

Kitja Kirasmutranont 2009: Design and Testing of an Updraft Biomass Gasifier.
Master of Engineering (Mechanical Engineering), Major Field:
Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor:
Assistant Professor Wichai Siwakosit, Ph.D. 86 pages.

The design and testing of an updraft biomass gasifier to replace a conventional furnace for drying of organic fertilizer is shown in this thesis. The outcomes of this research suggest that a utilization of this gasifier has a potential of 44.26 % reduction of fuel quantity compared to that of a conventional furnace.

The results has indicated that a para rubber wood (*Hevea Brasiliensis*) is the most appropriate fuel to use with this gasifier and yields 90 % thermal efficiency with 82 kW heating rate from producer gas. The wood consumption rate is approximately 28 kg/hr.

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Thesis Advisor's signature

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