

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. Xiaxi Yao
Dr. Wei Chen

Deadline for manuscript submissions

closed (30 November 2025)



Catalysts

an Open Access Journal
by MDPI

Impact Factor 4.0
CiteScore 7.6



mdpi.com/si/204460

Catalysts
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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](http://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 15.9 days after submission; acceptance to publication is undertaken in 3.5 days (median values for papers published in this journal in the second half of 2025).

