

ABSTRACT

Recently in an industry world, automatic tools and plants are massively used and developed with a goal to reduce the human error, and also to reduce a great amount of production costs. And there are many kinds of method of automatic controlling method that being used in industrial world nowadays, some of them are PID controlling method and Fuzzy Logic method.

In this undergraduated thesis proposal, there will be a given explanation about a controlling method that using a fuzzy logic method into a plant. Where the output result value will be following the recent input value. This concept, will be adapted in a drill plant system, where the voltage and the current will be adjusted according to the thickness material that will be drilled over. The sensors that attached to the drill system will giving a result value that will be processed over in a microcontroller that will be giving a feedback as a result, and that value will be used to adjust the power consumption of the motor that moves the drill and giving an exact value of power to drill over and make a hole in the object given, depends on the object thickness and material without reducing the performance of the motor.

The result from the several numbers of test shows that by applying fuzzy logic the amount of energy consumed is lower than the conventional one. The result are 69,81% energy saving rate for plywood, 67,89% for plastic fiber sheet, 66,28% for brick, 61,61% for aluminium sheet and 60,16% for zinc and brass mixture sheet. Thus it could be concluded that controlling system, is effective to maintain the system function and saving the amount of energy consumed.

Kata Kunci : Drill, Fuzzy Logic, Power , Effective