

عنوان مقاله:

Degradation of Diazinon from aqueous solution using Silver-modified Clinoptilolite Zeolite in photocatalytic process

محل انتشار:

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خلاصه مقاله:

photocatalytic reactor was tested in the degradation of diazinon in water using photocatalyst clinoptilolite zeolite-silver. The photocatalyst clinoptilolite zeolite-silver was synthesized using a microwave energy technique. The influence of AgO in the photocatalytic reactor was investigated for diazinon treatment. The prepared photocatalyst was authenticated by X-Ray Diffraction (XRD), for Field Emission Scanning Electron Microscope (FESEM), Brunner-Emmet-Teller (BET), and Diffuse Reflectance Spectroscopy (DRS) analysis methods. Every one of the mixtures was analyzed using XRD, and the three distinctive peaks ($2\theta = 9.84, 11.17, \text{ and } 22.35$) of clinoptilolite were chosen for which the calculations of the peak intensity summation were done. The experiments appraised the influence of various empirical factors, e.g., pH, photocatalyst dosage, initial diazinon, and irradiation time on the degradation efficiency. The results showed that the optimum conditions for diazinon degradation were a pH of 9, photocatalyst dosage of 1 g/L and irradiation time of 120 min. The point of zero charge (pzc) of the photocatalyst clinoptilolite zeolite-silver, the point when the surface charge density is zero, was identified to be 8. This excellent catalytic ability .was mainly attributed to the hybrid effect of the photocatalyst and adsorbent

کلمات کلیدی:

Clinoptilolite Zeolite-Silver, Diazinon, Microwave Irradiation, Photocatalytic degradation, photocatalytic reactor

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