High-Dimensional Structures Constructed from Alkoxo-Bridged Complexes as Nodes

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The development of crystal engineering has stimulated the search for new building-blocks able to generate extended structures with various dimensionalities. We are currently developing a research project concerning the use of binuclear complexes as nodes in designing high-dimensionality systems.

Nine new extended structures have been constructed by using alkoxo-bridged $[Cu_2(mea)_2]^{2+}$ and $[Cu_2(ap)_2]^{2+}$ (Hmea = ethanolamine, Hap = 3-amino-1-propanol) nodes and *exo*-bidentate ligands as spacers. Bidentate aminoalcohols were chosen, in order to increase the dimensionality of the coordination networks. The binuclear cores are connected through 1,4-bis(4-pyridil)benzene, 9,10-bis(4-pyridil)anthracene and 1,2-bis(4-pyridil)ethyne resulting in 1D, 2D and 3D structures. Interesting cases of interpenetration were emphasised. The dimensionality is influenced by the presence of the different counterions (NO_3^-, ClO_4^-, BF_4^- and $CF_3SO_3^-$).

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