W0015

Amide-amide Hydrogen Bonds and Flexible Ligands as Linkers for Deliberate Supramolecular Inorganic-organic Frameworks. Joaquin F. Urbina, Christer B. Aakeröy, John Desper, Dept. of Chemistry, Kansas State Univ., Manhattan, KS 66506

Ligands containing a coordination site and a hydrogen-bond moiety *e.g.* nicotinamide have produced various inorganic-organic motifs. To further extend the length of the ligand spacer and enhance structural versatility in these networks we have synthesized and employed flexible (benzimidazol-1-yl)methylbenzamide derivatives. These ligands contain an effective coordination site *via* the benzimidazol-1-yl nitrogen as well as a hydrogen-bond moiety through the amide functionality. In addition, the amide moiety is capable of forming self-complementary hydrogen bonds. Inorganic-organic supramolecular architectures based on these ligands and silver(I) ions have consequently been constructed. The role of the amide functionality as a supramolecular linker for constructing deliberate inorganic-organic frameworks has been emphasized. In particular, the nature of the amide-amide hydrogen bonds affects the outcome of the resulting architectures, and was thus investigated.