Special Issue

Magnetoelectric Materials and Their Application

Message from the Guest Editor

Multiferroic magnetoelectric (ME) materials, characterized by the concurrent presence of multiple ferroic orders such as ferromagnetic, ferroelectric, and ferroelastic behaviors, play a pivotal role in a myriad of device applications. These applications span from energy harvesting systems to magnetic field sensors and extend to electrically tunable magnetic devices used in microwave communications. The synergistic interplay between ferromagnetism and ferroelectricity gives rise to a novel coupling phenomenon known as the ME effect, which intricately correlates magnetic fields, electric fields, and mechanical deformations. Engineered multiferroic ME composites, featuring diverse connectivities like 0–3, 1–3, 1-2, and 2–2 configurations between distinct ferroelectric and ferromagnetic phases, have garnered significant attention due to their ability to offer enhanced design flexibility along with notably large ME coupling coefficients. Various strategies have been explored to amplify the ME coupling in these composites, encompassing optimizations of constituent phases, tailored ME structures, and enhancements in interfacial layers, among others.

Guest Editor

Dr. Deepak Patil
School of Materials Science and Engineering, Yeungnam University, Gyeongsan 38541, Republic of Korea

Deadline for manuscript submissions

closed (10 December 2024)

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/203901

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)