

Special Issue

Heterogeneous Electrocatalysis: Fundamentals and Applications

Message from the Guest Editors

Energy conversion and storage techniques based on heterogeneous electrocatalysis are expected to play a substantial role in the sustainable development of human society. The development of advanced electrocatalysts for electrochemical reactions, e.g., CO₂ reduction, N₂ reduction, H₂ evolution / oxidation, ethanol oxidation, etc., constitutes a significant part toward the practical applications of various electrochemical devices, which not only require advances in material engineering techniques but also fundamental understanding of reaction mechanisms. In the past few years, the community has witnessed rapid and continuous development in the field of heterogeneous electrocatalysis. This Special Issue will cover experimental and theoretical studies in various electrochemical reactions. Both fundamental and applied studies are of interest, particularly in the development of new catalysts of high activity / selectivity / stability, fundamental investigations into reaction mechanisms/pathways, impacts of catalyst structure/composition and interfacial environment on the catalytic results, and in situ characterizations of catalysts.

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