

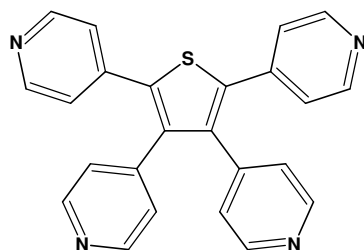
Ligand design for the construction of zeolite-like networks

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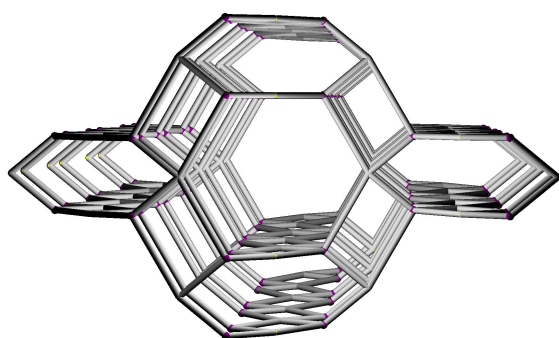
The ligand **1** has been synthesised according to a literature technique by reaction of 1,2-dipyridyl ethylene with sulfur, and then reacted with various metal salts. The reaction of **1** with AgX (X=BF₄⁻, SbF₆⁻) and CuX (X= BF₄⁻) leads to the



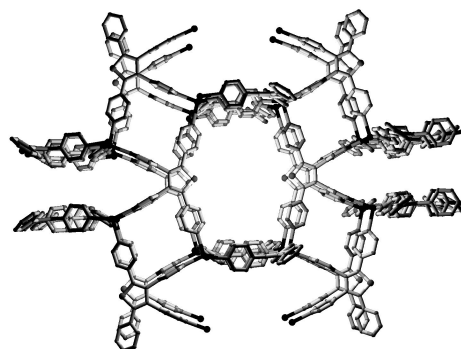
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formation of a zeolite-like network with large pores. The framework obtained can be described as a four connected 4²8⁴ net in which both the metal cation and the ligand act as fourfold nodes. Covalent and topological representation of the network is shown in figure below.

The network has tetragonal *I*4₁/*amd* symmetry and consists of big (10x14Å), medium (18x7Å) octagonal and small (8x5Å) tetragonal pores. All the pores are occupied with counter-anions. The four-membered rings formed within the network consist of 'Ag₂L₂' units. The formation of these small cyclic units is encouraged by the small (~72°) inter-pyridyl angles generated by **1**.



a



b

Topological (a) and covalent (b) representation of the network.