World Academy of Science, Engineering and Technology
International Journal of Energy and Environmental Engineering
Vol:17, No:03, 2023

A Correlative Study of Heating Values of Saw Dust and Rice Husks in the Thermal Generation of Electricity

Authors : Muhammad Danladi, Muhammad Bura Garba, Muhammad Yahaya, Dahiru Muhammad

Abstract : Biomass is one of the primary sources of energy supply, which contributes to about 78% of Nigeria. In this work, a comparative analysis of the heating values of sawdust and rice husks in the thermal generation of electricity was carried out. In the study, different masses of biomass were used and the corresponding electromotive force in millivolts was obtained. A graph of e.m.f was plotted against the mass of each biomass and a gradient was obtained. Bar graphs were plotted to represent the values of e.m.f and masses of the biomass. Also, a graph of e.m.f against eating values of sawdust and rice husks was plotted, and in each case, as the e.m.f increases also, the heating values increases. The result shows that saw dust with 0.033Mv/g gradient and 3.5 points of intercept had the highest gradient, followed by rice husks with 0.026Mv/g gradient and 2.6 points of intercept. It is, therefore, concluded that sawdust is the most efficient of the two types of biomass in the thermal generation of electricity.

Keywords : biomass, electricity, thermal, generation
Conference Title : ICREES 2023 : International Conference on Renewable Energy, Environment and Sustainability
Conference Location : Dubai, United Arab Emirates
Conference Dates : March 16-17, 2023