

## Special Issue

# Novel Physics and Practical Applications of Transformation Optics and Optical Mode Conversion

### Message from the Guest Editors

In the last decade, the possibility of structuring and tailoring the phase and intensity distributions of light has attracted increasing interest, exhibiting disruptive and promising applications in a wide range of fields: optical manipulation, high-resolution microscopy, mode-division multiplexing in telecoms, high-order modes of control, and high-dimensional quantum cryptography. Concurrently, remarkable efforts have been devoted to the design and fabrication of novel optical elements and effective materials in order to perform light reshaping, mode generation and conversion, and optical coordinate transformations. The topics of this Special Issue include, but are not limited to, optical coordinate transformations, multi-plane light conversion, high-order beam generation and manipulation, and mode switching and routing. This Special Issue will cover all the techniques and methods that can be used to control and reshape the electromagnetic field: diffractive optics, metasurfaces, metamaterials, plasmonics, photonics, etc.

### Guest Editors

Prof. Dr. Filippo Romanato

Department of Physics and Astronomy, University of Padova, Via 8 Febbraio 1848, 2, 35122 Padova PD, Italy

Dr. Gianluca Ruffato

1. Department of Physics and Astronomy, University of Padova, Padova, Italy

2. Department of Information Engineering, University of Padova, Padova, Italy

3. Quantum Technologies Research Center, University of Padova, Padova, Italy

### Deadline for manuscript submissions

closed (31 March 2021)



## Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



[mdpi.com/si/30743](https://mdpi.com/si/30743)

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

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

[appls](https://appls)





# Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



[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, CAPlus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering )