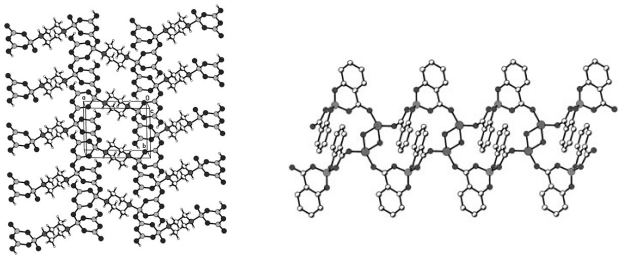
Flux Synthesis of New Organo-borate Hybrids

Alex S-F. Au-Yeung, Mingmei Wu, Gavin K-C. Wan, Herman H-Y. Sung, Ian D. Williams, *Department of Chemistry, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China*. E-mail: alexwill@ust.hk

Molten boric acid 'flux' synthesis has been used for the preparation of borate-rich clusters[1] and porous frameworks[2]. We recently found that use of boric acid flux conditions can lead to direct coupling of organic bases with inorganic borate fragments. A new family of organo-borates containing direct B-N covalent bondings was formed. Piperazine affords the 2D network solid $[(C_4H_{10}N_2)(B_6O_{10}H_2)]$ (left) and imidazole the molecular anion $[(C_3H_4N_2)(B_5O_{10}H_4)]^-$. New bis(borosalicylate) structures (right) can also be prepared by this HT method and some novel salts of these will also be discussed.



[1] Williams I.D., Wu M., Sung H.H-Y., Zhang X.X., Yu J., *Chem. Commun*., 1998, 2463. [2] Rowsell J.L., Taylor N.J., Nazar L.F., *J. Amer. Chem. Soc.*, 2002, **124**, 6522.

Keywords: inorganic organic structures, framework structures, flux synthesis