

## عنوان مقاله:

Nano-2SiO<sub>2</sub>- Modified by CTAB and oxime ligand for separation and Preconcentration of Trace Amount of Cu(II) in Real Environmental Samples

## محل انتشار:

دوفصلنامه ایرانی شیمی تجزیه, دوره 4, شماره 1 (سال: 1396)

تعداد صفحات اصل مقاله: 8

## نویسندگان:

Narges Vaezi - FIA-Lab., Department of Chemistry, Faculty of Sciences, University of Zanjan, Zanjan, Iran

Nasser Dalali - FIA-Lab., Department of Chemistry, Faculty of Sciences, University of Zanjan, Zanjan, Iran

Mehdi Hosseini - FIA-Lab., Department of Chemistry, Faculty of Sciences, University of Zanjan, Zanjan, Iran;  
University of Applied-Science, Branch of Calcimin, Dandi, Zanjan, Iran

## خلاصه مقاله:

A simple, novel, accurate and selective method for the determination of trace amounts of Cu<sup>2+</sup> ions in water and soil samples is proposed. The method is based on the separation and preconcentration of Cu<sup>2+</sup> on a nano-SiO<sub>2</sub> modified by a cetyltrimethylammonium bromide as surfactant and indane-1,2,3-trione-1,2-dioxime as complexing agent. The retained copper on the nano-sorbent was eluted with 1.5 mL of 1.0 mol L<sup>-1</sup> HNO<sub>3</sub> and measured by flame atomic absorption spectrometry. The synthesis of this nano-sorbent is also described and certified by FTIR, XRD and TEM techniques. Furthermore, several effective analytical parameters were evaluated and optimized. Under the best optimum conditions maximum absorption capacity, enrichment factor and limit of detection were 7.04 mg g<sup>-1</sup>, 333.3 and 4.4 µg L<sup>-1</sup>, respectively. The relative standard deviation of the preconcentration method was 0.28% (n=7) and calibration curve gave good level of linearity with correlation coefficient value 0.997. Finally, the feasibility and performance of the method was evaluated by determination of copper (II) ions in several water and soil samples with satisfied results.

## کلمات کلیدی:

Nano-SiO<sub>2</sub> Modified, Cetyltrimethylammonium Bromide Surfactant, Indane Ligand, Separation, Preconcentration, Copper Determination

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/630330>

