

Special Issue

Nanoscale Catalysts for Electrochemical Systems of Energy Generation and Storage

Message from the Guest Editors

The energy sector is transitioning to clean and renewable energy sources, and electrochemical technologies play an important role in this shift. The intermittent nature of solar and wind generations can be tamed using electrochemical systems of energy storage using batteries and hydrogen generation, storage, and utilization. Catalysts are the key components of these electrochemical energy storage systems and determine their efficiency, cost, and life-time. Currently, platinum group metals are the most efficient electrocatalysts in both anodic and cathodic reactions. The demand for cost efficiency in power sources makes the search for cheaper and more stable electrocatalysts mandatory. Modified carbonaceous materials, alloys, metal oxides and sulfides, polymer-modified electrodes, and macrocycles are promising alternatives to platinum group metals.

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Deadline for manuscript submissions

closed (10 March 2022)



Catalysts

an Open Access Journal
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Impact Factor 4.0
CiteScore 7.6



mdpi.com/si/77899

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