

## عنوان مقاله:

Removal of p-chlorophenol from aqueous solution using ultraviolet/zerovalent-iron (UV/ZVI)/persulfate process

## محل انتشار:

مجله پیشرفت در تحقیقات بهداشت محیط, دوره 4, شماره 1 (سال: 1394)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

Zahra Sharifi - *Department of Environmental Health Engineering, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran*

Mohammad Taghi Samadi - *Department of Environmental Health Engineering, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran*

Abdolmotaleb Seid-Mohammadi - *Social Determinants of Health Research Center (SDHRC) AND Department of Environmental Health Engineering, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran*

Ghorban Asgari - *Social Determinants of Health Research Center (SDHRC) AND Department of Environmental Health Engineering, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran*

## خلاصه مقاله:

In this study, degradation of p-chlorophenol (p-CP) was evaluated using persulfate (PS) activated zerovalent iron (ZVI) based ultraviolet (UV) in a bench scale photoreactor. The effect of operational parameters such as solution pH (3, 7, and 11), reaction time (0-60 minutes), ZVI dosage (0.15, 1.25, 0.5, 1, and 1.5 mM), PS concentration (0.5, 1.5, 2, 2.5, 3, and 4 mM), and initial p-CP concentration (0.22, 0.44, 0.88, 1.32, and 1.76 mM) were examined on the degradation of p-CP in batch experiments. The experimental results indicated that the p-CP removal rate significantly depends on operational parameters. The highest p-CP removal rate was achieved after 45 minutes ( $> 0.99\%$ ) in pH = 3, ZVI = 1 mM, and PS = 3 mM, and with initial p-CP concentration = 0.44 mM. The results revealed that excess amount of PS and ZVI could reversely affect p-CP removal efficiency. In addition, an increase in p-CP initial concentration from 0.22 to 1.76 mM significantly decreased its removal rate. This study indicated that PS activated ZVI based UV process is practically feasible for the effective degradation of p-CP in aqueous solution.

## کلمات کلیدی:

Zerovalent Iron, Sulfate Radical, Persulfate Activation, p-Chlorophenol

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/753834>

