

## **ABSTRACT**

*Thermal shock is a test method used on the magnetic components such as the components of the ferrite core. One kind of ferrite core is pot core. Thermal shock is performed to determine the resistance level of core to extreme temperature changes. By doing this test we will be able to see indications of cracks on the product. Small cracks occurred when the level of the robustness of the product is high. Optimization on the parameters of the design of the flange thickness and the neck diameter are made to minimize the stress value as an indication of cracks due to thermal shock. Taguchi method is used in this study to determine the most influential parameters and their combinations that are able to produce optimal results. By using 2 factors and 5 levels on each factor, then obtained the number of experiments as much as 25 times with the response is the value of the thermal stress. This study was conducted using computer simulation, so the finite element method is used to analyze the thermal stress of the pot core that has passed through the simulation of thermal shock. Based on simulations, it is known that the optimal point of the parameter flange thickness is 0.8 mm, whereas the parameter neck diameter is 2.5 mm. Such combination is a combination that is able to generate the optimal value of thermal stress. Factors with significant influence on the results of an experiment are the flange thickness with a P-Value smaller than 0.05.*

*Keywords: Thermal shock, ferrite core, pot core, Taguchi method, Finite Element Method*