

Abstract

This study aims to analyze the characteristics of the combustion of a mixture of rubber seed oil with methanol using droplets. The observed characteristics are flame temperature, ignition delay time, combustion rate, and visualization (high heat and flame colour). The variation of the mixture used in this study was a mixture of rubber seed oil and methanol with mixed percentages of 0%, 10%, 20%, 30%, 40%, and 50%. The droplet tool used for research is a tool designed by the researcher. The results showed that the highest flame temperature value was found in the 0% mixture, 114°C, and the lowest was in the 50% mixture, namely 79.67°C. The highest Ignition delay time value is in the 0% mixture, which is 3.33 s, and the lowest is at 50%, which is 2.21 s. The highest combustion rate value at 50% mixture is 0.517 mm²/s and the lowest at 0% is 0.317 mm²/s. The highest flame height in the 0% mixture was 42.6 mm, and the lowest at 50% was 23 mm.

Keywords: *Droplets, Rubber Seed Oil, Ignition Delay Time, Characteristics of Combustion.*