

CURRICULUM VITAE

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JAN V. SENGERS

Distinguished University Professor Emeritus and Research Professor, Institute for Physical Science and Technology

Distinguished University Professor Emeritus, Department of Chemical and Biomolecular Engineering

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PERSONAL DATA:

Born 27 May 1931, Heiloo, The Netherlands
U.S. citizen since 1977

EDUCATION:

University of Amsterdam	Candidate (Physics and Mathematics)	1952
	Doctorandus Major: Physics	1955
	Minors: Mathematics Mechanics	
	Ph.D. (Physics)	1962

HONORS AND AWARDS:

Candidate cum laude	1952
Doctorandus cum laude	1955
Ph.D. cum laude	1962
NBS Distinguished authorship award	1966
NBS Superior performance award	1966
NBS Distinguished authorship award	1968
NBS Outstanding performance award	1968
NBS Distinguished authorship award	1969
NBS Distinguished authorship award	1970
Elected Member of Sigma Xi	1970
NBS Distinguished authorship award	1977
Elected Fellow of American Physical Society	1977
Elected Correspondent of Royal Netherlands Academy of Sciences	1980
Elected Fellow of American Association for the Advancement of Science	1984
NSF creative and productive grant extension award	1985-1987
Annual Bicentennial Commemoration Lectureship in Chemical Engineering, Louisiana State University	1989
Touloukian Award of the American Society of Mechanical Engineers	1991
Subject of Honorary Editorial, Journal of Supercritical Fluids 4, pp. 89-90	1991
Doctor Honoris Causa, Technical University Delft	1992
Elected Honorary Member of Golden Key National Honor Society	1995

HONORS AND AWARDS (continued):

Faculty of the Year Award, AIChE Student Chapter, University of Maryland	1996
Citation Award for advancement of the engineering profession in the field of utility and industrial steam generation, ASME Research and Technology Committee on Water and Steam in Thermal Power Systems	1996
Elected Fellow of American Society of Mechanical Engineers	1996
Named Distinguished University Professor, University of Maryland	1997
Certificate of Recognition, President's Commission on Ethnic Minority Issues, University of Maryland	1998
Elected Member of Sigma Circle of Omicron Delta Kappa National Leadership Honor Society	1998
Named Associate Editor Emeritus of the International Journal of Thermophysics	1999
Elected Fellow of American Institute of Chemical Engineers	1999
Touloukian Memorial Lecturer, 14 th Symposium on Thermophysical Properties, Boulder, CO	2000
Elected Honorary Fellow of the International Association for the Properties of Water and Steam	2000
Elected Fellow of the World Innovation Foundation	2002
Elected Academician Emeritus of the International Academy of Refrigeration of the Russian Federation	2002
Elected Member of Cosmos Club, Washington, DC	2003
General lecturer, Centennial Celebration of the Royal Spanish Physical Society, Madrid	2003
Elected Fellow of International Union of Pure and Applied Chemistry	2004
Distinguished International Service Award of the University of Maryland	2008
A. James Clark School of Engineering Faculty Outstanding Commitment Award, University of Maryland	2011
Honorary 80 th birthday celebration sessions 01A00 and 01A01, Annual Meeting of American Institute for Chemical Engineers, Minneapolis, MN.	2011
Featured in <i>Fifty Years of Breakthrough Discoveries in Fluid Criticality</i> , M.A. Anisimov, International Journal of Thermophysics 32 , 2001 (2011)	2011
Granted Life Membership by American Society of Mechanical Engineers	2011
Best Presentation Diploma to R. Perkins, J. Sengers, I.M. Abdulagatov, and M. Huber at the All-Russian Conference on "Physics of Phase Transitions"	2012
Guest of Honor, 108 th Statistical Physics Conference, Rutgers University, December 16-18	2012
Certificate of Recognition of the American Chemical Society for Fifty Years of Service	2014
Honorary Member of the Organizing Committee of an International Symposium on "Phase Transitions and Critical Phenomena" dedicated to the 80 th birthday of I.K. Kamilov, Makhachkala, Dagestan, Russia	2015
Inducted in Dean's Circle, A. James Clark School of Engineering, University of Maryland	2016

POSITIONS:

Distinguished University Professor Emeritus Institute for Physical Science and Technology and Department of Chemical and Biomolecular Engineering, University of Maryland	1999-present
Research Professor Institute for Physical Science and Technology, University of Maryland	2000-present
Affiliate Professor of Mechanical Engineering, University of Maryland	1996-1999, 2002-present
Guest Researcher, National Institute of Standards and Technology	2001-present
Profesor Visitante, Departamento Física Aplicada I, Universidad Complutense, Madrid,	2007
Distinguished University Professor Department of Chemical Engineering and Institute for Physical Science and Technology	1997-1999
Professor and Chair, Department of Chemical Engineering, University of Maryland	1994-1999
Affiliate Professor of Chemical Engineering, University of Maryland	1991-1994
Professor, Institute for Physical Science and Technology, University of Maryland	1976-1999
Physicist, National Institute of Standards and Technology (intermittent)	1988-2001
Physicist, National Bureau of Standards (intermittent)	1968-1988
Director, Chemical Physics Program, University of Maryland	1981-1985
Acting Director, Chemical Physics Program, University of Maryland	1978-1981
Dr. Cornelis Gelderman Visiting Professor of Technical Physics, Technical University, Delft, The Netherlands	1974-1975
Professor, Institute for Molecular Physics, University of Maryland	1974-1976
Associate Professor, Institute for Molecular Physics, University of Maryland	1968-1974
Physicist, National Bureau of Standards (full time)	1963-1968
Research Associate, Van der Waals Laboratory, University of Amsterdam	1955-1963
Research Assistant, Van der Waals Laboratory, University of Amsterdam	1953-1955
Teaching Assistant, Natuurkundig Laboratorium, University of Amsterdam	1952-1953

PROFESSIONAL SOCIETIES:

Royal Netherlands Academy of Sciences (correspondent)
American Institute of Chemical Engineers (fellow)
American Society of Mechanical Engineers (fellow)
American Physical Society (fellow)
American Association for the Advancement of Science (fellow)
International Association for the Properties of Water and Steam (honorary fellow)
International Union of Pure and Applied Chemistry (fellow)
World Innovation Foundation (fellow)
American Chemical Society
European Physical Society
Dutch Physical Society
Sigma Xi
Golden Key National Honor Society (honorary member)
University of Maryland Link of the Order of the Engineer
Omicron Delta Kappa National Leadership Honor Society

PROFESSIONAL ACTIVITIES:

Executive Member International Association for Transport Properties	2001-present
Associate Editor Emeritus of the International Journal of Thermophysics	1999-present
Member Task Group of the International Association for the Properties of Water and Steam for the transport properties of H ₂ O and D ₂ O	1991-present
Member ASME Research and Technology Committee on Water and Steam in Thermal Power Systems	1989-present
Member Working Group on thermophysical properties of aqueous systems of the International Association for the Properties of Water and Steam	1985-present
Member Task Group of the International Association for the Properties of Water and Steam for the thermophysical properties of supercooled water	2014-2015
Member ASME Committee on the Properties of Steam	1976-present
Member Advisory Editorial Board of Physica A	1975-2020
Member Joint ASME-AIChE Committee on Thermophysical Properties	2003-2015
Member ASME Heat Transfer Division Committee K-7 on Thermophysical Properties	1976-2015
Member Scientific Committee for the 11 th International Meeting on Thermodiffusion IMT11	2013-2014
Member Scientific Committee of the 6 th International Workshop on Non-Equilibrium Thermodynamics	2011-2012
Member Selection Committee (BAC) "Chair of Engineering Thermodynamics at Technical University Delft	2010
Member Scientific Committee for the 9 th International Meeting on Thermodiffusion IMT9	2009-2010
Chair of Project 2008-014-1-100 on Applied Thermodynamics, Physical and Biophysical Chemistry Division, International Union of Pure and Applied Chemistry	2008-2010
Co-organizer (with D. Bedeaux) of sessions on Nonequilibrium Thermodynamics at the 18 th Symposium on Thermophysical Properties, Boulder, CO	2011-2012
Co-organizer (with D. Bedeaux) of sessions on Nonequilibrium Thermodynamics at the 17 th Symposium on Thermophysical Properties, Boulder, CO	2008-2009
Member Scientific Committee for the 8 th International Meeting on Thermodiffusion IMT8	2007-2008

Co-organizer (with M.A. Anisimov) of a Symposium on Nonequilibrium, Metastable and Critical States, 15 th International Conference on the Properties of Water and Steam, Berlin, Germany	2007-2008
Session organizer (with Venkat Ganesan) for 2006 Annual Meeting of AIChE	2006
Co-organizer (with Director of J.M. Burgers Center) of 2006 Burgers Day Symposium in The Netherlands	2005-2006
Chair Visitation Committee to review physics, applied physics and astronomy education at the Universities of Flanders in Belgium	2004-2008
Member Scientific Committee for the 7 th International Meeting on Thermodiffusion IMT7	2004-2006
Member Scientific Advisory Board of Conference on Thermal Forces – IMT6	2003-2004
Member Touloukian Award Subcommittee of the ASME Heat Transfer Division	1991-2002
Chair Touloukian Award Subcommittee of the ASME Heat Transfer Division	1998-2002
Session Organizer, 14 th International Conference on the Properties of Water and Steam, Kyoto, Japan	2003-2004
Member NASA Science Concept Review Panel for a spaceflight experiment	2002
Member, Editorial Board of Molecular Physics	1999-2001
Chair, International Visitation Committee to review physics, technical physics and astronomy education at the Universities in The Netherlands	2001-2002
Member, Executive Committee, National Capital Section of the AIChE	1996-2000
Member Administration Committee, Council for Chemical Research	1994-1999
Member, Center for Environmental Energy Engineering, University of Maryland at College Park	1991-1999
Associate Editor of the International Journal of Thermophysics	1989-1999
Editor (USA) of Journal of Non-Equilibrium Thermodynamics	1994-2000
Member, Scientific Committee, 5 th International Meeting on Thermodiffusion	2001-2002
Member, Scientific Advisory Board, 4 th International Meeting on Thermodiffusion	1999-2000
Member Evaluation Committee of Institute for Chemical Reaction Science, Tohoku University, Sendai, Japan	1998-1999

Chair, International Visitation Committee to review physics, technical physics and astronomy education at the Universities in The Netherlands	1996-1997
Member, Program Committee 68th Annual Meeting of the Society of Rheology	1996-1997
Session Organizer Winter Annual Meeting of AIChE	1997
Session Organizer Winter Annual Meeting of AIChE	1995
Co-Chairman, Program Committee of 12th International Conference on the Properties of Water and Steam	1992-1994
Member Task Group of International Association for the Properties of Water and Steam for a new scientific formulation of the thermodynamic properties of water and steam; Chairman since 1994	1992-1996
Member Touloukian Award Subcommittee of the ASME Heat Transfer Division	1987-1990
Co-organizer of 2nd U.S.-Japan Seminar on Thermophysical Properties	1987-1988
Member International Review Panel to evaluate the F.O.M. scientific program in statistical physics in The Netherlands	1987
Member Subcommittee of IUPAC Commission I.2 on the Transport Properties of Fluids	1985-2001
Chairman (with A. Cezairliyan) of the 10th Symposium on Thermophysical Properties	1985-1988
Member National Research Council Review Panel for the NAS Soviet and East European Exchange Program	1986-1987
Member Editorial Board of the International Journal of Thermophysics	1979-1998
Member Working Group II on Transport Properties of the International Association for the Properties of Steam	1977-1984
Co-organizer of 1st Japan-U.S. Seminar on Thermophysical Properties	1983
Chairman, ASME Research Committee K-7 on Thermophysical Properties	1978-1982
Consultant to the Council of Graduate Schools to Review the Doctoral Program in Physics at Temple University	1981
Chairman, 8th Symposium on Thermophysical Properties	1977-1981
Session Organizer, Winter Annual Meeting of the American Society of Mechanical Engineers	1979
Member, Special Committee on Transport Properties of the International Association for the Properties of Steam	1974-1977

Member, Overstudy Committee on Fluid Physics, Thermodynamics and Heat Transfer in Space Advisory to NASA	1974-1975
Chairman, Gordon Conference on the Chemistry and Physics of Liquids	1971-1973
Member, Editorial Committee, International Centennial Boltzmann Seminar on Transport Phenomena, Brown University	1970
Vice Chairman, Gordon Conference on the Chemistry and Physics of Liquids	1969-1971
Member, National Research Council Panel Advisory to Cryogenics Division of the National Bureau of Standards, Boulder, Colorado	1968-1969
Member, Editorial Committee, Proceedings of the International Seminar on the Transport Properties of Gases, Brown University	1964

SERVICE UNIVERSITY OF MARYLAND (2000-present):

Member Burgers Board for Fluid Dynamics	2003-present
Chair, Burgers Board for Fluid Dynamics	2003-2006
Member Communications Committee, Institute for Physical Science and Technology	2008-2018
Chair Organizing Committee celebrating Michael E. Fisher	2012
Chair International Symposium on Mesoscale and Fluctuation Thermodynamics, University of Maryland, April 27, 2012	2012
Member Search Committee for Personnel Coordinator Institute for Physical Science and Technology	2011
Member Search Committee for EERC Research Director in Mechanical Engineering	2006-2007
Member Search Committee for Research Coordinator Institute for Physical Science and Technology	2005
Member Distinguished University Professor Selection Committee	2004-2006
Member Facilities and Services Committee Institute for Physical Science and Technology	2002-2006
Member Local Organizing Committee of International Conference on Parallel Computational Fluid Dynamics	2005
Co-Chair, Mid-Atlantic Meeting on Thermodynamics in honor of S.C. Greer	2005
Chair, Facilities and Services Committee Institute for Physical Science and Technology	2002-2004
Chair, Committee to Review Dean of the College of Life Sciences	2004
Chair, Kirwan Faculty Research and Scholarship Prize Committee	2000

PUBLICATIONS:

A. Journal Articles:

- A.1 "The Thermal Conductivity of Argon Between 0°C and 75°C at Pressures up to 2500 Atmospheres", A. Michels, A. Botzen, A.S. Friedman and J.V. Sengers, *Physica* **22**, pp. 121-128 (1956).
- A.2 "Statistical Mechanical Derivation of the Generalized Boltzmann Equation for a Fluid Consisting of Rigid Spherical Molecules", J.V. Sengers and E.G.D. Cohen, *Physica* **27**, pp. 230-244 (1961).
- A.3 "On the Kinetic Theory of Dense Fluids. IX. The Fluid of Rigid Spheres with a Square-Well Attraction", H.T. Davis, S.A. Rice and J.V. Sengers, *J. Chem. Phys.* **35**, pp. 2210-2233 (1961).
- A.4 "The Thermal Conductivity of Carbon Dioxide in the Critical Region. Part I - The Thermal Conductivity Apparatus", A. Michels, J.V. Sengers and P.S. van der Gulik, *Physica* **28**, pp. 1201-1215 (1962).
- A.5 "The Thermal Conductivity of Carbon Dioxide in the Critical Region. Part II - Measurements and Conclusions", A. Michels, J.V. Sengers and P.S. van der Gulik, *Physica* **28**, pp. 1216-1237 (1962).
- A.6 "The Thermal Conductivity of Carbon Dioxide in the Critical Region. Part III - Verification of the Absence of Convection", A. Michels and J.V. Sengers, *Physica* **28**, pp. 1238-1264 (1962).
- A.7 "The Thermal Conductivity of Argon at Elevated Gas Densities", A. Michels, J.V. Sengers and L.J.M. van de Klundert, *Physica* **29**, pp. 149-160 (1963).
- A.8 "The Thermal Conductivity of Neon Between 25C and 75C at Pressures up to 2600 Atmospheres", J.V. Sengers, W.T. Bolk and C.J. Stigter, *Physica* **30**, pp. 1018-1026 (1964).
- A.9 "Thermal Conductivity and Viscosity of Simple Fluids", J.V. Sengers, *Int. J. Heat Mass Transfer* **8**, pp. 1103-1116 (1965).
- A.10 "Density Expansion of the Viscosity of a Moderately Dense Gas", J.V. Sengers, *Phys. Rev. Lett.* **15**, pp. 515-517 (1965).
- A.11 "Triple Collision Contribution to the Transport Coefficients of a Rigid Sphere Gas", J.V. Sengers, *Phys. Fluids* **9**, pp. 1333-1347 (1966).
- A.12 "Divergence in the Density Expansion of the Transport Coefficients of a Two-Dimensional Gas", J.V. Sengers, *Phys. Fluids* **9**, pp. 1685-1696 (1966).
- A.13 "The Critical Region", J.V. Sengers and J.M.H. Levelt Sengers, *Chemical and Engineering News* **46**, June 10, pp. 104-118 (1968)
- A.14 "Density Dependence of Experimental Transport Coefficients of Gases", H.J.M. Hanley, R.D. McCarty and J.V. Sengers, *J. Chem. Phys.* **50**, pp. 857-870 (1969).

- A.15 "Interfacial Tension of 3-Methylpentane-Nitroethane Near the Critical Point", A.M. Wims, J.V. Sengers, D. McIntyre and J. Shereshefsky, *J. Chem. Phys.* **52**, pp. 3042-3049 (1970).
- A.16 "Dynamical Theorems for Three Hard Spheres", J.V. Sengers, D.T. Gillespie and W.R. Hoegy, *Phys. Letters* **32A**, pp. 387-388 (1970).
- A.17 "Three-Particle Collisions in a Gas of Hard Spheres", W.R. Hoegy and J.V. Sengers, *Phys. Rev. A* **2**, 2461-2471 (1970).
- A.18 "Scaling of the Thermal Conductivity Near the Gas-Liquid Critical Point", J.V. Sengers and P.H. Keyes, *Phys. Rev. Lett.* **26**, pp. 70-73 (1971).
- A.19 "On the Density Expansion for Viscosity in Gases", J. Kestin, E. Paykoç, and J.V. Sengers, *Physica* **54**, pp. 1-19 (1971).
- A.20 "Dynamics of Concentration Fluctuations Near the Critical Mixing Point of a Binary Fluid", R.F. Chang, P.H. Keyes, J.V. Sengers, and C.O. Alley, *Phys. Rev. Lett.* **27**, pp. 1706-1709 (1971).
- A.21 "Transport Processes Near the Critical Point of Gases and Binary Liquids in the Hydrodynamic Regime", J.V. Sengers, *Ber. Bunsenges. Phys. Chemie* **76**, pp. 234-249 (1972).
- A.22 "Non-Local Effects in the Diffusion Coefficient of a Binary Fluid Near the Critical Mixing Point", R.F. Chang, P.H. Keyes, J.V. Sengers and C.O. Alley, *Ber. Bunsenges. Phys. Chemie* **76**, pp. 260-267 (1972).
- A.23 "Three-Particle Collision Integrals for a Gas of Hard Spheres", J.V. Sengers, M.H. Ernst and D.T. Gillespie, *J. Chem. Phys.* **56**, pp. 5583-5601 (1972).
- A.24 "Kinetic Theory of Droplet Growth in Nucleation", G.E. Kelly and J.V. Sengers, *J. Chem. Phys.* **57**, pp. 1441-1458 (1972).
- A.25 "Thermal Conductivity of Carbon Dioxide and Steam in the Supercritical Region", B. Le Neindre, R. Tufeu, P. Bury and J.V. Sengers, *Ber. Bunsenges. Phys. Chemie* **77**, pp. 262-275 (1973).
- A.26 "Drag Coefficients and the Generalized Boltzmann Equation", J.R. Dorfman, W.A. Kuperman, J.V. Sengers and C.F. McClure, *Phys. Fluids* **16**, pp. 2347-2349 (1973).
- A.27 "Droplet Growth in a Dilute Vapor", G.E. Kelly and J.V. Sengers, *J. Chem. Phys.* **61**, pp. 2800-2807 (1974).
- A.28 "Universality of Critical Behavior in Gases", J.M.H. Levelt Sengers and J.V. Sengers, *Phys. Rev. A* **12**, pp. 2622-2627 (1975).
- A.29 "Scaled Equation of State Parameters for Gases in the Critical Region", J.M.H. Levelt Sengers, W. L. Greer and J.V. Sengers, *J. Phys. Chem. Ref. Data* **5**, pp. 1-51 (1976).
- A.30 "Experimental Determination of the Critical Correlation Function for a Binary Liquid Mixture: Evidence for Universality", R. F. Chang, H. Burstyn, J.V. Sengers, and A.J. Bray, *Phys. Rev. Lett.* **37**, pp. 1481-1484 (1976).

- A.31 "Critical-Point Universality and Fluids", A. Levelt Sengers, R. Hocken and J.V. Sengers, *Physics Today* **30**, no. 12, pp. 42-51 (1977).
- A.32 "Three-Particle Collision Effects in the Transport Properties of a Gas of Hard Spheres", J.V. Sengers, D.T. Gillespie and J.J. Perez-Esandi, *Physica* **90A**, pp. 365-409 (1978).
- A.33 "Universality, Revisions and Corrections to Scaling in Fluids", F.W. Balfour, J.V. Sengers, M.R. Moldover and J.M.H. Levelt Sengers, *Phys. Letters* **65A**, pp. 223-225 (1978).
- A.34 "Two-Scale-Factor Universality near the Critical Point of Fluids", J.V. Sengers and M.R. Moldover, *Phys. Letters* **66A**, pp. 44-46 (1978).
- A.35 "Critical Phenomena Experiments in Space?", J.V. Sengers and M.R. Moldover, *Z. für Flugwissenschaften und Weltraumforschung* **2**, pp. 371-379 (1978).
- A.36 "Viscosity of Nitrogen near the Critical Point", R.S. Basu and J.V. Sengers, *J. Heat Transfer, Trans. ASME* **101**, pp. 3-8 (1979); **101**, 575 (1979).
- A.37 "Gravity Effects in Fluids near the Gas-Liquid Critical Point", M.R. Moldover, J.V. Sengers, R.W. Gammon and R.J. Hocken, *Rev. Mod. Phys.* **51**, pp. 79-99 (1979).
- A.38 "Correlation Function near the Critical Mixing Point of a Binary Liquid", R.F. Chang, H. Burstyn and J.V. Sengers, *Phys. Rev. A* **19**, pp. 866-882 (1979).
- A.39 "Nonexponential Decay of Critical Concentration Fluctuations in a Binary Liquid", H.C. Burstyn, R.F. Chang and J.V. Sengers, *Phys. Rev. Lett.* **44**, pp. 410-413 (1980).
- A.40 "Density Expansion of the Viscosity of Carbon Dioxide near the Critical Temperature", J. Kestin, O. Korfali and J.V. Sengers, *Physica* **100A**, pp. 335-348 (1980).
- A.41 "Viscosity of Steam in the Critical Region", R.S. Basu, J.V. Sengers and J.T.R. Watson, *Int. J. Thermophys.* **1**, pp. 33-50 (1980).
- A.42 "Stokes-Einstein Diffusion of Critical Fluctuations in a Fluid", H.C. Burstyn, J.V. Sengers and P. Esfandiari, *Phys. Rev. A* **22**, pp. 282-284 (1980).
- A.43 "Dynamical Scaling and Critical-Point Universality of Fluids", H.C. Burstyn and J. V. Sengers, *Phys. Rev. Lett.* **45**, pp. 259-262 (1980).
- A.44 "An Improved Representative Equation for the Dynamic Viscosity of Water Substance", J.T.R. Watson, R.S. Basu and J.V. Sengers, *J. Phys. Chem. Ref. Data* **9**, pp. 1255-1290 (1980).
- A.45 "Behavior of the Dielectric Constant of Fluids near a Critical Point", J.V. Sengers, D. Bedeaux, P. Mazur and S.C. Greer, *Physica* **104A**, pp. 573-594 (1980).
- A.46 "Density Dependence and Composition Dependence of the Viscosity of Neon-Helium and Neon-Argon Mixtures", J. Kestin, O. Korfali, J.V. Sengers and B. Kamgar-Parsi, *Physica* **106A**, pp. 415-442 (1981).

- A.47 "Crossover Function for the Critical Viscosity of a Classical Fluid", J.K. Bhattacharjee, R.A. Ferrell, R.S. Basu and J.V. Sengers, *Phys. Rev. A* **24**, pp. 1469-1475 (1981).
- A.48 "Decay Rate of Critical Concentration Fluctuations in a Binary Liquid", H.C. Burstyn and J.V. Sengers, *Phys. Rev. A* **25**, pp. 448-465 (1982).
- A.49 "Nonlocal Gravity-Induced Density Profiles in Gases Near the Critical Point", J.V. Sengers and J.M.J. van Leeuwen, *Physica* **116A**, pp. 345-367 (1982).
- A.50 "Fast Pressure Quenches near the Critical Point of a Binary Liquid Mixture", E.A. Clerke and J.V. Sengers, *Physica* **118A**, pp. 360-370 (1983); 120A, p. 367 (1983).
- A.51 "Time Dependence of Critical Concentration Fluctuations in a Binary Liquid", H.C. Burstyn and J.V. Sengers, *Phys. Rev. A* **27**, pp. 1071-1085 (1983).
- A.52 "Pressure Effects and Ultrasonic Attenuation in the Binary Liquid Mixture 3-Methylpentane + Nitroethane Near the Critical Point", E.A. Clerke, J. V. Sengers, R.A. Ferrell and J.K. Bhattacharjee, *Phys. Rev. A* **27**, pp. 2140-2151 (1983).
- A.53 "Thermodynamic Properties of Steam in the Critical Region", J.M.H. Levelt Sengers, B. Kamgar-Parsi, F.W. Balfour and J.V. Sengers, *J. Phys. Chem. Ref. Data* **12**, pp. 1-28 (1983).
- A.54 "Thermodynamic Properties of D₂O in the Critical Region", B. Kamgar-Parsi, J.M.H. Levelt Sengers and J.V. Sengers, *J. Phys. Chem. Ref. Data* **12**, pp. 513-529 (1983).
- A.55 "Dynamic Scaling Function for Critical Fluctuations in Classical Fluids", H.C. Burstyn, J.V. Sengers, J.K. Bhattacharjee and R.A. Ferrell, *Phys. Rev. A* **28**, pp. 1567-1578 (1983).
- A.56 "Thermodynamic Properties of Isobutane in the Critical Region", J.M.H. Levelt Sengers, B. Kamgar-Parsi and J.V. Sengers, *J. Chem. Eng. Data* **28**, pp. 354-362 (1983).
- A.57 "Logarithmic Density Dependence of the Transport Properties of Gases", B. Kamgar-Parsi and J.V. Sengers, *Phys. Rev. Lett.* **51**, pp. 2163-2166 (1983).
- A.58 "Thermophysical Properties of Fluid H₂O", J. Kestin, J.V. Sengers, B. Kamgar-Parsi and J.M.H. Levelt Sengers, *J. Phys. Chem. Ref. Data* **13**, pp. 175-183 (1984).
- A.59 "Representative Equations for the Viscosity of Water Substance", J.V. Sengers and B. Kamgar-Parsi, *J. Phys. Chem. Ref. Data* **13**, pp. 185-205 (1984).
- A.60 "A Universal Representation of the Thermodynamic Properties of Fluids in the Critical Region", J.V. Sengers and J.M.H. Levelt Sengers, *Int. J. Thermophys.* **5**, pp. 195-208 (1984).
- A.61 "Thermophysical Properties of Fluid D₂O", J. Kestin, J.V. Sengers, B. Kamgar-Parsi and J.M.H. Levelt Sengers, *J. Phys. Chem. Ref. Data* **13**, pp. 601-609 (1984).

- A.62 "Representative Equations for the Thermal Conductivity of Water Substance", J.V. Sengers, J.T.R. Watson, R.S. Basu, B. Kamgar-Parsi and R.C. Hendricks, *J. Phys. Chem. Ref. Data* **13**, pp. 893-933 (1984).
- A.63 "Gravity Effects on the Correlation Length in Gases Near the Critical Point", J.M.J. van Leeuwen and J.V. Sengers, *Physica* **128A**, pp. 99-131 (1984).
- A.64 "Gravity Effects on Critical Fluctuations in Gases", J.V. Sengers and J.M.J. van Leeuwen, *J. Phys. Chem.* **88**, pp. 6479-6484 (1984).
- A.65 "A Scaled Fundamental Equation for the Thermodynamic Properties of Steam near the Critical Point", J.V. Sengers, J.M.H. Levelt Sengers and B. Kamgar-Parsi, *Strojnický Casopis (Journal of Mechanical Engineering, Czechoslovak Academy of Sciences)* **36**, pp. 277-291 (1985).
- A.66 "Transport Properties of Fluids near Critical Points", J.V. Sengers, *Int. J. Thermophys.* **6**, pp. 203-232 (1985).
- A.67 "Gravity Effects on the Vapor-Liquid Interface Very Close to the Critical Temperature, J.M.J. van Leeuwen and J.V. Sengers, *Physica* **132A**, pp. 207-232 (1985).
- A.68 "Critical Phenomena in the Presence of Gravity", J.V. Sengers and J.M.J. van Leeuwen, *Int. J. Thermophys.* **6**, pp. 545-559 (1985).
- A.69 "Viscosity of Light and Heavy Water and Their Mixtures", J. Kestin, N. Imaishi, S.H. Nott, J.C. Nieuwoudt and J.V. Sengers, *Physica* **134A**, pp. 38-58 (1985); **136A**, p. 617 (1986).
- A.70 "Kinetic Theory of the Drag Force on Objects in Rarefied Gas Flows", J.R. Dorfman, J.V. Sengers and C.F. McClure, *Physica* **134A**, pp. 283-322 (1986).
- A.71 "A Crossover Description for the Thermodynamic Properties of Fluids in the Critical Region", P.C. Albright, J.V. Sengers, J.F. Nicoll and M. Ley-Koo, *Int. J. Thermophys.* **7**, pp. 75-85 (1986).
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INVITED LECTURES (2000-present)

“Thermal nonequilibrium phenomena in a polymer solution”, Department of Chemical Engineering, North Carolina State University, Raleigh, NC, February 22, 2000.

“Changes with time: Thermal nonequilibrium phenomena in polymer solutions”, Symposium in honor of M.E. Ernst, Utrecht University, The Netherlands, June 15-16, 2000.

“Mesoscopic dynamics in fluids”, Touloukian Memorial Lecture, 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

“Thermal nonequilibrium fluctuations in simple and complex fluids”, Fourth International Meeting on Thermodiffusion, Bayreuth, Germany, September 11-15, 2000.

“Light scattering from nonequilibrium fluctuations in liquids”, Lehrstuhl für Technische Thermodynamik, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, September 15, 2000.

“Mesoscopic dynamics in fluids”, Max-Planck Institut für Polymerforschung, Mainz, Germany, September 22, 2000.

“Mesoscopic dynamics in fluids”, 40 years of nonequilibrium statistical physics”, Symposium in honor of L.S. Garcia-Colin, UAM Iztapalapa, Mexico City, November 29-30, 2000.

“Nonequilibrium fluctuations in liquids and polymer solutions”, University of Sevilla, Spain, March 21, 2001.

“Critical phenomena and phase behavior in complex fluids and electrolyte solutions”, Complutense University, Madrid, Spain, March 23, 2001.

“Nonequilibrium fluctuations in simple and complex fluids”, University of Valladolid, Spain, March 28, 2001.

“Crossover critical phenomena and phase behavior in aqueous electrolyte solutions”, Meeting on Thermodynamics and Statistical Mechanics with Industrial Applications, University of Bristol, UK, April 4-6 2001.

“Critical phenomena and phase behavior in polymer solutions and electrolyte solutions”, Fluid Science: a Symposium in honor of M.R. Moldover, NIST, Gaithersburg, MD, April 18, 2001.

“Critical phenomena and phase behavior in aqueous electrolyte solutions”, ASTATPHYS-MEX-2001, Cancun, Mexico, July 23-27, 2001.

“Crossover critical phenomena in molecular and complex fluids”, Plenary Lecture, JETC7, Mons, Belgium, August 27-31, 2001.

“Critical phenomena in fluids with competing order parameters”, 86th Statistical Mechanics Conference in honor of M.E. Fisher, Rutgers University, New Brunswick, NJ, December 16-18, 2001.

“Fluctuations in fluids in thermal nonequilibrium states below the convective Rayleigh-Bénard instability”, Dynamics Days 2002, Baltimore, MD, January 3-7, 2002.

“Beta’s from an international perspective”, VNO-NCW, The Hague, The Netherlands, March 15, 2002.

“Science education from an international perspective”, Ministry of Education, Culture and Sciences, Zoetermeer, The Netherlands, May 21, 2002.

“Mesoscopic dynamics in fluids: 40 years of nonequilibrium statistical physics”, Symposium in honor of J.R. Dorfman, University of Maryland, College Park, MD, May 30-31, 2002.

“Thermal nonequilibrium fluctuations in fluid layers below the Rayleigh-Bénard instability, Statistical physics seminar, University of Maryland, College Park, MD, May 6, 2003.

“Thermal nonequilibrium fluctuations in fluid layers below the convective Rayleigh-Bénard instability”, Statistical Mechanics Conference in honor of E.G.D. Cohen, Rutgers University, NJ, May 18-20, 2003.

“Thermodynamics of critical fluctuations in molecular and complex fluids”, Centennial Conference of the Spanish Royal Society of Physics, Madrid, Spain, July 7-11, 2003.

“Critical phenomena in simple and complex fluids”, Department of Physics, Kansas State University, Manhattan, KS, March 8, 2004.

“Thermal nonequilibrium fluctuations in fluids”, Department of Physics, Kansas State University, Manhattan, KS, March 9, 2004.

“Thermal nonequilibrium fluctuations”, Laboratory for Aero- and Hydrodynamics, Technical University Delft, The Netherlands, March 25, 2004.

“Thermodynamics of critical fluctuations”, Laboratory for Physical Chemistry and Molecular Thermodynamics, Technical University Delft, The Netherlands, March 31, 2004.

“Fluctuations in fluids in thermal nonequilibrium states”, Physical and Chemical Properties Division, National Institute of Standards and Technology, Boulder, CO, July 1, 2004.

“Surprises in nonequilibrium thermodynamics and hydrodynamics of fluids”, Department of Chemical Engineering, University of Maryland, College Park, MD, September 7, 2004.

“Thermal fluctuations in nonequilibrium thermodynamics and fluid dynamics”, Fluid Dynamics Reviews Seminar, University of Maryland, College Park, MD, October 15, 2004.

“Legacy of J.M. Burgers at Maryland”, Inaugural Symposium of the Burgers Program for Fluid Dynamics, University of Maryland, College Park, MD, November 18, 2004.

“Thermal fluctuations in nonquilibrium thermodynamics”, Department of Chemical Engineering, Yale University, New Haven, CT, March 30, 2005.

“Legacy of Burgers in the USA”, Burgersdag 2006, Technical University Delft, The Netherlands, January 12, 2006.

“Fluctuations in nonequilibrium thermodynamics”, Technische Natuurwetenschappen, Universiteit Twente, The Netherlands, January 18, 2006.

“Thermal fluctuations in nonequilibrium thermodynamics”, Department of Physics, University of Maryland, College Park, MD, April 11, 2006.

“Thermal fluctuations in nonequilibrium thermodynamics”, Plenary Lecture, 7th International Meeting on Thermodiffusion, San Sebastian, Spain, May 29 – June 2, 2006.

“Thermal fluctuations in nonequilibrium thermodynamics”, Complutense University, Madrid, Spain, June 7, 2006.

“International Quality Assurance in Physics Education”, Tuning Education Structures in Europe: Curricular Reform Taking Shape, Learning Outcomes and Competences in Higher Education, European Commission, Brussels, Belgium, June 16, 2006.

“Thermal fluctuations in nonequilibrium thermodynamics”, Department of Chemistry, Norwegian University of Science and Technology, Trondheim, Norway, October 19, 2006.

“Hydrodynamic fluctuations in fluids and fluid mixtures”, Friedrich-Alexander-Universität, Erlangen-Nürnberg, Germany, October 27, 2006. (Principal lecture celebrating the 60th birthday of Professor Alfred Leipertz).

“Transport properties of H₂O”, Meeting of ASME Research and Technology Committee on Water and Steam in Thermal Power Cycles, General Electric, Schenectady, NY, November 2-3, 2006.

“Critical phase separation in asymmetric liquid mixtures” (co-authors: C.A. Cerdeiriña, J.T. Wang, M.A. Anisimov), Annual Meeting of AIChE, San Francisco, CA, November 12-17, 2006.

“Thermal fluctuations in nonequilibrium thermodynamics”, XXXVI Winter Meeting on Statistical Physics, Taxco, Guerrero, Mexico, January 9-12, 2007.

“Thermal fluctuations in nonequilibrium thermodynamics”, Université Libre de Bruxelles, Belgium, January 25, 2007.

“Hydrodynamic fluctuations in fluids and fluid mixtures”, Technical University Eindhoven, The Netherlands, February 1, 2007.

“Computer simulations of critical dynamics in fluids”, Workshop on Multiscale Modeling and Simulation of Complex Fluids, Center for Scientific Computation and Mathematical Modeling, University of Maryland, College Park, MD, April 16-20, 2007.

“Fluctuations in isothermal and non-isothermal reaction-diffusion systems”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, April 24, 2007.

“Computer simulations of critical dynamics in fluids”, Physical and Chemical Properties Division, National Institute of Standards and Technology, Boulder, CO, June 21, 2007.

“Computer simulations of transport properties in liquid Mixtures near critical points”, Mini-Symposium on Transport Phenomena/Nonequilibrium Thermodynamics, Department of Chemical Engineering, Yale University, New Haven, CT, July 30, 2007.

“Critical dynamics in polymer solutions”, Simposio de Termodinámica, Calorimetría y Análisis Térmico, XXXI Reunión de la Real Sociedad Española de Física, Granada, Spain, September 10-11, 2007.

“Mesoscopic fluctuations in nonequilibrium fluids”, GRANFL07: Granular Fluids-A Proving Ground for Nonequilibrium Statistical Mechanics, Sevilla, Spain, September 26-29 (2007).

“Thermal fluctuations in nonequilibrium thermodynamics”, Focus Meeting on Nonequilibrium Steady States, Institut Henri Poincaré, Paris, France, October 8-12 (2007).

“Computer simulations of critical slowing down of fluctuations in fluids” Departamento de Química-Física I, Complutense University, Madrid, Spain, November 8, 2007.

“Computer simulations of critical dynamics in fluids”, International Symposium on Strongly Interacting Systems: Past, Present and Future: A Symposium in memory of Richard A. Ferrell, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, November 16-17, 2007.

“Computer simulations of critical dynamics in fluids”, Thermophysics Informal Seminar, Universidad de Vigo, Ourense, Spain, December 5, 2007.

“Thermal fluctuations in nonequilibrium thermodynamics”, Ornstein Colloquium, Utrecht University, The Netherlands, January 24, 2008.

“Thermal fluctuations in nonequilibrium thermodynamics”, Katholieke Universiteit, Leuven, Belgium, May 5, 2008.

“Nonequilibrium phenomena in fluids: A history of surprises”, Plenary Lecture, 8th International Meeting on Thermodiffusion, Bonn, Germany, June 9-13, 2008.

“Light scattering of fluctuations in polymer and electrolyte solutions”, Symposium in honor of Wolfram Schröer, University of Bremen, September 12, 2008.

“Light scattering of fluctuations in polymer and electrolyte solutions”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, September 30, 2008.

“Critical crossover phenomena in macromolecular solutions”, 100th Statistical Mechanics Conference, Rutgers University, December 13-18, 2008.

“Crossover critical phenomena in fluids”, 17th Symposium on Thermophysical Properties”, Boulder, CO, June 21-26, 2009.

“Fluctuations in nonequilibrium thermodynamics”, 5th International Workshop in Non-Equilibrium Thermodynamics”, Cuernavaca, Mexico, August 23-28, 2009.

“Nonequilibrium phenomena in fluids: a history of surprises”, Colloquium on Thermophysical Properties of fluids in honor of Sir William Wakeham, Turcifal-Torres Vedras, Portugal, October 3, 2009.

“Fluctuations in nonequilibrium thermodynamics”, Departament de Física Fonamental, Universitat de Barcelona, Spain, October 27, 2009.

“Non-asymptotic critical phenomena in fluids and fluid mixtures”, Institut de Ciència de Materials, Universitat Autònoma de Barcelona, Spain, October 28, 2009.

“Velocity fluctuations in laminar fluid flow”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, September 14, 2010.

“Thermal fluctuations in non-equilibrium thermodynamics”, Symposium celebrating the 70th birthday of Dick Bedeaux, Oegstgeest, The Netherlands, September 17 (2011).

“Science and religion from a Dutch American perspective”, Tilburg School of Catholic Theology, Utrecht, The Netherlands, September 19, 2011.

“Mode-coupling phenomena in fluids induced by phase transitions and gradients”, International Conference on Dynamics of Phase Transitions, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India, November 20-30, 2011.

“Thermal fluctuations in non-equilibrium thermodynamics”, Department of Physics, Indian Institute of Science, Bangalore, India, December 1, 2011.

“New developments in nonequilibrium fluctuations in fluids”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, February 7, 2012.

“Reflections on ethics and science”, Space and Cosmic Ray Physics Seminar, Department of Physics and Institute for Physical science and Technology, University of Maryland, College Park, MD, March 5, 2012.

“Light scattering and shadowgraph measurements of nonequilibrium fluctuations in fluids”, Thermophysical Properties Division, National Institute of Standards and Technology, Boulder, CO, March 29, 2012.

“Light scattering and shadowgraph measurements of nonequilibrium fluctuations in fluids”, 107th Statistical Mechanics Conference, Rutgers University, May 6-8, 2012.

“Eddie Cohen and some surprises in nonequilibrium statistical physics”, 107th Statistical Mechanics Conference, Rutgers University, May 6-8, 2012.

“Equilibrium and nonequilibrium light scattering in fluids and fluid mixtures”, Department of Chemical Engineering, Yale University, New haven, CT, May 22, 2012.

“Ethics in science”, Torch Club, Shepherdstown, WV, May 24, 2012.

“Thermally induced non-equilibrium fluctuations: gravity and finite-size effects”, 6th International Workshop on Nonequilibrium Thermodynamics and 3rd Lars Onsager Symposium, Røros, Norway, August 19-24, 2012.

“Thermal fluctuations in fluids on earth and in space”, Space and Cosmic Ray Physics Seminar, University of Maryland, October 22, 2012.

“Fifty years of nonequilibrium statistical physics: A history of surprises”, International Summer School on Fundamental Problems in Statistical Physics XIII, Leuven, Belgium, June 16-29 (2013).

“Delight of transport: a historic review”, A Celebration of the 80th Birthday of Sir Brian Smith, Oxford University, Oxford, UK, September 7, 2013.

“Thermally induced nonequilibrium fluctuations: gravity and finite-size effects”, Courant Institute of Mathematical Sciences, New York University, October 11, 2013.

“Thermal fluctuations in nonequilibrium thermodynamics”, Departement Natuurkunde, KULeuven, Belgium, February 19, 2014.

“Thermal fluctuations in nonequilibrium thermodynamics: A continuing saga”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, April 29, 2014.

“Nonequilibrium thermodynamics revisited”, XXIX Congreso Nacional de Termodinámica, Temixco, Mor., September 1-5, 2014. Keynote lecture dedicated to the memory of Leopoldo S. García-Colin.

“Thermal fluctuations in nonequilibrium thermodynamics”, Department of Chemical and Biological Engineering, Illinois Institute of Technology, Chicago, IL, November 5, 2014.

“Gijs Ooms, JMBC, and the University of Maryland, Burgersdag, J.M. Burgerscentrum, Technical University Delft, The Netherlands, January 15, 2015.

“Ethics in Science”, William A. Keese School of Continuing Education, Asbury Methodist Village, Gaithersburg, MD, February 12, 2015.

“Fluctuation-induced pressures in fluids in non-equilibrium steady states”, Special Lecture sponsored by the International Journal of Thermophysics, 19th Symposium on Thermophysical Properties, Boulder CO, June 21-26, 2015.

“Long-range correlations in fluids”, Berni Alder Symposium, Lawrence Livermore National Laboratory, Livermore, CA, August 20, 2015.

“Thermal non-equilibrium fluctuations in fluids”, The College of Charleston, Charleston SC, February 25, 2016.

“New applications of Landau’s fluctuating hydrodynamics”, Russia-US Workshop, University of Maryland, April 29 – May 2, 2016.

“Fluctuation-induced forces in fluids in a temperature gradient”, 12th International Meeting on Thermodiffusion, Madrid, Spain, May 30-June 3, 2016.

“Thermal fluctuations in fluids in a temperature gradient”, Université de Pau et des Pays de l’Adour, Anglet, France, June 14, 2016.

“New applications of Landau’s fluctuating hydrodynamics”, International Conference on “Phase Transitions in Hydrocarbon Fluids: Theory and Experiments”, Gubkin State University of Oil and Gas, Moscow, Russia, September 14-15, 2016.

“Fluctuations in liquids on earth and in space”, Space and Cosmic Ray Physics Seminar, University of Maryland, College Park, MD, October 31, 2016.

“Fluctuations in liquids on earth and in space”, Materials Science and Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD, November 17, 2016.

“Fluctuations in liquids on earth and in space”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, December 6, 2016.

“Thermal non-equilibrium fluctuations in fluids”, Department of Chemistry and Biochemistry, UCLA, Los Angeles, March 27, 2017.

“Jan Burgers”, 2017 Burgers Symposium, Lunteren, The Netherlands, May 30-31 (2017).

“Thermal non-equilibrium fluctuations in fluids”. XLVII Winter Meeting on Statistical Physics, Puebla, Mexico, January 7-10 (2018).

“Thermal fluctuations in liquids on earth and in space”, Sandoval Vallarta Seminar, Institute of Physics, National University of Mexico, Mexico City, January 12, 2018.

“Nonequilibrium Casimir forces in Liquids”, Statistical Physics Seminar, Institute for Physical Science and Technology, University of Maryland, College Park, MD, April 9, 2019.

“Nonequilibrium fluctuating hydrodynamics”, Fluid Dynamics Review Seminar, University of Maryland, College Park, MD, February 28, 2020.

CONTRIBUTED PRESENTATIONS (2000-present):

Kh. S. Abdulkadirova, C. J. Peters, M. A. Anisimov, and J. V. Sengers, "Global Crossover Peng-Robinson Equation of State", NOW/CW Study Group Process Technology, Lunteren, The Netherlands, January 10-11, 2000.

V. A. Agayan, M. A. Anisimov, and J. V. Sengers, "A Crossover Parametric Equation of State for Three-Dimensional Ising Universality Class Systems", 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

J. Jacob, M. A. Anisimov, A. Kumar, V. A. Agayan, and J. V. Sengers, "Nature of Criticality in an Aqueous Electrolyte Solution", 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

A. K. Wyczalkowska, M. A. Anisimov, and J. V. Sengers, "Thermodynamics of the Two-Phase Isochoric Heat Capacity in Compressible Fluids", 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

Kh. S. Abdulkadirova, C. J. Peters, M. A. Anisimov, and J. V. Sengers, "Global Crossover Peng-Robinson Equation of State", 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

K. Gutkowski, M. A. Anisimov, and J. V. Sengers, "Crossover Criticality in Ionic Solutions", 14th Symposium on Thermophysical Properties, Boulder, CO, June 25-30, 2000.

V. A. Agayan, M. A. Anisimov, and J. V. Sengers, "A Crossover Parametric Equation of State for Fluids and Fluid Mixtures", Annual Meeting of the AIChE, Los Angeles, CA, November 12-17, 2000.

J. Jacob, M. A. Anisimov, and J. V. Sengers, "Thermodynamics, Light Scattering, and Crossover to Tricriticality in Polymer Solutions", Annual Meeting of the AIChE, Los Angeles, CA, November 12-17, 2000.

H.-W. Fang, J. V. Sengers, and S. M. Hsu, "Controlled Size and Shape UHMWPE Wear Particle Generation using a Silicon Micro-Fabricated Surface Texturing Technique", Annual Meeting of the Society for Biomaterials, Saint Paul, MN, April 24-29, 2001.

H.-W. Fang, J. V. Sengers, and S.M. Hsu, "generation of Controlled UHWPE Wear Particle Size and Shape by Surface Texturing: Relationship between Surface Feature Dimensions to Particle Size and Shape", Annual Meeting of the Society for Biomaterials, Saint Paul, MN, April 24-29, 2001 (poster).

A. F. Kostko, M. A. Anisimov, J. V. Sengers, and R. W. Gammon, "Light Scattering from Crossover Critical Fluctuations in Polymer Solutions", 34th Middle Atlantic Regional Meeting of the ACS, Towson, MD, May 30- June 1, 2001.

J. M. Ortiz de Zárate and J. V. Sengers, "Linear Theory of Nonequilibrium Fluctuations below the Convective Instability in the Rayleigh-Bénard Problem", IUPAC 21st International Conference on Statistical Physics, Cancun, Mexico, July 15-21, 2001.

J. V. Sengers, "Thermodynamic Properties of H₂O and D₂O in the critical Region", Annual Meeting of the International Association for the Properties of Water and Steam, Prague, Czech Republic, September 3-9, 2001.

A. F. Kostko, M. A. Anisimov, J. V. Sengers, and I. K. Yudin, "Reptation Relaxation Probed by Critical Fluctuations in Polymer Solutions", 73rd Annual Meeting of the Society of Rheology, Bethesda, MD, October 21-25, 2001.

M. A. Anisimov, A. F. Kostko, and J. V. Sengers, "Light Scattering from Crossover Critical Fluctuations in Polymer Solutions", Annual Meeting of the AIChE, Reno, NV, November 4-9, 2001.

A. Kostrowicka Wyczalkowska, M. A. Anisimov, and J. V. Sengers, "Impurity Effects on the Two-Phase Isochoric Heat Capacity of Fluids near the Critical Point", Annual Meeting of the AIChE, Reno, NV, November 4-9, 2001.

J. S. Hager, M. A. Anisimov, and J. V. Sengers, "Demixing of Polymer Solutions", Statistical Mechanics Conference in honor of M. E. Fisher, Rutgers University, New Brunswick, NJ, December 16-18, 2001.

M. A. Anisimov, A. F. Kostko, and J. V. Sengers, "Competition of Mesoscales and Crossover Tricriticality in Polymer Solutions", Mid-Atlantic Thermodynamics Conference, Thermo 2002, University of Maryland, College Park, MD, April 19-20, 2002 (poster).

A. F. Kostko, M. A. Anisimov, and J. V. Sengers, "Anomalous Dynamics in Near-Critical Polymer Solutions", Mid-Atlantic Thermodynamics Conference, Thermo 2002, University of Maryland, College Park, MD, April 19-20, 2002 (poster).

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "Micro-cutting Mechanism of Surface Texture Controlled UHMWPE Wear Particle Generation", Annual Meeting of the Society for Biomaterials, Tampa, FL, April 24-27 (2002).

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "Generation of Narrowly Distributed UHMWPE Wear Particles with Micro-Fabricated Silicon Surface Textures", 21th Southern Biomedical Engineering Conference, Bethesda, MD, September 28-29 (2002).

M. A. Anisimov, A. F. Kostko, and J. V. Sengers, "Anomalous Slowdown of Critical Fluctuations by Entanglements in Polymer Solutions", Annual Meeting of AIChE, Indianapolis, IN, November 3-8, 2002.

J. T. Wang, M. A. Anisimov, J. V. Sengers, and T. A. Edison, "Closed Solubility Loops in Partially Miscible Liquid Mixtures", Annual Meeting of AIChE, Indianapolis, IN, November 3-8, 2002.

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "Analysis of UHMWPE Particles induced Biological Responses: An Approach by Microfabrication of Particles and Biophysical Modeling of Phagocytosis", World Congress for Chinese Biomedical Engineers, Taipei, Taiwan, December 11-13, 2002.

M. A. Anisimov, J. V. Sengers, and A. F. Kostko, "Crossover Critical Behavior in Three-Dimensional Ising-Like Systems", March Meeting of the American Physical Society, Austin, TX, March 3-7, 2003.

A. F. Kostko, M. A. Anisimov, and J. V. Sengers, "Competition of Mesoscales in the Static and Dynamic Behavior of Polymer Solutions", 2nd NIST-KIPS Symposium on Polymer Science, National Institute of Standards and Technology, Gaithersburg, MD, March 20-21, 2003 (poster).

A. H. Krall and J. V. Sengers, "Simultaneous Measurement of Viscosity and Density with an Oscillating-Disk Instrument", 3rd Meeting of the International Association for Transport Properties, Boulder, CO, June 21-22, 2003.

A. F. Kostko, K. Toto, M. A. Anisimov, and J. V. Sengers, "A Mystery of Criticality in Ternary Aqueous Solutions of 3-Methylpyridine and Sodium Bromide: A Multicritical Point or Non-Equilibrium Micro-Phase Separation", 15th Symposium on Thermophysical Properties, Boulder, CO, June 22-27, 2003.

M. Yu. Belyakov, E. E. Gorodetskii, M. A. Anisimov, and J. V. Sengers, "Global Cubic Equation of State for Pure Fluids", 15th Symposium on Thermophysical Properties, Boulder, CO, June 22-27, 2003.

J. M. Ortiz de Zárate and J. V. Sengers, "Thermal Nonequilibrium Fluctuations in Fluids at Mesoscopic Length Scales", 15th Symposium on Thermophysical Properties, Boulder, CO, June 22-27, 2003.

A. F. Kostko, M. A. Anisimov, and J. V. Sengers, "Coupling of Critical Fluctuations with Self-Entanglements in Polymer Solutions", 15th Symposium on Thermophysical Properties, Boulder, CO, June 22-27, 2003.

J. V. Sengers, M. A. Anisimov, A. Kostrowicka Wyczalkowska, M. Yu. Belyakov, and E. E. Gorodetskii, "Critical Fluctuations and Cubic Equations of State", Annual Meeting of the AIChE, San Francisco, CA, November 16-21, 2003.

J. V. Sengers, M. A. Anisimov, and A. F. Kostko, "A Mystery of Criticality in Ternary Aqueous Solutions of 3-Methylpyridine and Sodium Bromide: A Multicritical Point or Non-Equilibrium Micro-Phase Separation?", Annual Meeting of the AIChE, San Francisco, November 16-21, 2003 (poster).

M. A. Anisimov, A. F. Kostko, and J. V. Sengers, "Probing Structural Relaxation in Complex Fluids by Critical Fluctuations", Meeting of the American Physical Society, Montreal, Canada, March 22-26, 2004.

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "A Study of the Mechanism of UHMWPE Particle Generation with Microfabricated Surface Features: In Situ Observation of Single-Tip Sliding Tests," 7th World Congress for Biomaterials, Sydney, Australia, May 17-21, 2004.

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "Surface-Texture Design to Generate Narrowly Distributed UHMWPE Particles with Specific Sizes and Shapes," 7th World Congress for Biomaterials, Sydney, Australia, May 17-21, 2004. (poster)

H.-W. Fang, S. M. Hsu, and J. V. Sengers, "Analysis of UHMWPE Particle Shape Effects on Bioactivity from the Physical Viewpoint of Phagocytosis Process," 7th World Congress for Biomaterials, Sydney, Australia, May 17-21, 2004. (poster)

A.F. Kostko, M. A. Anisimov, and J. V. Sengers, "Critical Phenomena in Binary and Ternary Aqueous Ionic Solutions," 14th International Conference on the Properties of Water and Steam, Kyoto, Japan, August 29-September 3, 2004.

A.F. Kostko, M.A. Anisimov, and J.V. Sengers, "Mesoscopic and Nanoscale Thermodynamics of Critical Fluctuations in Macromolecular Solutions," Annual Meeting of the AIChE, August, TX, November 7-12, 2004.

J.A. Fornés, J.M. Ortiz de Zárate, and J.V. Sengers, “Asymptotic Behavior of Thermal Fluctuations in the Rayleigh-Bénard Problem for Small and Large Wave Numbers”, XIII Congreso de Física Estadística, Madrid, Spain, June 27-29, 2005. (poster)

J.A. Fornés, J.M. Ortiz de Zárate, and J.V. Sengers, “Asymptotic Behavior of Thermal Fluctuations in the Rayleigh-Bénard Problem for Small and Large Wave Numbers”, 6th Liquid Matter Conference, Utrecht, The Netherlands, July 2-6, 2005. (poster)

H.-W. Fang, S.M. Hsu, and J.V. Sengers, “Modeling of the Generation of UHMWPE Particles with Microfabricated Surface Textures”, World Tribology Congress III, Washington, DC, September 12-16, 2005.

A.F. Kostko, M.A. Anisimov, and J.V. Sengers, “Dynamic Critical Fluctuations in Polymer Solutions”, 11th Russian Thermophysical Conference, St. Petersburg, Russia, October 4-7, 2005.

M.A. Anisimov and J.V. Sengers, “Finding Simplicity in Complexity: Scaling, Tricriticality, and Crossover in Polymer Solutions”, Annual Meeting of AIChE, Cincinnati, OH, October 30-November 4, 2005.

C. Cerdeiriña Alvarez, M.A. Anisimov, and J.V. Sengers, “Asymmetric Criticality: Yang-Yang and Related Anomalies in Liquid-Liquid Critical Points”, XXXV Winter Meeting on Statistical Physics, Taxco, Guerrero, Mexico, January 10-13, 2006.

J.T. Wang, C.A. Cerdeiriña, M.A. Anisimov, and J.V. Sengers, “Scaling Fields and the Nature of Liquid-Gas Asymmetry in Fluids”, March Meeting American Physical Society, Baltimore, MD, March 13-17, 2006.

S.K. Das, M.E. Fisher, J.V. Sengers, J. Horbach, and K. Binder, “Critical Dynamics in Fluids: Verifying Theory through Simulations”, 95th Statistical Mechanics Conference, Rutgers University, Brunswick, NJ, May 7-9, 2006.

J.M. Ortiz de Zárate and J.V. Sengers, “Long-Wavelength Nonequilibrium Concentration Fluctuations Induced by the Soret Effect”, 7th International Meeting on Thermodiffusion, San Sebastian, Spain, May 29- June 2, 2006.

C.A. Cerdeiriña, M.A. Anisimov, and J.V. Sengers, “Scaling Fields and the Nature of Order Parameter in Asymmetric Near-Critical Liquid Mixtures”, 16th Symposium on Thermophysical Properties, Boulder, CO, July 30-August 4, 2006.

G. Pérez-Sánchez, P. Losada-Pérez, C.A. Cerdeiriña, L. Romani, M.A. Anisimov, and J.V. Sengers, “Singular Diameters in Liquid-Liquid Critical Phenomena”, 16th Symposium on Thermophysical Properties, Boulder, CO, July 30-August 4, 2006.

M.L. Huber, D.G. Friend, R.A. Perkins, A. Laesecke, M.J. Assael, I.N. Metaxa, E. Vogel, and J.V. Sengers, “Formulation for the Viscosity of Water”, 16th Symposium on Thermophysical Properties, Boulder, CO, July 30-August 4, 2006.

J.V. Sengers, S.K. Das, M.E. Fisher, J. Horbach, and K. Binder, “Computer Simulations of Transport Properties of a Binary Liquid Mixture near the Critical Point”, 6th Meeting of the International Association for Transport Properties, Boulder, Co, July 29, 2006.

G. Pérez-Sánchez, P. Losada-Pérez, C.A. Cerdeiriña, L. Romani, M.A. Anisimov, and J.V. Sengers, “La Anomalía Crítica del Diámetro de la Curva de Coexistencia; Resultados para la Transición Líquido-Líquido”, Termo-2006, X Encuentro Inter-Bienal del Grupo Especializado de Termodinámica (GET) de las Reales Sociedades Españolas de Física (RSEF) y de Química (RSEQ), El Escorial, Spain, September 13-15, 2006.

J.V. Sengers, S.K. Das, M.E. Fisher, J. Horbach, and K. Binder, “Computer Simulations of Critical Dynamics in Fluids”, Annual Meeting of AIChE, San Francisco, CA, November 12-17, 2006.

H. Zhang, S.M. Hsu, and J.V. Sengers, “Metrology Issues of Textured Surfaces Developed for Friction Reduction”, Annual Meeting of the Society of Tribologists and Lubrication Engineers, Philadelphia, PA, May 6-10, 2007.

J.M. Ortiz de Zárate and J.V. Sengers, “Nonequilibrium Fluctuations and Energy Amplification in Plane Couette Flow”, StatPhys 23, Genova, Italy, July 9-13, 2007 (poster).

G. Pérez-Sánchez, P. Losada-Pérez, C.A. Cerdeiriña, L. Romani, M.A. Anisimov, and J.V. Sengers, “Comportamiento Crítico Asimétrico: El Diámetro de la Curva de Coexistencia Líquido-Líquido”, Simposio de Termodinámica, Calorimetría y Análisis Térmico, XXXI Reunión de la Real Sociedad Española de Física, Granada, Spain, September 10-11, 2007 (poster).

J.M. Ortiz de Zárate Leira and J.V. Sengers, “Fluctuaciones Fuera del Equilibrio en Flujo Plano de Couette”, XV Congreso Física Estadística, Salamanca, Spain, March 27-29, 2008 (poster; Libro de Resúmenes, p. 141).

J.M. Ortiz de Zárate, J.V. Sengers, D. Bedeaux, and S. Kjelstrup, “Soret-Driven Concentration Fluctuations in a Chemically Reacting Liquid Mixture”, 8th International Meeting on Thermodiffusion, Bonn, Germany, June 9-13, 2008.

J.V. Sengers, R.A. Perkins, M.L. Huber, and D.G. Friend, “Viscosity of H₂O in the critical region”, 15th International Conference on the Properties of Water and Steam, Berlin, Germany, September 7-11, 2008.

D.G. Friend, M.L. Huber, R.A. Perkins, A. Laesecke, M.J. Assael, I.N. Metaxa, J.V. Sengers, E. Vogel, R. Mares, and K. Miyagawa, “Proposed IAPWS Formulation for the Viscosity of Water”, 15th International Conference on the Properties of Water and Steam, Berlin, Germany, September 7-11, 2008.

M.A. Anisimov and J.V. Sengers, “Thermodynamics of Mesoscopic Fluctuations in Soft Matter”, Annual Meeting of AIChE, Philadelphia, PA, November 16-21, 2008.

D.A. Fuentevilla, M.A. Anisimov, and J.V. Sengers, “Vapor-Liquid Critical Locus for Aqueous Solutions of Sodium Chloride”, Annual Meeting of AIChE, Philadelphia, PA, November 16-21, 2008.

J.M. Ortiz de Zárate and J.V. Sengers, “Velocity Fluctuations and Energy Amplification in Laminar Fluid Flows”, 61st Annual Meeting of the APS Division of Fluid Dynamics, San Antonio, TX, November 23-25, 2008.

D. Ivanov, A. Trubetskaya, A. Kostko, M. Anisimov, and J.V. Sengers, “Dynamic Light Scattering in an Aqueous Solution of 3-Methylpyridine”, Meeting of the American Physical Society, Pittsburgh, PA, March 16-20, 2009.

J.V. Sengers, R.A. Perkins, M.L. Huber, B. Le Neindre “Thermal Diffusivity and Thermal Conductivity of H₂O near the Critical Point”, 9th Meeting of the International Association for Transport Properties, Boulder, CO, June 20-21, 2009.

D.G. Friend, M.L. Huber, R.A. Perkins, J.V. Sengers, I.M. Metaxa, and M.J. Assael, “Progress Report on the Background Thermal Conductivity of Water”, 9th Meeting of the International Association for Transport Properties, Boulder, CO, June 20-21, 2009.

J.M. Ortiz de Zárate and J.V. Sengers, “Thermal Fluctuations in Nonequilibrium Thermodynamics”, 17th Symposium on Thermophysical Properties, Boulder, CO, June 21-26, 2009.

D.A. Fuentevilla, J.V. Sengers, and M.A. Anisimov, “On the Critical Locus of Aqueous Electrolyte Solutions at High Temperatures”, 17th Symposium on Thermophysical Properties, Boulder, CO, June 21-26, 2009.

C.A. Cerdeiriña, P. Losada-Pérez, G. Pérez-Sánchez, M.A. Anisimov, and J.V. Sengers, “Scaling in Fluid-Fluid Criticality: the Case of Weakly Compressible Binary Mixtures”, 17th Symposium on Thermophysical Properties, Boulder, CO, June 21-26, 2009.

P. Losada-Pérez, C.A. Cerdeiriña, J.V. Sengers, M.A. Anisimov, and J. Thoen, “Dielectric Constant of Fluids and Fluid Mixtures at Criticality: Scaling Formulation and Experimental Testing”, 17th Symposium on Thermophysical Properties, Boulder, CO, June 21-26, 2009 (poster).

G. Pérez-Sánchez, P. Losada-Pérez, C.A. Cerdeiriña, M.A. Anisimov, and J.V. Sengers, “Liquid-Liquid Coexistence Curves Obtained from Refractive-Index Data”, 17th Symposium on Thermophysical Properties, Boulder, CO, June 21-26, 2009 (poster).

J.V. Sengers, R.A. Perkins, M.L. Huber, D.G. Friend, M.J. Assael, and I.N. Metaxa, “Progress Report on the Thermal Conductivity of H₂O”, Annual Meeting of International Association for the Properties of Water and Steam (IAWPS), Doorwerth, The Netherlands, September 6-11 (2009).

D.A. Fuentevilla, J.V. Sengers, and M.A. Anisimov, “Vapor-Liquid Critical Locus of Aqueous Solutions of NaCl Revisited”, Annual Meeting of International Association for the Properties of Water and Steam (IAWPS), Doorwerth, The Netherlands, September 6-11 (2009).

K. Piela, G. Ooms, and J.V. Sengers, “Prediction of Phase Inversion in Oil-Water Systems”, Annual Meeting of AIChE, Nashville. November 8-13 (2009).

D.A. Ivanov, M.A. Anisimov, J.V. Sengers, and A.F. Kostko, “Dynamic Light Scattering in an Aqueous Solution of 3-Methylpyridine”, Annual Meeting of AIChE, Nashville, November 8-13 (2009).

J.M. Ortiz de Zárate and J.V. Sengers, “Possible Casimir Forces arising from Thermal Fluctuations in Confined Fluids”, 3^a reunion Red de física de sistemas fuera del equilibrio: Partículas y Flujos, Universidad de Navarra, Pamplona, Spain, May 20-22 (2010).

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J.M. Ortiz de Zárate and J.V. Sengers, “Amplification of Thermal Fluctuations by Planar Couette Flow”, 4th International Symposium on Bifurcation and Instabilities in Fluid Dynamics, Universitat Politècnica de Catalunya, Barcelona, July 18-21 (2011).

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J.M. Ortiz de Zárate and J.V. Sengers, “Thermal Fluctuations of the Concentration in a Ternary Mixture”, 10th International Meeting on Thermodiffusion, Brussels, Belgium, June 4-8 (2012).

M.L. Huber, R.A. Perkins, D.G. Friend, J.V. Sengers, M.J. Assael, I.N. Metaxa, E. Vogel, K. Miyagawa, 12th Meeting of the International Association for Transport Properties, Boulder, CO, June 24 (2012).

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J.V. Sengers, J.M. Ortiz de Zárate, D. Bedeaux, S. Kjelstrup, and I. Pagonabarraga, “Concentration Fluctuations in Non-Isothermal Fluid Mixtures”, 18th Symposium on Thermophysical Properties, Boulder, CO, June 24-29 (2012).

J.M. Ortiz de Zárate and J.V. Sengers, “Fluctuations in Laminar Flow”, 6th International Workshop on Nonequilibrium Thermodynamics and 3rd Lars Onsager Symposium, Røros, Norway, August 19-24 (2012).

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V. Holten, M.A. Anisimov, and J.V. Sengers, “Equation of State for Supercooled Water”, 16th International Conference on the Properties of Water and Steam, London, September 1-5 (2013).

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J.M. Ortiz de Zárate, T.R. Kirkpatrick, and J.V. Sengers, “Fluctuation Induced Forces in Confined Nonequilibrium Liquids”, 9th Liquid Matter Conference, Lisbon, Portugal, July 21-25 (2014), poster.

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F. Llovel, L.F. Vega, M.A. Anisimov, and J.V. Sengers, Incorporating the critical divergence of the isochoric heat capacity into Soft-SAFT, SAFT 2015 Conference, Rice University, Houston, TX, May 17-19 (2015), poster.

V. Holten, M.A. Anisimov, and J.V. Sengers, “Equation of State for Supercooled Water at Pressures up to 400 MPa, 19th Symposium on Thermophysical Properties, Boulder, CO, June 21-16 (2015).

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J.M. Ortiz de Zárate, J.V. Sengers, and T.R. Kirkpatrick, “Fluctuation-Induced Forces in Fluids in a Temperature Gradient”, STATPHYS 26, Lyon, France, July 18-22, 2016.

V. Holten, F. Caupin, J.V. Sengers, and M.A. Anisimov, “Thermodynamics of Metastable Water”, Symposium on “Steam, Water and Aqueous Mixtures in Energy and Process Engineering, International Association of the Properties of Water and Steam, Dresden, Germany, September 14, 2016 (V. Holten, invited lecturer).

M.A. Anisimov and J.V. Sengers, “Critical Phenomena in Fluid Mixtures” (in Memoriam Evgenii E. Gorodetskiĭ and Sergei B. Kislev), International Conference on “Phase Transitions in Hydrocarbon Fluids: Theory and Experiments”, Gubkin State University of Oil and Gas, Moscow, Russia, September 14-15, 2016 (M.A. Anisimov, invited lecturer).

M.A. Anisimov and J.V. Sengers, “Liquid Polyamorphism: From Metallic Hydrogen to Supercooled Water”, Annual Meeting of AIChE, San Francisco, November 13-18, 2016.

X. Zheng, J.V. Sengers, and M.A. Anisimov, “Water-Soluble Polymers in Solutions of a Hydrotope”, 2nd Russia-USA Workshop on Phase Transitions in Fluids and Plasmas”, University of Maryland, College Park, MD, April 21, 2017.

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X. Zheng, J.V. Sengers, M.A. Anisimov, and M.-G. He, “Mesoscopic Behavior of Polymer Chains in Mixed Solvents Away and Near the Critical Point”, 20th Symposium on Thermophysical Properties, Boulder, CO, June 24-29, 2018.

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X. Zheng, M.A. Anisimov, J.V. Sengers, and M.-G. He, “Collapse and Swelling of Polymer Chains in Mixed Solvents near the Critical Point”, Annual Meeting of the AIChE, Pittsburg, PA, October 28 – November 2, 2018.

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