عنوان مقاله:
ارزیابی عملکرد انعقاد الکتریکی در حذف COD از فاضلاب کارواش

محل انتشار:
مجله انسان، محیط زیست و ارتقاء سلامت, دوره 8, شماره 4 (سال: 1401)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:
Background: Considering the increased demand for cars in different countries during recent years, using car washes for washing vehicles has received a lot of attention. This study aimed to assess removing chemical oxygen demand (COD) from car wash effluent using the electrocoagulation method. Methods: A reactor with dimensions of ۴۰ cm * ۵۰ cm * ۵۰ cm of Plexiglas with a volume of ۹۰ L equipped with an electric current generator and an electrode was used connected to the DC current generator in the form of Al-Al. The response surface method (RSM) was applied to optimize the factors affecting COD removal in the electrocoagulation process. For this purpose, D-optimal was utilized to optimize the experiments. The effects of measurable factors such as electrolysis time (X۱), current density (X۲), and aeration time (X۳) were examined to check COD removal. Results: According to the results, the optimal operating conditions for COD removal during electrolysis (۳۰ min) were as follow: the current density was ۱۸.۷۵ A/m۲, and the aeration time of ۳۰ min was ۴۸.۵۱%. Conclusion: In conclusion, electrocoagulation is, to some extent, a reliable and environmentally compatible technique for car wash wastewater treatment.

کلمات کلیدی:
Car wash wastewater, Electrocoagulation, COD removal, Response surface method, Pilot scale,
فاضلاب کارواش, انعقاد الکتریکی, حذف COD, روش سطح پاسخ