

## عنوان مقاله:

Use of core-shell magnetic nanoparticles -Fe<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> to clean up petroleum pollution environmental

## محل انتشار:

پنجمین کنفرانس بین المللی مهندسی محیط زیست و منابع طبیعی (سال: 1398)

تعداد صفحات اصل مقاله: 5

## نویسنده:

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## خلاصه مقاله:

Paramagnetic core-shell -Fe<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> nanoparticles were synthesized successfully. Field effect scanning electron microscopy (FESEM) confirmed that the average size of -Fe<sub>2</sub>O<sub>3</sub> nanoparticles are about 30 nm and the core-shell MNPs are about 100 nm with a coating of SiO<sub>2</sub>. With the use of core-shell magnetic nanoparticles, the process of separating and purifying oil from water for homogeneous mixture of water - oil samples was accomplished. These results are confirmed by turbidity, chemical oxygen demand (COD) and total petroleum hydrocarbons (TPHs). With this process, it is improved the water quality up to 70% in terms of transparency, and the COD about 78%, and eliminating completely hydrocarbons from the mixture of oil-water. Satisfactory results have been achieved in the purification of environmental pollution in the separation of crude oil from contaminated waters. This method is a promising procedure for eliminating oil pollution from wastewater and proper utilization in agriculture and industry.

## کلمات کلیدی:

core-shell magnetic nanoparticles, -Fe<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub>, purification of environmental pollution, chemical oxygen demand, total petroleum hydrocarbons.

## لینک ثابت مقاله در پایگاه سیویلیکا:

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