

Special Issue on  
**Advancements in CO<sub>2</sub>-based-EOR and geo-sequestration applied in unconventional oil reservoirs**

# CALL FOR PAPERS

Unconventional oil resources mainly include tight, shale, and heavy oil. Nowadays, these kinds of resources are increasingly at the forefront of academic and industry attention, due to the depletion of conventional oil resources. Among different enhanced oil recovery (EOR) methods, CO<sub>2</sub>-based techniques are particularly effective. This effective arises from the ability of injected CO<sub>2</sub> to maintain reservoir pressure, reduce oil viscosity, expand oil volume, etc. Moreover, part of the employed CO<sub>2</sub> can be sequestered within the abundant oil reservoirs, contributing to climate mitigation efforts.

The mechanisms and operation parameters associated with CO<sub>2</sub> utilization and sequestration (CUS) in unconventional oil reservoirs vary from those in conventional oil reservoirs. As a result, there is an imperative need to develop novel experiment methods, advanced mathematical models, and innovative numerical simulation approaches to create a comprehensive theoretical framework for CUS technology.

We are launching this Special Issue to address the unique challenges and capitalize on the opportunities presented by CUS in unconventional oil reservoirs. Our primary focus centers around advancements in CO<sub>2</sub>-based EOR methods and CO<sub>2</sub> geo-sequestration applied in unconventional oil reservoirs. We aim to forge a path for new experimental and numerical simulation methodologies, facilitate interdisciplinary collaboration, and highlight the latest findings in this dynamic research domain. We welcome the submission of both original research papers and comprehensive review articles.

Potential topics include but are not limited to the following:

- ▶ CO<sub>2</sub>-based oil recovery techniques
- ▶ CO<sub>2</sub> fracturing in tight formation
- ▶ Pre-fracture CO<sub>2</sub>-EOR strategies for tight heavy oil reservoir
- ▶ CO<sub>2</sub> sequestration in unconventional oil reservoir
- ▶ Reservoir numerical simulations in unconventional reservoirs
- ▶ Intelligent optimization methods for operational parameters
- ▶ Pore-scale study of CO<sub>2</sub>-EOR and CUS in unconventional oil reservoir
- ▶ Mathematical modelling of CUS in unconventional oil reservoir
- ▶ CO<sub>2</sub>-formation water-rock interaction in high temperature and high pressure
- ▶ Lightening process applied in shale oil

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=196848>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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