

W0200

Can Co-crystals be Assembled Employing a Specific Hydrogen-Bonded Motif? J. Bernstein, Dept. of Chemistry, Ben-Gurion Univ. of the Negev, Beer Sheva, Israel 84105.

In its ultimate manifestation crystal engineering[1] leads to a predicted desired *crystal structure*. In spite of some noteworthy successes in this effort, it is still not possible to design the crystal structure(s) of any particular substance given the structural formula, The recent piqued interest in co-crystals [2] has led to some impressive successes in preparing *crystals* of two or more components, but there still remains the considerable engineering challenge of designing and preparing *crystal structures* of systems with more than one molecular entity. We have been studying the hydrogen-bonding motif designated $\mathbf{R}_4^2(8)$ in the graph set notation, with the goal of utilizing the pattern in the generation of specific structural zero-, one-, two- and three dimensional structural features in co-crystals. Some successes and some 'failures' will be described, the latter nevertheless providing useful information for utilization and modification of the design strategy and crystal chemistry in general.

[1] G.R. Desiraju, *Crystal Engineering-The Design of Organic Solids*, Elsevier, Amsterdam, 1989

[2] Ö. Almarsson and M.J. Zaworotko, *Chem. Commun.*, 2004, 1989.

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