Special Issue

Nanomaterials for Photo- and Electro-Catalysis: Design and Characterization

Message from the Guest Editors

In this Special Issue, catalytic reactions through photocatalysis (directly driven by sunlight) or electrocatalysis (indirectly driven by electricity from renewable solar and wind energy) are of interest. With the sizes of materials down to the nanoscale, unique electronic structures enable nanomaterials to possess improved chemical and physical properties compared to those of their bulk counterparts. Accordingly, this Special Issue on “Nanomaterials for Photo- and Electrocatalysis: Design and Characterization” aims to gather new research findings in this thriving area. Papers that are devoted to new design synthesis of nanomaterials, new results around structural characterizations, and new catalytic performance evaluations via photocatalysis or electrocatalysis are welcome. The issue will focus on nanomaterials engineering for photocatalytic and electrocatalytic reactions in (but not limited to) hydrogen evolution/oxidation reaction (HER/HOR), oxygen evolution/reduction reaction (OER/ORR), water splitting, selective organic oxidation/reduction, CO2 reduction reaction (CO2RR), nitrogen reduction reaction (NRR), and biomass transformations.

Guest Editors

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.6 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).