Special Issue

Nanoscale Optical Sensing

Message from the Guest Editor

Optical sensing based on the unique properties of nanoscale materials has recently emerged as a highly rewarding research topic both on the fundamental and practical level. The optical response of nanoscale objects is strongly dependent on their environment, making them highly efficient in detecting and monitoring nearby events. By analyzing scattered, transmitted /reflected, or diffracted light using thin films, isolated nanoparticles, oligomers or arrays of nanoparticles, or 2D/3D-patterned films, one can sense molecular adsorption/interactions, changes of refractive index, temperature, pressure, humidity, or pH. Sensing based on surface plasmon resonances in metal nanostructures is one particularly hot research area, boosted by recent scientific findings in the field of plasmonics, and backed-up by the technical advancement of nanotechnology in general. In this Special Issue we aim to assemble a collection of up-to-date results pertaining to optical sensing based on nanoscale materials, ranging from simulations and theoretical investigations, to synthesis/fabrication, and new/advanced optical sensing approaches.

Guest Editor

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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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