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Effect of Capillary Pressure on Three-Phase Equilibria in a Confined Pore Space

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Highlights

- We propose a new three-phase flash algorithm considering capillarity in nanopores
- Large capillary pressure can noticeably alter three-phase boundary
- Oil-wet nanopore shifts three-phase boundary to a larger extent than water-wet one

Abstract

Tight/shale reservoirs are extensively containing nanopores, and the confined space in nanopores can greatly alter the phase behavior of reservoir fluids due to the strong capillarity effect. Many researches have been recently conducted to investigate the effect of capillary pressure in nanopores on altering the oleic-vapor two-phase equilibria. Few attempts have been made to describe the effect of capillarity on the aqueous-oleic-vapor three-phase equilibria. This work

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