Pyridine Boronic Acids as Building Blocks in Crystal Engineering

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We describe the use of different molecular tectons (building blocks), which exploit new and related synthons to generate a diverse range of crystal structures.[1,2] In particular salts of protonated pyridine boronic acids with anionic dithiooxalate complexes are shown to contain hydrogen-bonded supramolecular complexes which associate to form motifs of interesting dimensionality and form. Issues addressed include structural mimicry of one tecton by another, competition between alternative hydrogen bond acceptors and robustness of periodic motifs.

A series boronic acid complexes [4-HpyB$(OH)_2$] [M$(S_2C_2O_2)_2$].2H_2O (M= **1** Pd**, 2** Pt**, 3** Ni and **4** Cu), [3-HpyB$(OH)_2$] [M$(S_2C_2O_2)_2$] (M= **5** Pd**, 6** Pt**, 7** Ni and **8** Cu) have been prepared and structurally characterized. The supramolecular motifs in these salts show similarities despite differences in the local position of the pyridinium NH group, the metal atom used and the incorporation of water molecules in the structures.

[1] Gillon A. L., Lewis G. R., Orpen A. G., Rotter S., Starbuck J., et al., *J. Chem. Soc. Dalton Trans.*, 2000, 3897. [2] Podesta T. J., Orpen A. G., *CrystEngComm*, 2002, 336.

Keywords: crystal engineering, boronic acids, supramolecular chemistry