

عنوان مقاله:

Synthesis of CoFeYOF@Zn-MOF nanocomposite-graphene nanoflake nanocomposite for effective degradation using experimental design

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نویسندگان:

Maryam Roostaee - Shahid Bahonar University, Kerman, Iran

Iran Sheikhshoaie - Shahid Bahonar University, Kerman, Iran

خلاصه مقاله:

In recent years, one of the growing environmental concerns has been the contamination of water sources by dyes. For solving this problem, different nanostructures with various potentials have been suggested. In this work, a new nanostructure of CoFerOF@Zn-MOF-graphene nanoflake was synthesized. This nanostructure was developed for photocatalytic degradation of diazinon from an aqueous solution. Further, Yk-1 factorial design was used for investigating the effect of various experimental parameters including catalyst dosage, contact time, initial dye concentration, and pH on the photocatalyst behaviors of CoFerOF@Zn-MOF-graphene nanoflake. The results of the analysis of variance confirmed that these parameters have a significant effect on the degradation efficiency of diazinon by CoFerOF@Zn-MOF-graphene nanoflake. For achieving the best optimization of the BG degradation, the response surface methodology was applied. According to this methodology, the CoFerOF@Zn-MOF-graphene .nanoflake has a significant potential for diazinon degradation as high as 99%

کلمات کلیدی:

Diazinon, Experimental design, Photocatalyst, Metal organic framework, Graphene nanoflakes

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