การแปลข้อมูลสำหรับโพเทนชิโอเมตริก ไทเทรชัน ของกรดอ่อนผสม โดยวิธีการวิเคราะห์ความถดถอยแบบหลายตัวแปรเชิงเส้น

นางสาว สุภาวดี เชี่ยวชาญวัฒนา

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาเภสัชศาสตรมหาบัณฑิต
ภาควิชาเภสัชเคมี
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
พ.ศ. 2536

ISBN 974-583-459-9

ลิขสิทธิ์ของบัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

019448
i17137805

The Interpretation of Data for Potentiometric Titration of Weak acid Mixtures by Multiple Linear Regression Analysis

Miss Supawadee Chieawchanwatana

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A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Pharmacy
Department of Pharmaceutical Chemistry
Graduate School
Chulalongkorn University
1993

ISBN 974-583-459-9

Thesis Title The interpretation of data for potentiometric titration of weak acid mixtures by multiple linear regression analysis

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พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสีเขียวนี้เพียงแผ่นเดียว

สุภาวดี เชี่ยวชาญวัฒนา : การแปลข้อมูลสำหรับโพเทนชิโอเมตริก ไทเทรชัน ของกรดอ่อนผสม โดยวิธีการวิเคราะห์ความถดถอยแบบหลายตัวแปรเชิงเส้น (THE INTERPRETATION OF DATA FOR POTENTIOMETRIC TITRATION OF WEAK ACID MIXTURES BY MULTIPLE LINEAR REGRESSION ANALYSIS) อ.ที่ปรึกษา : อ.ดร.มิตร ปทีปวณิช, 180 หน้า. ISBN 974-583-459-9

การหาปริมาณของกรดอ่อนสองตัวที่ผสมกันนั้น สามารถทำได้โดยการใช้เทคนิคของโพเทนชิโอเมตริก ไทเทรชัน ร่วมกับการใช้สมการซึ่งพัฒนาและดัดแปลงมาเพื่อใช้ในการหาปริมาตรที่จุดสมมูลของกรดอ่อนผสม สำหรับการแปลข้อมูลนั้นได้มีการนำวิธีการทางสถิติ คือ การวิเคราะห์ความถดถอยแบบหลายตัวแปรเชิงเส้น และโปรแกรมคอมพิวเตอร์ (เอส พี เอส เอส/ พี ซี พลัส) มาใช้ จากการทดลองพบว่าสามารถใช้วิธีนี้ในการหาปริมาตรที่จุดสมมูลของกรดอ่อนที่ผสมกันสองตัวได้อย่างถูกต้อง อย่างไรก็ตาม ความผิดพลาดในการหาปริมาณจะเกิดขึ้นเมื่อความแตกต่างของลบล็อกค่าคงที่ของการแตกตัวของกรดอ่อนทั้งสองตัวมีค่าน้อยกว่าสองหรือมีความคลาดเคลื่อนในการวัดค่าความเป็นกรด-ด่าง เมื่อสารละลายมีค่าความเป็นกรด-ด่างมากกว่าสิบขึ้นไป

หอสมุดกลาง สถาบันวิทยบริการ จุฬาลงกรณ์มหาวิทยาลัย

ศูนย์วิทยทรัพยากร
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ภาควิชา เภสัชเคมี ลายมือชื่อนิสิต .....

สาขาวิชา เภสัชเคมี ลายมือชื่ออาจารย์ที่ปรึกษา .....

ปีการศึกษา 2536 ลายมือชื่ออาจารย์ที่ปรึกษาร่วม -

##C475143 : MAJOR PHARMACEUTICAL CHEMISTRY
KEY WORD: WEAK ACID MIXTURES / MULTIPLE LINEAR REGRESSION ANALYSIS / POTENTIOMETRIC TITRATION
SUPAWADEE CHIEAWCHANWATTANA : THE INTERPRETATION OF DATA FOR POTENTIOMETRIC TITRATION OF WEAK ACID MIXTURES BY MULTIPLE LINEAR REGRESSION ANALYSIS. THESIS ADVISOR : INSTRUCTOR MITR PATHIPVANICH, Ph.D. 180 pp. ISBN 974-583-459-9

Potentiometric titration technique can be used for determination of two weak acid mixtures including with the development and modification of equation in order to find the equivalent volume of weak acid mixtures. The statistical procedure, multiple linear regression analysis, and computer program, SPSS/PC$^+$, are used for the analysis of data. From the experiments, the equivalent volumes of two weak acid mixtures could be accurately determined by this method. However, error in equivalent points determination occured when ΔpKa of the two weak acids was less than two or there was the alkaline error in pH measurement, when pH value of the solution was above ten.

หอสมุดกลาง สถาบันวิทยบริการ จุฬาลงกรณ์มหาวิทยาลัย

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ปีการศึกษา 2536 ลายมือชื่ออาจารย์ที่ปรึกษาร่วม -

Acknowledgement

I wish to express my gratitude to my advisor, Dr. Mitr Pathipvanich for his guidance, encouragement had and understanding throughout this research.

I would like to thank Associate Professor Suttatip Chantaraskul and the staff of Pharmaceutical chemistry department, for their advice and helpful.

I also wish to thank the graduate school of Chulalongkorn university for granting partial financial support for this project.

Appreciation is extended to Associate Professor Yaowapa Wairaksat, Assistant Professor Usa Glagasigij and Assistant Professor Nuansri Nivattisaivong, Instructor of Pharmaceutical chemistry department, for their kind assistance.

A special appreciation is given to Mr. Seri Daodee for his kindness, willpower and cheerfulness during my graduate study.

Finally, my appreciation goes to my family and my friends who have graciously accepted my absence while working on this research.

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