

## **Recent results on hydrogen bonds in molecular crystals.**

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In this talk, I will present some recent results on weak intermolecular interactions.

- (1) Variable temperature crystal structure determinations indicate if an intermolecular interaction is in the attractive or repulsive domain. In the co-crystals of barbituric acid with urea and acetamide, a C–H...O interaction in acetamide-barbital is equivalent to a corresponding N–H...O interaction in urea-barbital (Curr. Sci., 98, 793, 2010).
- (2) Hydrogen bonds formed by water can be used as design elements in crystal engineering. Using water as a supramolecular reagent is like using a very reactive compound as a reagent in organic synthesis: selectivity is lost as reactivity increases (Cryst. Growth Des, 10, 4184, 2010).
- (3) The weakest of hydrogen bonds, namely the C–H... $\pi$  interactions are constituted in different ways in the polymorphs of phenylacetylene, a compound in which polymorphism might not even be expected (Cryst. Growth Des, 10, 4246, 2010).