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Ferroelectric and Piezoelectric Crystals

Guest Editors:

Dr. Guisheng Xu
Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 201800, China

Prof. Dr. Yizheng Tang
Hangzhou Applied Acoustics Research Institute, Hangzhou 310023, China

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Message from the Guest Editors

Ferroelectric and piezoelectric single crystals have attracted a great deal of attention in the last few years for their extremely large piezoelectric strains and very high electromechanical coupling factors. This issue is aimed at providing an update on the state of the art in this exciting field, including that on crystal growth, performance optimization and major piezoelectric applications.

Notable enhancement of performance, as higher piezoelectric strain, higher or lower mechanical quality factor Qm, and better temperature stability of ferroelectric and piezoelectric single crystals has been realized through material composite, rare earth doping, AC poling, domain engineering and microstructure adjustment. Meanwhile, the full set of material properties can be gained conveniently and self-consistently by using only one to two crystal samples.

The outstanding performance of these crystals makes them the primary candidates for the next generation of transducers, sensors, actuators and so on, and some significant progress in the devices based on the unique performances of relaxor-based single crystals will also be presented in this issue.

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Editor-in-Chief

Prof. Dr. Alessandra Toncelli
Department of Physics, University of Pisa, 56126 Pisa, Italy

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.

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Contact Us

Crystals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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crystals@mdpi.com
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