

ABSTRACT

Biodiesel-20 (B20) is a blend of 20% biodiesel, which is an alternative of fossil diesel that can be produced from waste oil and unwanted fat through transesterification, with 80% fossil diesel.

Biodiesel has numerous advantages over fossil diesel in conserving our environment and sustaining the development of society:

1. It is more environmentally friendly as it produces less acidic emissions while the extent of combustion is about the same.
2. ~~Waste oil and unwanted fat are recycled. Burden on sewage treatment and landfill will be alleviated.~~

However, pure biodiesel produces rather high content of nitrogen oxides, which accounts for acid rain. In contrast, B20 has several advantages over pure biodiesel:

1. It is more environmentally friendly as it produces less acidic emissions while the extent of combustion is about the same
2. It experiences fewer performance problems.

In our project, we investigate the following.

1. Production of biodiesel from waste vegetable oil and unwanted animal fat.
2. Preparation of a cleaner fuel B20 with less NO_x emissions.
3. Comparison of the properties of different kinds and blends of biodiesel.
4. Comparison of the extent of combustion and the amount of acidic emissions produced among B20, pure biodiesel (B100) and fossil diesel.