Special Issue

Nano-Design of Transition Metal Oxides for Energy Storage and Catalytic Application

Message from the Guest Editor

Transition metal oxides play a critical role in the fields of energy storage and catalysis, owing to their exceptional properties and versatility. The significance of nano-designing for these materials cannot be overstated regarding achieving efficient energy storage and enhancing catalytic activity. By precisely manipulating factors such as size, morphology, doping, composition, and surface characteristics at the nanoscale, nanoengineered transition metal oxides exhibit an enlarged surface area, improved charge transfer kinetics, and tailored electronic properties, thereby enabling higher energy storage capacity, accelerated reaction rates, and superior selectivity in catalytic processes. Furthermore, the integration of multi-components at the nanoscale (HEOs, etc.) and the deliberate introduction of controlled defects lead to synergistic effects and optimized redox reactions, further augmenting their performance. In this Special Issue, we aim to comprehensively cover the latest advancements in all these aspects of nano-design/engineering by hosting a mix of original research articles and critical reviews.

Guest Editor

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Inorganic chemistry remains a lynchpin of modern chemistry, not only embracing the function and reactivity of combinations of most elements of the periodic table, but also providing a footing for studies of materials, catalysts, drugs, fuels and industrial chemicals. Arguably, the role and reach of inorganics in society have never been as great as today. Adventurous research at the heart and at the extremes of inorganic chemistry is vital to further advances and Inorganics offers authors the opportunity to publish exciting new research in an open access format.

Editor-in-Chief

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