



19th International Congress on Artificial Materials for Novel Wave Phenomena

# Metamaterials 2025

Amsterdam, The Netherlands, 1 – 6 September, 2025

## General Chairs

Femius Koenderink, NL

## Steering Committee

A. Monti, Italy (*Chair*)

A. Alù, USA

F. Bilotti, Italy

G. Tagliabue, Switzerland

D. Ramaccia, Italy

A. Schuchinsky, UK

A. Tasolamprou, Greece

S. Vellucci, Italy

## Technical Program Committee

C. Coulais, NL (*Chair*)

F. Monticone, USA (*Chair*)

Y. Abate, USA

M. Barbuto, Italy

A. Boltasseva, USA

H. Caglayan, Finland

T.J. Cui, China

N. Engheta, USA

N. Estakhri, USA

R. Fleury, Switzerland

V. Galdi, Italy

G. Gerini, NL

B. Gorissen, Belgium

Y. Hadad, Israel

M. Kafesaki, Greece

A. Krushynska, NL

D. Kraft, NL

S. Maci, Italy

E. Martini, Italy

O. Miller, USA

C. Rockstuhl, Germany

D. Sounas, USA

E. Verhagen, NL

Y. Zhao, USA

B. Zhang, Singapore

## Local Committee

F. Koenderink (*Chair*)

E. Alarcón Lladó

J. van de Groep

S. Mann

A. Polman

## Proceeding editors

M. Barbuto, Italy

S. Vellucci, Italy

## Financial manager

E. Acciardi, Italy

## IT administrator

P. Carbone, Italy

The *Nineteenth International Congress on Artificial Materials for Novel Wave Phenomena – Metamaterials 2025*, will comprise a **4-day Conference (1–4 September)**, and a **2-day Doctoral School (5-6 September)**. Co-organized by the *METAMORPHOSE VI AISBL* (<https://www.metamorphose-vi.org>), the *University of Amsterdam*, and the *AMOLF*, this Congress follows the success of *Metamaterials 2007-2024* 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 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/photonics, acoustics/mechanics, transport, and multi-physics.

## The Conference

The Conference features **plenary presentations** by world-class scientists and engineers in the metamaterials research field, highlighting the latest trends and breakthroughs 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/photonics, 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: 7 March 2025

### Scientific Advisory Board

S. Tretyakov, Finland (*Chair*)

A. Sihvola, Finland

C. Caloz, Belgium

A. Grbic, USA

Y. Kivshar, Australia

G. Eleftheriades, USA

M. Farsari, Greece

F. Martin, Spain

L. Na Liu, Germany

J.B. Pendry, UK

E. Rajo Iglesias, Spain

D. Smith, USA

D. Werner, USA

R. Ziolkowski, USA

**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 based on the scientific merits of the applicant's submitted paper(s) and on the personal circumstances, particularly, of participants from low-income countries.

The grant rules and application forms are available on the Congress website. Applications should be submitted before **18 May 2025**.



## Topics

- Physics of artificial materials for novel and extreme wave phenomena
- Metamaterials modelling - analytical and computational approaches
- Computational, AI-based, data-driven design of metamaterials
- Fabrication and experimental characterization of meta-structures
- Tunable, reconfigurable and programmable metamaterials
- Nonlinear metamaterials and metasurfaces
- Time-space modulated metamaterials
- Nonreciprocal and topological metamaterials
- Chiral and bianisotropic composites; Nonlocality and spatial dispersion
- Active and non-Hermitian metamaterials; Exceptional-point physics
- ENZ metamaterials; Extreme parameters and broken symmetries
- RF, microwave and THz metamaterials and metasurfaces
- Photonic crystals and electromagnetic-bandgap structures
- Nanophotonics and nano-optics
- Plasmonics and polaritonics; Strong light-matter effects; Hot electrons
- 2D and Van-der-Waals metasurfaces and metamaterials
- Acoustic and mechanical metamaterials
- Metamaterials in soft matter and robotics
- Quantum and superconducting metamaterials
- Multiphysics metamaterials
- Homogenization and effective medium models
- Transformational electromagnetics, elastodynamics, thermodynamics
- Metamaterials for farfield and nearfield imaging; Super-resolution
- Metamaterials for sensing and metrology
- Metamaterials for computing, information and AI
- Metamaterials for quantum optics and nano-electronics
- Metamaterials for energy harvesting and conversion
- Thermal metamaterials and metasurfaces
- Metamaterials for communication technologies (5G and beyond)
- Antenna and absorber applications of metamaterials
- Advances in cloaking and scattering engineering
- Biological and biomedical applications
- Space, naval, aeronautic and automotive applications
- 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 award winners will be chosen from among all presenters, excluding the invited speakers.

Additionally, the *best student paper award* will be determined by a **Student Paper Competition**. Students who wish to participate in the competition should apply online on the Conference website before the **7 March 2025** (the paper submission deadline). Students should be registered on 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 on the Congress website.

### Previous editions

- 2024 & 2023 Crete, Greece
- 2022 Siena, Italy
- 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 (5–6 September 2025). The theme of the course is currently being finalized 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 leading experts in this field. For more information visit the website: <https://school.metamorphose-vi.org/>