

الآية

قال تعالى: (رَبَّنَا آمَنَّا بِمَا أَنْزَلْتَ وَاتَّبَعْنَا الرَّسُولَ
فَاكْتُبْنَا مَعَ الشَّاهِدِينَ)

صدق الله العظيم

آل عمران (35)

DEDICATION

This thesis work is dedicated

To...

My parents ...ELSIR & SOMIA

My husband ...Diaa eldin

My Teachers

My friends

My sisters and brothers

And all person who support me

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المستخلص

في هذا البحث تم استخدام تقنية التحفيز الضوئي باستخدام الثنائي الباعث للضوء ذو الطول الموجي 365 نانومتر وقدرة 1200 ملي واط كمصدر للأشعة فوق البنفسجية لتكسير جزيئات الميثيل البرتقالي عن طريق تحفيز أكسيد الزنك للتفاعل مع جزيئات الميثيل البرتقالي. تم اضافة الميثيل البرتقالي للماء ومن ثم أضيفت اوزان مختلفة من اوكسيد الزنك وتعريض الخليط للأشعة فوق البنفسجية بفترات تشعيع مختلفة.

سجل طيف الامتصاص لماده الميثيل البرتقالي قبل اضافة الماده شبه الموصلة (اوكسيد الزنك) وقبل التشعيع وتم تسجيل طيف الامتصاص بعد التشعيع بفترات مختلفة وبعد اضافة اوزان مختلفة من اوكسيد الزنك. تم المقارنة بين طيف الامتصاص في الحالتين لمعرفة ما إذا تكسرت جزيئات الميثيل البرتقالي ام لا.

من النتائج وجد انه كل ما زاد وزن المادة المحفزة وزمن التشعيع زاد تكسير جزيئات الميثيل البرتقالي أسيا حيث أن اقل نسبة تكسير كانت عندما أضيف 1000 ملي جرام من اوكسيد الزنك عند زمن تعريض 10 دقائق، في حين اختفت جزيئات الميثيل البرتقالي تماما عند اضافة 2000 ملي جرام من اوكسيد الزنك وزمن تعريض 30 دقيقة.

بينت هذه الدراسة انه يزيد تكسير جزيئات الميثيل البرتقالي أسيا بزيادة وزن المادة المحفزه (أكسيد الزنك) وزيادة زمن التشعيع.

Abstract

In this work, a UV light emitting diode (LED) with a wavelength of 365 nm and power 1200 mW was used as UV source for the photodegradation of methyl orange molecules by stimulating zinc oxide, as a catalyst, to interact with methyl orange molecules.

Methyl orange was added to the water and then different weights of zinc oxide were added and the mixture was subjected to ultraviolet radiation with different irradiation times.

The absorption spectra of the methyl orange substance were recorded before adding the semi-conductive material (ZnO) prior to irradiation. The absorption spectra were recorded after irradiation at different times and after adding different weights of zinc oxide. A comparison was made between the absorption spectra in both cases to determine whether methyl orange molecules were degraded or not.

The results showed that the increment of weight of the catalyst and the time of irradiation increased the degradation of the methyl orange molecules exponentially. The lowest degradation was when 1000 mg of zinc oxide was added and time of exposure of 10 minutes, while the methyl orange molecules were completely degraded when 2000 mg of zinc oxide was added with exposure time of 30 minutes.

This study showed that methyl orange molecules were degraded exponentially with increasing the amount of the catalyst and increasing the irradiation time.