

STANLEY I. SANDLER

Present Employment: Department of Chemical Engineering, University of Delaware (since 1967)
Henry B. du Pont Chair (since 2000)
Director, Center for Molecular and Engineering Thermodynamics (since 1992)
Professor of Chemistry and Biochemistry (since 1993)
Editor, American Institute of Chemical Engineers Journal (2000-2011)

Place of Birth: New York City, New York

Education

1962 City College of New York, B.Ch.E.
1966 University of Minnesota, Ph.D. (Chemical Engineering)

Previous experience

University of Delaware

Interim Dean, College of Engineering (1992)
Henry B. du Pont Professor (1982-2000)
Chairman, Department of Chemical Engineering (1982-86)
Professor of Chemical Engineering (1973-82)
Associate Professor of Chemical Engineering (1970-73)
Assistant Professor of Chemical Engineering (1967-70)

University of Maryland

National Science Foundation Postdoctoral Fellow at the Institute for Molecular Physics, 1966 – 1967
Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California
NASA-ASEE Summer Faculty Fellow, 1970
Mobil Research and Development Corporation, Princeton, New Jersey, Engineer (Summer), 1977

Visiting and Honorary Professorships

Honorary Professorial Fellow, University of Melbourne (Australia), 2004 onwards.

ExxonMobil Professor, National University of Singapore, 2006-2009.

University of California, Berkeley

Visiting Professor, Department of Chemical Engineering, 1995

Technische Universität Berlin (West)

Visiting Professor at the Institut für Thermodynamik und Anlagentechnik, 1981, 1988, 1989

University of Queensland (Brisbane, Australia)

Visiting Professor, Department of Chemical Engineering, 1989, 1996

Universidad Nacional Del Sur (Bahia Blanca, Argentina)

Visiting Professor in Departamento Ingeniería Química and Planta Piloto de Ingeniería Química
1985

Imperial College (London)

Visiting Professor in the Department of Chemical Engineering and Chemical Technology 1973-1974

Miegunyah Fellow and Visiting Professor, University of Melbourne (Australia), 2003.

Harbin Institute of Technology (Manchuria), 2011-

NATIONAL AND INTERNATIONAL HONORS AND AWARDS

PPEPPD Eminence Award (first winner), Suzhou China, 2010.
Fellow, Institute of Chemical Engineers (Britain), 2004.
Chartered Engineer (Europe), 2004; Chartered Scientist (Europe), 2004
Miegunyah Fellow, Univ. of Melbourne (Australia), 2003.
E. V. Murphree Award, American Chemical Society, 1998.
Rossini Lecturer, Commission 1.2, International Union of Pure and Applied Chemistry, 1998. ^P (Lecture delivered in Porto, Portugal, July 1998)
National Academy of Engineering, 1996
Warren K. Lewis Award, American Institute of Chemical Engineers, 1996. ^P
Fellow, American Institute of Chemical Engineers, 1993.
Alexander von Humboldt Foundation Distinguished U.S. Senior Scientist Award, 1988. ^P
3M Chemical Engineering Lectureship Award, American Society for Engineering Education, 1988. ^P
Professional Progress Award, American Institute of Chemical Engineers, 1984; Award Lecture, 1985. ^P
Research Fellowship, Alexander von Humboldt Foundation (Bonn, West Germany), 1980-81 for research at the Technical University of Berlin.
Camille and Henry Dreyfus Foundation Faculty - Scholar, 1971-1976.*
National Science Foundation Postdoctoral Fellowship, 1966-67.

REGIONAL AND LOCAL HONORS AND AWARDS

Inaugural E. A. Mason Memorial Lecturer, Brown University, 1997. ^P
Merck Collaboratus Lecturer, Rutgers University, 1995
ICI Distinguished Lecturer, University of Alberta, 1994. ^P
Ashton Cary Lecture Award, Georgia Institute of Technology, 1994. ^P
Francis P. Alison Award, University of Delaware, 1993. ^P
Phillips Lectureship in Chemical Engineering, Oklahoma State University, 1993. ^P
Stanley Katz Memorial Lecture, City College of New York, 1992. ^P
Warren McCabe Lectureship, North Carolina State University, 1990.
Delaware Section Award, American Chemical Society, 1989.
Center for Advanced Study Fellowship, University of Delaware, 1986-87.
Henry Belin du Pont Professor of Chemical Engineering, since 1982.
Fellow, Center for Teaching Effectiveness, University of Delaware, 1978-79.
Eliza Ford Prize, City College of New York, 1962.

PLENARY AND KEYNOTE LECTURES

6th Coniigua, Mesa Directiva de Ingenieria Quimica, Puebla MX 2009
Thermo2006, Boulder CO 2006
25th Australian Colloid and Surface Science Student Conference, Beechworth, Victoria, Australia, 2006
CHEMECA 2003, Adelaide, Australia, 2003.
VI Iberoamerican Conference on Phase Equilibria and Fluid Properties for Process Design, Foz do Iguassu, Brazil, 2002.
At seminar in my honor, 5th International Symposium of E.S.I.Q.I.E., I. P. N., Mexico City, 2002
4th International Symposium of E.S.I.Q.I.E., I. P. N., Mexico City, 2000.
E.S.I.Q.I.E. 50th Aniversario Symposium, Mexico City, 1998.

^P Awarded to one chemical engineer nationwide each year.

^P Awarded to one chemist, chemical engineer or physicist worldwide every other year.

* Generally awarded to only one chemical engineer nationwide each year.

• Awarded to one faculty member at the University of Delaware each year.

IX Coloquio Anual De Termodinamica, Guadalajara, Mexico, 1994
12th Symposium on Thermophysical Properties, NIST, Boulder, CO, 1994
International Symposium on Thermodynamics in Chemical Engineering & Industry, Beijing, China, 1994
E.S.I.Q.I.E. Aniversario Symposium, Mexico City, 1993.
Czechoslovak-French-Polish Calorimetry and Experimental Thermodynamics, Prague, 1993.
NATO Advanced Study Institute on Supercritical Fluids, Antalya, Turkey, 1993.

BIOGRAPHICAL CITATIONS

Who's Who in the World, Who's Who in America, Who's Who in the East
Who's Who in Technology, Who's Who in Finance and Industry
American Men and Women of Science, Stirling's Executive Who's Who

PROFESSIONAL AFFILIATIONS

- American Institute of Chemical Engineers
- American Chemical Society
- Society of Sigma Xi (Research Society)
- Cosmos Club (Washington, DC)
- Tau Beta Pi (Honor Society)
- Omega Chi Epsilon (Honor Society)
- American Society for Engineering Education
- Institution of Chemical Engineers (Britian)

MISCELLANEOUS

Executive Director, Karl W. Böer Solar Energy Medal of Merit Trust, 1994-2000
Member, Cyclical Review Panel, Dept. of Chem. Eng., University of Melbourne (Australia), 1997
Head, Review Committee, Dept. of Chem. Eng., University of Notre Dame, 1998
Head, Review Committee, Dept. of Chem. Eng., Ben Gurion University (Israel), 2000
Member, Review Committee, all Chem. Eng. departments in Israel, 2009

CURRENT RESEARCH INTERESTS

- Applied thermodynamics and phase equilibrium
- Environmental engineering (fate of chemicals in the environment, safety)
- Computational quantum chemistry
- Computer-assisted engineering education
- Separations and purification (including of pharmaceuticals and proteins)
- Computer-aided process design
- Statistical mechanics

EDITORIAL AND ADVISORY BOARDS

- Journal of Supercritical Fluids, 2000-2006.
- Advisory Committee, Chemical Engineering Department, City College of New York, from 2004.
- International Scientific Committee, Thermodynamics Laboratory for Environmental Purposes, Polish Academy of Sciences, Warsaw, 2003-2006.
- Advisory Committee, Chemical Engineering Department, Princeton University, 1998-2006.
- Fluid Phase Equilibria, from 1996.
- Cambridge University Press Series in Chemical Engineering Advisory Board, from 1996-2006.
- Indian Chemical Engineer, Calcutta, from 1994.
- Thermodynamics Area Editor, Chemical Engineering Education, 1990-2009.
- Advisory Committee, Chemical Engineering Department, Carnegie-Mellon University, from 1990.

- Engineering Science and Technology, Univ. of Malaysia, from 1993.
- Industrial and Engineering Chemistry Research, 1992-1995.
- Journal of Chemical and Engineering Data, from 1991.
- J. Wiley & Sons Series in Chemical Engineering Advisory Board, 1991-1996.
- American Institute of Chemical Engineers Journal , 1985-1988.
- University of Delaware Press, 1985-1986.
- Advisory Committee, Chemical Engineering Department, Louisiana State University, 1984-1990.
- Board of Trustees of the CACHE Corporation, 1982-1987.
- Industrial and Engineering Chemistry Fundamentals, 1977-1979.

Technical Meeting Chairman, Organizer and Session Chairman

Founder and Co-Chairman of Engineering Foundation Conference on "Estimation and Correlation of Phase Equilibrium and Fluid Properties in the Chemical Industry" held at the Asilomar Conference Grounds, Pacific Grove, California, January, 1977. [The 15th meeting in this international series will take place in Chile in 2013.]

Co-Chairman of International Symposium on "Phase Equilibrium and Fluid Properties in the Chemical Industry," sponsored by DECHEMA and held in Berlin (Germany) in March 1980. [This meeting, following the one above, is now a triennial meeting alternating between North America and Europe.]

Co-Chairman of Chemical Engineering Faculty Summer School of the American Society of Engineering Education held in Santa Barbara, California, in August 1982.

Organizing Committee for National Bureau of Standards meeting on "Nonlinear Fluid Behavior" held June, 1982, in Boulder, Colorado.

Organizing Committee for 3rd International Symposium on "Phase Equilibrium and Fluid Properties in the Chemical Industry" held April, 1983, in Callaway Gardens, Georgia.

Chairman of National Science Foundation Workshop on "Thermodynamic Needs for the Decade Ahead: Theory and Experiment" held October, 1983, in Washington, DC

Founder and Chairman, Engineering Foundation Conference on "Chemical Engineering Education in a Changing Environment" held January, 1988, in Santa Barbara, California.

Organizing Committee for "International Symposium on Thermodynamics in Chemical Engineering and Industry" held June, 1988 in Beijing, China.

Founder and Organizer, Mid-Atlantic Thermodynamics Meetings. Held each 12 to 18 months since 1982 among Mid-Atlantic Universities.

Organizing Committee for "Second International Symposium on Thermodynamics in Chemical Engineering and Industry" held June, 1994 in Beijing, China.

Meeting Program Chairman, AIChE Annual Meeting, Miami, 1998.

Organizing Committee for the 3rd Joint AIChE-CIESC Meeting held October 2000 in Beijing, China.

Chair of technical sessions at the following meetings

- American Institute of Chemical Engineers (numerous)
- American Chemical Society
- American Society of Mechanical Engineers
- Several Triennial Symposia on "Phase Equilibrium and Fluid Properties in the Chemical Industry"
- Symposium on "The Thermodynamics of Aqueous Solutions with Industrial Applications," (co-sponsored by The American Institute of Chemical Engineers, the National Bureau of Standards, and the National Science Foundation, held in October 1979).

National Committee Activities

- National Research Council Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons II (2000-2002).
- National Research Council Committee on Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons (1997-1999).
- National Research Council Panel on the Evaluation of National Science Foundation Graduate Fellowship Applicants (1974).
- National Science Foundation Proposal Evaluation Panel (1980, 1986 and 1995).
- Subcommittee for the William H. Walker Award, American Institute of Chemical Engineers (1981).
- Subcommittee for the Allan P. Colburn Award, American Institute of Chemical Engineers (1983).
- Subcommittee for CAST Division Award, American Institute of Chemical Engineers (1983).
- Subcommittee for the Professional Progress Award, American Institute of Chemical Engineers (1985 and 1986).
- National Research Council/National Academy of Sciences/National Academy of Engineering Evaluation Panel for the Center for Chemical Engineering of the National Bureau of Standards (1985-87) and Chairman of Subpanel for the Thermophysics Division.
- AIChE Subcommittee on New Technology Educational Materials (1987-1989).
- Selection Board for Editor, Journal of Chemical Engineering Data, American Chemical Society (1990).
- Chair, Canvassing Committee, E. V. Murphree Award, American Chemical Society (1994).
- Undergraduate Education Committee, SACHE, American Institute of Chemical Engineers (1992-1996).
- Awards Committee, American Institute of Chemical Engineers (1997-2001).
- Warren K. Lewis Award Subcommittee, American Institute of Chemical Engineers (1997-9).

OTHER PROFESSIONAL ACTIVITIES

Miscellaneous

- Expert witness (intellectual property), Federal District Court, Dallas, Texas, 1993
- Expert witness (patent infringement), Federal District Court, Detroit, Michigan, 1997

Governmental Activities

Gubernatorial Appointee to the Energy Resources Conservation and Development Board of the State of Delaware, 1975-1976.

Chairman of Task Force on Fossil Fuel Characterization at Conference/Workshop on Thermodynamics organized by The Fossil Fuel Extraction Division of The Department of Energy, Tulsa, Oklahoma, June 1979.

Consultancies

- Institute for Responsible Management (of hazardous nuclear wastes) of the Consortium for Risk Evaluation with Stakeholder Participation (CRESP), since 2006
- Israel Council on Higher Education, 2009
- PaulHastings, LLP (Intellectual Property attorneys), 2008-2009
- Oblon, Spivak, McClelland, Maier & Neustadt, LLP (IP attorneys), 2006-2010
- Buchanan Ingersoll & Rooney, LLP (IP attorneys), 2007 - 2008
- Connolly Bove Lodge & Hutz, LLP (attorneys) 2005

- Aspen Technology, Cambridge, MA (Moderator, Web Site on Thermodynamics) 2000 - 2002
- Technical Advisory Board, Aspen Technology, Inc. 2001 - 2003
- Mobil Research and Development Corporation, Princeton, New Jersey, 1977 - 1997
- Mendes & Mount, LLP (attorneys), 1996 - 1977
- Sullivan & Cromwell (attorneys), 1997
- Chevron Oil Field Research Company, La Habra, California, 1979 - 1993.
- Union Carbide Corporation, S. Charleston, West Virginia, 1980 - 1993.
- Du Pont Company, Wilmington, Delaware, 1980 - 1982, 1986 - 1990.
- Educational Testing Service, 1992 - 1994.
- Rothschild, Barry and Myers (attorneys) 1992 - 1993.
- Columbia Gas Systems, Wilmington, Delaware, 1986.
- Control Data Corporation, 1984 - 85.
- ARCO Chemical Company, Newtown Square, Pennsylvania, 1983
- Continuous Learning Corporation (for Computer-Assisted Instructional Materials in Engineering Thermodynamics), Cambridge, Massachusetts, 1982.
- Michael G. Kesler & Associates, Inc., Consulting Engineers (for energy conservation in oil refineries), New Brunswick, New Jersey, 1980.
- Diamond Shamrock Corporation, Delaware City, Delaware, 1977 - 78.
- Delaware Contracting Company, Wilmington, Delaware, 1975 - 76.
- Martin-Marietta Corporation, Denver, Colorado, 1970.

INVITED MEDIA APPEARANCES

2SER (107.3 FM), Sydney Australia, March 2003 discussing chemical weapons.

Australian Broadcasting Company, Melbourne Station, March 18, 2003 discussing chemical weapons.

WOR, New York City am radio, March 25, 2003 discussing chemical weapons.

Australian Broadcasting Company, national morning radio program, April 2, 2003 discussing chemical weapons.

TVNZ (New Zealand Television) Breakfast Show (national morning television program), November 20, 2003 discussing chemical weapons.

PUBLICATIONS

Books

1. "Chemical and Engineering Thermodynamics" by S. I. Sandler. Published by J. Wiley and Sons, NY, 1977 (and solutions manual). Reprinted in Taiwan, Korea and several other Asian countries. Chosen as the featured selection of the McGraw-Hill Chemical Engineers Book Club, July 1978. Eleven printings.
 - a) "Termodinamica En La Ingenieria Quimica" by Stanley I. Sandler. Published by Interamericana S.A.de. C.V., Mexico 1981. Spanish language translation of the above.
 - b) Chinese translation of the above, prepared by the faculty of East China Chemical Institute and published in the People's Republic of China, 1985.
2. "Proceedings of the Engineering Foundation Conference on the Estimation and Correlation of Phase Equilibria and Fluid Properties in the Chemical Industry," edited by T. S. Storvick and S. I. Sandler. Published as American Chemical Society Symposium Series No. 60 in 1977.
3. "Thermodynamics of Aqueous Systems with Industrial Applications," Associate Editor with S. A. Newman, H. E. Barner and M. Klein. Published as American Chemical Society Symposium Series No. 133 in 1980. Also Associate Editor of Supplement of discussions published as American Chemical Society Symposium Series No. 133A in 1980.
4. "Phase Equilibria and Fluid Properties in the Chemical Industry." Proceedings of the 2nd International Conference, Berlin, March 1980," edited by H. Knapp and S. I. Sandler, EFCF Publication Series No. 11, DECHEMA (Frankfurt, W. Germany) 1980.
5. "Thermodynamic Needs for the Decade Ahead: Theory and Experiment. Volumes 1 and 2," Proceedings of a National Science Foundation Workshop, edited by S. I. Sandler, University of Delaware 1985.
6. "Chemical and Engineering Thermodynamics, Second Edition" by S. I. Sandler. J. Wiley & Sons, Inc., NY, 1989 (also solutions manual). Chosen as featured selection by McGraw-Hill Chemical Engineers Book Club, March, 1990. Numerous printings.
 - a) Wiley International Edition (W.I.E. paperback) of the above for distribution in Europe, Asia, Africa and Oceania, 1991.
 - b) Translation of the above prepared by faculty at the leading South Korean universities and published in the Republic of South Korea, 1991.
7. "Chemical Engineering Education in a Changing Environment" edited by S. I. Sandler and B. A. Finlayson. Published by the Engineering Foundation and distributed by the American Institute of Chemical Engineers, 1989.
8. "The Kinetic and Thermodynamic Lumping in Multicomponent Mixtures" edited by G. Astarita and S. I. Sandler. Published by Elsevier, Amsterdam, 1991.
9. "Models for Thermodynamic and Phase Equilibria Calculations" edited by S. I. Sandler. Published by Marcel-Dekker, New York, 1993.
10. "Modelling Vapor-Liquid Equilibria. Cubic Equations of State and Their Mixing Rules" by H. Orbey and S. I. Sandler. Published by Cambridge University Press, 1998.

11. "Chemical and Engineering Thermodynamics, Third Edition" by S. I. Sandler. J. Wiley & Sons, Inc., NY, published August 1998. [Total sales of all English-language editions in excess of 50,000, also translation of this edition prepared by faculty at the leading South Korean universities and published in the Republic of South Korea, 2001.]
12. "Chemical, Biochemical and Engineering Thermodynamics, Fourth Edition" by S. I. Sandler. J. Wiley & Sons, Inc., NY, published January 2006. [This is the retitled 4th edition of items 1, 6 and 11]
13. "An Introduction to Applied Statistical Thermodynamics" by S. I. Sandler, J. Wiley & Sons, Inc., NY, published November 2010.

National Reports

- “Review and Evaluation of Alternative Technologies for Demilitarization of Assembled Chemical Weapons”, published by the National Academy Press, Washington, DC, 1999. 242 pages. [This is a multi-authored committee report; in addition to contributing to several chapters, I had prime responsibility for Chapter 7]
 - “Evaluation of Demonstration Test Results of Alternative Technologies for Demilitarization of Assembled Chemical Weapons:”, published by the National Academy Press, Washington, DC, 2000. 35 pages. [Multi-authored committee report]
 - “Analysis of Engineering Design Study for Demilitarization of Assembled Chemical Weapons at Pueblo Chemical Depot” [Multi-authored committee report], published by the National Academy Press, Washington, DC, 2001. 95 pages.
 - “Evaluation of Demonstration Test Results of Alternative Technologies for Demilitarization of Assembled Chemical Weapons. A Supplemental Review for Demonstration II” [Multi-authored committee report] Published by the National Academy Press, Washington, DC, December, 2001. 49 pages
 - “Analysis of the Engineering Design Studies for Demilitarization of Assembled Chemical Weapons at Blue Grass Army Depot”. [Multi-authored committee report] published by the National Academy Press, Washington, DC, September 2002. 152 pages
- Numerous Letter Reports commissioned by the U.S. Department of Energy through the Consortium for Risk Evaluation with Stakeholder Participation on the treatment of radioactive wastes from nuclear weapons production at Hanford WA, Savannah River SC, and Idaho Falls ID, 2006-onwards.

Papers

1. "Nonstationary Diffusion" by S. I. Sandler and J. S. Dahler. *Physics of Fluids* **7**, 1743-1746 (1964).
2. "Kinetic Theory of Loaded Spheres. II" by S. I. Sandler and J. S. Dahler. *J. Chem. Phys.* **43**, 1750-1759 (1966).
3. "Transport Properties of Polyatomic Fluids. II. A Dilute Gas of Spherocylinders" by S. I. Sandler and J. S. Dahler. *J. Chem. Phys.* **44**, 1229-1237 (1966).
4. "Transport Properties of Polyatomic Fluids. IV. The Kinetic Theory of a Dense Gas of Perfectly Rough Spheres" by B. J. McCoy, S. I. Sandler and J. S. Dahler. *J. Chem. Phys.* **45**, 3485-3512 (1966) and *J. Chem. Phys.* **49**, 2468 (1968).
5. "Kinetic Theory of Loaded Spheres. III. Transport Coefficients for the Dense Gas" by S. I. Sandler and J. S. Dahler. *J. Chem. Phys.* **46**, 3520-3531 (1967).

6. "Kinetic Theory of Loaded Spheres. IV. Thermal Diffusion in a Dilute-Gas Mixture of D₂ and HT" by S. I. Sandler and J. S. Dahler. *J. Chem. Phys.* **47**, 2621-2630 (1967).
7. "Thermal Diffusion in a Loaded Sphere - Smooth Sphere Mixture: A Model for He-HT and ³He-HD" by S. I. Sandler and E. A. Mason. *J. Chem. Phys.* **47**, 4653-4658 (1967).
8. "Kinetic-Theory Deviations Form Blanc's Law of Ion Mobilities" by S. I. Sandler and E. A. Mason. *J. Chem. Phys.* **48**, 2873-2875 (1968).
9. "Thermal Diffusion in Polyatomic Gases: Nonspherical Interactions" by L. Monchick, S. I. Sandler and E. A. Mason. *J. Chem. Phys.* **49**, 1178-1184 (1968).
10. "The Thermal Conductivity of Polyatomic Gases" by S. I. Sandler. *Phys. Fluids* **11**, 2549-2555 (1968).
11. "The Transport Properties of Almost Lorentzian Mixtures" by S. I. Sandler and E. A. Mason. *Phys. Fluids* **12**, 71-77 (1969).
12. "Transport Properties of Partially Ionized Argon" by S. I. Sandler, E. J. Miller and E. A. Mason. *Proceedings of the Fifth Symposium on Thermophysical Properties*, A.S.M.E., 1970, p. 342-346.
13. "Thermal Separation of the Ortho and Para Forms of H₂ and D₂" by E. A. Mason and S. I. Sandler. *Chem. Phys. Letters.* **6**, 620-622 (1970).
14. "The Determination of Thermal Transport Properties from Thermal Transpiration Measurements" by G. Ganzi and S. I. Sandler. *J. Chem. Phys.* **55**, 132-140 (1971).
15. "Intermolecular Potential Parameter Combining Rules for the Lennard-Jones 6-12 Potential" by S. I. Sandler and J. K. Wheatley. *Chem. Phys. Letters* **10**, 375-378 (1971).
16. "The Surface Diffusion of Adsorbable Gases Through Porous Media" by L. A. Roybal and S. I. Sandler. *AIChEJ* **18**, 39-42 (1972).
17. "The Determination of Thermal Transport Properties from Thermal Transpiration Measurements. II" by J. C. Tao, G. C. Ganzi and S. I. Sandler. *J. Chem. Phys.* **56**, 3789-3793 (1972).
18. "Dynamic Shielding Effects in Partially Ionized Gases" by H. S. Hahn, E. A. Mason, E. J. Miller and S. I. Sandler. *J. Plasma Phys.* **1**, 285-292 (1972).
19. "The Viscosity and Thermal Conductivity of Moderately Dense Gas Mixtures" by W. A. Wakeham, J. Kestin, E. A. Mason and S. I. Sandler. *J. Chem. Phys.* **57**, 295-301 (1972).
20. "The Determination of Surface Diffusion Rates from Thermal Transpiration Measurements" by S. I. Sandler. *AIChE Journal* **18**, 856-858 (1972).
21. "Temperature Dependence of the Knudsen Permeability" by S. I. Sandler. *IEC Fund.* **11**, 424-427 (1972).
22. "Transport Properties of a Two-Temperature Partially Ionized Gas" by E. J. Miller and S. I. Sandler. *Phys. Fluids* **16**, 491-494 (1973).
23. "Liquid Structure Analysis by Energy-Scanning X-ray Diffraction" by J. M. Prober, J. M. Schultz and S. I. Sandler. *Nature Physical Science* **243**, No. 24, 32-34 (1973).
24. "Transport Properties in Ionized Gases" by S. I. Sandler. *A.I.P. Conf. Proceed.* **11**, 203-228 (1973).
25. "Determination of Thermal Transport Properties from Thermal Transpiration Measurements. III. Polar Gases" by J. C. Tao, W. Revelt and S. I. Sandler. *J. Chem. Phys.* **60**, 4475-4482 (1974).

26. "Statistical Mechanics of Linear Molecules. VII. Application of "Blip Function" Theory to Dense Fluids" by W. A. Steele and S. I. Sandler. *J. Chem. Phys.* **61**, 1315-1325 (1974).
27. "X-ray and Neutron Diffraction from Diatomic Liquids" by S. I. Sandler, A. DasGupta and W. A. Steele. *J. Chem. Phys.* **61**, 1326-1337 (1974).
28. "The Use of a Non-Spherical Reference Potential in Statistical Mechanical Perturbation Theory" by S. I. Sandler. *Molec. Phys.* **28**, 1207-1223 (1974).
29. "Determination of Molecular Pair Correlation Functions and Size and Shape Parameters for Diatomic Liquids from X-ray and Neutron Diffraction Data" by A. DasGupta, S. I. Sandler and W. A. Steele. *J. Chem. Phys.* **62**, 1769-1776 (1975).
30. "A Predictive Method for the Calculation of the Parameters of the Soft Cube Model" by D. B. Dadyburjor and S. I. Sandler. *J. Chem. Phys.* **62**, 2920-2921 (1975).
31. "The Blip Function Calculation of the Radial Distribution Functions in Liquid Mixtures" by S. I. Sandler. *Chemical Phys. Letters* **33**, 351-356 (1975).
32. "The Effect of the Gas-Surface Interaction on Thermal Transpiration" by D. B. Dadyburjor and S. I. Sandler. *J. Vacuum Sci. Technol.* **13**, 985-991 (1976).
33. "X-ray Diffraction Study of Liquid Carbon Disulfide" by S. I. Sandler and A. H. Narten. *Molec. Phys.* **32**, 1543-1558(1976).
34. "On the Use of Statistical Mechanical Models to Interpret X-Ray and Neutron Diffraction Data for Liquids" by A. DasGupta and S. I. Sandler. *Chemical Phys. Letters* **46**, 299-302 (1977).
35. Book Review "Chemical Engineering Vol. 1, 3rd Edition" by J. M. Coulson and R. F. Richardson. *American Scientist* **66**, 252 (1978).
36. "The Structure of Liquid Bromine. I. An X-Ray Diffraction Study" by A. H. Narten, R. Agrawal and S. I. Sandler. *Molec. Phys.* **35**, 1077-1086 (1978).
37. "The Structure of Liquid Bromine. II. Theory and Computer Simulation" by R. Agrawal, S. I. Sandler and A. H. Narten. *Molec. Phys.* **35**, 1087-1111 (1978).
38. "The Effects of Spin Polarization on the Thermal Conductivity of Polyatomic Gases" by L. A. Viehland, E. A. Mason and S. I. Sandler. *J. Chem. Phys.* **68**, 5277-5282 (1978).
39. Review of the new journal "Fluid Phase Equilibria," *AIChE Journal* **24**, 558 (1978).
40. "X-Ray Diffraction Study of Liquid Neopentane and Tertiary Butyl Alcohol" by A. H. Narten, S. I. Sandler and T. Rensi. General Discussion, The Faraday Division of the Chemical Engineering Society (England) **66**, 39-47 (1978).
41. "A Third Parameter for Use in Generalized Thermodynamic Correlations" by M. G. Kesler, B. I. Lee and S. I. Sandler. *IEC Fund.* **18**, 49-54 (1979).
42. "Industrial Problems in the Prediction of Thermodynamic Properties" by S. I. Sandler *Proceedings of the Conference on Chemical Thermodynamic Data on Fluids and Fluid Mixtures*, pp. 79-86, IPC Science and Technology Press, Guilford, England, 1979.
43. "On the Viscosity and Thermal Conductivity of Dense Gases" by S. I. Sandler and J. K. Fiszdon. *Physica* **95A**, 602-608 (1979).
44. "X-Ray Diffraction Study of Liquid Tertiary Butyl Alcohol at 26°C" by A. H. Narten and S. I. Sandler. *J. Chem. Phys.* **71**, 2069-2073 (1979).

45. "A Corresponding States Equation for Saturated Liquid Densities. II. Applications to the Calculation of Swelling Factors of CO₂-Crude Oil Systems" by A. S. Teja and S. I. Sandler, *AIChE Journal* **26**, 341-346 (1980).
46. "The Viscosity and Thermal Conductivity of Simple Dense Gases" by Y. Cohen and S. I. Sandler. *IEC. Fundamentals* **19**, 186-188 (1980).
47. "The Prediction of CO₂ Solubility and Swelling Factors for Enhanced Oil Recovery by C. A. Mulliken and S. I. Sandler. *IEC. Process Des. and Dev.* **10**, 709-711 (1980).
48. "A Generalization of the Corresponding States Principle Using Two Nonspherical Reference Potentials" by A. S. Teja, S. I. Sandler and N. C. Patel. *Chemical Engineering Journal (England)* **21**, 21-28 (1981).
49. Articles on the "Gibbs Phase Rule," "Isothermal Processes," and "Polytropic Processes," 5th Edition of the *Encyclopedia of Science and Technology* (McGraw-Hill, 1981).
50. "The Use of a Nonspherical Reference Potential in Statistical Mechanical Perturbation Theory. II. The Pair Correlation Function" by J. O. Valderrama, S. I. Sandler and Mark Fligner. *Molecular Physics* **42**, 1041-1057 (1981).
51. "Thermodynamic Models and Process Simulation" by S. I. Sandler, in the *Proceedings of the Engineering Foundation Conference on the Foundations of Computer-Aided Chemical Process Design*, R. S. H. Mah and W. D. Seider, eds., Eng. Found., NY, 1981, Vol. II, pp. 83-111.
52. "Pade Approximants, the Second Virial Coefficient and Perturbation Theory" by J. O. Valderrama and S. I. Sandler. *Chem. Phys. Letters* **84**, 119-122 (1981).
53. "X-Ray Diffraction Study and Models of Liquid Ethane at 105 and 181°K by S. I. Sandler, M. G. Lombardo, D. S. H. Wong, A. Habenschuss and A. H. Narten. *J. Chem. Phys.* **77**, 2144-2152 (1982).
54. Book Review "The Statistical Thermodynamics of Simple Liquids and Their Mixtures" by T. Boublik, I. Nezbeda and K. Hlavaty. *Chemical Engineering Journal* **23**, 115 (1982).
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382. "Comparison of Two Simulation Methods to Compute Free Energies and Partition Coefficients" by Li Yang, A. Ahmed and S. I. Sandler. Submitted for publication to *Fluid Phase Equilibria*, January 2012.
383. "Solvation Free Energies and Hydration Structure of N-methyl-p-nitroaniline" by A. Ahmed and S. I. Sandler. Submitted for publication to the *Journal of Chemical Physics*, January 2012.

Lessons Developed for the PLATO System of Computer-Assisted Instruction

| | <u>Stoichiometry</u> | <u>Brief Description</u> |
|------------|-----------------------|--|
| File Name: | MB3 | Mass balance with chemical reaction |
| | <u>Modeling</u> | |
| | TANKI | Modeling of a draining tank |
| | <u>Thermodynamics</u> | |
| | (*) EXPAN | Expansion of a gas |
| | (*) TURB | Steam turbine - use of Mollier diagram |
| | (*) REFRIG | Rankine refrigeration cycle |
| | (*) DESUPER | Desuperheater - use of steam tables |
| | (*) REPRESS | Compression of a gas |
| | (*) STATES1 | Use of corresponding states |
| | (*) STATES2 | Principle in chemical engineering |
| | (*) STATES3 | |
| | (*) BINMIX | Use of Othmer Still and instruction on activity coefficient modeling |
| | (*) REACT1 | Gas-phase chemical equilibrium |
| | (*) REACT2 | Chemical equilibrium involving solid and gas phases |
| | (*) REACTU1 | Utility program for the calculation of chemical equilibrium constants |
| | FUGAC1 | Modeling of vapor-liquid equilibrium |

The thermodynamics lessons indicated by (*) were published in the Control Data Corporation Authors Library (Minneapolis) in 1986 and were available on NOVANET.

Computer Programs Developed to Accompany Textbooks I Have Written

Chemical and Engineering Thermodynamics, 2nd edition, Wiley, 1989

(This was the first chemical engineering thermodynamics textbook to have an accompanying disk of programs for student use.)

QUICKBASIC programs (so students could make changes without needing a compiler) for pure fluid Peng-Robinson equation of state calculations, mixture Peng-Robinson equation of state calculations, calculations and database of parameters using the UNIFAC model, chemical equilibrium calculations and a program for calculating pure fluid properties with the complete base from the "Properties of Gases and Liquids" by Prausnitz et al.

Chemical and Engineering Thermodynamics, 3rd edition, Wiley, 1998

MATHCAD and QUICKBASIC programs as in the 2nd edition, and augmented with additional programs for mixture bubble point T or P calculations, dew point T or P calculations, flash calculations subject to various constraints using the PR, PRSV and SRK equations of state, VLE, LLE AND VLLE calculations using a variety of activity coefficient models. Available on included disk and Website.

Chemical, Biochemical and Engineering Thermodynamics, 4rd edition, Wiley, 2006

Many updated versions of the above programs also made available in MATLAB and, for a easier-to-use GUI, in compiled Visual Basic, as well as the earlier programs available on an included disk and Website.

Modelling Vapor-Liquid Equilibria. Cubic Equations of State and Their Mixing Rules (with H. Orbey) Cambridge University Press, 1998

A large collection of FORTRAN programs for a variety of phase behavior and thermodynamics properties using cubic equations of state and a collection of mixing rules. The programs, on a disk accompanying the book, were largely targeted at industrial users,

An Introduction to Applied Statistical Thermodynamics, 2009

A collection of MATLAB and FORTRAN-based programs for instructional Monte Carlo and molecular dynamics simulations, and virial coefficient and Percus-Yevick calculations, and a large collection of MATHCAD programs for a variety of statistical mechanical calculations. Available on included disk and Website.

INVITED LECTURES AND SEMINARS

(Many contributed lectures--those are not included)

Department of Chemical Engineering, University of California, Davis, March 1966
Department of Chemical Engineering, The Johns Hopkins University, February 1967
Department of Chemical Engineering, University of Delaware, March 1967
Department of Chemical Engineering, University of Florida, April 1970
Department of Chemical Engineering, City College of New York, April 1972
Department of Chemical Engineering, University of Pennsylvania, November 1972
Boltzmann Centennial Seminar, Brown University, January 1973
Materials Physics Division, Atomic Energy Research Establishment, Harwell, England, December 1973
Laboratoire de Physique Theoretique des Liquides, Universite Paris VI, January 1974
Physics Department, University of Surrey at Guilford (England), April 1974
Department of Chemistry and Chemical Engineering and Chemical Technology, Imperial College of Science and Technology (London), May 1974
Theoretical Physics Department, University of Newcastle Upon-Tyne (England), May 1974
Department of Chemical Engineering, State University of New York at Buffalo, December 1974
Chemistry Division, Oak Ridge National Laboratory, January 1975
Department of Chemical Engineering, Rice University, March 1975
Department of Chemical Engineering, University of Houston, March 1975
Chemistry Department, University of Delaware, September 1975
Mechanical and Aerospace Engineering Department, University of Delaware, May 1976
National Bureau of Standards Meeting on the Estimation of the Properties of Fluid Mixtures, Gaithersburg, Maryland, April 1977
Department of Chemical Engineering, Columbia University, October 1977
Department of Chemical and Biochemical Engineering, University of Pennsylvania, April 1978
Department of Chemical Engineering, North Carolina State University April, 1978
National Physical Laboratory Conference Chemical Thermodynamic Data on Fluids and Fluid Mixtures, Teddington, England, September 1978
Faraday Society Discussion No. 66 on the "Structure and Motion of Liquids," University of Kent at Canterbury, England, September 1978
Department of Chemical Engineering, Purdue University, November 1978
Department of Chemical Engineering, University of Minnesota, November 1978
40th Statistical Mechanics Meeting, Rutgers University, December 1978
Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland, January, 1979
Department of Chemical Engineering, University of Illinois, March 1979
Department of Chemical Engineering, Carnegie-Mellon University, October 1979
Department of Chemical and Petroleum Engineering, University of Pittsburgh, October 1979
Department of Chemical Engineering, The Johns Hopkins University, November 1979
International Conference on Phase Equilibria and Fluid Properties in the Chemical Industry, Berlin, West Germany, March 1980
Technical Center, Union Carbide Corporation, S. Charleston, W. Va., June 1980
Engineering Foundation Conference on the Foundations of Computer-Aided Chemical Process Design, Henniker, New Hampshire, July 1980
Department of Chemical Engineering, University of Rochester, December 1980
Chevron Oil Field Research Corporation, La Habra, California, December 1980
Tau Beta Pi, Delaware Alpha Chapter International Banquet, December 1980

Fachgebiet Thermodynamik, Gesamthochschule Duisburg, West Germany, February 1981
Institut für Thermo- und Fluidodynamik, Ruhr-Universität, Bochum, West Germany, February 1981
Institut für Thermodynamik und Anlagentechnik, Technische Universität Berlin, Berlin, West Germany, series of five lectures, February - June, 1981
Iwan N. Stranski-Institut für Physikalische und Theoretische Chemie, Technische Universität Berlin, Berlin, West Germany, March 1981
Tieftemperatur-Technik-Kolloquium of the Technische, Universität Berlin (West), Obertauern, Austria, March, 1981
Wolfson Department of Chemical Engineering, The Technion-Israel Institute of Technology, Haifa, Israel, Series of three lectures, April 1981
Linde Werksgruppe TVT, Munich, West Germany, April 1981
The Chemical Center, University of Lund, Lund, Sweden, May 1981
Institut für Physikalische Chemie und Elektrochemie, Universität Karlsruhe, Karlsruhe, West Germany, May 1981
BASF Aktiengesellschaft, Ludwigshafen, West Germany, May 1981
Institut für Technische Thermodynamik, Universität Kaiserslautern, Kaiserslautern, West Germany, May 1981
Institut für Technische Chemie, Universität Erlangen-Nürnberg, West Germany, June 1981
Institut für Technische Thermodynamik und Technische Verfahrenstechnik, Universität Stuttgart, West Germany, June 1981
Lehrstuhl für Chemie, Universität Regensburg, West Germany, July 1981
Department of Chemical Engineering, Cornell University, October 1981
Department of Chemical Engineering, Princeton University, November 1981
Departamento Ingeniería Química, Universidad Autónoma Metropolitana-Ixtapalapa, Mexico City, January 1982
Instituto Mexicano del Petróleo, Mexico City, January 1982
University of Delaware Chapter, Sigma Xi, March 1982
University of Delaware, Undergraduate Honors Program, May 1982
ASEE Summer School for Chemical Engineering Faculty, Santa Barbara, California, August 1982
Undergraduate Honors Program and Honor Societies Lecture, University of Delaware, August 1982
Joint Meeting of the CIESC-AIChE, Beijing, China, September 1982
Department of Chemical Engineering, Lehigh University, November, 1982
International Seminar of Chemical Engineering Education, Research & Training in Developing Countries, Calcutta, India, December 1982
Union Carbide Corporation, Technical Center, S. Charleston, West Virginia, August 1983
ARCO Chemical Company, Newtown Square, Pennsylvania, October 1983
Department of Chemical Engineering, University of Massachusetts, March 1984
Department of Chemical Engineering, University of Washington, Seattle, April 1984
Department of Chemical Engineering, University of Virginia, April 1984
Department of Chemical Engineering, Virginia Polytechnic Institute and State University, April 1984
Department of Chemical Engineering, Brigham Young University, September 1984
Department of Chemical Engineering, University of California, Berkeley, December 1984
Department of Chemical Engineering, Massachusetts Institute of Technology, March 1985
American Chemical Society Symposium on Equations of State, Miami Beach, Florida, May 1985
Ninth Symposium on Thermophysical Properties, Boulder, Colorado, June 1985
Departamento Ingeniería Química, Universidad Nacional Del Sur and Planta Piloto de Ingeniería Química (PLAPIQUI), Bahía Blanca, Argentina, July 1985

Instituto de Desarrollo Tecnológico Para La Industria Química (INTEC), Santa Fe, Argentina August 1985
 Instituto Petroquímico Argentina (IPA), Buenos Aires, Argentina, August 1985
 IUPAC/CODATA Meeting, Paris, France, September 1985
 Instituto Superior Técnico, University of Lisbon, Lisbon, Portugal, October, 1985
 Department of Chemical Engineering, University of Texas, Austin, Texas, October 1985
 Department of Chemical Engineering, The Pennsylvania State University State College, Pennsylvania, October 1985
 Professional Progress Award Lecture, 1985 National Meeting of the American Institute of Chemical Engineers, Chicago, Illinois, November 1985
 Mobil Research and Development Corporation, (a) Princeton, New Jersey, January and March, 1986; (b) Dallas, Texas, January 1986
 Union Carbide Corporation Technical Center, S. Charleston, West Virginia, August 1986
 Du Pont Company, Wilmington, DE, September 1986
 Chevron Oil Field Research Company, La Habra, CA, November 1986
 Department of Chemical Engineering, The Polytechnic Institute of New York, December 1986
 Department of Chemical Engineering, University of Akron, October 1987
 Department of Chemical Engineering, University of California - Los Angeles, January 1988
 Aspenworld 88 Conference, Amsterdam, The Netherlands, October 1988
 Department of Chemical Engineering, Ohio State University, October 1988
 Department of Chemical Engineering, University of Washington, Seattle, October 1988
 Department of Chemical Engineering, University of Florida, November 1988
 Fachgebiet Thermodynamik, Gesamthochschule Duisberg, West Germany, December, 1988
 Department of Chemical Engineering, University of Queensland, Australia, March 1989
 Shell Laboratories, Amsterdam, The Netherlands, May 1989
 Institute du Pétrole Française, Rueil, Malmaison, France, June 1989
 Institut für Thermodynamik und Reaktionstechnik, Technische Universität Berlin (West), series of lectures in June 1989
 Department of Physics, Technische Universität Berlin (West), July 1989
 Department of Chemical Engineering, Technical University of Budapest, Hungary, August 1989
 Department of Chemical Engineering, University of South Florida, February 1990
 Tieftemperatur-Thermodynamik Kolloquium, Serfaus, Austria, February 1990
 Mobil Research and Development Corporation, Paulsboro, NJ, two lectures at separate meetings, March 1990
 Union Carbide Corporation Technical Center, S. Charleston, WV, March 1990
 Department of Chemical Engineering, Michigan State University, April 1990
 Instytut Chemii Fizycznej, Polish Academy of Sciences, Warsaw, Poland, July 1990.
 Institut für Thermodynamik und Reaktionstechnik, Technische Universität Berlin, West Germany. Series of four lectures, July 1990.
 Department of Chemical Engineering, North Carolina State University, September 1990.
 Department of Chemical Engineering, University of Notre Dame, March 1991.
 Department of Chemical Engineering, University of Connecticut, March 1991.
 12th (European) Seminar on Applied Thermodynamics, Berlin, Germany, April 1991.
 Linde-KCA-Dresden GmbH, Dresden, Germany, May 1991.
 11th Symposium on Thermophysical Properties, Boulder, CO., June 1991.
 Dow Chemical Company, Midland, MI, August 1991.
 American Petroleum Institute Refining Meeting, Kansas City, MO, October 1991.
 Mobil Research and Development Corporation, Princeton, NJ, November 1991.

Department of Chemical Engineering, City College of New York, April 1992.
Union Carbide Corporation Technical Center, S. Charleston, WV, April 1992.
Air Products and Chemicals Co., Allentown, PA, April 1992.
University of Lyon, France, July 1992.
6th International Conference on Phase Equilibria and Fluid Properties in the Chemical Industry, Cortina d'Ampezzo, Italy, July 1992.
ASEE Summer School for Chemical Engineering Faculty, Bozeman, Montana, August 1992.
12th IUPAC International Conference on Chemical Thermodynamics, Snowbird, Utah, August 1992.
Institut für Thermodynamik und Reaktortechnik, Technische Universität Berlin, Germany, January 1993.
Department of Chemical Engineering, Texas A&M University, March 1993.
Department of Chemical Engineering, University of Maryland, March 1993.
Department of Chemical Engineering, Oklahoma State University, March 1993.
Department of Chemical and Nuclear Engineering, University of New Mexico, January 1994.
Department of Chemical Engineering and Materials Science, University of Minnesota, February 1994.
Verfahrenstechnik II, Technische Universität Hamburg-Harburg, Germany, April 1994.
Department of Chemical Engineering, Seoul National University, South Korea, May 1994.
Department of Chemical Engineering, Pohang Institute of Technology, South Korea, May 1994.
Department of Chemistry and Biochemistry, University of Delaware, November 1994.
Department of Chemical and Biochemical Engineering, Rutgers University, March, 1995.
7th International Conference on Fluid Properties and Phase Equilibria for Chemical Process Design, Snowmass, Colorado, June 1995.
Separation Technology IV: Advances and Opportunities in Environmental Separations. Snowbird, Utah, July 1995.
Department of Chemical Engineering, University of California, Berkeley. Lecture and two seminars, September and October, 1995.
K. C. Chao Retirement Symposium, Department of Chemical Engineering, Purdue University, September 1995.
DuPont Company, Wilmington, DE, September 1995
Department of Chemical Engineering, University of California, Santa Barbara, October 1995.
Department of Chemical Engineering, University of Pittsburgh, November 1995.
Department of Chemical Engineering, University of New South Wales, Sydney, Australia, March 1996.
Department of Chemical Engineering, Monash University, Melbourne, Australia, April 1996.
Department of Chemical Engineering, University of Melbourne, Australia, April 1996.
Department of Chemical Engineering, University of Queensland, Brisbane, Australia, April 1996.
14th IUPAC Conference on Chemical Thermodynamics, Osaka, Japan, August 1996.
Department of Chemical Engineering, McGill University, Montreal, Canada, November 1996.
Departments of Chemistry and Chemical Engineering, Brown University, March, 1997.
Department of Chemical Engineering, University of Cape Town, South Africa, June 1997.
Department of Chemistry, University of Natal, Durban, South Africa, June 1997.
South African Chemical Institute, Kwa Zulu-Natal Section, Durban, South Africa, June 1997.
Department of Chemical Engineering, University of Natal, Durban, South Africa, June 1997.
School of Chemistry, Federal University of Rio de Janeiro, Brazil, August, 1997.
PETROBRAS Research Center, Rio de Janeiro, Brazil, August, 1997.
Department of Chemical Engineering, Federal University of Bahia, Salvador, Brazil, August, 1997.
Technical Center, Union Carbide Corporation, S. Charleston, W. Va., October, 1997.
8th International Conference on Phase Equilibria and Fluid Properties for Product and Process Design, Noordwijkerhout, The Netherlands, April, 1998.

3rd International Symposium of the E. S. I. Q. I. E., Instituto Politecnico Nacional, Mexico City, series of lectures, May 1998.
Bayer Chemical Company, Leverkusen, Germany, August, 1998
Department of Chemical Engineering, Princeton University, September, 1998.
Department of Chemical Engineering, State University of New York at Buffalo, June, 1999.
Department of Chemical Engineering, Stevens Institute of Technology, Hoboken, NJ, November, 1999.
Department of Chemical Engineering, University of South Carolina, December, 1999.
Department of Chemical Engineering, University of Wisconsin, May, 2000.
4th International Symposium of the E. S. I. Q. I. E., Instituto Politecnico Nacional, Mexico City, short course, May 2000.
14th Symposium on Thermophysical Properties, Boulder, CO., June 2000.
3rd Joint Meeting of the CIESC-AIChE, Beijing, China, September 2000.
Institute of Chemistry, Chinese Academy of Science, Beijing, China, September 2000.
Department of Chemical Engineering, New Jersey Institute of Technology, September 2000.
LEGEP, University of Lyon, France, April 2001.
IUPAC 2nd Workshop on Thermochemical, Thermodynamic and Transport Properties of Halogenated Hydrocarbons and Mixtures, Paris, France, April 2001.
Centre Reacteurs et Processus, Ecole des Mines de Paris, Fontainebleau, France, April 2001.
AspenTech Technical Ladder Retreat, Colorado Springs, May 2001.
9th International Conference on Properties and Phase Equilibria for Product and Process Design, Kurashiki, Japan, May 2001.
Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan, May 2001.
Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan, May 2001.
NIST Workshop on Predicting the Thermophysical Properties of Fluids by Molecular Simulation, Gaithersburg, MD June 2001.
Department of Chemical Engineering, University of Adelaide, Australia, September 2001.
School of Chemical Engineering, Curtin University of Technology, Perth, Australia, September 2001.
Department of Chemical Engineering, Iowa State University, October 2001.
Department of Chemical Engineering, Clemson University, February 2002.
Department of Chemistry, University of Minnesota, Minneapolis, February 2002.
Department of Chemical Engineering, Tulane University, March 2002.
Department of Chemical Engineering, University of Washington, April 2002.
XIVth Russian Thermodynamics Conference, St. Petersburg, Russia, July 2002.
ASEE Summer School for Chemical Engineering Faculty, Boulder, CO, July 2002.
Aspen World 2002, Washington, DC, October 2002.
Department of Chemical Engineering, University of Cincinnati, December 2002.
Public lecture “Chemical Weapons: What are they, where are they and what are we doing about them”, University of Delaware, January 2003.
Miegunyah Fellowship Public lecture “Chemical Weapons: What are they, where are they and what are we doing about them”, University of Melbourne, Australia, March 2003.
Victorian Joint Chemical Engineering Committee, Melbourne, Australia, April 2003.
Department of Chemical Engineering, University of Natal, Durban, South Africa, May 2003.
Faculty of Engineering, University of Newcastle, Australia, July 2003.
Division of Chemical Engineering, University of Queensland, Brisbane, Australia, July 2003.
Department of Chemical and Biomolecular Engineering, University of Melbourne, Australia, August 2003.
Department of Chemical Engineering, Monash University, Melbourne, Australia, August 2003.
Physics Department, University of Melbourne, Australia, September 2003.

Centre for Molecular Simulation, School of Information Technology, Swinburne University of Technology, Melbourne, Australia, September 2003.

CSIRO, Molecular Sciences Division, Clayton, Melbourne, Australia, October 2003.

Department of Chemical and Biomolecular Engineering, University of Melbourne, Australia, October 2003.

Department of Chemical Engineering, University of Sydney, Australia, October 2003.

School of Chemical Engineering and Industrial Chemistry, University of New South Wales, Australia, October 2003.

Department of Chemical and Materials Engineering, University of Auckland, New Zealand, November 2003.

Royal Society of New Zealand, Rotorua Section, November 2003.

Department of Chemical and Biochemical Engineering, Tufts University, February 2004.

10th International Conference on Properties and Phase Equilibria for Product and Process Design, Snowbird, Utah, May 2004.

Summer School, "Thermodynamics for the Environment" Polish Academy of Sciences, Hel, Poland, September 2004, series of lectures.

Separations Technology VI, Engineering Conferences International, Fraser Island, Australia, October 2004.

L. T. Fan Lecture, Department of Chemical Engineering, Kansas State University, October 2005.

Department of Chemical Engineering, Monash University, Melbourne, Australia, January 2006.

Iis Lahari Lectureship, Department of Chemical Engineering, Vanderbilt University, April 2006.

Department of Chemical and Biomolecular Engineering, National University of Singapore, July 2006

Boris Musulin Lecture Series (3), Physics, Chemistry and Biochemistry Departments, Southern Illinois University, July 2007.

Blue-Green Lecture, Joint Lecture University of Michigan/Michigan State, November 2007

Department of Chemical Engineering, Yale University, May 2008

Pizer Lecture, Department of Chemical Engineering, University of Kansas, May 2008

Departments of Chemical Engineering and Mechanical Engineering, Worcester Polytechnic Institute, October 2008

Congreso Internacional de Ingenieria Quimica y Alimentos (chosen by undergraduate students in Mexico to be a featured lecturer), Puebla, Mexico, February 2009

Texas Distingusihed Faculty Lectureship, Department of Chemical Engineering, University of Texas, Austin, November 2009.

Lectures (2) at Invited-only Symposia, AIChE National Meeting, Nashville TN, November 2010

Kelly Distinguished Lecturer, School of Chemical Engineering, Purdue University, April 2011.

Universidad Tecnologia Nacional, Buenos Aires, Argentina (by two-way closed-circuit TV) September 2011.

Lectures (2) at two Invited-only Symposia, AIChE National Meeting, Minneapolis MN, Octoberber 2011