Special Issue

Novel Photonic and Electronic Devices Based on Semiconductor Nanomaterials

Message from the Guest Editor

Among the known modes of photon–electron interaction, surface plasmons (SPs) are special electromagnetic modes induced by the interaction between surface charge oscillations and photons in the surface of a metal. SPs have important and unique significance, especially in terms of solving a long-standing problem in previous optical research: photon regulation in the micro/nanoscale. The typical structures of SPs are demonstrated in nanoparticle systems, planar structure systems, and nanowires/nanopillar systems. This Research Topic will not only focus on the basic principles of surface plasmons and nano-resonators but also on the possible semiconductor micro/nano-structures used for micro/nano-resonators and related novel photonic and electronic devices.

- Physics giving rise to novel SP modes;
- Optoelectronics and light-matter interactions based on micro/nanostructures and SP coupling;
- Novel micro/nanostructures;
- Novel photonic and electronic devices, including emission and detection etc.;
- Practical applications of micro/nanostructures and SP coupling.

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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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