

RADIATION DOSE MEASUREMENT OF MAMMOGRAPHY USING
THERMOLUMINESCENT DOSIMETER (TLD)

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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X-Ray has been a commodity that is now often used in the medical field for imaging purposes, both screening and diagnostic. Mammography, one form of modality, is used to detect for ailments such as breast cancer or micro calcifications. It is often referred in combination with an *ultrasonography* (USG) examination or *magnetic resonance imaging* (MRI) depending on the patient's condition and the doctor's needs. Since mammography uses radiation in its usage, its exposure needs to be controlled to avoid over exposure that would lead to many unwanted results. This research focuses on measuring the radiation dosage during a mammography examination. The research was done by using a thermoluminescent dosimeter (TLD) chips placed in the film plate during a mammography procedure taken from two views, the *craniocaudal* (CC) view and the *mediolateral oblique* (MLO) of each breast and was conducted with a total of fifteen patients (15). The study shows no outliers and there are also new advancements towards dose reduction under development and some are even available in the market today. The result of the dosage was within the parameter of the guidance from IAEA and BAPETEN.

Keywords: *Radiation Protection, Breast Cancer, Mammography, Thermoluminescent Dosimeter Chip (TLD Chip)*





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TABLE OF CONTENTS

STATEMENT BY THE AUTHOR	2
ABSTRACT	3
DEDICATION	5
ACKNOWLEDGEMENTS	6
TABLE OF CONTENTS	7
LIST OF FIGURES	9
LIST OF TABLES	10
CHAPTER 1 – INTRODUCTION	11
1.1 BACKGROUND	11
1.2 RESEARCH PROBLEMS	13
1.3 RESEARCH OBJECTIVES	13
1.4 SIGNIFICANCE OF STUDY	14
1.5 RESEARCH QUESTIONS	14
1.6 HYPOTHESES	14
CHAPTER 2 – LITERATURE REVIEW	15
2.1 BREAST CANCER	15
2.2 MAMMOGRAPHY	18
2.3 X-RAY RADIATION	20
2.3.1 THE X-RAY TUBE	21
2.3.2 PRINCIPLES OF X-RAY PRODUCTION	21
2.4 BIOLOGICAL EFFECT OF RADIATION EXPOSURE	22
2.4.1 SOMATIC EFFECTS	23
2.4.2 GENETIC OR HEREDITARY EFFECTS	23
2.5 RADIATION SAFETY PROTOCOLS	24
2.6 THERMOLUMINESCENT DOSIMETER (TLD)	27
CHAPTER 3 – RESEARCH METHODS	29
3.1 VENUE AND TIME	29
3.2 MATERIALS AND EQUIPMENT	29
3.3 DESIGN OF EXPERIMENTS	29
3.3.1 PHILLIPS MAMMODIAGNOST	31
3.3.2 THERMOLUMINESCENT DOSIMETER (TLD) CHIP 100	32
3.3.3 THERMOLUMINESCENT DOSIMETRY (TLD) READER	33
3.4 EXPERIMENTAL PROCEDURE	33
3.5 ANALYTICAL PROCEDURE	34
3.5.1 BOXPLOT ANALYSIS	35

3.5.2 CONFIDENCE INTERVAL ANALYSIS	35
3.5.3 COMPARISON OF DOSAGE	36
<u>CHAPTER 4 - RESULTS AND DISCUSSION</u>	<u>38</u>
4.1 RESULTS OF EXPERIMENT	38
4.2 STATISTICAL ANALYSIS	39
4.2.1 BOXPLOT ANALYSIS	39
4.2.2 CONFIDENCE INTERVAL ANALYSIS	41
4.2.3 COMPARISON OF RADIATION DOSAGE	42
<u>CHAPTER 5 - CONCLUSION AND RECOMMENDATIONS</u>	<u>49</u>
5.1 CONCLUSION	49
5.2 RECOMMENDATIONS	49
5.2.1 FOR THE HOSPITAL	49
5.2.2 FOR FUTURE RESEARCH	49
<u>GLOSSARY</u>	<u>51</u>
<u>REFERENCES</u>	<u>54</u>
<u>APPENDICES</u>	<u>57</u>
<u>CURRICULUM VITAE</u>	<u>63</u>

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