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Crystal structure of poly[(μ_2 -biphenyl-2,2'-dicarboxylato- $\kappa^4 O, O':O'', O'''$)(μ_2 -4,4'-bipyridine- $\kappa^2 N:N'$)copper(II)], $C_{24}H_{16}CuN_2O_4$

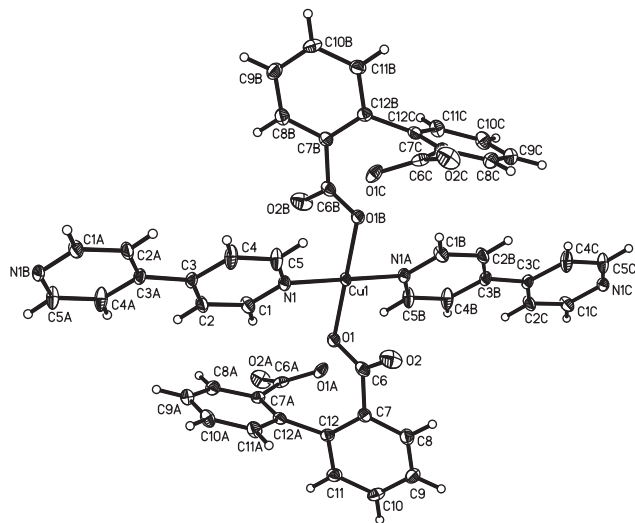


Table 3: Fractional coordinates and atomic displacement parameters (Å²).

Atom	Site	<i>x</i>	<i>y</i>	<i>z</i>	<i>U</i> ₁₁	<i>U</i> ₂₂	<i>U</i> ₃₃	<i>U</i> ₁₂	<i>U</i> ₁₃	<i>U</i> ₂₃
Cu(1)	4a	1.0	1.0	0.0	0.0194(2)	0.0268(3)	0.0281(3)	0.0076(1)	0.0159(2)	0.0077(1)
C(1)	8f	1.1336(1)	0.8242(2)	0.0947(2)	0.038(1)	0.045(1)	0.048(1)	0.018(1)	0.033(1)	0.022(1)
C(2)	8f	1.1983(1)	0.7660(2)	0.1016(2)	0.029(1)	0.043(1)	0.056(1)	0.018(1)	0.027(1)	0.026(1)
C(3)	8f	1.21491(9)	0.7785(2)	−0.0025(2)	0.0192(9)	0.0261(9)	0.038(1)	0.0025(7)	0.0151(8)	−0.0055(8)
C(4)	8f	1.1634(1)	0.8503(3)	−0.1129(2)	0.026(1)	0.071(2)	0.026(1)	0.015(1)	0.0131(8)	−0.0039(9)
C(5)	8f	1.1013(1)	0.9080(2)	−0.1113(2)	0.023(1)	0.062(1)	0.026(1)	0.0149(9)	0.0097(8)	0.0011(9)
C(6)	8f	0.9328(1)	0.7798(2)	0.0389(2)	0.035(1)	0.0247(9)	0.033(1)	0.0098(8)	0.0211(9)	0.0030(8)
C(7)	8f	0.9093(1)	0.6758(2)	0.1118(2)	0.028(1)	0.0236(9)	0.0266(9)	0.0024(8)	0.0132(8)	−0.0015(7)
C(8)	8f	0.8334(1)	0.6557(2)	0.0667(2)	0.030(1)	0.033(1)	0.033(1)	0.0038(8)	0.0091(9)	0.0004(8)
C(9)	8f	0.8060(1)	0.5725(2)	0.1334(2)	0.028(1)	0.034(1)	0.048(1)	−0.0054(9)	0.0163(9)	−0.0052(9)
C(10)	8f	0.8547(2)	0.5033(2)	0.2454(3)	0.039(2)	0.034(1)	0.043(2)	−0.0119(8)	0.022(1)	0.0008(8)
C(11)	8f	0.9303(2)	0.5184(2)	0.2904(2)	0.034(1)	0.030(1)	0.029(1)	−0.0041(8)	0.010(1)	0.0042(8)
C(12)	8f	0.9589(1)	0.6057(2)	0.2260(2)	0.028(1)	0.0202(9)	0.027(1)	−0.0019(7)	0.0115(8)	−0.0042(7)
N(1)	8f	1.08545(9)	0.8955(2)	−0.0101(2)	0.0227(8)	0.0303(9)	0.0390(9)	0.0073(7)	0.0195(7)	0.0051(7)
O(1)	8f	0.99232(7)	0.8504(1)	0.1069(1)	0.0258(7)	0.0360(7)	0.0406(8)	0.0078(6)	0.0210(6)	0.0155(6)
O(2)	8f	0.8930(1)	0.8008(2)	−0.0799(2)	0.071(1)	0.0483(9)	0.0246(8)	−0.0028(9)	0.0181(8)	0.0040(7)

Discussion

In recent years, the design and construction of has been investigated not only because metal-organic frameworks of their interesting structures, but also owing to their potential applications in many fields such as gas storage and separation, catalysis, magnetism, sensor, luminescence, and so on [1–6].

In order to search for new metal complex, the title complex was synthesised and its crystal structure determined. In the title complex, the Cu^{II} ion situated on a centre of inversion showing a square coordination geometry. The Cu^{II} ion is coordinated by two N atoms from two 4,4'-bipyridine ligands and two O atoms from two biphenyl-2,2'-dicarboxylato ligands. The biphenyl-2,2'-dicarboxylato and 4,4'-bipyridine ligands bridge the metal atoms, forming a 3D network.

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