

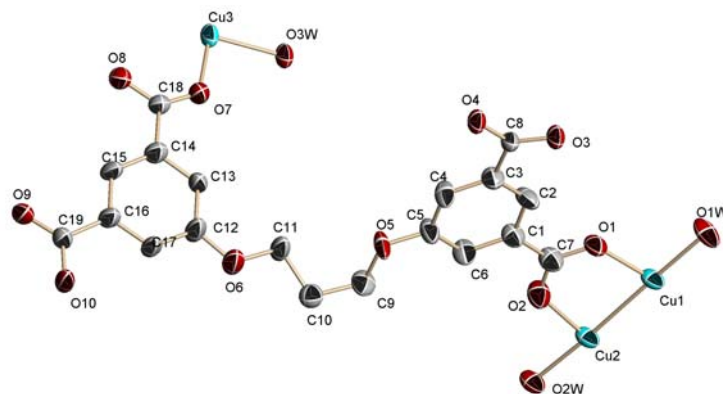
Supporting Information for the Manuscript

A Robust Microporous Metal-Organic Framework Constructed from a Flexible Organic Linker for Acetylene Storage at Ambient Temperature

Yun-Shan Xue,^a Yabing He,^b Shi-Bin Ren,^a Yanfeng Yue,^b Le Zhou,^a Yi-Zhi Li,^a Hong-Bin Du,^{a,*} Xiao-Zeng You,^a and Banglin Chen^{b,*}

a. State Key Laboratory of Coordination Chemistry, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, 210093, China. Fax: (+86) 25-83314502, E-mail: hbdu@nju.edu.cn.

b. Department of Chemistry, University of Texas at San Antonio, One UTSA Circle, San Antonio, Texas 78249-0698, USA. Fax: (+1) 210-458-7428, E-mail: banglin.chen@utsa.edu



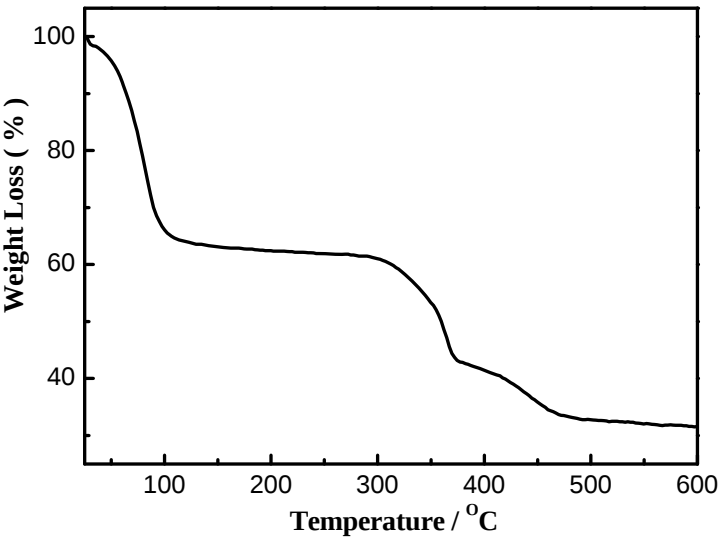


Fig. S2 TGA profile under nitrogen for **1**

Table S1. Selected bond lengths (Å) and angles (deg) for **1**

Cu1—O1	1.9143(19)	Cu2—O2	1.969(2)	Cu3—O4 ^v	1.9461(19)
Cu1—O10 ⁱⁱⁱ	1.9291(18)	Cu2—O9 ⁱⁱⁱ	1.9687(18)	Cu3—O3 ^{vi}	1.9524(19)
Cu1—O1W	2.144(3)	Cu2—O2W	2.149(3)	Cu3—O8 ^{vii}	1.955(2)
Cu3—O7	1.9596(19)	Cu3—O3W	2.1623(17)	O3 ^{vi} —Cu3—O8 ^{vii}	90.66(8)
O1 ⁱⁱ —Cu1—O1	90.76(12)	O2 ⁱⁱ —Cu2—O2	91.95(14)	O4 ^v —Cu3—O3 ^{vi}	168.21(7)
O1 ⁱⁱ —Cu1—O10 ⁱⁱⁱ	168.02(8)	O2 ⁱⁱ —Cu2—O9 ^{iv}	88.37(9)	O4 ^v —Cu3—O8 ^{vii}	88.02(8)
O1—Cu1—O10 ⁱⁱⁱ	88.76(10)	O2—Cu2—O9 ^{iv}	167.97(8)	O4 ^v —Cu3—O7	89.98(9)
O10 ⁱⁱⁱ —Cu1—O10 ^{iv}	89.24(15)	O9 ^{iv} —Cu2—O9 ⁱⁱⁱ	88.84(13)	O3 ^{vi} —Cu3—O7	88.88(9)
O1 ⁱⁱ —Cu1—O1W	96.22(9)	O2 ⁱⁱ —Cu2—O2W	94.51(8)	O8 ^{vii} —Cu3—O7	167.94(8)
O10 ⁱⁱⁱ —Cu1—O1W	95.74(9)	O9 ^{iv} —Cu2—O2W	97.45(8)	O4 ^v —Cu3—O3W	97.26(7)
O8 ^{vii} —Cu3—O3W	96.99(7)	O7—Cu3—O3W	95.06(8)	O3 ^{vi} —Cu3—O3W	94.53(7)

Symmetry transformations: (i) x, 0.5-y, 2-z; (ii) x, y, 1.5-z; (iii) -1+x, 0.5-y, 2-z; (iv) -1+x, 0.5-y, -0.5+z; (v) 1-x, -y, 2-z; (vi) 1+x, y, z; (vii) 2-x, -y, 2-z; (viii) -1+x, y, z; (ix) 1+x, 0.5-y, 2-z.