

Metal Exchange within a Body-Centred Hydrogen-Bonded Network

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Supplementary Material

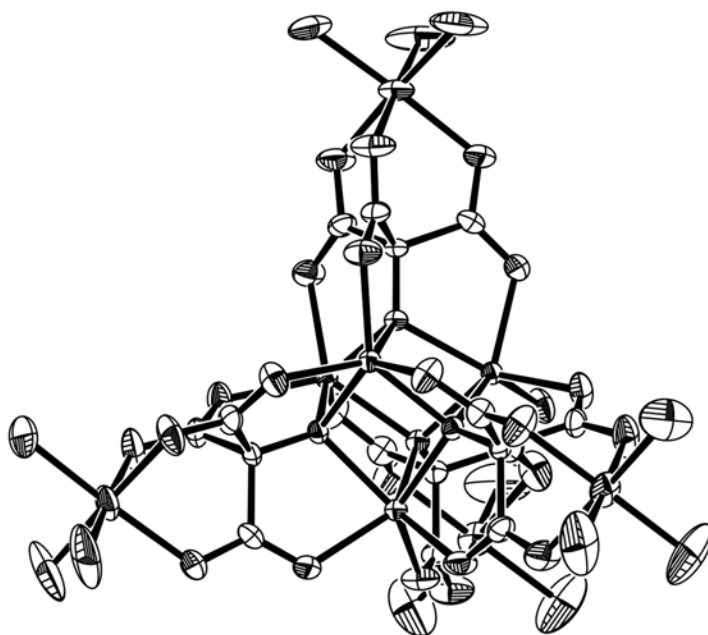
Figure S1. ORTEP representations of a) $\text{Zn}_4\text{Ni}_4(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate from the intra-crystal exchange process (293K) b) $\text{Zn}_4\text{Ni}_4(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate from direct synthesis (130 K).

Figure S2. Schematic representation of the unit cell for $\text{M}_8(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate

Figure S3. The body-centred cubic network topology of the $\text{M}_8(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate series.

Figure S4. A comparison of the IR spectra obtained from a) the intra-crystal exchange process and b) direct synthesis

a)



b)

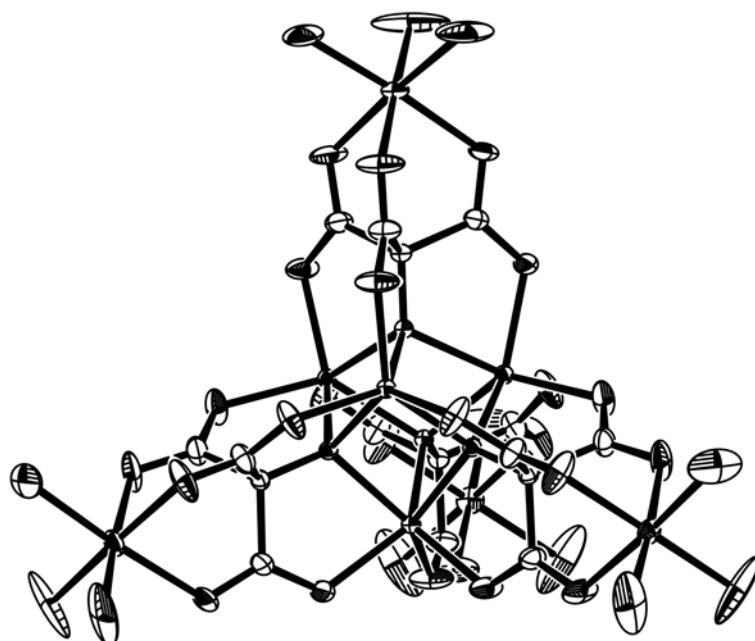


Figure S1. ORTEP representations of a) $\text{Zn}_4\text{Ni}_4(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate from the intra-crystal exchange process (293K) b) $\text{Zn}_4\text{Ni}_4(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate from direct synthesis (130 K). Thermal ellipsoids are at the 50% probability level.

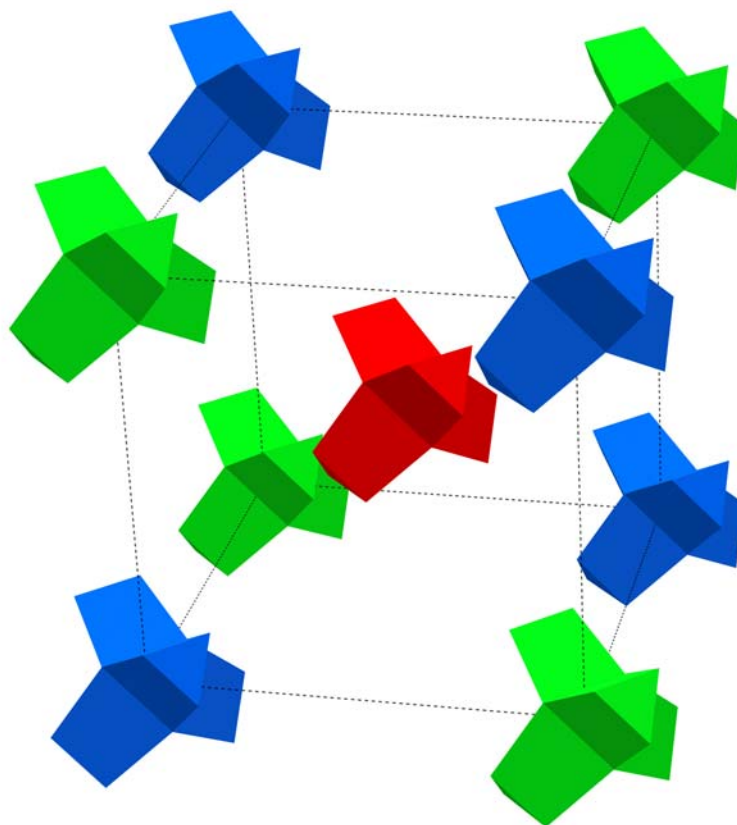


Figure S2. Schematic representation of the unit cell for $M_8(C_4O_7)_4(H_2O)_{12}$ hydrate. Each tetrahedral unit represents a $M_8(C_4O_7)_4(H_2O)_{12}$ unit. The central red unit acts as a hydrogen-bond donor to the four blue units. The four green units each act as a hydrogen bond donor toward the red unit. Each connection between a pair of units involves a triple hydrogen bond and thus the central unit participates in 24 equivalent hydrogen bonds.

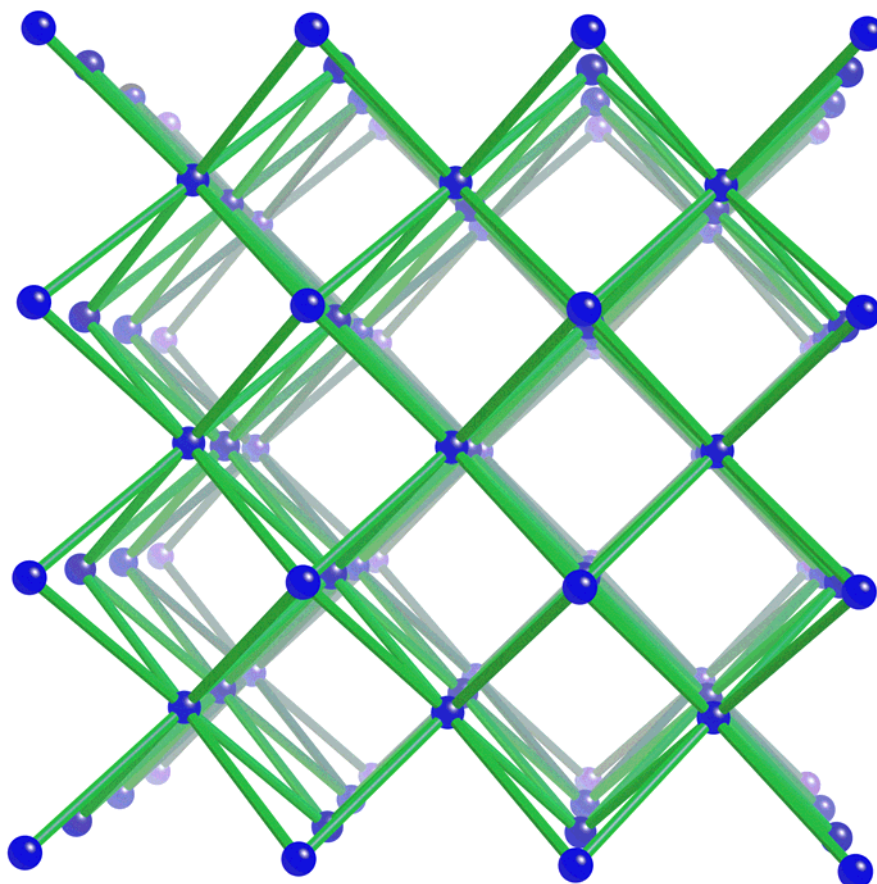


Figure S3. The body-centred cubic network topology of the $M_8(C_4O_7)_4(H_2O)_{12}$ hydrate series.

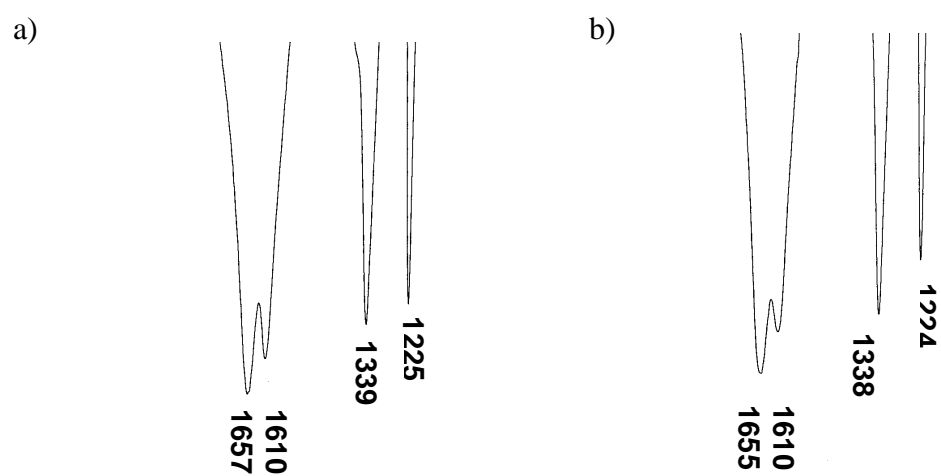


Figure S4. A comparison of the IR spectra of $\text{Zn}_4\text{Ni}_4(\text{C}_4\text{O}_7)_4(\text{H}_2\text{O})_{12}$ hydrate obtained from a) the intra-crystal exchange process and b) direct synthesis

