Special Issue

Functionalized Hydrogels: Biomimetic Design, Adhesion Mechanisms and Biomedical Applications

Message from the Guest Editor

Functionalized hydrogels represent a cutting-edge class of biomaterials designed to mimic natural biological systems, offering remarkable properties such as tunable mechanics, biocompatibility, and multifunctionality.

This Special Issue, “Functionalized Hydrogels: Biomimetic Design, Adhesion Mechanisms and Biomedical Applications”, will explore the latest advancements in biomimetic design strategies. It will focus on adhesion mechanisms, including physical (e.g., hydrogen bonds and electrostatic forces) and chemical (e.g., catechol-based, Schiff base, and enzyme-mediated crosslinking) interactions, enabling robust and adaptable bioadhesion for diverse applications.

We invite the submission of original research and reviews on novel hydrogel functionalization techniques, mechanistic studies, and translational developments. By fostering interdisciplinary collaboration, this Special Issue aims to accelerate the transition of functionalized hydrogels from lab-scale breakthroughs to real-world medical solutions.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Gels (ISSN 2310-2861) is recently established international, open access journal on physical and chemical gel-based materials. The journal aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. General topics include but not limited to synthesis, characterization and applications of new organogels, hydrogels and ionic gels made either from low molecular weight compounds or polymers, composite and hybrid materials where a metal is by some means incorporated into the gel network, and computational studies of these materials in order to provide a better understanding of gelation mechanism. We cordially invite you to consider publishing with us and contribute with your own grain of sand to the advance in this fascinating field.

Editor-in-Chief

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