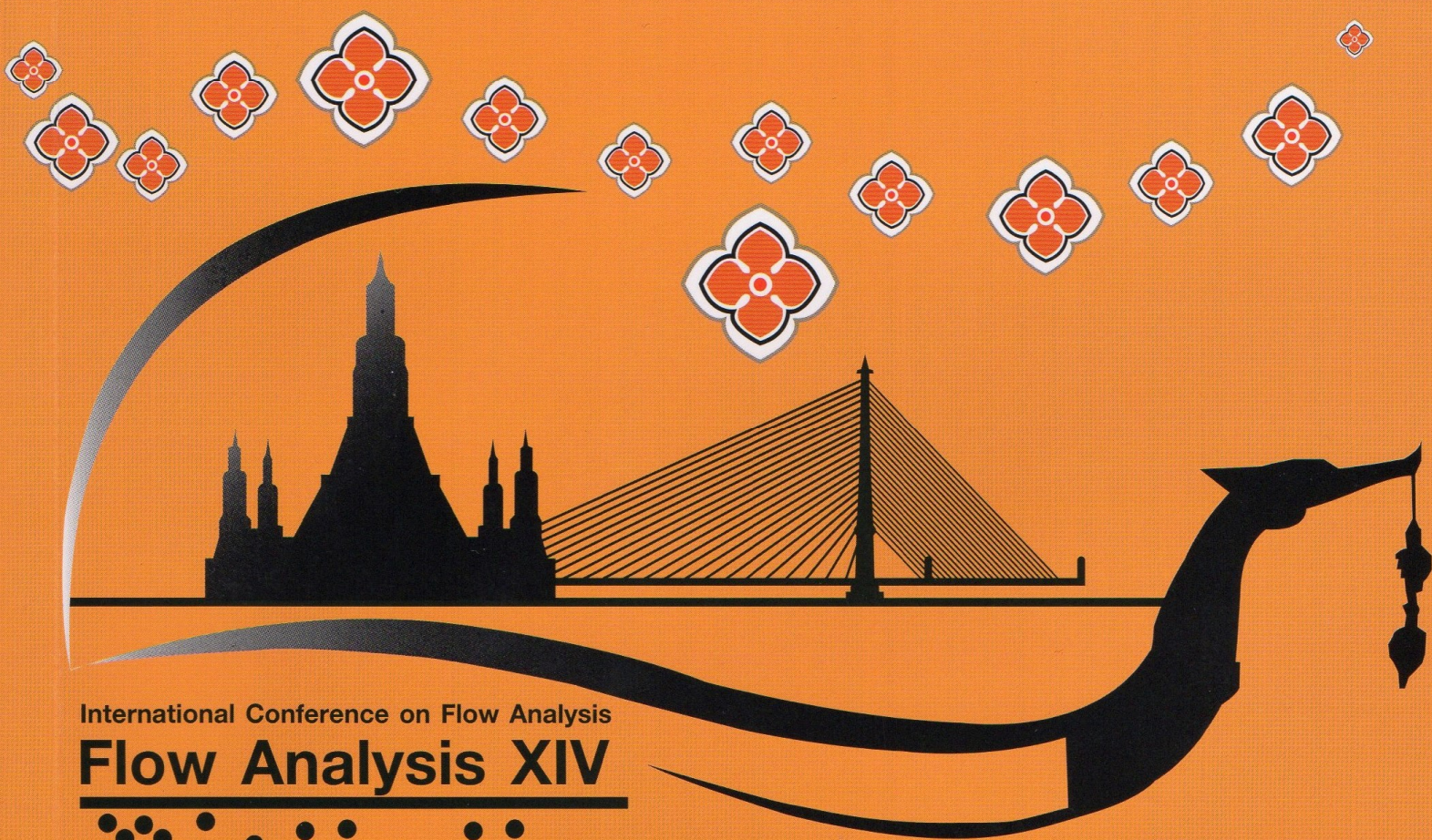


# Abstract book

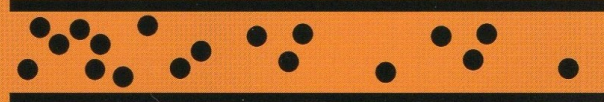
วิธีวิเคราะห์สมัยใหม่ biological ๒๐๑๘ Excursion Gas diffusion  
FIA UPAD อาหาร ๒๐๑๘ GC MBLVP  
CE การเตรียมตัวอย่าง quantitative 14th การวิเคราะห์  
SIA Solid phase extraction  
SIEMA ตัวอย่าง analysis  
MSFIA ๑๘  
Sample สเปกโทรสโกปี SIA CIA spectroscopy  
Electrochemistry ๒๐๑๘ สิ่งแวดล้อม เคมีไฟฟ้า

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## Sequential injection multi-parametric determination in urine: Iodide, Creatinine and NO<sub>x</sub>

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### Abstract

Iodine deficiency is a worldwide-recognized problem, and over two billion individuals have insufficient iodine intake [1]. Urinary iodide concentration is the primary indicator of population iodine status and supplementation strategies evaluation [1, 2]. Creatinine is an indicator of renal health and may validate urine tests since its concentration is stable along the day. Normalization of iodine/creatinine ratio is needed when screening individuals with spot samples [3]. Nitrate appears to inhibit iodine uptake correlating with iodine concentration [4] and the presence of nitrite is synonym of urinary tract infection. In this work, a sequential injection (SI) multi-parametric method is proposed for determination of iodide, creatinine and NO<sub>x</sub>. For iodide determination, a column packed with a strong anion exchange resin (AG1-X8) was coupled with a combined ion selective electrode, attaining on-line iodide retention prior to detection. Creatinine was determined using Jaffe's reaction with spectrometric detection. Finally, Griess reaction was used for NO<sub>x</sub> determination, after nitrate reduction using a zinc column. The developed SI method was successfully applied to urine samples and the linear working range covered the normal levels found in the human urine. The results were comparable to those obtained by reference methods, and recovery tests further confirmed the method accuracy.

**Keywords:** Urinalysis, Iodine, Creatinine, NO<sub>x</sub>, Flow analysis.

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