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Identification of Pyrolytic Oil Products by GC-MS Collected via Sodium Chloride (NaCl) Saturated Solution Extract

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Abstract

In this study, the residual oil absorbed on spent bleaching clay (SBC) was pyrolyzed using tubular furnace to give pyrolytic oil also known as bio-oil which can be used as a chemical feedstock and others alternative fuel. A total oil adsorbed in SBC is 26.6 wt % which in agreement to total oil content in range of 17-35 %. Pyrolytic oil (bio-oil) gives aliphatic hydrocarbon range from C₁₆-C₄₄ via NaCl saturated solution extract. Carboxylic acids and alkanes were the major classes of products obtained. In addition, the presence of monoaromatic compounds, alkenes, alcohols, ketones, aldehydes, esters, nitrogenated compounds, and PAHs was also observed. The bio-oil products analyzed by GC-MS shows a good potential to be used as renewable fuels and chemicals. The pyrolysis of triglyceride materials to produce liquid hydrocarbon mixtures represents a process that has the potential to meet this need.

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1. Introduction

Pyrolysis is a severe form of thermal cracking with consequent rearrangement of fragments [1]. The resulting bio-oil can then be used as fuel or for the production of chemicals and other bio-based products. It is well known that triglyceride based vegetable oils or animal fats have the potential to be a suitable source of fuel or hydrocarbons under the right processing conditions. Today, pyrolysis is generally used to describe processes in which preferred products

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