

Special Issue

Vibration Problems in Engineering Science—the New Paradigm

Message from the Guest Editor

Last thirty years, mathematical models have enabled the universal use of operational modal diagnosis and generalized predictive control, making structures more observable and controllable.

The presence and integration of lasers in tests, the dynamic analysis of 3D images and the emergence of new digital post-finite element methods are among the new techniques that are now classic. However, it is in the nonlinear extensions of dynamic modes that the prospects for knowledge, performance and safety of structures are most promising. Nonlinear conservative modes are indeed much better known and provide information on the behavior of the structure at the limits of its domain. Fatigue, aging and damage can now be linked to vibration modeling. Finally, structure–fluid vibration interactions, environmental representation and stochastic vibration models are now fully integrated into certification tools. Potential topics of this Special Issue include but are not limited to:

- operational modal diagnosis
- generalized predictive control
- structural dissipation
- digital structural model
- shell fluid interaction
- stochastic dynamic model

Guest Editor

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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.

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