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COMPARING GAS PRODUCTION RATE, STEAM GENARTION RATE USING COCONUT SHELLS, RICE HUSK, SUGARCANE BAGASSE, GROUNDNUT SHELLS IN UPDRAFT GASIFIER

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Abstract

In developing countries like India, use of petrol fuels like furnace oil or light diesel oil to meet the thermal energy demands of industries places a heavy burden on the economy. Use of producer gas from indigenously available agricultural residues is an attractive alternative. Gasification is a chemical process that converts carbonaceous materials like biomass into useful convenient gaseous fuels or chemical feedstock. Experimental investigation presented in this study was conducted using coconut shell, ground nut shells, sugar cane bagasse, and rice husk. An experimental model which can hold a batch of 5kg fuel has been fabricated to take trial and study the process of gasification and various parameters of gasification process and production of steam. Arrangements have been made to record the gas and steam temperatures. The aim of this research was to investigate the efficiency of the gasifier and the gas production rates of biomass materials coconut shells, ground nut shells, sugar cane bagasse, rice husk and steam production. From the experimental study we observe that by increasing the temperature there will be increase in gas production rate. And the maximum gas production rate is for sugar cane bagasse and the least for rice husk.

Keywords : Calorific value, rice husk, coconut shell, Ground nut shells, Sugar cane bagasse Gas production rate, Gasification efficiency.