



## Advances in Magnesium Alloys: Microstructure, Coating, and Machining

Guest Editors:

**Dr. Ireneusz Zagórski**

Department of Production  
Engineering, Lublin University of  
Technology, 20-618 Lublin,  
Poland

**Dr. Mirosław Szala**

Department of Materials  
Engineering, Faculty of  
Mechanical Engineering, Lublin  
University of Technology, 20-618  
Lublin, Poland

**Prof. Dr. Pavel Lukáč**

Department of Physics of  
Materials, Charles University, Ke  
Karlovu 3, 121 16 Praha 2, Czech  
Republic

Deadline for manuscript  
submissions:

**closed (31 August 2023)**

### Message from the Guest Editors

Magnesium alloys are an interesting material for construction and design. They have many interesting and specific characteristics. Some of these characteristics could be interesting for the telecommunications industry, space industry, etc.

Starting from the 1970s, attempts have focused on defining the recommended machinability parameters for light alloys, including magnesium alloys. The problems occurring in the milling of magnesium alloys can be classified depending on the type of machining (i.e., dry machining or wet machining with the application of emulsion or oil). In dry machining, the critical machinability indicator is the temperature in the cutting zone. However, magnesium alloys have been proven to be suitable for both HSC (high-speed cutting) and HPC (high-performance cutting). The machining of magnesium alloys can be up to four times faster than that of popular aluminum alloys. Magnesium alloys can be dry machined because of a longer tool life—in the case of magnesium alloys, the tool life is ten times longer than that of tools used in the machining of aluminum alloys.





*crystals*



an Open Access Journal by MDPI

## Editor-in-Chief

**Prof. Dr. Alessandra Toncelli**

Department of Physics, University  
of Pisa, 56126 Pisa, PI, Italy

## 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.

## 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](#), [CAPus / SciFinder](#), and [other databases](#).

**Journal Rank:** JCR - Q2 (Crystallography) / CiteScore - Q2 (Condensed Matter Physics)

## Contact Us

---

*Crystals* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/crystals](http://mdpi.com/journal/crystals)  
[crystals@mdpi.com](mailto:crystals@mdpi.com)  
[X@Crystals\\_MDPI](https://twitter.com/Crystals_MDPI)