Invited Lecture

Carbonyl Hypoiodites as Halogen Bond Donors

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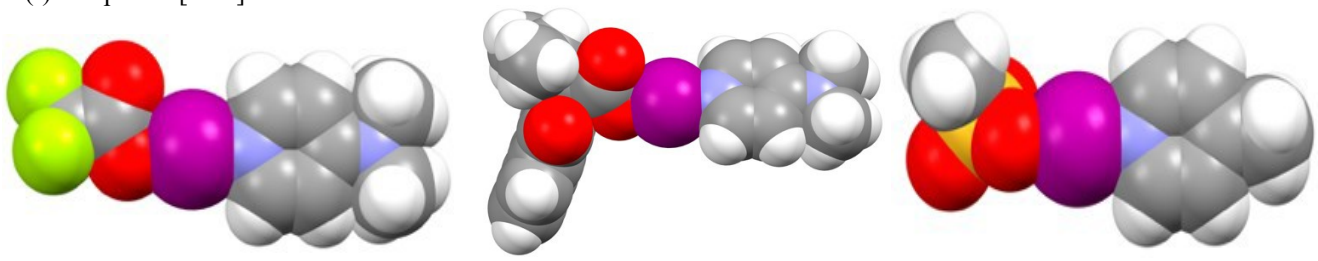
An exciting research challenge in supramolecular chemistry is to design, synthesize, and characterize novel architectures with applications in biology, chemistry, and materials science [1]. Predicting and designing non-covalently bound supramolecular complexes and assemblies is difficult because of the weakness of the interactions involved, thus the resulting superstructure is often a compromise between the geometrical constraints of the building blocks and the competing weak intermolecular interactions [2,3]. Our research interest has been focused on the studies of weak non-covalent intermolecular, *viz.* supramolecular interactions as the driving force in complex formation, self-assembly and molecular recognition, especially in the solid state by single crystal X-ray diffraction. The lecture will highlight some of our recent studies on halogen-bonded systems, especially focusing on those based on halogen(I) complexes [4-12].



a b c

Figure 1. The X-ray structures of DMAP trifluoriacetyl hypoiodite (**a**[4]), chiral amino acid-based hypoiodite complex (**b**[9]) and DMAP methylsulfonyl hypoiodite (**c**[11])

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