

## عنوان مقاله:

Simultaneous determination of trace metals in natural groundwater and snow after their preconcentration on novel adsorbent based on Magnetic Dispersive Micro-solid Phase Extraction with inductively coupled plasma mass spectrometry (DMSPE-ICP-MS)

## محل انتشار:

ششمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1401)

تعداد صفحات اصل مقاله: 13

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## خلاصه مقاله:

A simple and sensitive method for preparation of the adsorbent and solid phase extraction procedure for multi-element determination by inductively coupled plasma mass spectrometry (ICP-MS) has been proposed. The magnetic solid phase extraction (MSPE) was synthesised by Chemical co-precipitation method. Cd(II), Ni(II) and Pb(II) were quantitatively ( $\text{Fe}_3\text{O}_4$ ) recovered using  $\text{Fe}_3\text{O}_4$  from aqueous solutions at pH ۶.۷ and at a flow rate of  $1.0 \text{ mL min}^{-1}$ . All the elements can easily be eluted by  $3.0 \text{ mL } 0.3 \text{ M HNO}_3$ . A mini-column packed with  $0.15 \text{ g Fe}_3\text{O}_4$  retained all elements quantitatively from up to  $50 \text{ mL}$  multi-element solution. The relative standard deviation for five replicate determinations was  $5.7\%$  and  $4.1\%$  and  $4.8\%$ , for Ni(II), Cd(II), and Pb(II) respectively, for determination of  $10 \mu\text{g L}^{-1}$  level. The developed method was applied for SPE-ICP-MS determination of Cd, Ni, Pb, in groundwater and snow

## کلمات کلیدی:

Magnetite nanoparticles, multi-element, preconcentration, ICP-MS

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1447342>

