



**DEVELOPMENT OF FLOW INJECTION AMPEROMETRIC
METHOD USING TRIIODIDE ION AS REAGENT FOR
ESTIMATION OF ANTIOXIDANT ACTIVITY**

PUTTAPORN KLAYPRASERT

**MASTER OF SCIENCE
IN CHEMISTRY**

**THE GRADUATE SCHOOL
CHIANG MAI UNIVERSITY**

FEBRUARY 2012

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่
Copyright © by Chiang Mai University
All rights reserved

**DEVELOPMENT OF FLOW INJECTION AMPEROMETRIC
METHOD USING TRIIODIDE ION AS REAGENT FOR
ESTIMATION OF ANTIOXIDANT ACTIVITY**

PUTTAPORN KLAYPRASERT

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

**THE GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
FEBRUARY 2012**

**DEVELOPMENT OF FLOW INJECTION AMPEROMETRIC
METHOD USING TRIIODIDE ION AS REAGENT FOR
ESTIMATION OF ANTIOXIDANT ACTIVITY**

PUTTAPORN KLAYPRASERT

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

EXAMINING COMMITTEE

Y. Vaneesorn
..... CHAIRPERSON

Asst. Prof. Dr. Yuthsak Vaneesorn

Jaroon Jakmunee
..... MEMBER

Assoc. Prof. Dr. Jaroon Jakmunee

THESIS ADVISOR

Jaroon Jakmunee
.....

Assoc. Prof. Dr. Jaroon Jakmunee

J. Kritisana
..... MEMBER

Dr. Kritisana Jitmanee

ACKNOWLEDGEMENTS

The author would like to express her sincere gratitude and is greatly indebted to her thesis advisor, Assoc. Prof. Dr. Jaroon Jakmune, for his kind supervision, invaluable guidance, comments, suggestions and consistent motivation and constant encouragement throughout the study.

The author is truly grateful to Asst. Prof. Dr. Yuthsak Vaneesorn and Dr. Kritsana Jitmanee for their valuable comments, suggestions and discussion.

The author gratefully acknowledges The Research Professional Development Science Project under the Science Achievement Scholarship of Thailand (SAST) for granting the scholarship throughout her study. The Graduate School and Department of Chemistry are also acknowledged for partial support. She would like to thank her friends at the Flow Based Analysis Research group (FBA) and the Unit of Instrumentation and Electrochemistry (UIE) for their encouragements and friendship.

The author expresses her greatest gratitude to her parents, and everyone whom may concern to her success for their endless love and continual encouragement even in a difficult time. Finally, she would like to thank those whose names are not listed here, who have one way or another contributed to the success of this work.

Puttaporn Klayprasert