SUPRAMOLECULAR SELF-ASSEMBLY OF HALOGEN-BOND-FORMING QUINOLINE DERIVATIVES

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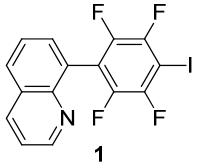
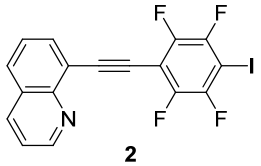
Programmed self-assembly of small building blocks *via* noncovalent interaction is a main goal of crystal engineering, which can provide numerous functional materials. Design of supramolecular systems can be reached by employing highly directional and persistent interaction such as hydrogen bonding (HB) [1], chalcogen bonding (ChB) [2] and more recently by halogen bonding (XB) [3].



1



2

Here we report supramolecular architectures formed by 8-substituted quinoline derivatives **1** and **2**. Both of the compounds contain a donor and an acceptor site of the halogen bonds in the same molecule and were designed with the expectation that self-complementary dimers would form in the solid state. The crystal structure of **1** revealed that its molecules aggregate into infinite undulating chains, whereas molecules of **2** form self-complementary dimers. The packing motifs in the crystal structure of these compounds will be discussed.

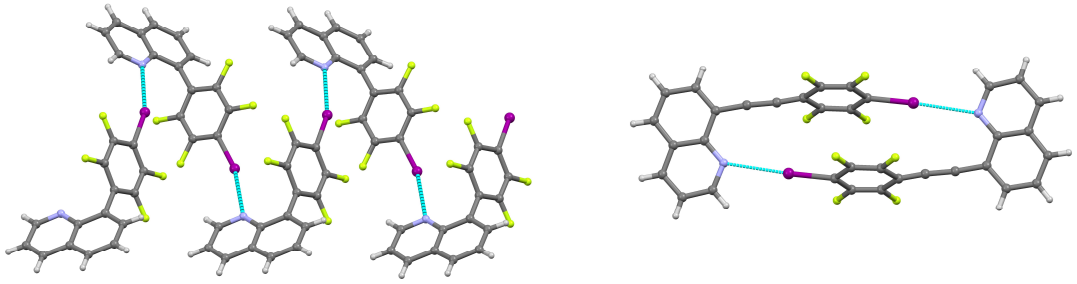


Fig. 1. Crystal structure of **1** (left) and **2** (right). XB pointed by blue dashed lines.

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[3] (a) Cavallo G. et al., *Chem. Rev.*, **2016**, *116*, 2478-2601; (b) Gilday L.C. et al., *Chem. Rev.*, **2015**, *115*, 7118-7195; (c) Christopherson J.-C. et al., *Cryst. Growth Des.*, **2018**, *18*, 1245-1259.