



Faculty of Education  
Chemistry Department

# **Preparation, extraction and characterization of nanosized materials from treated rice husk ash and their environmental applications**

Thesis Submitted

By

Salma Ahmed Abdelatif Mohamed

B.Sc., Ed. 2014

For

**The Degree of**

**M. Sc. of Teacher's Preparation in Science  
(Physical Chemistry)  
To**

Chemistry Department  
Faculty of Education  
Ain Shams University  
Cairo, Egypt

**2021**

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**Salma Ahmed Abdelatif Mohamed**

**B.Sc., Ed. 2014**

## **Under the Supervision of:**

**Prof. Dr. Sahar A. El-Molla.....**

Prof. of Physical Chemistry, Faculty of Education, Chemistry  
Department, Ain Shams University.

**Prof. Dr. Mohamed A. Ismail.....**

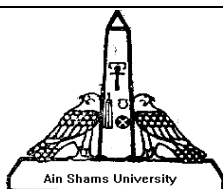
Prof. of Physical Chemistry, Faculty of Science, Chemistry Department,  
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**Dr. Hala R. A. Mahmoud.....**

Ass. Prof. of Physical Chemistry, Faculty of Education, Chemistry  
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**Faculty of Education**  
**Chemistry Department**

## **Title Sheet**

**Name of researcher** : Salma Ahmed Abdelatif Mohamed

**Date of Birth** : 24/12/1991

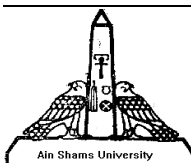
**Place of Birth** : Cairo

**The University Degree** : M. Sc. Degree for Teacher's  
Preparation in Science  
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**Name of University** : Ain Shams

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## **Approval Sheet**

**Name of candidate:** Salma Ahmed Abdelatif Mohamed

**Degree:** M.Sc. Degree for Teacher's Preparation in Science  
(Physical Chemistry)

**Thesis Title :** Preparation, extraction and characterization of  
nanosized materials from treated rice husk ash and their  
environmental applications

**This thesis has been approved by:** \_\_\_\_\_

**Approved**

**Prof. Dr. Sahar A. El-Molla:**.....

Prof. of Physical Chemistry, Faculty of Education, Chemistry  
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## **ACKNOWLEDGEMENT**

Thanks always are due to God

I would like to express my deep gratitude and sincere appreciation to **Prof. Dr. Sahar A. El-Molla, Prof.** of Physical Chemistry, Chemistry Department, Faculty of Education, Ain Shams University, for suggesting and planning the subject of this work, for kind supervision, guidance during the course of research work and stimulating discussion through the course of research work.

I would like to express my deep gratitude and sincere appreciation to **Prof. Dr. Mohamed A. Ismail, Prof.** of Physical Chemistry, Chemistry Department, Faculty of Science, Ain Shams University, for suggesting and planning the subject of this work, for kind supervision, guidance during the course of research work and stimulating discussion through the course of research work.

I would like to express my deepest sincere of gratitude to **Dr. Hala R.A.Mahmoud, Ass. Prof.** of Physical Chemistry, Chemistry Department, Faculty of Education, Ain Shams University, for suggesting and planning the subject of this work, for kind supervision, her continuous encouragement, support and unlimited help that made this work going well and stimulating discussion through the course of research work.

I am also, extended to **Prof. Dr. Mohamed Abass Mohamed,** Head of Chemistry Department, Faculty of Education, Ain-Shams University, for facilities provided during the course of research work.

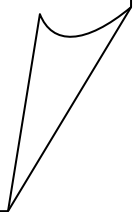
I am thankful to the support of all members of Chemistry Department, Faculty of Education, Ain Shams University, for their valuable help.

I am thankful to the support of my husband and all members of my family for their valuable help, their continuous encouragement, support and unlimited help that made this work going well.

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# ***Abstract***







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**ABSTRACT**

**Preparation, extraction and characterization of  
nanosized materials from treated rice husk ash  
and their environmental applications**

**By**

**Salma Ahmed Abdelatif Mohamed**

*Department of Chemistry, Faculty of Education, Ain Shams University, Roxy  
11757, Cairo, Egypt.*

This work has been done to prepare and characterize the nano silica from rice husk ash by precipitation and combustion methods and to compare them with nano silica prepared in different methods from sodium silicate and tetra ethyl ortho silicate. All prepared nanomaterials have been used as adsorbents for removal textile dyes from wastewater.

**Keywords:**

SiO<sub>2</sub>; Nanomaterials; RHA; Methylene blue; Dyes adsorption.

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# ***Contents***

