Special Issue

Polymer Gels for the Oil and Gas Industry

Message from the Guest Editors

Polymer gels play a critical role in the oil and gas industry. Taking advantage of their strong interfacial interactions, polymer gels have been applied for lost circulation control during the drilling process, and to block high-permeability layers to improve formation heterogeneity during the development process. The plugging strength can be adjusted by controlling the cross-linking network structure of polymer gels. Gel fracturing fluid is another important application where the polymer gel provides viscosity to support the suspended proppant during the fracturing process; after fracturing, the gel structure could be dissociated quickly to reduce formation damage. Through changes in synthesis conditions and the introduction of specialized monomers, high-temperature-resistant gels and responsive gels, have been synthesized for use in developing various types of oil reservoirs.

Interdisciplinary collaboration is essential for effectively applying these functional polymer gels to different phases of oil and gas production. We welcome submissions of experimental and theoretical studies that explore the potential applications of polymer gel materials in this field.

Guest Editors

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Deadline for manuscript submissions

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About the Journal

Message from the Editorial Board

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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