

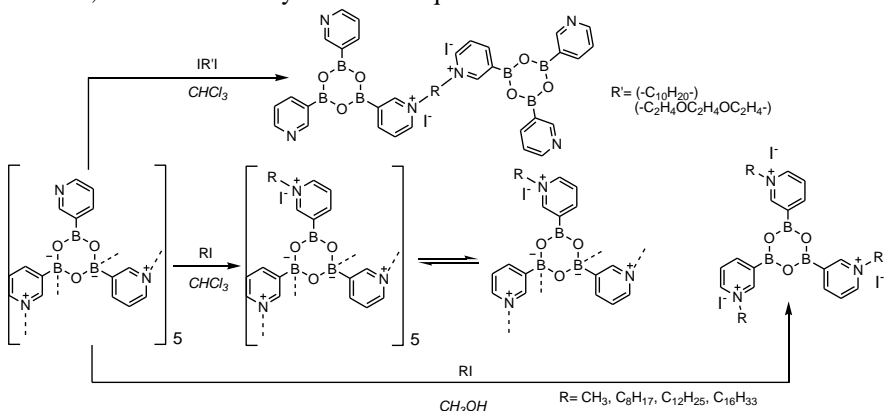
Nanostructured surfaces

Pyridine boronic acids and their complexes with mono- and dipentaerythritol as precursors of 2D and 3D nanostructures

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Boronic acids themselves and in the presence of various polyols are among promising precursors of molecular networks [1]. Boron-containing COF are built by means of N→B bonding, and N-alkyl derivatives of pyridine-3-boronic acid (3-PBA) have been recently reported to form nanoaggregates with low aggregation concentrations [2]. A cage supramolecular structure, pentadecamer of 3-PBA, was obtained, and selective alkylation techniques were elaborated.



The products of interaction of 3-PBA and 4-PBA with pentaerythritol, dipentaerythritol, and 2,3,6,7,10,11-hexahydroxytriphenylene have been characterized with NMR, IR, optical microscopy, and XRD techniques to open an opportunity of designing 2D and 3D molecular networks with tunable branching.

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