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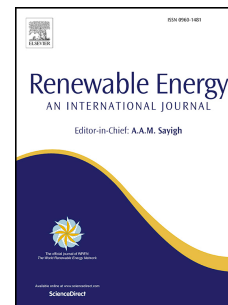
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# 1 Model and simulation of a packed resin column for biodiesel purification

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## 7 Abstract

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

17

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

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## 21 1. Introduction

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

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