Supporting information:

Three isolated structural motifs in one crystal: Penetration of two 1D chains through large cavities within 2D polymeric sheets

Muhammad Arif Nadeem,[a] Mohan Bhadbhade,[b] Roland Bircher[c] and John Arron Stride* [a,c]

[a] *School of Chemistry, University of New South Wales, Sydney, NSW 2052, Australia. Fax: +61 (02) 9385 6141; Tel: +61 (0)2 9385 4672; E-mail: j.stride@unsw.edu.au*
[b] *Analytical Centre, University of New South Wales, Sydney, NSW 2052, Australia.*
[c] *Bragg Institute, Australian Nuclear Science and Technology Organisation, PMB 1, Menai, NSW 2234, Australia.*

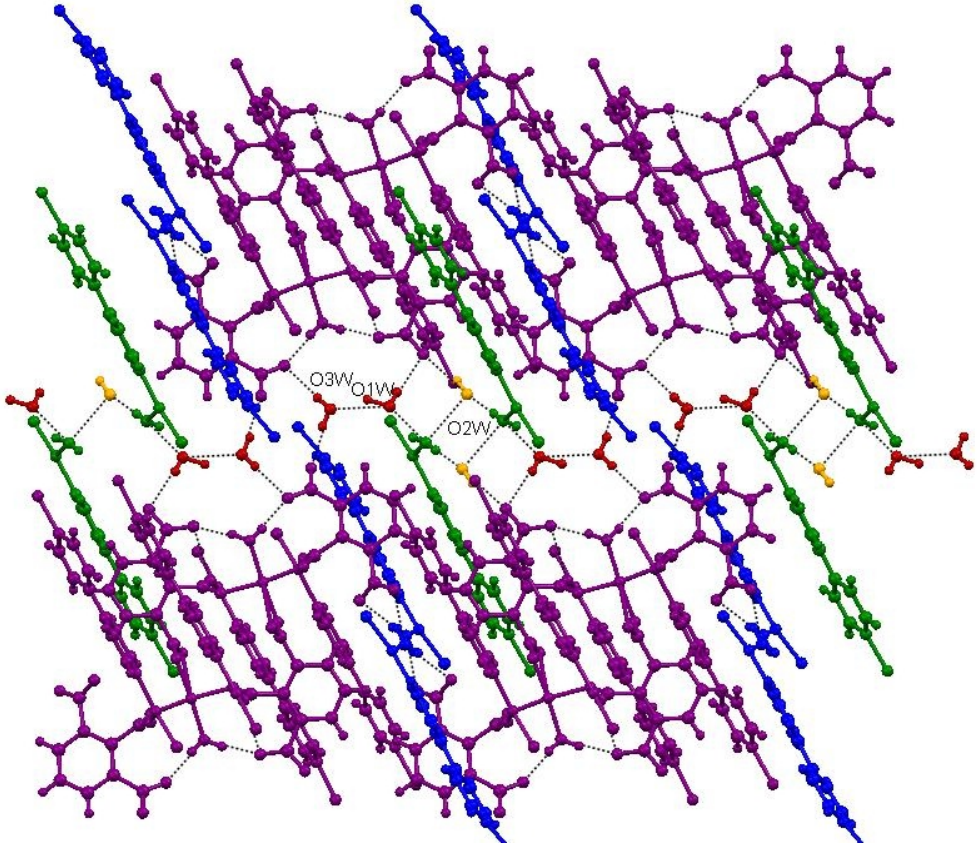

Figure S1: Detail of hydrogen-bonding between the 2D layers, generating the pseudo-3D structure. Polymer **A** (2D) shown in purple and the two 1D polymers, **B** and **C**, in green and blue respectively. Lattice water molecules are shown in red, whilst hydroxide ions ($^{-}$OH) in yellow.

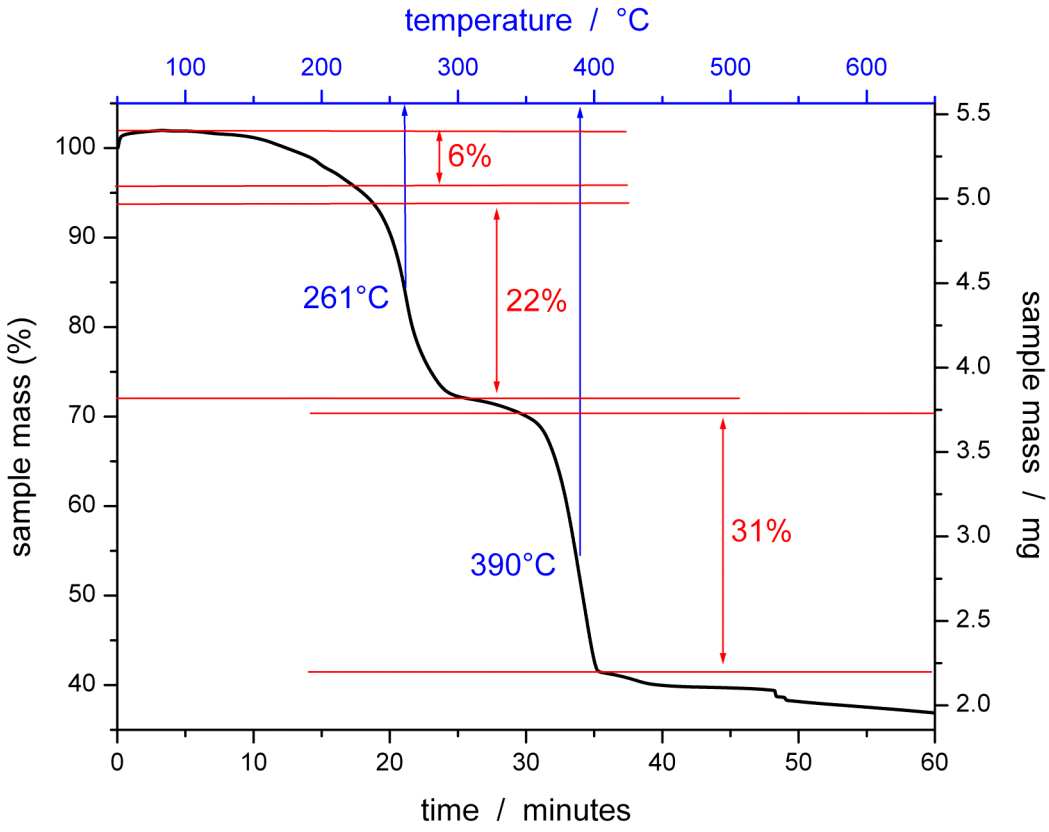

Figure S2: Thermogravimteric analysis of $Cu_3(Hbtc)(btc)(bpy)_2$. Three distinct regions of mass loss were observed: (*i*) 6% over the temperature range of 150 - 220ºC corresponding to the loss of water molecules (both coordinated and non-coordinated), *theoretical*: 9.8%; (*ii*) 22% around 261ºC corresponding to the loss of the organic components of the 1D polymers **B** and **C**, *theoretical*: 21.3%; and (*iii*) 31% at 390ºC corresponding to sample degradation. There is an additional small mass loss around 530ºC. All samples were run under a flow of nitrogen at a heating rate of 10ºC/min.