

**STUDY ON HEAT INPUT FOR SUPERALLOY WELDING BY
USING FEA SIMULATION AND EXPERIMENTAL
VERIFICATION.**

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A thesis submitted in partial fulfillment of the requirement for the award of Bachelor of
Engineering (Hons) Mechanical

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NOVEMBER 2009

AUTHORS DECLARATION

“I declared 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 bachelor degree and is not concurrently submitted in candidature of any bachelor degree.”

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ACKNOWLEDGEMENT

Firstly I would like to thank Allah S.W.T for giving me a strong will in order for me to complete this thesis. Without his bless it is impossible for me to complete my task successfully. I would also like to take this opportunity to express my thankfulness to my one and only supervisor, Mr. Sarizal bin Abu Bakar who was never shows a sign of giving up in helping me to complete my thesis. He also helped me a lot by guiding me into the right path in finding information for this project topic. He always encourages me by saying that I can do it. I would also like to thank him again for spending his personnel time with us just to make sure we all will get through. I also appreciate the freedom and trust he has given me. Last but not least, I would like to take this opportunity to express my gratitude to all my family and friends who have give me support and encourage to me for theirs continuous support throughout my studies in UiTM and my thesis. I also really appreciate my entire lecture especially Dr. Ing. Yupiter Harangan Prasada Manurung because for spending a lot of time to help me in ensuring the successfulness of this thesis. May Allah S.W.T bless all of you for your contribution in this simulation study.

ABSTRACT

The purpose of this study is to find out optimum heat source for IN625 nickel based super alloy by using experimental and finite element analysis. The investigation on heat source was use in the welding process in order to seek the relationship between mechanical characteristic and macrostructure. It also employed in order to find out the optimum heat source on butt join and had included simulation (SYSWELD). Information in IN625 coupons parameter such as variable current, voltage and travelling speed while welding have been taken and was applied in SYSWELD. The distortion effects from welding works are then being measure by using CMM. The hardness values are taken by portable Hardness Vickers equipment. The macrograph from experimental measured to develop heat source fitting for SYSWELD application. It is hope that by using simulation software the time taken to predicting outcome of super alloys welding can be shortened hence avoiding trial and error method which currently being employed.

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