Thermal Evolution Profile Analysis for Pyrolysis of Coal ? Acacia Mangium Wood Blends / Barlin, Gunawan, Amir Arifin, Diah Kusuma Pratiwi

Barlin, author

Abstrak

Due to critical environmental issues, increasing future energy supplies and decreasing reserved energy resources are currently the subject of comprehensive research. The use of biomass as a renewable energy resource may be helpful in solving current energy shortfalls, particularly for countries that have abundant biomass resources. In this study, pyrolysis of coal, Acacia Mangium wood, and their respective blend samples were investigated using proximate analysis and Thermogravimetric (TG?DTG). A mixture of coal and A. Mangium wood with a weight ratio 100:0, 90:10, 50:50, 10:90, and 0:100, were used and non-isothermal conditions at a constant heating rate of 5, 15, and 30°C/min were applied. Thermal evolution profile analysis of the pyrolysis process confirms that the reactivity of the fuel increased with the increasing proportion of the biomass in the fuel. The reactivity and maximum temperatures increased with the increasing heating rates. Proximate analysis showed the potential of biomass of A. Mangium wood to be used as a mixture with coal in terms of low ash and high volatile matter content.