Halogen versus Hydrogen Bonding in Crystal Engineering

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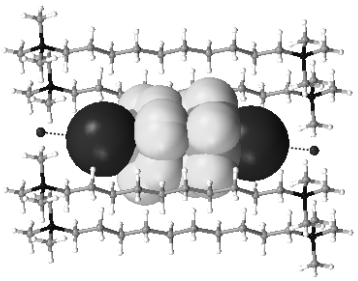
Halogen bonding is any noncovalent interaction directed towards the positive region of the electrostatic potential surface of halogen atoms [1]. Similarities and differences with hydrogen bonding will be described [2]. It will be shown how halogen bonding is a strong, reliable, and specific interaction that can be successfully employed to drive recognition phenomena and self-assembly of various multi-component supramolecular architectures [3,4]. Heuristic principles will be presented to design complex and functional systems proving how the structure and topology of a supramolecular architecture can be anticipated from the structure and geometry of the starting tectons [5]. The impact of halogen bonding in materials and life sciences will also be demonstrated [6,7].



References

1. An IUPAC Task Group set up to examine the definition of halogen bonding has not yet reported, so that given here should be taken as temporary (see www.iupac.org/web/ins/2009-032-1-100 and www.halogenbonding.eu).
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