

## Special Issue

# Homogeneous and Heterogeneous Catalytic Oxidation and Reduction

### Message from the Guest Editors

Apart from enzymatic catalysis, we have seen ever-increasing interest in homogeneous and heterogeneous catalysis for target reactions in various fields. Catalytic activity, selectivity, and stability for many reactions play a crucial role in both catalysis; however, it remains challenging to develop rational design and regulation strategies for catalysts and to establish effective reaction mechanisms. Although many efforts have been made to tune catalytic performance, it is still a huge challenge to strive to establish structure–activity relationships. The key points regarding this relationship include active center and sites, active regions, valence states, promoters, etc. The design, optimization, and understanding of structures and compositions are key goals in the field of catalysis. To better understand and design more efficient catalysts, this Special Issue is dedicated to the trends of various catalytic processes, including Fenton, Fenton-like, enzyme catalysis, enzyme-like catalysis, photocatalysis, sonocatalysis, piezoelectric-catalysis, photo-electrocatalysis, nanocatalysis, etc. In this Special Issue, original research articles and reviews are welcome.

### Guest Editors

Dr. Weiwei Wang

Dr. Xiayi Yao

Dr. Wei Chen

### Deadline for manuscript submissions

30 November 2025



## Catalysts

an Open Access Journal  
by MDPI

Impact Factor 4.0  
CiteScore 7.6



[mdpi.com/si/204460](https://mdpi.com/si/204460)

*Catalysts*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[catalysts@mdpi.com](mailto:catalysts@mdpi.com)

[mdpi.com/journal/  
catalysts](https://mdpi.com/journal/catalysts)





# Catalysts

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.0  
CiteScore 7.6



[mdpi.com/journal/  
catalysts](https://mdpi.com/journal/catalysts)



## About the Journal

### Message from the Editor-in-Chief

---

#### Editor-in-Chief

Prof. Dr. Keith Hohn

Carl R. Ice College of Engineering, Kansas State University, Manhattan,  
KS, USA

---

#### Author Benefits

##### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, CAB Abstracts, and other databases.

##### Journal Rank:

JCR - Q2 (Chemistry, Physical) / CiteScore - Q1 (General Environmental Science )

##### Rapid Publication:

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).