عنوان مقاله:

Gas-liquid Relative Permeability Estimation in 2D Porous Media by Lattice Boltzmann Method: Low Viscosity Ratio 2D LBM Relative Permeability

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خلاصه مقاله:

This work is a primary achievement in studying the CO_2 and N_2–oil systems. To predict gas-liquidrelative permeability curves, a Shan-Chen type multicomponent multiphase lattice Boltzmann modelfor two-phase flow through 2D porous media is developed. Periodic and bounce back boundaryconditions are applied to the model with the Guo scheme for the external body force (i.e., thepressure gradient). The influence of relationship between cohesion and adsorption parameters andthe interfacial tension values in Young s equation, pore structure (micro scan image derived porousmedia response is compared with corresponding porosity and permeability ideal sphere packstructure), and saturation distribution on relative permeability curves are studied with the aim toachieve the realistic stable condition for the simulation of gas-liquid systems with a low viscosityratio.

کلمات کلیدی:

Relative Permeability, Lattice Boltzmann Model, Guo Scheme, Micro Scan Image, Gas Liquid System

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https://civilica.com/doc/835319