



## Symmetry and Asymmetry in Mechanical Engineering

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### Message from the Guest Editors

Dear Colleagues,

Symmetry plays an essential role in simplifying mathematical models, improving computational efficiency, and obtaining qualitative properties in mechanical-engineering-related problems. The Special Issue on “*Symmetry and Asymmetry in Mechanical Engineering*” will feature original research articles with innovative mathematical modeling, experimental or numerical case studies, methodologies and theoretical frameworks, or reviews of recent advances in all aspects of symmetry or asymmetry in mechanical engineering. By comprehensively bringing together perspectives from system dynamics, mechanical design, control theory, and other areas of mechanical engineering, this Special Issue endeavors to highlight the significance of investigating the symmetry-related phenomena in various mechanical engineering applications and applying symmetry-based methods to numerical simulations and analysis.

- Group theory and its application in mechanical engineering.
- Symmetry-based model reduction for computational efficiency.
- Parity-time (PT) and anti-parity-time (APT) symmetry in optical, acoustic, and diffusive systems, among others...





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## Editor-in-Chief

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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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