



16th International Congress on Artificial Materials for Novel Wave Phenomena

# Metamaterials 2022

Siena, Italy, 12 – 17 September, 2022

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The *Sixteenth International Congress on Artificial Materials for Novel Wave Phenomena – Metamaterials 2022*, will comprise a **4-day Conference (12–15 September)**, and a **2-day Doctoral School (16–17 September)**. Co-organized by the *METAMORPHOSE VI AISBL* (<https://www.metamorphose-vi.org>) and The University of Siena, this Congress follows the success of *Metamaterials 2007-2021* and continues the traditions of the highly successful series of *International Conferences on Complex Media and Metamaterials (Bianisotropics)* and *Rome International Workshops on Metamaterials and Special Materials for Electromagnetic Applications and Telecommunications*. The Congress will provide a unique topical forum to share the latest results of the metamaterials research. It will bring together the engineering, physics, applied mathematics and material science communities working on artificial materials and their applications in electromagnetism/optics, acoustics/mechanics, transport, and multi-physics.

**The Congress is expected to be on-site. However, if the sanitary emergency and the travel restrictions will not allow a full on-site event, the Congress will be held in a hybrid format in the same date.**

## The Conference

The Conference includes *plenary presentations* given by leading scientists in the metamaterials research field and will address the main tendencies and discoveries in this field. Leading experts will present invited talks, which will review the state-of-the-art and address the latest advancements in their respective areas.

The technical oral talks and interactive poster sessions will encompass a broad range of themes, from fundamental theory of metamaterials to innovative applications in electromagnetism/optics, acoustics/mechanics, transport, and multi-physics.

## Paper Submission

Papers should be 2-3 pages long and contain an abstract, a brief conclusion, and a main body where technical content and novelty of the work are clearly presented. Papers should be submitted as camera-ready PDF files to the website:

<https://congress.metamorphose-vi.org>

Authors are requested to use the template provided on the Congress website when preparing their submission. Authors of accepted and presented papers will be given the option of publishing their work in IEEE Xplore subject to the manuscript compliance with the format and copyright requirements.

## Submission deadline: 6 March 2022

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**Reduced fees** are available for personal or institutional members of the METAMORPHOSE VI and for students and senior participants.

**Grants** will be provided for students and delegates from low-income countries. The grant rules and application forms are available at the Congress website. Applications should be submitted before **22 May 2022**.



## Topics

- Physics of complex electromagnetic materials
- Analytical and numerical modelling of metamaterials and metasurfaces
- Homogenization and effective medium models
- Fabrication and experimental characterization of metamaterials
- Nonlinear, tunable, reconfigurable, and programmable metamaterials and metasurfaces
- Time-space modulated structures
- Active and absorption-free metamaterials
- Chiral and bianisotropic composites
- Metamaterials with extreme parameters
- Quantum and superconducting metamaterials
- Carbon nanotubes, graphene and other 2D materials
- Nonreciprocal and topological metamaterials
- Multiscale metamaterials
- Plasmonics
- Photonic crystals and EBG structures
- Antenna and absorber applications of metamaterials
- RF and microwave metamaterials
- Metamaterials for 5G (and beyond) applications
- Millimeter wave/THz metamaterials and applications
- Optical metamaterials and their applications
- Acoustic metamaterials
- Mechanical and elastic metamaterials
- Metamaterials for nanoelectronics, nanophotonics and nanoantennas
- Metamaterials for control of heat flow and radiation
- Metamaterials for quantum electronics
- Metamaterials for sensing
- Metamaterials in naval and aeronautic applications
- Biological and biomedical applications of metamaterials
- Super-resolution and near-field imaging: effects and devices
- Transformational electromagnetics, elastodynamics, hydrodynamics and thermodynamics
- Advances in cloaking and invisibility
- Metamaterials in education

## Congress Prizes and Student Paper Competition

The Congress Prizes will be awarded in different categories based on the merits of submitted papers and their conference presentations. The winners of these awards will be selected from all the presenters except the invited speakers.

Additionally, the *best student paper* will be decided in the **Student Paper Competition**. Students who wish to participate in the competition should apply online at the Conference website before the **6 March 2022** (the paper submission deadline). Students should be registered at the website to submit a paper and fill in an application form online. During the submission process, students will be requested to upload:

- a CV outlining their research activities,
- the paper title,
- an endorsement letter signed by the student's advisor.

The Student Paper Competition rules are available at the Congress website.

### Previous editions

- 2021 & 2020 online
- 2019 Rome, Italy
- 2018 Espoo, Finland
- 2017 Marseille, France
- 2016 Crete, Greece
- 2015 Oxford, UK
- 2014 Copenhagen, Denmark
- 2013 Bordeaux, France
- 2012 St. Petersburg, Russia
- 2011 Barcelona, Spain
- 2010 Karlsruhe, Germany
- 2009 London, UK
- 2008 Pamplona, Spain
- 2007 Rome, Italy

**Contact: [contact@metamorphose-vi.org](mailto:contact@metamorphose-vi.org)**

### Doctoral School on Metamaterials

A course of the *European School on Metamaterials* operated by the METAMORPHOSE VI will be held in conjunction with the Congress (16–17 September 2022). The theme of the course is still under definition and will be announced shortly on the website.

The event will represent a unique opportunity for students and young researchers to get exposure to the latest advancements in the field of metamaterials and to meet the leading experts in this field. For more information visit the website: <https://school.metamorphose-vi.org/>

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