1985

Remembering my friend and colleague: Professor Shoji Kimura

Kimura Lab
University of Tokyo, Japan
1983?

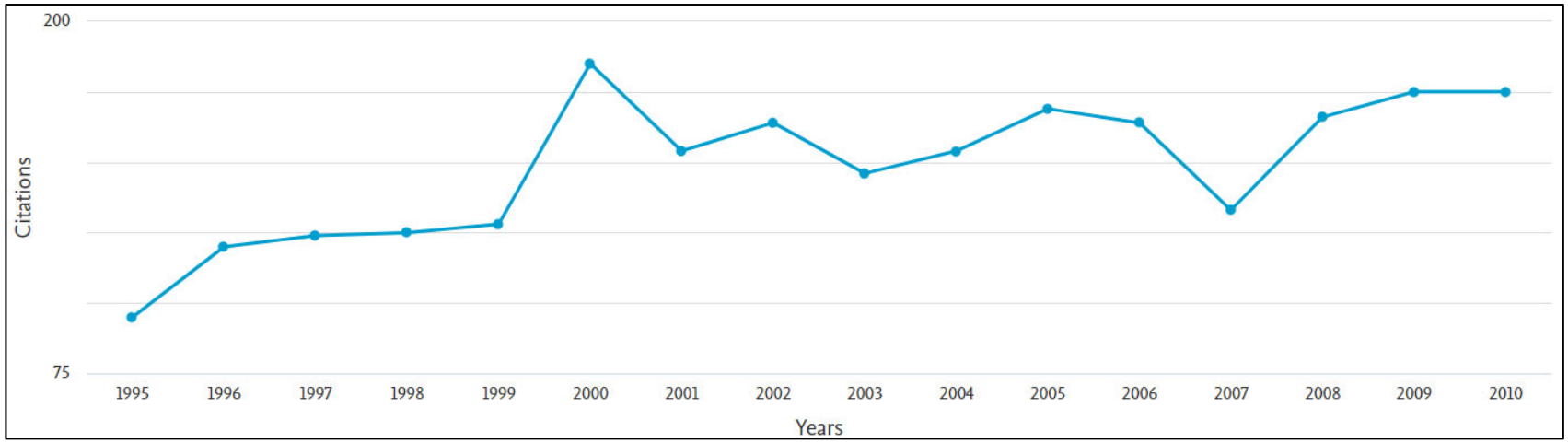
Shoji Kimura – Membrane Giant and Humanist
1934-2020

H-index 35

Citations 4292

Source: Scopus
June 11th 2023

Citations per year



History of ICOM

- Foundation COM in Stresa, June 18-22, 1984

1. First ICOM1987, Akasaka, Tokyo, Japan June 8-12, (722 participants)
2. ICOM1990, Chicago, USA. 854 participants (854)
3. ICOM1993, Heidelberg, Germany, Aug. 30 – Sept. 3, (732)
4. ICOM1996, Yokohama, Japan. Aug. 18 to 23, 1996 (644)
5. ICOM1999, Toronto, Canada, June 13-18.
6. ICOM2002 Toulouse, France. July 7-12, 2002 (1030)
7. ICOM2005, Seoul, Korea, Aug. 21-25, 2005
8. ICOM2008, Honolulu, Hawaii July 12-18, 2008.
9. ICOM2011, Amsterdam, Netherlands, July 24-29, 2011
10. ICOM2014, Suzhou, China. July 20-25, 2014
11. ICOM2017, San Francisco, USA, July 30 – August 4, 2017
12. ICOM2020, On-line, London, UK., December 7-11
13. ICOM2023, Makuhari Messe, Chiba, Japan

My Visits to Japan

1985: Visit Kimura – Tokyo (Ropongi dinner with Prof. Marlene Belfort and Yukiko Kimura, wife of Prof Kimura), Kyoto (shining golden pavilion which used to be the political center of the Shogun (the head of Samurai warrior), Nara (Tōdaiji, "Great Eastern Temple" 15 m high Budda, Riokaan. PHOTO.

1987: ICOM Tokyo Akasaka and Hakone Open Air Museum

1988: Visit Kimura and attend The 4th Seminar on Frontiers Technology: "At the Front of Selective Reactions and Separations", Oiso Prince Hotel, Kanagawa Prefecture, Japan

1992: UNITIKA, Japan Society for the Promotion of Science

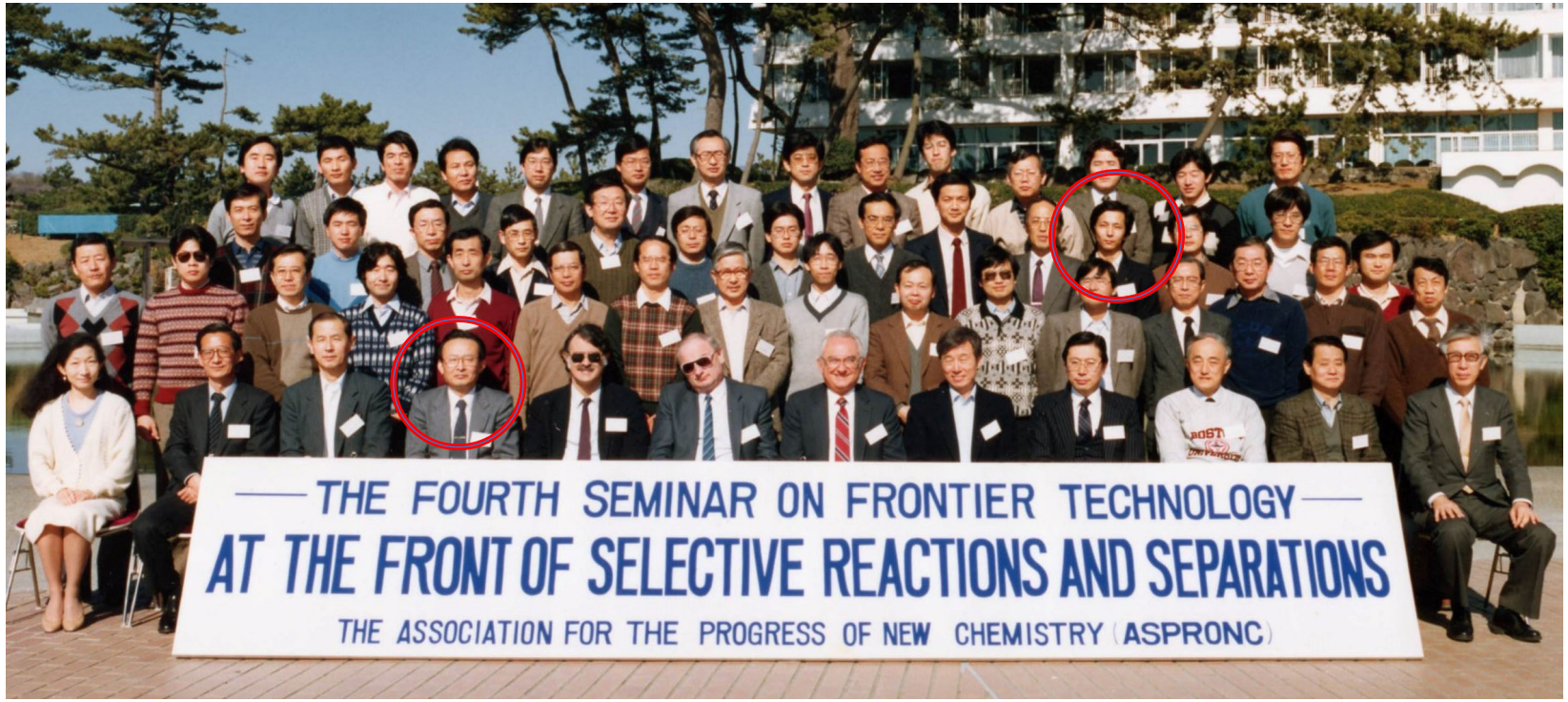
1996: ICOM Yokoyama, UNITIKA (Osaka Headquarters), TORAY, Otsu and Hakone Open Air Museum

2003: UNITIKA/TAKEDA Pharma, Japan Society for the Promotion of Science and Hakone Open Air Museum

2023: ICOM Makuhari Messe, Chiba, Japan

1988

Invitation by Prof Kimura



Oiso Prince Hotel, Kanagawa
Prefecture, Japan
February 5th, 1988

Shoji Kimura's top publications 1962-1995

Source: Scopus
June 11th 2023

	Documents	Year	Citations
			4292
1	The electrostatic and steric-hindrance model for the transpo...	1997	320
2	Plasma-Graft Filling Polymerization: Preparation of a New Ty...	1991	267
3	Electrolyte transport through nanofiltration membranes by th...	1995	227
4	Calculation of ion rejection by extended nernst-planck Equat...	1991	205
5	Analysis of solutes rejection in ultrafiltration	1981	204
6	Evaluation of pore structure and electrical properties of na...	1995	193
7	Development of a molecular recognition ion gating membrane a...	2002	188
8	Transport phenomena in membrane distillation	1987	168
9	Reverse osmosis of single and mixed electrolytes with charge...	1991	161
10	Characteristics of macromolecular gel layer formed on ultraf...	1979	149
11	Models of membrane transport phenomena and their application...	1982	137
12	Effects of osmotic pressure and adsorption on ultrafiltratio...	1990	101
13	Negative rejection of anions in the loose reverse osmosis se...	1991	91
14	Continuous ethanol extraction by pervaporation from a membra...	1987	86
15	Boron reduction performance of reverse osmosis seawater desa...	2001	74
16	Preparation of microporous membranes by TEOS/O_3 C...	2000	74
17	Transport of organic electrolytes with electrostatic and ste...	1995	73
18	Preparation of pervaporation membranes for removal of dissol...	1994	73
19	Evidence and mechanisms of filling polymerization by plasma-...	1996	72
20	Permeation equations developed for prediction of membrane pe...	1991	66

Kimura Publications

Concentration Polarization Effects in Reverse Osmosis Using Porous Cellulose Acetate Membranes	Shoji Kimura and S. Sourirajan *Industrial & Engineering Chemistry Process Design and Development* 1968, 7, 1, 41-48
Analysis of data in reverse osmosis with porous cellulose acetate membranes used	Shoji Kimura, S. Sourirajan AICHE Journal Volume 13, Issue 3 May 1967 Pages 497-503
Mass Transfer Coefficients for Use in Reverse Osmosis Process Design	Shoji Kimura and S. Sourirajan *Industrial & Engineering Chemistry Process Design and Development* 1968, 7, 4, 539-547
Stagewise Reverse Osmosis Process Design	Shoji Kimura, S. Sourirajan and Haruhiko Ohya *Industrial & Engineering Chemistry Process Design and Development* 1969, 8, 1, 79-89
Solubility and pervaporation properties of the filling-polymerized membrane prepared by plasma-graft polymerization for pervaporation of organic-liquid mixtures	Takeo Yamaguchi, Shinichi Nakao and Shoji Kimura *Industrial & Engineering Chemistry Research* 1992, 31, 8, 1914-1919
Development of crosslinked plasma-graft filling polymer membranes for the reverse osmosis of organic liquid mixtures	Teruhiko Kai, Hidemi Goto, Yoko Shimizu, Takeo Yamaguchi, Shin-ichi Nakao, Shoji Kimura Journal of Membrane Science, Volume 265, Issues 1–2, 15 November 2005, Pages 101-107
Preparation of hollow-fiber membranes by plasma-graft filling polymerization for organic-liquid separation	Teruhiko Kai, Toshinori Tsuru [1], Shin-ichi Nakao, Shoji Kimura Journal of Membrane Science Volume 170, Issue 1, 15 May 2000, Pages 61-70
Development of a Molecular Recognition Ion Gating Membrane and Estimation of Its Pore Size Control	Taichi Ito Takanobu Hioki Takeo Yamaguchi Toshio Shinbo Shin-ichi Nakao and Shoji Kimura

Kimura publications by topic - 1

Fouling in RO, NF and UF membranes

1) Watanabe, Atsuo & Kimura, Shoji & Ohta, Yoshio & Randall, John & Kimura, Susumu. (2006). Nature of the deposit on reverse osmosis membranes during concentration of pectin/cellulose solutions. *Journal of Food Science*. 44. 1505 - 1509. 10.1111/j.1365-2621.1979.tb06473.x.
2) Watanabe, Atsuo & Kimura, Shoji & Kimura, Susumu. (2006). Flux restoration of reverse osmosis membranes by intermittent lateral surface flushing for orange juice processing. *Journal of Food Science*. 43. 985 - 988. 10.1111/j.1365-2621.1978.tb02467.x.
3) Kai, Teruhiko & Goto, Hidemi & Shimizu, Yoko & Yamaguchi, Takeo & Nakao, Shin-ichi & Kimura, Shoji. (2005). Development of crosslinked plasma-graft filling polymer membranes for the reverse osmosis of organic liquid mixtures. *Journal of Membrane Science*. 265. 101-107. 10.1016/j.memsci.2005.05.003.
4) Kimura, Shoji & Nakao, Shin-Ichi. (1975). Fouling of cellulose acetate tubular reverse osmosis modules treating the industrial water in Tokyo. *Desalination*. 17. 267-288. 10.1016/S0011-9164(00)84061-8.
5) Takaba, Hiromitsu & Fuse, Masanori & Ishikawa, Touru & Kimura, Shoji & Nakao, Shin-ichi. (2000). Removal of Scale-forming Components in Hot-seawater by Nanofiltration Membranes. *Membranes* 25. 189-197. 10.5360/membrane.25.189.
6) Nakao, Shin - Ichi & Nomura, Tsuyoshi & Kimura, Shoji. (1979). Characteristics of macromolecular gel layer formed on ultrafiltration tubular membrane. *AIChE Journal*. 25. 615 - 622. 10.1002/aic.690250407.
7) Nakao, Shin-ichi & Kimura, Shoji. (1981). Effect of Gel Layer on Rejection and Fractionation of Different-Molecular-Weight Solutes by Ultrafiltration. *ACS Symposium Series*. 119-132. 10.1021/bk-1981-0154.ch009

Belfort Publications on same topics

- Belfort, G. (1976), Cleaning of reverse osmosis membranes in wastewater renovation, in *Water 75*, published by *AIChE*, NY, 76-81

- Mahlab, D., Ben Yosef, N., and Belfort, G. (1978), Concentration polarization profile for dissolved species in unstirred batch hyperfiltration (reverse osmosis) - II Transient Case, *Desalination*, 24, 297-303.

- Mahlab, D. Ben Yosef, N. Belfort, G. (1981) "Intrinsic Membrane Compaction and Aqueous Solute Studies of Hyperfiltration (Reverse Osmosis) Membrane Using Interferometry", pp. 147-158 in Synthetic Membranes Vol. 1, Desalination (ed. A. F. Turak) ACS Symposium Series 153, ACS Washington, DC.

- Ulbricht, M and Belfort, G. (1995), Low Temperature Surface Modifications of Polyacrylonitrile Ultrafiltration Membranes - 1. Plasma Treatment Effects, *J. Appl. Polymer Sci.*, 56, 325-343.

Kimura publications by topic - 2

Modeling transport through membranes

1) Ichimura, Shigetoshi & Tsuru, Toshinori & Nakao, Shin-ichi & Kimura, Shoji. (2000). Analysis of Linear Macromolecule Transport through Aluminum Anodic Oxide Membranes by Pore Model. Journal of Chemical Engineering of Japan - J CHEM ENG JPN. 33. 141-151. 10.1252/jcej.33.141.
2) Wang, Xiao-Lin & Tsuru, Toshinori & Nakao, Shin-ichi & Kimura, Shoji. (1997). The Electrostatic and Steric-Hindrance Model for the Transport of Charged Solutes Through Nanofiltration Membranes. Journal of Membrane Science. 135. 19-32. 10.1016/S0376-7388(97)00125-7.
3) Yamaguchi, Takeo & Nakao, Shin-Ichi & Kimura, Shoji. (1997). Swelling behavior of the filling-type membrane. Journal of Polymer Science Part B: Polymer Physics. 35. 469 - 477. 10.1002/(SICI)1099-0488(199702)35:3<469::AID-POLB6>3.0.CO;2-N.
4) Wang, Xiao-Lin & Tsuru, Toshinori & Togoh, Masanori & Nakao, Shin-ichi & Kimura, Shoji. (1995). Transport of Organic Electrolytes with Electrostatic and Steric-Hindrance Effects Through Nanofiltration Membranes. Journal of Chemical Engineering of Japan - J CHEM ENG JPN. 28. 372-380. 10.1252/jcej.28.372.
5) Wang, Xiao-Lin & Tsuru, Toshinori & Togoh, Masanori & Nakao, Shin-ichi & Kimura, Shoji. (1995). Transport of Organic Electrolytes with Electrostatic and Steric-Hindrance Effects Through Nanofiltration Membranes. Journal of Chemical Engineering of Japan - J CHEM ENG JPN. 28. 372-380. 10.1252/jcej.28.372.
6) Kimura, Shoji & Nakao, Shin-Ichi & Shimatani, Shun-Ichi. (1987). Transport phenomena in membrane distillation. Journal of Membrane Science. 33. 285-298. 10.1016/S0376-7388(00)80286-0.

Belfort Publications on same topics

- Nagata, N. Herouvis, K., Dziewulski, D. M. and Belfort, G. (1989), Cross-flow membrane microfiltration of a bacterial fermentation broth, *Biotechnology and Bioengineering*, 34, 447-466.

- Belfort, G. (1976), A molecular friction model or transport of uncharged solutes in neutral hyperfiltration and ultrafiltration membranes containing bound water, *Desalination*, 18, 3, 259-281.

- Sorci, M., Gu, M., Heldt, C. L., Grafeld, E. and Belfort, (2013) A multi-dimensional approach for fractionating proteins using charged membranes, *Biotechnol. Bioeng.*, 110, 1704–1717.

- Taniguchi, M, Kilduff, J. E., and Belfort, G (2003) Low fouling synthetic membranes by UV-Assisted graft polymerization: Monomer selection to mitigate fouling by natural organic matter, *J. Membrane Sci.*, 222, 59–70

Kimura publications by topic - 3

Dynamic membranes for UF

1) NAKAO, SHIN-ICHI & NOMURA, TSUYOSHI & KIMURA, SHOJI & WATANABE, ATSUO. (1986). Formation and characteristics of inorganic dynamic membranes for ultrafiltration. Journal of Chemical Engineering of Japan - J CHEM ENG JPN. 19. 221-226. 10.1252/jcej.19.221.
2) Ohtani, Toshio & Watanabe, Atsuo & Hoshino, Chimaki & Kimura, Shoji. (1985). Application of Dynamic Membrane to Ultrafiltration. KAGAKU KOGAKU RONBUNSHU. 11. 140-146. 10.1252/kakoronbunshu.11.140.
3) KIMURA, SHOJI & OHTANI, TOSHIRO & WATANABE, ATSUO. (1985). Nature of Dynamically Formed Ultrafiltration Membranes. 10.1021/bk-1985-0281.ch003.

Pervaporation

1) Kimura, Shoji & Nomura, Tsuyoshi. (1983). Pervaporation of alcohol-water mixtures with silicone rubber membrane. Maku (Membrane). 5. 10.5360/membrane.8.177.

Belfort Publications on same topics

- Lee, Y., Bourgeois, D., and Belfort, G. (1989), Sorption, diffusion and pervaporation of organics in polymer membranes, *J. Membrane Science*, 44, 161-181.

Professor Kimura with his students

Shin-ichi Nakao

Takeo Yamaguchi

Thank you for your **kindness**
Thank you for your **technical acuity**
Thank you for **helping to build**
Membrane Science & Technology in Japan
to be at the TOP

Acknowledgements

- Prof. Takeshi Matsuura and Prof Tony Fane
- Prof Shin-ischi Nakao, Prof. Emeritus The University of Tokyo, Prof. Emeritus Kogakuin University
- Naohiko Nagata, Unitika, Retired
- Surya Karla, current PhD student Belfort group

Thank you, Shoji Kimura

Prof Shoji Kimura,
Prof. Emeritus The University of Tokyo, Prof. Emeritus Osaka University,
Special Full-time Professor, Kogakuin University

We miss you at this meeting

Thank you, my friend and colleague

Thank Organizers
for
Opportunity to honor and say goodbuy
to my friend
Prof Shoji Kimuru

- Shin-ichi Nakao, Emeritus Professor, The University of Tokyo
- Takeo Yamaguchi, Tokyo Institute of Technology
- Hideto Matsuyama, Kobe University
- Toshinori Tsuru, Hiroshima University