

**THE POTENTIAL OF FOOD WASTE AS AN ENERGY SOURCE**

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**BACHELOR OF CHEMICAL ENGINEERING  
UNIVERSITI MALAYSIA PAHANG**

**THE POTENTIAL OF FOOD WASTE AS AN ENERGY SOURCE**

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for the award of the degree of  
Bachelor of Chemical Engineering

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## **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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### **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

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Dedicated to my father, mother and my brother.

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**LIST OF SYMBOLS**

<i>A</i>	mass percentage of ash in biomass from ultimate analysis
<i>C</i>	mass percentage of carbon in biomass from ultimate analysis
<i>H</i>	mass percentage of hydrogen in biomass from ultimate analysis
<i>N</i>	mass percentage of nitrogen in biomass from ultimate analysis
<i>O</i>	mass percentage of oxygen from difference on dry and ash
<i>S</i>	mass percentage of sulphur in biomass from ultimate analysis

**LIST OF ABBREVIATIONS**

CV	Calorific Value
EFB	Empty Fruit Bunches
FKKSA	Faculty of Chemical Engineering & Natural Resources
FW	Food Waste
HHV	Higher Heating Value
MSW	Municipal Solid Waste
N <sub>2</sub>	Nitrogen Gas
PA	Proximate Analysis
PKS	Palm Kernel Shell
SEM	Scanning Electron Microscope
TGA	Thermogravimetric Analyzer
UA	Ultimate Analysis
CARIFF	Centre of Excellence for Advanced Research in Fluid Flow