

Special Issue

Advances in Solid Mechanics and Applications to Slender Structures

Message from the Guest Editors

This Special Issue aims to gather new research in the field of solid mechanics, with a particular focus on the mechanical modeling of slender elastic elements across various length scales. Studies of interest include the following: stress and strain predictions in slender deformable elements with mechanical properties that vary along their length; on phenomena such as instability and resonance that may threaten safety or offer opportunities for energy harvesting; and on phenomena such as partial interaction and relative slippage between individual system components, such as those observed in cables made of helically wound fibers interacting via friction or in fibers made of carbon nanotubes held together by Van der Waals interactions. Topics of interest include, but are not limited to:

- Statics and dynamics of prismatic and non-prismatic beams and cables;
- Dynamic stability and bifurcation phenomena;
- Hierarchical arrangements of helical fibers and strands;
- Analytical methods, perturbation methods, and homogenization methods;
- Reduced order models;
- Energy harvesting, vibration absorbers, and damping design;
- Experimental investigations.

Guest Editors

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Deadline for manuscript submissions

closed (30 July 2025)



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About the Journal

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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