

عنوان مقاله:

Solid phase extraction and determination of indium using multi-walled carbon nanotubes modified with magnetic nanoparticles

محل انتشار:

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خلاصه مقاله:

In this work MWCNTs-Fe₃O₄ nanocomposite was used as an adsorbent for extraction and preconcentration of indium from aqueous solutions. The magnetic MWCNTs with adsorbed analytes were easily separated from the aqueous solution by applying an external magnetic field. After elution of the adsorbed analytes, the concentration of indium was determined using inductively coupled plasma optical emission spectrometry determination. The effects of pH, sorbent amount, eluent type, chelating reagent concentration, sample volume, and time on the recovery of the In(III) were investigated. Moreover, under the optimum conditions, the detection limit for In(III) was 0.28 µg L⁻¹. The precision of the method, evaluated as the relative standard deviation obtained by analyzing a series of ten replicates, was 3.1 %.

Ultimately, the method was successfully applied for the determination of In(III) in environmental water samples

کلمات کلیدی:

,Indium, Preconcentration, Carbon nanotubes, Fe₃O₄ nanoparticles

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