

MESIN PENGADUK GULA AREN OTOMATIS MENGGUNAKAN METODE PID BERBASIS STM32

STUDI KASUS HOME INDUSTRI GULA MERAH DI DESA ROMBEN

AUTOMATIC PALM SUGAR BLENDING MACHINE USING PID METHOD BASED ON STM32
A CASE STUDY OF THE HOME OF THE BROWN SUGAR INDUSTRY IN ROMBEN VILLAGE

Moh Faris Rahman

Jurusan Teknik Elektro Universitas Trunojoyo Madura

Email : farisassegaf11@gmail.com

ABSTRACT

Palm sugar is one of the sweeteners that have been produced by the Indonesian people for a long time. Palm sugar as an alternative food sweetener and is a side income for most people in Romben Village. In the process of making palm sugar, the farmers in Romben village still use manual or traditional methods so that it is very time consuming to make, where in making palm sugar it really takes a long time, and must also be stirred constantly. With the development of microcontroller technology, currently we need a tool that can cook legen water into palm sugar automatically. Control systems are needed in the industrial world to help workers save time and produce more products. This study aims to help factories to be more efficient in terms of producing palm sugar. Therefore, a temperature control system using a thermocouple sensor is used by using the PID (Proportional Integral Derivative) method. The PID controller can help simplify the mixing process to the maximum. The PID controller determines the setpoint so that the temperature and speed of the stirrer are controlled according to the specified setpoint. . Controlling is done by reading the thermocouple temperature sensor and then sent to the main controller, then the main controller responds and sends a signal to the actuator. The actuator used is a servo motor, so in general the temperature is regulated by increasing and decreasing the temperature carried out by the valve burner with the help of a servo motor to open and close the valve, the main controller used is STM32. The results of this study resulted that every 4.5 liters of water will produce 2 kg of palm sugar. The set point used in the PID is 220 0C.

Keywords : Water, Palm Sugar, PID (Proportional Integral Derivative)