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Potassium carbonate from pineapple and orange peels as catalyst for biodiesel production (Conference Paper)

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Abstract

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Scarcity in fuel from fossil fuel has led to exploration of potential substitutes from renewable sources. Biodiesel as one of renewable energy sources is identified as cleaner alternative to petroleum fuel. This paper reports on the study of potassium carbonate , K_2CO_3 sourced from pineapple and orange peels as heterogeneous catalyst for biodiesel production . K_2CO_3 was produced by drying of fruit peel prior to calcination at temperature ranged from 700°C to 1000°C for 2 to 4 hours. To determine the physicochemical properties of the resulting ash, Fourier transform infrared (FTIR) and Scanning electron microscopy (SEM) analysis were employed for the characterization of the solid. Through FTIR analysis, the presence of carbonate was confirmed while SEM analysis revealed the morphological properties of the catalyst . Biodiesel with highest yield of 95.6% was produced at 60°C, 2.75 wt% of catalyst and 12:1 molar ratio of methanol to oil. © 2018 Author(s).

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