

## Combining halogen bonds and hydrogen bonds in the modular assembly of heteromeric infinite 1-D chains†

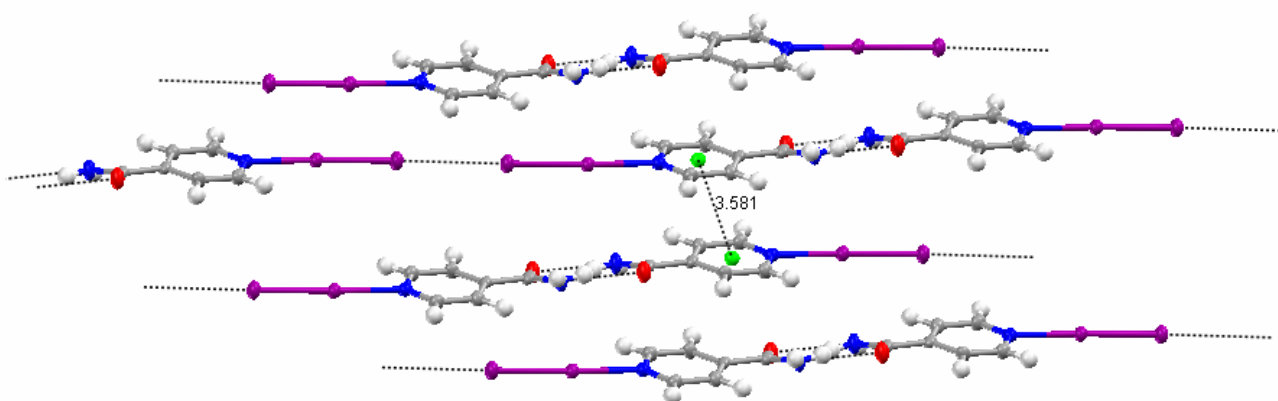
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### Electronic Supplementary Information

The tetramer **1**, wherein iodine and *isonicotinamide* are in a 2:2 ratio, was obtained by dissolving *isonicotinamide* ( $1 \times 10^{-4}$  mol, 0.122 g) in 8 mL of warm ( $\sim 35$  °C) 95% ethanol. After this solution had cooled to room temperature it was placed in a test tube wrapped with aluminum foil, and solid iodine ( $1 \times 10^{-4}$  mol, 0.208 g) was then dissolved into the solution. After three days orange-brown prismatic crystals of iodine *isonicotinamide* had formed. Mp  $\sim 100$  °C (dec.).

The infinite chain **2**, wherein tetrafluorodiodobenzene and *isonicotinamide* are in a 1:2 ratio, was obtained by dissolving *isonicotinamide* ( $5 \times 10^{-4}$  mol, 0.059 g) in 1.5 mL of a 2:1 mixture of methanol/chloroform at room temperature. This solution was added of tetrafluorodiodobenzene ( $2.5 \times 10^{-4}$  mol, 0.101 g) dissolved in 1 mL of chloroform and place in a closed jar containing paraffine oil. After one day at  $+4$  °C, colorless, elongated tablets of **2** had formed. Mp  $\sim 175$  °C.

**Fig. 5** The anti-parallel dipole-dipole (or  $\pi$ - $\pi$ ) interactions between pyridine rings characterizing the packing of the 1D infinite chains present in the crystal structure of co-crystal **1**.



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