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Recent Advances in Polymeric Gel for Geo-Energy Recovery

Guest Editor:

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Message from the Guest Editor

Polymeric gels are widely used in the field of geo-energy development, for example, in the process of plugging while drilling in complex oil and gas reservoirs, and the exploitation of conventional oil and gas reservoirs such as profile control and water blocking in old oil fields with excessive water production. Other examples are the in-depth conformance control and flooding of low-permeability oil reservoirs, the diversion and acidification of tight oil reservoirs and re-fracturing, the high-efficiency water circulation of geothermal resources, and leakage remediation in the CCUS process. Polymer gels generally include in situ cross-linked polymer gels, in situ free radical polymerization gels, particle gels, foam gels, temperature-responsive, or pH-responsive gels. The properties of different polymer gels are not the same, resulting in different evaluation methods, action mechanisms, and application scopes. In addition, with the rapid development of big data and artificial intelligence technology, polymer gel screening, indoor evaluation, and mine application are becoming more and more intelligent.

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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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