Application of polymer nonocomposits in solid phase microextraction

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Solid phase microextraction (SPME), nowadays, is regarded as a well-established and solvent-free extraction technique and has been applied for the determination of a variety of chemicals indifferent samples. In this technique the extraction process is pre-dominantly performed on fragile fused silica-based fibers. Therefore access to appropriate fiber coatings is one of the most critical steps in SPME. One important strategy to improve the sensitivity of SPME relies on the usage of nanostructured materials in which the interactions between the desired chemicals and the fiber coating are enhanced. The developments of new fibers are mostly focused on improving the thermal, mechanical and chemical stabilities, imparting diverse functionalities and polarities and enhancing their extraction capacity. The use of polymer nanocomposites-based coatings and replacing the fragile fused silica substrates by metallic wires are among the recent approaches toward achieving an overall stability for the prepared fibers.

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