

عنوان مقاله:

Optimization and modeling of photo-degradation of Congo red on PbO nanolayers under visible light using the Box-Behnken design

محل انتشار:

چهارمین کنفرانس بین المللی شیمی و مهندسی شیمی (سال: 1401)

تعداد صفحات اصل مقاله: 14

نویسندگان:

Mostafa Ataee Khorrami - *Caspian Faculty of Engineering, College of Engineering, University of Tehran, Iran*

Amideddin Nouralishahi - *Caspian Faculty of Engineering, College of Engineering, University of Tehran, Iran*

Shabnam Sohrabnezhad - *Department of Chemistry, Faculty of Science, University of Guilan, P.O. Box 1914 Rasht, Iran*

Azadeh Asadollahi - *Department of Chemistry, Faculty of Science, University of Guilan, P.O. Box 1914 Rasht, Iran*

خلاصه مقاله:

In the current study, PbO nanolayers were synthesized to be used for photocatalytic degradation of Congo red dye in aquatic media at natural pH under visible light irradiation. The as-synthesized photocatalyst was characterized by multiple techniques, including XRD, FTIR, DRS, FESEM, and zeta potential measurement, and the characterization results implied that the PbO nanolayers were synthesized successfully. Multiple experiments were designed using Box-Behnken design (BBD) to optimize the operational parameters, including initial dye concentration, photocatalyst dosage, and irradiation time. Moreover, the significance of the individual parameters and their possible interactions were investigated by analysis of variance (ANOVA). The maximum photocatalytic removal of the Congo red dye on PbO nanolayers was ۸۹.۳%.

کلمات کلیدی:

Wastewater treatment, Photocatalyst, PbO, RSM, BBD

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1600804>

