Electronic Supplementary Material (ESI) for *CrystEngComm*

One-Pot Synthesis of Two New Copper(I) Coordination Polymers: In Situ Formation of Different Ligands from 4-aminotriazole

Zhen-Guo Zhao,[a] Rong-Min Yu,[a] Xiao-Yuan Wu,[a] Qi-Sheng Zhang,[a] Yi-Ming Xie,[a] Fei Wang,[a] Seik Weng Ng,[b] and Can-Zhong Lu*[a]

Received (in XXX, XXX) Xth XXXXXXXXX 200X, Accepted Xth XXXXXXXXX 200X
First published on the web Xth XXXXXXXXX 200X

DOI: 10.1039/b000000x

[a] *State Key Laboratory of Structure Chemistry, Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, Fujian 350002, P. R. China*

[b] *Graduate School of Chinese Academy of Sciences, Beijing 100039, P. R. China.*

*The corresponding author, Fax: (+86)- 591-83714946; Tel: (+86)- 591-83705794; E-mail: czlu@fjirsm.ac.cn

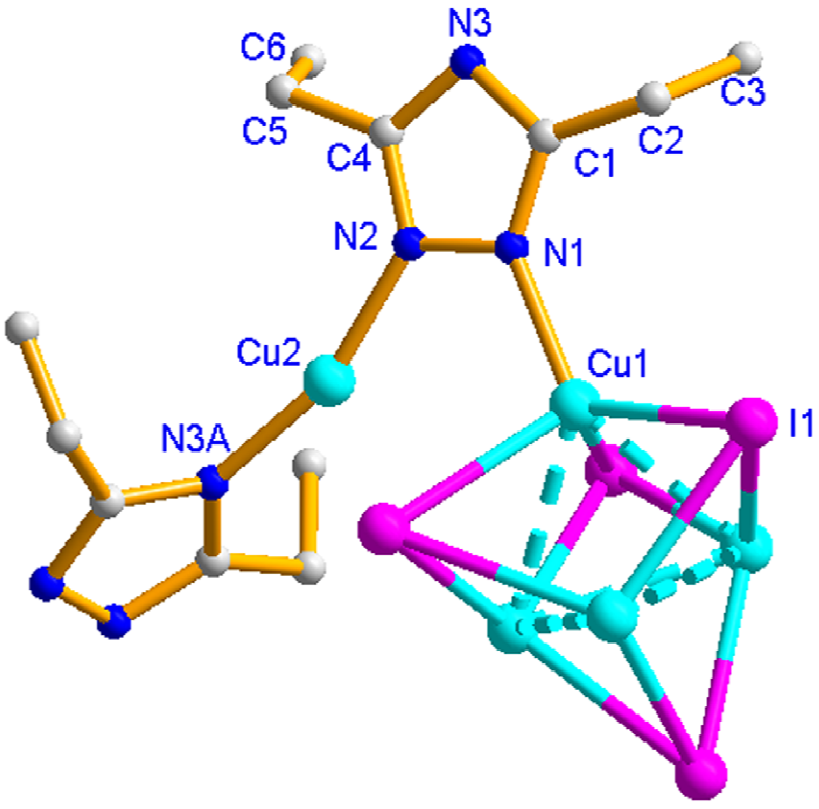

Fig. S1 The coordination environments of Cu1 and Cu2 atoms in **2.** Symmetry codes: (A) -x+0,-y+1/2, z+0

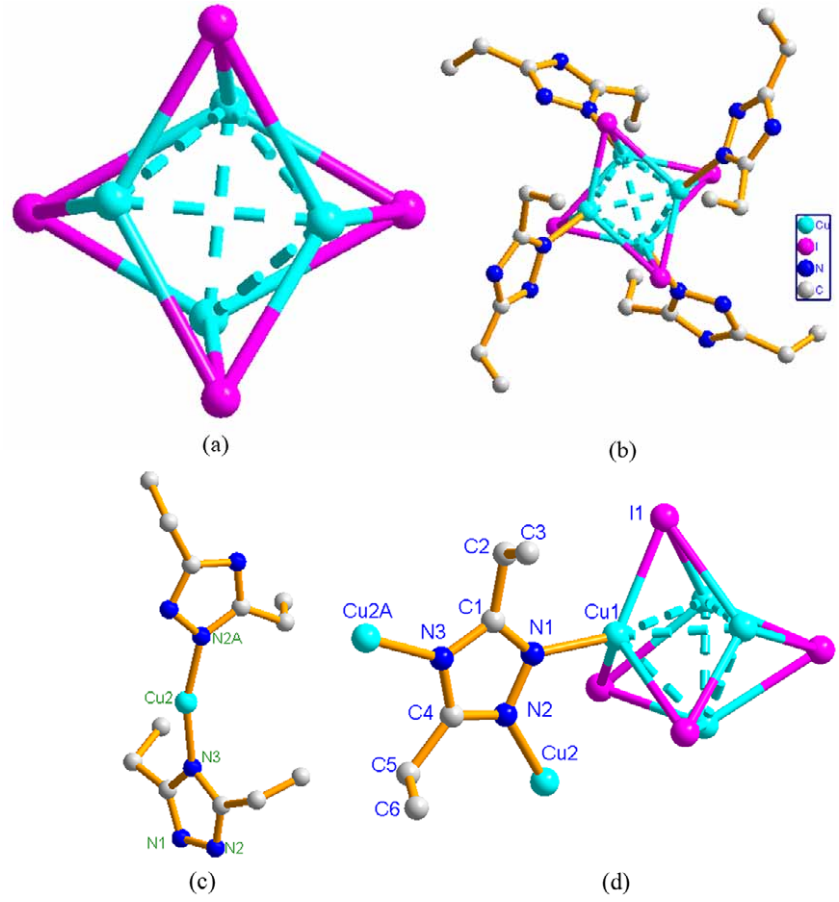

Fig. S2 The coordination geometries of Cu_4I_4 unit, Cu1, Cu2, dtz in **2**.

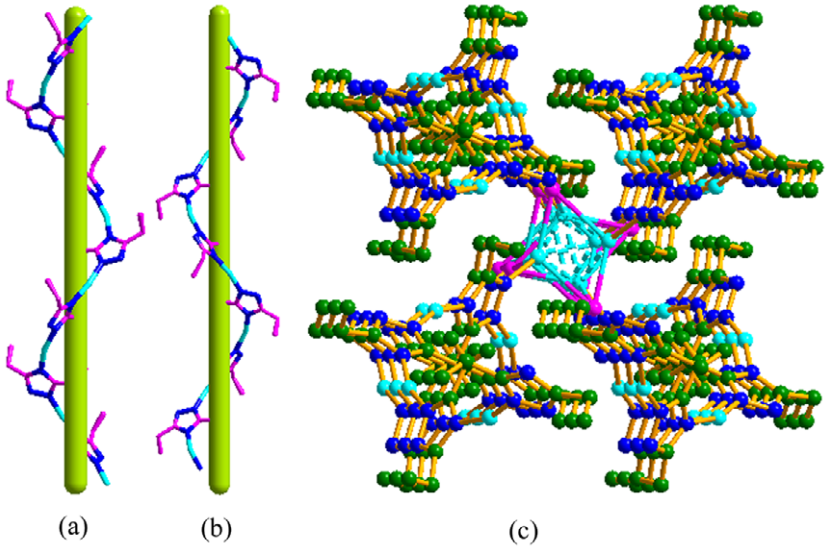

Fig. S3 (a) View of the right-handed helixes. (b) View of the left-handed helixes. (c) Ball and Stick view of four helixes with opposite chiralities.

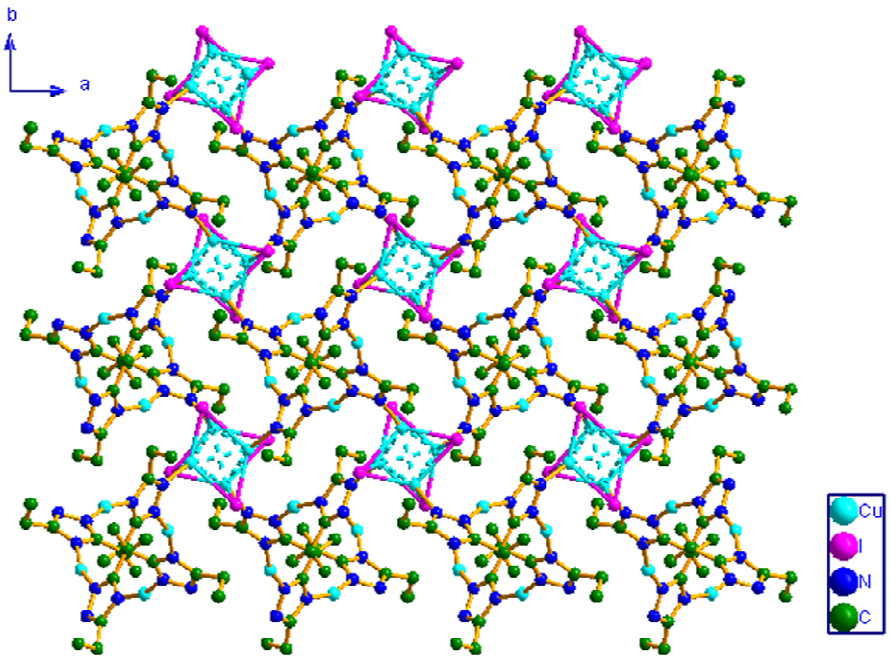

Fig. S4 View of the 3D network down the *c*-axis for **2**

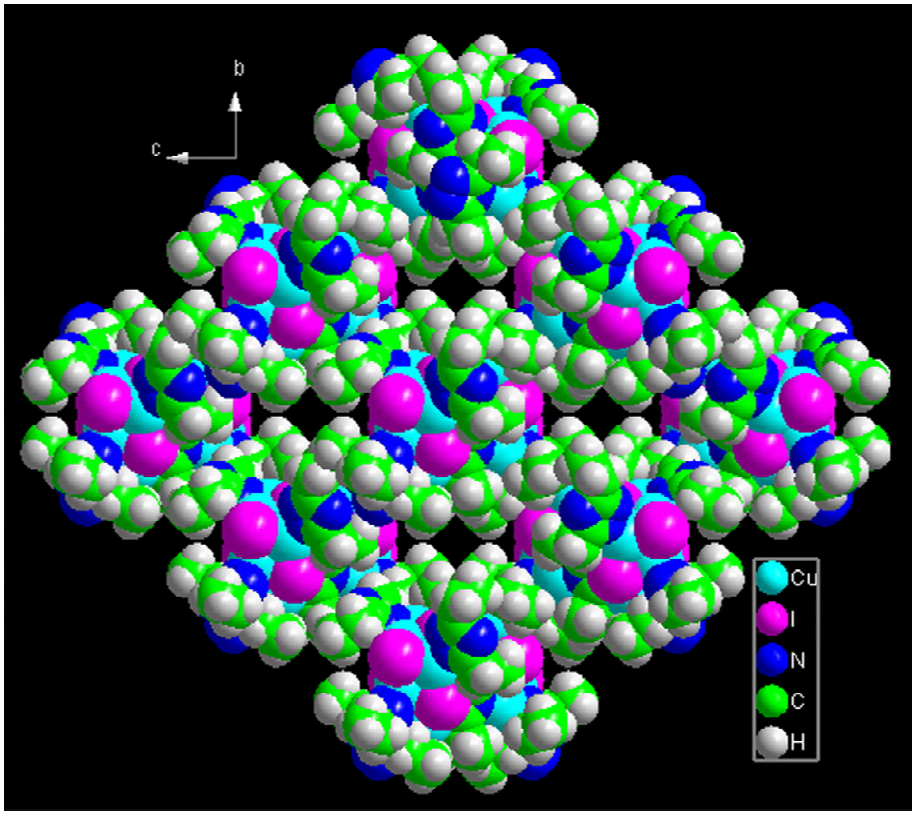

Fig. S5 View of the 3D network and space filling model of the channel structures along the *a* axis

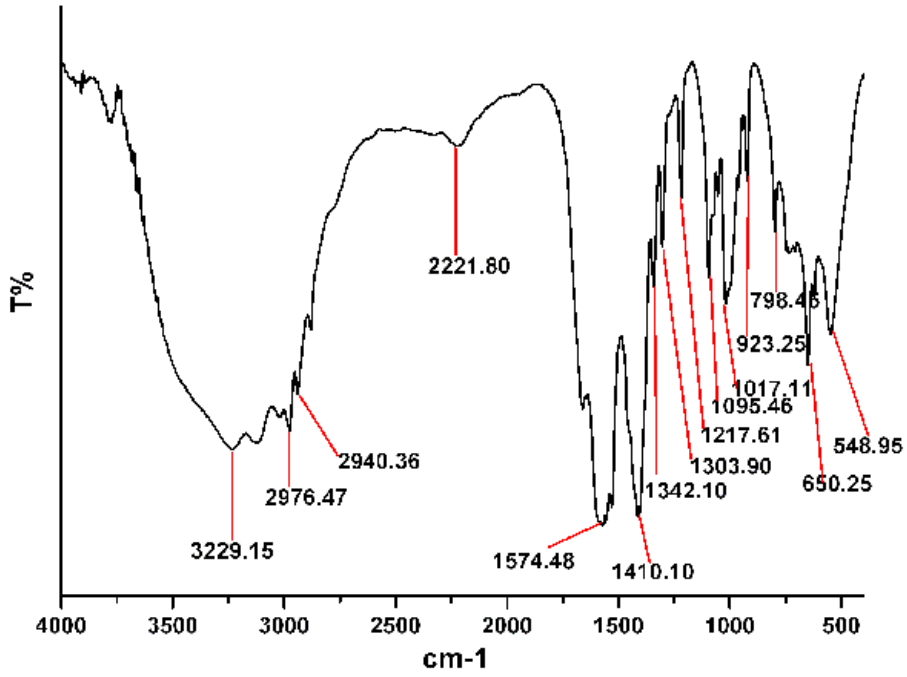

Fig. S6 The IR spectrum of 3,5-diethyl-4-amino-triazole.

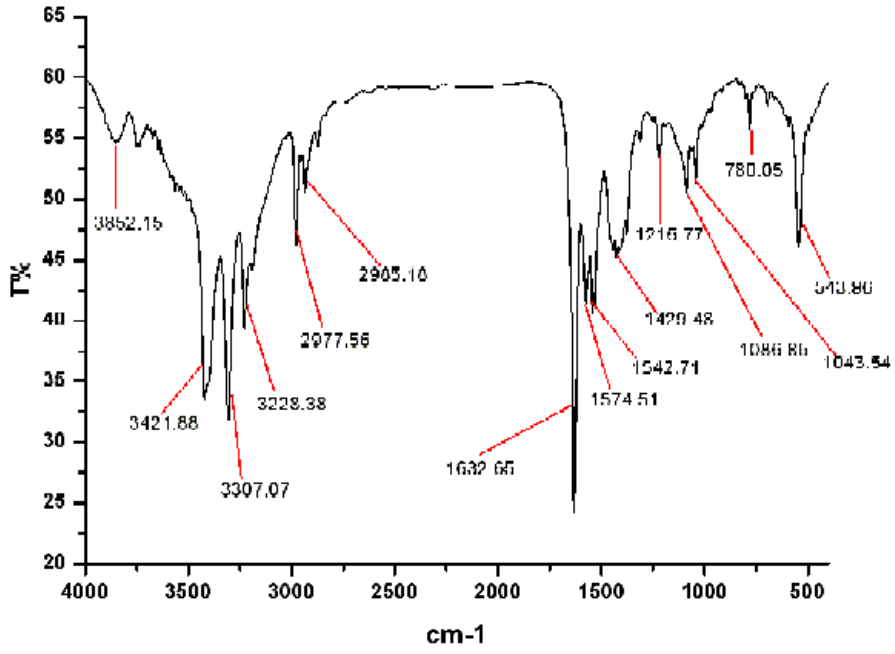

Fig. S7 The IR spectrum of **1**

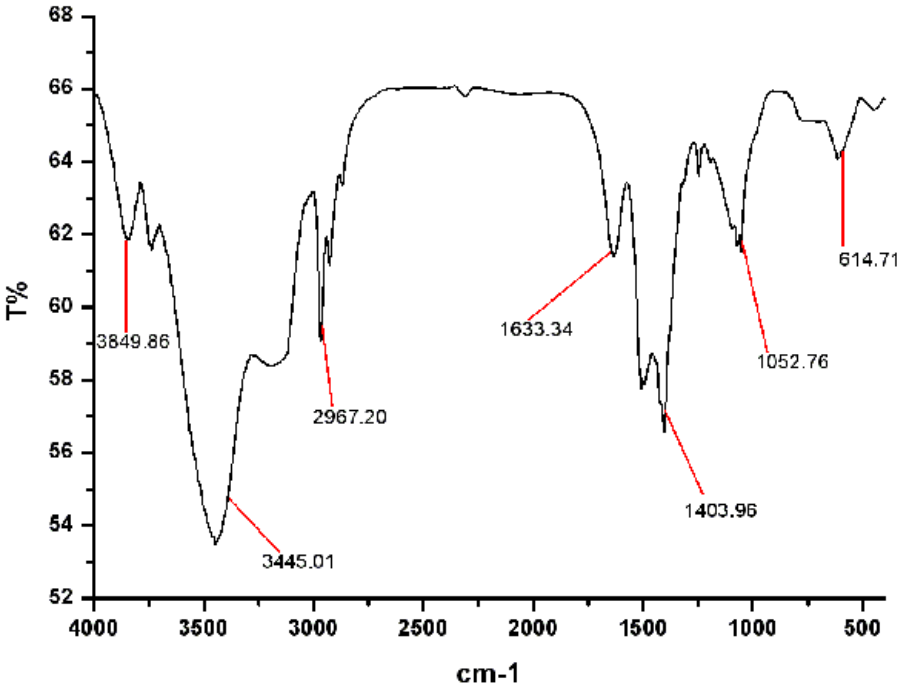

Fig. S8 The IR spectrum of **2**

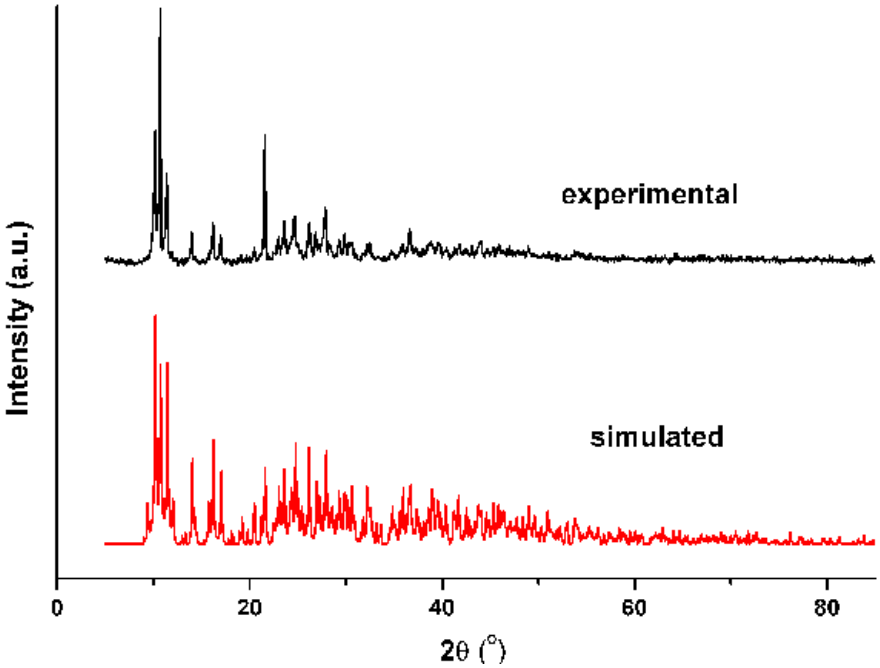

Fig. S9 PXRD patterns for **1**

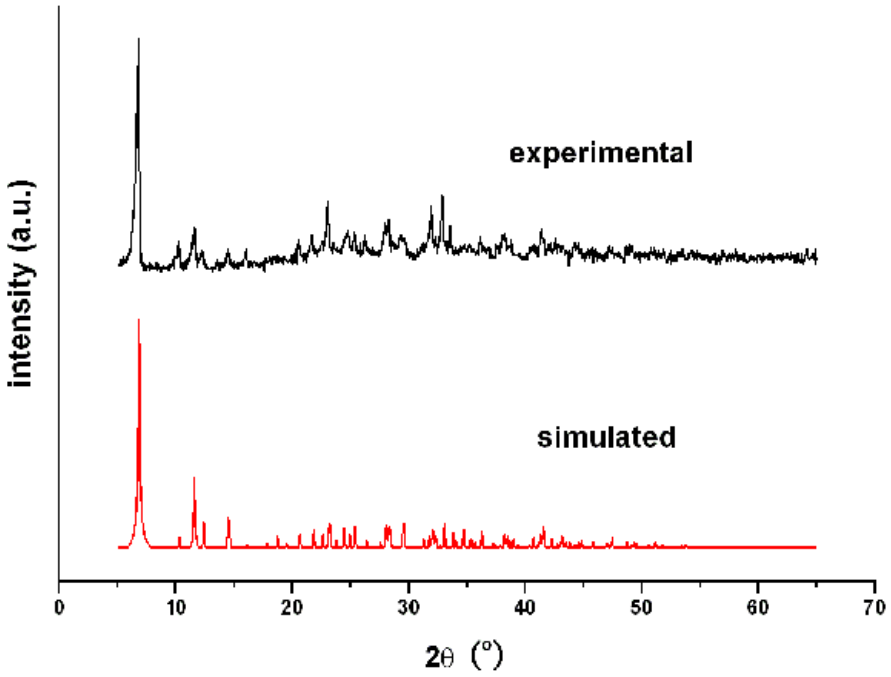

Fig. S10 PXRD patterns for **2**

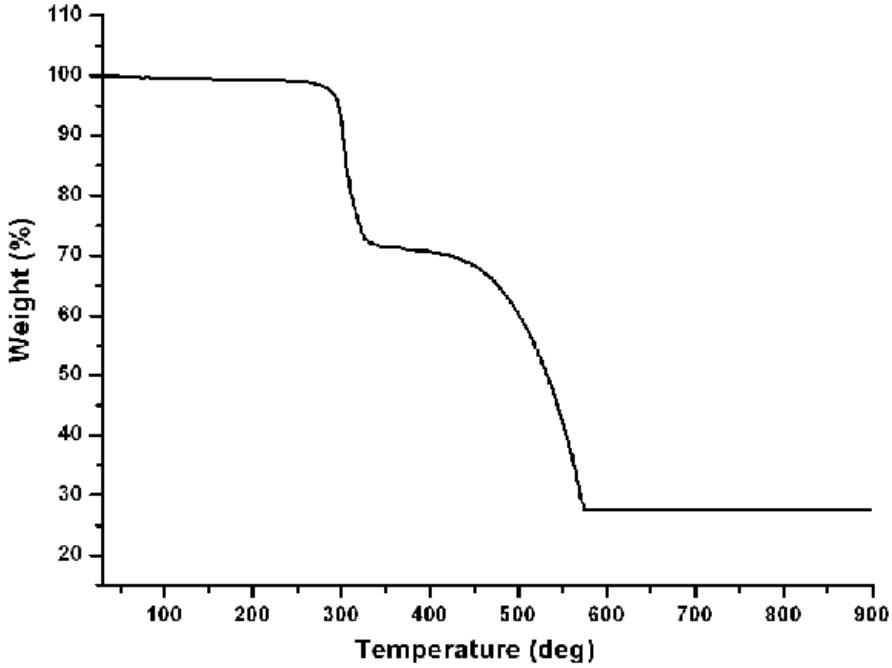

Fig. S11 The TGA plot for **1**

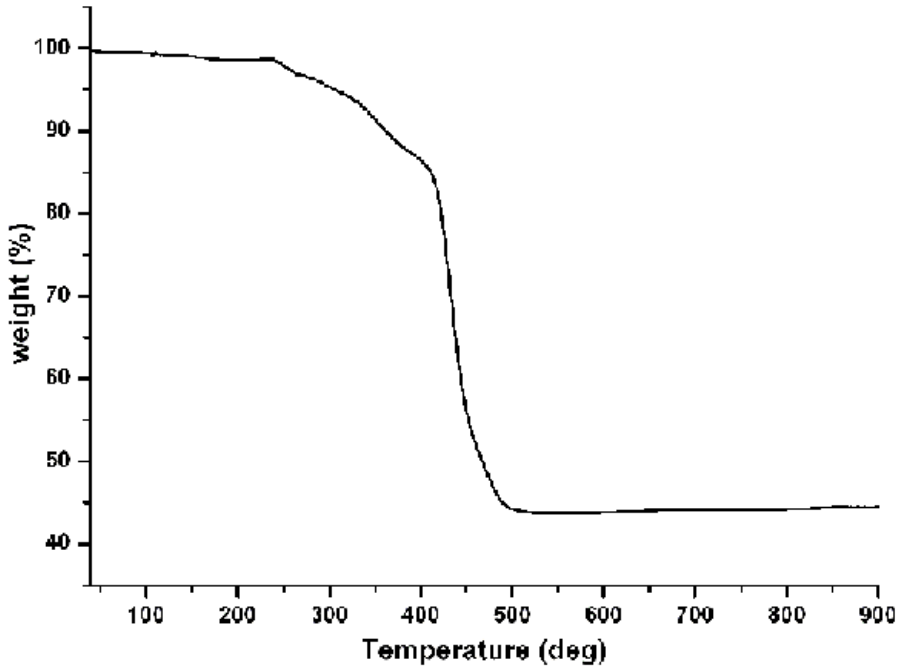

Fig. S12 The TGA plot for **2**

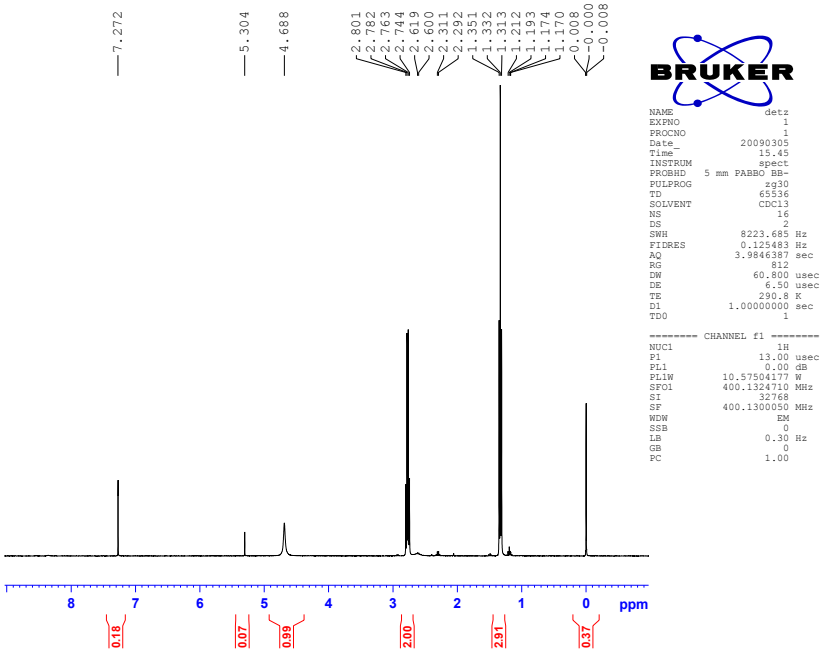

Fig. S13 ^{1}H NMR spectrum of 4-amino-3,5-diethyl-1,2,4-triazole. ^{1}H NMR ($CDCl_3$, δppm) for 4-amino-3,5-diethyl-1,2,4-triazole: 4.688 (s, 2H, NH_2), 2.801-2.744 (m, 4H, CH_2), 1.332 (t, 6H, $J_{H\text{-}H}$ = 7.6 Hz, CH_3)