

Supplementary files

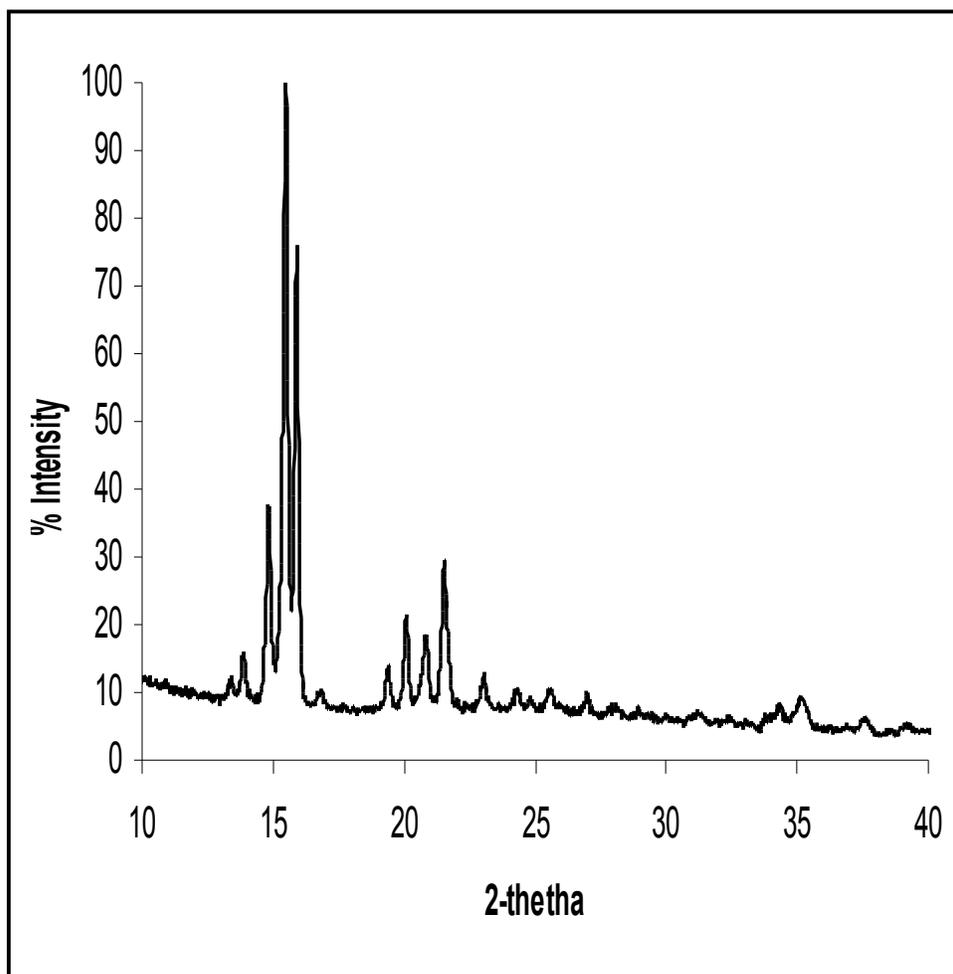


Figure S1. Powder pattern of  $(\text{NH}_4)_2\text{B}_{10}\text{H}_{10}$  (II)

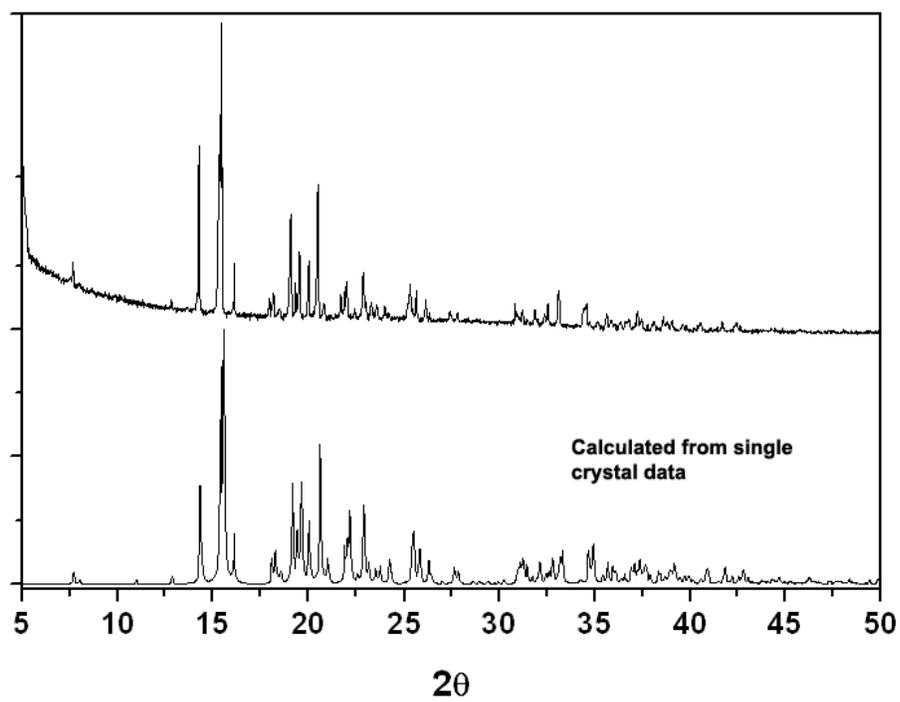
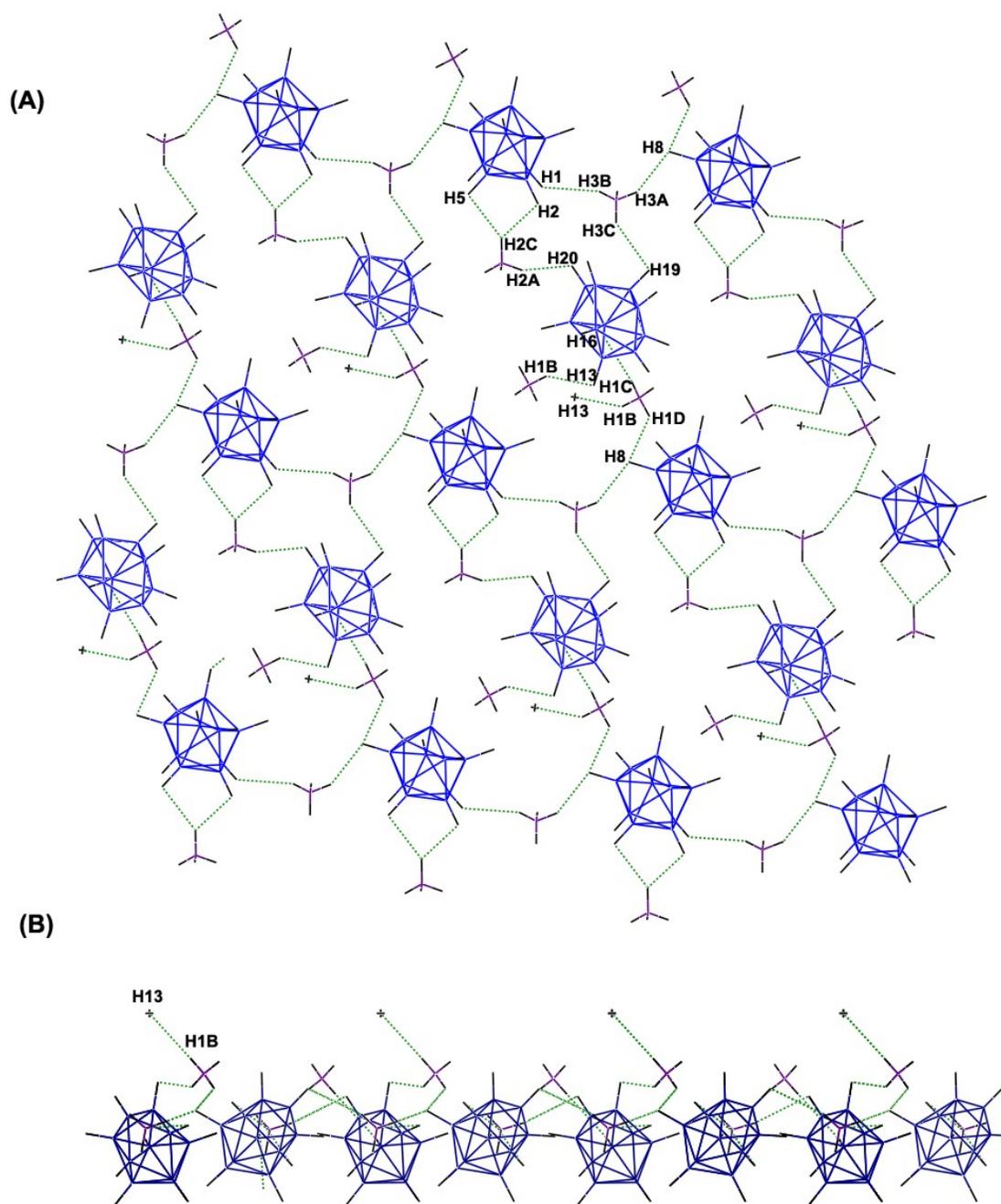
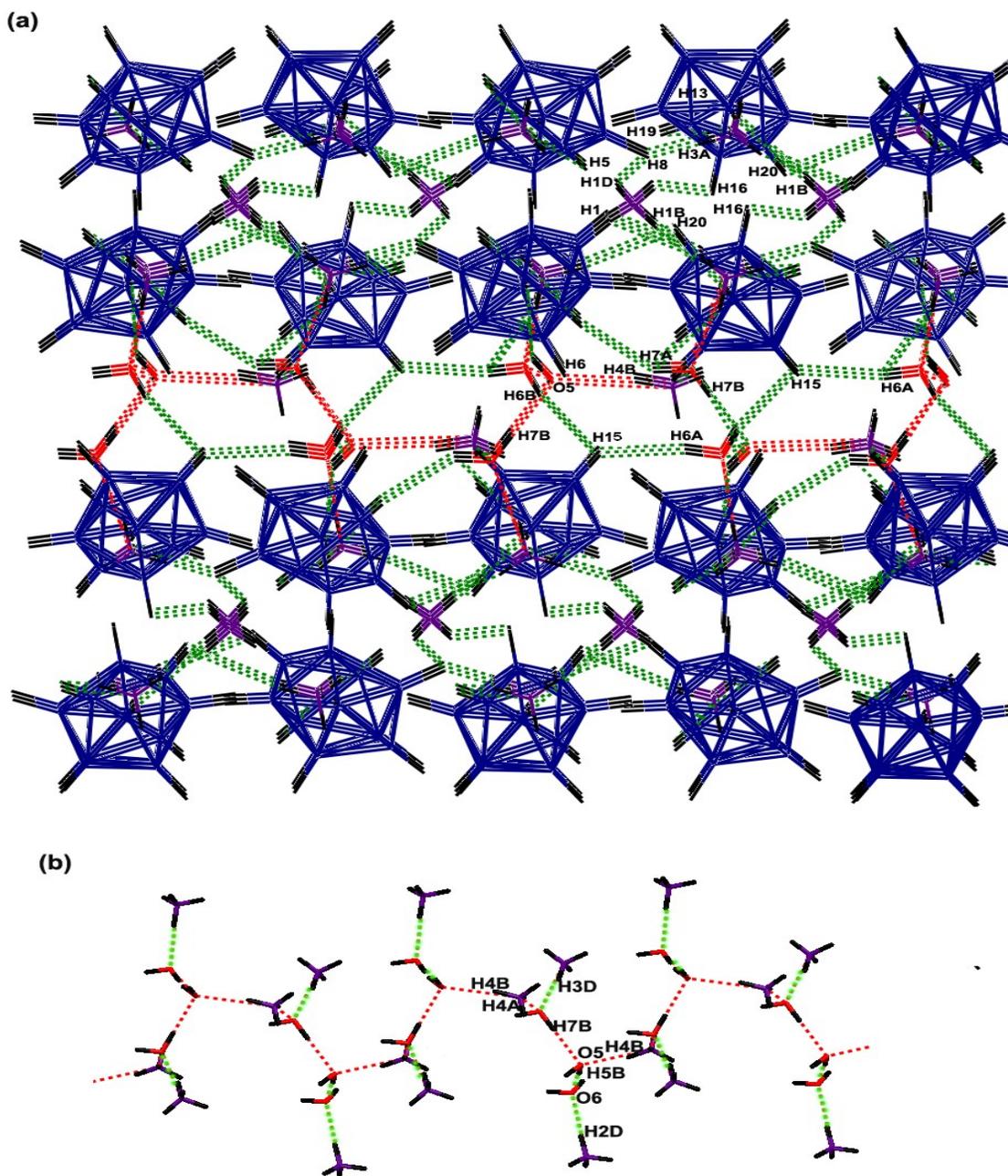


Figure S2  
X-ray powder diffraction pattern of (I) the lower one is the calculated powder pattern from the single crystal data.



**Figure S3**

(a) 2-D sheet structure of **(I)** showing N-H...H-B dihydrogen bonding interactions.  
 (b) is the same structure viewed along a axis (The dotted line to H13 is the dihydrogen bond that links the 2-D sheet to another 2-D sheet above).



**Figure S4**

(a) 3-D extended structure of (**I**) along the a axis showing dihydrogen bonding and hydrogen bonding interactions (For the electronic version, dotted green and dotted red represent dihydrogen bonding and hydrogen bonding respectively) (b) 1-D chain of hydrogen bonding seen from the a-axis (For the electronic version, dotted red represents main chain of hydrogen bonding and dotted green represent hydrogen bonding branching from the main chain).