

## BENNY DEAN FREEMAN

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McKetta Department of Chemical Engineering  
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### EDUCATION:

- Ph.D. Chemical Engineering - January 1988  
University of California, Berkeley  
Thesis: "The Effect of Hydrostatic Pressure on Mutual Diffusion Coefficients in Polymer Solutions" Thesis Directors: Morton M. Denn and David S. Soane
- B.S. Chemical Engineering - May 1983 *Summa Cum Laude*  
North Carolina State University  
Graduate of Engineering Honors Program

### PROFESSIONAL EXPERIENCE:

#### The University of Texas at Austin:

- William J. (Bill) Murray, Jr. Endowed Chair in Engineering, September 2019 – present.  
Richard B. Curran Centennial Chair of Engineering, September 2012 – August 2019.  
Paul D. and Betty Robertson Meek & American Petrofina Foundation Centennial Professor of Chemical Engineering, September 2007 to August 2012.  
Kenneth A. Kobe Professor of Chemical Engineering, September 2005 to August 2012.  
Matthew van Winkle Professor of Chemical Engineering, September 2002 to August 2005.  
Professor of Chemical Engineering, January 2002 to present.

#### Monash University:

- Professorial Fellow, January 2021 – present.

#### NC State University:

- Professor of Chemical Engineering, November 1997 to January 2002.  
Sabbatical Leave, July 2000 to December 2000. University of California, Berkeley.  
Associate Department Head, August 1996 to January 2002.  
Associate Professor of Chemical Engineering, August 1994 to November 1997.  
Assistant Professor of Chemical Engineering, August 1989 to August 1994.

**NATO Postdoctoral Fellow**, March 1988 to July 1989, Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI), Laboratoire Physico-Chimie Structurale et Macromoléculaire, 10 rue Vauquelin, 75231 Paris, France. Research directed by Professor Lucien Monnerie and Professor Liliane Bokobza.

**Graduate Student**, August 1983 to January 1988, Univ. of California, Berkeley.

**Summer Technical Hire**, E.I. duPont, Inc. Brevard, NC, Summers of 1981, 1982, and 1983.

### HONORS AND AWARDS:

- 14<sup>th</sup> Annual Reuel Shinnar Memorial Lecture.....2026  
Alan S. Michaels Award for Innovation in Membrane Science and Technology.....2026  
Fellow, National Academy of Inventors .....2025  
Hill Prize in Engineering (joint with Prof. Joan Brennecke).....2025  
Billy & Claude R. Hocott Distinguished Centennial Engineering Research Award .....2024  
Walter J. Weber, Jr. Distinguished Lecture in Environmental and Energy Sustainability .....2024  
U.S. National Academy of Engineering.....2023

Texas Academy of Medicine, Engineering, Science & Technology (TAMEST).....	2023
AICHE Materials Engineering & Sciences Division Braskem Award for Excellence in Materials Science and Engineering.....	2023
AICHE Separations Division Founders Award.....	2022
Reilley Lectureship, University of Notre Dame.....	2020
Membrane Society of Australasia (MSA) Distinguished Scholar Lectureship.....	2019
American Chemical Society POLY Fellow .....	2019
American Chemical Society POLY/PMSE Plenary Lecture.....	2019
Bird, Stewart, and Lightfoot Lecture, University of Wisconsin.....	2019
North American Membrane Society (NAMS) Fellow .....	2017
Fulbright Distinguished Chair .....	2016-2017
PMSE Distinguished Service Award (from Polymeric Materials: Science and Engineering Division of ACS).....	2015
World Premier International (WPI) Professor of International Institute for Carbon-Neutral Energy Research (I <sup>2</sup> CNER) at Kyushu University, Japan.....	2014-2026
Fellow of the Industrial and Engineering Chemistry Research Division of ACS .....	2014
AICHE Clarence (Larry) G. Gerhold Award .....	2013
Joe J. King Professional Engineering Achievement Award.....	2013
Society of Plastics Engineers (SPE) International Award.....	2013
Roy W. Tess Award in Coatings (from PMSE Division of ACS) .....	2012
AAAS Fellow .....	2011
ACS Fellow .....	2011
AICHE Fellow .....	2011
Fellow of the PMSE Division of ACS .....	2010
ACS Award in Applied Polymer Science .....	2009
American Institute of Chemical Engineers (AIChE) Institute Award for Excellence in Industrial Gases Technology .....	2008
IBM Faculty Award.....	2008, 2012
University CO-OP Research Excellence Award for Best Research Paper in 2006 .....	2007
American Chemical Society (ACS) PMSE Cooperative Research Award.....	2002
National Academy of Engineering Frontiers of Engineering – Japan Symposium.....	2002
Strategic Environmental Research and Development Program Project of the Year .....	2001
Japan Society for the Promotion of Science Fellowship .....	1997, 2001
Alcoa Foundation Distinguished Engineering Research Award.....	2000
National Technological University Outstanding Teaching Certificate .....	2000
Academy of Outstanding Teachers .....	1997
College of Engineering Outstanding Teaching Award .....	1997
United Technologies Excellence in Teaching Award .....	1997
ALCOA Foundation Research Achievement Award .....	1996
National Academy of Engineering Frontiers of Engineering Symposium.....	1995
NSF Young Investigator Award .....	1992-1996
3M Nontenured Faculty Grant Award .....	1991-1994
NATO Postdoctoral Fellowship .....	1987
Berkeley Outstanding Graduate Instructor .....	1986
NSF Graduate Fellowship .....	1984
Berkeley Fellowship .....	1983
Phi Kappa Phi Fellowship .....	1983
P.V. Danckwerts Senior Research Prize in Chemical Engineering .....	1983
Eastern NC Section AIChE Award .....	1983
Special Service Award from NC Alpha Chapter of Tau Beta Pi .....	1983
E.I. duPont Ph.D. Fellowship .....	1982

Allied Merit Scholarship .....	1982
SOHIO Merit Scholarship .....	1981

**EXTERNAL PROFESSIONAL ACTIVITIES:**

**American Chemical Society**

Member of Executive Committee, Polymeric Materials: Science and Engineering (PMSE) Division [served as Program Chair, Ford Travel Grant Chair, Member at Large, and Chair of the On-line Preprints Committee]	1994 – present
Vice Chair, PMSE Division	2003 – 2004
Chair, PMSE Division	2005
Past Chair, PMSE Division	2006
Alternate Councilor for PMSE Division	2008 – 2010
Councilor for PMSE Division	2011 – 2022
Associate Member, Committee on Patents and Related Matters	2020 – 2025

**American Institute of Chemical Engineers**

Vice Chair of Membranes Area of Separations Division	2002 – 2003
Chair of Membranes Area of Separations Division	2003 – 2004
Co-organizer of Topical Conference on Membranes	2003
Director of Separations Division	2003 – 2008
Second Vice Chair of the Separations Division	2009
First Vice Chair of the Separations Division	2010
Chair of the Separations Division	2011
Past-Chair of the Separations Division	2012
Member, Separations Division Nominating Committee	2017
Co-organizer of Topical Conference on Water Technologies for Developed and Developing Countries	2011
Member, AIChE Fellows Admission Committee	2013 – 2018
Second Vice Chair, AIChE Fellows Admission Committee	2015
First Vice Chair, AIChE Fellows Admission Committee	2016
Chair, AIChE Fellows Admission Committee	2017

**North American Membrane Society**

Vice President	2004 – 2005
President	2005 – 2006
Member, Board of Directors	2001 – 2012
Technical Program Chair of Annual Meeting	2004
Co-Chair of International Congress on Membranes (ICOM)	2008
Co-Organizer of Annual Meeting	2024

**Other**

Vice Chair of the Gordon Research Conference on Membranes: Materials & Processes	2002
Chair of the Gordon Research Conference on Membranes: Materials & Processes	2004

**JOURNAL EDITORIAL ACTIVITIES:**

Member, Advisory Board, <i>Advanced Membranes</i> .....	2025 – present
Member, Advisory Board, <i>Journal of Membrane Science</i> .....	2023 – present
Editor-in-Chief, <i>Polymer</i> .....	2020 – present
Senior Editor, <i>Polymer</i> .....	2019

Member, Advisory Board, *Desalination* ..... 2022 – 2026  
 Member, Editorial Board, *Industrial & Engineering Chemistry Research*..... 2020 – 2023  
 Member, Editorial Board, *ACS Macro Letters* ..... 2020 – present  
 Member, Editorial Board, *ACS Applied Polymer Materials* ..... 2020 – present  
 Member, Editorial Board, *Polymer* ..... 2011 – 2019  
 Member, Editorial Board, *Desalination* ..... 2009 – 2013  
 Member, Editorial Board, *Polymers*..... 2009 – present  
 Member, International Editorial Advisory Board, *Int. Journal of Polymer Science*..... 2008 – present  
 Associate Editor, *Industrial & Engineering Chemistry Research*..... 2007 – 2019  
 Member, Editorial Board, *The Open Macromolecules Journal* ..... 2007 – present  
 Member, Editorial Board, *Journal of Membrane Science*..... 2005 – 2023  
 Member, Editorial Board, *Journal of Applied Membrane Science and Technology*..... 2005 – present  
 Member, International Editorial Advisory Board, *Membrane Journal*..... 2003 – present  
 Member, International Editorial Advisory Board, *Korean Membrane Journal*..... 2003 – present

### BOOKS:

1. B.D. Freeman and Y. Yampolskii, *Membrane Gas Separation*, John Wiley & Sons, Ltd., New York (2010).
2. Y.P. Yampolskii, I. Pinnau, and B.D. Freeman, *Materials Science of Membranes for Gas and Vapor Separation*, John Wiley & Sons, Ltd., New York (2006).
3. I. Pinnau and B.D. Freeman, Editors, *Advanced Materials for Membrane Separations*, ACS Symposium Series Volume 876, American Chemical Society, Washington, DC (2004).
4. I. Pinnau and B.D. Freeman, Editors, *Membrane Formation and Modification*, ACS Symposium Series Volume 744, American Chemical Society, Washington, DC (2000).
5. B.D. Freeman and I. Pinnau, Editors, *Polymeric Membranes for Gas and Vapor Separations: Chemistry and Materials Science*, ACS Symposium Series Volume 733, American Chemical Society, Washington, DC (1999).

**PUBLICATIONS:** Researcher ID: G-5405-2016, Orcid ID: [orcid.org/0000-0003-2779-7788](https://orcid.org/0000-0003-2779-7788), Google Scholar: <https://scholar.google.com/citations?user=3A0LkFUAAAAJ&hl=en>

1. Mahdavi, H., A. Khosravanian, C.M. Doherty, D. Acharya, Z. Xie, B.D. Freeman, Z. Mulet, and M.R. Hill, “Low-cost and Scalable Type II/III Porous Liquids from Surface-Engineered Hypercrosslinked Polymers with Enhanced Molecular Separation Performance,” *Separation and Purification Technology*, in press.
2. Mahdavi, H., L. Melag, A. Khosravanian, J. Mondal, Z. Xie, B.D. Freeman, and M.R. Hill, “Unveiling the Oxygen Adsorption Potential of ZIFs: Investigating the Impact of Organic Ligands, Metal Centres, and Synthesis Methods,” *Materials Advances*, in press.
3. Mahdavi, H., L. van ‘t Hag, Z. Xie, M.R. Hill, and B. D. Freeman, “Towards Cost-effective and Sustainable PET Recycling Through Glycolysis: Ethylene Glycol Recovery Using Solution-processable Nanocomposite Membranes,” *Chemical Engineering Journal*, in press.
4. Mann, A., N. Wamble, L. Kuehster, B. Pedretti, I. Soares, G. Su, N. Lynd, G. Fredrickson, B. Freeman, G. Sanoja, “Rubbery Midblock Content Controls Formation and Mechanical–Separation Tradeoffs in Block Polymer Membranes,” *Macromolecules*, in press.

5. Irving, P., S. Rane, B. Freeman, and V. Ganesan, "Influence of Rigidity-Hydration Coupling on Size-Dependent Diffusion in Hydrated Polymer Membranes," *ACS Macro Letters*, in press.
6. Cooper, A., A. Bridge, N. Wamble, J. Garcia, K. Delaney, B. Freeman, and G. Fredrickson, "Microstructure Evolution During Nonsolvent-induced Phase Separation: A Joint Experimental-Computational Investigation into Membrane Formation," *Macromolecules*, in press.
7. Okeowo, I.O., Z. Li, A. Alhazmi, P. Jin, Matthew R. Hill, S.H. Thang, B.D. Freeman, and H. Wang, "Development of Ammonium Ion-selective Membranes for Efficient Recovery of Ammonia from Wastewater," *Journal of Membrane Science*, **750**, 125487 (2026).
8. Mithaiwala, H., W. Wang, H. Lopez-Marques, B.D. Freeman, and M.D. Green, "High Performance Zwitterion-Modified Poly(arylene ether sulfone) Copolymer Dense Membranes for Pervaporation Desalination," *Journal of Membrane Science*, in press.
9. Grosz, A., J. Richardson, T. Xuan Tan, G. Moore, C. Aimoli, B. Freeman, Z. Smith, "Dilation and Transport Characterization of Incrementally Fluorinated Poly(ether imide)s for CO<sub>2</sub>-Based Separations," *Macromolecules*, 59(4), 2193-2205 (2026).
10. Barricella, S., M. Giergiel, C. Gassner, K. Kochan, V.S. Haritos, B.D. Freeman, and G. Garnier, "Designing Functional Membranes with Tunable PDA/PEI Coatings for Enzyme Entrapment," *ACS Applied Materials & Interfaces*, **18**, 4272-4282 (2026).
11. Lopez-Marques, H., J.L. Wade, K.K. Reimund, S.K. Sinyangwe, S. Guzzo, L.A. Smith, A. Chamoun-Farah, H. Oh, W. Wang, P.R. Gupta, C.B. Mullins, M. Kumar, and B.D. Freeman, "CO<sub>2</sub> Sorption in Moisture Swing Anion Exchange Resins for Direct Air Capture: Experimental Isotherm Determination and Modeling," *Environmental Science & Technology*, **60**(2), 1781-1790 (2026).
12. Chamoun-Farah, A., P.J. Thacker, I.D. Benavides-Perez, L.M. Cañada, B.D. Freeman, and J.F. Brennecke, "Effect of Water on the Viscosity, Density, and Ionic Conductivity of Amine-Functionalized Ionic Liquids," *Journal of Chemical & Engineering Data*, **71**, 114-128 (2026).
13. Zhao, C., N. Li, S. Shi, J. Hou, L. Gao, B.D. Freeman, H. Wang, and H. Zhang, "Biomimetic NaK Channel Membrane Enabled by A Crown Ether-Coordinated Metal-Organic Framework," *Angewandte Chemie International Edition*, e21529 (2026).
14. Yeo, J.Y., B. Tapia, F.M. Benedetti, A.M. Robinson, J. Richardson, B.J. Pedretti, T.H. Lee, B.D. Freeman, Y. Xia, and Z.P. Smith, "Ultra-selective CANAL Polymers for Hydrogen-based Membrane Separations after Long-Term Aging," *Journal of Membrane Science*, **742**, 125038 (2026).
15. Nassr, M., S. Ivandic, B.J. Pedretti, A. Amjad, L.E. Katz, N.A. Lynd, and B.D. Freeman, "Insights into Determining Pore Size Properties of Ultrafiltration Membranes," *Journal of Membrane Science*, **740**, 124963 (2026).
16. Quigley, A.E., E.S. Zofchak, K.J. Dycha, N.A. Lynd, V. Ganesan, and B.D. Freeman, "Predicting Mixed Binary Alkali Halide Salt Transport in Uncharged Poly(ethylene oxide)-based Membranes," *Journal of Membrane Science*, **739**, 124918 (2026).

17. Tan, I.W., J.J. Rosenthal, A. Chamoun-Farah, W. Wang, T. Song, J.M. Richardson, J.F. Brennecke, B.D. Freeman, and N.A. Lynd, "Poly(1,3-Dioxolane)-Containing Terpolymer Membranes for CO<sub>2</sub> Separations," *Journal of Membrane Science*, **738**, 124859 (2026).
18. Das, S., E. Deng, A.E. Quigley, L. Zhu, J.V. Mowatt, K. Chen, B.D. Freeman, and H. Lin, "Engineering Surface Charges of Nanofiltration Membranes to Maximize Li<sup>+</sup>/Mg<sup>2+</sup> Separation Properties," *Journal of Membrane Science*, **738**, 124757 (2026).
19. Marioni, N., K.K. Reimund, R. Sujanani, Z. Zhang, H.S. Sachar, B.D. Freeman, and V. Ganesan, "Non-equilibrium Simulations of Hydraulic Permeation: Role of Mechanical Boundary Conditions in Dense Membranes," *Journal of Membrane Science*, **738**, 124837 (2026).
20. Reimund, K.K., R. Sujanani, J.M. Hernandez, K.L. Gleason, and B.D. Freeman, "Experimental Observation of Nonlinear Relation Between Pressure and Water Flux is Consistent with the Solution-Diffusion Model," *Journal of Membrane Science*, **737**, 124756 (2026).
21. Quah, T., C. Li, N. Wamble, E. Murphy, C. Bates, C. Hawker, B. Freeman, M.S. Shell, and G. Fredrickson, "Data Efficient Methods for Determining Flory-Huggins  $\chi$  Parameters in Multi-component Polymer Formulations," *Macromolecules*, **58(23)**, 12678-12692 (2025).
22. Marioni, N., A. Rajesh, Z. Zhang, B.D. Freeman, and V. Ganesan, "Field-driven Simulations to Probe the Impact of Ionic Correlations on Salt Transport Properties Under Mixed-salt Conditions," *Journal of Chemical Theory and Computation*, **21**, 12242-12253 (2025).
23. Yao, C., R. Lee, A.R. Sheena, S. Dasgupta, H. Behera, P.K. Maiti, B.D. Freeman, and M. Kumar, "Highly Selective Molecular-Sieving Membranes by Interfacial Polymerization for H<sub>2</sub> Purification," *Industrial and Engineering Chemistry Research*, **64**, 20309-20320 (2025).
24. Mann, A.N., N.P. Wamble, L. Kuehster, M.R. Landsman, A.J. Arrowood, G.M. Su, N.A. Lynd, B.D. Freeman, and G.E. Sanoja, "SAN-based Block Polymers as a Platform for Manufacturing Strong Isoporous Membranes," *Macromolecules*, **58**, 10901-10913 (2025).
25. Rosenthal, J.J., N.P. Wamble, T. Song, L.M.C. Cañada, L. Kuehster, N.A. Lynd, J.F. Brennecke, and B.D. Freeman, "Pressure-Stable Supported Ionic Liquid Membranes Using Isoporous Supports for Evaluating Pure- and Mixed-Gas Light Paraffin Fractionation," *Journal of Membrane Science*, **736**, 124668 (2025).
26. Mahdavi, H., L. Halim, S. Giles, X. Jin, L. van 't Hag, Z. Xie, M.R. Hill, and B.D. Freeman, "Unlocking Plastic Recycling Processes Potential with Integration of Membrane Technology: A Focus on PET Valorisation," *Green Chemistry*, **27**, 12115-12150 (2025).
27. Mahdavi, H., S.K. Kocaoglu, L. Halim, M. Batten, A. Khosravianian, L. van 't Hag, Z. Xie, M.R. Hill, and B.D. Freeman, "Enhancing Strategies for Advanced Treatment Technologies to Reduce Microplastic Pollution Journal of Environmental Chemical Engineering," *Journal of Environmental Chemical Engineering*, **13(5)**, 118953 (2025).
28. Khosravianian, A., F. Zadehahmadi, M.N. Khan, H. Mahdavi, M.T. Scalzo, B.D. Freeman, M.R. Hill, and T.F. Scott, "Photopolymerized Mixed Matrix Membranes for Liquid Organic Hydrogen Carrier Separation," *Advanced Science*, e11336 (2025).

29. Webber, T.R., D.P. Shannon, L.W. Gordon, O.A. Nordness, J.D. Moon, R.J. Clément, B.D. Freeman, R.A. Segalman, C.J. Hawker, S. Han, "Solution-Like Water Transport Across Molecular to Macroscopic Length Scales in Crosslinked Poly(Ethylene Glycol Diacrylate) Networks With Tailored Sidechains," *Journal of Polymer Science*, 0:1-13 (2025).
30. Barricella, S., K.H. Putera, V.S. Haritos, B.D. Freeman, and Gil Garnier, "Chiral Amines Production by Compartmentalized Enzymes in Membrane Based Flow Bio-catalysis," *Separation and Purification Technology*, **377(3)**, 134415 (2025).
31. Mahdavi, H., F. Zadehahmadi, M. Arzani, L. Melag, A.L. Sutton, M.M. Sadiq, Z. Xie, M.R. Hill, and B.D. Freeman, "Practical Considerations in the Design and Use of non-Crystalline Metal-Organic Frameworks," *Advanced Materials*, e05579 (2025).
32. Chamoun-Farah, A., A. Keller, L. Cañada, B. Freeman, and J. Brennecke, "Vapor-Liquid Equilibria of Water and Amine-Functionalized Ionic Liquids," *Journal of Chemical & Engineering Data*, **70**, 2808-2816 (2025).
33. Marioni, N., A. Rajesh, R. Sujanani, Z. Zhang, L. Gordon, R. Clément, R. Segalman, B. Freeman, and V. Ganesan "What is the Role of Relative Humidity on Conductivity in Polymer Electrolytes?," *ACS Macro Letters*, **14**, 865-871 (2025).
34. Molins, S., N. Spycher, S.M. Dischinger, M. Nassr, J.Y. Lee, J. Johnston, N. Tilton, K. Gleason, B.D. Freeman, W.T. Stringfellow, and D.J. Miller, "Permeate Fluxes from Desalination of Brines and Produced Waters: A Reactive Transport Modeling Study," *Applied Geochemistry*, **189**, 106149 (2025).
35. Kim, J.-W., M.J. Allen, E.A. Recker, L.M. Stevens, H.L. Cater, A. Uddin, A. Gao, W. Eckstrom, A.J. Arrowood, G.E. Sanoja, M.A. Cullinan, B.D. Freeman, and Z.A. Page, "Hybrid Epoxy-Acrylate Resins for Wavelength-Selective Multimaterial 3D Printing," *Nature Materials*, **24**, 1116-1125 (2025).
36. Cheng, Y.-H., A.Y. Kirschner, J.J. Wu, M. Nassr, W.A. Sullivan, D.R. Paul, L.E. Katz, R.W. Field, and B.D. Freeman, "Complete Coverage Fouling Model for Constant Flux Crossflow Ultrafiltration and Experimental Validation," *Journal of Membrane Science*, **729**, 124132 (2025).
37. Nassr, M., M.R. Landsman, S. Ivandic, E. Schaible, D. McReynolds, N.A. Lynd, K.L. Gleason, L.E. Katz, B.D. Freeman, and G.M. Su, "Crossflow Membrane Filtration System for *Operando* Fouling Characterization using Transmission X-ray Scattering," *Review of Scientific Instruments*, **96**, 065209 (2025).
38. Bridge, A.T., Z. Huang, N.P. Wamble, M.N. Davenport, C.M. Doherty, J.F. Brennecke, R. Guo, and B.D. Freeman, "Gas Separation Properties of Thermally-Rearrangeable Blends Prepared from Poly(benzimidazole) and Triptycene-containing Poly(hydroxyimide)," *Polymer*, **333**, 128579 (2025).
39. Nassr, Mostafa, Sarah M. Dischinger, Ji Yeon Lee, Kristofer L. Gleason, Sergi Molins, Nicolas Spycher, Pedram Bigdelou, Jacob Johnston, Nathaniel A. Lynd, Nils Tilton, William T. Stringfellow, Benny D. Freeman, and Daniel J. Miller. "Mineral Scale Formation during Crossflow Reverse Osmosis at Constant Flux and Constant Transmembrane Pressure Conditions," *Industrial and Engineering Chemistry Research*, **64**, 1295-1308 (2025).

40. Chamoun-Farah, A., L.M. Cañada, J.F. Brennecke, and B.D. Freeman, "Supported Ionic Liquid Membranes (SILMs) with Exceptional Selectivity and Permeability for Dilute CO<sub>2</sub> Separations," *Journal of Membrane Science*, **727**, 124081 (2025).
41. Oh, H, H. Lopez-Marques, N.P. Wamble, R.J. Vogler, R. Dhiman, H. Behera, L. Smith, C. Yu, A. Jogdand, T.-Y. Hsieh, J. Hernandez, C.B. Mullins, B.D. Freeman, and M. Kumar, "Highly Breathable and Protective Carbon Fabrics," *ACS Applied Materials and Interfaces*, **17**, 23383-23393 (2025).
42. Scalzo, M.T., A.L. Sutton, M.M. Sadiq, H. Zhang, B.D. Freeman, T.F. Scott, M.R. Hill, "A Metal-Organic Framework Designed for Separation of Liquid Organic Hydrogen Carriers," *Chemistry of Materials*, **37**, 1174-1182 (2025).
43. Mahofa, E., S.E. Meragawi, M.A. Vilayatteri, S. Dwivedi, M.R. Panda, P. Jovanović, A.C.T. van Duin, B. Freeman, A. Tanksale, and M. Majumder, "Manipulating Intrapore Energy Barriers in Graphene Oxide Nanochannels for Targeted Removal of Short-Chain PFAS," *ACS Nano*, **19**, 14742-14755 (2025).
44. Irving, P, G. Sam, S. Rane, N. Thirumalai, N. Marioni, G. Geise, B. Freeman, and V. Ganesan, "Engineering Lithium-Magnesium Selectivity in Hydrated Polymer Membranes Through Polymer Backbone Rigidity," *ACS Macro Letters*, **14**, 161-168 (2025).
45. Vogler, R.J., K.E. Kimball, D.D. Bujanosa, H. Behera, B.J. Pedretti, K. Grogan, N.A. Lynd, B.D. Freeman, and M. Kumar, "Rapid Heat-driven Formation of 2D Nanosheets from Membrane Proteins and Block Copolymers," *Journal of Membrane Science*, **720**, 123732 (2025).
46. Rosenthal, J.J., M.Y. Balagun, M.N. Davenport, L.M.C. Cañada, J.F. Brennecke, and B.D. Freeman, "Improving Blowout Pressure in Supported Ionic Liquid Membranes for Light Paraffin Fractionation," *Journal of Membrane Science*, **717**, 123624 (2025).
47. Van Havere, D., N. Lenaerts, J.J. Rosenthal, J.F. Brennecke, B.D. Freeman, R. Verbeke, and I.F.J. Vankelecom, "Interfacial Transport: A Versatile and Facile Preparation Method for Thin-film Supported Liquid Membranes," *Journal of Membrane Science*, **717**, 123608 (2025).
48. Jin, X., X. Wu, D. Ng, B.D. Freeman, and Z. Xie, "Challenges and Prospects of Microporous Membranes for High-Temperature Hydrogen Separation," *Small Structures*, **6**, 2400521 (2025).
49. Park, S. L. Ruggiero, J. Noh, O. Morales-Collazo, I. Ibarra, C.J. Brinker, B.D. Freeman, and J.F. Brennecke, "Mesoporous Silica Modified Alumina Improves Pressure Stability of Supported Ionic Liquid Membranes," *Journal of Membrane Science*, **710**, 123138 (2024).
50. Deng, E., K. Chen, A.E. Quigley, M. Yuan, L. Zhu, Z.T. Kralles, B.D. Freeman, N. Dai, and H. Lin, "In Situ Oxidation of Reduced Graphene Oxide Membranes by Peracetic Acid for Dye Desalination," *Journal of Membrane Science*, 12299 (2024).
51. Irving, P.R., K.K. Reimund, E.S. Zofchak, N. Marioni, B.D. Freeman, and V. Ganesan, "Cellulose Acetate Membranes Exhibit Exceptional Monovalent to Divalent Cation Selectivities," *Journal of Membrane Science*, **706**, 122892 (2024).

52. Cater, H.L., M.J. Allen, M.I. Linnell, A.K. Rylski, Y. Wu, H.-M. Lien, F. Mangolini, B.D. Freeman, and Z.A. Page, "Supersoft Norbornene-Based Thermoplastic Elastomers with High Strength and Upper Service Temperature," *Advanced Materials*, 2402431 (2024).
53. Sujanani, R., K.K. Reimund, K.L. Gleason, and B.D. Freeman, "Hydraulic Permeation-Induced Water Concentration Gradients in Ion Exchange Membranes," *Journal of Membrane Science*, **705**, 122858 (2024).
54. Zhao, C., F. Feng, J. Hou, J. Hu, Y. Su, J. Liu, M. Hill, B. Freeman, H. Wang, and H. Zhang, "Unlocking Direct Lithium Extraction in Harsh Conditions through Thiol-Functionalized Metal-Organic Framework Subnanofluidic Membranes," *Journal of the American Chemical Society*, **146(20)**, 14058-14066 (2024).
55. Chamoun-Farah, A., A.N. Keller, M.Y. Balogun, L.M. Cañada, J.F. Brennecke, and B.D. Freeman, "Amine Functionalized Supported Ionic Liquid Membranes (SILMs) for CO<sub>2</sub>/N<sub>2</sub> Separation," *Journal of Membrane Science*, **702**, 122758 (2024).
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