

Low Energy Method for Producing Biodiesel

Background

Conventional biodiesel production requires high energy consumption and not only involves a longer reaction time, but also multiple tanks to allow for glycerine to settle and be stored. There is a need for more energy efficient methods of production, especially in the enhancement of the chemical reaction rate and reduction of the settling time needed.

Our Technology

Our technology utilizes a low energy air bubbling process – where air bubbles surround the oil molecules – which not only enables a preferential reaction, but also prevents competition for the base catalyst. This leads to an enhanced rate of biodiesel formation, thereby aiding in the separation of biodiesel from glycerin and gives rise to a higher throughput in biodiesel yield.

Our technology involves a base catalyst and alcohol mixture at a regulated flow rate to the oil source. As compared to the conventional method, our tested technology has the following advantages:

- 1) Less than 1/3 the Power Requirement,
- 2) Less than 1/2 the footprint,
- 3) Less than 1/8 the conventional investment cost, and
- 4) Faster production to bottling time.



Fig 1: Biodiesel Production Lab scale prototype

Market Trends & Opportunities

- Conventional processes are not only associated with longer reaction completion time but also requires additional space to house settling tanks for glycerin to settle overnight. The existing market needs a low cost and high efficiency process that can speed up the production process of biodiesel.
- Market Publishers Ltd: Global biofuel market will reach US139.6 billion by 2016 with a CAGR of 16%.

Benefits

- ✓ Reduced reaction time
- ✓ Reduced settling time
- ✓ Improved batch production time (by more than 50%)
- ✓ Reduced energy consumption
- ✓ Higher profits

Potential Application

- Biodiesel processors

Intellectual Property

- Patent-Pending

Commercialisation Opportunities

- ✓ Ready for commercialisation
- ✓ Available for licensing
- ✓ Accepting business plans from interested parties

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