Special Issue

Heterogeneous Photocatalysis for Green and Sustainable Chemistry

Message from the Guest Editors

As a green technology featured with the advantages of operating in mild conditions and using solar energy as the driving force, heterogeneous photocatalysis represents a particularly effective approach to achieving these objectives. This process generally involves the use of semiconductors or metal nanoparticles which become energised by light to activate the adsorbed molecules. Recently, significant advances have been made in heterogeneous photocatalysis, particularly for the valorisation of biomass and waste plastics, CO2 fixation, and selective organic transformations. These advances have opened new opportunities to address the energy- and environmental-related challenges. This Special Issue aims to explore the latest advances in both the fundamental and the applied aspects of heterogeneous photocatalysis. Topics of interest include (but are not limited to) the following:

- New photocatalytic reaction mechanisms;
- New photocatalysts and characterisation techniques;
- Valorisation of waste biomass;
- Recycling and upcycling of waste plastics;
- CO2 fixation, water splitting, and selective organic transformations;
- Environmental photocatalysis.

Guest Editors

Dr. Gang Xiao

State Key Laboratory of Green Biomanufacturing, Beijing Key Laboratory of Green Chemicals Biomanufacturing, College of Life Science and Technology, Beijing University of Chemical Technology, Beijing 100029, China

Dr. Pengfei Han

College of Science, National University of Defence Technology, Changsha 410072, China

Deadline for manuscript submissions

30 September 2025

Catalysts

an Open Access Journal by MDPI

Impact Factor 4.0
CiteScore 7.6

mdpi.com/si/236071

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

MDPI

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).