

عنوان مقاله:

Highly selective removal of Pb(II) ions using one-pot thiol- functionalized nanoporous silica with a low amount of directing agent

> محل انتشار: مجله بين المللي فناوري نانو در آب و محيط زيست, دوره 5, شماره 4 (سال: 1399)

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نویسندگان:

Naimeh Atoub - Kish International Campus. University of Tehran. Kish. Iran

Ahmad Amiri - School of Chemistry, College of Science, University of Tehran, Tehran, Iran

Alireza Badiei - School of Chemistry, College of Science, University of Tehran, Tehran, Iran

Jahan B. Ghasemi - School of Chemistry, College of Science, University of Tehran, Tehran, Iran

خلاصه مقاله:

In this study, thiol-functionalized nanostructure silica type MCM-F1 was successfully prepared via the facile one-pot hydrothermal method with low amounts of the directing agent. The mesoporous silica indicated a remarkable adsorption behavior toward Pb(II) ions without any interference of the competing ions. The main experimental variables affecting removal efficiency of the adsorbent were examined, and the optimized conditions were achieved as to be 5, 0, mg, and w, min for solution pH, the adsorbent dosage, and contact time, respectively. The adsorbent was triumphantly used for the removal of Pb (II) ion from real water samples with a notable removal efficiency as 94%. The concentrations of the competitive ions in the solution were about 10 to 100 times more than Pb (II) ions. The results show that other ions had no interfering effect on the removal efficiency of Pb (II) ions. It means that SH-SiOY has .excellent selectivity for Pb (II) ions and is an appropriate candidate for removing Pb (II) ions from the real samples

کلمات کلیدی: adsorbent, Thiol- mesoporous silica, Pb (II) ions

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