

## عنوان مقاله:

Preparation of nanosized zero valent zinc (Zn0) immobilized on ZnO as redox nanocomposite for degradation of methyl orange from aqueous solution

## محل انتشار:

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## خلاصه مقاله:

Objective: In this study, the prepared redox nanocomposite (nano zero valent zinc immobilized on nano zinc oxide) employs both of reductive decolorization and photodegradation processes for the removal of methyl orange (MO) with zero valent zinc (Zn0) and ZnO photocatalyst, respectively . research methods: The prepared redox nanocomposite (nZn0-ZnO) was characterized by the XRD and SEM techniques. The prepared sample was separated by centrifuging. The preparation process of nZn0-ZnO including synthesis-immobilization, washing and drying carried out under Argon gas flow. The effect of temperature and kinetics of reaction were studied . Results: The results showed that degradation efficiency of prepared redox nanocomposite was increased compared to each ZnO nanopowder and Zn0 under the same operational condition. The calculated activation energy for the degradation process was 4.05 KJ.mol<sup>-1</sup> . Conclusion: Finally, the results showed that the degradation processes followed pseudo first order kinetic .model in the basic condition on the basis of the relative deviation modulus, P

## کلمات کلیدی:

.Redox nanocomposite, nZn0-ZnO, Degradation, Methyl orange, Wastewater treatment

## لینک ثابت مقاله در پایگاه سیویلیکا:

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