

ABSTRAK

Analisis Karakteristik Pembakaran Biopellet Berbahan Limbah Serbuk Gergaji Kayu Kelapa dengan Penambahan Variasi Zeolit Alam ini dilakukan untuk mengetahui sifat biopellet sebagai bahan bakar alternatif. Tujuan penelitian ini yakni guna mengetahui karakteristik biopellet yang menggunakan limbah serbuk gergaji kayu kelapa sebagai bahan utama dan menambahkan variasi zeolit alam untuk meningkatkan kualitas biopellet. Metode penelitian yang digunakan adalah penelitian eksperimen. Komposisi campuran bahan baku utama dan zeolite alam yang digunakan dalam penelitian ini memiliki 6 variasi yaitu 100% : 0%, 95% : 5%, 90 % : 10%, 85% : 15%, 80 % : 20%, 75 % : 25%. Pembuatan perekat biopellet menggunakan 20 % pada semua sampel. Hasil pengujian karakteristik biopellet dari penelitian ini diperoleh nilai kadar abu terendah 7,13% sedangkan nilai kadar abu tertinggi yakni 11,40%. , nilai kadar air terendah 5,32% dan nilai kadar ar tertinggi diperoleh nilai sebesar 8,66%. Sedangkan nilai laju pembakaran diperoleh nilai 0,014 g/s-0,023 g/s. untuk laju pembakaran dengan rata rata suhu yang didapat antara 250°C sampai 350 °C.

Kata Kunci: Biopellet, Biomassa, Serbuk Kayu Kelapa dan Zeolit.



ABSTRACT

An analysis of the combustion characteristics of biopellets made from coconut sawdust waste with the addition of natural zeolite variations was carried out to determine the properties of biopellets as an alternative fuel. The aim of this research is to determine the characteristics of biopellets that use coconut wood sawdust waste as the main ingredient and add variations in natural zeolite to improve the quality of the biopellets. The research method used is experimental research. The composition of the mixture of main raw materials and natural zeolite used in this research has six variations, namely 100%: 0%, 95%: 5%, 90%: 10%, 85%: 15%, 80%: 20%, and 75%: 25%. Making biopellet adhesive uses 20% of all samples. The results of testing the characteristics of biopellets from this research obtained the lowest ash content value of 7.13%, while the highest ash content value was 11.40% , the lowest water content value was 5.32%, and the highest water content value was 8.66%. Meanwhile, the combustion rate value obtained was 0.014 g/s–0.023 g/s for the combustion rate with an average temperature obtained between 250°C and 350°C.

Keywords: *Biopellets, Biomass, Coconut Wood and Zeolite.*

