Special Issue

Advanced Crystallographic Approaches in Steel Research: Microstructure, Properties, and Applications

Message from the Guest Editors

This Special Issue highlights innovative characterization techniques, including advanced X-ray diffraction methodologies, electron microscopy approaches, neutron diffraction studies, and in situ crystallographic investigations, illuminating phase transformations and the microstructural evolution in steel. We invite scholarly contributions investigating the crystallographic characteristics of diverse steel classifications, encompassing traditional carbon steels, sophisticated high-strength steels, stainless steels, and innovative steel alloys. To address these insights, this Special Issue will delve into a wide range of focused areas, including

- Crystallographic aspects of phase transformations in steel;
- Texture development and its influence on mechanical properties;
- Crystallographic characterization of interfaces and grain boundaries;
- Structure–property relationships in advanced steel grades;
- In situ studies of deformation and recrystallization processes;
- Computational modeling of crystalline structures in steel;
- Novel techniques for crystallographic analysis of steel microstructures;
- Crystallography of precipitation and second-phase particles in steel.

Guest Editors

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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

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