

Special Issue

Symmetry/Asymmetry Studies in Composite Materials and Structures

Message from the Guest Editor

Composite materials and structures have revolutionized modern engineering by combining dissimilar constituents to achieve superior mechanical, thermal, and functional properties. Central to their performance is the intricate interplay of symmetry principles across multiple scales—from atomic arrangements to macroscopic architectures. This Special Issue aims to explore the fundamental role of symmetry in designing, characterizing, and optimizing advanced composites and metamaterials. We invite contributions addressing novel theoretical frameworks and computational models, as well as experimental studies that leverage symmetry concepts in areas including, but not limited to, the following: - Symmetry-driven design of hierarchical and multifunctional composites; - Bioinspired symmetric patterns for enhanced damage tolerance; - Symmetric fracture mechanisms in composite fracture and fatigue; - Data-driven symmetry discovery in composite design; - Topology optimization guided by symmetry constraints; - Symmetry-adaptive composites for extreme environments; - Symmetrical interface design in fiber metal laminates;

Guest Editor

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Deadline for manuscript submissions

31 December 2025



Symmetry

an Open Access Journal
by MDPI

Impact Factor 2.2
CiteScore 5.3



mdpi.com/si/233738

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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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