Special Issue

Nanostructured Biomass-Based Materials for Energy Storage and Environmental Remediation

Message from the Guest Editors

Nanomaterials derived from biomass have emerged as a cutting-edge solution to address global challenges in sustainable energy and environmental protection. Combining the natural abundance, eco-friendliness, and tunable properties of biomass with the unique advantages of nanotechnology—such as high surface area, tailored porosity, and enhanced functionality—has unlocked tremendous potential for innovative applications. This Special Issue focuses on the design, synthesis, and applications of nanostructured biomass-based materials in two key areas: energy storage (e.g., battery electrodes, electrolytes, and supercapacitors) and environmental remediation (e.g., heavy metal adsorption, water purification, and air pollution control). The convergence of biomass resources and nanotechnology not only addresses resource sustainability but also fosters the development of multifunctional, high-performance materials that align with global carbon neutrality and circular economy goals.

Guest Editors

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Deadline for manuscript submissions

22 August 2025

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/226396

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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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