NEW METHOD FOR THE DETERMINATION AND MONITORING OF THE ORGANIC AND INORGANIC POLLUTION LEVELS IN WATERS OF VARIOUS NATURE

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ABSTRACT

During the past five years, the Group of Atomic Spectrometry and Environmental Analysis of the Department of Analytical Chemistry of the University of Alicante has been developing new methods and strategies for the determination of several pollution parameters in waters of different procedure. Among these parameters we can highlight the Chemical Oxygen Demand, the Total Organic and Inorganic Carbon and the concentration of several heavy metals. Currently, the Department of Analytical Chemistry has the instrumentation required to carry out this kind of determinations.

ADVANTAGES AND INNOVATIVE ASPECTS

- The determination of heavy metals by using new sample introduction systems lowers the detection limits and the extent of the interferences.

- The determination of TOC, DOC and NDOC through ICP-AES eliminates some of the problems encountered with conventional methods (i.e., poor recoveries, instrument failure in presence of high sodium concentrations, etc.).

- The determination of IC through ICP-AES allows the inorganic carbon speciation.

- The simultaneous determination of metals and carbon related parameters through ICP-AES reduces the laboratory investment in instrumentation and qualified personal.

MARKET APPLICATIONS

The method described can be used by any company willing to control the quality of both the water used in industrial processes and the wastewaters.

The following figure details the possible applications of the present method.
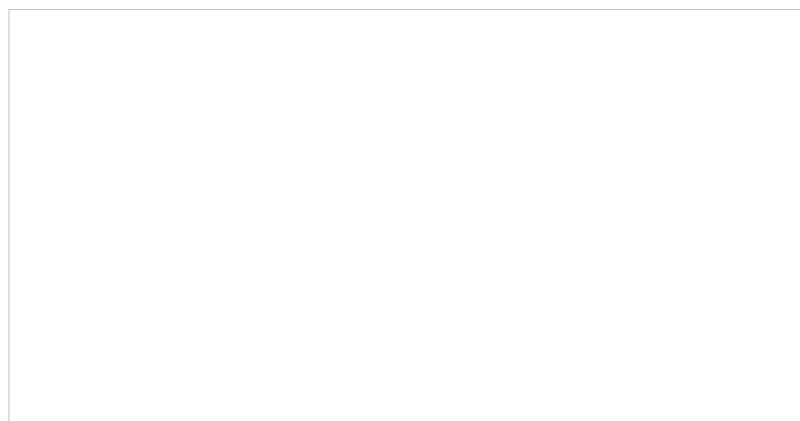
Currently we have the technology required to:

a. Developing and implantation of the method in an analysis laboratory

b. Developing of an on-line monitoring system in industrial processes

c. Developing of a method for the analysis of solid wastes