

## 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 CO<sub>2</sub> 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.

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### 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

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### Deadline for manuscript submissions

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## Crystals

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

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## 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.

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### Editor-in-Chief

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

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