Special Issue

Advances in Polymer Hydrogels for Biomedical Applications

Message from the Guest Editors

Polymer hydrogels are water-rich, three-dimensional networks formed from natural or synthetic polymers. They are widely explored for biomedical applications due to their biocompatibility and tuneable properties. Recent advances include smart hydrogels that respond to stimuli such as pH or temperature, enabling controlled drug delivery, and biosensing applications. Injectable and self-healing hydrogels offer minimally invasive application and durability within the body. Biopolymer-based hydrogels, derived from materials such as alginate and chitosan, enhance tissue compatibility and are ideal for wound healing and regeneration. Hybrid and composite hydrogels combine polymers or incorporate nanoparticles to improve strength and functionality, supporting uses in bone and nerve repair. Furthermore, progress in 3D bioprinting has enabled the use of customized hydrogel formulations to fabricate tissues and organs. These developments collectively mark a significant leap in the use of hydrogels for drug delivery, tissue engineering, and medical diagnostics, advancing personalized and regenerative medicine.

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.7.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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