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Applications of Metallic Nanoparticles in Surface-Enhanced Raman Scattering Sensing

Guest Editor:

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Message from the Guest Editor

Surface-enhanced Raman scattering is a powerful technique that can amplify the Raman signal of molecules by several orders of magnitude, enabling the detection of trace amounts of analytes in various fields. Metallic nanoparticles, especially those made of noble metals such as gold and silver, are widely used as SERS substrates due to their tunable optical properties, facile synthesis, and versatile surface functionalization.

We invite you to contribute to this Special Issue and share your valuable insights and findings with the scientific community:

- Novel synthesis methods and characterization techniques of metallic nanoparticles for SERS
- Theoretical modeling and simulation of plasmonic effects and SERS enhancement mechanisms;
- Surface modification and functionalization of metallic nanoparticles for selective and sensitive SERS detection
- Integration of metallic nanoparticles with other materials (such as carbon dots, 2D materials, metal oxides, etc.) to form nanocomposites or hybrid structures for SERS
- Development of SERS devices and platforms based on metallic nanoparticles for practical applications in various fields

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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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