

Special Issue

Research on Crystalline Metamaterials

Message from the Guest Editors

High-power microwaves (HPMs), or directed energy RF, represent an evolution of vacuum electron devices (VEDs) that seek to generate the highest peak power levels in the frequency range of 100 MHz to 100 GHz (and even higher frequencies) in short pulses (10–100 ns in duration) that can be repetitively pulsed. In 1967, Veselago theoretically investigated exotic electromagnetic properties of metamaterials (MTMs) such as negative refractive index, reversed Doppler effect, and reversed Cherenkov radiation (RCR) in an assumed homogeneous isotropic material in which the real parts of the permittivity and the permeability were both negative. The permittivity (ϵ_{eff}) and the permeability (μ_{eff}) are the complex averaged EM response functions of the molecules that make up the material due to the interaction with the electric and magnetic components of an incident wave. The construction of new devices involves designing the EM properties and structures of available materials to obtain the permittivity (ϵ_{eff}) and the permeability (μ_{eff}); thus, engineers are able to precision engineer geometries from these materials.

Guest Editors

Dr. Meiqin Liu
Dr. Ningfeng Bai
Prof. Dr. Weihua Jiang

Deadline for manuscript submissions

closed (20 May 2024)



Crystals

an Open Access Journal
by MDPI

Impact Factor 2.4
CiteScore 5.0



mdpi.com/si/183644

Crystals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
crystals@mdpi.com

[mdpi.com/journal/
crystals](https://mdpi.com/journal/crystals)





Crystals

an Open Access Journal
by MDPI

Impact Factor 2.4
CiteScore 5.0



[mdpi.com/journal/
crystals](https://mdpi.com/journal/crystals)



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)