

**Analisis Penggunaan Adsorben Abu Sekam Padi Untuk Penurunan Kadar FFA Dan Pemurnian Biodiesel Dari Minyak Jelantah** (*The Analysis of Rice Husk Ash Adsorbent Utilize To Decrease FFA Levels and Biodiesel Purify From Used Cooking Oil*). Supervised by : Saiful Anwar, S.TP., M.P (as chief counselor) and Yuli Hananto (as a member counselor)

**Dimas Prianto**  
*Study Program of Renewable Energy Engineering*  
*Department of Engineering*  
Program Studi Teknik Energi Terbarukan  
Jurusan Teknik

**ABSTRACT**

*Used cooking oil is a potential raw material to make biodiesel because it is contain fatty acid. however it also contain high level of FFA because of heating repeatedly, so it is necessary to decrease the FFA content. This research was using adsorbtion method to reduce the FFA level by using rice hush ash as the adsorben with aims to determine the effect of rice hush ash as the adsorben on biodiesel purifying process and how the characterization of characterization of biodiesel that produced. This research was using Completely Randomized Design (CRD) with 2 factors. The first factor was mass of rice husk ash (A) (5%, 10%, and 15%). The second factor was time of reaction (T) (30, 60 and 90 minutes). The biodiesel characterization parameters that were analyzed were density, viscosity, acid number, iodine number, cetane number, heating value and methyl ester content in accordance with SNI 7182 – 2015. The results show that the highest yield is A1T3 (5%, 90 minutes), while the lowest yield is A3T1(15%, 30 minutes) with biodiesel quality as follows: density 845.54 kg / m<sup>3</sup> and 841.35 kg / m<sup>3</sup>, viscosity 4.05 Cst and 5.21 Cst, acid numbers 0.1 mgKOH / g and 0.2 mgKOH, iodine numbers 9.14 g / 100g and 10.08 g / 100g, cetane numbers 44.25 and 44.29 , the heating value is 48.49 Mj / Kg and 48.41 Mj / Kg. The levels of methyl ester are 99.79% and 88.44%.*

**Key words :** *Biodiesel, Purification, Rice Husk Ash, Used Cooking Oil*