

عنوان مقاله:

Synthesis high character of ion-imprinted polymer Nano particles for the extraction and preconcentration of Magnesium ions in food and water samples

محل انتشار:

کنفرانس بین المللی علوم، مهندسی، تکنولوژی و کسب و کارهای فناورانه (سال: 1398)

تعداد صفحات اصل مقاله: 14

نویسندگان:

Hossein Khani - *Department of Chemistry, Ilam University, Ilam, Iran*

Nasrin Rahmatian - *Department of Chemistry, Islamic Azad University, Ilam branch, Ilam, Iran*

Alireza Taheri - *Department of Chemistry, Islamic Azad University, Ilam branch, Ilam, Iran*

خلاصه مقاله:

An ion imprinted polymer (IIP) was synthesized for the separation and recovery of trace amount of Mg^{2+} ion from food and water samples. It was prepared by copolymerization of methyl methacrylate (monomer) and ethylene glycol dimethacrylate (cross-linker) in the presence of Mg^{2+} -2-((E)-(3-hydroxyphenylimino)methyl)phenol ternary complex wherein Mg^{2+} ion is the imprint ion and is used to form the imprinted polymer. The structure and morphology of Mg^{2+} -IIP were followed by various analytical methods such as infrared spectroscopy (IR), X-ray diffraction (XRD), and scanning electron microscopic (SEM) techniques. The specific surface area and pore volume of adsorbents were measured by nitrogen adsorption based on the Brunauer–Emmett–Teller (BET) technique. The effect of several parameters such as solution pH, sorption and desorption time, type, concentration, and volume of eluent on the extraction were investigated and optimized. The adsorption isotherm of magnesium ions on the IIP was well described by the Langmuir model ($R^2=0.9988$). Mg^{2+} ion can be separated selectively from the solution and the method was successfully applied to the determination of trace amounts of Mg^{2+} in food and water samples with an acceptable reproducibility (RSD <5.0%).

کلمات کلیدی:

Applications; Crosslinking; Nanoparticles; Properties and Characterization; separation Techniques

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/903171>

