

Special Issue

Nanophotonics Enabled by Femtosecond Lasers

Message from the Guest Editor

During the last decade, ultrashort-pulse lasers have emerged as versatile, precise and high-throughput toolkits for the surface and bulk nanopatterning of functional materials, uniquely harnessing diverse non-linear optical and non-thermal—electronic, plasmonic, coherent-phonon and shockwave—processes in the nanofabrication. Advanced plasmonic nanosensors, photocatalysts and other light-conversion nanodevices, micro-optical all-dielectric devices and nano/microlasers have been demonstrated via high-throughput laser ablative nanopatterning and nanoprinting. Basic optical and solid-state physics, underlying these outstanding nanotechnological applications of ultrashort-pulse lasers, in many cases, is not well understood yet, thus hindering emerging and state-of-the-art implications of these laser nanotechnologies. In this Special Issue, fundamental optical and solid-state studies, anticipating and predicting nanoscale engineering in plasmonic and dielectric materials by ultrashort laser pulses, and corresponding applications will be in focus to provide a synergistic comprehensive overview of encouraging basics and remarkable state-of-the-art implications.

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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