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Chemistry Department

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Thesis Title: Removal of some organic pollutants from environmental liquid wastes using photo-catalytic method

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Ain Shams University
Faculty of Education
Chemistry Department

Removal of some organic pollutants from environmental liquid wastes using photo-catalytic method

Thesis Submitted

By
Mai Saleh Abd-El-Maqsoud
B.Sc., Ed. 2007

For
The Degree of
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To

Chemistry Department
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Ain Shams University
Cairo, Egypt

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Under the Supervision of:

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Title Sheet

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Place of Birth : Cairo

First University Degree: B.Sc. & Ed., May 2007

Name of University : Ain Shams

Faculty of Education
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Abstract

Removal of Some Organic Pollutants from environmental liquid wastes using photocatalytic method

By

Mai Saleh Abd El - Maqsoud

Department of Chemistry, Faculty of Education Ain – Shams University, Roxy, Cairo, Egypt.

The present work explains the preparation of ZnO catalyst by direct precipitation method using different precipitating agents such as ammonium hydroxide, sodium hydroxide & urea respectively with zinc nitrate and modified ZnO by supporting ZnO/SiO_2 different ratios. The prepared catalysts were dried overnight at 373 K and calcined at 500°C. The Calcined catalysts were characterized using the common techniques such as XRD, FITR, SEM, surface texturing (N_2 adsorption), TGA and TEM. The catalytic activities of the characterized catalysts were investigated in the photodegradation of levafix brilliant red dye, reactive black 5 and reactive orange 96 from the textile industry at different experimental conditions (variation of catalyst doses, dye conc., pH and addition of H_2O_2). The obtained data indicate that samples prepared from urea exhibits the higher activity when compared with the other pure ZnO samples, While ZnO/SiO_2 (0.05 wt %) exhibits the highest activity.

Keywords:

ZnO synthesis, Reactive, photodegradation, Textile wastewater.

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