

Special Issue

Materials Science and X-Ray Diffraction

Message from the Guest Editors

This SI is related to the investigation/characterization of the structural and dynamical properties of existing and newly synthesized materials using X-Ray diffraction. In recent years, for very exciting and innovative studies on functional materials in their pure form or in mixture, as well as in various environments or in operando conditions. The role of symmetry (or asymmetry) in the tropicity of materials has proved to be very important in the response to external stimuli, as, for instance, temperature, pressure or tensile stress, and several examples of directional properties have been pointed out: linear and nonlinear elasticity, piezoelectricity and electrostriction, magnetic phenomena, to name a few. Techniques like *in situ* X-Ray microtomography have revealed the spatial distributions, orientations, alignment, and connectivity of the microstructural features of materials. Researchers working in this field are cordially invited to contribute original research papers or reviews to this Special Issue of *Symmetry*.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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