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Recent Progress in Hydrogels with Novel Functionality

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Message from the Guest Editors

Dear Colleagues,

Hydrogels, three-dimensional network hydrophilic polymeric materials with physical or chemical crosslinks, have been developed over a century and have diverse applications, such as hygiene products, cosmetics, water purification, pharmaceutics, etc. Hydrogels can adsorb a large amount of water after swelling in aqueous environments through hydrophilic interaction and hydrogen bonding between polymers and water in addition to some dissociated electrolyte groups on the main chain or side groups. Due to the intrinsic structural factors and complex interactions inside the hydrogel, physical properties such as strength, morphology, and shape of a swelled hydrogel are commonly sensitive to the environment and affected by external stimuli.

This Special Issue aims to provide a comprehensive collection of the latest progress in the field of functional hydrogels, including the synthesis, characterization of hydrogels, and their responsivity, structure, swelling, mechanical or other particular properties.