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## Application of polypyrrole-based stir bar sorptive extraction in combination with ion mobility spectrometry for the determination of chlorpyrifos in water and fruit samples

Mansoureh Kermani<sup>1</sup>, Jacek Namiesnik<sup>2</sup>, Adam Kloskowski<sup>2</sup>, Łukasz Marcinkowski<sup>2</sup>, Mohammad T Jafari<sup>1</sup> and Mohammad Saraji<sup>1</sup><sup>1</sup>Isfahan University of Technology, Iran<sup>2</sup>Gdansk University of Technology, Poland

With the aim of contributing to the development and improvement of microextraction techniques, our research group proposed for the first time a new configuration relying on the principles of stir-bar sorptive extraction (SBSE), in which an expanded iron sheet was used instead of a glass-enveloped magnet as the extraction phase. Although SBSE, is a well-established microextraction technique but it has a limitation in flexibility for selection of sorbent that can be coated over the glass magnetic stir bar. Also, coating procedure involves several tedious steps in order to expose the maximum number of surface silanol groups for allowing linkage of sorbent to the surface. In this work, we have demonstrated the electrosynthesis of polypyrrole coating on a piece of expanded iron sheet, as a self-stirring extraction setup. This new device not only solves above said problem but also increases an effective surface area of the sorbent exposed to sample solution through its configuration. The electrodeposition as a coating procedure is flexible and easily controlled by adjusting the electropolymerization conditions. Moreover, the device offers an inexpensive alternative for SBSE production, a higher sensitivity, improved precision and mechanical stability. The surface of the device was characterized by using scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FT-IR) and thermogravimetric analysis (TGA) techniques. The performance of the device prepared was evaluated for trace determination of chlorpyrifos in different real samples using directly thermally desorption (TD) into an ion mobility spectrometry (IMS). The effects of various parameters affecting the extraction efficiency were studied, simultaneously.

### Biography

Mansoureh Kermani began her PhD studies at Isfahan University of Technology, Isfahan, Iran in 2014. She is currently a Visiting Researcher at the Faculty of Chemistry of the Gdansk University of Technology, Poland. She is the author of two scientific papers.

Kermani.mansoureh@gmail.com

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