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Special Issue Reprint

Smart Polymer Hydrogels: Synthesis, Properties and Applications – Volume I

Edited by: Wei Ji

This Special Issue aims to provide a comprehensive collection of works on recent advances and developments in smart polymer hydrogels applied to the biomedical and nanotechnological fields. The research topic covers all hydrogels, including polymer hydrogels, supramolecular gels, hybrid hydrogels, metallohydrogels, etc.
Stimulus-responsive polymer hydrogels have attracted considerable interest as promising smart materials due to their tremendous potential in biomedical and nanotechnological applications. They can respond to different chemical and physical external stimuli, including pH, temperature, light, enzyme activity, redox agents, the electric or magnetic field, and chemicals. Compared to single stimulus-responsive polymer hydrogels, multiple-responsive hydrogels exhibit higher flexibility and tunability to realize multiplefunctionality in a synergistic manner. The structural and phase transition of polymer hydrogels triggered by external stimuli offers enormous potential for drug delivery, tumor therapy, tissue engineering, and biodevices.

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