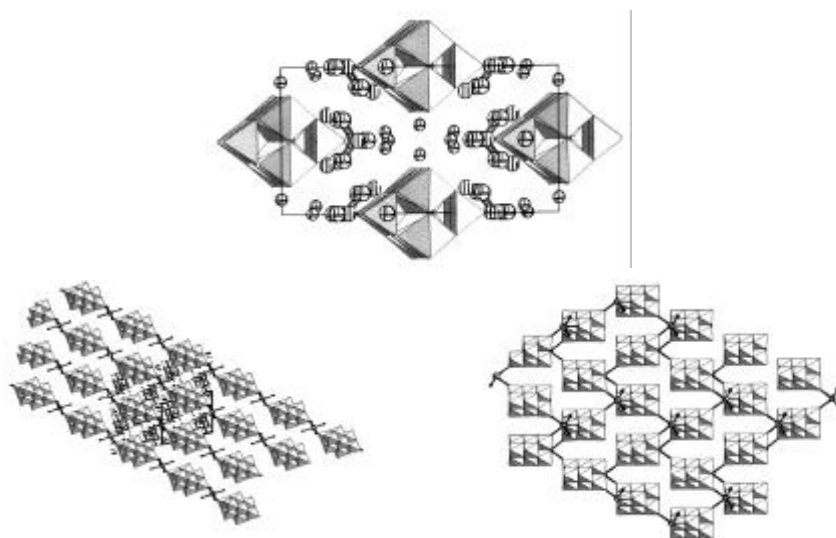


Influence of organic cations on the crystal packing of decavanadate containing solids

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Polyoxometallates form a rich class of inorganic materials which exhibit a range of molecular and electronic structural versatility, reactivity and relevance to catalysis, biology, medicine, geochemistry, material science, and topology^{1,2}. The metal oxide clusters invariably contain highly symmetrical core assemblies of MO_n units which often adopt quasi-spherical structures based on Archimedean and Platonic solids, of considerable topological interest. Particularly interesting are the polyoxovanadates with hollow spheres, which exhibit many different types of surface organization owing to a variety of metal macropolyhedra and macropolyhedral fragments built of VO_4 , VO_5 and VO_6 in addition to variable oxidation states V(IV) and V(V). Polyoxovanadates frequently show interesting host-guest interaction. Understanding the driving force for the formation of such clusters still remains a formidable challenge. In this talk, we will present our results on the synthesis and structural chemistry of decavanadate clusters exhibiting zero- and two-dimensional networks. The talk also addresses the chemistry of formation of such clusters in terms of the influence of organic cations.



References

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2. Muller A, Syed Q N, Bogge H and Schmidtman M 1999 *Nature* **397** 48