ABSTRACT

The Water Boiling Test measurement method on the gasification stove and the bomb calorimeter can be used to find the calorific value of briquettes. There are data that have been carried out by previous researchers, but there has been no research that has done modeling by connecting between the measurements of the Water Boiling Test on the updraft gasification stove and the bomb calorimeter. This study aims to correlate the two heat measurements using a regression model. The data carried out by previous studies were used to search for modeling the relationship between the two measurements and obtained a model with a high correlation. Then, the results of the data modeling will be tested by measuring the Water Boiling Test and the bomb calorimeter. From the data obtained, it will produce an error value between the predicted value (bomb calorimeter model) and the original value (original bomb calorimeter). The method used is a regression model. The results of this study indicate that the two measurement methods have a very high correlation in the third, fourth, and sixth order models with a value of 100% and the correlation between the original bomb calorimeter and the model bomb calorimeter produces a very strong correlation with an error value of 1.26% using the formula exponential regression model $y = 3571{,}5e^{0{,}00002x}$ *and the coefficient of determination is 83,19%.*

Keywords : *bomb calorimeter, gasification stove, correlation, regression model*