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Development of CaO / PVA catalyst from fish bone for biodiesel production (Article) [Open Access](#)

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Abstract

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In this study, calcium oxide were synthesized from fish bone waste and the optimum condition: catalyst amount, reactor temperature, and methanol to oil ratio (molar) for biodiesel production were studied. The calcium oxide (CaO) derived from fish bone wastes was then supported on polyvinyl alcohol (PVA) to easily separate the catalyst and biodiesel. Fish bone were dried in oven at 70 °C for 24 h before calcination process at 900 °C for 4 h. The biodiesel yield was studied by varying three parameters, namely methanol to oil ratio (molar) (6:1 - 20:1), amount of catalyst (1-10 wt%) and temperature (55-65 oC). The highest fatty acid methyl ester (FAME) yield obtained from this study was at 80.40 % with catalyst amount of 10 wt%, methanol to oil ratio (molar) of 20:1, and temperature of 65 oC. Copyright © 2019 BCREC Group. All rights reserved

SciVal Topic Prominence

Topic: Biodiesel | Transesterification | oil molar

Prominence percentile: 99.884 

Reaxys Database Information

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Author keywords

[Biodiesel](#)
[Calcination](#)
[Calcium Oxide](#)
[Fish Bone](#)
[PVA](#)
[Transesterification](#)

Indexed keywords

Engineering controlled terms:

[Biodiesel](#)
[Bone](#)
[Calcination](#)
[Catalysts](#)
[Fatty acids](#)
[Fish](#)
[Lime](#)
[Methanol](#)

[Molar ratio](#)
[Transesterification](#)

Engineering uncontrolled terms

[Biodiesel production](#)
[Fatty acid methyl ester](#)
[Fish bones](#)
[Oil ratio](#)
[Optimum conditions](#)

[Poly \(vinyl alcohol\) \(PVA\)](#)
[Reactor temperatures](#)
[Three parameters](#)

Engineering main heading:

[Synthetic fuels](#)

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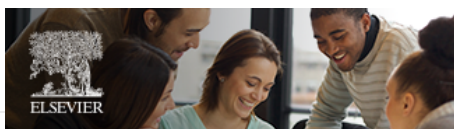
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