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Type: **Poster (+) Presentation**

Development of a simple-to-use and novel correlation to predict apparent viscosity of waxy crude oils mixed with polymeric additives

Thursday, 3 June 2021 20:00 (1 hour)

Although several investigations on the waxy crude oils have been conducted, there are no adequate research studies on the prediction of the apparent viscosity of waxy crude oils mixed with polymeric inhibitors. In this study, multi-gene genetic programming (MGGP) as a powerful intelligent model is used to develop an accurate and efficient mathematical model to relate process input parameters to the output for predicting the apparent viscosity of waxy crude oils doped with polymers. The new proposed mathematical model is evaluated by a large collected data set from the published literature. The total collected datapoints are randomly divided into three subcategories; 70% for training, 20% for testing, and 10% for validation stages. The high accuracy and reliability of the new proposed model to predict the apparent viscosity is confirmed by the calculated statistical parameters. The values of R-squared for training, testing, and validation steps are 0.98819, 0.96491, and 0.98501, respectively. The statistical assessments show the high accuracy and reliability of the developed model. The new proposed mathematical model can be used to predict the apparent viscosity of waxy crude oils doped with polymeric additives with high accuracy without requiring expensive and time-consuming experimental investigations.

Time Block Preference

Time Block C (18:00-21:00 CET)

References

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