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Nanomaterials for Surface Enhanced Raman Spectroscopy

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

For many decades, Raman spectroscopy has not been considered a useful analytical tool because of the very low efficiency of "normal" Raman scattering (the typical cross-section for Raman scattering is 11 and 8 orders of magnitude smaller than the typical cross-sections for absorption in ultraviolet and infrared). However, by utilizing special electromagnetic resonators constructed from plasmonic metals, the Raman scattering cross-sections could be increased by many orders of magnitude, making possible the observation of good-quality Raman spectra of even a single molecule. This effect is called SERS (surface-enhanced Raman scattering). Crucial to obtaining strong SERS signal is the application of an efficient SERS substrate. This Special Issue of *Nanomaterials* will attempt to cover the recent advances in nanomaterials for SERS spectroscopy, concerning not only their synthesis, but also simulations of the obtained local SERS enhancement factors and the applications of new nanomaterials in chemical and biochemical SERS analysis.

Dr. Andrzej Kudelski
Guest Editor

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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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