Aplikasi Cangkang Kerang Bulu dan Limbah Las Karbit Sebagai Katalis Reaksi Transesterifikasi Biodiesel Limbah Pabrik Pengalengan Ikan (*Application of Anadara antiquenta's Shells and Waste Calcium Carbide as Catalyst Reaction on Biodiesel Transesterification of Waste Of Canning Fish Factory*)

Erwinsyah Trio Indra Praja
Renewable Energy Engineering Study Program
Engineering Department

ABSTRACT

The process of making biodiesel from fish oil waste has been done through transesterification reaction using heterogenic base catalyst. One type of heterogeneous base catalyst that can be used as a catalyst is the shell of Anadara antiquenta. The objective of this research is to determine the effect of Anadara antiquenta shell catalyst with the addition of carbide welding waste and stirring time in fish oil transesterification reaction and to determine the characteristics of biodiesel. The method used for making biodiesel is esterification and transesterification. The type of alcohol used in the reaction is methanol as much as 20% v/v of oil for the esterification reaction and 50% v/v of oil for the transesterification reaction. Variations in the amount of Anadara antiquenta's shells used were 1%, 2%, 3%, and 4% w/v with the addition of 2% w/v carbine welding waste and the agitation time used was 60 and 90 minutes. The quality of biodiesel from the highest yield of catalyst variation and duration of stirring were tested. The density value of biodiesel is 877,789 kg/m^3, viscosity 5,62 cSt, acid number 0,7854, flame 196 ^oC, iod 48,60, deviation index 149,771, sapding 48,10, and heat value 46,729 Mj/Kg.

***Key Word* :** *Biodiesel, Fish oil waste, Stirring duration.*