

## Special Issue

# Advances in Nonlinear Vibration: Modeling, Data- Based Methods and Applications

### Message from the Guest Editors

Nonlinearity is known to play an important role in various fields of applied sciences. Structural nonlinearities, large-amplitude vibrations, limit cycles, instability, and friction are just some examples of nonlinear dynamical phenomena. The research community's interest in improving our awareness of nonlinear vibration phenomena has gained increased importance in recent years, in combination with the incipient industrial need for efficient and lightweight designs, and the necessity of monitoring and characterizing pre-existent structures. This Special Issue invites contributions on recent advances in nonlinear vibrations, focusing on modeling, data-based methods, and novel applications. Target topics include, but are not limited to, analytical and numerical methods, experimental nonlinear dynamics, signal processing, system identification and model updating, nonlinear phenomena in structures and structural health monitoring, nonlinear damping, dynamic interactions, nonlinear vibration control, and emerging topics in nonlinear vibrations.

---

### Guest Editors

Dr. Dario Anastasio

Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy

Prof. Dr. Stefano Marchesiello

Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy

---

### Deadline for manuscript submissions

closed (20 September 2024)



## Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/179609](https://mdpi.com/si/179609)

*Applied Sciences*  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[applsci@mdpi.com](mailto:applsci@mdpi.com)

[mdpi.com/journal/  
applsci](https://mdpi.com/journal/applsci)





# Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/journal/  
applsci](https://mdpi.com/journal/applsci)



## 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

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

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, CAPIus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q1 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)