

BENJAMIN A. WILHITE, Associate Professor of Chemical Engineering,
 Artie McFerrin Department of Chemical Engineering
 Texas A&M University, College Station TX 77843
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Education:

Massachusetts Institute of Technology,	Microchemical Systems	2002-2005
University of Notre Dame	Ph.D., Chemical Engineering	2003
North Carolina State University	B.S., Chemical Engineering	1997

Appointments:

Artie McFerrin Department of Chemical Engineering, Texas A&M Univ.		
Associate Professor of Chemical Engineering, w/ tenure		2013-present
Interim Associate Department Head (<i>Untenured</i>), Undergraduate Studies		2011-2013
Associate Professor of Chemical Engineering, w/o tenure		2010-2013
CMBE Department, University of Connecticut		
Assistant Professor		2005-2010
Connecticut Global Fuel Cell Center (CGFCC), University of Connecticut		
Assistant Professor		2005-2010
Department of Chemical Engineering, M.I.T.		
Research Scientist		2004-2005
Postdoctoral Research Associate		2002-2004
Department of Chemical Engineering, University of Notre Dame		
Graduate Instructor		2001-2002
Arthur J .Schmitt Research Fellow		1997-2001

Honors and Recognitions:

<i>George Armistead, Jr. 23' Faculty Excellence Award for Service (TAMU)</i>		2018
<i>Linda and James Harris Outstanding Undergraduate Instructor (TAMU)</i>		2015
<i>American Chemical Society Doctoral New Investigator (ACS-DNI)</i>		2008
<i>National Science Foundation CAREER Award</i>		2008
<i>Office of Naval Research Young Investigator Award</i>		2007
<i>DuPont Young Faculty Grant</i>		2007
<i>Univ. of Conn. Junior Faculty Summer Fellowship,</i>		2007
<i>Invited Keynote Speaker,</i>		
Robert M. Langer Graduate Student Symposium, Yale University		2006
<i>Inductee, Sigma Xi Scientific Research Society,</i>		
Massachusetts Institute of Technology Chapter,		2004
<i>Outstanding Graduate Student Teacher Award,</i>		
University of Notre Dame,		2002
<i>Arthur J. Schmitt Research Fellowship,</i>		
University of Notre Dame		1997-2001

Professional Service:

- **International Conference on Catalysis in Membrane Reactors (ICCMR)**
 - **Lead Organizer**, 13th International Conference on Catalysis in Membrane Reactors (ICCMR-13), Houston, TX 2017.
- **International Symposia on Chemical Engineering (ISCRE)**
 - **Secretary, Board of Directors**, Elected 2014
 - **Member, Board of Directors**, Elected 2010
 - **Co-Organizer**, 3rd Symposium, North America (NASCRE-3), Houston, TX, 2013
 - **Chair**, Computational Transport and Reaction Workshop, NASCRE-3, Houston, TX 2013
 - **Member, Scientific Committee**, 21st Symposium (ISCRE-21), Philadelphia PA, 2010.
- **American Institute of Chemical Engineers (AIChE)**
 - **Division Director**, CRE Division 20, Fall 2011 – Fall 2014
 - **Planning Chair**, Division 20b, Fall 2008 – Fall 2010.
 - **Planning Vice-Chair**, Division 20b, Fall 2007 – Fall 2008.
- **American Chemical Society (ACS)**
 - **Organizer**, Symposium on Hydrogen Reforming, *ACS 2007 Fall Meeting, Boston, MA.*
 - **Co-Chair**, Perspectives on Hydrogen Generation, *ACS 2007 Fall Meeting, Boston, MA.*
 - **Chair**, Small-Scale Hydrogen Generation: Status and Future Challenges, *ACS 2007 Fall Meeting, Boston, MA.*
- **American Society of Mechanical Engineers (ASME)**
 - **Track Chair**, Fuel Cell Systems: Integration and Implementation, 5th International Fuel Cell Science, Engineering and Technology Conference, New York, NY, June 18th-21st, 2007.
- **Indian Institute of Chemical Engineering (IChE)**
 - **Chair**, Polymer Materials and Processing, ChemCon 2008, Chandigarh, India.

Editorial Service:

- Editor, Chemical Engineering Processing: Process Intensification [Elsevier, IF: 2.24], 2018 – present.
- Associate Editor, Chemical Engineering Processing: Process Intensification [Elsevier, IF: 2.24], 2016-2018.
- **Guest Editor**, “ICCMR-13 – Selected Papers from the 13th International Conference on Catalysis in Membrane Reactors, July 10th-13th, Houston TX, USA,” *Catalysis Today* (2018). [*expected 10 articles*]
- **Guest Editor**, “Hydrogen Production – Selected Papers from the Hydrogen Production Symposium at the American Chemical Society 234th National Meeting and Exposition, August 19-23, 2007, Boston MA, USA,” *Catalysis Today*, 139 (2009). [*8 articles, 622 total citations*].

Notable University Service:

Artie McFerrin Department of Chemical Engineering, Texas A&M Univ.

Dean's Research Council

2015-2016

EIC Faculty Committee

2013-2016

Associate Department Head, Undergraduate Studies, Chemical Eng.

2011-2013

Chairman, Undergraduate Committee, Chemical Engineering

2011-2013

<i>Member, Graduate Committee, Chemical Engineering</i>	2010-2011
<i>Member, Graduate Admissions Sub-Committee, Chemical Eng.</i>	2010-2011
<i>Elected Member, Faculty Senator</i>	2015-present
<i>Member, Research Committee</i>	2015-2016
<i>Member, Honors Council</i>	2015-present
CMBE Department, University of Connecticut	
<i>Honors Undergraduate Advisor, Chemical Engineering Program</i>	2006-2010
<i>Member, University Scholars Committee</i>	2006-2010
<i>Member, Office of Undergraduate Research Advisory Board</i>	2006-2010
<i>Member, Undergraduate Committee, Chemical Engineering</i>	2006-2010

Teaching Responsibilities:

A. Courses Taught (since first TT appointment, August 2005):

Spring 2006. CHEG 251: Process Kinetics. Enrollment: 38. Average Evaluation Score: **8.6/10**.

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. Prentice-Hall, 2006.

Fall 2006. CHEG 312: Transport Processes I (Grad). Enrollment: 15. Average Evaluation Score: **8.1/10**.

- Bird, Stewart and Lightfoot. Transport Phenomena, 2nd Edition. (2005).
- Leal. Laminar Flow and Convective Transport Processes. (1992).

Spring 2007. CHEG 251: Process Kinetics. Enrollment: 42. Average Evaluation Score: **8.6/10**.

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Fall 2007. CHEG 321: Chemical Reaction Engineering (Grad). Enrollment: 10. Average Score: **9.1/10**.

- Lectures primarily based upon instructors notes developed from J.J. Carberry and Arvind Varma.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I.. Chemical Kinetics and Catalysis. (2001).
- Carberry, J.J. Chemical and Catalytic Reaction Engineering. (1976).
- Schmidt, L.D. The Engineering of Chemical Reactions (2005).

Spring 2008. CHEG 239W: Unit Operations Laboratory II. Enrollment: 42. Average Score: **8.4/10**.

- Responsible for experiments on PID Control Systems, Reaction Kinetics and Biodiesel Production.
- Aided in development of new Biodiesel Production lab assignment.

Fall 2008. CHEG 321: Chemical Reaction Engineering (Grad). Enrollment: 10. Average Score: **8.5/10**.

- Lectures primarily based upon instructors notes developed from J.J. Carberry and Arvind Varma.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I.. Chemical Kinetics and Catalysis. (2001).
- Carberry, J.J. Chemical and Catalytic Reaction Engineering. (1976).
- Schmidt, L.D. The Engineering of Chemical Reactions (2005).

Spring 2009. CHEG 4999: Special Topics in Energy (UG/Grad). Enrollment: 14. Average Score: **8.3/10**.

- Lectures focused on Chemical Engineering aspects of Fuels, Energy Systems and Sustainability
- Students prepared research reports on Biofuels, Solar Energy, Hydrogen Storage and other topics.

Fall 2009. CHEG 5321: Chemical Reaction Engineering (Grad). Enrollment: 20. Average Score: **8.3/10**.

- Lectures primarily based upon instructors notes developed from J.J. Carberry and Arvind Varma.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).

- Masel, R.I. Chemical Kinetics and Catalysis. (2001).
- Carberry, J.J. Chemical and Catalytic Reaction Engineering. (1976).
- Schmidt, L.D. The Engineering of Chemical Reactions (2005).

Spring 2010: CHEG 4999: Special Topics in Energy (UG/Grad). Enrollment: 8. Average Score: **8.6/10**.

- Lectures focused on Chemical Engineering aspects of Fuels, Energy Systems and Sustainability
- Students prepared research reports on Biofuels, Solar Energy, Hydrogen Storage and other topics.
- Students assigned bi-weekly homework, comprised of engineering calculations and back-of-the-envelope analysis questions.

Spring 2011: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 21. Average Score: **4.5/5**

- Lectures based upon instructor-generated notes and distributed online via pecast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I. Chemical Kinetics and Catalysis. (2001).
- Carberry, J.J. Chemical and Catalytic Reaction Engineering. (1976).
- Schmidt, L.D. The Engineering of Chemical Reactions (2005).

Fall 2011: CHEN 464: Chemical Reaction Engineering (Undergrad). Enrollment: 46. Average Score: **4.1/5**

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Spring 2012: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 29. Average Score: **4.5/5**

- Lectures based upon instructor-generated notes and distributed online via pecast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I. Chemical Kinetics and Catalysis. (2001).
- Schmidt, L.D. The Engineering of Chemical Reactions (2005).

Fall 2012: CHEN 464: Chemical Reaction Engineering (Undergrad). Enrollment: 63. Average Score: **4.1/5**

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Spring 2013: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 30. Average Score: **4.6/5**

- Lectures based upon instructor-generated notes and distributed online via pecast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I. Chemical Kinetics and Catalysis. (2001).

Fall 2013: CHEN 485: Chemical Reaction Engineering (Undergrad). Enrollment: 5. Average Score: **4.7/5**

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Fall 2013: CHEN 424: Chemical Eng. Mass Ops (Undergrad). Enrollment: 41. Average Score: **3.4/5**

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2014: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 30. Average Score: **4.6/5**

- Lectures based upon instructor-generated notes and distributed online via pecast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I. Chemical Kinetics and Catalysis. (2001).

Fall 2014: CHEN 485: Chemical Reaction Engineering (Undergrad). Enrollment: 2. Average Score: **N.A.**

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Fall 2014: CHEN 424: Chemical Eng. Mass Ops (Undergrad). Enrollment: 46. Average Score: **4.5/5**

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2015: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 30. Average Score: **4.6/5**

- Lectures based upon instructor-generated notes and distributed online via pencast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I.. Chemical Kinetics and Catalysis. (2001).

Fall 2015: CHEN 424: Chemical Eng. Mass Ops (Undergrad). Enrollment: 65. Average Score: **4.3/5**.

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2016: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 38. Average Score: **4.4/5**

- Lectures based upon instructor-generated notes and distributed online via pencast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I.. Chemical Kinetics and Catalysis. (2001).

Fall 2016: CHEN 424: Chemical Eng. Mass Ops (Undergrad). Enrollment: 68. Average Score: **4.0/5**.

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Fall 2016: ICPE617: Gas Separations for Energy. Enrollment: 10. Average Score: **4.3/5**

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2017: CHEN 624: Chemical Reaction Engineering (Grad). Enrollment: 38. Average Score: **4.4/5**

- Lectures based upon instructor-generated notes and distributed online via pencast technology.
- Levenspiel, O. Chemical Reaction Engineering, 3rd Edition (1999).
- Masel, R.I.. Chemical Kinetics and Catalysis. (2001).

Fall 2017: ICPE617: Gas Separations for Energy. Enrollment: 10. Average Score: **4.3/5**

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2018: CHEN 324: Chemical Eng. Mass Ops (Undergrad). Enrollment: 68. Average Score: **4.0/5**.

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Fall 2018: CHEN 464: Chemical Reaction Engineering (Undergrad). Enrollment: 63. Average Score: **4.1/5**

- Fogler, H.S. Elements of Chemical Reaction Engineering, 4th Edition. (2006).

Spring 2019: ICPE617: Gas Separations for Energy. Enrollment: 10. Average Score: **4.3/5**

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

Spring 2019: CHEN 324: Chemical Eng. Mass Ops (Undergrad). Enrollment: 68. Average Score: **4.0/5**.

- Geankoplis, C. Transport Processes and Unit Operations, 3rd Edition (2007).

B. Undergraduate Academic Advising:

- University of Connecticut: served as primary academic advisor to 32 Honors Students

C. Research Advisor and Postgraduate-Scholar Sponsor

Ph.D. Students: A. Moreno (2010); D. Kim (2011); A. Suresh (2011); B. Kuncharam (2013),
H. Zhang (2016), E. Lugo (2016), H. Butcher (2017), X. Cui (2018), PVK

Srikanth (2018), S. Venkatesh (2020), G. Liu (2020), J. Wang (2020), Y. Sue (2020), N. Ade (2021).

M.S. Students: M. Boucher (co-advised, 2008); P. Baker (co-advised, 2009); A. Awonusi (2009), S. Damodharan (2012); P. Kawatra (2017); K. Das (2017)

B.S. Students: E. Livaich (2007), B. Webb (2007), A. Kellogg (2008), G. Honda (2010), D. Donahue (2010), C. Duval (2011), K. Huffman (2012), K. Barnett (2013), T. Benefield (2013), J. Piatt (2014), S. Powell (2016), H. Yang (2017)

Career: Ph.D. Students (14), M.S. Students (6), Undergraduate (12)

Invited Talks (20 total)

1. "Alternative Energy Systems and Sources: Fueling Research at the University of Connecticut," *Keynote Speech, 4th Annual Langer Graduate Symposium, Yale University, December 1st, 2006.*
2. "Bridging the Gap between Green Fuels and Clean Fuel Cells," *Biofuels Symposium: Policy, Opportunity and Science, University of Connecticut, January 11th, 2007.*
3. "Alternative Energy Systems and Sources: Bridging the Gas between Green Fuels and Clean Fuel Cells," *Department of Chemical and Biomolecular Engineering, Tufts University, February 12th, 2007.*
4. "Microchemical Systems for Portable Biofuels Reforming: Revisiting and Rethinking Chemical Reaction Engineering Analysis," *Session in Honor of Arvind Varma's 60th Birthday, AIChE 2007 annual meeting, November 5th, 2007.*
5. "Microchemical Systems for Portable Biofuels Reforming," *presented at Department of Chemical Engineering, West Virginia University, February 22nd, 2008.*
6. "Fuel Cells: Powering a Sustainable Future," *presented at the University of Connecticut Sustainable Energy Symposium, March 31st, 2008.*
7. "Microchemical Systems for Portable Biofuels Reforming: Revisiting and Rethinking Chemical Reaction Engineering Analysis," *India-US Symposium on Energy and Sustainability, Hosted by ChemCon 2008, Chandigarh, India, December 29th, 2008.*
8. "Multifunctional Reactors and Materials," *presented at Department of Chemical Engineering, Cornell University, September 21st, 2009.*
9. "Hot-Spots in Chemical Reaction Engineering – Multifunctional Reactors and Materials," *presented at the Frontiers of Chemical Reaction Engineering invited session at the 2009 AIChE Annual Meeting in Nashville, TN.*
10. "Hot-Spots in Chemical Reaction Engineering – Multifunctional Membranes," *presented at the American Chemical Society Meeting, special session in honor of Arvind Varma (Spring, 2011).*
11. "Hot-Spots in Chemical Reaction Engineering – Multifunctional Reactors," *presented at Naval Research Laboratories, May 17, 2011.*
12. "Hot-Spots in Chemical Reaction Engineering," *presented at Department of Chemical Engineering, University of Houston, August 26th, 2011.*
13. "Composite Catalytic Membranes: Applying Reaction Engineering Fundamentals to Gas Purification," *presented at 9th World Congress on Chemical Engineering (WCCE-9), Seoul, Korea, August 20th, 2013.*
14. "New Frontiers in Reaction Engineering and Materials for Energy," *presented at Auburn University, Department of Chemical Engineering, August 5th, 2014 (B. Tatarchuk, host).*
15. "Process Intensification in Catalytic Processes – Manipulation of Transport and Reaction at the Mesoscale," *invited presentation at National Research Council Mesoscale Chemistry Workshop, Washington D.C., November 6th-7th, 2014.*
16. "Process Intensification in Chemical Reaction Engineering," *invited presentation at Washington State University Department of Chemical Engineering, February 9th, 2015.*
17. "Process Intensification – Opportunities and Challenges for Reaction Engineering," *invited presentation at AIChE Workshop on Process Systems Development, Houston TX, June 4th, 2015.*

18. "Process Intensification in Separations," invited presentation as part of round-table discussion at AIChE National Meeting, 2016.
19. "Challenges in Education and Work Force Development for Modeling and Simulation," invited presentation at RAPID Workshop, AIChE Spring Meeting, April 25th, 2018
20. "Chemical Reaction Engineering for Inherently Safer Chemical Processing and Process Intensification," invited presentation in session honoring Dan Luss' 80th birthday, NASCRE-4 (172), Houston, TX, Feb. 18th, 2019.

Peer-Research Publications (57 Total; Google Scholar Statistics: H-index: 17; #citations: 1088)

1. R. Xia, J. Wang, Z. Han, Z. Li, M.S. Mannan and B.A. Wilhite, "Mechanism Study of Ammonium Nitrate Decomposition and Chloride Impurity using Experimental and Molecular Simulation Approach," *J. Haz. Mat.*, article in press (available online Apr. 22nd, 2019).
2. J. Wang, Y. Sun, X. Gao, M.S. Mannan and B.A. Wilhite, "Experimental Study of Electrostatic Hazard inside Scrubber Column using Response Surface Methodology," *Chem. Eng. Sci.*, **200** (2019), 46-68.
3. S. Venkateswaran, C. Kravaris, B.A. Wilhite, "Analysis of Solid-Phase Axial Heat Conduction upon Hot-Spot Formation in a One-Dimensional Microreactor," *Chem. Eng. Sci.*, article in press (available online 28th November, 2018).
4. J. Wang, Y. Huang, B.A. Wilhite, M. Papadaki, M.S. Mannan, "Toward the Identification of Intensified Reaction Conditions using Response Surface Methodology: A Case Study on 3-Methylpyridine N-Oxide Synthesis," *Ind. Eng. Chem. Res.*, article in press (available online 30th October, 2018).
5. M.S. Challiwala, B.A. Wilhite, M. M. Ghouri, N. O. Elbashir, "Multidimensional Modeling of a Microfibrous Entrapped Cobalt Catalyst Fischer-Tropsch Reactor Bed," *AIChE J.*, **64** (2018), 1723-1731.
6. P. Kawatra, S. Panyaram, B.A. Wilhite, "Hydrodynamics in a Pilot-Scale Cocurrent Trickle-Bed Reactor at Low Gas Velocities," *AIChE Journal*, **64** (2018), 2560 – 2569.
7. B.A. Wilhite, "Unconventional microreactor designs for process intensification in the distributed reforming of hydrocarbons: a review of recent developments at Texas A&M University," *Current Opinion in Chemical Engineering*, **17** (2017), 100-107.
8. Y. Song, E. L. Lugo, S. Powell, P. Tzeng, B.A. Wilhite, J.C. Grunlan, "Highly Selective Multilayer Polymer Thin Films for CO₂/N₂ Separation," *J. Polymer Science B: Polymer Physics*, **55** (2017), 1730-1737.
9. O. Onel, A.M. Niziolek, ^H. Butcher, **B.A. Wilhite**, C.F. Floudas[†], "Multi-Scale Approaches for Gas-to-Liquids Process Intensification: CFD Modeling, Process Synthesis, and Global Optimization," *Computers & Chemical Engineering*, **105**, (2017) 276-296.
10. ^X. Cui, M. Sam Mannan, **B.A. Wilhite**[†], "Segregated-Feed Membrane Reactor Design for Alkylpyridine N-Oxidation: Implications for Process Safety and Intensification," *Ind. Eng. Chem. Res.*, **56** (2017), 3822-3832.
11. ^E.L. Lugo, **B.A. Wilhite**[†], "A Theoretical Comparison of Multifunctional Catalyst for Sorption-Enhanced Reforming Process," *Chem. Eng. Sci.*, **150** (2016), 1-15.
12. ^Zhang, H.M., **B.A. Wilhite**[†], "Electrical Conduction and Hydrogen Permeation Investigation on Iron-Doped Barium Zirconate Membrane," *J. Mem. Sci.*, **512** (2016), 104-110.
13. ^H. Butcher, **B.A. Wilhite**[†], "Enhancing Catalyst Effectiveness by Increasing Catalyst Film Thickness in Coated Wall Microreactors: Exploiting Heat Effects in Catalytic Methane Steam Micro-Reformers," *Chem. Eng. Sci.*, **143** (2016), 47-54.
14. ^H. Zhang, **B.A. Wilhite**[†], "Electrical Conduction and Reaction Analysis on Mixed-Conducting Iron-Doped Barium Zirconate," *Solid-State Ionics*, **286** (2016), 7-18.
15. ^X. Cui, M.S. Mannan, **B.A. Wilhite**[†], "Towards Efficient and Inherently Safer Continuous Reactor Alternatives to Batchwise Processing of Fine Chemicals: CSTR Nonlinear Dynamics Analysis of Alkylpyridines N-Oxidation," *Chem. Eng. Sci.*, **137** (2015), 487-503.

16. P. Tzeng, ^E. Lugo, G. Mai, B.A. Wilhite and J.C. Grunlan, "Super Hydrogen and Helium Barrier with Polyelectrolyte Nanobrick Wall Thin Film," *Macromolecular Rapid Communications*, **36** (2015), 96-101.
17. ^H. Zhang, A. Suresh, C.B. Carter and **B.A. Wilhite**, "Materials Synthesis, Electrochemical Characterization and Oxygen Permeation Properties of Fe-doped BaZrO₃," *Solid State Ionics*, **266** (2014), 58-67.
18. ^H. Butcher, C.J.E. Quenzel, L. Brezinger, J. Mettes, B.A. Wilhite and P. Bossard, "Design of an Annular Microchannel Reactor (AMR) for Hydrogen and/or Syngas Production via Methane Steam Reforming," *Int. J. Hydrogen Energy*, **39** (2014), 18046-18057.
19. ^D. Kim, P. Tzeng, K. Barnett[‡], Y-H. Yang, **B.A. Wilhite** and J. Grunlan, "Highly Size-Selective Ionically Crosslinked Multilayer Polymer Films for Light Gas Separations," *Advanced Materials*, **26** (2014), 746-751.
20. ^H. Zhang, ^A. Suresh, C.B. Carter and **B.A. Wilhite**, "Permeation studies of Iron-Doped Barium Zirconates for Membrane Reactor Applications," *ECS Trans.*, **61** (2014), 307-318.
21. W.R. Chan, **B.A. Wilhite**, J.J. Senkevich, M. Soljagic, J. Joannopoulos and I Celanovic[†], "An all-metallic microburner for a millimeter-scale thermophotovoltaic generator," *Journal of Physics: Conference Series*, **476** (2013) 021017.
22. ^B. Kuncharam and **B.A. Wilhite**[†], "Theoretical Investigation of a Water-Gas-Shift Catalytic Membrane for Diesel Reformate Purification," *AIChE Journal*, **59** (2013), 4334-4345.
23. **B.A. Wilhite**[†], L. Breziner, J. Mettes and P. Bossard, "Radial Microchannel Reactors (RMRs) for Efficient and Compact Steam Reforming of Methane: Experimental Demonstration and Design Simulations," *Energy Fuels*, **27**(2013), 4403-4410.
24. ^S. Damodharam, ^B. Kuncharam and **B.A. Wilhite**[†], "Design of Cartridge-Based Ceramic Heat-Exchanger Microchannel Reformers for Process Intensification: Experiments and Simulations," *Energy Fuels*, **27** (2013), 4411-4422.
25. ^D. Kim, K. Barnett[‡] and **B.A. Wilhite**[†], "Experimental Demonstration of Enhanced Hydrogen Permeation in Palladium via a Composite Catalytic-Permselective Membrane," *AIChE J.*, **59** (2013), 1627.
26. ^E. Lugo and **B.A. Wilhite**[†], "Comparison of Composite Catalytic-Permselective Membranes with Packed-Bed Membrane Reactors for Diesel Reforming Cleanup," *Chem. Eng. J.*, **207-208**(2012), 552-563.
27. **B.A. Wilhite**[†], "Composite Catalytic-Permselective Membranes: A Novel Strategy for Enhancing Selectivity and Permeation Rates via Reaction and Diffusion," *Industrial & Engineering Chemistry Research*, **50**(17), 10185-10193 (2011).
28. ^E.L. Romero and **B.A. Wilhite**[†], "Enhancement of Water-Gas-Shift Conversion via Externally-Imposed Temperature Profiles: Comparison of Linear, Convex and Gaussian Profiles," *Chemical Engineering Journal*, **175**, 433-442 (2011).
29. J. Basu, ^A. Suresh, **B.A. Wilhite**[†] and C.B. Carter, "Microstructural Evolution of Cobalt-Doped Barium Cerate-Zirconate at Elevated Temperatures under Moist Reducing Conditions," *Journal of the European Ceramic Society*, **31**, 1421-1429 (2011).
30. J. Basu, ^A. Suresh, B.A. Wilhite and C.B. Carter[†], "FIB and TEM Study of Reactivity of Co Doped BaCe_{1-x}Zr_xO₃ Membrane in Reducing Environment," *Microscopy and Microanalysis*, **16**, 1208-1209 (2010).
31. G.S. Honda[‡] and **B.A. Wilhite**[†], "The Impact of Externally Applied Thermal Gradients on Catalyst Behavior in Wall-Coated Microreactors," *Chemical Engineering Science*, **68**(1), 663-667 (2011).
32. A. Moreno[^], S. Damodharan[^] and **B.A. Wilhite**[†], "Influence of Two-Dimensional Distribution Schemes upon Reactor Performance in a Ceramic Microchannel Network for Autothermal Methanol Reforming," *I&EC Research*, **49**, 10956-1094 (2010).
33. D. Kim[^], D. Donohue[‡], B. Kuncharam^{*}, C. Duval[‡] and **B.A. Wilhite**[†], "Towards an Integrated Ceramic Micro-Membrane Network," *I&EC Research*, **49**, 10254-10261 (2010).

34. A. Moreno[^] and **B.A. Wilhite**[†], "Autothermal Hydrogen Generation from Methanol in a Ceramic Microchannel Network," *Journal of Power Sources*, **195(7)**, 1964-1970 (2010).
35. A. Suresh[^], J. Basu, C.B. Carter, N. Sammes and **B.A. Wilhite**[†], "Synthesis and Characterization of Cobalt-doped Barium Cerate-Zirconate ($\text{BaCe}_{0.25}\text{Zr}_{0.6}\text{Co}_{0.15}\text{O}_{3-d}$) for Simultaneous Hydrogen Production and Electrochemical Separation," *Journal of Materials Science*, **45**, 3215-3227 (2010).
36. W.G. McPhee, M. Boucher[^], J. Stuart, R.S. Parnas[†], M.Koslowske, T. Tao and **B.A. Wilhite**, "Demonstration of a Liquid-Tin Anode Solid-Oxide Fuel Cell (LTA-SOFC) Operating from Biodiesel Fuel," *Energy Fuels*, **23**, 5036-5041 (2009).
37. D. Kim[^], A. Kellogg[‡], E. Livaich[‡] and **B.A. Wilhite**[†], "Towards an Integrated Ceramic Micro-Membrane Network: Electroless-Plated Palladium Membranes in Cordierite Supports," *J. Mem. Sci.*, **340**, 109-116 (2009).
38. M.B. Boucher[^], C. Weed, N.E. Leadbeater, **B.A. Wilhite**, J.D. Stuart and R.S. Parnas[†], "Pilot Scale Two-Phase Continuous Flow Biodiesel Production via Novel Laminar Flow Reactor-Separator," *Energy & Fuels*, **23(5)**, 2750-2756 (2009).
39. A. Moreno[^], K. Murphy and **B.A. Wilhite**[†], "Parametric Study of Solid-Phase Axial Heat Conduction in Thermally Integrated Microchannel Networks," *Ind. Eng. Chem. Res.*, **47**, 9040 (2008).
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54. A. Suresh, J. Basu, N.M. Sammes, C.B. Carter and **B.A. Wilhite**[†], “Synthesis and Activity of Cobalt-Doped Barium Cerium Zirconate for Catalysis and Proton Conduction,” *Advances in Solid Oxide Fuel Cells V, Ceramic Engineering and Science Proceedings*, **30** (4), 167-173 (2009).
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56. C. Livermore[‡], T.F. Hill, L. Velasquez-Garcia, **B.A. Wilhite**, A.H. Epstein, K.F. Jensen, W. Terry Rawlins, S. Lee and S. Davis, “Singlet-Oxygen Generation on a Chip for MEMS-based COIL,” *Proceedings of International Society for Optical Engineering (SPIE), Photonics Conference, Jan. 20 – 25th, 2007, Vol. 6454*.
57. Boucher, M., Li, S.-Y., C. Weed, **B.A. Wilhite**[†], J.D. Stuart and R. Parnas[†], “Kinetics for Soybean Oil Transesterification in a Batch System,” ACS Fuels Division Preprints, 234th ACS National Meeting, Boston, MA, FUEL 032 (2007)

[†] indicates Principal Investigator

[‡] indicates Undergraduate Student Mentee of Wilhite, as of Completion of Work

[^] indicates Graduate Student Mentee of Wilhite, as of Completion of Work

Research Presentations (80 total)

1. G. Liu and **B.A. Wilhite**, “Model-Based Design for Inhibition of Thermal Runaway,” oral presentation at NASCRE-4 (109), Feb. 19th, 2019.
2. J. Wang, **B.A. Wilhite** and M.S. Mannan, “Experimental Study of Electrostatic Hazard inside Scrubber Column Using Response Surface Methodology,” poster presentation at 2019 Spring AIChE Meeting (55av), New Orleans, LA, Apr. 1st, 2019.
3. J. Wang, Y. Huang, **B.A. Wilhite** and M.S. Mannan, “Towards the Identification of Intensified Reaction Conditions using Response Surface Methodology,” oral presentation at 2019 Spring AIChE meeting (180c), New Orleans, LA, Apr. 3rd, 2019.
4. N. Mishra and **B.A. Wilhite**, “Layer-by-Layer Functional Thin Film Coatings for Enhanced Light Gas Separations,” oral presentation at 2018 AIChE National Meeting (11e), Pittsburgh, PA, Oct. 28th, 2018.
5. S. Venkateswaran, Costas Kravaris and **B.A. Wilhite**, “Runaway in microchannel Reactors,” oral presentation at 2018 AIChE National Meeting (350a), Pittsburgh, PA, Oct. 30th, 2018.
6. M.S. Challiwala, H.A. Choudhary, **B. A. Wilhite** and N. Elbashir, “Modeling Fischer Tropsch Non-Conventional Reactors and Media,” poster presentation at ISCRE-25 (173), Florence, Italy, May 21st, 2018.
7. S. Venkateswaran, C. Kravaris and **B.A. Wilhite**, “Runaway in Microchannel Reactors,” oral presentation at ISCRE-25, Florence Italy, May 22nd, 2018.
8. J. Grunlan and **B.A. Wilhite**, “Size selective Ionically Crosslinked Polymer Multilayer Films for Light Gas Separation,” oral presentation at 2017 AIChE National meeting (413a), Minneapolis, MN, Oct. 31, 2017.
9. M.S. Challiwala, **B.A. Wilhite**, M.M. Ghouri and N. Elbashir, “2-D Modeling of Fischer Tropsch Packed Bed Reactor: First Step Towards Scale-up,” oral presentation at 2017 AIChE National Meeting (450f), Minneapolis, MN, Oct. 31, 2017.

10. X. Cui, M.S. Mannan and **B.A. Wilhite**, "Application of Membrane Reactor for Continuous Manufacturing of Alkylpyridine N-oxides," oral presentation at ICCMR-13, Houston, TX, July 11, 2017.
11. H. Butcher, P. Bossard, A. Kaldor and **B.A. Wilhite**, "CFD Simulations of Coupled Endothermic Methane Steam Reforming and Exothermic Methane Combustion in an Annular Microchannel Reactor (AMR)," oral presentation at ISCRE-24 (317), Minneapolis, MN, June 14, 2016.
12. S. Panyaram, D. Slivensky, K. Hampton, X. Wu and **B.A. Wilhite**, "Loading Methodologies and Impact on Packing Configurations," oral presentation at ISCRE-24 (410), Minneapolis, MN, June 15, 2016.
13. X. Cui, M.S. Mannan and **B.A. Wilhite**, "Model-Based Design and Operation of Flow Reactors for Conversion of Fine Chemicals and Pharmaceuticals," oral presentation at ISCRE-24 (360), Minneapolis, MN, June 15, 2016.
14. O. Onel, A. M. Niziolek, H. Butcher, **B.A. Wilhite** and C.F. Floudas, "Small-Scale GTL Processes for Utilizing Stranded Gas: Model Identification, Process Synthesis, and Global Optimization," oral presentation at 2015 AIChE National Meeting (156c), Salt Lake City, UT, Nov. 9, 2015.
15. S. Panyaram, D. Slivensky, K. Hampton, X. Wu and **B.A. Wilhite**, "Packing Algorithms to Study Loading Methodologies in Trickle Bed Reactors," oral presentation at 2015 AIChE National Meeting (485f), Salt Lake City, UT, Nov. 11, 2015.
16. E. Lugo, P. Tzeng, S. Powell, **B.A. Wilhite** and J.C. Grunlan, "Highly Selective Layer-by-Layer Polymer Films for CO₂/N₂ Separation," oral presentation at 2015 AIChE National Meeting (650g), Salt Lake City, UT, Nov. 12, 2015.
17. H. Butcher, P. Bossard, A. Kaldor and **B.A. Wilhite**, "CFD Simulations of Coupled Endothermic and Exothermic Methane Steam Reforming and Combustion in an Annular Microchannel Reactor (AMR)," oral presentation at 2015 AIChE National Meeting (79f), Salt Lake City, UT, Nov. 9, 2015.
18. X. Cui, M.S. Mannan and **B.A. Wilhite**, "Aiding Safer and More Efficient Transformation from Batch to Continuous Flow Processing via Nonlinear Dynamic Analysis," oral presentation at 2015 AIChE National Meeting (608f), Salt Lake City, UT, Nov. 11, 2015.
19. P. Bossard, L. Breziner, C. Quenzel, H. Butcher and **B.A. Wilhite**, "Annular Micro-Channel Reactors: Efficient and Scalable Methane Steam Reformers," oral presentation at 2014 AIChE National Meeting (500b), Atlanta, GA, Nov. 19, 2014.
20. **B.A. Wilhite**, "Optimizing the Design and Implementation of the Upper Level Curriculum: Making the Case for Scheduling Analysis of an Undergraduate Program," oral presentation at 2014 AIChE National Meeting (559b), Atlanta, GA, Nov. 19, 2014.
21. Holly Butcher, **B.A. Wilhite**, Peter Bossard and Casel Quenzel, "Enhancing Catalyst Effectiveness and Loading in Microreactors," oral presentation at 2014 AIChE National Meeting (304c), Atlanta, GA, Nov. 18, 2014.
22. D. Kim, P. Tzeng, K. Barnett, Y-H. Yang, **B.A. Wilhite**, J.C. Grunlan, "Breaking the Upper Boundary in Size-Selective Gas Separation Assemblies," oral presentation #616 at 248th ACS National Meeting, San Francisco CA, Aug. 13, 2014.
23. P. Tzeng, **B.A. Wilhite** and J.C. Grunlan, "Gas Barrier and Separation Ability of Nanobrick Wall Multilayer Thin Films," oral presentation #611 at 248th ACS National Meeting, San Francisco CA, Aug. 13, 2014.
24. L. Breziner, P. Bossard, A. Kaldor, **B.A. Wilhite**, "Annular Micro-Channel Reactors: Compact and Efficient Methane Steam Reformers," oral presentation #307 at 248th ACS National Meeting, San Francisco CA, Aug. 12, 2014.
25. W.R. Chan, **B.A. Wilhite**, J.J. Senkevich, M. Soljagic, J. Joannopoulos and I Celanovic[†], "An all-metallic microburner for a millimeter-scale thermophotovoltaic generator," oral presentation at 13th Intl. conference on Micro and Nanotechnology for Power Generation (PowerMEMS 2013), London, December 2013.

26. P. Bossard, L. Breziner, **B.A. Wilhite** and J. Mettes, "Measured and Modeled Properties of Radial Microchannel Reactors (RMR)," oral presentation at Advanced Fossil Energy Utilization Topical, hosted by AIChE Annual Fall conference, San Francisco, CA 2013.
27. H. Zhang and **B.A. Wilhite**, "Electrocatalytic and Materials Properties of Iron-Doped Barium Zirconates for Oxygen Membrane and CO₂ Reduction Applications," oral presentation at AIChE Annual Fall conference, San Francisco, CA 2013.
28. D. Kim, P. Tzeng, K.J. Barnett, Y.-H. Yang, J.C. Grunlan and **B.A. Wilhite**, "Size-Selective Ionically Crosslinked Permselective Films for Light Gas Separation: Breaking the Upper Bound in H₂ Purification," oral presentation at North American Membrane Society meeting (NAMS), June 8th, 2013.
29. B. Kuncharam and **B.A. Wilhite**, "Theoretical Investigation of Composite Non-Permselective Catalytic Membrane Reactor for Extraction of Hydrogen from Bio-Ethanol Steam Reforming," poster presentation at NASCRE-3, Houston TX, March 19th, 2013.
30. H. Zhang and **B.A. Wilhite**, "Synthesis of Iron-Doped Barium Zirconate Perovskite and its Electrochemical and Materials Properties," poster presentation at NASCRE-3, Houston TX, March 20th, 2013.
31. P. Bossard, J. Mettes, L. Breziner and **B.A. Wilhite**, "A Radial Microchannel Reactor (RMR) Provides Breakthroughs in Efficient Hydrogen Production from Natural Gas," oral presentation at NASCRE-3, Houston, TX, March 20th, 2013.
32. D. Kim, K. Barnett, E. Lugo and **B.A. Wilhite**, "Modeling Analysis and Experimental Demonstration of Enhanced Hydrogen Permeation in Palladium via a Composite Catalytic-Permselective (CCP) Membrane," oral presentation at NASCRE-3, Houston TX, March 21st, 2013.
33. P. Bossard, J. Mettes, L. Breziner and **B.A. Wilhite**, "Process Intensification for Hydrogen Generation Using Micro-Channel Steam Reforming," oral presentation at AIChE Fall Meeting, 304e, October 30th, 2012.
34. E.L. Romero, D. Kim and B.A. Wilhite, "Composite Catalytic Membranes: Enhancing H₂ Recovery Membranes by Appropriate Coupling with Water-Gas-Shift Reaction," oral presentation at AIChE Fall Meeting, 301b, October 30th, 2012.
35. S. Damodharan and **B.A. Wilhite**, "Cartridge-Based Ceramic Microreactor Networks for Process Intensification in Fuels Reforming: Demonstration and Modeling of Complex 2-D Thermal Integration," oral presentation at AIChE Fall Meeting, 562d, October 31st, 2012
36. A. Suresh, A.B. Mhadeshwar, C.B. Carter and B.A. Wilhite, "Catalytic Activity in Un-Doped and Rare Earth-Doped Strontium Cerates," oral presentation at AIChE Fall Meeting, 321a, November 1st, 2012.
37. B. Kuncharam and **B.A. Wilhite**, "Non-Isothermal Model for Theoretical Investigation of Hydrogen Purification by Water-Gas-Shift Reaction from Reforming Mixtures using Catalytic Membrane Reactor," oral presentation at AIChE Fall Meeting, 402d, November 2nd, 2012.
38. E.L. Romero and **B.A. Wilhite**, "Composite Catalytic-Permselective Membranes: Comparison with Packed-Bed Membrane Reactor Configuration," poster presentation at 22nd-International Symposium on Chemical Reaction Engineering (ISCRE-22), Maastricht, NL, September 5th, 2012.
39. B. Kuncharam and **B.A. Wilhite**, "Theoretical Investigation of a Water-Gas-Shift Catalytic Membrane for Diesel Reformate Purification," poster presentation at 22nd-International Symposium on Chemical Reaction Engineering (ISCRE-22), Maastricht, NL, September 5th, 2012
40. E.L. Romero, D. Kim, B. Kuncharam and **B.A. Wilhite**, "Composite Catalytic-Permselective Membranes: Theory and Demonstration," poster presentation at 2012 Gordon Research Conference on Membranes, Materials and Processes.
41. A. Suresh*, C.B. Carter and **B.A. Wilhite**[†], "Examination of the Relative Catalytic Activities of Undoped and Cobalt-Doped Barium Cerate-Zirconates towards Methanol Partial Oxidation," poster presentation at MRS Spring 2012 Meeting, U9-37, April 12, 2012.

42. A. Suresh*, M.J. Arellano-Jimenez, **B.A. Wilhite**[†] and C.B. Carter, "Structural Characterization of Transition Metal-doped Ceria Synthesized by HMTA-Based Co-precipitation," poster presentation at MRS Spring 2012 Meeting, YY8.2, April 11, 2012.
43. A. Suresh*, M.J. Arellano-Jimenez, C.B. Carter and **B.A. Wilhite**[†], "Microstructural Evolution of Gadolinium-doped Barium Cerate in Moisture at Elevated Temperatures," oral presentation at MRS Spring 2012 Meeting, CCC9-4, April 12, 2012.
44. D. Kim, E. L. Romero[^] and **B.A. Wilhite**[†], "Composite Catalytic-Permeable Membranes for H₂ Purification," oral presentation at 2012 AIChE Spring Meeting, 131d, April 4th, 2012.
45. B. Kuncharam^{^*} and **B.A. Wilhite**[†], "Cost-Effective Catalytic Membranes for H₂ Purification," oral presentation at 2012 AIChE Spring Meeting, 67b, April 3rd, 2012
46. B. Kuncharam^{^*} and **B.A. Wilhite**[†], "A Non-Isothermal Maxwell-Stefan Diffusion Model for Design of Catalytic Membrane for Hydrogen Production from Ethanol Reforming," oral presentation at 2011 AIChE Annual Meeting, 570ai, October 16th, 2011.
47. S. Damodharan^{^*} and **B.A. Wilhite**[†], "Influence of External Insulation and Catalyst Packing Configuration upon Overall Hydrogen Yield in a Ceramic Microchannel Network," *oral presentation at 2011 ACS Annual Meeting, 38d, August 22nd, 2011.*
48. D. Kim^{^*}, D. Donohue[‡] and **B.A. Wilhite**[†], "Integrated Ceramic Micro-Membrane Networks for Hydrogen Production from Ethanol," oral presentation at 2010 AIChE Annual Meeting, 603d, November 10th, 2010.
49. B. Kuncharam^{^*} and **B.A. Wilhite**[†], "Composite Catalytic Membranes for High-Purity Hydrogen from Ethanol," poster presentation at 2010 AIChE Annual Meeting, 598ie, November 9th, 2010.
50. B. Kuncharam^{^*} and **B.A. Wilhite**[†], "Composite Catalytic Membranes for High-Purity Hydrogen from Ethanol," poster presentation at Separations Technology VIII: Sustainable Separations Technology for Energy and Environmental Challenges, Kona, Hawaii, December 1st, 2010.
51. A.M. Moreno^{^*} and **B.A. Wilhite**[†], "2-D Complex Flow Distribution Schemes for Autothermal Hydrogen Production from Methanol," poster presentation at 21st International Symposium on Chemical Reaction Engineering (ISCRE-21), abstract 198 (2010).
52. D. Kim^{^*}, D. Donohue[‡] and **B.A. Wilhite**[†], "Integrated Ceramic Micro-Membrane Networks for Hydrogen Production from Ethanol," oral presentation at 21st International Symposium on Chemical Reaction Engineering (ISCRE-21), abstract 197 (2010).
53. G. Honda^{‡*} and **B.A. Wilhite**[†], "The Effect of Catalyst Layer Thermal Gradients on Catalyst Efficiency in Wall-Coated Microreactors," presented at 2009 AIChE Annual Meeting, 82d, November 9th, 2009.
54. A. Suresh^{^*}, P. Singh and **B.A. Wilhite**[†], "Influence of pH on Synthesis of Homogeneous Cobalt-Doped Barium Cerium Zirconium Oxide via Oxalate Co-Precipitation," presented at 2009 AIChE Annual Meeting, 516d, November 12th, 2009.
55. A.M. Moreno^{^*} and **B.A. Wilhite**[†], "Autothermal Hydrogen Generation from Methanol in a Ceramic Microchannel Network," presented at 2009 AIChE Annual Meeting, 522b, November 12th, 2009.
56. A. Moreno^{^*}, G. Honda[‡], D. Kim and **B.A. Wilhite**[†], "Design Strategy for Thermally Integrated Ceramic Microreactor Networks," *presented at 8th World Congress of Chemical Engineers (WCCE 8), Montreal, QC, August 26th, 2009.*
57. **B.A. Wilhite**^{†*} and A. Moreno, "Heat-Integrated Hydrogen Production from Liquid Fuels: Demonstration of Cartridge-Based Micro-Reformers," *presented at 238th Annual Meeting of the American Chemistry Society, FUEL 37, Washington D.C., August 16th, 2009.*
58. Basu, J., A. Suresh[^], S. Bhowmick, N.M. Sammes^{*}, C.B. Carter and **B.A. Wilhite**[†], "Synthesis of Nanoscale Cobalt and Zirconium-Doped Barium Cerate Perovskites for Hydrogen Extraction," *presented at 32nd International Conference & Exposition on Advanced Ceramics and Composites, January 31st, 2009.*
59. A. Suresh^{^*}, J. Basu, N.M. Sammes, C.B. Carter and **B.A. Wilhite**[†], "Synthesis and Activity of Co-Doped Barium Cerium Zirconate for Simultaneous Hydrogen Generation and Purification," *oral*

- presentation S11.6 presented at Materials Research Society Fall Meeting, Boston MA, December 4th, 2008.*
60. A. Moreno^{^*} and **B.A. Wilhite**[†], "Experimental Demonstration of a Thermally-Integrated Microchannel Network," *presented at 2008 AIChE Annual Meeting, 423d, November 19th 2008.*
 61. D. Kim^{^*}, A. Kellogg[‡] and **B.A. Wilhite**[†], "Electroless Plating of Palladium onto a Cordierite Monolith for Portable Hydrogen Extraction," *presented at 2008 AIChE Annual Meeting, 701e, November 20th, 2008.*
 62. D. Kim^{^*}, A. Awonusi, A. Kellogg[‡] and **B.A. Wilhite**[†], "Towards an Integrated Ceramic Micro-Membrane Network: Electroless-Plated Palladium Membranes in Cordierite Supports," *poster presentation at 2008 Gordon Conference, Membranes: Materials and Processes, August 10-15th, 2008.*
 63. A. Moreno^{^*} and **B.A. Wilhite**[†], "Modeling of a Micro-Scale Heat Exchanger Reactor for Portable Hydrogen Production," *presented at American Institute of Chemical Engineers (AIChE) Annual Meeting, Salt Lake City, UT, 37a (2007).*
 64. M. Boucher^{†*}, C. Weed[‡], S.-Y. Li, **B.A. Wilhite**[†], J.D. Stuart and R.S. Parnas[†], "Kinetics of Soybean Oil Transesterification in a Batch System," *presented at the 234th ACS National Meeting, Boston, MA, FUEL 032 (2007)*
 65. **Wilhite, B.A.**^{†*}, "Chemical Reaction Engineering – Fuel for Thought," *presented at AIChE Annual Meeting, San Francisco, CA, 367c (2006).*
 66. *C. Livermore[†], T.F. Hill, L. Velasquez-Garcia, **B.A. Wilhite**, A.H. Epstein, K.F. Jensen, W. Terry Rawlins, S. Lee and S. Davis, "Singlet-Oxygen Generation on a Chip for MEMS-based COIL," *presented at the International Society for Optical Engineering (SPIE) Photonics Conference, Jan. 20 – 25th, 2007.*
 67. *L.F. Velasquez-Garcia, T.F. Hill, **B.A. Wilhite**, K.F. Jensen, A.H. Epstein and C. Livermore[†], "A MEMS Singlet Oxygen Generator for a MEMS Chemical Oxygen Iodine Laser," *poster presentation at PowerMEMS Conference, Berkeley, CA (2006).*
 68. ***Wilhite, B.A.**, T.F. Hill, L.F. Valasquez-Garcia, A.Epstein, K.F. Jensen and C. Livermore[†], "Singlet-Oxygen Generation via Microscale Trickle-Bed Reactor Array: Experiments and Modeling," *presented at AIChE Annual Meeting, San Francisco, CA, 664f (2006).*
 69. *Hill, T., **B.A. Wilhite**, L. Velasquez-Garcia, A. Epstein, K. Jensen and C. Livermore[†], "A MEMS Singlet-Oxygen Generator," *presented at Hilton Head 2006: A Solid State Sensor, Actuator and Microsystems Workshop (2006).*
 70. *Deshpande, K.T., **B.A. Wilhite**, M.A. Schmidt and K.F. Jensen[†], "Integrated Partial Oxidation and Purification Microsystems for Autothermal Production of Hydrogen from Methanol," *presented at 2005 AIChE Annual Meeting, Cincinnati, OH, 36a (2005).*
 71. ***B.A. Wilhite**, S.E. Weiss, J.Y. Ying, M.A. Schmidt and K.F. Jensen[†], "Microchemical Systems for Portable Hydrogen Generation," *presented at the 19th North American Catalysis Society Meeting, poster session 16, Philadelphia, PA (2005).*
 72. **B.A. Wilhite**, *B.S. Blackwell, K. Cheung, K.F. Jensen[†], L. Arana, M.A. Schmidt and Ole Nielson, "Micro Reaction Technology for Energy Conversion," *presented at IMRET 8, hosted by AIChE Spring Meeting, Atlanta, GA (2005).*
 73. ***B.A. Wilhite**, O.M. Nielsen, S.E. Weiss, J.Y. Ying, M.A. Schmidt and K.F. Jensen[†], "Microchemical Systems for Hydrogen Generation: Portable Power Applications," *presented at AIChE 2004 Annual Meeting, Austin TX (2004).*
 74. ***B.A. Wilhite**, A.M. Mehta[‡], D.J. Quinn, J.L. Hertz, M.S. Spearing, H.L. Tuller, M.A. Schmidt and K.F. Jensen[†], "Development of a Membrane-Based Solid-Oxide Fuel Cell: Microfabrication and Performance Analysis," *presented at 2004 MRS Fall Meeting, M5.22, Boston, MA (2004).*
 75. ***B.A. Wilhite**, A.M. Mehta[‡], D.J. Quinn, J.L. Hertz, M.S. Spearing, H.L. Tuller, M.A. Schmidt and K.F. Jensen[†], "Development of a Membrane-Based Solid-Oxide Fuel Cell," *presented at AIChE 2004 Annual Meeting, Austin, TX (2004).*

76. ***B.A. Wilhite**, M.A. Schmidt and K.F. Jensen[†], "Palladium-Based Micromembranes for Hydrogen Purification: Influence of Material Selection upon Performance," *presented at AIChE 2003 Annual Meeting, San Francisco, CA* (2003).
77. ***B.A. Wilhite**, X. Huang, M.J. McCready and A. Varma[†], "Effects of Induced-Pulsing Flow on Trickle-Bed Reactor Performance," *presented at the 4th International Conference on Unsteady-State Processes in Catalysis (USPC-4), Montreal, Quebec* (2003).
78. **B.A. Wilhite**, B. Blackwell[‡], J. Kacmar[‡], A. Varma and *M.J. McCready[†], "Mechanistic Origins of the Pulsing Regime in Cocurrent Gas-Liquid Packed Bed Flow," *presented at 2002 AIChE Annual Meeting, Indianapolis, IN* (2002).
79. *X. Huang, **B.A. Wilhite**, M.J. McCready and A. Varma[†], "Phenylacetylene Hydrogenation in a Three-Phase Catalytic Packed-Bed Reactor: Experiments and Model," *poster presented at ISCRE-17, Hong Kong* (2002).
80. ***B.A. Wilhite**, M.J. McCready and A. Varma[†], "Phenylacetylene Hydrogenation over Pt/g-Al₂O₃ Catalyst: Kinetics, Modeling and Reactor Performance," *presented at 2001 AIChE Annual Meeting, Reno, NV* (2001).

*denotes speaker

[†] indicated Principal Investigator

[‡] indicates Undergraduate Student Mentee, as of Completion of Work

[^] indicates Graduate Student Mentee, as of Completion of Work

Book Chapters (1)

1. **Wilhite, B.A.** "Chapter 7: Thermal Management and System Integration," in Microfabricated Power Generation Devices: Design and Technology, A. Mitsos and P.I. Barton, Editors, Wiley-VCH, January 2009.

Patents (1 awarded, 1 application)

1. **Wilhite, B.A.**, A. Moreno and D. Kim, Process Intensification in Microreactors. US Patent 8298499 (2012).
2. J.C. Grunlan and **B.A. Wilhite**, Polyelectrolyte Multilayer Films for Gas Separation & Purification, Patent application filed, 2013.

External Funding (Since 1st Appt. at University of Connecticut, August 2005).

1. "Layer-by-Layer Functional Thin Film Coatings for Enhanced Light Gas Separations," w/ J. Grunlan (co-PI). UCFER Program (DOE-NETL-PSU). Award Period: 08/01/17 – 07/31/19. Award Amount: \$120,000 (PI Share).
2. "Maximizing the Effectiveness of Fischer-Tropsch Fixed-bed Reactor: Tailoring Reaction Media, Catalyst Geometry and Pore Structure," w/ N. El-Bashir (Lead), B. Tatarchuk (co-PI). QNRF. Award Period: 01/01/16 – 12/31/20. Award Amount: \$290,000 (PI Share).
3. "Layer-by-Layer Polymer Electrolyte Assemblies for Size-Selective Cl₂ Purification from Cl₂-O₂ and Cl₂-H₂ Streams," w/ J. Grunlan (co-PI), Bayer. Award Period: 06/01/16 – 12/31/16. Award Amount: \$25,000 (PI Share).
4. "Layer-by-Layer Polymer Assemblies as Size-Selective Gas Separation Membranes," w/ J. Grunlan (co-PI). NSF. Award Period: 09/15/14 – 12/31/17. Award Amount: \$168,000 (PI Share).
5. "Flow Maldistribution and Reactor Hot-Spot Mechanisms," Eastman Chemicals Co. Award Period: 01/01/14 – 12/31/16. Award Amount: \$160,000.
6. "Pilot-Scale Gas-Liquid Column for Hydrodynamic Measurements," Eastman Chemicals Co. Award Period: 01/01/15 – 12/31/16. Award Amount: \$80,000.
7. "REU Supplement: EAGER Radial MicroReactors," NSF, Award Period: 06/01/13-09/01/13. Award Amount: \$6,000.
8. "EAGER: Radial MicroReactors," NSF. Award Period: 03/13/13 – 02/27/14. Award Amount: \$53,000.

9. "Fluid Maldistribution and Thermal Runaway in Trickle-Bed Reactors," Eastman Chemical Co. Award Period: 01/01/12 – 06/01/12. Award Amount: 10,000.
10. "EAGER: LbL Thin Films for Reactive Gas Separations," w/ J. Lutkenhaus (co-PI), NSF. Award Period: 01/01/12 – 12/31/12. Award Amount: \$50,000 (PI Share).
11. "Analysis of Ultra-Thin Palladium Films," Office of Naval Research (ONR). Award Period: 06/01/11 – 09/01/12. Award Amount: \$150,000.
12. "Heat-Integrated Hydrogen Production from Liquid Fuels," Office of Naval Research, Young Investigator Program (ONR-YIP). Award Period: 06/01/07-10/31/10. Award Amount: \$299,905.
13. "CAREER: Composite Catalytic Micro-Membranes." National Science Foundation (NSF). Award Period: 08/01/08-07/30/13. Award Amount: \$400,000.
14. DuPont Young Investigator Award, DuPont DeNemours Corp. Award Period: 08/01/08 – 07/31/2010. Award Amount: \$75,000.
15. "Hydrogen from Ethanol via Integrated Ceramic Microchannel Membrane Networks," National Science Foundation (NSF). Award Period: 09/01/07 – 08/31/2010. Award Amount: \$240,000.
16. "Electroceramic Materials for High-Purity Hydrogen Extraction from Liquid Hydrocarbons via Coupled Electrochemical and Catalytic Phenomena," American Chemical Society Petroleum Research Fund (ACS-PRF). Award Period: 01/01/09 – 08/31/11. Award Amount: \$100,000