

Abstract

In this research, a urea-based porous organic polymer with a metal-organic framework (UiO-66-NH₂), is investigated as an adsorbent for extraction of uranium from the aqueous samples. Affecting parameters on extraction efficiency such as pH of the sample solution, amount of adsorbent, sonication time, volume of eluent, sample volume and desorption time were studied. The limit of detection (LOD) was 0.6 µgL⁻¹. The intra-day and inter-day precisions (RSD%) were assessed by five measurements at the concentration of 100 µgL⁻¹. The intra-day and inter-day precisions were found to be 4.8% and 1.9%, respectively. The simple preparation of the sorbent, highly efficient, and fast separation provide a practical method for application of such material in industry.

Keywords: uranium, solid phase extraction, metal-organic framework, porous organic polymer,



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**Extraction and determination of uranium in aqueous
solution using a urea-based porous organic polymer as
an adsorbent and UV-Vis spectrophotometry**

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