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Farhadzadeh, M.; M. Nick, H.

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M. Farhadzadeh[1], and H.M. Nick[1]

[1]Danish Hydrocarbon Research and Technology Centre, Denmark;

M. Farhadzadeh

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At the pore-level two-phase modeling, solid and liquids are clearly separated and two immiscible fluids (brine/oil) share the pore-space and flow. Here, a solver has been implemented to simulate two-phase flow, ions transport, ions adsorption on the chalk surface and dynamic wettability. This provides a framework of pore-level modeling to study flow behavior during immiscible displacement influenced by brine chemistry. In addition, the SEM image of chalk is used to mimic chalk pore-space geometry closely.

Keywords: Numerical simulator, EOR