

Special Issue

Catalyst for Electrolysis Application

Message from the Guest Editor

In the transition towards renewable energy (RE), hydrogen produced via electrolysis is a promising solution for large-scale energy storage due to a very high energy density per kg and null self-discharge once stored. In this context, hydrogen can be directly used in the industry or facilitate the coupling among sectors (e.g., FCH mobility or link between electricity and gas grids). This process is known as power-to-hydrogen. However, wide commercialization of advanced energy devices, such as water electrolysis technologies (e.g., PEM, AEM, alkaline) is closely linked to the cost, activity, and durability of the electrocatalysts. The goal is to contribute to the road-map addressing the achievement of a wide-scale decentralized hydrogen production infrastructure with the long-term goal to reach net-zero CO₂ emissions. Significant advances in cell materials can contribute significantly to reducing the electrolyzer CAPEX and OPEX costs. Studies on end of life processes and cost and life cycle assessment of electrocatalysts (e.g., LCC and LCA) will be welcome in this Special Issue.

Guest Editor

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