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Alkyl Polyglucosides stabilized foam for gas controlling in high-temperature and high-salinity environments

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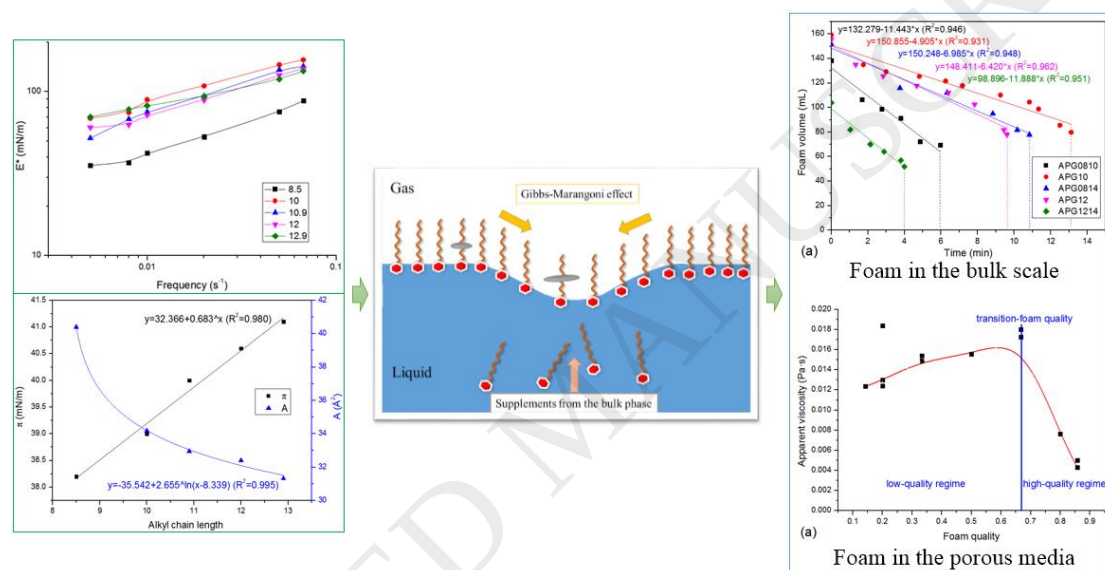
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Graphical abstract



ABSTRACT

APG can be employed as a promising foaming agent due to its largely independent of temperature and salinity. Aiming at the APGs foam, we conducted the experiments about adsorption behaviors, surface viscoelasticity, bulk foam properties and core flooding under conditions of high-temperature and -salinity. Our results demonstrated that APG ($n=10$) foam presents a good foam performance and foam properties is highly depended on the surface viscoelasticity and is not completely determined by the adsorbing capacity at the interface of gas-water. In the porous media, an appropriate foam quality of APG foam is contribute to increase the foam strength and gas trapping.

Keywords: APG, foam properties, surfactant adsorption, surface viscoelasticity, foam apparent viscosity, high-temperature and -salinity

Introduction

Chemical flooding has been widely considered as a feasible & effective EOR (enhanced oil recovery) method yielding high recovery rates in many oilfields. While for some reservoirs, characterized by high-temperature, high-salinity, tight, fracture, severe heterogeneity and high oil

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