RESEARCH PROJECT

THE PREPARATION OF ACTIVATED CARBON FROM DURIAN SHELLS AND ITS APLICATION FOR METHYLENE BLUE ADSORPTION

Submitted by:

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SURABAYA

2006

APPROVAL SHEET

The **RESEARCH** entitled:

The Preparation of Activated Carbon from Durian Shells and Its Application for Methylene Blue Adsorption

which is prepared and submitted by:

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has been approved and accepted as one of requirement for **Bachelor of Engineering** degree in Department of Chemical Engineering, Faculty of Engineering, Widya Mandala Catholic University by following supervisor and has been examined by the committees on December, 14th 2006

Surabaya, January 4th 2007

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which is prepared and submitted by:

Name : Thio Christine Chandra

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ABSTRACT

An activated carbon was prepared from durian shell and used for the removal of methylene blue from aqueous solutions. The activated carbon was prepared using chemical activation method with potassium hydroxide as the activating agent. The activation was conducted at 673.15-773.15 K for 1 h with mass ratio of chemical activating agent to durian shell 0.25-3. Batch kinetics and isotherm studies were conducted to evaluate the adsorption behavior the activated carbon from durian shell. The adsorption experiments were carried out isothermally at three different temperatures. The Langmuir and Freundlich isotherm model were used to describe the equilibria data. The Langmuir model agrees with experimental data well. The Langmuir surface kinetics, pseudo first order, and pseudo second order models were used to evaluate the kinetics data and the rate constant were also determined. The experimental data fitted very well with the langmuir surface kinetics and pseudo first order model.

DECLARATION SHEET

I declare that this research was my own work and not the others' work, some or all except be written in the text. Wether it is known that this research is the others' work, I aware and accept the consequence that this research cannot be used as a requirements to achieve **Bachelor of Engineering** degree.

Surabaya, January 4th 2007

The undergraduate student

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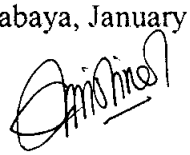
Surabaya, January 4th 2007



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ACKNOWLEDGEMENT

The authors would like to thank God for His blessing in conducting the research entitled **The Preparation of Activated Carbon from Durian Shells and Its Application for Methylene Blue Adsorption**. This research is one of the requirements to get **Bachelor of Engineering** degree in Chemical Engineering Department, Faculty of Engineering, Widya Mandala Catholic University Surabaya. This research has been submitted and published as article in press in **Elsevier Chemical Engineering Journal** entitled **Adsorption of basic dye onto activated carbon prepared from durian shell: Studies of adsorption equilibrium and kinetics**.

The authors realize that the success of the research could be attained because of the help of some people, so the authors would like to say thank you to:

1. Ir. Suryadi Ismadji, MT., Ph.D. and Ir. Yohanes Sudaryanto, MT. as our supervisors of this research;
2. Ir. Nani Indraswati, Herman Hindarso, ST., MT., and Felycia Edy Soetaredjo, ST., M.Phil. as the reviewers of this research;
3. Wenny Irawati, ST., MT. for her suggestion;
4. Technological and Professional Skills Development Sector Project which support us with the student research grant;
5. Adsorption Group, Chemical Engineering Division, University of Queensland, Australia, who helped us in analyzing the products of our research by using nitrogen adsorption method;

6. Mr. Novi as the technician of Organic Chemistry and Physic Chemistry Laboratorium;
7. Mr. Pudjo as the technician of Process Technology Laboratorium;
8. Mr. Agus as the technician of Unit Operations Laboratory;
9. Our parents and friends who gave a lot of support;
10. The others, who cannot be mentioned one by one, who helped us from the beginning of the research till the report making.

The authors realize that there maybe some shortages in this report. Therefore, the authors would be pleased to accept critics and recommendations for further revision. At last, the authors hope that this report will be useful especially for those who need some information in this report.

CONTENTS

LIST OF TABLES

LIST OF FIGURES