Novel Modular Coordination Frameworks

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Crystal Engineering of Coordination Frameworks has been experiencing a great growth in recent years. Despite the majority of the compounds reported in the literature could only be usually isolated in small amounts due to inherent limitations of the synthetic techniques employed, we have optimised the hydrothermal synthetic approach for the synthesis of large and phase-pure quantities of such materials [1]. N-(phosphonomethyl)iminodiacetic and etidronic acids are precursors of multidentate organic ligands which not only exhibit unusual and flexible coordination properties, but also contain a number of potentially interesting nuclei to study using, *e.g.*, solid-state NMR techniques. We have focused our research in the *in situ* synthesis of rigid building blocks (*i.e.*, Secondary Building Units, SBUs) formed by these ligands and V^{4+} which, along with various metal centres (*e.g.*, Co^{2+}, Mn^{2+} and Ce^{3+}) and rod-like bridging organic molecules (such as 4,4'-bipyridine and pyrazine), self-assemble into peculiar frameworks of various topologies and dimensionalities [2], [3].

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