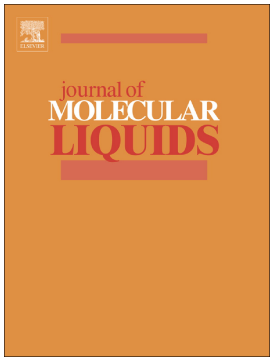

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Application of a Water Based Nanofluid for Wettability Alteration of Sandstone Reservoir Rocks to Preferentially Gas Wetting Condition

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Abstract

Condensate and water banking around gas condensate wells result in vital well deliverability issues. Wettability alteration of near wellbore region to gas wetting condition is known to be the most novel and the only permanent method, to improve condensate well productivity. In this work, a water based nanofluid is used to change the wettability of sandstone reservoir rocks from strongly liquid wetting to intermediate gas wetting condition. Static contact angle measurements demonstrated significant increase of liquid phase contact angle as a result of chemical treatment with SurfaPore M nanofluid. The characteristics of SurfaPore M adsorption on sandstone rock are