

Table of Contents

Part I Water and wastewater treatment (novel membrane development)

1. Preparation and characterization of blended polysulfone/polyphenylsulfone ultrafiltration membranes for palm oil mill effluent treatment

Norafiqah Ismail, Woei Jye Lau & Ahmad Fauzi Ismail

2. Development and characterization of sago/PVA blend membrane for recovery of ethyl acetate from water

Abdulhakim M. Alamaria & M.M. Nawawia Ghazali

3. Development of adsorbents based cellulose acetate mixed matrix membranes for removal of pollutants from textile industry effluent

Ramesh Kumar Saranya, Yogarathinam Lukka Thuyavan, Gangasalam Arthanareeswaran & Ahmad Fauzi Ismail

4. Studying the role of magnetite (Fe_3O_4) colloids functionality on PES membrane in removing of humic acid foulant using QCM-D

Qi-Hwa Ng, Jit-Kang Lim, Abdul Latif Ahmad & Siew-Chun Low

5. The effect of spinning parameters on PLA hollow fiber membrane formation

Arisa Jaiyu, Kanungnuch Keawsupsak, Julaluk Pannoi, Passakorn Sueprasit & Chutima Eamchotchawalit

6. Fabrication of microporous polypropylene membrane via thermally induced phase separation for support media

Norlisa Harruddin, Norasikin Othman, Ani Idris, Norul Fatiha Mohamed Noah & Zing-Yi Ooi

7. Synthesis and characterization of superhydrophobic alumina membrane with different types of silane

Nor Aini Ahmad, Thinesh Rachandran, Choe Peng Leo & Abdul Latif Ahmad

Part II Water and wastewater treatment (applications)

8. Cross-flow microfiltration of synthetic oily wastewater using multi-channel ceramic membrane

Yusof H.D. Alanez

9. Treatment of dye solution via low pressure nanofiltration system

Abu Zahrim Yaser & Nidal Hilal

10. Fractionating the value-added products from skimmed coconut milk using membrane separation technique

Ching Yin Ng, AbdulWahab Mohammad & Law Yong Ng

11. Recovery of rubber from skim latex using membrane technology

Khairul Muis Mohamed Yusof, Jaya Kumar Veellu, Ahmad Jaril Asis, Zainan Abdullah, Mohamed Kheireddine Aroua & Nik Meriam Nik Sulaiman

12. Application of membrane separation technology for biodiesel processing

Mohammad Mahdi A. Shirazi, Ali Kargari, Ahmad Fauzi Ismail & Takeshi Matsuura

Part III Water and wastewater treatment (modeling)

13. Mathematical modeling of nanofiltration-based deionization processes in aqueous media

Mohammad M. Zerafat, Mojtaba Shariaty-Niassar, S. Jalaledin Hashemi, Samad Sabbaghi & Azadeh Ghaee

14. Simulation of heat and mass transfer in membrane distillation (MD) processes: the effect of membrane pore space description

Abdussalam O. Imdakm, Elmahdi M. Abousetta & Khalid Mahroug

15. Simulation of drying for multilayer membranes

Zawati Harun, Tze Ching Ong, David Gethin & Ahmad Fauzi Ismail

Part IV Membranes for energy and environmental applications (novel membrane developments for gas separation)

16. Effect of poly phenylene oxide (PPO) concentration on the morphological, thermal, crystalline and CO₂ permeation properties of as-synthesized flat sheet dense PPO polymeric membranes

Biruh Shimekit, Hilmi Mukhtar, Zakaria Man & Azmi Mohd Shariff

17. Critical concentration of PEI in NMP as a criterion for the preparation of asymmetric membranes for gas separation

Ahmad Arabi Shamsabadi, Masoud Bahrami Babaheidari & Kaveh Majdian

18. Powder preparation effect on oxygen permeation flux of hollow fiber LSCF6428 ceramic perovskite membrane

Haikal Mustafa, Ammar Mohd Akhir, Sharifah Aishah Syed Abdul Kadir, Ahmad Fauzi Ismail, Pei Sean Goh, Be Cheer Ng & Mohd Sohaimi Abdullah

19. Preparation of porous PVDF/montmorillonite hollow fiber mixed matrix membrane contactor via a phase inversion method to capture CO₂

M. Rezaei-DashtArzhandi, Ahmad Fauzi Ismail, Seyed A. Hashemifard, Gholamreza Bakeri & Takeshi Matsuura

Part V Membranes for environmental and energy applications (gas separation application)

20. An experimental investigation into the permeability and selectivity of PTFE membrane: a mixture of methane and carbon dioxide

Sina Gilassi & Nejat Rahmanian

21. The effect of piperazine with *N*-methyldiethanolamine in emulsion liquid membrane for carbon dioxide removal

Norfadilah Dolmat & Khairul S.N. Kamarudin

22. Separation of olefins from paraffins by membrane contactor – a review

Gholamreza Bakeri, Ali Kazemi Joujili, Mostafa Rahimnejad, Ahmad Fauzi Ismail & Takeshi Matsuura

23. The reliability of the conventional gas permeation testing method for characterizing the porous asymmetric membranes: a conceptual review

Seyed A. Hashemifard, Ahmad Fauzi Ismail & Takeshi Matsuura

24. Modeling of concurrent and counter-current flow hollow fiber membrane modules for multi-component systems

Serene Sow Mun Lock, Kok Keong Lau & Azmi Mohd Shariff

Part VI Membranes for other applications

25. Preparation of sulfonated polyether ether ketone (SPEEK) and optimization of degree of sulfonation for using in microbial fuel cells

Mostafa Ghasemi, Wan Ramli Wan Daud, Ahmad Fauzi Ismail & Takeshi Matsuura

26. Performance of polyphenylsulfone solvent resistant nanofiltration membrane: Effects of polymer concentration, membrane pretreatment and operating pressure

Nur Aimie Abdullah Sani, Woei Jye Lau & Ahmad Fauzi Ismail

27. Application of membrane technology in degumming and deacidification of vegetable oils refining

Noor Hidayu Othman, Ahmadilfitri Md Noor, Mohd Suria Affandi Yusoff, Ahmad Fauzi Ismail, Pei Sean Goh & Woei Jye Lau

28. Preparation of polysulfone electrospun nanofibers: effect of electrospinning and solution parameters

Zafarullah Khan & Feras M. Kafiaha