



OPTIMIZATION OF PRE-TREATMENTS OF EXTRACTION METHODS FOR  
QUALITY OF AGARWOOD (*AQUILARIA MALACCENSIS*) ESSENTIAL OIL

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Thesis submitted in fulfilment of the requirements  
for the award of the degree of  
Master of Science in Industrial Chemistry.

Faculty of Industrial Sciences and Technology  
UNIVERSITI MALAYSIA PAHANG

SEPTEMBER 2016

PERPUSTAKAAN UNIVERSITI MALAYSIA PAHANG	
No. Perolehan <b>117773</b>	No. Panggilan FIST
Tarikh <b>17 APR 2017</b>	'185 2016 r Thesis

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## LIST OF SYMBOLS

$\alpha$	Alpha
$\beta$	Beta
$^{\circ}\text{C}$	Celsius
cm	Centimetre
$\delta$	Delta
dbh	Diameter At Breast Height
$\epsilon$	Epsilon
$\gamma$	Gamma
g	Gram
hr	Hour
kg	Kilogram
Kv	Kilo Volt
$\mu$	Micro
mL	Millilitre
mm	Millimetre
$[\alpha]_D^{25}$	Optical Rotation (25 $^{\circ}$ C)
%	Percentage
[n]D	Refractive Index
rpm	Rotation Per Minute
NaOH	Sodium Hydroxide

## LIST OF ABBREVIATIONS

AAS	Atomic absorption spectrometer
ETOH	Ethanol
GC	Gas chromatography
GC-FID	Gas chromatography-flame ionization detector
GC-MS	Gas chromatography-mass spectrometry
GC-Q-TOFMS	Gas Chromatography-Quadrapole-Time-of-flight/ Mass Spectrometry
HD	Hydrodistillation
HPLC	High performance liquid chromatography
ICP-MS	Inductively coupled plasma mass spectrometry
KI	Kovats index
MAE	Microwave-assisted extraction
MS	Mass spectrum
<i>m/z</i>	Mass to ratio
NIST	National Institute of Standards Technology
NMR	Nuclear magnetic resonance
PDB	Potato dextrose broth
PDA	Potato dextrose agar
PH	Power of hydrogen
RI	Retention index
RT	Retention time
SEM	Scanning electron microscope
SFE	Supercritical fluid extraction
SHD	Standard hydrodistillation

SWE

Subcritical water extraction

TLC

Thin layer chromatography