

Stereochemistry in Crystal Engineering

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Molecular recognition by hydrogen bonding between organic molecules has been explored in supramolecular chemistry to a great extent.^{1,2} Most of the recognition motifs are however two-dimensional in nature. By employing organic compounds in the context of supramolecular chemistry and utilizing their chiral attributes the three-dimensional nature of intermolecular hydrogen bonding may be revealed.

This project, to date, has been focused on the design and synthesis of sulfides, sulfoxides and sulfones. Sulfoxides are ideally suited as a recognition motif as they are extremely polar and have the potential to participate in hydrogen bonding. The intrinsic chirality at sulfur introduces the three-dimensional nature of the study. The effect of the oxidation state of sulfur on the hydrogen bonding array is also investigated, along with other substituent effects.

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