BIO OIL PLANT OF RICE STRAW BY FAST PYROLYSIS PROCESS DYNAMOTIVE TECHNOLOGIE

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Abstract

Bio oil is a dark-colored liquid fuel smells like smoke and can be produced from biomass as raw materials that contain cellulose. Bio oil was used for substitute diesel, because it has characteristics resembling diesel as fuel. The bio-oil plant from rice straw which used fast pyrolysis process has capacity 14,000 ton / year. The location of the plant were selected based on the availability of raw materials, the water resources and the transportation facilities therefor the plant will be established in cirebon.

Bio oil production by fast pyrolysis dynamotive technology process is divided into three stages, pretreatment, pyrolysis and separation. At the pretreatment stage, the rice straw has to be 2mm size reduction, at the pyrolysis stage the rice straw is reacted in a fluidized bed reactor with the operating conditions 500 °C and produce a gas that mixed charcoal. In the last stage these product was separated using cyclone then the gas which has been separated from charcoal is condensed using quencher, the result is bio oil and non-condensable gas as the product and the gas will be used as combustor’s fuel.

To reach the target of production capacity is need about 60.125,06 kg / day rice straw, 1653.43 kg / day N₂ gas as a support material, 1,806 m³ / hour water sanitation as plant consumption and also 224,4 1m³ /hou water cooling.

Keyword : Bio Oil, Rice Straw, Fast Pyrolysis