Supporting Information

Coligand modifications fine-tuned the structure and magnetic property of two triple-bridged azido-Cu(II) chain compounds exhibiting ferromagnetic order and slow relaxation

Xiangyu Liu,*[a] Feifei Li,[a] Xiaohui Ma,[a] Peipei Cen,[b] Shuchang Luo,[d] Quan Shi,*[c] Shenru Ma,[a] Yuewei Wu,[a] Chengcheng Zhang,[a] Zhao Xu,[a] Weiming Song,[a] Gang Xie[b] and Sanping Chen*[b]

a College of Chemistry and Chemical Engineering, State Key Laboratory Cultivation Base of Natural Gas Conversion, Ningxia University, Yinchuan 750021, China

b Key Laboratory of Synthetic and Natural Functional Molecule Chemistry of Ministry of Education, College of Chemistry and Materials Science, Northwest University, Xi'an 710069, China

c Dalian Institute of Chemical Physics, Chinese Academy of Sciences, 457 Zhongshan Road, Dalian 116023, China

d School of Chemical Engineering, Guizhou University of Engineering Science, Bijie, 551700, China

***Corresponding author**

Dr. Xiangyu Liu

Tel.: +86-951-2062004

Fax: +86-951-2062860

E-mail: xiangyuliu432@126.com

***Corresponding author**

Prof. Sanping Chen

Tel.: +86-29-88302604

Fax: +86-29-88302604

E-mail: sanpingchen@126.com

***Corresponding author**

Dr. Quan Shi

Tel.: +86-411-84379213

Fax: +86-411-84379213

E-mail: shiquan@dicp.ac.cn

Contents

Table S1. Selected Bond Lengths (Å) and Bond Angles (°) for **1**

1					
Cu(1)-O(1)#1	1.951(2)	Cu(1)#1-N(1)	2.005(2)	O(1)#1-Cu(1)-O(2)	179.11(9)
Cu(1)-O(2)	1.9599(19)	N(1)-N(2)	1.204(3)	Cu(1)-N(1)-Cu(1)#1	106.57(10)
Cu(1)-O(3)	2.466	N(2)-N(3)	1.137(4)	N(3)-N(2)-N(1)	178.9(4)
Cu(1)-N(1)	1.994(2)	F(1)-C(3)	1.319(4)	O(1)-C(1)-O(2)	127.4(2)
Cu(1)-N(1)#2	2.005(2)	C(8)-O(3)	1.397(4)	O(2)-Cu(1)-N(1)	90.39(8)
#1 x+1/2,-y+1/2,-z		#2 x-1/2,-y+1/2,-z			

Table S2. Selected Bond Lengths (Å) and Bond Angles (°) for **2**

2					
Cu(1)-O(1)	1.9595(18)	Cu(1)#2-N(1)	1.9894(17)	O(1)#1-Cu(1)-O(1)	180.0
Cu(1)-O(1)#1	1.9595(18)	N(1)-N(2)	1.223(4)	Cu(1)#2-N(1)-Cu(1)	110.33(14)
Cu(1)-O(2)	2.556	N(3)-N(2)	1.127(4)	N(3)-N(2)-N(1)	178.3(4)
Cu(1)-N(1)	1.9894(17)	F(1)-C(3)	1.354(5)	O(1)-C(1)-O(1)#3	128.5(3)
Cu(1)-N(1)#1	1.9894(17)	O(2)-C(8)	1.401(5)	O(1)-Cu(1)-N(1)	91.16(10)
#1 -x+1,-y+1,-z+1		#2 -x+1,y-1/2,-z+1		#3 x,-y+1/2,z	

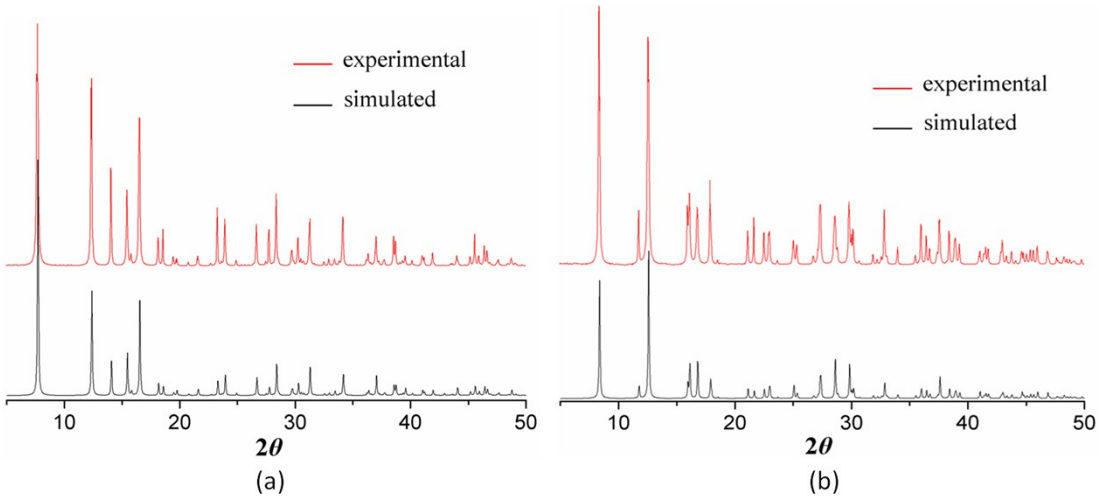

Fig. S1 PXRD patterns for compounds: (a) **1**, (b) **2**.

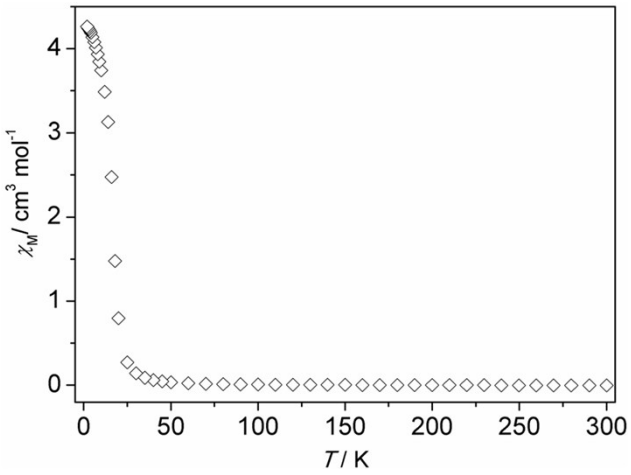

Fig. S2 Thermal dependence of χ_M for **1**.

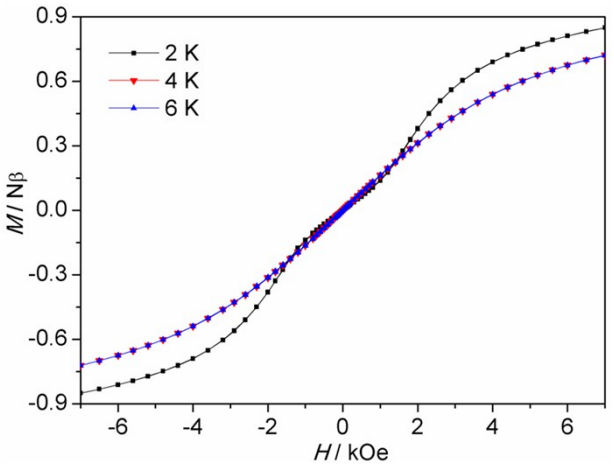

Fig. S3 Hysteresis loops for **2** at different temperatures.

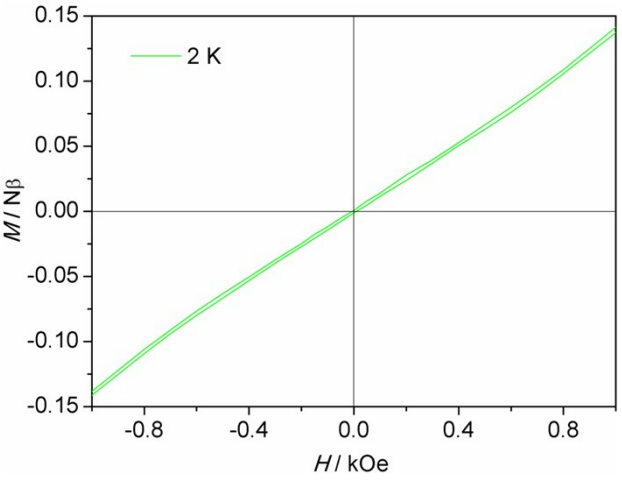

Fig. S4 Hysteresis loop for **2** at 2 K.

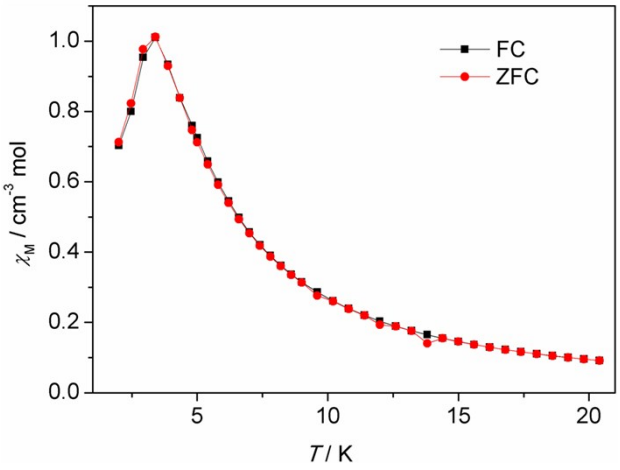

Fig. S5 FC and ZFC plots for **2**.

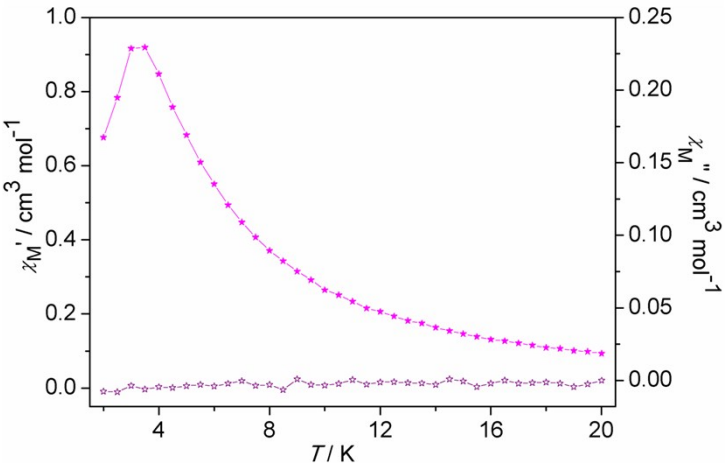

Fig. S6 χ'_M and χ''_M *vs* T plots at 1000 Hz for **1**.