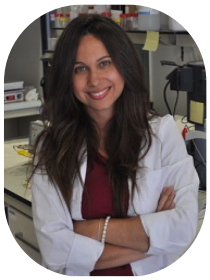
2021
July 26-27
Webinar

23rd World Congress on
Analytical and Bioanalytical



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The new era of the future: Microchips to solve biological and environmental problems?

Miniaturization is a word that has become a trend topic in the field of analytical chemistry. Many known procedures and techniques such as solid phase microextraction and the electromembrane have been miniaturized in microfluidic chip systems, with really satisfactory results applied to both biological and environmental samples. These techniques have proven to be of great potential for the extraction of compounds of a very diverse nature with an excellent clean-up, without the need to require previous steps. But in addition, microchip systems have been used as separation systems such as the implementation of capillary electrophoresis for the separation of biological molecules and its successful application to the early diagnosis of diabetes. It is true that these minute systems that have been able to be coupled online to analysis instruments or even allow them to be used as analysis instruments, present numerous and important advantages compared to the more traditional methods, procedures or set ups. Among these advantages are the significant decrease in the volume of sample and reagents (especially organic solvents), the reduction of the analysis time, the improvement in the mass transfer of the analytes through a membrane, the capacity for consecutive extractions, and the low manufacturing cost, among others. In this plenary session, we are going to go through the history of sample procedures up to the present and we are going to investigate this new future era in which on-chip diagnostic procedures and methods for analyzing environmental samples will take on special relevance.

Biography

Maria Ramos PayÃ¡n is Doctor in Chemistry (Ph.D) and she is Professor at University of Seville (Spain) at the Department of Analytical Chemistry. Her research interests focus on the development of new microextraction techniques and microfluidic devices for applications in the life sciences and pharmaceutical sciences. She has published over 40 scientific articles.

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