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Nanomaterials for Quantum Photonics and Quantum Photonics for Nanomaterials

Guest Editor:

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Deadline for manuscript submissions:
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Message from the Guest Editor

Over the past several years, quantum optical sensors have emerged as practical tools for the characterization of nanomaterials. Sensors that leverage squeezed and entangled optical fields offer the potential to probe material properties with classically inaccessible sensitivity. Near-field interactions between quantum optical resources and nanophotonic media may also enable new means of quantum information processing.

Conversely, a growing variety of defects in nanomaterials are emerging as quantum light sources that may enable new quantum sensing and networking applications. Indeed, optically accessible spin-based quantum sensors are now used for high-sensitivity quantitative imaging of temperature and magnetic and electric fields in fields from condensed matter physics and biology to high energy physics and cosmology.

This Special Issue aims to bring together research efforts that use quantum optical resources to probe nanomaterials with those that use nanomaterials as quantum resources. We invite authors to contribute original research articles and review articles.

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Editor-in-Chief

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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.

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