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Biopolymer-Based Hydrogel Materials: Opportunities and Challenges

Guest Editor:

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Message from the Guest Editor

Hydrogels are networks of polymer chains bridged by covalent cross-links and physical bonds. These materials swell strongly in aqueous solutions (due to the hydrophilic nature of chains) but preserve their structural integrity due to the presence to permanent links between chains.

Biopolymer-based gels differ substantially from their synthetic counterparts in terms of the structure of chains, types of cross-links, self-organization, and response to external stimuli. These features open an opportunity for the engineering of nano-, micro-, and macro-gels with enhanced mechanical properties and novel functionalities: multi-stimuli-responsiveness, molecular recognition, and cell adhesion.

This Special Issue focuses on design and preparation methods for stimuli-responsive biopolymer nanogels and macroscopic gels, theoretical and experimental analysis of their properties and interactions with cells and biological tissues, correlations between the microstructure of biopolymer gels and their mechanical and physical properties, as well as novel areas of applications for these materials.

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Editor-in-Chief

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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.

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