Special Issue

Electrochemical & Photoelectrochemical Photocatalysts: From Fundamentals to Materials Performance

Message from the Guest Editor

Electrochemical and photoelectrochemical photocatalysts have emerged as promising technologies for sustainable energy conversion and environmental remediation. These materials employ solar energy to drive chemical reactions, leading to clean hydrogen production, pollutant degradation, and CO2 reduction. The underlying principles behind these technologies involve light absorption, charge carrier generation and separation, and redox reactions taking place at the catalyst surface. Key factors that impact performance include the semiconductor bandgap, crystallinity, surface structure, and interfacial charge transfer kinetics. To optimize these factors, researchers have explored novel photocatalyst materials, including metal oxides, chalcogenides, carbon-based composites, and emerging 2D nanomaterials.

Guest Editor

Dr. Zohreh Masoumi

Air Environment and Energy Research Lab (AEERL), Department of Environment Engineering, University of Ulsan, Daehakro 93, Namgu, Ulsan 44610, Republic of Korea

Deadline for manuscript submissions

20 August 2025

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/208112

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

mdpi.com/journal/crystals

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/journal/crystals

MDPI

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, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank:

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