

Jennifer Lynn Anthony

Assistant Professor

Department of Chemical Engineering, Kansas State University

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Education:

- 2004 Ph.D. Department of Chemical and Biomolecular Engineering
University of Notre Dame
- Thesis: *Gas Solubilities in Ionic Liquids: Experimental Measurements and Applications*
- 2003 M.S. Department of Chemical and Biomolecular Engineering
University of Notre Dame
- 1999 B.S. Department of Chemical Engineering
University of Colorado, Boulder
- Completed optional program for environmental emphasis

Registered Engineer-Intern (EI) in the State of Colorado (fall 1998)

Experience:

Assistant Professor – Kansas State University (2005 - present)

- Department of Chemical Engineering
- Courses taught: Chemical Engineering Thermodynamics I and II

Postdoctoral Scholar – California Institute of Technology (2004 - 2005)

- Department of Chemical Engineering
- Advisor: Professor Mark E. Davis
- Project: *Synthesis and Characterization of Zincosilicates*

Research Assistant – University of Notre Dame (1999 - 2004)

- Advisors: Professor Joan F. Brennecke and Professor Edward J. Maginn
- Project: *Gas Solubilities in Ionic Liquids: Experimental Measurements and Applications*

Graduate Student Instructor - University of Notre Dame

- ChEg 256 Thermodynamics (spring 2003)
- ChEg 443 Separation Processes (fall 2001)

Curriculum Vitae

Teaching Assistant - University of Notre Dame

- ChEg 448 Chemical Process Design (spring 2001)
- ChEg 355 Transport Phenomena I (fall 2000)
- ChEg 358 Junior Chemical Engineering Laboratory (spring 2000)
- ChEg 459 Senior Chemical Engineering Laboratory (fall 1999)

Advanced Ceramics Corporation – Lakewood, OH (summer 1999)

Teaching Assistant – University of Colorado

- CHEN 1300 Introduction to Chemical Engineering (spring 1999)
- CHEN 2120 Chemical Engineering Materials and Energy Balances (fall 1998)

Independent Study Research Project – University of Colorado (1998)

- Advisor: Dr. W. Fred Ramirez
- Project: *Modeling of Air Flow Patterns Around an Object in a Space Station*

M.A. Hanna – Cleveland, OH (summer 1998)

Bechtel Corporation – Houston, TX (summer 1996)

Refereed Publications – corresponding author underlined:

1. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Solution Thermodynamics of Imidazolium-Based Ionic Liquids and Water”, *Journal of Physical Chemistry B*, 2001, 105, 10942-10949.
**recognized as one of 24 papers published since 2000 in the Journal of Physical Chemistry A & B receiving 100+ citations (<http://pubs.acs.org/journals/jpchax/promo/editors/articles100.html>)*
2. Brennecke, J. F., Blanchard, L. A., Anthony, J. L., Gu, Z., Zarraga, I., and Leighton, D. T., “Separation of Species from Ionic Liquids,” *Clean Solvents - ACS Symposium Series 819*, M. Abraham and L. Moens, eds., 2002, pp. 82-96.
3. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Thermodynamic Properties and Solubilities of Gases in 1-*n*-butyl-3-methylimidazolium hexafluorophosphate”, *Journal of Physical Chemistry B*, 2002, 106, 7315-7320.
**recognized as one of 24 papers published since 2000 in the Journal of Physical Chemistry A & B receiving 100+ citations (<http://pubs.acs.org/journals/jpchax/promo/editors/articles100.html>)*
4. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Gas Solubilities in 1-*n*-butyl-3-methylimidazolium hexafluorophosphate”, *Ionic Liquids – ACS Symposium Series 818*, R. Rogers and K. Seddon, eds., 2002, pp. 260-269.
5. Brennecke, J. F., Anthony, J. L., and Maginn, E. J., “Gas Solubilities in Ionic Liquids”, *Ionic Liquids in Synthesis*, P. Wasserschied and T. Welton, eds., Wiley-VHC, 2003, pp. 81-93.

Curriculum Vitae

6. Anthony, J. L., Crosthwaite, J. M., Hert, D. G., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “Phase Equilibria of Gases and Liquids with 1-*n*-butyl-3-methylimidazolium tetrafluoroborate”, *Ionic Liquids as Green Solvents – ACS Symposium Series 856*, R. Rogers and K. Seddon, eds., 2003, pp. 110-120.
7. Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “Feasibility of Using Ionic Liquids for Carbon Dioxide Capture”, *International Journal of Environmental Technology and Management*, 2004, 4, 1/2, 105-115.
8. Cadena, C., Anthony, J. L., Shah, J. K., Morrow, T. I., Brennecke, J. F. and Maginn, E. J., “Why is CO₂ So Soluble in Imidazolium-Based Ionic Liquids?” *Journal of the American Chemical Society*, 2004, 126, 16, 5300-5308.
9. Crosthwaite, J. M., Ropel, L. J., Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “Phase Equilibria with Gases and Liquids of 1-*n*-butyl-3-methylimidazolium trifluoromethanesulfonylimide”, *Ionic Liquids IIIA: Fundamentals, Progress, Challenges, and Opportunities, Properties and Structure - ACS Symposium Series 901*, R. Rogers and K. Seddon, eds., 2005, pp. 292-300.
10. Anthony, J. L., Anderson, J. L., Maginn, E. J., and Brennecke, J. F., “Anion Effects on Gas Solubilities in Ionic Liquids”, *Journal of Physical Chemistry B*, 2005, 109, 6366-6374.
11. Anthony, J. L. and Davis, M. E., “Assembly of Zeolites and Crystalline Molecular Sieves”, in *Self-Organized Nanoscale Materials*, D. Lockwood and M. Adachi, eds., Series: Nanostructure Science and Technology, Springer Publishing, 2006, pp. 159-185.

Other Publications:

1. Brennecke, J. F., Scurto, A. M., Lubbers, C. M., Blanchard, L. A., Anthony, J. L., and Maginn, E. J., “Environmental Applications of Supercritical Fluids”, Proceedings of the 4th Brazilian Conference on Supercritical Fluids, Salvador, Bahia, Brazil, October 9-11, 2001.
2. Aki, S. N. V. K., Scurto, A. M., Anthony, J. L., and Brennecke, J. F., “Separation of Ionic Liquids from Organic and Aqueous Solutions Using Supercritical Fluids: Dependence of Recovery on the Pressure”, Proceedings of the 6th International Symposium on Supercritical Fluids, Versailles, France, April 28-30, 2003.
3. Anderson, D., Anthony, J. L., Chanda, A., Denison, G., Drolet, M., Fort, D., Joselevich, M., and Whitfield, J. R., “Green Approaches: A New Horizon for Future Scientists – Student Voices from the Pan-American Advanced Studies Institute on Green Chemistry”, *Green Chemistry*, 2004, 6, 1, G5 – G9.

Curriculum Vitae

Presentations – speaker underlined:

1. Anthony, J. L., Blanchard, L. A., Gu, Z., Maginn, E. J., and Brennecke, J. F., “Gas Solubility in Ionic Liquids”, 221st American Chemical Society National Meeting, San Diego, CA, April 3, 2001.
2. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Solution Thermodynamics of Imidazolium-Based Ionic Liquids and Water”, 221st American Chemical Society National Meeting, San Diego, CA, April 3, 2001.
3. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Solution Thermodynamics of Imidazolium-Based Ionic Liquids and Water”, 2001 Midwest Statistical Mechanics and Thermodynamics Conference, East Lansing, MI, May 7, 2001.
4. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Solubility of Gases in Ionic Liquids”, 33rd American Chemical Society Central/Great Lakes Joint Regional Meeting, Grand Rapids, MI, June 12, 2001.
5. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Thermodynamics of Gases in Ionic Liquids”, 5th Annual Green Chemistry and Engineering Conference, Washington D.C., June 26, 2001.
6. Brennecke, J. F., Scurto, A. M., Lubbers, C. M., Blanchard, L. A., Anthony, J. L., and Maginn, E. J., “Environmental Applications of Supercritical Fluids”, 4th Brazilian Meeting on Supercritical Fluids, Salvador, Bahia, Brazil, October 7-9, 2001.
7. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Thermodynamics of Gases in Ionic Liquids”, 2001 AIChE Annual Meeting, Reno, NV, November 4-9, 2001.
8. Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “Gas Separations with Ionic Liquids”, 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002.
9. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “Interactions of Permanent and Reactive Gases with Ionic Liquids”, 2002 Midwest Statistical Mechanics and Thermodynamics Conference, Pittsburgh, PA, May 12-13, 2002. (poster)
10. Anthony, J. L., Scurto, A. M., Crosthwaite, J. M., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “Processes Using Ionic Liquids and Permanent Gases”, 224th American Chemical Society National Meeting, Boston, MA, August 18-22, 2002.
11. Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., “CO₂ Capture by Ionic Liquids”, 2002 AIChE Annual Meeting, Indianapolis, IN, November 3-8, 2002.

Curriculum Vitae

12. Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., "Supported Ionic Liquid Membranes for Gas Separations", 2002 AIChE Annual Meeting, Indianapolis, IN, November 3-8, 2002.
13. Aki, S. N. V. K., Scurto, A. M., Anthony, J. L., and Brennecke, J. F., "Separation of Ionic Liquids from Organic and Aqueous Solutions Using Supercritical Fluids: Dependence of Recovery on the Pressure", 6th International Symposium on Supercritical Fluids, Versailles, France, April 28-30, 2003.
14. Shah, J. K., Anthony, J. L., Brennecke, J. F., and Maginn, E. J., "Monte Carlo Simulations of Gas Solubilities in Ionic Liquids", 7th Annual Green Chemistry and Engineering Conference, Washington D.C., June 23-26, 2003.
15. Aki, S. N. V. K., Crosthwaite, J. M., Anthony, J. L., Maginn, E. J. and Brennecke, J. F. "Thermodynamics of Ionic Liquids for Separations", Fifteenth Symposium on Thermophysical Properties, Boulder, CO, June 22-27, 2003.
16. Crosthwaite, J. M., Anthony, J. L., Belveze, L. S., Eike, D. M., Morrow, T. I., Shah, J. K., Kamat, N., Hert, D. G., Aki, S. N. V. K., Maginn, E. J., Stadtherr, M. A., Lamberti, G. A., and Brennecke, J. F., "Experimental, Modeling and Simulation Studies of Ionic Liquids", 7th Annual Green Chemistry and Engineering Conference, Washington D.C., June 23-26, 2003. (poster)
17. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., "Thermodynamic Properties and Applications of Ionic Liquids Based on Solubility Studies", 2003 Pan-American Advanced Studies Institute on Green Chemistry, Montevideo, Uruguay, July 6-17, 2003. (poster)
18. Anthony, J. L., Cadena, C., Maginn, E. J., and Brennecke, J. F., "Effects of Ionic Liquid Structure on Gas Solubilities", 226th American Chemical Society National Meeting, New York, NY, September 7-11, 2003.
19. Aki, S. N. V. K., Anthony, J. L., Crosthwaite, J. M., Scurto, A. M., and Brennecke, J. F., "Phase behavior of mixtures containing ionic liquids", 226th American Chemical Society National Meeting, New York, NY, September 7-11, 2003.
20. Shah, J. K., Anthony, J. L., Morrow, T. I., Brennecke, J. F., and Maginn, E. J., "Monte Carlo Simulations of Gas Solubilities in Ionic Liquids", 226th American Chemical Society National Meeting, New York, NY, September 7-11, 2003.
21. Anthony, J. L., "Molecular Design of Novel Materials for Environmental Processes", 2004 AIChE Annual Meeting, Austin, TX, November 7-12, 2004. (poster)

Curriculum Vitae

22. Anthony, J. L., Maginn, E. J., and Brennecke, J. F., “How Ionic Liquid Structure Affects Gases Solubilities”, 2004 AIChE Annual Meeting, Austin, TX, November 7-12, 2004.
23. Anthony, J. L. and Davis, M. E., “Microporous Zincosilicates: Synthesis and Characterization”, 2004 AIChE Annual Meeting, Austin, TX, November 7-12, 2004.
24. Anthony, J. L., McKeen, J. C., Chen, Z., Yushan, Y. and Davis, M. E. “Proton Conductivities of Microporous Zincosilicates”, 2005 AIChE Annual Meeting, Cincinnati, OH, October 30 – November 5, 2005.

Honors and Awards:

- K-State Mentoring Fellowship for Women and Minorities in the Sciences and Engineering, (AY 2005-2006, AY 2006-2007)
- Eli J. and Helen Shaheen Graduate School Award for Engineering (2004)
Recognizing top Ph.D. thesis in the College of Engineering at Notre Dame
- Pan-American Advanced Studies Institute on Green Chemistry (2003)
Fellowship to attend PASI in Montevideo, Uruguay
- John A. Kaneb Outstanding Graduate Student Teacher Award (2002)
- Bayer Predoctoral Fellowship (2001 - 2002)
- NSF-Graduate Research Trainee Fellowship (2000 - 2001)
- G.E. Fund Fellowship (1999 - 2000)
- Omega Chi Epsilon - Chemical Engineering Honor Society (1997 - 1999)
Vice President (1998 - 1999)
- Order of Omega - Greek Academic-Leadership Society (1998 - 1999)
- Carl Giroux Scholarship (1998 - 1999)
- O’Kelly Scholarship (1997)
- Scott K. Dailey Scholarship (1995 - 1997)
- J. Ranald Fox Scholarship for Freshmen (1995 - 1996)

Professional Societies and Other Activities:

- American Institute of Chemical Engineers (1998 - present)
- American Chemical Society (2000 - present)
- Sigma Xi Research Society (2006 – present)
- American Society of Engineering Education (2007 – present)
- Center for Sensors and Sensor Devices, Kansas State University (2005 – present)
- Consortium for Environmental Stewardship and Sustainability (CESAS), Kansas State University (2006 – present)

Curriculum Vitae

Students Supervised:

Doctoral

- Xin Sun (Selma) current

Masters

- Tyler Selbe current
- Tyler McGown defended January 2007
Infrared Spectroscopy for the Characterization of Porous Zincosilicate Materials and Their Use in Lead Capture

Undergraduate

- Jonathan King current
- Kyle Smith summer & fall 2006
Solubility of Ionic Liquid and Silica Mixtures

Committees/Service Activities:

Department

- Seminar Series Committee (with K. Hohn & L. Erickson)
- Graduate Student Recruiting Committee (co-chair with K. Walton)

College of Engineering

- Professional Performance Committee