ABSTRACT

In the laboratory, it can't be separated with analyzing and mixing liquid process. Mixing liquid process uses to homogenizing a liquid with another liquid with purpose to get an analyze result that we want. to make easier the mixing process, it uses a homogenizer mixer with speed and timer setting system.

Homogenizer mixer is a tool that use to homogenizing two element into one. Homogenizer mixer use a probe that has function to break the element particle to be smaller, so it will be easier to be homogen. The probe rotates according with the rotation of the motor, the motor used is a DC motor. The processing time will be displayed on LCD character 2x16. The speed setting will be variated depend on user's will, because it uses variable resistor. Motor driver using a PC817 as optoisolator and IRF540 to adjust the motor current. A whole system process is controlled by microcontroller ATMega 16.

From the measurement that i done for 5 times, i got an error result of measurement when 1 minute equal to 0.667%, 10 minute equal to 0.2%, 20 minute equal to 0.183%, 30 minute equal to 0.333% and error measurement of speed motor when 730 rpm equal to 0.274%, 1500 rpm equal to 0.453%. After testing the homogenity, the difference percentage obtained by comparison of the final project modules and laboratory equipment for 30%. From the procentage error, this modul can be used.

Keywords: ATmega 16, homogenization, homogenizer mixer, probe