Special Issue

Applications of Catalysts in Metal-Air Batteries

Message from the Guest Editor

Metal–air batteries have the advantages of a high energy density, a low cost, and high levels of safety, and they are considered a highly promising energy storage device. However, the slow kinetic rate of oxygen reduction reactions in air electrodes greatly limits the practical application of metal–air batteries. Existing catalysts face problems such as the use of expensive precious metal catalysts, the poor stability of non-precious metal catalysts, and the severe corrosion of carbon supports. In order to improve the energy conversion efficiency of metal–air batteries and optimize their poor charge/discharge stability and low current density, it is crucial to develop low-cost and highly catalytic electrocatalysts. This Special Issue provides a comprehensive overview of some design ideas for metal–organic framework-based, metal-free, and metal-based catalysts.

- electrocatalytic materials
- oxygen reduction
- air battery
- composite electrode

Guest Editor

Dr. Rongxian Zhang
School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, China

Deadline for manuscript submissions

28 February 2026

Catalysts

an Open Access Journal by MDPI

Impact Factor 4.0
CiteScore 7.6

mdpi.com/si/227356

Catalysts
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
catalysts@mdpi.com

mdpi.com/journal/catalysts

Catalysts

an Open Access Journal by MDPI

Impact Factor 4.0
CiteScore 7.6

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).

MDPI