Abstract

In this study, a novel CO_2-assisted liquid phase microextraction (LPME) based on switchable hydrophilicity solvents (SHS) which called (SHS-LPME) was applied for preconcentration of 4-mononitrotoluene, 2,4-dinitrotoluene and 2,6-dinitrotoluene in water samples. Mixture of DPA and water (1:1) in the presence of CO_2 was used as extractant solvent. Protonated DPA was helped to transition of analytes from aqueous phase to organic phase. NaOH solution was added to homogenous solution for separation of two phases. Extraction parameters affecting the microextraction efficiency were optimized that under optimized conditions, detection limit and preconcentration factor were obtained in the ranges of 0.9-1.8ng/mL and 132-138, respectively. Finally the developed method was successfully applied to determination of nitro aromatic compounds in water samples.

Keywords: Homogeneous liquid-liquid microextraction, Switchable hydrophilicity solvent, Mono and dinitro toluenes, Gas chromatography

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The Thesis Submitted for the Degree of M. Sc
In the field of Analytical Chemistry

Application of N,N-dipropylamine as switchable hydrophilicity solvent for homogeneous liquid-liquid microextraction of nitroaromatic compounds from water samples

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September 2016