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Chemistry Using the Symmetry of Crystals

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Crystallography is widely used as a structure determination tool in various fields of natural science. In principle, the three-dimensional periodic arrangement of atoms in a solid or crystal is measured via diffraction in the reciprocal space field of electromagnetic waves, and the atomic positions in real space are determined via Fourier transformation. In chemistry, 3D structures are discussed in stereochemistry and structural chemistry, but they are also closely related to condensed matter chemistry and chemical reactions involving molecular recognition. They have now become an indispensable research tool for analyzing low-molecular-weight crystal structures; however, once a crystal is formed, it follows the laws of crystal symmetry, such as the center of symmetry of the space group and the presence or absence of chirality. This Special Issue broadly calls for chemical research that essentially utilizes such symmetries of crystals.

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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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