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DEVELOPMENT OF AN ANALYTICAL TECHNIQUE FOR THE ASSAY
OF TRACE ELEMENTS IN FRESH WATER BY
ATOMIC ABSORPTION

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หัวข้อวิทยานิพนธ์	การพัฒนาวิธีการทางเคมีวิเคราะห์สำหรับหาธาตุที่มีปริมาณน้อยในน้ำจืดโดยวิธีอะตอมมิกแอบซอร์ปชัน
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บทคัดย่อ

ได้ศึกษาวิธีวิเคราะห์ปริมาณ เงิน ทองแดง พรอท ตะกั่ว แคดเมียม และ โคบอลต์ ในน้ำจืดวิธีอะตอมมิกแอบซอร์ปชัน แยกธาตุทั้งหกจากน้ำโดยให้ถูกดูดซับ (adsorb) บน คอลัมน์ (column) ของโวลตาเลฟ (voltalef) ซึ่งฉาบด้วยไดไทโซน (Dithizone) เงิน ทองแดง และ พรอท จะถูกดูดซับเมื่อสารละลายมี pH 1 ± 0.5 ตะกั่ว แคดเมียม และ โคบอลต์ จะถูกดูดซับเมื่อสารละลายมี pH 5 ± 0.5 ธาตุทั้งหกจะถูกไล่ออกจากคอลัมน์ด้วยสารผสม CCl_4 : acetone ในอัตราส่วน 1 : 1 หลังจากทำลายสารละลายอินทรีย์แล้ววัดปริมาณธาตุด้วยวิธีอะตอมมิกแอบซอร์ปชัน ได้ใช้วิธีดังกล่าววิเคราะห์ปริมาณธาตุทั้งหกในตัวอย่างน้ำที่เก็บจากแม่น้ำเจ้าพระยาตอนล่างระหว่างเดือน มิถุนายน ถึงเดือน สิงหาคม พ.ศ. 2517 รวมทั้งสิ้น 24 ตัวอย่าง

Thesis Title Development of an Analytical Technique for
the Assay of Trace Elements in Fresh Water
by Atomic Absorption

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ABSTRACT

The quantitative analysis of Ag, Cu, Hg, Pb, Cd and Co by the method of atomic absorption was studied. The elements were concentrated by chelation on a chromatographic column containing voltalef coated with dithizone. Ag, Cu and Hg were adsorbed from an aqueous solution at $\text{pH } 1 \pm 0.5$ whereas Pb, Cd and Co were adsorbed at $\text{pH } 5 \pm 0.5$. A mixture of CCl_4 : acetone in a ratio 1 : 1 was used as eluting agent. After the organic solvent was destroyed, the concentration was measured by the method of atomic absorption. The results of the concentration of the six elements in 24 water samples collected from the lower part of the Chao Phya River during June - August, 1974 were reported.

TO

MY MOTHER

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