Special Issue

Advances of Additively Manufactured Mechanical Metamaterials

Message from the Guest Editors

Additive manufacturing (AM) has transformed mechanical metamaterials from a theoretical curiosity to an engineering reality. The geometric freedom of AM now allows researchers to create intricate cellular and lattice architectures whose properties can be tuned far beyond those of conventional solids, achieving extreme stiffness-to-weight ratios, programmable compliance, negative Poisson's ratios, tailored energy absorption on demand, and multifunctional behavior that blends mechanics with thermal, acoustic, or biological performance. This Special Issue seeks original research that pushes the frontier of architected metamaterials enabled by AM. We welcome fundamental studies that deepen our understanding of structure–property relationships, as well as application-driven contributions that demonstrate translational impact in aerospace, energy, robotics, biomedical devices, consumer products, and other sectors. We welcome full research articles, communications, and comprehensive reviews that demonstrate fundamental insights or translational impact in the engineering and design of additively manufactured mechanical metamaterials.

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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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