

PYROLYSIS OF OIL PALM EMPTY FRUIT BUNCH



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ABSTRACT

PYROLYSIS OF OIL PALM EMPTY FRUIT BUNCH

Pyrolysis was discovered as a new technology to dispose solid waste with valuable yield. The main product that produced from pyrolysis process is char and pyrolytic oil. Pyrolysis process is almost the same with incineration process which is the most popular technology to dispose solid waste. The only different between them is pyrolysis process does not consume oxygen or consume oxygen gas too little compare with incineration process which need enough oxygen gas in order to incinerate all the solid waste. In this research, the sample biomass that used is oil palm empty fruit bunch. This sample was used to characterize the raw and char sample produced by using proximate and ultimate analysis. The chemical compound presence in the pyrolytic oil also had been identified by using GCMS. Actually, there are many factors that contribute in the distribution of pyrolytic oil and char produced in pyrolysis process such as temperature of the pyrolysis reactor, the solid residence time, particle size of biomass sample and the gas flow rate utilized. This research only study about the effect of pyrolysis reactor temperature in the production of pyrolytic oil and char sample. From the result obtained, it was proved that the temperature of the pyrolysis reactor playing an important role in distribution of product yield. The percentage of product yield was different in different temperature of pyrolysis reactor. The higher the temperature of pyrolysis reactor, the higher pyrolytic oil produced, the lower char produced and vice versa.

CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Nowadays, the source of world energy is totally depending on the fossil fuel but the decreasing of this source of energy fear the people who live in the country that totally depend on this source of energy. If the shortage of this source of energy is occur, the price of everything that depend on this source of energy will increase tremendously and burden the people who live in the country that the energy is totally depend on the fossil fuel. The need of energy is increasing sharply due to the tremendous increase in the world population and developing technologies while the current energy resources that are from fossil fuel are decreasing. The scientists all over the world are trying hard to find out the new source of energy to replace source of energy that come from fossil fuel.