

## Accepted Manuscript

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Authors: Mostafa Lashkarbolooki, Mahdi Bayat

PII: S0263-8762(18)30360-5  
DOI: <https://doi.org/10.1016/j.cherd.2018.07.021>  
Reference: CHERD 3275

To appear in:

Received date: 27-1-2018  
Revised date: 11-7-2018  
Accepted date: 14-7-2018

Please cite this article as: Lashkarbolooki, Mostafa, Bayat, Mahdi, Prediction of surface tension of liquid normal alkanes, 1-alkenes and cycloalkane using neural network. Chemical Engineering Research and Design <https://doi.org/10.1016/j.cherd.2018.07.021>

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

Mostafa Lashkarbolooki <sup>a\*</sup>, Mahdi Bayat <sup>b</sup>

<sup>a</sup> School of Chemical Engineering, Babol Noshirvani University of Technology, Babol, Iran

<sup>b</sup> Department of Chemical Engineering, Faculty of Engineering, University of Bojnord, Bojnord, Iran

\* Corresponding author, E-mail: m.lashkarbolooki@nit.ac.ir, Tel/Fax.: +98 1132334204

\* Corresponding author, E-mail: m.lashkarbolooki@nit.ac.ir, Tel/Fax.: +98 1132334204

## 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<sub>4</sub> to n-C<sub>40</sub>), linear alkenes (i.e. 1-C<sub>4</sub> to 1-C<sub>40</sub>), and cycloalkanes (C<sub>4</sub> to C<sub>20</sub>) in a wide range of temperatures. The most important advantage of the current proposed network is its

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