

Comfortable Environments: Materials for Room Acoustics and Noise Control

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Message from the Guest Editors

Noise and vibrations are significant problems that affect the well-being and comfort of people in buildings. In this context, developing materials and devices that dissipate or control sound energy is of great importance in order to improve habitability. Advances in this field over the last few years have paved the way for the design of new systems, ranging from acoustic metamaterials to innovative constructive solutions, many of which are conceived for their use indoors (e.g., workspaces, gymnasiums, classrooms, auditoriums, etc.). On the other hand, the characterization of these materials and the assessment of their in situ acoustic performance are also integral to their adoption in the building engineering sectors.

We would like to invite researchers to contribute to this Special Issue. Possible topics include, but are not limited to, the following:

- An assessment of the acoustic performance of rooms;
- New materials for sound absorption and vibration reduction in rooms;
- Devices for noise control in room acoustics;
- The modelling and simulation of room environments;
- New methods and techniques for the characterization of acoustic materials.



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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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