

Development of self-cleaning ceramic microfilters by microwaves and application to the filtration of environmental samples. "MICROFILCER"

Nowadays there are in Spain more than 200 accredited entities that carry out samples' analysis. Development of analysis in the laboratory requires a previous filtration and/or pre-concentration, in order to separate and/or concentrate substances with the aim to improve the detection limits of the different methods of analysis. Different kind of filters are used for these processes, which are thrown out after each use. This involves an expense in microfiltration filters around 30% of the total consumable material used, that is in Spain a total volume around 1 million of units per year and more than 100 million in Europe. In addition, there are disposable microfiltration systems, such as in the online analysis systems, where the inconvenient is the high cost.

The aim of MICROFILCER project is to develop a new microfiltration compact and reusable system for pre-concentration or pre-treatment of samples coming from waste or industrial waters, based on ceramic membranes which are sensitive to microwave, whose composition will be based on low cost ceramic membranes. It is an innovative project, with an important technological advance regarding the current state of the art. It arises from an identified need in the market, and will have different applications. It is based on the **development of a compact system that will allow the sample gathering, microfiltration and regeneration of membranes in a unique device, without the need to replace the microfiltration membrane after each use.**

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