

Accepted Manuscript

Modeling thermal conductivity in refrigerants through neural networks

Pierantozzi Mariano, Petrucci Giulio

PII: S0378-3812(17)30511-3

DOI: [10.1016/j.fluid.2017.12.027](https://doi.org/10.1016/j.fluid.2017.12.027)

Reference: FLUID 11700

To appear in: *Fluid Phase Equilibria*

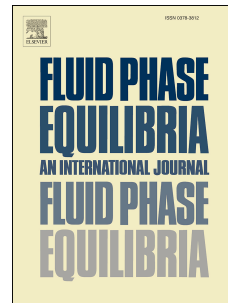
Received Date: 17 October 2017

Revised Date: 17 December 2017

Accepted Date: 22 December 2017

Please cite this article as: P. Mariano, P. Giulio, Modeling thermal conductivity in refrigerants through neural networks, *Fluid Phase Equilibria* (2018), doi: 10.1016/j.fluid.2017.12.027.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Modeling thermal conductivity in refrigerants through Neural Networks

Pierantozzi Mariano^{1*}, Petrucci Giulio^{2,3}

¹ Scuola di Architettura e Design, Università di Camerino, 63100 Ascoli Piceno (Italy)

² FBK, 38123, Trento, Italy

³ University of Trento, 38123, Trento, Italy

* Corresponding author. Email: mariano.pierantozzi@unicam.it

ABSTRACT.

The thermal conductivity value for a material measures its attitude to transfer heat, though, not many values coming from experimental measurements of the thermal conductivity of different materials are available to the scientific community, which needs accurate model to predict such value from other observations. In this work, we trained and evaluated a Multi-Layered Perceptron architecture for a regression task in which the thermal conductivity for a set of families of refrigerants at the liquid state is predicted from their acentric factor, critical pressure, reduced temperature, and dipole moment, at atmospheric pressure condition. Such model has been proven capable to capture deep regularities over the whole data set and also across different

Download English Version:

<https://daneshyari.com/en/article/6619289>

Download Persian Version:

<https://daneshyari.com/article/6619289>

[Daneshyari.com](https://daneshyari.com)