Method of Producing Biodiesel from Cheaper Priced Feedstock

TECHNOLOGY DESCRIPTION

This technology focuses on biodiesel production from cheaper priced feedstock via heterogeneous catalytic reaction.

TECHNOLOGY FEATURES

The heterogeneous catalytic system was designed to replace conventional homogeneous catalyst for simple mass biodiesel production at lower production cost. 90 % of biodiesel can be obtained with high catalyst reusability as compared to other catalysts in the market. High flexibility of the catalyst towards the biodiesel feedstock leads to lower feedstock's requirement compared to conventional catalyst for higher purity biodiesel production.

ADVANTAGES

- Lower production cost
- Simple reaction pathway

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INDUSTRY OVERVIEW

Prospect : Biodiesel manufacturers, Petrochemical manufacturers

The National Biofuel Policy (2006) was the Malaysian government's initiative to use environmental friendly and sustainable energy sources to reduce dependency on fossil fuels and to stabilize and boost palm oil prices. Under this plan, biofuels were to be produced for transport, industry, and export. The average national blend of biodiesel in Malaysia's transport diesel pool has steadily increased since 2011. From 1.3% in 2011 (where biofuel was only available in the central region of Negeri Sembilan and Selangor states), consumption of biodiesel increased to 2.0% in 2012 when it was available in the Southern region of Malacca and Johore states. After the implementation of B5 program in 2014, it increased to 5% (nationwide implementation). In 2015 B5 was introduced which increase the national blend rate to 7%. In the year 2016, Malaysia's national blend rate is at 7.0% with consumption of 530 million liters. Biodiesel are used in the transportation as well as industrial sectors mainly as source of material to heat boilers and generate electricity. Combination of biodiesel utilization in transportation and industrial sectors is forecasted to increase the average blend rate at 10% with consumption forecasted at 770 million liters in the year 2017. The international market for biodiesel is bright and promising. Exports of biodiesel in 2015 increased to 195 million liters from 95 million liters in 2014. In 2015, Malaysia exported to various countries such as 65 % of biodiesel to Spain, 19% to the Netherlands and 11% to Switzerland. The global biodiesel market is projected to reach a total worth of $41.18 billion (€38.45bn) by 2021, growing at a compound annual growth rate of 3.8%. The largest market for biodiesel is estimated to be Europe where Germany is expected to hold the largest share in Europe until 2021, while Italy is growing rapidly. In North America the US dominates the market, with major producers of biodiesel such as Archer Daniels Midland Co., Bunge, Renewable Energy Group, Cargill, and TerraVia Holdings.