

ABSTRACT

In this study vertical rotation of the ball mill machine was carried out using Pulse Width Modulation (PWM) using IC LM 555. This machine is used for grinding the material so that it can produce a reduction in the size of the material. The workings of this grinding machine will rotate the propellers on the inside of the tube mixed with air, iron balls, and the material to be milled. The results of rounds and collisions with centrifugal iron balls that can damage the material inside. This machine uses PWM as speed control and DC electric motor as a propeller drive engine. The measuring instrument is done in three steps, measuring the turning speed of the propeller engine, measuring voltage and current input, and grinding the material. When the speed measurement is divided into three parts when the engine with an air load of 300 mL, 600 mL, 900 mL, and 1200 mL; machines with a load of 300 grams and air as much as 300 mL, 600 mL, and 900 mL; and when the engine is without load. Whereas for material milling is done using zeolite and brick fragments. The right variable includes the length of time and the work value of the machine. The results of grinding will be compared with the ingredients before grinding.

Keywords: ball mill, material milling, milling, PWM, DC motor