

عنوان مقاله:

(Chelate Modified β -CDP as a Green and Economical Sorbent for Separation and Preconcentration of Co(II)

محل انتشار:

دوفصلنامه ایرانی شیمی تجزیه, دوره 1, شماره 2 (سال: 1393)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Sandeep Jaggi - *Department of Chemistry, Punjabi University, Patiala, India*

Usha Gupta - *Department of Chemistry, Punjabi University, Patiala, India*

خلاصه مقاله:

A simple and sensitive method has been developed for the preconcentration and determination of trace level of Co(II) using UV-Vis spectrophotometry. β -Cyclodextrin polymer modified with 1-(2-pyridylazo)-2-naphthol (PAN) is used for the preconcentration of Co(II) from samples at pH 8.5. The polymer is synthesized and characterized using elemental analysis, FT-IR and SEM analysis. The factors affecting the recovery of Co(II) such as pH, adsorbent dose, contact time, sample volume, eluent concentration and volume are also optimized in order to achieve higher sensitivity. The recoveries of Co(II) are found to be $\geq 95\%$ and the relative standard deviation found by analyzing 3 replicates is ≤ 2.9 . The preconcentration factor is found to be 100. The limit of detection (LOD) determined as (3σ) is found to be 4.2 ng/ml and limit of quantification (LOQ) determined as (10σ) is found to be 14 ng/ml. The recoveries achieved by addition of Co(II) at known concentrations to samples and analysis results show that the described method has a good accuracy. The proposed method is applied to water, vegetable and alloy samples successfully

کلمات کلیدی:

Solid Phase Extraction; Preconcentration; Polymer

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/630284>

