Special Issue

Gel-Based Materials for Intelligent Sensors and Self-Powered Nanogenerators

Message from the Guest Editors

With the recent advances in “gel-type” soft and stretchable electronics, scientists have created innovative devices that can sense “smartly” while functioning as self-powered nanogenerators. “Gel-type” soft polymer composites can integrate a polymeric gel matrix with embedded electrically conducting fillers and exhibit mechanical stretchability and electrical conductivity. This makes them useful for various engineering applications, including wearable technology, soft robotics, smart sensors, and self-powered nanogenerators. The polymer gel matrix provides soft and flexible frameworks. As intelligent sensors, these soft materials can conform to various shapes, respond to mechanical deformation, and enable real-time monitoring. Their application as gel sensors requires the gel-type soft polymer composite to possess various properties, including high sensitivity to mechanical stimuli, flexibility, self-healing, and biocompatibility.

This Special Issue aims to present the latest research, from both academics and industrial professionals, on gel-type soft polymer composite materials.

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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

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