

## Special Issue

# Recent Advances in Metal-Organic Frameworks: Synthesis, Characterization and Application

### Message from the Guest Editor

Metal-organic frameworks (MOFs) are among the most promising novel materials, which was first introduced in 1990. MOFs are formed by the assembly of two components: Cluster or metal ion nodes and organic linkers between them, usually giving rise to crystalline structures with an open framework and significant porous texture development. Recently, they have been investigated with increasing interest for energy storage and conversion, gas adsorption/separation, membranes, catalysis, sensing and biomedicine.

Here, we are greatly honored to assemble a special issue of the latest research work on MOFs toward their synthesis, characterization and application. Some of the key topics relevant to this Special Issue are:

- Synthesis and characterization of novel MOFs or MOF-based materials
- SPE application;
- Porous MOFs for adsorption and gas storage/capture;
- Drug delivery application with MOF based-materials;
- Catalysis and photocatalysis with MOFs and MOF-based materials;
- Synthesis of MOFs for chemical sensing;
- Energy storage in MOFs;
- CO<sub>2</sub> capture with MOFs and MOF-based materials.

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### Guest Editor

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### Deadline for manuscript submissions

closed (20 December 2025)



## Crystals

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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  
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