# Special Issue

# Research on Electrocatalytic Materials for Hydrogen Evolution and Oxygen Evolution

## Message from the Guest Editors

Energy and the climate are two critical global challenges. Searching for alternative energy sources that are clean and renewable to replace conventional fossil fuels is in urgent demand. This Special Issue reports recent advances in electrocatalytic materials for hydrogen and oxygen evolutions, aiming to shed light on the rational design of electrocatalysts and advance material adventure in this field. A broad range of topics from fundamental to applied, from experimental to theoretical will be covered. Reviews, perspectives, communications, and original research articles all related to hydrogen evolution are welcome. Topics of particular interest to this Special Issue include, but are not limited to,

(i) Design, fabrication, and performance evaluation of advanced electrocatalysts for either HER or OER.
(ii) Multifunctional electrocatalysts are active for both HER and OER toward overall water splitting.
(iii) Advanced in situ and ex situ characterization and testing methodologies.
(iv) Discussion of underlying reaction mechanisms.
(v) Theoretical calculations and predictions for new electrocatalysts.
(vi) Photocatalytic water splitting.
(vii) Photoelectrochemical water splitting.

## Guest Editors

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## Deadline for manuscript submissions

closed (20 July 2025)

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# About the Journal

## Message from the Editor-in-Chief

*Materials* (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

## Editor-in-Chief

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