

A Study on the gasification performance of *Casuarina equisetifolia* wood

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Abstract

Demands of for energy from all possible sources is growing manifold day by day. One of the chief sources of energy viz. harnessing fossil fuel is fraught with heavy load of pollutants to the ambient environment. Biomass is widely considered as an ipotential fuel and it is renewable energy resources for the present and future. *Casuarina equisetifolia* is one of the highest calorie yielding fuel wood and also an important livelihood source to rural people with industrial use. It was mostly planted in costal region of India. In this regard a study was conducted at IWST to analyze the gasification properties of Casuarina wood by using 1 Kw downdraft gasifier. The reactor temperature was varied from 600-1143°C. The quality of gas samples were analysed through Gas chromatography and heat value of the producer gas. Result shows that compared to wood wastes, Casuarina wood produce high amount of carbon monoxide and hydrogen gases.