



## CHAPTER 6

## CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The experiment condition were varied by exit air temperature, fuel-air ratio, and for each batch test run was about 10-15 minutes to stabilize the condition. feed rate of rice husk was constant at each batch test run. It also fixed air feed rate, so that it fixed fuel air ratio for each test set (fix excess air). Result of the experiments were shown by % thermal efficiency of this air .

Analyzing the result by graph, it was plotted between % thermal efficiency vs. rice husk feed rate ,it suggested that for the same fuel - air ratio, % thermal eff of air increased when rice husk feed rate increased. But for the same rice husk feed rate, when fuel-air ratio in increased, % thermal eff. of air are incresed also.

The superficial velocity of air or volumetric flow rate of air increased and that heat carried over with air is more and more. It's effected to rise % thermal eff of air, meanwhile, the heat generated in from of heat accumulation in combustor will be decreased sligthly. but when changing fuel-air ratio, volumetric flow rate is largely increased, its effected to increased % thermal eff.and effected to decrease % heat accumulation in combustion. Its known that heat generated to used in rice mill 2 forms, one for drying process and the other for boiler heat an sources. % thermal eff. is parameter

to show the drying process eff., because when % thermal eff. is high, so that heat for drying is more carried over with air and it will be more by increasing % excess air or decreasing fuel-air ratio.

This study research in the primary step to modify the lab. scale FBC of rice husk that the way to pilot scal of FBC. But it suggest that the way to get heat energy (introduced to from of energy) form biomass ie. rice husk in more efficeiney and more usage.

## 6.2 Recommendation

In future study of this research, it suggents to study

- % combustion efficeincy of this system
- the next step to construct the boiler.
- study math modelling of rice husk combustion in FBC
- apply this combustion to the rice mill for industrial project.
- study the economics program for this FBC in rice mill.

It's important for Thailand and world to maintain energy sources for using in a long term. This combustor is one of the choice to do that, which it was more attractive for environment saved because this combustor type can solve the problem about pollutions by emission  $SO_2$ ,  $No_x$  of fuel combustion not only rice husk but also coal, charcoal, gabbage etc. It hoped that the new choice for this world for saving the world energy, or lest, it can support the status of Thailand

economics to defence the world energy crises now.



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