# Special Issue

# Smart Polymer Hydrogels: Design, Properties and Its Applications

## Message from the Guest Editor

This Special Issue "Smart Polymer Hydrogels: Design, Properties, and Applications" aims to provide a comprehensive exploration of the rapidly evolving field of smart polymer hydrogels. These materials, known for their unique ability to respond to external stimuli such as pH, temperature, light, and ionic strength, have garnered significant attention in various scientific and engineering disciplines. This Special Issue seeks to highlight the latest advances in the design and synthesis of these hydrogels, focusing on their responsive behaviors and multifunctional properties. It will also address the characterization methods that are critical for understanding the dynamic response of these materials at the molecular and macroscopic levels. Topics include their use in biomedical fields (such as drug delivery, wound healing, and tissue engineering), environmental applications (e.g., sensors and water purification), and smart packaging systems. The aim is to showcase how these materials bridge the gap between academic research and practical applications, with an emphasis on overcoming challenges in scalability, reproducibility, and long-term performance.

## Guest Editor

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## Deadline for manuscript submissions

closed (20 September 2025)

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### Message from the Editorial Board

*Materials* (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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