

عنوان مقاله:

A Review on Degradation of Antidepressant Drug Fluoxetine in Aqueous Medium by Advanced Oxidation Processes

محل انتشار:

شانزدهمین کنگره ملی مهندسی شیمی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Elmira Yaghinirad - *Environmental Engineering Research Centre, Department of Chemical Engineering, Sahand University of Technology, Tabriz, Iran*

Amanollah Ebadi - *Environmental Engineering Research Centre, Department of Chemical Engineering, Sahand University of Technology, Tabriz, Iran*

خلاصه مقاله:

Fluoxetine is one of the widely used pharmaceuticals to treat major depressive disorders. The Fluoxetine has low biological decomposition in traditional wastewater treatment processes and is rather persistent to the hydrolysis and photolysis and disobedient against microbial decomposition. In most studies, advanced oxidation processes (AOPs) have been used successfully to eliminate a wide variety of pollutants including pharmaceuticals in water and wastewater treatment. This study reviews the application of advanced oxidation processes for removal of Fluoxetine. To help effective degradation of this hazardous compound from the aqueous environments several advanced oxidation processes (AOP) have been investigated including, ozonation, peroxonation (O_3/H_2O_2), photooxidation, photochemical and sonochemical treatment, electron beam irradiation and indirect photolysis. Biological process, alone, cannot be able to remove Fluoxetine, but for complete degradation of Fluoxetine, combining of sonication by biological treatments is one of the best methods. Also recently, in situ generated free radical system based on $\bullet OH$ -initiated peroxy radical-mediated processes were used. Most of the possible reaction paths were investigated including aromatic hydroxylation, defluorination, O- dealkylation and C-dealkylation. Most of the studies done to remove Fluoxetine from sewage using ozone have been performed on the amount of Fluoxetine elimination and the effects of operating parameters such as contact time, ozone doses and pH. Adsorption on AC, ozonation and O_3/AC coupling when pH range was from 3 to 7 determined that total degradation of Fluoxetine was done.

کلمات کلیدی:

Advanced Oxidation Processes, Ozone, Antidepressant pharmaceuticals, Fluoxetine

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/860222>

