Special Issue

Nanomaterials for Matrix-Free Laser Desorption/Ionization Mass Spectrometry

Message from the Guest Editors

Laser desorption/ionization (LDI) is one of the most popular ionization techniques currently used in mass spectrometry (MS). This technique is most commonly used in matrix-assisted laser desorption/ionization (MALDI). However, this approach has some shortcomings, making it difficult to analyze compounds giving signals in this spectral region, and inhomogeneous co-crystallization of analyte and matrix leading to the formation of so-called "sweet spots,". For these reasons, increasing research attention is focused on the possibilities offered by the use of matrix-free systems based on nanostructures in laser methods, which are referred to as surface-assisted laser desorption/ionization (SALDI). The use of nanostructures in LDI MS has made it possible to analyze low molecular compounds, often at very low concentrations, without the presence of a matrix-derived chemical background, contributing to more applications of the LDI MS method. In this Special Issue, we will discuss the latest information on the use of nanoparticles and nanostructures in matrix-free laser desorption/ionization mass spectrometry techniques.

Guest Editors

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Deadline for manuscript submissions

18 August 2025

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/205174

Nanomaterials
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mdpi.com/journal/nanomaterials

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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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