

عنوان مقاله:

Measurement and Prediction of Time-independent and Time-dependent Rheological Behavior of Waxy Crude Oil

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خلاصه مقاله:

phenomenon changes the rheological behavior of waxy crude oil completely. In the current work, the rheological time-dependent and time-independent behaviors of waxy crude oil samples are studied and flow curve and compliance function are measured for the oil samples with various wax contents at different temperatures. A decrease in temperature and an increase in wax content lead to an increase in the viscosity and yield stress but a significant drop in compliance function. A modified Burger model is developed to predict the behavior of the compliance function and a modified Casson model is used to predict the flow curve of the waxy crude oil samples within a vast range of wax contents and temperatures. The proposed Burger and Casson models match with experimental results with R2 of .99.7% and 97.33% respectively

کلمات کلیدی:

Viscoelastic Properties, Rheological Model, Flow Curve

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