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Novel Non-precious Metal Electrocatalysts for Oxygen Electrode Reactions II—Dedicated to Prof. Nicolas Alonso-Vante

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Message from the Guest Editors

Increasing inevitable global demands for energy have stimulated considerable research on alternative energy harvesting technologies, high-efficiency conversion and storage systems, and cost-effective and environmentally friendly systems. To date, the state-of-the-art catalysts for the ORR consist of platinum-based materials (Pt), while ruthenium (Ru)- and iridium (Ir)-oxides are excellent OER catalyst materials. The scarcity of precious metals, their prohibitive cost, and declining activity greatly hamper their use in large-scale applications. It is of paramount practical importance and interest to develop efficient and stable materials for the oxygen electrode, based on Earth-abundant non-noble metals.

This Special Issue aims to cover recent progress and advances in novel non-precious metal electrocatalysts tailored with high activity and stability for the catalytic conversion between water and oxygen. Electrocatalytic activity, selectivity, durability, and mechanism for single or bifunctional oxygen electrode reactions are essential subjects for this Special Issue.