

## **ABSTRACT**

*Hydrogen production using rice as a substrate involves anaerobic bacteria. The process of bacterial metabolism is influenced by pH. Therefore, we need a pH control system on reactor TPAD part thermophilic hydrogen reactor to control the pH value of the substrate.*

*In this study, conducted two experiments are without pH control and using pH control. Based on the experiment without pH control, the pH value drop polynomial and can be determined alkaline solution to be used in the pH control experiment.. In experiment using pH control, a system built to keep pH in the value range 5,00 to 6,00 with an average error of the system is 0,06.*

*Keywords : Control, pH, biomass, anaerobic, thermophilic*