



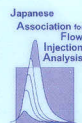
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ANALYSIS

15 - 20 SEPTEMBER 2013

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DEVELOPMENT OF A μ SI-LOV SYSTEM FOR THE SPECTROPHOTOMETRIC DETERMINATION OF CADMIUM AND LEAD: PRELIMINARY STUDIES

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Metals determination in natural waters, with emphasis on cadmium and lead, is still a major concern since they continue to be discharged into the environment from several sources including anthropogenic activities. In bathing waters, to guarantee the good quality of the water, a continuous and real time monitoring of the metals content is particularly important due to the negative impact of metals in human's health. Flow methods represent a sustainable alternative for water analysis as a result of the simplified sample handling, miniaturization and automation of the determinations. Sequential injection lab-on-valve (SI-LOV), as the third generation of flow analysis techniques, brought advantages in terms of miniaturization allowing not only a lower sample and reagents consumption but also the possibility to manipulate bead suspensions [1]. With this approach the analyte or the reagent can be immobilized on beads surface and packed in the detection cell improving the overall consumption.

The objective of this work is the spectrophotometric determination of cadmium and lead using the SI-LOV technique. A minimal consumption of reagents and sample is intended using dithizone as the colour reagent for the determination of the two metals. This feature may be possible by varying the pH value, as the optimum pH for lead reaction with dithizone ranges from 7-10 while for cadmium is about 12 (strongly alkaline medium).

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- [1] J. Ruzicka, *Analyst* 125 (2000) 1053.