



**INVESTIGATION OF MILLING PARAMETERS  
FOR MINIMIZING CONSUMPTION OF ENERGY**

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## **DECLARATION BY THE CANDIDATE**

“I declare that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any degree.”

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## ABSTRACT

The energy consumption in machining process nowadays is extremely high which lead to significant impact on many aspects especially on manufacturing industry and environment. There are lot of study discussing about how to save energy on the manufacturing industries. In this project milling process parameter have been investigated for minimizing the consumption of energy via experimental approach where the power consumption was recorded by the clamp multi Fluke 345 PQ Clamp Meter while mildsteel (AISI 1018) being cut using conventional milling machine. The cutting tool High Speed Steel (HSS) was used in the experiment. The process parameters that involved was spindle speed (RPM), feed rate (m/min), and depth of cut (mm). By using response surface method (RSM) the result of the experiment have been evaluated and analyzed and obtain the optimized process parameters to minimize the consumption of energy where the spindle speed is 220 rpm, feed rate is 0.218 m/min and depth of cut is 0.1mm. The rsm also generate interaction equation between parameters with the accuracy of 94.39% from the experimental data. At the end of the study, feed rate is the most influential milling parameters that affect to energy consumption. From the result it concluded that higher feed rate decrease machining time which lead to lower energy consumption.

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