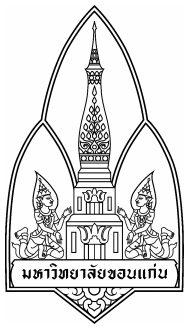
Appendix B

Example of Thesis Component

Example of Thesis Cover for Doctoral Degree



A HOT WATER HEATER USING WASTE HEAT FROM SMALL SPLIT-TYPE AIR CONDITIONER

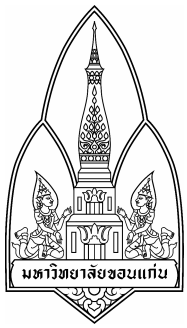
MR. PISIT TECHARUNGPAISAN

A THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

KHON KAEN UNIVERSITY

2007

Example of Thesis Cover for Master Degree



USE OF SHED KING COBRA SKIN AS A HUMAN BARRIER MEMBRANE: AN IN VITRO PERMEATION STUDY

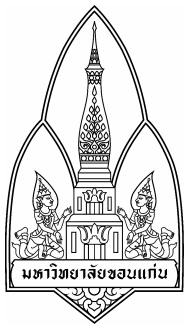
MR. SARAYUT RADAPONG

A THESIS FOR THE DEGREE OF MASTER OF SCIENCE

KHON KAEN UNIVERSITY

2007

Example of Thesis Cover for Master Degree



AN ANALYTICAL STUDY OF PATRONAGE SYSTEM IN THAILAND BY KANTIAN ETHICS

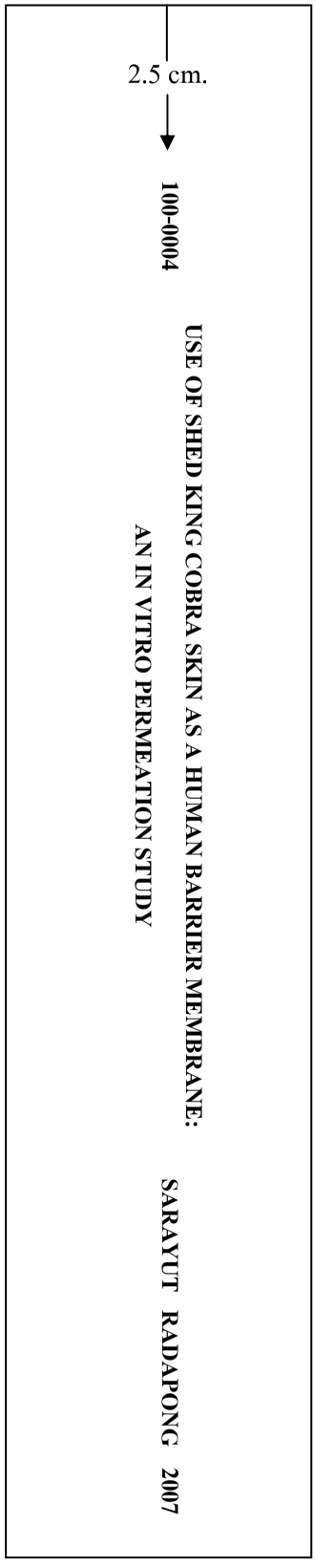
MR. NATTANAN THANATPIPATKUL

A THESIS FOR THE DEGREE OF MASTER OF ARTS

KHON KAEN UNIVERSITY

2007

Example of Spine (English)



Example of Thesis Title Page for Doctoral Degree

A HOT WATER HEATER USING WASTE HEAT FROM SMALL SPLIT-TYPE AIR CONDITIONER

MR. PISIT TECHARUNGPAISAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN MECHANICAL ENGINEERING
GRADUATE SCHOOL KHON KAEN UNIVERSITY
2007

Example of Thesis Title Page for Master Degree

USE OF SHED KING COBRA SKIN AS A HUMAN BARRIER MEMBRANE: AN IN VITRO PERMEATION STUDY

MR. SARAYUT RADAPONG

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN PHARMACEUTICAL CHEMISTRY AND NATURAL PRODUCTS GRADUATE SCHOOL KHON KAEN UNIVERSITY 2007

Example of Thesis Title Page for Master Degree

AN ANALYTICAL STUDY OF PATRONAGE SYSTEM IN THAILAND BY KANTIAN ETHICS

MR. NATTANAN THANATPIPATKUL

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN PHILOSOPHY
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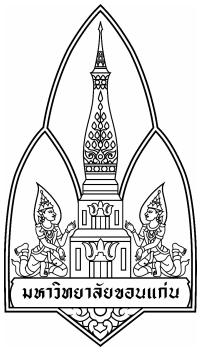
2007

Example of Thesis Certification for Doctoral Degree



THESIS APPROVAL

KHON KAEN UNIVERSITY

FOR

DOCTOR OF PHILOSOPHY

IN MECHANICAL ENGINEERING

Thesis Title: A Hot Water Heater Using Waste Heat from Small Split-type Air Conditioner

Author: Mr. Pisit Techarungpaisan

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Assoc. Prof. Dr. Somnuk Theerakulpisut	Member
Assoc. Prof. Dr. Sommai Priprem	Member
Asst. Prof. Dr.Chatchai Benjapiyaporn	Member

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(Assoc. Prof. Dr. Sommai Priprem)

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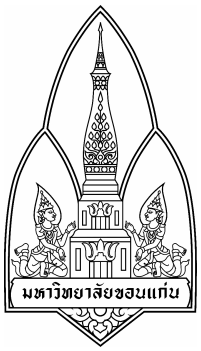
Dean, Graduate School Dean, Faculty of Engineering

Example of Thesis Certification for Master Degree



THESIS APPROVAL

KHON KAEN UNIVERSITY

FOR

MASTER OF SCIENCE

IN MEDICAL BIOCHEMISTRY

Thesis Title: Study of Renal Cell Damage by Oxidative Stress in Potassium Deficiency Rats

Author: Mrs. Nusara Suwannachot

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Example of Abstract for Doctoral Degree

Pisit Techarungpaisan. 2007. **A Hot Water Heater Using Waste Heat from Small Split-Type Air Conditioner**. Doctor of Philosophy Thesis in Mechanical Engineering, Graduate School, Khon Kaen University.

Thesis Advisors: Assoc. Prof. Dr. Somnuk Theerakulpisut,
Assoc. Prof. Dr. Sommai Preeprem

ABSTRACT

Thailand largely depends on imported energy, therefore, energy conservation has become one of most important issues for the country. Using waste heat from condensing units of split-type air conditioners is one of the possible ways to use saved energy to produce hot water. At present, split-type air conditioners with water heaters have been practically applied in small hotels, however, their performance and system design for application in Thailand have not been fully investigated, especially when both cooling and heating effects are desirable.

The objective of this research was to investigate the performance of split-type air conditioners incorporated with water heaters. In this study, mathematical modeling and experimentation have been carried out. Mathematical models were built based on the fundamental principles of heat transfer, thermodynamics, fluid mechanics, and manufacturer's data. The mathematical model was coded into a computer program for simulation. The experimental system composed of 12,000 Btu/hr split-type air conditioner and 102 liters of water heater tank capacity. The simulation program was verified by experiments with five different system configurations. There were more than one hundred experimental runs which indicated that the program is highly accurate. Then the effect of seven important parameters; location of water tank, length of heating coil, diameter of heating coil, water heater tank capacity, area of condenser, condensing fan operating condition, and water withdrawal rate on the system performance were studied. Finally, suitable water heating with air conditioner systems for use in Thailand were suggested. The economic analysis for this system was also determined. The program can be fuether modified for use with the different capacities of split-type air conditioners.

Example of Abstract for Master Degree

Sarayut Radapong. 2007. **Use of Shed King Cobra Skin as a Human Barrier Membrane: An in vitro Permeation Study**. Master of Sciences Thesis in Pharmaceutical Chemistry and Natural Products, Graduate School, Khon Kaen University.

Thesis Advisors: Assoc.Prof. Dr. Aroonsri Priprem, Assoc. Prof. Dr. Theera Rittirod, Asst. Prof. Dr. Padungkwan Chitropas

ABSTRACT

Scales of shed skin of adult king cobras (Ophiophagus hannah) (SS) 5-20 (n=9) years and human epidermis (HE) 33-70 years (n=20) were compared as barrier membranes in this *in vitro* permeation study of 10 known substances and an unknown mixture of compounds from *Phyllanthus amarus* extract. Each substance was subjected to 6 replicates of at least 3 different sheets of specimens from SS or HE. The comparison was performed by following Fick's first law and using side-by-side diffusion cells. Donor solution was saturated with each substance at pH 5.6 and receptor solution was buffer at pH 7.4 controlled temperatures at 32 ◦C and constantly stirred at 600 rpm. The experiment was performed by maintaining sink condition. It was found that permeability of the 10 known substances generally depended on partition coefficients and the orders of permeability were the same between SS and HE. The permeabilities of butylparaben, propylparaben and methylparaben through SS and HE were found to have a ratio of 5:4:1 and 7:3:1, respectively. The permeabilities of ibuprofen, sodium diclofenac and paracetamol with different degree of ionization were 39:29:1 (SS) and 199:81:1 (HE), respectively. The permeabilities of methyl salicylate, salicylic acid and sodium salicylate were found at a ratio 932:8:1 through SS and 13016: 264: 1 through HE, respectively. The permeability of phenol through HE was about twice that of SS. Overall analysis of the 10 known substances was performed using Fick's first law and Pott and Guy's equation, these substances, with a range of molecular weights from 152-318 g/mole and partition coefficients of 1.87-2.9 showed good correlation between SS and HE with linear regression ($r^2 > 0.890$). Multi regression showed that the influence of partition coefficient was substantial. The permeabilities of these substances through HE was 1.9 times higher than those through SS. The mixture of permeants, studied by suing *P.amarus* extract showed that there were certain permeants through the SS and HE in similar pattern. It was found that a certain substance permeated through SS better than HE. It leads to conclude that SS could be used as an alternative barrier membrane to the human epidermis for known substances. Further studies are needed to understand the mixed permeation.

Example of Abstract for Master Degree

Nattanan Thanatpipatkul. 2006. **An Analytical Study of Patronage System in Thailand by Kantian Ethics**. Master of Art Thesis in Philosophy, Graduated school, Khon Kaen University.

Thesis Advisor: Assoc. Prof. Dr. Prayong Sanburan

ABSTRACT

Patronage has been involved in Thai's society and way of life for Thai people since an ancient times. Therefore, the researcher has applied Kant's moral philosophy for analyzing and assessing Patronage in Thai society in order to gain knowledge from Kan's point of view when applied to a system of Patronage

The purpose of this research is to study Patronage system in Thai society and to analyze Kan's moral philosophy as a tool to finally solve a problem of patronage system in our society.

This research is qualitatively-based, and as such refers to several books written by foreign and Thai scholars as well as unwritten sources of information. Furthermore, information has been abtained from cassette tape of various Thai society patrons.

From this research, it revealed that Patronage system which has been influenced in Thai society such as, destroy the law or, the criterion of the social, destroy humanity worth, destroy the equality, build influence system, be born corrupting, and destroy the unity, for many decades causes so many problems and obstacles for development of our country due to Patronage would consider whether to do or not to do by mainly their self interests rather than interests of society as a whole. Analysis of patronage by applying Kant's moral philosophy theory revealed that Kant would disagreed with the current system of Patronage. He encouraged people in society to conduct their duties originating from good intentions without considering the consequences of that action. Also, this research suggests that adaptation of this philosophy for everyone in our society would eliminate all problems and negative outcomes as well as eliminate Patronage from the country.

Example of Dedication Page

The Present Thesis is Greatly Dedicated
to my Parents and the Entire Teaching Staff

Example of Acknowledgement

ACKNOWLEDGEMENTS

I would like to express my deepest and sincere gratitude to my advisor, Associate Professor Dr. Somnuk Theerakulpisut for his kindness in providing an opportunity to be his advisee. I am also appreciative for his valuable supervision, suggestions, encouragement, support, guidance and criticism throughout the course of my study.

I would like to express my greatest appreciation and sincere gratitude to my co-advisor, Associate Professor Dr. Sommai Priprem for his valuable advice, kindness, useful comments and suggestions. Sincere thanks and appreciation are also due to my graduate committee, Associate Professor Dr. Norkun Sitthiphong, Assistant Professor Dr. Chatchai Benjapiyaporn, and my qualify examination committee, Assistant Professor Dr. Denpong Soodphakdee for their helpful suggestions. I am also grateful to Assistant Professor Dr. Julaporn Benjapiyaporn for her advice on the choice of the computer language used in this project. Appreciation is also expressed to Assistant Professor Dr. Kulachate Pianthong and Assistant Professor Dr. Umpaisak Teeboonma, Mechanical Engineering Department, Faculty of Engineering, Ubon Ratchathani University for their advice on experimental set-up and data analysis. My special additional thanks are also to Mr. Choochai Ngamchauchit for his advice on the original hot water heater with air conditioner system.

This study was supported by the Energy Policy and Planning Office, Thailand, the Energy Management and Conservation Office, Khon Kaen University, Thailand, the Graduate School Khon Kaen University, Thailand and Ubon Ratchathani University, Thailand.

Finally, I would like to express my sincere gratitude and appreciation to my dear parents, Mr. Poolsawat and Mrs. Laddawan who gave me a chance to study and have strongly supported me. I deeply thank my brother and sisters, especially Mr. Pichai, who took care of my family. I also thank my wife, Mrs. Pongpun who worked hard during my absence from home.

Pisit Techarungpaisan

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Example of List of Symbols and Abbreviations

LIST OF ABBREVIATIONS

ϒ-GGT	gamma-glutamyltranspeptidase
µg/mL	microgram per milliliter
µg/mL	microgram per milliliter
µL	micro liter (s)
ANOVA	Analysis of variance
BHT	Butylated hydroxytoluene
^{0}C	degrees Celcius
Ca	calcium
CaOx	calcium oxalate
cm	centimeter (s)
DI water	deionized water
dl	deciliter
DW	distilled water
DTNB	5,5′-dithiobis-(2-nitrobenzoic acid)
Fe^{2+}	ferrous ion
Fe^{3+}	ferric ion
g/day	gram per day
GAG	glucosaminoglycan
GPx	Glutathione peroxidase
GSH	reduce glutathione
GSSG	oxidized glutathione
H_2O_2	Hydrogenperoxide

....

Example of References

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Example of Title Page of Appendices

APPENDICES

Example of Title Page of Appendix

APPENDIX A

Reagents for Preparation of Metacercariae

Example of Research Publications

RESEARCH PUBLICATIONS

1. **Saijuntha W**, Sithithaworn P, Wongkham S, Laha T, Pipitgool V, Petney TN, Chilton NB, Andrews RH. Enzyme markers to identify and characterize *Opisthorchis viverrini* in Thailand and Lao PDR. ***Southeast Asian J Trop Med Public Health*** 2006; 37 Suppl 3: 43-7.
2. **Saijuntha W,** Sithithaworn P, Wongkham S, Laha T, Pipitgool V, Petney TN, Andrews RH. Genetic markers for the identification and characterization of *Opisthorchis viverrini*, a medically important food borne trematode in Southeast Asia. ***Acta Trop*** 2006; 100: 246-51.
3. **Saijuntha W,** Sithithaworn P, Wongkham S, Laha T, Pipitgool V, Tesana S, Chilton NB, Petney TN, Andrews RH. Evidence of a species complex within the food-borne trematode *Opisthorchis viverrini* and possible co-evolution with their first intermediate hosts. ***Int J Parasitol*** 2007; 37: 695-703.

Example of Vitae

VITAE

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1998-1999	Master Degree of Engineering (Energy Technology) Asian Institute of Technology (AIT), Prathumtani, Thailand. Thesis : "A study of temperature and flow distribution in a natural circulation solar water heater system"
1986-1989	Bachelor Degree of Mechanical Engineering. (Second Class honor) Khon Kaen University, Khon Kaen, Thailand.
Project :	"Rice Husk Gasifier"

Career	Assistant Professor Department of Mechanical Engineering, Faculty of Engineering, Ubon Ratchatani University, Thailand