Special Issue

Nanostructures for SERS and Their Applications (2nd Edition)

Message from the Guest Editor

More than thirty years ago, researchers discovered Raman signal of a molecule adsorbed on nanostructured metal surface is amplified. This enhancement effect is due to coupling of incident radiation with collective oscillations of surface metal electrons, which produce electromagnetic field that enhances the incoming electron. The areas in which this effect is particularly intense are in between adjacent metal nanostructures, in interstitial crevices, and on sharp tips. By coupling Raman spectrometer with AFM, under the suitable conditions of optical excitation and collection optics, it is possible to perform tip-enhanced Raman spectroscopy (TERS) with sub-diffraction-limited imaging capabilities. The aim of this Special Issue is to showcase recent advancement in SERS and TERS, including development of new substrates with efficiency and exploration of new fields of application, proceeding from three aspects: novel low-cost easy-to-produce substrates for the detection of parameters suitable for health;
nanoscale chemical imaging obtained by SERS and TERS, and the problems involved in them;
new fields of application for SERS/TERS.

Guest Editor

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Deadline for manuscript submissions

closed (30 March 2025)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/194213

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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.

Editor-in-Chief

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