Special Issue

Acoustic Metamaterials and Acoustic Foams: Recent Advances

Message from the Guest Editors

Dear Colleague Acoustic metamaterials are synthetic materials made of repeating unit cells which are designed to address an acoustic problem by the rational design of their micro-features. The characteristics of acoustic metamaterials are dominated by their rationally designed microarchitecture rather than the base material. Particularly, acoustic metamaterials can manipulate sound and elastic waves both spatially and spectrally in unpreceded ways. This class of materials did not exist until recently, as manufacturing their complex features was either impossible or prohibitively expensive. Recent advances in additive manufacturing (3D printing) have made it possible to manufacture such constructions with complex internal geometries and at much lower cost. Even though acoustic metamaterials are becoming more and more prevalent in academic and industrial sectors, acoustic foams have still kept their importance in addressing noise issues, due to their relatively low cost and high noise mitigation performance. **Keywords**: noise control; acoustic metamaterials; broadband noise attenuation; additive manufacturing; acoustic foams; 3D printing;

Guest Editors

Dr. Reza Hedayati

Aerospace Structures and Materials (ASM), Delft University of Technology, Postbus 5, 2600 AA Delft, The Netherland

Dr. Mahdi Bodaghi

Department of Engineering, School of Science and Technology, Nottingham Trent University, Nottingham NG11 8NS, UK

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Applied Sciences
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

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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

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

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