# Special Issue

# Catalysis for Sustainable Hydrogen Production: Ammonia Decomposition, Photocatalysis, and Electrolyser Technologies

## Message from the Guest Editors

This Special Issue highlights recent advances in catalytic systems for sustainable hydrogen production, with emphasis on ammonia cracking, photocatalytic water splitting, and catalytic electrolysis. Ammonia is increasingly recognized as a promising hydrogen carrier due to its high hydrogen density, carbon-free nature, and established infrastructure. In parallel, photocatalytic hydrogen production using solar energy provides a green and decentralized pathway for hydrogen generation. Furthermore, catalytic electrolysis, including water electrolysers and ammonia-assisted electrolysis, offers highly efficient hydrogen production driven by renewable electricity.

This Special Issue welcomes original research and review articles on catalyst design, mechanistic understanding, structured catalysts, and reactor engineering for hydrogen production. Topics include transition metal catalysts, bimetallic systems, electrocatalysts, photocatalysts, and integrated catalytic processes. Contributions addressing catalyst durability, poisoning resistance, and techno-economic considerations are particularly encouraged to advance scalable and economically viable green hydrogen technologies.

## Guest Editors


Dr. Mohd Lokman Ibrahim

School of Chemistry and Environment, Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam 40450, Selangor, Malaysia

Dr. Surajudeen Olalekan Sikiru

School of Physics & Materials Studies, Faculty of Applied Sciences, Universiti Teknologi Mara, Shah Alam Selangor 40450, Malaysia


## Deadline for manuscript submissions

10 November 2026


# Catalysts

an Open Access Journal by MDPI

Impact Factor 4.0
CiteScore 7.6

mdpi.com/si/278650

*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 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).