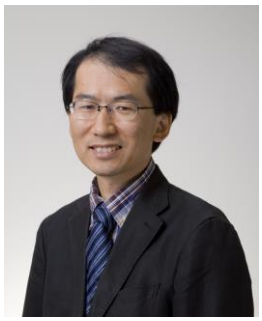

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Research keywords: Vanadium, Polyoxovanadates

Research abstract: The element vanadium has named after the Scandinavian goddness, the god of beauty, love and maturity, *Vanadis*. It is avandant in seawater and important in industry as catalyst, an additive to steel and new materials. In chemistry, the solution containing vanadium complexes is known to exhibit a spectrum of a beautiful color. This is because of the possible versatile oxidation states in vanadium as well as the coordination spheres. Especially, a square-pyramidal five-coordination mode is particularly important only in vanadium. Polyoxovanadates, may offer a new way to further expand the boundary of coordination chemistry for inorganic complexes featuring a part of metal oxide structures. Because of the complexity of the oxides, it is difficult to elucidate the structure and property relationships. Investigating the reactivity and physical properties by modifying the oxide structures in a systematic manner is challenging to test the hypothesis of a postulated mechanism. Polyoxovanadates have a molecular structure comparable to vanadium oxides and we try to establish the way to control its frameworks for a particular application.

Possible collaboration: Fundamental chemistry of polyoxovanadates is our focus with the classification based on their structural building units and we can offer diverse range of new polyoxovanadates almost exclusively from our lab, including the structural types of bowls, tubes, spheres, blocks, rings with 3d-transition elements as the heteroatom, in crystal quality.

Reference.

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