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Education

- Ph.D. Chemical Engineering, Pennsylvania State University, 1991.
- B.A. Chemistry (with distinction), University of Rhode Island, 1986.
- B.S. Chemical Engineering, University of Rhode Island, 1985.
- B.A. Economics, Muhlenberg College, 1981.

Work Experience

- Associate Professor of Chemistry and Chemical Engineering, University of New Haven (1997-present).
- Assistant Professor of Chemistry and Chemical Engineering, University of New Haven (1990-1997, granted tenure 1995).
- Visiting Research Associate, Department of Chemical Engineering, University of Rhode Island (Spring 2001).
- Visiting Research Scientist, Institute of Thermo-Fluid Engineering and Science, Lehigh University, Bethlehem, PA (1994-1997).
- Instructor, Department of Chemical Engineering, Pennsylvania State University, University Park, PA (1989-1990).
- Research Assistant, Department of Chemical Engineering, Pennsylvania State University, University Park, PA (1986-1990).
- Teaching Assistant, Department of Chemical Engineering, Pennsylvania State University, University Park, PA (1986-1990).

Refereed Publications

- A. S. Gow, R. Errichetti, M. Seaman and O. Zabala, *SAFT-Q: A Simple Quartic Equation of State Analog of the Statistical Associating Fluid Theory*, **in preparation for submission to Fluid Phase Equilibria.**
- J. Smolen and A. S. Gow, *Linear, Cyclic and Branched Lennard-Jones Chain Quartic Equation of State Templates for Associating Fluid Model Development*, Fluid Phase Equilibria, **recommended for publication in special SAFT 25th Anniversary Edition after minor revision.**

A. S. Gow and R. Kelly, *A New Simple and Accurate Dispersion Term for Molecular-Based Equations of State*, Industrial & Engineering Chemistry Research, **in revision**.

A. S. Gow and R. Kelly, *Twenty-One New Theoretically-Based Cubic Equations of State for Athermal Hard-Sphere Chain Pure Fluids and Mixtures*, AIChE Journal, **61**, 1677-1690 (2015).

A. S. Gow, S. Demir and S. Alkhalidi, *Cubic and Quartic Hard-Sphere and Lennard-Jones Chain Equations of State as Foundations for Complex Fluid Modeling*, Fluid Phase Equilibria, **399**, 1-15 (2015).

A. S. Gow, III and A. S. Gow, Jr., *Microeconomic Theory of Chemical Production Processes: Application to VOC Air Stripping Operations*, Advances in Environmental Research, **8**, 267-285 (2003).

A. S. Gow, *Microeconomic Modeling and Analysis of Commodity Chemical Production in a Simple Plant*, New York Economic Review, **34**, 4-21 (2003).

A. S. Gow, *Engineering Production Functions for Technical and Economic Analysis of Popular Alkylation Technologies*, Proceedings of the 5th International Conference on Refinery Processing, AIChE Spring National Meeting, New Orleans, LA, March 2002, 543-553.

A. S. Gow, X. Guo, A. Lucia, *Simulation of Refrigerant Phase Equilibria*, Industrial and Engineering Chemistry Research, **36**, 2841-2848 (1997).

A. S. Gow, F. P. Stein, X. Guo, and A. Lucia, *Calculation of Refrigerant Mixture Phase Equilibria Using a Quasi-Regular Nonrandom Fluid Theory and Local Composition Mixing Rules*, Fluid Phase Equilibria, **116**, 60-67 (1996).

C.-L. Peng, F. P. Stein and A. S. Gow, *An Enthalpy-Based Cubic Equation of State Mixing Rule for Cross-Prediction of Excess Thermodynamic Properties of Hydrocarbon and Halogenated Refrigerant Mixtures*, Fluid Phase Equilibria, **108**, 79-102 (1995).

A. S. Gow, *Calculation of Vapor-Liquid Equilibria from Infinite-Dilution Excess Enthalpy Data Using the Wilson or NRTL Equation*, Industrial and Engineering Chemistry Research, **32**, 3150-3161 (1993).

A. S. Gow, *A Modified Clausius Equation of State for Calculation of Multicomponent Refrigerant Vapor-Liquid Equilibria*, Fluid Phase Equilibria, **90**, 219-249 (1993).

A. S. Gow and J. Phillips, *Microcalorimetric Study of Reactive Surface Area on Demineralized Coal Chars*, Energy and Fuels, **7**, 674-679 (1993).

A. S. Gow and J. Phillips, *Microcalorimetric Study of Oxygen Adsorption on Catalytically Promoted Gasification Chars: Mechanistic Evidence for Alkali and Alkaline-Earth Metal Carbonate Catalyzed Reactions*, *Energy and Fuels*, **6**, 526-532 (1992).

A. S. Gow and J. Phillips, *Calorimetric Study of Oxygen Adsorption on a High Surface Area Polymer Derived Carbon*, *Energy and Fuels*, **6**, 184-188 (1992).

A. S. Gow and J. Phillips, *Mechanistic Analysis of Chemisorption and Surface Interaction in Batch Calorimetric Systems: A New Approach*, *Industrial and Engineering Chemistry Research*, **31**, 193-204 (1992).

A. S. Gow and J. Phillips, *Microcalorimetric Study of Oxygen Adsorption on Catalytically Promoted Gasification Chars*, *Journal of Catalysis*, **132**, 388-401 (1991).

A. S. Gow and J. Phillips, *Mathematical Analysis of the Effects of Surface Heterogeneity in Chemisorption: A New/Old Model*, *Thermochimica Acta*, **148**, 173-182 (1989).

Conference Presentations

Stanley Sandler's Contributions to the Development of Equations of State, Accepted for presentation at the 2015 AIChE Fall Annual Meeting, Salt Lake City, UT, November 2015.

A New Quartic Equation of State for Real Chain Fluids, Accepted for presentation at the 2015 AIChE Fall Annual Meeting, Salt Lake City, UT, November 2015.

A Hybrid Free Energy of Micellization Model – SAFT-Type Equation of State for Aqueous Nonionic Surfactant Systems, SAFT 2015, A 25th Anniversary Celebration of the Statistical Associating Fluid Theory, Houston, TX, May 2015.

New Simple Lennard-Jones Linear and Branched Chain Equations of State within the Johnson and Marshall-Chapman TPT Frameworks, SAFT 2015, A 25th Anniversary Celebration of the Statistical Associating Fluid Theory, Houston, TX, May 2015.

New Simple Basis Terms for the SAFT Equations of State, SAFT 2015, A 25th Anniversary Celebration of the Statistical Associating Fluid Theory, Houston, TX, May 2015.

At the Interface Between Academic Statistical Mechanics and Industrial Process Design: Some Practical Guidelines for Equation of State Development, 2014 AIChE Fall Annual Meeting, Atlanta, GA, November 2014.

Real Chain Fluid Equations of State Derived from New Versions of Wertheim's Perturbation Theory, 2014 AIChE Fall Annual Meeting, Atlanta, GA, November 2014.

Model Shale Gas Properties from a Statistical Mechanical Perturbed Hard-Sphere Chain Cubic Equation of State, 2014 AIChE Spring Meeting & 10th Global Congress on Process Safety, New Orleans, LA, April 2014.

A Molecular Thermodynamic Perturbed Hard-Sphere Chain Cubic Equation of State for Hydrocarbons, 2014 AIChE Spring Meeting & 10th Global Congress on Process Safety, New Orleans, LA, April 2014.

A Statistically-Mechanically-Based Cubic Equation of State for Athermal Hard-Sphere Chains, 2013 AIChE Fall Annual Meeting, San Francisco, CA, November 2013.

A Molecularly-Constructed Cubic Equation of State for Nonassociating Fluids, 2012 AIChE Fall Annual Meeting, Pittsburgh, PA, October 2013.

A Predictive Molecular Thermodynamically-Based Cubic Equation of State for the Attractive Hard-Sphere Fluid Using Experimental Hard-Sphere Diameters, Northeast Regional Meeting of the American Chemical Society, New Haven, CT, October 2013.

An Optimized Molecular Thermodynamically-Based Cubic Equation of State for the Attractive Hard-Sphere Fluid Using a Universal Reference Hard-Sphere Diameter, Northeast Regional Meeting of the American Chemical Society, New Haven, CT, October 2013.

Coupling Bulk Phase Thermodynamic Constraints and Molecular Simulations, 2009 AIChE Fall Annual Meeting, Nashville, TN, November 2009.

Pricing, Output, and Investment Decisions Under Uncertainty: a Game Theoretic Approach for the Study of Chemical Process Industry Economic Behavior, AIChE National Spring Meeting, New Orleans, LA, April 2004.

Engineering-Based Microeconomic Tools for the Chemical Process Industries, AIChE National Spring Meeting, New Orleans, LA, March 2003.

Microeconomic Modeling and Analysis of Commodity Chemical Production in a Simple Plant, 55th Annual Conference of the New York State Economics Association, Buffalo, NY, October 2001. (**Won Outstanding Conference Paper Award, is published in *New York Economic Review***).

Economic Production Functions for Technical and Economic Analysis of Popular Alkylation Technologies, AIChE National Spring Meeting, New Orleans, LA, March 2002.

Transition Temperature Calculations for Polymer Mixtures, AIChE Annual Meeting, Reno, NV. November 2001.

Microeconomic Theory of Chemical Production Processes: Application to an Isothermal Continuous Stirred Tank Reactor (CSTR), 54th Annual Conference of the New York State Economics Association, Buffalo, NY. October 2001.

Statistical Thermodynamics of Self-Assembled Systems: A New Excess Free Model for the Description of Phase Equilibria in Ternary Aqueous Nonionic Surfactant-Alkane Solutions, AIChE Annual Meeting, Chicago, IL. November 1996.

Excess Enthalpy-Based Mixing Rules for Multiphase Refrigerant Mixtures, AIChE National Spring Meeting, New Orleans, LA. February 1996.

A Three-Liquid Theory and Quasi-Chemical Excess Free Energy Model for Description of Thermodynamic Properties and Phase Behavior of Aqueous Nonionic Surfactant Systems, AIChE Annual Meeting, Miami, FL. November 1995.

Statistical Thermodynamics of Self-Assembled Systems: A New Excess Free Energy Model for Description of Phase Equilibria in Aqueous Nonionic Surfactant Solutions, International Symposium on Micelles, Microemulsions and Monolayers: Quarter Century Progress and New Horizons, Gainesville, FL. August 1995.

Simulation of Refrigerant Mixture Phase Behavior Using Local Composition Mixing Rules, a Quasi-Regular Nonrandom Fluid Theory and a Complex Equation Solver, Seventh International Conference on Fluid Properties & Phase Equilibria for Chemical Process Design, Snowmass, CO. June 1995.

Prediction of Refrigerant Mixture Phase Equilibria Using Excess Enthalpy-Based Mixing Rules and a Complex Domain Equation Solver, AIChE National Spring Meeting, Houston, TX. March 1995.

Simulating Multiphase Separations with a Single Model, AIChE Annual Meeting, San Francisco, CA. November 1994.

Prediction of Vapor-Liquid Equilibria from Heat of Mixing Data for Systems Containing Hydrocarbons and Other Simple Fluids Using an Excess Enthalpy-Based Cubic Equation of State Mixing Rule, 44th Annual Canadian Chemical Engineering Conference, Calgary, Alta. October 1994.

Cross-Prediction of Thermodynamic Excess Properties of Halogenated Refrigerant Mixtures using a Cubic Equation of State with Isolation of Variables Technique, AIChE National Spring Meeting, Atlanta, GA, April 1994.

Prediction of Phase Equilibria with Local Composition EOS Mixing Rules Incorporating Excess Enthalpy Data, AIChE Annual Meeting, St. Louis, MO. November 1993.

Prediction of Multicomponent Phase Equilibria from an Equation of State with Local Composition Mixing Rules Incorporating Excess Enthalpy Data, 43rd Annual Canadian Chemical Engineering Conference, Ottawa, Ont. October 1993.

Microcalorimetric Study of the Adsorption of Oxygen on Chars Produced from Coals of Different Rank, 10th Annual Pittsburgh Coal Conference, Pittsburgh, PA. September 1993.

Microcalorimetric Study of Oxygen Adsorption on Catalytically Promoted Gasification Chars: Mechanistic Evidence for Alkali and Alkaline-Earth Metal Carbonate Catalyzed Reactions, AIChE Annual Meeting, Miami, FL. November 1992.

An Optimized Four-Parameter Equation of State for Pure Fluids and Fluid Mixtures, 42nd Annual Canadian Chemical Engineering Conference, Toronto, Ont. October 1992.

Low to Moderate Pressure Phase Equilibria Predictions from Excess Enthalpy Data Using Wohl's Expansion for the Excess Gibbs Energy, AIChE Annual Meeting, Los Angeles, CA. November, 1991.

Microcalorimetric Study of Oxygen Adsorption on Catalytically Promoted Gasification Chars, AIChE Annual Meeting, Chicago, IL. November, 1990.

Novel Microcalorimeter for the Analysis of Heat Evolution from Electrochemical Processes, 45th Annual Calorimetry Conference, Ann Arbor, MI. July 1990.

Microcalorimetric Study of Oxygen Adsorption on Gasification Chars: Effect of Catalyst and Pretreatment Temperature on Char Structure and Reactivity, 45th Annual Calorimetry Conference, Ann Arbor, MI. July 1990.

Microcalorimetric Study of Oxygen Adsorption on Coal Chars, 44th Annual Calorimetry Conference, Oak Ridge, TN. August 1989.

Mechanistic Analysis of Chemisorption: A New Approach, 44th Annual Calorimetry Conference, Oak Ridge, TN. August 1989.

Microcalorimetric Study of Oxygen Adsorption on Coal Chars, Nineteenth Biennial Conference on Carbon, Penn State Univ., Univ. Park, PA. June 1989.

Mechanistic Analysis of Chemisorption and Surface Interaction in Batch Calorimetric Systems: A New Approach, 28th Annual Spring Symposium of the Pittsburgh-Cleveland Catalysis Society, Pittsburgh, PA. March 1989.

Mathematical Analysis of the Effects of Surface Heterogeneity in Chemisorption: A New/Old Model, 9th International Conference on Thermal Analysis, Jerusalem, Israel. August 1988.

Invited Lectures

Tools for the Design of Simple Molecularly-Based Engineering Equations of State, 2012 AIChE Northeast Regional Conference, University of New Haven, West Haven, CT, March 2012.

A Molecularly-Constructed Cubic Equation of State for Simple and Complex Fluids, Amgen Seminar Series in Chemical Engineering, University of Rhode Island, Kingston, RI, February 2012.

Prediction of Phase Equilibria for Process Design: Some Simple Models and Methods, Department of Chemical Engineering, University of Rhode Island, Kingston, RI. February 2001.

Thermodynamic Properties of Environmentally Friendly Refrigerant Mixtures: From Measurement to Molecular Modeling, Department of Chemical Engineering, Lehigh University, Bethlehem, PA. October 1996.

Phase Equilibria for Environmentally Safe Refrigerant Mixtures: A Perspective on Experimental Techniques and Predictive Methods, Institute of Thermo-Fluid Science and Engineering, Department of Chemical Engineering, Lehigh University, Bethlehem, PA. August 1994.

Calculation of Phase Equilibria with Equation of State Mixing Rules Incorporating Infinite-Dilution Reduced Excess Enthalpy Data, Department of Chemical Engineering, University of Rhode Island, Kingston, RI. February 1993.

Sessions Chaired at Professional Meetings

Industrial Organization, 55th Annual Conference of the New York State Economics Association, Buffalo, NY October 2002.

Thermodynamics and Transport Properties: Refrigerants, AIChE Spring National Meeting, New Orleans, LA. March 1998 (Co-Chaired by M. Huber.)

Advances in Thermodynamics and Transport Properties I. Experiment and Correlation, AIChE National Spring Meeting, New Orleans, LA. February 1996 (Co-Chaired by F. P. Stein.)

Advances in Thermodynamics and Transport Properties II: Theory and Simulation, AIChE National Spring Meeting, New Orleans, LA. February 1996 (Co-Chaired by A. Lucia.)

Scientific and Professional Societies

American Institute of Chemical Engineers
Tau Beta Pi National Engineering Honor Society
Phi Lambda Upsilon National Honorary Chemical Society
New York Economics Association

Honors and Awards.

UNH Faculty Fellowship, Summer 2005 (\$2,400).
UNH Faculty Fellowship, Summer 2003 (\$3,250).
UNH Faculty Research Fund, 2002-03 (\$1,000).
NASA Connecticut Space Grant Consortium Faculty Research Grant, 2002-03 (\$5,000).
UNH Faculty Fellowship, Summer 2002 (\$3,250).
UNH Sabbatical Leave, Spring 2001 (half-year salary) Conduct Molecular Thermodynamics Research.
UNH Faculty Fellowship, Summer 1999 (\$3,250).
UNH Faculty Research Fund, 1999-2000 (\$2,000).
NASA CT Space Grant Consortium Collaborative Research Grant, Summer 1995 (\$5,000).
NASA Connecticut Space Grant Consortium Faculty Fellowship, Summer 1994 (\$5,000).
Faculty Research Fund, 1992-93 (\$1,000).
NASA Connecticut Space Grant Consortium Faculty Fellowship, Summer 1992 (\$5,000).
UNH Faculty Fellowship, Summer 1992 (\$3,000).
UNH Faculty Research Fund, 1991-92 (\$2,000).

Other Professional Activities

(a) Peer Reviewer for

Fluid Phase Equilibria (Elsevier Science Publishers)
Industrial and Engineering Chemistry Research (American Chemical Society)
Journal of Chemical and Engineering Data (American Chemical Society)
Journal of Thermodynamics (Hindawi Publishing Corporation)
Chemical Engineering Research and Design (Elsevier Science Publishers)
Petroleum Research Fund (American Chemical Society)
National Science Foundation

(b) Paper Discussant for

Michael Jerzmanowski (Brown University), *TFP Differences: Appropriate Technology vs. Efficiency*, 55th Annual Conference of the New York State Economics Association, Buffalo , NY . October 2002.