Special Issue

Advances in Biomaterials and Hydrogels: Pioneering Strategies for Brain Repair in Neurodegenerative Diseases and Aging

Message from the Guest Editors

For this Special Issue, we welcome original research articles and reviews that cover a broad spectrum of topics. These include the design and synthesis of biomaterials tailored for brain tissue engineering, the functionalization of hydrogels with bioactive molecules to enhance neuroregeneration, and both in vitro and in vivo evaluations of biomaterial efficacy in brain tissue repair following neurodegenerative damage. This Special Issue will also explore how biomaterials can modulate the brain's microenvironment and inflammatory responses, the advances in 3D bioprinting technologies for personalized brain implants, and the mechanisms through which hydrogels support neuroprotection and neuronal survival. Furthermore, this Special Issue aims to navigate the challenges and opportunities in the clinical translation of these advanced materials.

By highlighting cutting-edge developments and promoting interdisciplinary collaboration among physicians, materials scientists, regenerative medicine experts, and bioengineers, this Special Issue aims to provide an up-to-date view on pioneering strategies for brain repair in the context of neurodegenerative diseases and aging.

Guest Editors

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Deadline for manuscript submissions

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About the Journal

Message from the Editor-in-Chief

The biomaterials field is one of the largest and fastest growing research areas both in the scientific community and in the industrial one. Biomaterials are the result of collaborations between different disciplines: chemistry, medicine, pharmacology, engineering and biology. The objective of this collaboration is to lead to the implementation of new devices to restore form and human body functions. The mission of the *Journal of Functional Biomaterials* (*JFB*) is to focus attention on physico-chemical characteristics and their importance in the interactions between biomaterials and living tissues. *JFB* seeks to publish studies on the preparation, performance and use of biomaterials in biomedical devices, as well as regarding their behavior in physiological environments. We are pleased to welcome you as our authors.

Editor-in-Chief

Prof. Dr. Pankaj Vadgama
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