

การพัฒนาเทคนิคทางเคมีวิเคราะห์สำหรับธาตุพิษจำนวนน้อยในน้ำ  
โดยวิธีนิวตรอนแอคติเวชันอานาลัยซิส



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THE DEVELOPMENT OF A TECHNIQUE IN ANALYTICAL  
CHEMISTRY FOR THE DETERMINATION OF TRACE TOXIC  
ELEMENTS IN WATER BY NEUTRON ACTIVATION ANALYSIS.



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#### บทคัดย่อ

รายงานนี้ไ้ทำการพัฒนากรรมวิธีวิเคราะห์ธาตุพิษปริมาณน้อยในน้ำบางตัว เช่น สารหนู พลวง โมลิบดีนัม หังสเทน โทบอลด์ โครเมียม แคดเมียม สังกะสี พรอท และ ซีลีเนียม โดยทำการตกตะกอนร่วมกับเหล็กไฮดรอกไซด์ และ/หรือ คุคชันบนผงถ่าน เพื่อนำมาทำการวิเคราะห์ด้วยวิธีนิวตรอนแอกติเวชันต่อไป

หลังจากตรวจสอบความเชื่อถือไ้ของกรรมวิธีวิเคราะห์ดังกล่าวนี้แล้ว ไ้้นำมาใช้วิเคราะห์ ตัวอย่างน้ำชนิดต่าง ๆ ซึ่จำกัดของการวิเคราะห์ธาตุในน้ำมีค่า 0.01-0.1 ไมโครกรัมต่อลิตร

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#### ABSTRACT

Techniques in preconcentration of some trace toxic elements from water samples based on co-precipitation with  $\text{Fe}(\text{OH})_3$  and/or adsorption on activated charcoal have been developed for the analysis of As, Sb, Mo, W, Co, Cr(VI), Cd, Zn, Hg and Se by neutron activation. After the reliability of the developed techniques was checked, they were applied to investigate some trace elements in various kinds of water samples. The limit of detection was found in the range of 0.01-0.1  $\mu\text{g./l.}$  for the concerning elements.



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