Special Issue

Advances in Quantum Theory with Symmetry

Message from the Guest Editors

Symmetry is one of the most important topics in chemistry, influencing the properties and reactions of molecules and materials in profound ways. For example, observed spectroscopic features can be predicted directly with symmetry selection rules. In coordination compounds, the energy splitting of *d* and *f* orbitals can be predicted by symmetry of the surrounding ligand field. Symmetry also provides insights into edge technologies such as the designation of molecular descriptors for machine learning and qubit reduction in quantum computing. This Special Issue aims to provide a platform for researchers to share their novel findings and perspectives on quantum chemistry, with a special emphasis on symmetry. We sincerely welcome original research articles, communications, and review articles that cover topics such as, but not limited to, investigations on vibrational and/or electronic spectroscopy; molecular chirality and stereochemistry; symmetry-adapted machine learning for quantum chemistry; application of symmetry in quantum computing; and topology in condensed matter physics.

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.

Editor-in-Chief

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