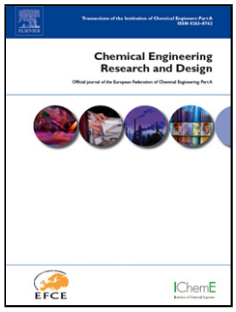

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Prediction of surface tension of liquid normal alkanes, 1-alkenes and cycloalkane using neural network

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Highlight

- Surface tension of hydrocarbons was accurately correlated by neural network.
- 91 hydrocarbons including alkane, alkene and cycloalkane were considered.
- The network was trained by the Levenberg‑Marquardt algorithm.
- The main advantage of the proposed network is its low number of input variables.
- Temperature, carbon number and critical temperature of components were inputs."

Abstract

In the light of artificial neural network (ANN) model advantages, a predictive ANN model is proposed to correlate the surface tension of common hydrocarbons including normal alkanes (i.e. n-C_4 to n-C_{40}), linear alkenes (i.e. 1-C_4 to 1-C_{40}), and cycloalkanes (C_4 to C_{20}) in a wide range of temperatures. The most important advantage of the current proposed network is its