

Design in Maritime Engineering

Contributions from the ICMAT 2021

Editors: Azman Ismail, Wardiah Mohd Dahalan, Andreas Öchsner

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Andreas Öchsner
Editors

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 Springer

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Preface

The *Design in Maritime Engineering* book covers several research outcomes of various fields and school of thoughts particularly related to maritime operation, applications and materials science. Thirty-four research papers have been compiled from the 2nd International Conference on Marine and Advanced Technologies 2021 (ICMAT 2021) which was organized by the Research and Innovation Section of the Universiti Kuala Lumpur—MIMET. The authors were experienced lecturers from various universities in Malaysia discussing various topics and sub-topics related to maritime engineering and materials science. These chapters portray the actual knowledge on the latest developments and trends of technologies in maritime industries. This new development of marine-related matters will inculcate greater interest and ideas.

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Polysulfone/Cellulose Acetate Phthalate/Polyvinylpyrrolidone (PSf/CAP/PVP) Blend Membranes: Effect of Evaporation Time on Blend Membrane Characteristics

[Asmadi Ali](#) , [Rosli Mohd Yunos](#), [Mohamad Awang](#), [Sofiah Hamzah](#), [Mohammad Hakim Che Harun](#), [Fazureen Azaman](#) & [Muhammad Abbas Ahmad Zaini](#)

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Abstract

Recently, researchers proved that the evaporation time during the membrane fabrication process has a significant effect on the characteristics and performance of membranes. In this study, flat sheet asymmetric polysulfone/cellulose acetate phthalate/polyvinylpyrrolidone (PSf/CAP/PVP) blend membranes were fabricated at different evaporation time in the range of 0–20 s to investigate the effect of the evaporation time on characteristics of the blend membranes. The PSf/CAP/PVP blend membranes were characterized in terms of water content, porosity, pure water flux and permeability coefficient. The results showed that an increase of evaporation time from 0 to 20 s has resulted in decreasing of water content and porosity of the PSf/CAP/PVP blend membranes. The permeation water flux of the blend membrane was decreased with the increment of evaporation time. This indicated that an increase of evaporation time would lead to a decrease of the membrane permeability coefficient and hence increased the membrane resistance to permeation of water through the membranes.

Keywords

Ultrafiltration

Evaporation time

Blend membrane

Flux

References

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