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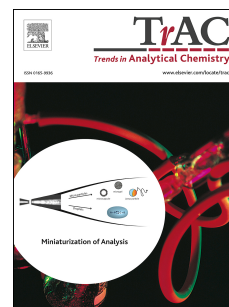
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Comprehensive Two-Dimensional Gas Chromatography in Environmental Analysis

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Abstract

Comprehensive two-dimensional gas chromatography (GC×GC) offers increased peak capacity and selectivity relative to conventional one dimensional separations. The analysis of persistent organic pollutants in environmental matrices is very challenging due to the large number of compounds with varying chemical and physical properties that are typically present in the sample at the same time at concentrations ranging from ultra-trace to percent levels. GC×GC is steadily gaining in popularity in environmental analysis and the number of publications citing the use of this technique has been increasing significantly in the recent years. An overview of the latest applications in the environmental field is presented in this paper, emphasizing the advances for targeted and non-targeted analysis in complex matrices. In addition, instrumentation, data interpretation approaches, as well as the quality assurance and control for routine analytes are discussed.

Keywords: *Comprehensive Two-Dimensional Gas Chromatography; GC×GC; environmental analysis; targeted and non-targeted analysis; multiresidue methods*

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