

Development of CaO/PVA Catalyst from Fish Bone for Biodiesel Production

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Abstract

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 degrees C for 24 h before calcination process at 900 degrees 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 degrees C). 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 degrees C. Copyright (c) 2019 BCREC Group. All rights reserved

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