



## 1. Subject

**Special Issue on Advances in Science of Light: Research Highlights in Italy**

## 2. Submission Deadline:

**March 31, 2025**

## 3. Illustration

This special issue will collect the most advances research work and highlight the broad scope of research in optics and photonics supported by the Department of Physical Sciences and Technology of Matter (DSFTM) of the National Research Council (CNR), as well as the inclusion of other significant contributions from university and others research institutions in Italy.

## 4. Brief introduction about the Special Issue

*As a follow-up to the Light: Sino-Italian Photonics Forum 2024, one of the Light brand conferences held in Rome, Italy, on May 17th-18th, we are happy to announce this special issue devoted to the best of Italian research in optics and photonics.*

*Optics and photonics in Italy represent a dynamic and rapidly advancing field, characterized by significant contributions to both scientific research and industrial applications. Italy boasts a rich history and solid roots in optics, dating back to the Renaissance with figures such as Galileo Galilei, Giovanni Battista Della Porta, and F.M. Grimaldi, who were ancient pioneers of optics and its applications. Today, the country is home to leading research institutions and universities, such as the Department of Physical Sciences and Technologies of Matter (DSFTM) of the Consiglio Nazionale delle Ricerche, which drive innovation in photonics and optical technologies. Italian companies are at the forefront of developing cutting-edge solutions in areas like laser technology, fiber optics, and imaging systems, playing a crucial role in global markets. The collaborative ecosystem in Italy, supported by governmental initiatives and*

*international partnerships, ensures continuous growth and impactful breakthroughs in the optics and photonics sector.*

*This special issue aims to collect the best research results developed by Italian scientists in both basic and technological advancements. These findings can then be disseminated globally within the wide scientific community of optics and photonics, thanks to the prestigious and authoritative role of the LSA journal.*

## **5.The types of invited papers**

Research Article/Review/Perspective.

The special issue will accept submission from Italian corresponding authors about to the topics reported in the next section. Anyway, any topic included in LSA journal is welcome.

We also welcome contributions reporting work in the context of international collaborations between Italian scientists and colleagues from foreign institutions to highlight Italy's international optical and photonic research network. The guideline for submission <https://www.nature.com/lsa/> A limited number of invited papers recommended by the Guest Editors will also be included in the special issue.

## **6.Topics**

Topics of particular interest within the Featured Issue's scope include, but are not limited to, those listed below:

- Imaging, Microscopy, Biomedical, Holography
- Spectroscopy, Lasers
- THz, Quantum cascade lasers
- Materials
- Nonlinear Optics, Ultrafast Optics and Spectroscopy
- Attosecond Science
- Nanophotonics and metaoptics
- Integrated Photonics

## **7. Co Editors-in-Chief**

- Professor **Pietro Ferraro (Lead)**, Institute of Applied Sciences & Intelligent Systems (ISASI), CNR



Prof. Pietro Ferraro is currently director of research at CNR Institute of Applied Sciences and Intelligent Systems (ISASI), Napoli Italy. He also worked as Principal Investigator with Alenia Aeronautics. Among his current scientific interests are: holography, interferometry, microscopy, fabrication of micro-nanostructures, ferroelectric crystals, optical fiber sensors, fiber bragg gratings, nano-microfluidics, optofluidics, EHD Ink jet printing, soft

matter.

- Professor Giulio Cerullo, Politecnico di Milano, Italy



Prof. Giulio Cerullo is a Full Professor at the Physics Department, Politecnico di Milano, where he leads the Ultrafast Optical Spectroscopy laboratory. His research activity focuses on the generation of tunable few-optical-cycle light pulses and on their application to the study of primary photoinduced processes in molecules, nanostructures and two-dimensional materials.

- Professor **Miriam Vitiello**, Nanoscience Institute of the National Research Council, CNR, Italy



Prof. Miriam Serena is group leader at the National Enterprise of Nanoscience and Nanotechnology and at the Nanoscience Institute of the National Research Council (CNR). Prof. Vitiello focuses on the design, development and applications of THz quantum cascade lasers; the development of THz nanostructured detectors based on semiconductor nanowires, 2D materials and vdW heterostructures; far-infrared metrology;

graphene-based photonics; near-field THz microscopy.

- Professor **Stefano Fabris**, DSFTM-CNR, Italy



Prof. Stefano Fabris has been the Director of DSFTM-CNR. His research interests focus on computational materials science and theory of nanostructured materials, addressing in particular novel materials and interfaces for renewable energies. Recent works investigated the fundamental physical processes governing the function of photocatalysts, surface-supported metal nanoparticles and metal-oxide interfaces in a wide

range of compositions and environments, ranging from model surfaces at  $T=0\text{K}$  in vacuum conditions to realistic wet interfaces at finite temperatures.

***For further information, please contact:***

Dr. Jingze Yuan (LSA Academic Editor)

Email: [yuanjz@ciomp.ac.cn](mailto:yuanjz@ciomp.ac.cn)

Dr. Veronica Vespini (CNR, Italy)

Email: [veronica.vespini@isasi.cnr.it](mailto:veronica.vespini@isasi.cnr.it)

Dr. Antonella Tajani (CNR, Italy)

Email: [antonella.tajani@cnr.it](mailto:antonella.tajani@cnr.it)