Special Issue

Innovative Topology Optimization Methods and Sustainable Applications

Message from the Guest Editor

Topology optimization has emerged as a transformative approach in structural and mechanical design, enabling the development of lightweight, high-performance structures optimized for various constraints and applications. This computational method has significantly advanced in recent years, incorporating multi-physics simulations, reliability-based design considerations, and sustainability aspects. The integration of topology optimization with cutting-edge numerical techniques, such as finite element analysis (FEA) and artificial intelligence (AI)-driven methods, has broadened its applicability across engineering disciplines.

This Special Issue aims to gather novel contributions on the latest advancements in topology optimization methods and their applications in structural engineering, aerospace, biomechanics, and beyond. Topics of interest include, but are not limited to, reliability-based topology optimization, manufacturing constraints, multi-material optimization, and sustainability-driven design strategies. We invite researchers and practitioners to submit original research articles, case studies, and review papers to contribute to this growing field.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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