



gels



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Stimuli-Responsive Gels

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Message from the Guest Editor

Stimuli-responsive polymer gels are of particular interest due to their abilities to respond to internal and/or external chemico-physical stimuli; such responses are often large and macroscopic. Aside from the scientific challenges of designing stimuli-responsive polymer gels, the main technological interests concern numerous applications, ranging from catalysis in microsystem technology and chemomechanical actuators to sensors. Since the phase transition phenomenon of hydrogels is theoretically well understood, advanced materials based on predictions can be prepared. Since the volume phase transition of hydrogels is a diffusion-limited process, the size of the synthesized hydrogels is an important factor. Consistent downscaling of the gel size will result in fast smart gels with sufficient response times. To apply smart gels in microsystems and sensors, new preparation techniques for hydrogels have to be developed. For upcoming nanotechnology, nano-sized gels as actuating materials would be of great interest. Finally, new design concepts for tough polymer gels are of interest for overcoming the mechanical shortcomings of conventional gels.

Prof. Dirk Kuckling



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Special Issue



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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.

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