

Special Issue

Synthesis and Characterization of New Superconductors Materials

Message from the Guest Editors

In recent years, the saturation of the scientific interest in high-T_c superconductor perovskites, i.e., cuprates, was accompanied by a new stream of works based on new families of compounds showing high critical temperature superconductivity, i.e., intermetallic borides (e.g. MgB₂), iron–nickel-based superconductors (La(Fe,Ni)(Pn,Ch)O, (Pn,Ch= pnictide or chalcogenide ions), heavy fermion superconductors (e.g., CeCoIn₅), and superhydrides systems (e.g., H₃S). This Special Issue aims to attract scientific contributions providing new insights and advances in the synthesis and characterization of novel superconductor materials, addressing multiple aspects of the overall physical/chemical problem, specifically the following:

- Synthesis and structural analysis
- Magnetic and/or electric characterization of the superconductive transition
- Structural effects on superconductivity
- Effect of magnetism on the superconductive state
- Role of crystal symmetry
- TC dependence on external stimuli and/or non-ambient conditions
- Theoretical modeling

Guest Editors

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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

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