سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

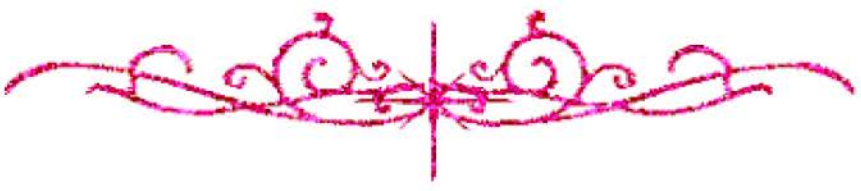
يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

سامية محمد مصطفى

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة



سامية محمد مصطفى

شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

IMPROVING NYLON FABRIC PROPERTIES VIA GRAFTING BY A NEW PROPOSED REDOX INITIATION SYSTEM

THESIS

SUBMITED FOR THE DEGREE OF M.Sc

BY

DALIA MOHAMED MOHAMED ESSA

(B.Sc. Chem. 1994)

NATIONAL INSTITUTE FOR STANDARDS

TO

CAIRO UNIVERSTIY

(2001)

APPROVAL SHEET FOR SUBMISSION

Title of thesis: " Improving nylon fabric properties via grafting by a new proposed redox initiation system".

Name of Candidate: Dalia Mohamed Mohamed Essa.

This thesis has been approved for submission by the supervisors:

1- Prof. Dr. Kamal Aziz.

Signature: Kamal Aziz

2- Prof. Dr. Ferial Mohmoud Tera.

Signature: Ferial Tera

Prof./ Dr. Mohamed H. El.Nagdy

Chairman of Chemistry Department.

Faculty of Science – Cairo University.

ABSTRACT

Name of Candidate: Dalia Mohamed Mohamed Essa.

Title of thesis: " Improving nylon fabric properties via grafting by a new proposed redox initiation system".

Degree: (M.Sc.) Unpublished Master of Science Thesis, Faculty of Science – Cairo University, 2000.

The original work presented in this thesis was undertaken to improve nylon fabric properties via grafting with acrylonitrile monomer by a new proposed redox initiation system using potassium persulphate (KPS) as a main oxidizing agent in conjunction with sodium bisulphite (SBS) or benzaldehyde sodium bisulphite adduct (BSBS) as reducing agents. Optimization conditions for grafting including the concentration of the redox system components, polymerization time and temperature, liquor ratio, monomer concentration were studied. The produced grafted nylon and ungrafted nylon fabrics were characterized using IR, thermogravimetric analysis and differential scanning calorimetry. Also mechanical properties including, thickness, wettability, air and water permeability besides bursting strength were examined and discussed.

The dyeabillity and fastness properties of the grafted nylon fabric with two different classes of dyes (disperse and direct) and the optimal conditions of dyeing, pH values, temperature and time of dyeing, liquor ratio and dye concentration were studied in relation to the ungrafted nylon fabric.

Keywords: Nylon, polyamide, IR analysis, thermal analysis, dyeing of nylon, mechanical properties.

Supervisors: Prof. Dr. Kamal Aziz.

Prof. Dr. Ferial Mohmoud Tera.

Prof./ Dr. Mohamed H. El.Nagdy

Chairman of Chemistry Department.

Faculty of Science – Cairo University.

Notes

Besides the work carried out in this thesis, the candidate / **Dalia Mohamed Mohamed Essa** had attended post graduate studies for the partial fulfillment of the M.Sc. degree in the following topics:

1-Thermodynamic.
2- X-ray and Thermal analysis.
3- Quantum chemistry.
4- Advanced Analytical Chemistry.
5- Catalysis.
6- Spectroscopy.
7- New trends in analysis.
8- Modeling in physical chemistry.
9- Techniques of molecular structure..
10- Electrical double layer.
11-Electro Kinetic phenomena.
12-Non-aqueous solvents..
13- Mechanism of inorganic chemistry.
14- Advanced inorganic chemistry
15- Molten salts.
16- electrochemistry.
17- Nuclear chemistry
18- Metallurgy
19- Adsorption.
20- Group theory
21- Advanced Chelatometry
22- Mathematics.

Date of birth: 8 / 9 / 1973

Place of birth: Giza – Egypt

Prof./ Dr. Mohamed H. El.Nagdy

Chairman of Chemistry Department.

Faculty of Science – Cairo University.

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