

Special Issue

Physicochemical and Mechanical Properties of Polymer Gels

Message from the Guest Editors

Gels composed of polymer networks and solvents are a unique soft solid with extremely low elastic modulus and large deformability. In recent decades, several novel approaches to toughen gels have been developed including double network gels composed of stiff and soft networks, and dual crosslink gels with covalent and transient crosslinks. Gels are thermodynamically semi-open and thus solvents can flow into and out of the gels, leading to extraordinary stimulus-responsiveness. They can largely change their volume (swell and shrink) in response to a variation in environmental parameters such as temperature, solvent composition, and mechanical strain and stress. The connections between unique mechanical and stimulus-responsiveness result in amazing possibilities of polymer gels for scientific research and industrial applications such as soft actuators. This Special Issue collects the papers reporting the latest findings for physicochemical and mechanical properties of polymer gels. Both original research and comprehensive review papers are welcome.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Gels (ISSN 2310-2861) is recently established international, open access journal on physical and chemical gel-based materials. The journal aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. General topics include but not limited to synthesis, characterization and applications of new organogels, hydrogels and ionic gels made either from low molecular weight compounds or polymers, composite and hybrid materials where a metal is by some means incorporated into the gel network, and computational studies of these materials in order to provide a better understanding of gelation mechanism. We cordially invite you to consider publishing with us and contribute with your own grain of sand to the advance in this fascinating field.

Editor-in-Chief

Prof. Dr. Esmail Jabbari

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