Special Issue

Polyoxometalate-Based Molecular and Composite Materials

Message from the Guest Editor

Research shows that the electronic and topological structures of POM (polyoxometalate) systems can be tuned by incorporation of transition metal ions or groups of transition metal ions at specific sites of the various lacunary POM ligands. Thus, the resultant properties directed by the structure–property relationship allows for a bottom-up approach to the development of multifunctional materials. Within the class of transition metal-substituted POMs, the paramagnetic metal ion-containing POMs represents the largest subclass due to their remarkable structural diversities, different chemical compositions, and potential applications in the field of molecular magnetism, magnetocaloric refrigerants, magnetic resonance imaging (MRI), magnetic sensing, molecular spintronics, and quantum computing. This Special Issue invites research papers covering all research areas related to paramagnetic metal ion-containing POMs (magnetic POMs with 3d-transition metals ions, lanthanide ions, actinide ions, main group elements, heterometallic ions, and organic–inorganic hybrids), their preparation, characterization, and various applications.

Guest Editor

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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