

Symmetry in Biophysics

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Message from the Guest Editor

Dear Colleagues,

As a science of the principles and mechanisms of functioning of living systems, biophysics comes to the realization that symmetry is not only a manifestation of the structural features and functions of living systems but the physical basis for their occurrence and evolution. It is possible to consider the symmetry foundations of spatiotemporal self-organization in active media with a distributed energy resource as a way toward the emergence of a self-consistent system of biosynthesis and metabolism. The consideration of chirality (homochirality) is possible not only as a characteristic symmetry feature of living systems, but also as a tool for consistent symmetry breaking in the hierarchical structure formation of macromolecules and molecular machines, and the consistency of all molecular biology. In this Special Issue, the systemic role of symmetry and symmetry violations could be revealed from the standpoint of various sciences and approaches in the formation of molecular and cellular structures in phylogenesis and ontogenesis.

This Special Issue invites reviews, new insights, and research on these topics at any level of biophysical phenomena.





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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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