

**DEVELOPMENT OF A SECONDARY ION MASS SPECTROMETER
PROTOTYPE USING QUADRUPOLE MASS SPECTROMETRY**

YAOWARET KEAWMUI

**MASTER OF SCIENCE
IN PHYSICS**

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright © by Chiang Mai University
All rights reserved

**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY**

MAY 2005

ISBN 974-9885-52-X

**DEVELOPMENT OF A SECONDARY ION MASS SPECTROMETER
PROTOTYPE USING QUADRUPOLE MASS SPECTROMETRY**

YAOWARET KEAWMUI

**A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF SCIENCE
IN PHYSICS**

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright © by Chiang Mai University
All rights reserved

**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY**

MAY 2005

ISBN 974-9885-52-X

DEVELOPMENT OF A SECONDARY ION MASS SPECTROMETER
PROTOTYPE USING QUADRUPOLE MASS SPECTROMETRY

YAOWARET KEAWMUI

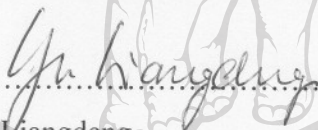
THIS THESIS HAS BEEN APPROVED
TO BE A PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF SCIENCE
IN PHYSICS

EXAMINING COMMITTEE



CHAIRPERSON

Asst.Prof. Dr. Dheerawan Boonyawan



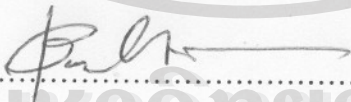
MEMBER

Dr. Yu Liangdeng



MEMBER

Dr. Dusadee Suwannakachorn



MEMBER

Asst.Prof. Dr. Boonchoat Paosawatanyong

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright © by Chiang Mai University
All rights reserved

19 May 2005

© Copyright by Chiang Mai University

ACKNOWLEDGEMENT

I would like to express my sincere thanks to my supervisor Dr. Yu Liangdeng for his excellent guidance and his encouragement. He continuously supports me for the progress of this thesis.

I especially wish to thank Asst.Prof. Dr. Dheerawan Boonyawan and Prof. Dr. Thiraphat Vilaithong for their advice and interest during this project.

I would like to thank Dr. Dusadee Suwannakachorn and Asst.Prof. Dr. Boonchoat Paosawatyanong for reading this thesis and participating as examining committee.

I am thankful to Mr. Rabieb Suwanakosom for helping me about the CMU2 heavy ion-implantation facility, to Mr. Michael W. Rhodes for his program to collect the mass spectrum, to Mr. Pathom Wichaisirimongkol and Mr. Thuansak Thibprasit for teaching me to operate the quadrupole gas analyzer.

I wish to express thank to Mr. Teerasak Kamwanna for his assistance and concerning about my thesis.

I appreciate all FNRF members for their supports and friendships. I am very thankful to Mr. Thongsuk Gladpirom for his support on construction of the adaptor.

The scholarship supported by the Development and Promotion of Science and Technology Talent Project (DPST) is greatly appreciated.

Finally, I would like to express my gratitude to my beloved parents and my brother for their love, unconditional support and being so proud of me.

Yaowaret Keawmui