Supporting Information

Two Cu-complex directed aluminoborates: from 2D layer to 3D framework

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Table S1 Selected bond distances of **1** and **2**.

Compound **1**			
Cu(1)-N(8)	1.994(5)	Al(1)-O(10)#3	1.737(4)
Cu(1)-N(9)	2.002(5)	Al(2)-O(21)	1.731(4)
Cu(1)-N(7)	2.010(5)	Al(2)-O(30)	1.735(4)
Cu(1)-N(10)	2.020(5)	Al(2)-O(33)#4	1.737(4)
Cu(1)-O(7)	2.699(4)	Al(2)-O(18)	1.751(4)
Cu(2)-N(12)	2.002(5)	B(1)T-O	1.474(7)
Cu(2)-N(12)#1	2.002(5)	B(2)Δ-O	1.363(7)
Cu(2)-N(11)#1	2.013(5)	B(3)Δ-O	1.370(7)
Cu(2)-N(11)	2.013(5)	B(4)Δ-O	1.365(7)
Cu(2)-O(32)#1	2.515(4)	B(5)Δ-O	1.363(8)
Cu(2)-O(32)	2.515(4)	B(6)T-O	1.472(7)
Cu(3)-N(1)#2	1.995(5)	B(7)Δ-O	1.363(8)
Cu(3)-N(1)	1.995(5)	B(8)Δ-O	1.363(8)
Cu(3)-N(2)	2.016(5)	B(9)Δ-O	1.367(8)
Cu(3)-N(2)#2	2.016(5)	B(10)Δ-O	1.367(7)
Cu(3)-O(29)	2.572(4)	B(11)T-O	1.471(6)
Cu(3)-O(29)#2	2.572(4)	B(12)Δ-O	1.369(7)
Cu(4)-N(6)	1.973(7)	B(13)Δ-O	1.367(7)
Cu(4)-N(4)	2.019(7)	B(14)Δ-O	1.369(7)
Cu(4)-N(3)	2.023(6)	B(15)Δ-O	1.363(7)
Cu(4)-N(5)	2.052(7)	B(16)T-O	1.472(7)
Cu(4)-O(17)	2.505(4)	B(17)Δ-O	1.369(7)
Al(1)-O(11)	1.713(4)	B(18)Δ-O	1.367(7)
Al(1)-O(40)	1.723(4)	B(19)Δ-O	1.354(7)
Al(1)-O(1)	1.722(4)	B(20)Δ-O	1.360(8)

Symmetry code: #1, -x,-y+1,-z; #2, -x,-y,-z+2; #3, x-1,y,z; #4, x,y,z+1.

[a] T and [b] Δ represent the B atoms of BO_4 and BO_3 groups respectively, similarly hereinafter. All the he B-O band lengths are the average value, similarly hereinafter.

Compound **2**			
Cu-N(1)	1.990(5)	Al-O(3)#2	1.733(4)
Cu-N(4)	1.995(5)	Al-O(7)#3	1.750(4)
Cu-N(2)	2.012(5)	B(1)T-O	1.468(6)
Cu-N(3)	2.015(5)	B(2)Δ-O	1.360(7)
Cu-O(8)	2.564(4)	B(3)Δ-O	1.358(6)
Al-O(1)	1.707(4)	B(4)Δ-O	1.365(6)
Al-O(2)#1	1.716(4)	B(5)Δ-O	1.363(7)

Symmetry code: #1, x+1/2,y,-z-1/2; #2, -x+1,-y,-z-1; #3 x+1/2,-y-1/2,-z-1.

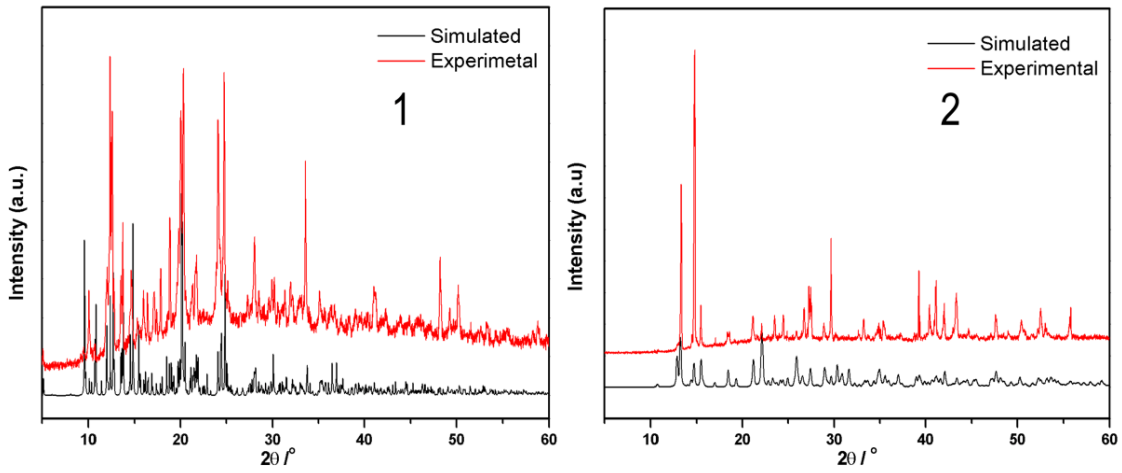

Fig. S1 Simulated and experimental powder XRD patterns of **1** and **2**, respectively.

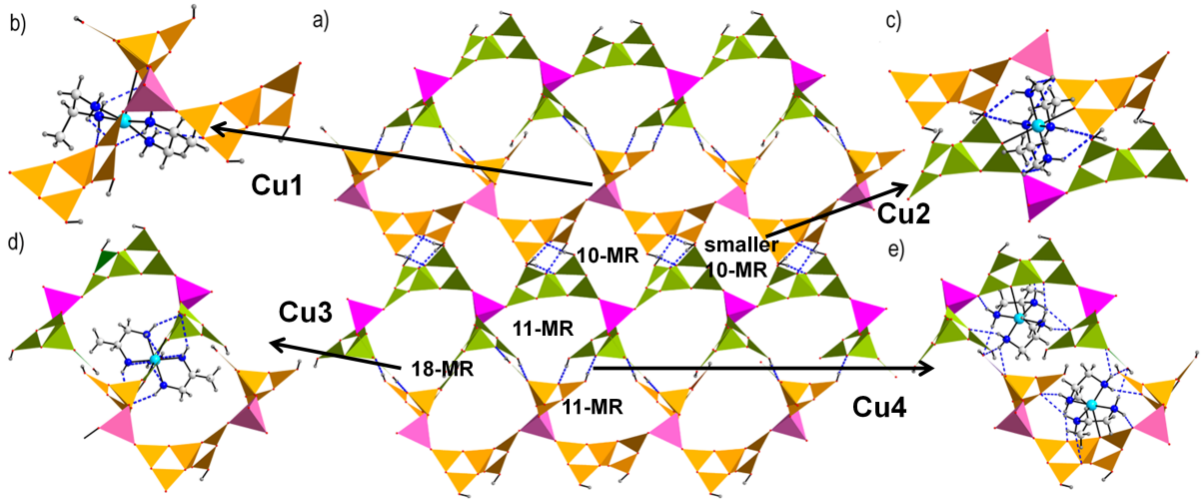

Fig. S2 View of the layer stacking along *a*-axis and the $[Cu(enMe)_2]^{2+}$ cations located in the channels.

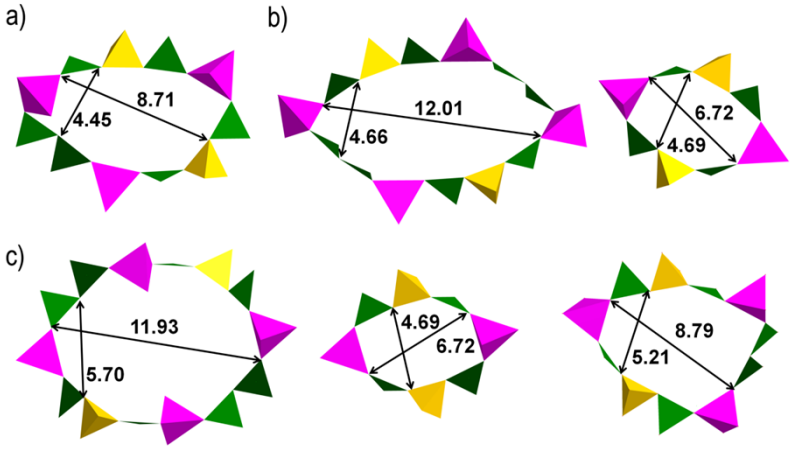

Fig. S3 a) View of the elliptical 11-MR opening situated on the *bc* plane in **2**. b) View of the 14- and 8-MR openings situated on the *ab* plane in **2**. c) View of the 14-, 8-MR and 11-MR openings located on the two layers of *ac* plane, respectively.

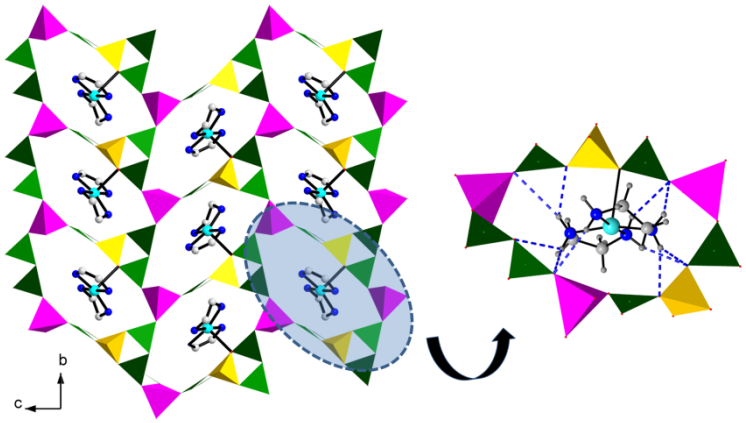

Fig. S4 View of the $[Cu(en)_2]^{2+}$ cations located at the 11-MRs and interacting with the framework through weak Cu-O bonds and H-bonds.

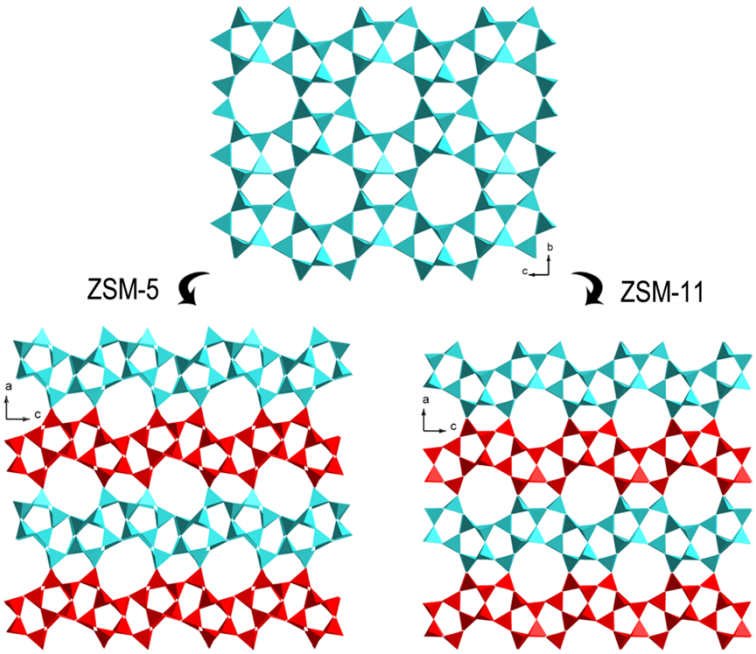

Fig. S5 The different building layer arrangements in ZSM-5 and ZSM-11, respectively.

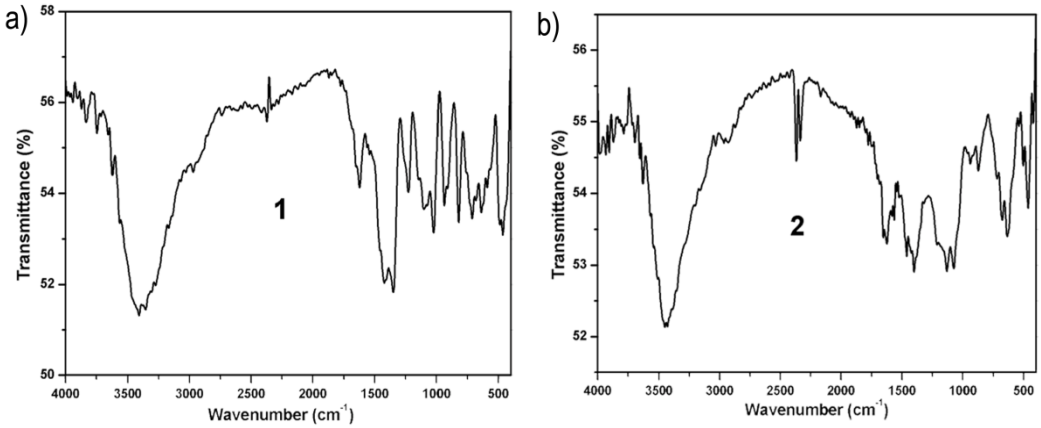

Fig. S6 IR spectra of **1** and **2**, respectively.

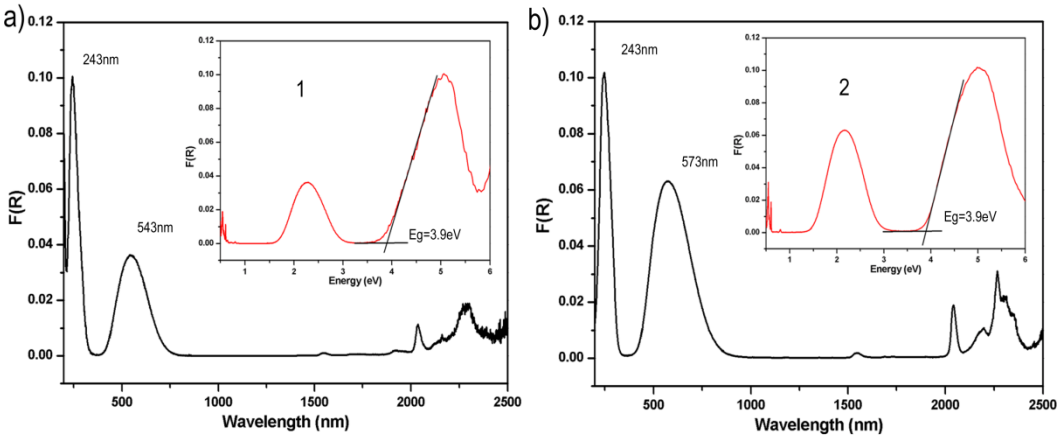

Fig. S7 UV-vis-NIR diffuse reflectance spectra of **1** and **2**, respectively.

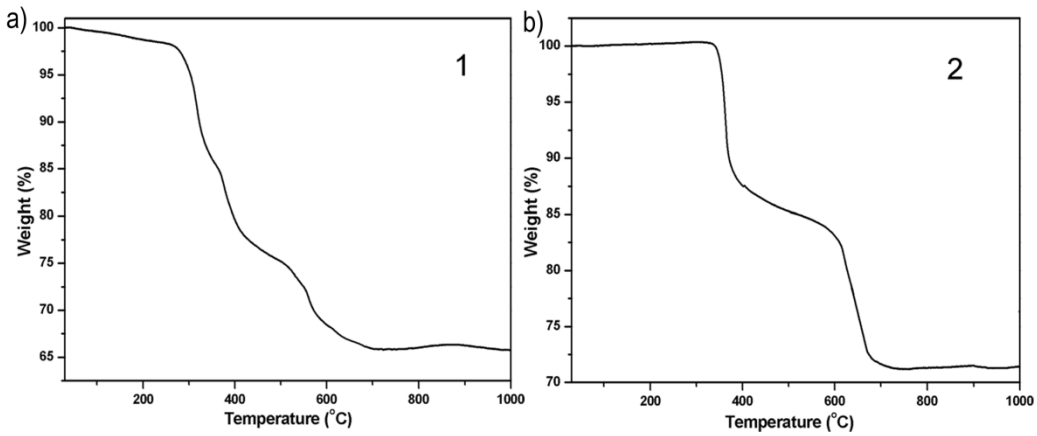

Fig. S8 TG curves of **1** and **2**, respectively.