Special Issue

Electrocatalyst Design for the Reduction of Carbon Dioxide

Message from the Guest Editor

With the over-exploitation of fossil fuels, the atmospheric CO2 concentration continuously rises, causing the global greenhouse effect and other environmental problems. Electrocatalytic CO2 reduction reaction (CO2RR), which can cleanly obtain various hydrocarbons, is considered a potential solution. Fundamental understanding, rational design, and delicate manipulation of catalysts are the keys to achieving high-performance electrochemical CO2 conversion. Catalysts with special spatial arrangement can exhibit high catalytic activity, and the advantageous morphology, suitable support, electronic structure, and chemical properties can further improve the performance of CO2RR. However, there are still many questions that need to be explored to reach general conclusions about superior activity, selectivity, and stability. Research is addressing fundamental questions, but industrial-level devices and systems are not out of reach. These are currently open questions and hot and timely topics. Scientists around the world are invited to contribute to this Special Issue of Crystals, which will facilitate the development of the CO2 electrolysis field.

Guest Editor

Prof. Dr. Zhen Zhang

State Key Laboratory of Solidification Processing, Center for Nano Energy Materials, School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an 710072, China

Deadline for manuscript submissions

closed (20 March 2025)

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/190701

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

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)