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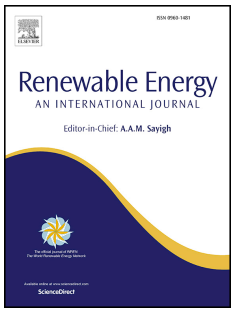

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Nilva R. Uliana, Louise A. Kuhl, Marintho B. Quadri, J. Vladimir Oliveira

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Model and simulation of a packed resin column for biodiesel purification

Nilva R. Uliana[a], Louise A. Kuhl[a], Marintho B. Quadri[a,*], J. Vladimir Oliveira[a,b]

[a]*Department of Chemical and Food Engineering, UFSC, Florianópolis, SC, Brazil.*

[b]*Transfertech Innovation Ltda, Erechim, RS, 99700, Brazil.*

Abstract

This study aims to develop a multiphysics model using the finite element method for the simulation of a packed column. This column was filled with ion exchange resins SP112H and GF101, performing purification for the dry washing process mainly to reduce the free fatty acid content (FFA), monoacylglycerol (MAG), diacylglycerol (DAG), and triacylglycerol (TAG) biodiesel samples. Results obtained from simulations were compared to the experimental results for acidity, MAG, DAG and TAG. It was found that the simulation results represented with reasonable agreement the experimental.

Keywords: Biodiesel purification; simulation; dry washing; ion-exchange resins; packed column.

1. Introdution

In the biodiesel production process, different types of catalysts are used; for example, alkali catalysts, acidic catalysts and enzymatic catalysts [1-4]. Considering

* Corresponding author. Tel.: +55 48 37212530; Fax: +55 48 37219687.
E-mail address: mbq1959@hotmail.com (M.B. Quadri).