



Study of Multiphase Flow and Its Application in Petroleum Engineering

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Message from the Guest Editor

In the production of an oil or gas well, multiphase flow may occur under several operational circumstances. To enable appropriate engineering design, oil and gas professionals must precisely comprehend and forecast the physics of multiphase flow patterns. Multiphase flow data are related to important processes, including the movement of proppant in the fracture and drilling fluid in the wellbore. The internal corrosion rate is further influenced by multiphase flow due to the diverse hydrodynamics and associated turbulence, and is notably different to that of single-phase flow. Additionally, multiphase flow must consider how the fluid phase condition changes under various pressure and temperature conditions. Despite recent advances in the creation of mathematical models to analyze the behaviors of multiphase flows, no correlations or mechanistic models have been thoroughly validated against field data.

This Special Issue focuses on recent developments in multiphase flow research in petroleum science and engineering, including multiphase flow issues in drilling, stimulation, and reservoir simulation.





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