

Molecular tectonics: On the formation of 1-D silver coordination networks by thiacalixarenes bearing nitrile groups

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Abstract

Two new *p*-tert-butylthiacalix[4]arene derivatives 2 and 3 decorated at the lower rim with four nitrile groups have been prepared and structurally characterised in the crystalline phase. The two ligands, differing by the length of the spacer between the calix moiety and the nitrile group, adopt the 1,3-alternate conformation in the solid state. The ligand 3 bearing four (CH₂)₃CN fragments behaves as a tecton in the presence of silver salts (AgX, X = BF₄, PF₆ or SbF₆) and leads to the formation of analogous 1-D linear coordination networks. The tecton 3 acts as a bischelate unit and bridges consecutive silver cations adopting a tetrahedral coordination geometry. Anions and solvent molecules occupy the free space between networks and exhibit no specific interactions with the cationic architecture. © The Royal Society of Chemistry.

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