

Special Issue

Smart Polymer Hydrogels for Advanced Biomedical Applications

Message from the Guest Editor

Smart polymer hydrogels have emerged as a highly versatile class of materials for biomedical applications due to their tunable physical, chemical, and biological properties. By responding to environmental stimuli such as pH, temperature, ionic strength, light, or specific biomolecules, these hydrogels enable drug release, tissue engineering scaffolds, biosensors, wound dressings, and regenerative therapies to be precisely controlled. This Special Issue aims to highlight state-of-the-art research on the synthesis, characterization, and application of smart polymer hydrogels in various biomedical contexts. We welcome the submission of both original research articles and comprehensive reviews that provide readers with insights into emerging trends, challenges, and future opportunities in this rapidly evolving field.

- Keywords

- smart hydrogels
- stimuli-responsive polymers
- drug delivery systems
- tissue engineering
- regenerative medicine
- biosensors
- biocompatibility
- controlled release
- biomedical materials
- supramolecular hydrogels

Guest Editor

Dr. Yongfeng Gao

1. Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada

2. The Fifth Affiliated Hospital, Guangzhou Medical University, Guangzhou 510700, China

Deadline for manuscript submissions

20 April 2026



Bioengineering

an Open Access Journal
by MDPI

Impact Factor 3.7
CiteScore 5.3
Indexed in PubMed



mdpi.com/si/255985

Bioengineering
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
bioengineering@mdpi.com

[mdpi.com/journal/
bioengineering](https://mdpi.com/journal/bioengineering)





Bioengineering

an Open Access Journal
by MDPI

Impact Factor 3.7
CiteScore 5.3
Indexed in PubMed



[mdpi.com/journal/
bioengineering](https://mdpi.com/journal/bioengineering)



About the Journal

Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Bioengineering* (ISSN 2306-5354). *Bioengineering* is published in open access format – research articles, reviews and other contents are released on the Internet immediately after acceptance. The scientific community and the general public have unlimited and free access to the content as soon as it is published. *Bioengineering* provides an advanced forum for the science and technology of bioengineering. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Anthony Guiseppi-Elie

Department of Biomedical Engineering, Texas A&M University, College Station, TX 77843, USA

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, CAPIus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Engineering, Biomedical) Rapid Publication: manuscripts are peer-reviewed and a first decision is provided to authors approximately 19.2 days after submission; acceptance to publication is undertaken in 3.3 days (median values for papers published in this journal in the first half of 2025).

Recognition of Reviewers:

reviewers who provide timely, thorough peer-review reports receive vouchers entitling them to a discount on the APC of their next publication in any MDPI journal, in appreciation of the work done.