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Advances in Synthesis, Testing, and Applications of Natural and Synthetic Polymer Hydrogels

Guest Editors:

Dr. Chandra Mouli R. Madhuranthakam
Department of Chemical Engineering, Abu Dhabi University, Abu Dhabi P.O. Box 59911, United Arab Emirates

Dr. Iolanda Francolini
Department of Chemistry, Sapienza University of Rome, P. le A. Moro 5, 00185 Rome, Italy

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Message from the Guest Editors

Hydrogels are crosslinked, three-dimensional networks of highly hydrophilic polymers capable of absorbing significant amounts of water or biological fluids. Natural-polymer-based hydrogels contain starch, chitosan, cellulose, alginate, guar gum, and hyaluronic acid, and they are extensively used in biomedical applications such as tissue regeneration and drug delivery. Synthetic polymer hydrogels (such as polyacrylamide and polyethylene glycol) are made using different routes such as bulk polymerization, the free radical mechanism, the radiation method, and solution mixing and casting, leading to enhanced mechanical properties, swelling, stimuli sensitivity, and compatibility in biomedical as well as other engineering applications. Extensive research is being carried out on functionalized hydrogels and their state-of-the-art synthesis methods that have extensive applications in regenerative medicine, separation processes, enhanced oil recovery, and water and wastewater treatment processes.

This Special Issue welcomes articles and reviews on the discovery of novel polymer hydrogels, their manufacturing methods, and analytical methods for their characterization and applications.

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Editor-in-Chief

Prof. Dr. Alexander Böker
Fraunhofer-Institut für Angewandte Polymerforschung, Lehrstuhl für Polymermaterialien und Polymertechnologie, Universität Potsdam, Geiselbergstraße 69, 14476 Potsdam-Golm, Germany

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 4.9.

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.

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Contact Us

Polymers Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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𝕏@Polymers_MDPI