METHANE PURIFICATION USING PVC MEMBRANE: PREPARATION, CHARACTERIZATION AND PERFORMANCE STUDY

RAJ KRISHNA ROSHAN A/L KANASAN

BACHELOR OF CHEMICAL ENGINEERING

UNIVERSITI MALAYSIA PAHANG

SUPERVISOR'S DECLARATION

I 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.

Signature :
Name of main supervisor : DR. SUNARTI BINTI ABD RAHMAN
Position : SENIOR LECTURER
Date :

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 :
Name : RAJ KRISHNA ROSHAN S/O KANASAN
ID Number : KC13041
Date :

Dedication

To my loving parents, who have given me all the love and knowledge from the beginning of birth, and also my beloved siblings who guided in all of my success and achievements in life.

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LIST OF SYMBOLS

wt%	weight percentage
p_m	permeance
^oC	degree Celcius
^oF	degree Fahrenheit

Greek

Δ	delta
α	selectivity

Units

Å	Angstrom
ft^2	square feet
ft	feet
g	gram
m^2	square meter
m^3	cubic meter

LIST OF ABBREVIATIONS

Al_2O_3	Aluminium Oxide
CA	Cellulosic esters
$CaCO_3$	Calcium Carbonate
$Ca(OH)_2$	Calcium Hydroxide
CO_2	Carbon dioxide
CH_4	Methane
DVB	Divinylbenzene
ED	Electrodialysis
F	Filtration
FTIR	Fourier Transform Infra-Red spectroscopy
GP	Gas permeation
MF	Microfiltration
MOL	Milk of lime
NMP	N-Methyl-2-pyrrolidone
PA	Polyamide
PAN	Polyacrilonitrile
PC	Polycarbonate
Pd	Palladium
PE	Polyethylene
PES	Polyether sulfone
PEst	Polyester
PI	Polyimide
PP	Polypropylene
PS	Polysulfone
PTFE	Polytetrafluoroethylene
PV	Pervaporation
PVC	Polyvinylchloride
RO	Reverse Osmosis
S	Silicon Rubber
SEM	Scanning Electron Microscope
SiO_2	Silicone dioxide
SO_2	Sulphur dioxide
TiO_2	Titanium dioxide
UF	Ultrafiltration
ZrO_2	Zirconium dioxide