

Energy Production from Biomass By means of Pyrolysis Process

Generally all over the world, energy sector plays a vital role in the development and implementation of technologies in each country. The present energies are based on the fossil resources and it reaches to peak in daily role. The fossil energy sources are based on petroleum, natural gas and coal. Utilization of fossil resources for the energy production induces harmful effects that leads to the global warming. For the forthcoming year, the energy sector will face complication due the fuel scarcity. To reduce these problems, researchers are revealing their research in the field of alternative fuels. In the alternative fuels, biomass places a major role in reducing the scarcity of fuels.

Biomass is said to be organic materials which is found energy from the sunlight. Solar energy is used to convert water and carbon dioxide to form starch and also oxygen cycle. The energy from biomass plays a significant role for the local energy demand. It is the primary source of energy for the people in developing countries and it is easily available for world's poor for cooking and space heating in reasonable price. The energy obtained from the biomass as direct burning along the human ages. It is an exothermic process for the heat generation. The heat is induced due to the oxidation process. Biomass is converted into bio-gas, bio-ethanol, bio-diesel and bio-char.

Bio fuels can be subdivided into three generation with respect to feedstock. They are first generation from food crops, second generation from non food and lignocelluloses biomass and third generation from algal biomass. The extraction method of secondary fuel from primary fuel is classified at different ways. Primary and Secondary fuel can be analyzed with reference to standard reference by using

different methods for characterization of fuels. In comparison of biomass material as fuel with coal has the higher oxygen and hydrogen.

Methodology:

- Find the correct biomass for the pyrolysis process by knowing the percentage of cellulose, hemicelluloses and lignin content
- Addition of plastic or tyre with biomass for the improvement of oil if necessary
- End product such as Char, Oil and gas is characterized and detailed analysis of end use.

Expected Result

Oxygen content in biomass bio oil is high. By using some techniques oxygen can be reduced. Char can used as catalyst in water treatment process. Gas efficiency is calculated for the performance of gas turbines or gas engines.