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KINETIC STUDY ON FERULIC ACID PRODUCTION FROM BANANA STEM WASTE VIA MECHANICAL EXTRACTION

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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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Date : 25 MAY 2017
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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Name : MUHAMAD KHAIRI JUSUP
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Dedicated to my parents, and my siblings.
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LIST OF SYMBOLS

K reaction rate constant
V volume
M mass of the compounds
P applied pressure
D diameter of the capillary channel
\( \eta \) dynamic viscosity
l length of capillary channel
t time
LIST OF ABBREVIATIONS

UV  ultra violet
FA  ferulic acid
OPF oil palm frond
LCC lignin-carbohydrate complexes
AFEX ammonia fibre explosion
HPLC high performance liquid chromatography
CCP Chinese chive polysaccharides
UAE ultrasound-assisted extraction
HWE hot-water extraction