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## ***In situ* suspended aggregate micro-extraction: A new sample preparation approach for the enrichment of organic compounds in aqueous solutions**

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Extraction techniques play a crucial role in sample pre-treatment, since they allow both clean-up and pre-concentration of the target analytes in only one step. This operation enhances selectivity and sensitivity, which is especially important when trace analysis is performed. With the aim of contributing to the development of extraction techniques, we present, herein, a new approach termed *in situ* Suspended Aggregate Micro-Extraction (iSAME). This new concept capitalizes on the general principles of *in situ* Solvent Formation Micro-Extraction (ISFME), but accommodating extraction in a supra-molecular aggregate phase which is formed *in situ* in the sample solution through ion-association between two oppositively charged counter-ions. The aggregate phase containing the analytes is then collected in the form of a thin-film onto the surface of a plain filter paper by vacuum filtration. The analytes are released by dissolving the film into an appropriate solvent. Under these conditions, recoveries can be conceivably maximized since (a) extraction is accomplished both by entrapment and mass transfer of the target analytes and (b) the total amount of the extractant phase is collected. Using a series of organic UV filters as model analytes, the experimental variables pertaining to the operation of this new extraction approach were optimized and validated to the analysis of genuine water samples of different nature and with different matrix complexity (tap, river, lake, lagoon, delta and sea). The satisfactory analytical performance of the method along with its simplicity and low resource requirements render the method as an attractive alternative to the routine assessment of organic compounds in environmental water samples.

### **Biography**

Alberto Chisvert has completed BSc from Faculty of Chemistry, University of Valencia, in 1999; PhD from Department of Analytical Chemistry, University of Valencia, in 2003. He is Associate Professor of the Department of Analytical Chemistry of University of Valencia. At present, he has published more than 60 articles in reputed journals, and more than 10 book chapters. Moreover, he is the Co-Editor of the book *Analysis of Cosmetic Products* (Elsevier, 2007). He is Editorial Board Member of *Advances in Analytical Chemistry*, *American Journal of Analytical Chemistry*, *Chromatography Research International*, *International Journal of Analytical Chemistry* and *Journal of Trace Analysis in Food and Drugs*, and is a regular Reviewer of more than 27 journals. His research areas are focused on both liquid and gas chromatography coupled to mass-spectrometry, liquid- and solid-phase micro-extraction, in bio-analysis and cosmetic, pharmaceutical and environmental analysis.

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