



Advanced Mathematical and Numerical Modeling in Electrodynamics and Photonics

Guest Editors:

Dr. André Nicolet

Institut Fresnel, Aix-Marseille
Université, 13013 Marseille,
France

Dr. Guillaume Demésy

Institut Fresnel, Aix-Marseille
Université, 13013 Marseille,
France

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Message from the Guest Editors

In recent years, intensive numerical modeling has become an important player in electromagnetic wave and nanophotonics research. Technological advances have allowed the design of complex structures at the wavelength scale of visible light, providing innovative optical functions and opening new applications, including metamaterials, microstructured optical fibers, nonlinear optics, plasmonics, graphene and 2D material devices, topological photonics, integrated quantum photonics, etc. In parallel, numerical and applied mathematics have provided very efficient new techniques that have profited from the increase in available computer power to provide us with the powerful computational methods necessary for the design of complex new structures. The purpose of this issue is to present the current state of the art of this research field in electromagnetic wave modeling and its wide panel of mathematical and computational tools: finite elements, boundary integrals, finite differences, discontinuous Galerkin, quasi-normal mode expansions, domain decomposition, absorbing boundary techniques, etc.





Editor-in-Chief

Prof. Dr. Francisco Chiclana

School of Computer Science and
Informatics, De Montfort
University, The Gateway,
Leicester LE1 9BH, UK

Message from the Editor-in-Chief

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Mathematics Editorial Office
MDPI, St. Alban-Anlage 66
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