Special Issue

Development of New Catalysts for Polymer Electrolyte Fuel Cells

Message from the Guest Editor

Polymer electrolyte fuel cells (PEFCs), including proton (PEMFCs) and anion (AEMFCs) exchange membrane fuel cells, are promising clean energy technologies due to high efficiency, low operating temperature, and environmental compatibility. Their commercialization is limited by the need for cost-effective, durable, and high-performance catalysts. This Special Issue welcomes contributions on advances in PEFC catalysts, focusing on innovative materials, synthesis methods, and performance optimization. Topics include electrocatalysts for oxygen reduction and hydrogen oxidation, platinum-group-metal-free alternatives, low-platinum strategies, advanced supports, durability, and methods to enhance stability. Both experimental and theoretical works are invited, including computational modeling, mechanistic insights, and interdisciplinary studies combining materials science, electrochemistry, and engineering. Reviews summarizing progress and challenges in catalyst development are also encouraged. The aim is to provide a platform for the latest research in PEFC catalyst innovation, advancing sustainable energy conversion and practical applications. We look forward to receiving your contribution.

Guest Editor

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