

## Special Issue

# Advanced Materials for Applications in Water Splitting

### Message from the Guest Editor

Hydrogen energy has been regarded as a prospective energy to meet global energy demands.

Electrochemical water splitting is one of the most attractive strategies to gain hydrogen. To enhance the conversion efficiency of water splitting, it is necessary to use catalysts to accelerate the reaction kinetics and reduce reaction energy barriers. At present, electrocatalysts have become a research hotspot, including precious metal (Pt, Pd, Ru, Ir), transition metal (Fe, Co, Ni, Mo), and non-metallic materials.

Researchers have been devoted to exploring and designing high-performance and stable catalysts. Structural design, especially heterostructures, is crucial for realizing efficient catalysts. Component regulation is also an effective strategy. Advanced characterization techniques are applied to explore the structure–activity relationship of the catalysts. Density functional theory can be applied to reveal the electrocatalytic mechanism. The Special Issue aims to study the material design, characterization, catalytic property, and mechanism for electrochemical water splitting. In this Special Issue, original research articles and reviews are welcome.

---

### Guest Editor

Dr. Zhiyi Pan

School of Physical Science and Technology, School of Resources, Environment and Materials, Guangxi University, Nanning 530004, China

---

### Deadline for manuscript submissions

20 June 2025



## Crystals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.4  
CiteScore 4.2



[mdpi.com/si/203440](https://mdpi.com/si/203440)

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

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





# Crystals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.4  
CiteScore 4.2



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



## About the Journal

### Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

---

### Editor-in-Chief

Prof. Dr. Alessandra Toncelli  
Department of Physics, University of Pisa, 56126 Pisa, PI, Italy

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, CAPIus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Crystallography) / CiteScore - Q2 (Condensed Matter Physics)