

1. 査読つき論文

1. H. Wu, T. Yoshioka, K. Nakagawa, T. Shintani, T. Tsuru, D. Saeki, H. Matsuyama, Applying Amphotericin B-Ergosterol in forward osmosis: a simulation study, *Membrane* **42** (2017) 250-254. <https://doi.org/10.5360/membrane.42.250>
2. S. Yoshimoto, K. Kumagai, H. Hosomi, M. Takeda, T. Tsuru, K. Ito, Effect of heat treatment on the nanoporosity of silica PECVD films elucidated by low-energy positron annihilation and ellipsometric porosimetry, *Journal of Applied Physics*, **122** (2017) 185304. <https://doi.org/10.1063/1.5004187>
3. F.-T. Zheng, K. Yamamoto, M. Kanezashi, T. Tsuru, J. Ohshita, Preparation of bridged silica RO membranes from copolymerization of bis(triethoxysilyl)ethene/ (hydroxymethyl)triethoxysilane. Effects of ethenylene-bridge enhancing water permeability, *Journal of Membrane Science*, **546** (2018) 173-178. <https://doi.org/10.1016/j.memsci.2017.10.025>
4. M. Yoshikawa, H. Shiba, M. Kanezashi, H. Wada, A. Shimojima, T. Tsuru, K. Kuroda, Synthesis of a 12-membered cyclic siloxane possessing alkoxyethyl groups as a nanobuilding block and its use for preparation of gas permeable membranes, *RSC Advances*, **7** (2017) 48683-48691. <https://doi.org/10.1039/C7RA09380B>
5. H. Wu, K. Nakagawa, T. Shintani, T. Tsuru, D. Saeki, Y. Chen, K.-L. Tung, H. Matsuyama, Water transport and ion rejection investigation for application of cyclic peptide nanotubes to forward osmosis process: a simulation study, *Desalination*, **424C** (2017) 85-94. <https://doi.org/10.1016/j.desal.2017.09.008>
6. H. Wu, T. Shintani, K. Nakagawa, T. Tsuru, D. Saeki, A. Shaikh, H. Matsuyama, Preparation of Amphotericin B-Ergosterol structures and molecular simulation of water adsorption and diffusion, *Journal of Membrane Science*, **545** (2018) 229-239. <https://doi.org/10.1016/j.memsci.2017.09.032>
7. Y.-R. Chen, T. Tsuru, D.-Y. Kang, Simulation and design of catalytic membrane reactor for hydrogen production via methylcyclohexane dehydrogenation, *International Journal of Hydrogen Energy*, **42** (2017) 26296-26307. <https://doi.org/10.1016/j.ijhydene.2017.08.174>
8. L. Yu, M. Kanezashi, H. Nagasawa, T. Tsuru, Fabrication and CO₂ permeation properties of amine-silica membranes using a variety of amine types, *Journal of Membrane Science*, **541** (2017) 447-456. <https://doi.org/10.1016/j.memsci.2017.07.024>
9. M. Kanezashi, T. Matsutani, H. Nagasawa, T. Wakihara, T. Okubo, T. Tsuru, Preparation and gas permeation properties of fluorine-silica membranes with controlled amorphous silica structure: Effect of fluorine source and calcination temperature on network size, *ACS Applied Materials & Interfaces*, **9** (2017) 24625-24633. <https://doi.org/10.1021/acsami.7b06800>
10. R. Abejón, A. Abejón, W. Puthai, S. B. Ibrahim, H. Nagasawa, T. Tsuru, A. Garea, A. Irabien, Preliminary techno-economic analysis of non-commercial ceramic and organosilica membranes for hydrogen peroxide ultrapurification, *Chemical Engineering Research and Design*, **125** (2017) 385-397. <https://doi.org/10.1016/j.cherd.2017.07.018>
11. K. Yamamoto, S. Koge, K. Sasahara, T. Mizumo, Y. Kaneko, M. Kanezashi, T. Tsuru, J. Ohshita, Preparation of bridged polysilsesquioxane membranes from bis[3-(triethoxysilyl)propyl]amine for water desalination, *Bulletin of the Chemical Society of Japan*, **90** (2017) 1035-1040. <https://doi.org/10.1246/bcsj.20170153>
12. H. Wu, H. Nagasawa, M. Kanezashi, T. Tsuru, D. Saeki, H. Matsuyama, Preparation of cyclic peptide nanotube structures and molecular simulation of water adsorption and diffusion, *Journal of Membrane Science*, **537** (2017) 101-110. <https://doi.org/10.1016/j.memsci.2017.04.060>
13. M. Kanezashi, Y. Yoneda, K. Yamamoto, H. Nagasawa, J. Ohshita, T. Tsuru, Experimental study of gas permeation properties through organosilica membranes and evaluation of microporous structure, *AIChE Journal*, **63** (2017) 4491-4498. <https://doi.org/10.1002/aic.15778>
14. W. Puthai, M. Kanezashi, H. Nagasawa, T. Tsuru, Development and permeation properties of SiO₂-ZrO₂ nanofiltration membranes with a MWCO of < 200, *Journal of Membrane Science*, **535** (2017) 331-341. <https://doi.org/10.1016/j.memsci.2017.04.023>
15. G. Li, K. Zhang, T. Tsuru, Two-dimensional covalent organic framework (COF) membranes fabricated via the assembly of exfoliated COF nanosheets, *ACS Applied Materials & Interfaces*, **9** (2017) 8433-8436. <https://doi.org/10.1021/acsami.6b15752>

16. L. Yu, M. Kanezashi, H. Nagasawa, J. Oshita, A. Naka, T. Tsuru, Pyrimidine-bridged organoalkoxysilane membrane for high-efficiency CO₂ transport via mild affinity, *Separation and Purification Technology*, **178** (2017) 232-241. <https://doi.org/10.1016/j.seppur.2017.01.039>
17. L. Yu, M. Kanezashi, H. Nagasawa, J. Oshita, A. Naka, T. Tsuru, Fabrication and microstructure tuning of a pyrimidine-bridged organoalkoxysilane membrane for CO₂ separation, *Industrial & Engineering Chemistry Research*, **56** (2017) 1316-1326. <https://doi.org/10.1021/acs.iecr.6b04460>
18. H. Nagasawa, M. Nishibayashi, M. Kanezashi, T. Yoshioka, T. Tsuru, Photo-induced sol-gel synthesis of polymer-supported silsesquioxane membranes, *RSC Advances*, **7** (2017) 7150-7157. <https://doi.org/10.1039/C6RA21161E>
19. G. Li, M. Kanezashi, T. Tsuru, Catalytic ammonia decomposition over high-performance Ru/Graphene nanocomposites for efficient CO_x-free hydrogen production, *Catalysts*, **7** (2017) 23. <https://doi.org/10.3390/catal7010023>
20. S. M. Ibrahim, H. Nagasawa, M. Kanezashi, T. Tsuru, Organosilica membranes for gas separation (GS) and reverse osmosis (RO): The effect of preparation conditions on structural and the correlation between gas and liquid permeation properties. *Journal of Membrane Science*, **526** (2017) 242-251. <https://doi.org/10.1016/j.memsci.2016.12.036>
21. K. Yamamoto, M. Kanezashi, T. Tsuru, J. Ohshita, Preparation of bridged polysilsesquioxane-based membranes containing 1,2,3-triazole moieties for water desalination, *Polymer Journal*, **49** (2017) 401-406. (Highlight paper) <https://doi.org/10.1038/pj.2016.128>
22. K. Yamamoto, S. Koge, T. Gunji, M. Kanezashi, T. Tsuru, J. Ohshita, Preparation of POSS-derived robust RO membranes for water desalination, *Desalination* **404** (2017) 322-327. <https://doi.org/10.1016/j.desal.2016.11.017>
23. W. Puthai, M. Kanezashi, H. Nagasawa, T. Tsuru, SiO₂-ZrO₂ nanofiltration membranes of different SiO₂/ZrO₂ molar ratios: stability in hot water and acid/alkaline solutions, *Journal of Membrane Science*, **524** (2017) 700-711. <https://doi.org/10.1016/j.memsci.2016.11.045>
24. H. Nagasawa, Y. Yamamoto, N. Tsuda, M. Kanezashi, T. Yoshioka, T. Tsuru, Atmospheric-pressure plasma-enhanced chemical vapor deposition of microporous silica membranes for gas separation, *Journal of Membrane Science*, **524** (2017) 644-651. <https://doi.org/10.1016/j.memsci.2016.11.067>
25. M. Kanezashi, R. Matsugasako, H. Tawarayama, H. Nagasawa, T. Tsuru, Pore size tuning of sol-gel-derived triethoxysilane (TRIES) membranes for gas separation, *Journal of Membrane Science*, **524** (2017) 64-72. <https://doi.org/10.1016/j.memsci.2016.11.006>
26. K. Yamamoto, J. Ohshita, T. Mizumo, M. Kanezashi, T. Tsuru, Synthesis of organically bridged trialkoxysilanes bearing acetoxymethyl groups and applications to reverse osmosis membranes, *Applied Organometallic Chemistry*, **31** (2017) e3580. <https://doi.org/10.1002/aoc.3580>

(Articles published in 2018, articles in press, and accepted articles)

27. M. Kanezashi, T. Matsutani, H. Nagasawa, T. Tsuru, Fluorine-induced microporous silica membranes: Dramatic improvement in hydrothermal stability and pore size controllability for highly permeable propylene/propane separation, *Journal of Membrane Science*, **549** (2018) 111-119. <https://doi.org/10.1016/j.memsci.2017.11.072>
28. L. Yu, M. Kanezashi, H. Nagasawa, N. Moriyama, K. Ito, T. Tsuru, Enhanced CO₂ separation performance for tertiary amine-silica membranes via thermally induced local liberation of CH₃Cl, *AIChE Journal*, in press. <https://doi.org/10.1002/aic.16040>
29. H. Nagasawa, Y. Yamamoto, M. Kanezashi, T. Tsuru, Atmospheric-pressure plasma-deposition of hybrid silica membranes, *Journal of Chemical Engineering of Japan*, accepted.
30. S. Yoshimoto, K. Ito, H. Hosomi, M. Takeda, T. Tsuru, Subnanopore structural change of time-elapsed silica PECVD films elucidated by slow positron annihilation and ellipsometric porosimetry, *JJAP Conference Proceedings*, accepted

2. 著書

1. H. Nagasawa, T. Tsuru, "Silica membrane application for pervaporation process", in A. Basil, K. Ghasemzadeh (Ed.), *Current Trends and Future Developments on (Bio-) Membranes, Silica*

Membranes: Preparation, Modelling, Application, and Commercialization, Elsevier (2017).

2. 金指正言, 都留稔了, シリカ系分子ふるい膜の細孔径制御と透過特性, 幸塚広光 (監修) ゼルーゲルテクノロジーの最新動向, シーエムシー出版 (2017).

3. 総説など

1. 都留稔了, セラミック多孔膜による高度分離: ナノ/サブナノ細孔膜の設計, 評価と応用, 化学と工業, **70** (2017) 687-689.

(Articles published in 2018 and Accepted articles)

2. 金指正言, 都留稔了, シリカ系分子ふるい膜のネットワーク制御と Normalized Knudsen-based Permeance (NKP) 法による細孔径評価, ゼオライト, **35** (2018) 13-22.
3. T. Tsuru, Silica-Based Membranes with Molecular-Net-Sieving Properties: Development and Applications, *Journal of Chemical Engineering of Japan*, accepted.

4. 学会などからの招待講演, 基調講演

1. 都留稔了, シリカおよびオルガノシリカを用いたナノ/サブナノ多孔膜の開発と環境・エネルギーへの応用, 第 24 回ヤングセラミスト・ミーティング特別講演, 日本セラミック協会中四国支部, 2017.12.9.
2. 都留稔了, シリカおよびオルガノシリカの高機能化と環境・エネルギーへの応用, 日本学術振興会, 先導的研究開発委員会, 2017.12.8.
3. H. Nagasawa, Development of microporous organo-silica membranes and their applications for molecular separation, International Workshop on Materials, Membranes, Energy and Water Management, Banjarmasin, Indonesia, 2017.12.6.
4. 金指正言, 炭化水素分離のためのシリカ系膜の開発, 第 34 回ニューメンブレンテクノロジーシンポジウム, 三田 NN(東京), 2017.10.17.
5. T. Tsuru, Research Activities on Sustainability, MIRAI Workshop, Lund, Sweden, 2017.10.17
6. M. Kanezashi, Tailoring the sub-nano amorphous silica network structure for development of highly permeable gas separation membranes, The Society of Chemical Engineers, Japan (SCEJ) 49th Annual Meeting (Joint Session of SCEJ and KICChE), Nagoya University, 2017.9.21.
7. 都留稔了, 高選択・高透過性分離膜の開発と各種分離プロセスへの応用: Beyond the border, 先端膜工学センター・先端膜工学研究推進機構, 2017.9.14.
8. T. Tsuru, Silica-Based Membranes with Molecular-Net-Sieving Properties: Applications to Catalytic Membrane Reactors, International Symposium on Environmentally Friendly Smart Materials, Higashi-Hiroshima, 2017.8.27.
9. 金指正言, ゼルーゲル法によりアモルファス構造を制御したシリカ系膜の開発と透過特性, 無機膜研究センター産業化戦略協議会 第 5 回セミナー, TKP ガーデンシティ心斎橋, 2017.5.19.
10. T. Tsuru, The 3rd Asian Symposium on Water Reuse, Robust reverse osmosis (RO)/nanofiltration (NF) membranes with thermal stability and chlorine tolerance for expanding applications to various types of water resources, Seoul, Korea, 2017.04.25.
11. 金指正言, 米田悠里, 長澤寛規, 都留稔了, 橋架けアルコキシドによるオルガノシリカ膜の細孔構造制御と炭化水素透過特性, 化学工学会第 82 年会, 芝浦工業大学, 2017.3.7.
12. 都留稔了, セラミック多孔膜による高度分離: ナノ~サブナノ細孔の設計, 評価と応用, 日本化学会第 97 春季年会 ATP セッション, 慶応大学, 2017.3.16.