

CHAPTER VII

CONCLUSION AND RECOMMENDATION

7.1 Conclusion

7.1.1 In this experiment, the combustion efficiency of the rice hull fluidized-bed combustor was about 91-95 %. It was achieved by the replacing of the ordinary plane distributor, which gave combustion efficiency only about 56-84 %, with conical shape distributor.

7.1.2 The fluidized-bed dryer was operated at the efficiency of 16-21 % with heat source from the electric heater.

7.1.3 The combined process was operated in two stages: the first stage for reducing the moisture of parboiled paddy from 52-58 % to 18-28 % with the drying efficiency was about 13-18 %. The second stage was to reduce the moisture from 18-28 % to 10-13 % with the drying efficiency was about 3-8 %.

7.1.4 The overall drying efficiency of the combined system was about 7-11 % for first stage and 2-4 % for the second stage.

7.1.5 The result of this work indicated that rice hull of parboiled paddy from fluidized-bed dryer could supply only about 30-33 % of the thermal energy required for drying of parboiled paddy.

7.1.6 The major energy loss of the combined system was approximately 90 %, was lost with used gases output from dryer.

7.2 Recommendation

7.2.1 In this experiment of fluidized-bed combustion, the combustion efficiency was very high, but the amount of heat for using was small because it was lost by the wall surface of the system. To improve the efficiency of heat utilization of the system, it is necessary for good design by reducing the distance and surface between the combustor and dryer.

7.2.2 The drying efficiency was very low because about 90 % of heat was lost with gases out put from system at high temperature. It is very interesting to improve the drying efficiency by recycle hot air to use in dryer again.