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Improving celerity of heavy metals measurements

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Abstract:This paper presents a low cost measurement system to identify heavy metals dissolved in water and to evaluate their concentrations. Two main objectives of the proposed measurement system must be underlined, both related with measurement celerity. The first one improves measurement celerity by reducing the requested time to remove dissolved oxygen contained in the water sample. The second one proposes a flexible voltammetry voltage scan that improves measurement celerity using a fast voltage scan that identifies the heavy metals dissolved in the solution with higher concentrations and then a slower voltage scan is performed around the voltammogram current peaks associated with the heavy metals with higher concentrations.

Published in: 2010 IEEE Instrumentation & Measurement Technology Conference Proceedings

Date of Conference: 3-6 May 2010INSPEC Accession Number: 11501675

Date Added to IEEE Xplore: 17 June 2010DOI: 10.1109/IMTC.2010.5488121

ISBN Information:Publisher: IEEE




ISSN Information:Conference Location: Austin, TX, USA

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I. Introduction

Heavy metals' measurements together with the measurement of others aquatic water variables like conductivity, salinity, dissolved oxygen, turbidity and temperature, between others, are essential in every environmental assessment. This system (to be implemented) for the measurement of heavy metals concentrations is a hard task since the classical measurement techniques requires laboratory conditions that uses expensive equipments with limited measurement flexibility.

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