## Hydrogen-bond networks in the binary complexes of trigonal molecules with 4,4'bipyridine

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(b)

Figure S1 Space fill models of the interpenetrated networks in the crystal structures of (a)  $MTAH_3$ -bipy and (b) HPT-bipy.



Figure S2 Graphset analysis of the hydrogen bond networks in the crystal structures of **MTAH<sub>3</sub>**•bipy. The C(8) chains of MTAH<sup>2-</sup> anions formed through O-H···O<sup>-</sup> interactions,  $C_2^2(17)$  chain consisting of alternate bipyH<sub>2</sub><sup>2+</sup> cations and MTAH<sup>2-</sup> anions and  $C_2^2(17)$  chain of neutral MTAH<sub>3</sub> and bipy molecules



(a)



Figure S3 Graphset analysis of the hydrogen bond networks in the crystal structures of **HPT**•**bipy**.(**a**) Parallel chains of triazine molecules, through O–H<sup>...</sup>N interactions forming the C(11) chain and the adjacent triazine molecules of the C(11) chains interconnected by bipy linkers through O–H<sup>...</sup>N interactions forming the  $C_2^2(24)$  chain. (**b**) The  $R_2^2(8)$  centrosymmetric dimer like linkage through C-H<sup>...</sup>O interactions leading to the **pcu** net.



Figure S4 Two possible conformations of HPT – low symmetry ( $\phi$ ) and high symmetry ( $\Delta$ ).