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## Photocatalytic Cracking of P-nitro aniline using coupled ZnO – Sb<sub>2</sub>O<sub>3</sub>

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### ABSTRACT

The research work consist of two main parts , the first part includes the preparation of coupled metal oxide( ZnO – Sb<sub>2</sub>O<sub>3</sub>) , which is done by mixing 1 g of ZnO with 1g of Sb<sub>2</sub>O<sub>3</sub>and calcinig in oven at 900C° for five hours. The mixing of semiconductor products was studied by using X-ray diffraction and Infra-red spectrophotometer techniques. The second part includes the study of photo degradation of P-nitro aniline using coupled metal oxides ZnO – Sb<sub>2</sub>O<sub>3</sub> (first part) , which is achieved by the irradiation of suspended solution consists of different weights of P-nitro aniline dissolved in 100cm<sup>3</sup> of distilled water with 0.13 g of coupled metal oxide ZnO – Sb<sub>2</sub>O<sub>3</sub> by mercury lamp(125 W ) from external source inside a Pyrex photoreaction cell of 100 cm<sup>3</sup> at 298 K . In order to study the effect of coupled metal oxide ZnO – Sb<sub>2</sub>O<sub>3</sub> in photo degradation of p-nitro aniline, several experiments were carried out in various conditions to attain the best degradation. These experiments include the effect of hydrogen per oxide, the effect of temperature. The product was studied by using UV-Visible spectrophotometer.

**Keywords:** P-nitro aniline, Photocatalytic Degradation, Aromatic compound, cracking.

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