

MICHELE GALIZIA

University of Oklahoma, School of Chemical, Biological and Materials Engineering (CBME)
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EMPLOYMENT

Univ. of Oklahoma, School of Chem., Biol. & Mater. Eng.	Assistant Professor	Aug. 2017-
Univ. of Texas at Austin, Dept. of Chem. Eng.	Research Associate	Nov. 2013-July 2017

EDUCATION

University of Bologna, Italy	Chemical Engineering	MS	Feb. 2006
University of Bologna, Italy	Chemical Engineering	PhD	Apr. 2010
University of Naples, Italy	Materials Engineering	Post Doc	June 2010-Oct. 2013

AWARDS AND HONORS

National Science Foundation (NSF) Early Career Award.....2021
I&ECR (ACS) Class of Influential Researchers of 2021.....2021
OU Chemical Engineering Outstanding Professor Award.....2021
Paper selected to be featured in the Frontiers in Chemistry Editor's Pick 2021 collection.....2021
Early Career Editorial Board, *Journal of Membrane Science*.....2021
FIP (OU Faculty Investment Project) Award.....2020
Paper selected as Cover Page in the Journal of Polymer Science.....2020
Paper selected as the Editor's Choice in the Journal of Membrane Science.....2020
ACS-PRF (Petroleum Research Funding) Award.....2019
FIP (OU Faculty Investment Project) Award.....2018
Featured as a Rising Star by the Journal *Frontiers in Chemistry* (Nature Publishing Group): "Researcher that has the potentiality to revolutionize his field and make an impact"2018
Paper selected as Cover Page and editor's choice in *Macromolecules*.....2017
Best Reviewer Award, *Journal of Membrane Science* "for the excellence in paper reviewing and for an ongoing contribution to the quality of the journal"2014
Italian Ministry of Education, Graduate Fellowship (40 k\$).....2007

JOURNAL EDITORIAL ACTIVITY

Editorial Board Member	<i>Journal of Membrane Science</i> (Elsevier)	2021-
Associate Editor	<i>Journal of Polymer Engineering</i> (De Gruyter)	2018-
Guest Editor (Special Issue)	<i>Industrial & Engineering Chemistry Research</i> (ACS)	2020
Editorial Board Member	<i>Frontiers in Polymer Chemistry</i> (Nature Publishing Group)	2012 - 2018

OTHER PROFESSIONAL ACTIVITIES

Session Chair:

- AIChE National Meetings (*Mixed Matrix Membranes for CO₂ separation*).....Nov. 2017-current

- NAMS Meetings (*Polymer membranes for organic separations*).....May 2020-current
- ACS Meetings (*various sessions*).....March 2015-current
- Gordon Membrane Conference (discussion leader).....Aug. 2021
- D.R. Paul 50 Years: Symposium and Celebration.....Austin, TX, October 2017

Proposal Reviewer for NSF (CBET, EPSCoR, ERC Programs), ACS-PRF

NSF Panelist (CBET, Molecular Separation/Interfacial Engineering Program)

Manuscripts Reviewer for: *PNAS, Journal of Membrane Science, Macromolecules, Polymer, International Journal of Hydrogen Energy, Industrial & Engineering Chemistry Research, ACS Applied Materials & Interfaces, Frontiers in Polymer Chemistry, Polymer Engineering and Science, Separation and Purification Technologies, Reactive and Functional Polymers, Journal of Polymer Engineering, Brazilian Journal of Chemical Engineering, Chemical Engineering Science*

MEMBERSHIP

American Institute of Chemical Engineers (AIChE).....2014-
 American Chemical Society (ACS).....2015-
 North American Membrane Society (NAMS).....2016-

INVITED ORAL PRESENTATIONS

1. *Mass transport in polymer membranes for gas separation*, University of Naples, Naples, Italy, May 11 2010
2. *Transport phenomena in membranes for water desalination: the role of fabric backing*, The University of Texas at El Paso, August 6 2014
3. *Helium and hydrogen sorption, diffusion and transport in hydrocarbon, silicon and fluorocarbon-based polymers*, AIChE National Meeting, Atlanta, November 18 2014
4. *Divalent vs monovalent ion sorption and transport in a cation exchange membrane based on cross-linked polystyrene with fixed sulfonate anions*, General Electric R&D Center, Boston, August 14 2015
5. *Fundamental study of small molecule transport in polymers*, University of Oklahoma, Norman, February 10 2017
6. *From molecular to macromolecular engineering: a multiscale approach to identify and develop new membrane materials for energy-efficient separations*, Naples, Italy, December 18 2017
7. *Molecular origin of flux non-linearity in Organic Solvent Nanofiltration: Formulation of a thermodynamic/transport framework*, Advanced Materials for Energy-efficient Separations: Addressing Vision 2030 and beyond, KAUST, Saudi Arabia, March 3 2020
8. *The solution-diffusion theory of Organic Solvent Reverse Osmosis and Nanofiltration: analysis of the role of sorption, diffusion, swelling and molecular interactions*, Massachusetts Institute of Technology (MIT), February 4 2021

ORAL PRESENTATIONS

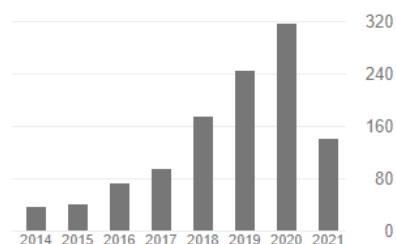
1. *n-Pentane sorption and diffusion in expandable polystyrene*, ENI R&D Center, Mantova, Italy, November 2005
2. *Modeling vapor sorption and swelling in expandable polystyrene*, ENI R&D Center, Mantova, Italy, April 2006
3. *Modeling the process of gas hydrate formation in offshore pipelines*, University of Bologna, Italy, April 2006

4. *Vapor sorption and transport in a novel addition-type polytrimethylsilyl norbornene*, Italian Association of Chemical Engineering, Rome, May 2009
5. *Vapor sorption, diffusion and swelling in polytrimethylsilyl norbornene*, Euromembrane, Montpellier, France, September 2009
6. *Mass transport in polymer membranes for gas separation*, University of Naples, Naples, Italy, May 2010
7. *Gas Sorption and Diffusion in Amorphous and Semicrystalline Nanoporous Poly-(1,4-Dimethyl-1,6-Phenylene)Oxide*, Time of Polymers and Composites (TOP), Ischia, Italy, June 2012
8. *Mass transport in polymers: the role of polymer structure and molecular interactions*, The University of Texas at Austin, Austin, January 2014
9. *Predictive Calculation of Hydrogen and Helium Solubility in Glassy and Rubbery Polymers for Membrane Applications*, ACS Spring Meeting, Denver, March 2015
10. *Divalent and monovalent ion sorption in a cation exchange membrane based on cross-linked polystyrene with fixed sulfonate anions*, Process Science and Technology Center, Austin, October 2015
11. *Modeling gas sorption in glassy HAB-6FDA poly-imide and its thermally-rearranged analogs with lattice fluid theory*, AIChE National Meeting, Salt Lake City, November 2015
12. *Liquid methanol sorption and transport in water swollen polymers and in ion exchange polymers*, AIChE National Meeting, Salt Lake City, November 2015
13. *Modeling of gas sorption properties in thermally rearranged polymers*, Process Science and Technology Center, Austin, April 2016
14. *Ion and methanol sorption in a cation exchange membrane based on cross-linked sulfonated polystyrene*, North America Membrane Society Meeting (NAMS), Seattle, May 2016
15. *Modeling of gas permeation properties of thermally-rearranged polymers*, Process Science and Technology Center, Austin, October 2016
16. *Modeling Gas Sorption in HAB-6FDA poly-imide and its Thermally Rearranged Analogues: a Thermodynamic Approach*, AIChE National Meeting, S. Francisco, November 2016
17. *Pure and mixed ion sorption and transport in a cation exchange polymer based on cross-linked poly(p-styrene sulfonate-co-divinylbenzene)*, AIChE National Meeting, S. Francisco, November 2016
18. *Fundamental study of small molecule transport in polymers as a tool to identify and develop new membrane materials for energy-efficient separations*, University of Oklahoma, Norman, November 2017
19. *Comprehensive analysis of gas transport in thermally rearranged polymers*, AIChE National Meeting, Minneapolis, November 2017
20. *Ion partitioning between brines and ion exchange polymers*, AIChE National Meeting, Minneapolis, November 2017
21. *Gas sorption properties of novel iptycene-based thermally rearranged co-polymers: effect of temperature and mixed gas*, AIChE National Meeting, Pittsburgh, October 2018
22. *Fundamental study of gas and vapor sorption and transport mechanism in triptycene-based polymers*, ACS Spring Meeting, Orlando, April 2019
23. *Influence of molecular interactions, membrane swelling and plasticization on pure and mixed fluid transport in OSN membranes*, AIChE National Meeting, Orlando, November 2019
24. *Fundamental origin of flux non-linearity in OSN*, North America Membrane Society Meeting (NAMS), May 2020 (online conference)

25. *Effect of thermal treatment on the structure and gas transport properties of a triptycene-based polybenzoxazole exhibiting configurational free volume*, North America Membrane Society Meeting (NAMS), May 2020 (online conference)
26. *Fundamental Origin of Flux Non-Linearity in Organic Solvent Reverse Osmosis and Organic Solvent Nanofiltration*, AIChE National Meeting, S. Francisco, November 2020
27. *Effect of Thermal Treatment on the Structure and Gas Transport Properties of a Triptycene-Based Polybenzoxazole Exhibiting Configurational Free Volume*, AIChE National Meeting, S. Francisco, November 2020

PEER REVIEWED PUBLICATIONS

* STANDS FOR CORRESPONDING AUTHOR
48 PAPERS & BOOK CHAPTERS, 80 CONFERENCE PROCEEDINGS,
 H-INDEX =17
 TOTAL CITATIONS **1192** (MAY 20 2021)
 Google Scholar



1. A. Manoj Tandel, W. Guo, K.P. Bye, L. Huang, **M. Galizia**, H. Lin, *Designing organic solvent separation membranes: Polymers, porous structures, 2D materials, and their combinations*, submitted to Materials Advances
2. J. Deng, Z. Huang, B.J. Sundell, D.J. Harrigan, S.A. Sharber, K. Zhang, R. Guo, **M. Galizia***, *State of the art and prospects of chemically and thermally aggressive membrane gas separations: insights from polymer science*, submitted to Polymer, May 2021 (invited review)
3. J. Deng, S. Razavi, **M. Galizia***, *Janus Membranes for water purification and gas separations*, in Sustainable Separation Engineering: Materials, Techniques and Process Development, Ed. Gyorgy Szekely, Wiley, 2021, in press
4. Y. Okamoto, H.C. Chiang, M. Fang, **M. Galizia**, T.C. Merkel, M. Yavari, H. Nguyen, H. Lin, *Perfluoropolymers for Gas Separation Membrane Applications*, Membranes, **2020**, 10, 394-408
5. V. Loianno, K.P. Bye, **M. Galizia***, P. Musto, *Plasticization mechanism in polybenzimidazole membranes for organic solvent nanofiltration: insights from FTIR spectroscopy*, Journal of Polymer Science, **2020**, 58, 2547-2560 ([invited contribution, selected as Journal cover page](#)).
6. **M. Galizia**, D.R. Paul, B.D. Freeman, *Co-ion specific effect on sodium halides sorption and transport in a cross-linked poly(p-styrene sulfonate-co-divinylbenzene) for membrane applications*, Journal of Membrane Science, **2020**, 612, 118410 ([selected as the Editor's choice](#))
7. **M. Galizia***, B.D. Freeman, *Don Paul: 60 years in research and education*, Industrial & Engineering Chemistry Research, **2020**, 59, 5203-5204
8. K.P. Bye, **M. Galizia***, *Fundamental origin of flux non-linearity in Organic Solvent Nanofiltration: Formulation of a thermodynamic/transport framework*, Journal of Membrane Science, 603, **2020**, 118020
9. R.D. Crist, Z. Huang, R. Guo, **M. Galizia***, *Effect of thermal treatment on the structure and transport properties of a triptycene-based polybenzoxazole exhibiting configurational free volume*, Journal of Membrane Science, 597, **2020**, 117759

10. P. Musto, V. Loianno, G. Scherillo, P. La Manna, **M. Galizia**, G. Guerra, G. Mensitieri, *Benzene induced crystallization of PPO: a combined thermodynamic and vibrational spectroscopy study*, *Industrial & Engineering Chemistry Research*, **2020**, 59, 5402-5411
11. J.D. Moon, **M. Galizia**, H. Borjigin, R. Liu, J. Riffle, B.D. Freeman, D.R. Paul, *Modeling water diffusion and plasticization in polybenzimidazoles using partial immobilization and free volume theory*, *Polymer*, 189, **2020**, 122170
12. Y. Li, M. Yavari, A. Baldanza, E. Di Maio, Y. Okamoto, H. Lin, **M. Galizia***, *Volumetric properties and sorption behavior of perfluoropolymers with dioxolane pendant rings*, *Industrial & Engineering Chemistry Research*, **2020**, 59, 5276-5286 (*invited contribution*)
13. V. Loianno, Q. Zhang, S. Luo, R. Guo, **M. Galizia***, *Modeling gas and vapor sorption and swelling in a triptycene-based polybenzoxazole: evidence for entropy-driven sorption*, *Macromolecules*, **2019**, 52, 4385-4395
14. K.P. Bye, V. Loianno, T.N. Pham, R. Liu, J.S. Riffle, **M. Galizia***, *Pure and mixed fluid sorption and transport in Celazole® polybenzimidazole: effects of plasticization*, *Journal of Membrane Science*, **2019**, 580, 235-247
15. **M. Galizia**, G.S. Manning, D.R. Paul, B.D. Freeman, *Ion partitioning between brines and ion exchange polymers*, *Polymer*, **2019**, 165, 91-100
16. V. Loianno, S. Luo, Q. Zhang, R. Guo, **M. Galizia***, *Gas and water vapor sorption and diffusion in a triptycene-based polybenzoxazole: effect of temperature and pressure and predicting of mixed gas sorption*, *Journal of Membrane Science*, **2019**, 574, 100-111
17. **M. Galizia***, K.P. Bye, *Advances in organic solvent nanofiltration rely on physical chemistry and polymer chemistry*, *Frontiers in Chemistry*, **2018**, 6, 511 (*invited contribution*)
18. J.D. Moon, **M. Galizia**, H. Borjigin, R. Liu, J. Riffle, B.D. Freeman, D.R. Paul, *Water vapor sorption, diffusion and dilation in polybenzimidazoles*, *Macromolecules*, **2018**, 51, 7197-7208
19. P. Musto, P. La Manna, J.D. Moon, **M. Galizia**, B.D. Freeman, *Infrared Spectroscopy of Polybenzimidazole in the Dry and Hydrate Forms: A Combined Experimental and Computational Study*, *ACS Omega*, **2018**, 3, 11592-11607
20. **M. Galizia**, W.S. Chi, Z.P. Smith, T.C. Merkel, R. Baker, B.D. Freeman, *Polymers and mixed matrix membranes for gas and vapor separation: a review and prospective opportunities*, *Macromolecules*, **2017**, 50, 7809-7843 (*invited contribution, selected as the Editor's choice and cover page*)

Prior to OU

21. **M. Galizia**, K.A. Stevens, D.R. Paul, B.D. Freeman, *Modeling gas permeability and diffusivity in thermally rearranged polymers*, *Journal of Membrane Science*, **2017**, 537, 83-92
22. **M. Galizia**, F.M. Benedetti, D.R. Paul, B.D. Freeman, *Monovalent and divalent ion sorption in a cation exchange membrane based on cross-linked poly(p-styrene sulfonate-co-divinylbenzene)*, *Journal of Membrane Science*, **2017**, 535, 132-142
23. K.A. Stevens, Z.P. Smith, K.L. Gleason, **M. Galizia**, D.R. Paul, B.D. Freeman, *Influence of temperature on gas sorption in thermally rearranged polymers*, *Journal of Membrane Science* **2017**, 533, 75-83
24. **M. Galizia**, K.A. Stevens, Z.P. Smith, D.R. Paul, B.D. Freeman, *Non-equilibrium lattice fluid modeling of gas solubility in HAB-6FDA polyimide and its thermally rearranged analogs*, *Macromolecules*, **2016**, 49, 8768-8779
25. **M. Galizia**, D.R. Paul, B.D. Freeman, *Liquid methanol sorption, diffusion and permeation in charged and uncharged polymers*, *Polymer*, **2016**, 102, 281-291

26. Q. Liu, **M. Galizia**, K.L. Gleason, C.A. Scholes, D.R. Paul, B.D. Freeman, *Influence of toluene on pure- and mixed-gas transport properties of thermally rearranged (TR) polymers based on 3,3'-dihydroxy-4,4'-diamino-biphenyl (HAB) and 2,2'-bis-(3,4-dicarboxyphenyl) hexafluoropropane dianhydride (6FDA)*, *Journal of Membrane Science*, **2016**, 514, 282-293
27. J. Kamcev, **M. Galizia**, F.M. Benedetti, E.S. Jang, D.R. Paul, B.D. Freeman, G.S. Manning, *Partitioning of Mobile Ions Between Ion Exchange Polymers and Aqueous Salt Solutions: Importance of Counter-ion Condensation*, *Physical Chemistry Chemical Physics*, **2016**, 18, 6021-6031.
28. **M. Galizia**, Z.P. Smith, G.C. Sarti, B.D. Freeman, D.R. Paul, *Predictive calculation of hydrogen and helium solubility in glassy and rubbery polymers*, *Journal of Membrane Science*, **2015**, 475, 110-121.
29. V. Guarino, **M. Galizia**, M. Alvarez Perez, G. Mensitieri, L. Ambrosio, *Improved surface and transport properties of macroporous hydrogels for bone regeneration*, *Journal of Biomedical Materials Research A*, **2015**, 103, 1095-1105.
30. G. Scherillo, M. Petretta, **M. Galizia**, P. La Manna, P. Musto, G. Mensitieri, *Thermodynamics of water sorption in high performance glassy thermoplastic polymers*, *Frontiers in Polymer Chemistry*, **2014**, 2, 1-16
31. P. Musto, **M. Galizia**, M. Pannico, G. Scherillo, G. Mensitieri, *Time resolved FTIR spectroscopy, gravimetry and thermodynamic modeling for a molecular level description of water diffusion in poly- ϵ -caprolactone*, *Journal of Physical Chemistry B*, **2014**, 118, 7414-7429.
32. **M. Galizia**, P. La Manna, G. Mensitieri, M. Pannico, P. Musto, *Diffusion in polymers as investigate by two dimensional correlation spectroscopy: the H₂O/PCL system*, *Journal of Macromolecular Structure*, **2014**, 1069, 290-298.
33. **M. Galizia**, M.G. De Angelis, M. Messori, G.C. Sarti, *Mass transport in hybrid PTMSP/silica membranes*, *Industrial & Engineering Chemistry Research*, **2014**, 53, 9243-9255.
34. P. Musto, **M. Galizia**, P. La Manna, M. Pannico, G. Mensitieri, *Diffusion and Molecular Interactions in a Methanol/Polyimide System Probed by Coupling time-resolved FTIR Spectroscopy with Gravimetric Measurements*, *Frontiers in Polymer Chemistry*, **2014**, 2, 1-9.
35. M. Salzano de Luna, **M. Galizia**, J. Wojnarowicz, R. Rosa, W. Lojkowski, C. Leonelli, D. Acierno, G. Filippone, *A novel compounding method for the optimization of filler dispersion in HDPE-ZnO polymer nanocomposites*, *Express Polymer Letters*, **2014**, 8, 362-372.
36. **M. Galizia**, P. La Manna, M. Pannico, G. Mensitieri, P. Musto, *Methanol diffusion in polyimides: a molecular description*, *Polymer*, **2014**, 55, 1028-1039.
37. C. Daniel, S. Longo, **M. Galizia**, *Crystalline Nanoporous Materials based on Poly(2,6-dimethyl-1,4-phenylene)oxide*, *Macromolecular Symposia*, **2014**, 335, 70-77.
38. P. Musto, **M. Galizia**, G. Scherillo, G. Mensitieri, *Water sorption thermodynamics in polymer matrices*, in *Durability of Composites in a Marine Environment*, Ed. Springer, 2014, pp.15-45.
39. P. Musto, **M. Galizia**, G. Scherillo, G. Mensitieri, *Water sorption thermodynamics and mass transport in Poly- ϵ -caprolactone: interactional issues emerging from vibrational spectroscopy*, *Macromolecular Chemistry and Physics*, **2013**, 214, 1921-1930.
40. **M. Galizia***, C. Daniel, G. Guerra, G. Mensitieri, *Solubility and Diffusivity of Low Molecular Weight Penetrants in semi-crystalline poly-(2,6-dimethyl-1,4-phenylene)oxide: the role of the crystalline phase*, *Journal of Membrane Science*, **2013**, 443, 100-106.

41. G. Scherillo, **M. Galizia**, P. Musto, G. Mensitieri, *Water sorption thermodynamics in glassy and rubbery polymers: modeling interactional issues emerging from FTIR spectroscopy*, *Industrial & Engineering Chemistry Research*, **2013**, 52, 8674-8691.
42. G. Scherillo, L. Sanguigno, **M. Galizia**, M. Lavorgna, P. Musto, G. Mensitieri, *Modelling water sorption thermodynamics in fluorinated polyimides by compressible non equilibrium lattice models accounting for hydrogen bond interactions*, *Fluid Phase Equilibria*, **2012**, 334, 166-188.
43. G. Scherillo, L. Sanguigno, L. Sansone, E. Di Maio, **M. Galizia**, G. Mensitieri, *Thermodynamics of water sorption in PCL: a comparative analysis by lattice fluid models including hydrogen bond contributions*, *Fluid Phase Equilibria*, **2012**, 313, 127-139.
44. **M. Galizia***, C. Daniel, G. Fasano, G. Guerra, G. Mensitieri, *Gas Sorption and Diffusion in Amorphous and Semicrystalline Nanoporous Poly-(2,6-dimethyl-1,4-phenylene)oxide*, *Macromolecules*, **2012**, 45, 3604-3615.
45. **M. Galizia**, M.G. De Angelis, G.C. Sarti, *Sorption of hydrocarbon and alcohols in addition type poly-trimethylsilyl-norbornene and other high free volume glassy polymers. II. NELF model predictions*, *Journal of Membrane Science*, **2012**, 405-406, 201-211.
46. **M. Galizia**, M.G. De Angelis, E. Finkelshtein, Y. Yampolskii, G.C. Sarti, *Sorption and transport of hydrocarbon and alcohols in addition type poly-trimethylsilyl-norbornene. I. Experimental data*, *Journal of Membrane Science*, **2011**, 385-386, 141-153.
47. M.C. Ferrari, **M. Galizia**, M.G. De Angelis, G.C. Sarti, *Vapor sorption and diffusion in Mixed Matrices based on Teflon® AF2400*, in *Membrane Gas Separation*, Ed. by B.D. Freeman e Y. Yampolskii, Wiley, New York, 2010, pp. 125-142.
48. **M. Galizia**, M.G. De Angelis, G.C. Sarti, *Characterization and modeling of the organic vapor transport in addition type poly(trimethylsilyl norbornene)*, in *Chemical Engineering Transactions*, Ed. AIDIC (Italian Association of Chemical Engineers), ISBN 978-88-95608-10-5, ISSN 2036-5969, 2010, pp. 139-148.
49. M.C. Ferrari, **M. Galizia**, M.G. De Angelis, G.C. Sarti, *Gas and vapor transport in mixed matrix membranes based on amorphous Teflon® AF1600 and AF2400 and fumed silica*, *Industrial & Engineering Chemistry Research*, **2010**, 49, 11920-11935.

TEACHING AS A FACULTY MEMBER AT OU

Period	Course	Enroll.	Students' evaluation	Department average	College average
S 2018	CHE 5843: Adv. Chem. Eng. Thermodynamics*	13	4.9/5.0	4.1/5.0	4.1/5.0
S 2020	CHE 5843: Adv. Chem. Eng. Thermodynamics*‡	12	4.8/5.0	4.3/5.0	4.2/5.0
F 2018	CHE 4153: Process Dynamics and Control†	118	4.6/5.0	4.0/5.0	4.1/5.0
F 2019	CHE 4153: Process Dynamics and Control†	84	4.6/5.0	4.3/5.0	4.2/5.0
F 2020	CHE 4153: Process Dynamics and Control†‡	80	4.6/5.0	4.3/5.0	4.3/5.0

S = spring semester, F= fall semester

* graduate class

† undergraduate senior class

‡ taught in remote via Zoom, due to COVID outbreak

TEACHING AS A POST-DOC AT THE UNIVERSITY OF NAPLES (ITALY)

Period	Course	Enroll.	Students' evaluation
F 2010	<i>Thermodynamics of Materials[†]</i>	55	8.5/10
S 2012	<i>Thermodynamics of Materials[†]</i>	50	9/10
S 2013	<i>Thermodynamics of Materials[†]</i>	52	9/10

[†] undergraduate class

SUPERVISED GRADUATE STUDENTS

Kelly P. Bye (MS, 2019-2021)

"Influence of molecular interactions, plasticization and operative conditions on pure and mixed fluid transport in Organic Solvent Nanofiltration membranes"

William J. Box (PhD, 2020-)

"Engineering diffusion- and sorption-selectivity in polymer membranes by controlling configurational free volume and cohesive energy density"

Matthew T. Webb (PhD, 2020-)

"Synthesis and characterization of Janus Mixed Matrix Membranes with precisely controlled morphology and transport properties"

SUPERVISED POST-DOCTORAL ASSOCIATES

Dr. Jing Deng (BS, Chem. Eng., Tianjin University; PhD, Chem. Eng., NTNU Trondheim, Norway, January 2020-)

"Fabrication and characterization of microporous membranes for gas and liquid separations"

"Thickness dependent swelling in glassy and rubbery membranes"

SUPERVISED INTERNATIONAL VISITING PHD STUDENTS

Mr. Valerio Loianno (PhD student, University of Naples "Federico II", Italy, Jan.-Oct. 2018)

"High performance gas separation membranes exhibiting configurational free volume"

Mrs. Laura Matesanz Niño (PhD student, University of Valladolid, Spain, July-Oct. 2019)

"Synthesis and characterization of novel gas separation membranes obtained by partial pyrolysis of polyimides with polyethylene oxide moieties"

Mr. Antonio Baldanza (PhD student, University of Naples "Federico II", Italy, Spring 2021)

SUPERVISED UNDERGRADUATE HONOR THESIS

Jacob T. Klenke (BS, Chem. Eng., May 2020)

"Fabrication and characterization of novel materials for energy efficient molecular separations"

Elijah M. Defferari (BS, Chem. Eng., May 2020)

"Enhancing gas and liquid transport properties of polybenzimidazole via incorporation of Polymer Porous Frameworks"

SUPERVISED UNDERGRADUATE RESEARCHERS

Kelly P. Bye (2018-2019, BS in in Chemical Engineering, OU), *currently Graduate Student at OU*

Ryan D. Crist (2018-2019, BS in Chemistry, OU), *currently Researcher at High Labs Inc, Oklahoma City*

Amanda Lanson (2018-2019, BS in Chemical Engineering, OU), *currently Process Engineer, ONEOK, Tulsa*

Emily Michalak (2019, BS in Chemical Engineering, OSU, National Merit Student)

Joseph Riley (2019, BS in Chemical Engineering, OU)

Elijah M. Defferari (2019-2020, BS in Chemical Engineering, OU, National Merit Student), *currently Process Engineer at Lummus Technology, Houston TX*

Jacob T. Klenke (2020, BS in Chemical Engineering, OU, National Merit Student), *currently Process Engineer at Chevron Phillips, Port Arthur TX*

Adriana Landry (2021- Chemical Engineering sophomore, OU)

Shivam Patel (2021- Chemical Engineering sophomore, OU)

Michael Williams (2021- Mechanical Engineering sophomore, OU)

PHD COMMITTEES

Michael T. Warren (Chemical Engineering, Supervisor: Prof. Jeffrey Harwell), *Understanding specific ion effects and interfacially active solutes using the colligative properties of microemulsions* (defended on April 2020)

Brandon S. Abbott (Chemical Engineering, Supervisor: Prof. Keisha Walters), *Synthesis and characterization of polymers for water purification* (ongoing)

Yu Yan (Chemical Engineering, Supervisor: Prof. Bin Wang), *Molecular simulations of advanced materials for applications in catalysis and membrane separations* (ongoing)

STUDENT AWARDS

Kelly P. Bye, <i>UROP Grant</i>	2018
Kelly P. Bye, <i>CBME Best Junior Researcher Award</i>	2019
Kelly P. Bye, <i>Al Clark Award, University of Oklahoma</i>	2020
Kelly P. Bye, <i>Undergraduate Research Award, North American Membrane Society</i>	2020
Kelly P. Bye, 1st place at the North American Membrane Society Poster Competition	2020
Jacob. T. Klenke, <i>Outstanding Chevron Phillips Mentor</i>	2020
Elijah M. Defferari, <i>L. Reid Gas Conditioning Conference Family Foundation Scholarship</i>	2020

ACADEMIC SERVICES

AICHE Student Chapter Advisor, OU	2018-current
GRA Recruitment Committee, OU	2019-current
Member of a Faculty Search Committee in the water/energy area, OU	Fall 2019
PhD Qualifiers Exams, OU, Committee Member	2018-current

COMPETITIVE RESEARCH GRANTS (TOTAL: \$1,914,490. GALIZIA SHARE: \$1,122,058)

NSF-CBET (Interfacial Engineering): *CAREER: Engineering polymers cohesive energy density and free volume for highly selective organic separations*

Role: **PI**

Total fund: **\$543,641**

September 2021-August 2026.

University of Oklahoma (BIC, Big Idea Challenge): *Carbon-free H₂ Energy Production and Storage*

Role: **Senior Personnel**

Total fund: **\$150,000** (to be used collegially by all the personnel involved)

March 2021-February 2023

NSF-CBET (Interfacial Engineering): *Molecular design and fundamental understanding of Janus Mixed Matrix Membranes with precisely controlled morphology and transport properties*

Role: **PI**

Total fund: **\$491,361** (50% share with Dr. Sepideh Razavi)

September 2020-August 2023

NSF-CBET (Molecular Separations): *Collaborative Research: Molecular-level Understanding of Small Molecule Transport in Glassy Polymers Exhibiting Configurational Free Volume*

Role: **PI**

Total fund: **\$592,688**, (\$391,872 for OU, \$200,816 for the University of Notre Dame)

September 2019-August 2022

ACS-PRF (Doctoral New Investigator): *Fundamental transport property-structure correlations for Organic Solvent Nanofiltration membranes*

Role: **PI**

Total fund **\$110,000**

September 2019-August 2021

Faculty Investment Program (FIP, OU): *Next generation polymer membranes for isomers separation via Organic Solvent Reverse Osmosis*

Role: **PI**

Total fund: **\$11,800**

January 2021-December 2021

Faculty Investment Program (FIP, OU): *Janus nanoparticle membranes for CO₂ separation*

Role: **PI**

Total fund: **\$15,000**

January 2019-December 2019

UROP (Undergraduate Research Opportunities Program): *Novel Organic Solvent Nanofiltration polymer membranes*

Total fund: **\$1,000**

April 2018-April 2019

IMMIGRATION STATUS

Green Card Holder (Permanent Resident)