Poster Presentation

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Positioning effect of carboxylate in dimensionality of silver based MOFs

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In the design and synthesis of novel MOFs, aromatic carboxylate can play important role due to their versatility as well as directionality and easier deprotonated for coordination with metal ions.1 These MOFs can be constructed in the presence of suitable metal-ligand interactions and affected by certain factors like counter ion, metal-to-ligand ratio, strong hydrogen bondings and other weak interactions like vander waal interactions.2

Silver(I) ion can exhibit linear, trigonal, and tetrahedral coordination and has high affinity for hard donor atoms (i.e. nitrogen or oxygen) and soft donor atoms (i.e. sulfur), giving versatile building block for the construction of MOFs.3 Furthermore, silver ion is suitable to form short Ag···Ag contacts as well as ligand unsupported interaction which has been proved to be two of the most important factors contributing to the formation of such complexes and special properties.3 It has been proved that rigid benzene-multicarboxylic acid, such as 1,4-benzenedicarboxylic acid, 1,3,5-benzenetricarboxylic acid and 1,2,4,5-benzenetetracarboxylic acid, are good choices for the construction of MOCPs owing to their rich coordination modes. However, although many CPs constructed by benzoic multicarboxylic acid have been reported, most of them focused on the lanthanide(III) and transition metal such as Cu(II), Co(II), Zn(II), and Cd(II), those on silver(I) are very rare, probably because they often appear as insoluble salts that make structural analyses difficult. To the best of our knowledge, only a few silver-benzoic multicarboxylic acid complexes have been reported in the literature.1 To extend this, systematic studies have been carried out by employing different aromatic carboxylic acids (Fig 1) and changing reaction conditions.

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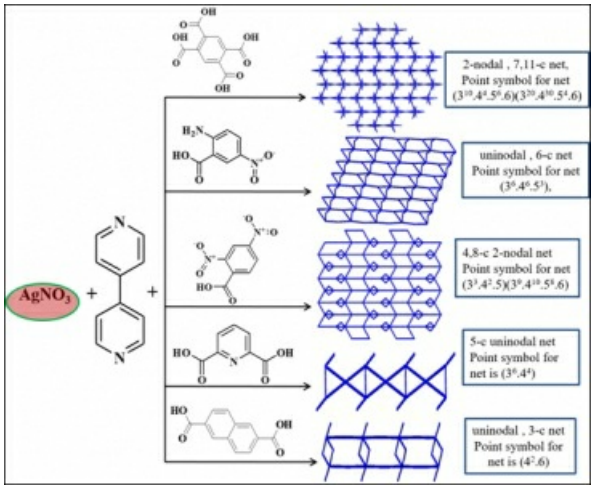

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