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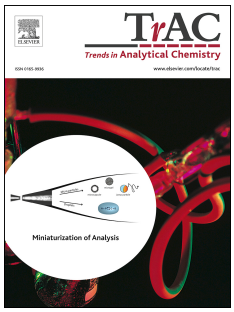

Different configurations of carbon nanotubes reinforced solid-phase microextraction techniques and their applications in the environmental analysis

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Different configurations of carbon nanotubes reinforced solid-phase microextraction techniques and their applications in the environmental analysis

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Abstract

Since its introduction in 1990s, solid-phase microextraction (SPME) has grown increasingly popular due to its simplicity, environmental benignity and adaptability to a wide variety of sample types and analytes. The application of carbon nanotubes (CNTs) in SPME is receiving great attention since their introduction would bring an enhancement of partition coefficient, an increasement of diffusion coefficients and better selectivity to the target analytes. CNTs have been feasibly applied in almost all of the developed configurations of SPME technique such as fiber SPME, thin-film SPME, in-tube SPME, stir-bar microextraction, in-needle SPME and in-tip SPME. The objective of this literature review is to elucidate the advances of the configurations of CNTs based SPME techniques and their applications in the environmental analysis.