THESIS

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Faculty of Chemical & Natural Resources Engineering
UNIVERSITI MALAYSIA PAHANG

2016
COOPERATION BETWEEN LACCASE AND GLUCOSE OXIDASE IN THE OXIDATION OF LIGNIN MODEL COMPOUND

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(SUPERVISOR: DR. NOR HANIMAH BINTI HAMIDI)

BACHELOR OF CHEMICAL ENGINEERING
UNIVERSITI MALAYSIA PAHANG
COOPERATION BETWEEN LACCASE AND GLUCOSE OXIDASE IN THE
OXIDATION OF LIGNIN MODEL COMPOUND

MOHAMED YAZRUL BIN MOHD YASSIN

Thesis submitted in partial fulfilment of the requirements
for the award of the degree of
Bachelor of Chemical Engineering

Faculty of Chemical & Natural Resources Engineering
UNIVERSITI MALAYSIA PAHANG

DECEMBER 2016
SUPERVISOR’S DECLARATION

We hereby declare that we have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Chemical Engineering.

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Date : 15 DECEMBER 2016
STUDENT’S DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree

Signature : 

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ID Number  : KC13031
Date       : 15 DECEMBER 2016
Dedicated to my Mother.
ACKNOWLEDGEMENT

I would like to express my special appreciation and thanks to my supervisor, Dr. Nor Hanimah Binti Hamidi. You have been a brilliant mentor for me. I would like to thank you for your never ending support during my tenure as research student under your guidance, for giving insightful comments and suggestions of which without it, my research path would be a difficult one. Your advice on my research has been valuable. My fullest appreciation goes as well to my co-tenures, Hazirah Razak and Syafiqah Rudzellan for your help, idea and support from the beginning till the end of my research.

A special thanks to my family. Words cannot express how grateful I am to my mother and brothers who always supported me in the moments when there was no one to answer my queries and for all the sacrifices you have made on my behalf love throughout these years. Your prayer for me was what sustained me thus far.

I am also indebted to the Ministry of Higher Education and Universiti Malaysia Pahang for funding my study.

I would also like to thank all of my friends who supported me in writing, and motivate me to strive towards my goal. I am sincerely grateful to the staffs of Chemical Engineering and Natural Resources Faculty who helped me in many ways and made my stay in UMP pleasant and unforgettable.
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# List of Abbreviation

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>LTV</td>
<td>Laccase</td>
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<tr>
<td>GOX</td>
<td>Glucose Oxidase</td>
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<tr>
<td>HPLC</td>
<td>High Performance Liquid Chromatography</td>
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<tr>
<td>UV-VIS</td>
<td>Ultraviolet-Visible Spectrophotometer</td>
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<tr>
<td>ABTS</td>
<td>3-ethylbenzothiazoline-6-sulphonic acid</td>
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<tr>
<td>LMC</td>
<td>Lignin Model Compound</td>
</tr>
<tr>
<td>LiP</td>
<td>Lignin peroxidase</td>
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<tr>
<td>MnP</td>
<td>Manganese peroxidase</td>
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