RADIATION DOSE MEASUREMENT FROM COMPUTED TOMOGRAPHY SCANNER ON THORAX AND ABDOMEN USING THERMOLUMINESCENT DOSEMETER (TLD)

By

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14311039

BACHELOR'S DEGREE

in

ELECTRICAL ENGINEERING -

BIOMEDICAL ENGINEERING CONCENTRATION

FACULTY OF LIFE SCIENCES AND TECHNOLOGY

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August 2015

Revision after the Thesis Defense on 5th August 2015

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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Computed Tomography scan is a device in hospital which used for giving anatomy of human body images for diagnostic. Usually people use CT – scan for detecting abnormalities in human body such as cancer. CT – scan uses X-ray as the source, so the organ that being examined has a risk of radiation exposure. The purpose of this research is to measure the number of absorbed radiation in order to meet the radiation dose protection requirement for the patients. As a human body, in this research use a Rando Alderson solid humanoid phantom. Then lithium fluoride thermoluminescent dosemeters (TLD) - LiF were placed on the thorax and abdomen part of the phantom for dose measurement. This study using standard protocols for thorax and abdomen scanning. To find the smallest absorbed radiation dose, the radiation dose from three different slice thickness were used and were compared. It can be concluded that the thicker the slice thickness the smaller the radiation dose.

Keywords: X-rays, Computed Tomography, CT – scan, TLD, Humanoid Phantom

DEDICATION

This thesis is especially dedicated to my family and friends.
Also for people that interested with this field.

ACKNOWLEDGMENTS

First of all praise and gratitude profusely I pray to God Almighty because only by His grace and grace alone this thesis can be done well.

I would like to deeply thank Mr. M. Fathony, Ph.D. as my advisor. Thank for his patience, guidance, and advices during all of the process of this thesis. Also thank you for your support until the end of my work. I am really sorry if there are any mistakes and flaws.

Deeply thank you to Ms. Rina Taurisia, M.Sc as my co-advisor. Thank for her advices and guidance during the thesis. Thank you very much, please forgive all my flaws.

To Mrs. Dyah and all staff in PTKMR-BATAN thank you very much for all your help. I could not have done the experiments without you all.

I also would like to thank all the staff in MRCCC Siloam Semanggi Hospital. Mr. Ferdinand for taking care of my thesis proposal, welcome and openness. Thank you to dr. Felly Sahli, Sp. Rad as radiologist. Thank you to Mr. Ucok Noptua Haposan Hutagalung, Amd.Rad as my supervisor. Thank you for his patience and help. Also thank you to all radiodiagnostic staff for your help.

I would like to thank my family, especially my parents. Thank you for everything.

Last but not least, I would like to deeply thank my friends Tessar, Meliza, Hanny, Cynthya, Jessica, Erike, Grace, Youth Leadership Intermediate family and BPTYM. Thank you very much for all your pray and support. Thank you for everything.

TABLE OF CONTENTS

Page