CO2 Hydrate Kinetics for CO2 Storage in Depleted Gas Reservoirs through Microfluidic Experiments

Peyman Dehghani*[1], Anne Sinquin , Nicolas Gland* , and Anh Minh Tang

[1]IFP Energies nouvelles – SINQUIN Anne – France

Résumé

Carbon dioxide (CO2) storage in depleted oil and gas reservoirs offers a promising approach for addressing greenhouse gas emissions and mitigating climate change. Depleted oil and gas reservoirs, along with deep saline aquifers and coal seams, can be used for CO2 storage. These structures possess distinct properties and demand diverse injection strategies to ensure efficient CO2 storage. The success of geological storage of carbon dioxide (CO2) in depleted reservoirs depends on various factors, including the efficiency of CO2 injection, particularly in the near-wellbore region where flow rates are high. In this area, static effects, and dynamic effects such as Joule-Thomson can lead to the formation of CO2 hydrates. Hydrate formation can significantly reduce injectivity and impair well operations on-site.

*Intervenant