

Special Issue

Nanomaterials for Advanced Optics and Photonics

Message from the Guest Editor

The recent advances in the field of novel optical spectral detection of biologically important molecules, particularly antibodies to corona-type viruses, requires developing high-sensitivity detection means along with fast spectral measurements, promising to yield results much more quickly than polymerase chain reactions. In addition, photonic crystals constitute a flourishing area of research and innovation for the detection of extremely small amounts of analytes thus promising to yield radical new sensing technologies that will dramatically expand the application range of advanced biosensors and diagnostic agents with diversified and specific characteristics in terms of composition and functionality. The scope of this Special Issue covers a very broad range of aspects, including fundamental concepts of biosensing using nanomaterials, their synthesis, engineering their sensing properties based on advanced optics and photonics, and exploring their emerging applications in medical diagnostics, industry, environmental control, and food analysis. Besides, laser-induced periodic surface structures can be used to produce sensors or gas storage applications.

Guest Editor

Prof. Dr. Stefano Bellucci

INFN-Laboratori Nazionali di Frascati, 00044 Frascati, Italy

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Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano–alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

School of Geography, Earth and Environmental Science, University of
Birmingham, Birmingham B15 2TT, UK

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