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Polymer Thermal Degradation: Numerical Simulation and Upscaling for Field Scale Reservoir Applications

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Thermal degradation is a key element that determines the success of polymer projects. The published work conducted on commercial polymers such as HPAM has suggested the infeasibility of polymers used in harsh reservoir environments. Nonetheless, with recent advances in polymer technology interest in numerical simulation evaluation on field-scale harsh reservoir environments has revived. In this project, we aim to study the impact of thermal degradation, hydrolysis reaction, and salinity simultaneously on polymer flood performance in a full field scale heterogeneous and harsh reservoir environment. A set of sensitivities on operating parameters will set the strategy to minimize the impact of degradation of polymer flood performance. To reduce the computation time of full-field scale numerical simulation a workflow and method to upscale the polymer degradation model will be established to facilitate an efficient simulation computing time.

Participation

In-Person

References

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Energy Transition Focused Abstracts

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