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(57) Abstract :

The present invention relates to an apparatus (100) and a method (300) for apparatus for producing biodiesel fuel. The apparatus (100) comprises a reactor tank (101) adapted for holding a predetermined quantity of a mixture therein. The mixture includes a predetermined quantity of crude palm oil, a predetermined concentration of catalyst and a predetermined percentage of alcohol to the crude palm oil crude palm oil therein. Also, the apparatus (100) includes a microcontroller (102), an electromechanical stirrer (106), a solenoid valve (109). The solenoid valve (109) is configured for removal of a by-product glycerol from the reactor tank (101) such that the biodiesel fuel is leftover in the reactor tank (101). Further, at least one heating coil (105b) of a pair of heating coils (105a), (105b) is configured for heating the biodiesel fuel such that the biodiesel fuel is removed through the solenoid valve (109) after heating. < To be published with Figure 2>

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Patent Search

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Abstract:

The present invention relates to an apparatus (100) and a method (300) for apparatus for producing biodiesel fuel. The apparatus (100) comprises a reactor tank (101) holding a predetermined quantity of a mixture therein. The mixture includes a predetermined quantity of crude palm oil, a predetermined concentration of catalyst and a predetermined percentage of alcohol to the crude palm oil crude palm oil therein. Also, the apparatus (100) includes a microcontroller (102), an electromechanical stirrer (solenoid valve (109). The solenoid valve (109) is configured for removal of a by-product glycerol from the reactor tank (101) such that the biodiesel fuel is leftover in the reactor tank (101). Further, at least one heating coil (105b) of a pair of heating coils (105a), (105b) is configured for heating the biodiesel fuel such that the biodiesel fuel is removed through the solenoid valve (109) after heating. < To be published with Figure 2>

Complete Specification

Claims:We Claim:

1. An apparatus (100) for producing biodiesel fuel, the apparatus (100) comprising:
a reactor tank (101) adapted for holding a predetermined quantity of a mixture therein, the mixture including a predetermined quantity of crude palm oil, a predetermined concentration of catalyst and a predetermined percentage of alcohol to the crude palm oil crude palm oil therein;
a microcontroller (102) programmed for generating signals for controlling production of the biodiesel fuel;
an electro mechanical stirrer (106) configured for stirring the mixture based on one or more signals from the micro controller (102);
a solenoid valve (109) configured for removal of a by-product glycerol from the reactor tank (101) after at least two layers comprising the biodiesel fuel and the by product glycerol is formed in the reactor tank (101);
a water sprayer (107a) for spraying a predetermined quantity of water to the biodiesel fuel;
at least one heating coil (105b) of a pair of heating coils (105a), (105b) for heating the biodiesel fuel such that the biodiesel fuel is removed through the solenoid valve (109) after heating.
2. The apparatus (100) as claimed in claim 1, wherein the crude palm oil comprises free fatty acids (FFAs) in a predetermined quantity.
3. The apparatus (100) as claimed in claim 1, wherein the catalyst concentration is 0.75% of a mixture comprising of the crude palm oil, the catalyst and alcohol.
4. The apparatus (100) as claimed in claim 1 or 3, wherein the mixture comprises alcohol-oil molar proportion at 1:6.
5. The apparatus (100) as claimed in claim 1 wherein the microcontroller (102) is an Arduino Mega 2560 microcontroller based on an ATmega2560 datasheet

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