SUPPORTED LIQUID MEMBRANE FOR ACETIC ACID EXTRACTION: SCREENING OF MEMBRANE SUPPORT PREPARATION FACTORS

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BACHELOR OF CHEMICAL ENGINEERING

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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

JUNE 2017

SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my 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 family and friends.

ACKNOWLEDGEMENT

I would like to express my special appreciation and thanks to my supervisor, AP Dr. Syed Mohd Saufi. 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.

A special thanks to my family. Words cannot express how grateful I am to my mother, father and siblings for the love and support throughout these years. Your prayer for me was what sustained me this far.

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 at Faculty of Chemical and Natural Resources Engineering who helped me in many ways.

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LIST OF SYMBOLS

%	Percent
μm	Micrometer
ε	Overall porosity
℃	degree Celcius
A	Temperature of water bath
B	Exposure time
C	Air humidity
C_{fi}	Initial concentration in feed phase
C_{fo}	Final concentration in feed phase
C_s	Concentrations in strip phase
ρ	Density of oil
E	Liquid membrane phase
F	Feed phase
R	Receiving phase
s	Seconds
W_1	Weight of wet membrane
W_2	Weight of dry membrane
wt	Weight
x	Variables
y	Response

LIST OF ABBREVIATIONS

ANOVA	Analysis of variance
BLM	Bulk liquid membrane
CA	Contact angle
CCD	Central composite design
DMAc	Dimethylacetamide
EFB	Empty fruit bunches
ELM	Emulsion liquid membrane
EU	European Union
FSSLM	Flat sheet supported liquid membrane
HFSLM	Hollow fiber supported liquid membrane
HLB	Hydrophilic-lipophilic balance
HMF	Hydroxymethyl furfural
HPLC	High performance liquid chromatography
LM	Liquid membrane
MF	Microfiltration
NF	Nanofiltration
NIPS	Non solvent induced phase separation
PEG	Polyethylene glycol
PEO	Polyethylene oxide
PES	Polyethersulfones
PS	Polysulfones
PVDF	Polyvinylidene difluoride
PVP	Polyvinylpyrolidene
RH	Relative humidity

RO	Reverse osmosis
RSM	Response surface methodology
SLM	Supported liquid membrane
TIPS	Thermally induced phase separations
UF	Ultrafiltration
UK	United Kingdom
UPLC	Ultra performance liquid chromatography
VIPS	Vapour induced phase separations