investigating the chemistry of bismuth oxide nanoparticles.

Keywords: main-group elements, bismuth compounds, clusters in coordination complexes

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Solvent driven association and dissociation of the hydrogen-bonded protonated decavanadate dimer

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When crystallized with tetraalkylammonium cations, the decavanadate anions form monomers, dimers and linearly catenated polymers. The dimers of triprotonated anions, which are linked by six hydrogen-bonds, are observed in the crystals obtained from the mixed solvents of water and aprotic protophobic solvents (e.g. acetone and 3-pentanone). The monomers of tetraprotonated anions, which forms hydrogen-bond complex with solvent molecules, are observed in the crystals precipitated from the mixed solvents of water and aprotic protophilic solvents (e.g. 1,4-dioxane and tetrahydrofuran).

In order to examine whether these hydrogen-bond aggregates in the crystals exist also in the solution, we carried out systematic SAXS experiments of tetraamylammonium decavanadate in the mixtures of aprotic protophobic and aprotic protophilic solvents.

Keywords: polyoxometalates, SAXS, hydrogen bonds

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Is 2.07 Å the record for the shortest Pt-S distance? Two questionable experimental structures

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The available crystal structures of the very similar compounds [(Ph3P)3Pt(m-OH)Pt(PPh3)]2,1 and [(Ph3P)3Pt(m-S)Pt(PPh3)2]2,2 raise intriguing questions about their geometrical and electronic structure relations.

Keywords: vaska-type complexes, catalysis, disorder

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Solid state packing behaviour in pseudo Vaska-type complexes

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Keywords: main-group elements, bismuth...