

**THE EVALUATION OF ALTERNATING CURRENT FIELD MEASUREMENT(ACFM)
RESPONSE ON STAINLESS STEEL PIPE SURFACE DEFECT**

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**Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (hons.) Industrial Physics
in the Faculty of Applied Sciences
Universiti Teknologi MARA**

OCTOBER 2010

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AKNOWLEDGMENTS

Allhamdulillah,

This thesis is the end of my long journey in obtaining my degree in Industrial Physics.. There are some people who made this journey easier with words of encouragement and more intellectually satisfying by offering different places to look to expand my theories and ideas. First of all, I am really grateful to the greatest Allah s.w.t for blessing that have been given me the strenght and ability to complete this thesis as the way it has to be. In preparing this thesis, I want to to express my gratitude and sincere appreciation to my supervisor, Dr Syed Yusainee Syed Yahya for him encouragement, guidance, critics, knowledge and friendship.I would also like to thank my first co-supervisor, Dr khazali Mohd Zin and my second co-superpervisor, Encik Jerry Jamil for guidance and ideas that have been given in this project is successfullly completed. I would also like to express sincere appreciation to the SIRIM for giving me permission to use the machine ACFM in this thesis successfullly. Lastly thank for my friend Ahmad Zubir Zainal Abidin for helped in contributed the idea and information in complete this proposal.

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ABSTRACT

Recently a new technique for the detection and sizing of cracks and defects has been introduced in Australia. The alternating current field measurement (ACFM) technique is an electromagnetic inspection method that uses hand-held probes, and computerized control, data acquisition and computational models. ACFM is more efficient than conventional inspection methods (e.g. UT, MT, RT) due to a reduced need for surface preparation and an ability to work through surface coatings. ACFM also has an added benefit that it is not only capable of detecting flaws; it can also size defects for length and depth. This report describes the principles of the a.c. field measurement technique, a non-contacting electromagnetic method of crack detection and sizing the depth of defect and length of defect in metals. The metal that used is stainless steel pipe. Otherwise, I'm also have done to prepare the calibration block following ASME Code Section V article 15 2007. The Alternating Current Field Measurement (ACFM) technique has been developed for the accurate detection and sizing of defects through coatings. To do this we would need to know both the length and depth of the defects. Knowing the dimensions of the defect, along with fracture mechanics, we can determine if the component tested is safe for continued operation. ACFM saves the cost of buffing and recoating, and due to the mobility of the newer units, makes it an ideal technique. Using rope access methods can also save on the cost of building scaffolding. Based on this experiment, we want to know the capability of ACFM technique which is how about its performance and how maximum depth that can detect by ACFM machine. I'm only wanted to focus on the depth of defect, so the length of defect was fixed about 15mm.