

عنوان مقاله:

Box-Behnken Experimental Design for Optimizing HSSPME-GC-MS

محل انتشار:

دومین کنفرانس بین المللی و سومین همایش ملی کاربرد فناوری های نوین در علوم مهندسی (سال: 1394)

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خلاصه مقاله:

The goal of the present study is to find the optimal conditions of temperature and extraction time, VOC and NaCl amount, and desorb time of extraction reaction that takes place in the vial while performing the HS-SPME procedure for the determination by GC/MS of six analytes (benzene, toluene, ethyl benzene, ortho xylene, meta xylene and para xylene) and the corresponding IS (MIBK) by fitting and analyzing a response surface for each one. The paper shows Box-behnken experimental design (BBD) as a useful technique to improve and optimize an extraction condition and embody the effect that some experimental factors exert on several analytical responses. A five-factor, three-level BBD was used to optimize. Forty six batches were prepared and evaluated for responses as dependent variables. In the optimal experimental conditions (0.32 gr NaCl, 2.67 microliter VOC, 40 °C extraction temperature, 15 min extraction time and 60 second desorb time) determined by means of a HS-SPME-GC/MS system ..is carried out

کلمات کلیدی:

Box-Behnken; optimization; HS-SPME-GC , MS; BTEX

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