ABSTRACT

In a laboratory, an analyst do a common procedure to mix material with manual technic. But this process not so effective, because will take longer time and the result is not too maximal.

To solve this problem, the mixing of material is able to do by Orbital Shaker. Orbital Shaker is a device to mix material between solution and solution which rotated 360 degree horizontally and with time determinded. The motor which is used is DC motor, where in the rotor there is motor sensor (optocopler) to detect rotating of motor. The speed are 100 rpm (rotation per minute) and 150 rpm. This device there is microcontroller ATMega 8353 to control the sistem. The display in the program will be displayed on the LCD character 2x16 as motor speed and time which are determined. When the time is up, motor stops and buzzer is on.

After do measuring 5 times, the result time error % 30 minutes = 0,34% and error % 50 minutes = 0,48%, and rotating motor error % 100 rpm = 0,006 % and error % 150 rpm = 0,48 %. According to the result of analysis the device can be used.

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Keywords: ATMega 8535, error, LCD, orbital shaker, sensor rotating motor