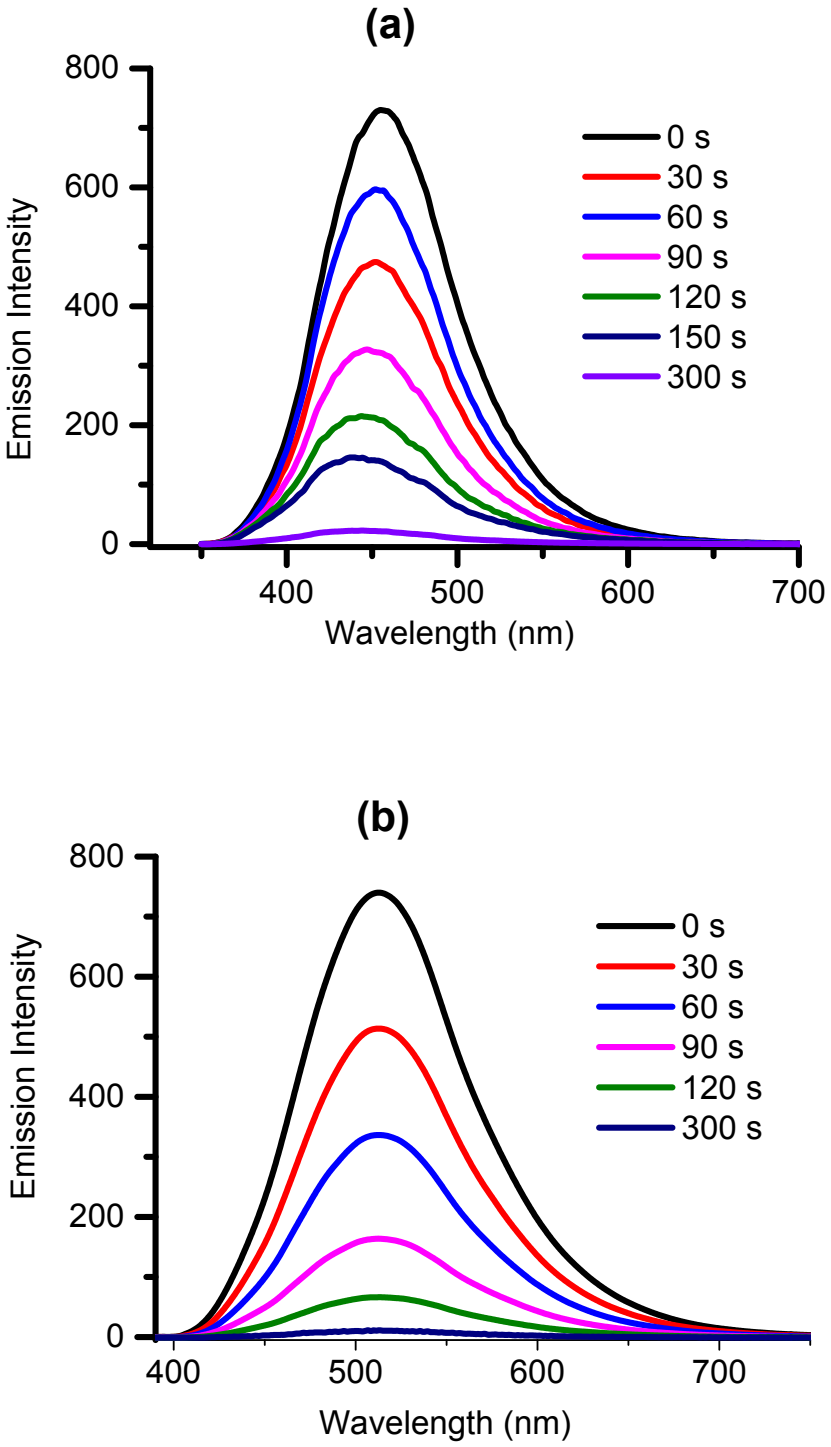

Fig. S6 The time-dependent emission spectra of fresh prepared samples **2** (a) and **4** (b) in response to MeOH vapor.

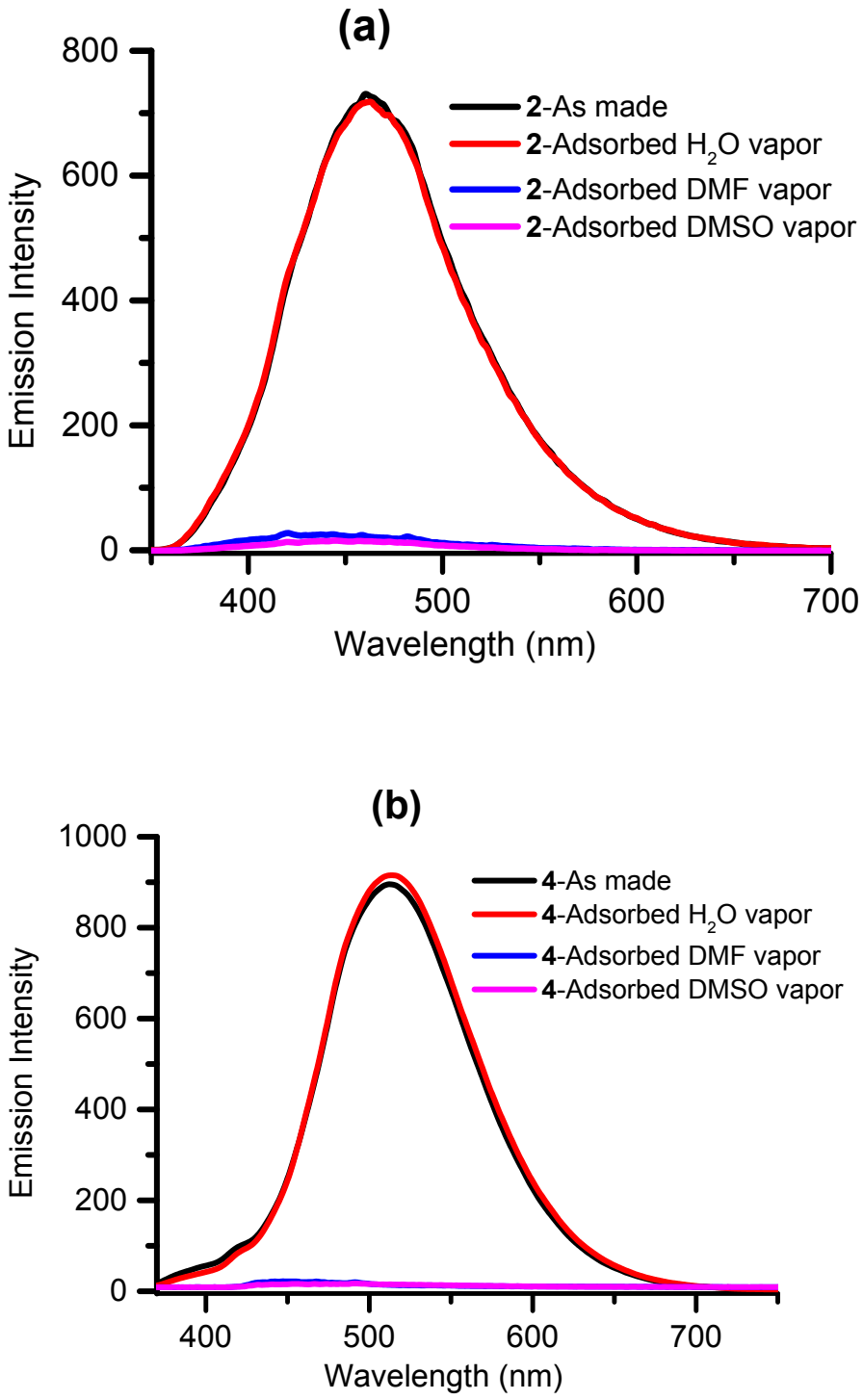

Fig. S7 Solid-state emission spectra of fresh prepared samples 2 (a) and 4 (b) complex in response to water, DMF and DMSO vapors.at ambient temperature.

As Fig. S7 shown, after exposure to H_2O vapor for several hours, the luminescent quenching of **2** and **4** are not detected. However, after exposure to DMSO and DMF vapors for overnight, the luminescent quenching of **2** and **4** are observed.

Table S1. Selected atomic distances (Å) and bond angles (deg) of complex **1**

Bond	Dist	Angle	Deg
Ag(1)-N(1)	2.304(3)	N(1)-Ag(1)-N(3)	102.69(10)
Ag(1)-N(3)	2.312(3)	N(1)-Ag(1)-P(1)#1	135.91(7)
Ag(1)-P(1)#1	2.3993(8)	N(3)-Ag(1)-P(1)#1	120.94(8)
Ag(1)-Ag(1)#1	3.3458(5)	N(1)-Ag(1)-Ag(1)#1	82.58(7)
Ag(2)-N(2)	2.284(3)	N(3)-Ag(1)-Ag(1)#1	118.68(8)
Ag(2)-N(4)	2.322(3)	P(1)#1-Ag(1)-Ag(1)#1	71.79(2)
Ag(2)-P(2)#2	2.3943(8)	N(2)-Ag(2)-N(4)	108.04(10)
Ag(2)-N(5)	2.574(4)	N(2)-Ag(2)-P(2)#2	134.45(7)
Ag(2)-Ag(2)#2	3.3533(5)	N(4)-Ag(2)-P(2)#2	117.25(8)
		N(2)-Ag(2)-N(5)	89.30(12)
		N(4)-Ag(2)-N(5)	87.27(14)
		P(2)#2-Ag(2)-N(5)	97.07(12)
		N(2)-Ag(2)-Ag(2)#2	83.99(7)
		N(4)-Ag(2)-Ag(2)#2	121.40(8)
		P(2)#2-Ag(2)-Ag(2)#2	69.12(2)
		N(5)-Ag(2)-Ag(2)#2	151.24(11)
		C(7)-P(1)-Ag(1)#1	112.79(11)
		C(1)-P(1)-Ag(1)#1	115.72(11)
		C(13)-P(1)-Ag(1)#1	115.14(10)
		C(24)-P(2)-Ag(2)#2	113.80(11)
		C(18)-P(2)-Ag(2)#2	112.91(12)
		C(30)-P(2)-Ag(2)#2	116.28(10)

Table S2. Selected atomic distances (Å) and bond angles (deg) of complex **2**

Bond	Dist	Angle	Deg
Ag(1)-N(2)	2.200(3)	N(2)-Ag(1)-P(1)	168.33(9)
Ag(1)-P(1)	2.3699(10)	N(2)-Ag(1)-Ag(2)	89.88(8)
Ag(1)-Ag(2)	3.0291(4)	P(1)-Ag(1)-Ag(2)	78.46(3)
Ag(2)-N(1)	2.202(3)	N(1)-Ag(2)-P(2)	161.09(9)
Ag(2)-P(2)	2.3652(10)	N(1)-Ag(2)-O(1)	90.14(11)
Ag(2)-O(1)	2.566(3)	P(2)-Ag(2)-O(1)	108.10(8)
		N(1)-Ag(2)-Ag(1)	89.19(9)
		P(2)-Ag(2)-Ag(1)	73.70(2)
		O(1)-Ag(2)-Ag(1)	140.04(7)
		C(29)-P(1)-Ag(1)	110.40(14)
		C(1)-P(1)-Ag(1)	116.93(13)
		C(7)-P(1)-Ag(1)	115.80(14)
		C(23)-P(2)-Ag(2)	107.23(13)
		C(12)-P(2)-Ag(2)	119.46(13)
		C(18)-P(2)-Ag(2)	116.08(13)
		Cl(1)-O(1)-Ag(2)	111.36(16)
		C(11)-N(1)-Ag(2)	116.7(3)
		C(7)-N(1)-Ag(2)	125.3(3)
		C(22)-N(2)-Ag(1)	120.0(3)
		C(18)-N(2)-Ag(1)	121.4(3)

Table S3. Selected atomic distances (Å) and bond angles (deg) of complex **3**

Bond	Dist	Angle	Deg
Cu(1)-N(2)	1.9537(17)	N(2)-Cu(1)-N(1)	100.91(7)
Cu(1)-N(1)	2.0368(16)	N(2)-Cu(1)-P(1)#1	129.79(5)
Cu(1)-P(1)#1	2.1956(5)	N(1)-Cu(1)-P(1)#1	125.27(5)
		C(1)-P(1)-Cu(1)#1	113.42(6)
		C(7)-P(1)-Cu(1)#1	113.22(6)
		C(13)-P(1)-Cu(1)#1	115.99(6)
		C(17)-N(1)-Cu(1)	120.42(13)
		C(13)-N(1)-Cu(1)	121.33(12)
		C(18)-N(2)-Cu(1)	165.53(17)

Table S4. Selected atomic distances (Å) and bond angles (deg) of complex **4**

Bond	Dist	Angle	Deg
Cu(1)-O(1)	2.1742(15)	O(1)-Cu(1)-O(5)	91.78(6)
Cu(1)-O(5)	2.1876(15)	O(1)-Cu(1)-P(1)	110.26(5)
Cu(1)-P(1)	2.2435(6)	O(5)-Cu(1)-P(1)	107.16(5)
Cu(1)-P(2)	2.2527(6)	O(1)-Cu(1)-P(2)	111.47(5)
Cu(2)-N(2)	1.9103(18)	O(5)-Cu(1)-P(2)	102.22(4)
Cu(2)-N(1)	1.9111(18)	P(1)-Cu(1)-P(2)	127.31(2)
Cu(2)-O(7)#1	2.3172(16)	N(2)-Cu(2)-N(1)	165.69(8)
		N(2)-Cu(2)-O(7)#1	93.76(7)
		N(1)-Cu(2)-O(7)#1	100.42(7)
		C(7)-P(1)-Cu(1)	121.70(7)
		C(1)-P(1)-Cu(1)	113.60(7)
		C(13)-P(1)-Cu(1)	110.27(7)
		C(24)-P(2)-Cu(1)	119.72(7)
		C(18)-P(2)-Cu(1)	116.67(7)
		C(30)-P(2)-Cu(1)	104.95(7)
		Cl(1)-O(1)-Cu(1)	114.20(9)
		Cl(2)-O(5)-Cu(1)	127.41(9)
		Cl(2)-O(7)-Cu(2)#2	133.50(11)
		C(17)-N(1)-Cu(2)	121.71(15)
		C(13)-N(1)-Cu(2)	119.13(14)
		C(34)-N(2)-Cu(2)	121.24(15)
		C(30)-N(2)-Cu(2)	119.80(14)