Special Issue

Cobalt-Based Alloys: From Prosthetic Dentistry to Hot Turbine Components

Message from the Guest Editors

At present, cobalt-based alloys are used in various applications: as refractory alloys for the hottest parts in aeronautical or power generation turbines, corrosion-resistant alloys for dental prostheses and other biomedical devices, wear-resistant alloys for hardfacing components, amorphous alloys for applications exploiting their magnetic properties, etc. Among the first cobalt-based alloys to appear, there were the conventionally cast chromium-rich ones which emerged about a century ago for responding dentistry needs and, a little later, their cousin cobalt-based superalloys which allowed developing turbines for WWII military aircrafts. From this period, the chemical composition and elaboration techniques were more or less continuously developed and improved. New elaboration ways, metallurgical strengthening principles, or answers for enhanced resistance against corrosion, for instance, are today investigated for crystalline cobalt-based superalloys (e.g., cobalt–rhenium–chromium alloys or gamma/gamma prime Co-based single crystals) as for dental alloys (e.g., new compositions and additive manufacturing).

Guest Editors

Dr. Patrice Berthod

Institut Jean Lamour and Faculty of Sciences and Technologies, University of Lorraine, 54000 Nancy, France

Dr. Pascal De March

1. Faculty of Odontology and Institut Jean Lamour, University of Lorraine, 54000 Nancy, France
2. Luxembourg Institute of Science and Technology, 4362 Esch-sur-Alzette, Luxembourg

Deadline for manuscript submissions

closed (30 September 2021)

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/39874

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)