



Gels

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Special Issue Reprint

Applications of Gels for Enhanced Oil Recovery

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This Reprint, "Applications of Gels for Enhanced Oil Recovery," focuses on the latest advancements in utilizing gel technology to improve oil recovery. As reservoir heterogeneity intensifies, particularly in fractured reservoirs, the displacing phase tends to channel through high-permeability pathways, reducing sweep efficiency. Gel conformance control technology serves as an effective countermeasure by sealing these channels and diverting subsequent fluids into unswept micropores and throats, thereby significantly enhancing crude oil production. The studies compiled in this volume address key topics such as the development of novel gel systems resistant to high temperatures and salinity, the percolation behavior of gels in porous media, and the application of nanomaterials to enhance gel properties. These theoretical and experimental investigations provide innovative solutions and profound insights into addressing the challenges posed by the current harsh reservoir conditions.

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