



**BIOCHEMICAL STUDIES ON REDUCTION OF  
PHENOLIC POLLUTANTS IN INDUSTRIAL  
WASTE WATER BY USING DIFFERENT  
SUBSTRATES AS ADSORBENTS**

**By**

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**(B.Sc., Biochemistry, Ain Shams University, 2001)**

**ATHESIS**

**Submitted in Partial Fulfillment for the Requirements  
of the M.Sc. Degree in Organic Chemistry**

**Department of chemistry  
Faculty of science  
Menoufia University  
EGYPT**

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## **SUPERVISION SHEET**

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## **APPROVAL SHEET**

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# Abstract

Today, the world is facing the problem of environmental pollution of human needs requires development in life activities. Health and environmental risks of pollution have become apparent throughout the world over the past several decades. Chemical industries in particular, have created sever problem, since they release thousands of chemicals to the environment. The present study was planned to remove the environmental pollutant (phenol). The study was focused in many categories:

1. Determination of phenol in different samples of water as fresh water (River Nile) and industrial wastewater (sugar factory).
  2. Determination of phenol in soil and plant samples that were collected around the investigated study.
  3. Remediation of water polluted with phenol using some different natural materials (rice strew, orange peels, and zeolite) under different condition (pH, temperature, time, and dose of adsorbents).
  4. Removal the phenol from vinasse using some different natural materials under the best conditions that have been studied previously.
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