

ABSTRACT

Nowadays, oil fuel is one of the most important human needs. Vehicle such as car, motorcycle or industrial components require oil fuel to work. In Indonesia the demand of oil consumption has increased following the increase of vehicles number.

The need of fuel is inevitable, because most of the fuel in Indonesia still use fossil fuel, the unrenewable resource. In 1998, the production of crude oil has already diminished, from 2003 the oil consumption is higher than the production level. Indonesia is no longer the exporting oil country.

One of the alternatives to solve this problem is using fuel from fat, especially diesel engine. Biodiesel is fuel that is made from vegetable oil, animal fat, or used cooking oil. Biodiesel in Indonesia can be developed from coconut or palm oil. Both plants grow well in the wet tropical country like Indonesia. Biodiesel production in Indonesia itself still faces many obstacles. Indonesia still doesn't have big industry that produced biodiesel for mass application. Despite great potential of using coconut and palm for biodiesel, small industry for making biodiesel has not yet well developed.

This research will explain the most common method in making biodiesel, called batch process method. This process will be visualised at Human Machine Interface (HMI) that could show every process movements and its information in real time ways. In comprised with another method such as supercritical process, microwave method, lipase-catalyzed, etc, batch process method uses simple technology and tools, so that with this research, community have another alternative to learn how to make biodiesel

Keywords: oil fuel, diesel, biodiesel, HMI (Human Machine Interface), batch process method