

Publications

1. Erickson, J. S.; Aranovich, G. L.; Donohue, M. D. *Mol. Phys.* **2002**, 100, 2121. "A Simple Model for Ordering in Adsorbed Layers".
2. Sangwichien, C.; Aranovich, G. L.; Donohue, M. D. *Colloids Surf. A* **2002**, 206, 313. "Density Functional Theory Predictions of Adsorption Isotherms with Hysteresis Loops".
3. Chernoff, M. P.; Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **2002**, 116, 9395. "Density Functional Theory Calculations of the Energy and Free Energy of Anisotropic Multicomponent Mixtures".
4. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **2002**, 116, 7255. "Modeling Self-Assembly in Molecular Fluids".
5. Hocker, T.; Donohue, M. D. *J. Colloid Interface Sci.* **2001**, 244, 9. "A Simple Model for Solute Partitioning and Adsorption".
6. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **2001**, 115, 5331. "A Simple Lattice Model for Phase Transitions in Block Copolymers".
7. Aranovich, G. L.; Donohue, M. D. *Colloids Surf. A* **2001**, 187, 95. "Surface Compression in Adsorption Systems".
8. Hocker, T.; Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **2001**, 238, 167. "Adsorption-Energy Distribution of Heterogeneous Surfaces Predicted by Projections onto Convex Sets".
9. Wu, D.-W.; Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **2000**, 230, 281. "Adsorption of Amphiphilic Dimers at Surfaces".
10. Wu, D.-W.; Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **2000**, 113, 3404. "Non-random Behavior of Amphiphilic Dimers in Solution".
11. Aranovich, G. L.; Sangwichien, C.; Donohue, M. D.; *J. Colloid Interface Sci.* **2000**, 227, 553. "Intermolecular Repulsions in Adsorbed Layers".
12. Aranovich, G. L.; Donohue, M. D. *Carbon* **2000**, 38, 701. "Vapor Adsorption on Microporous Adsorbents".
13. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **2000**, 112, 2361. "Lattice Density Functional Theory Predictions of Order-Disorder Phase Transitions".
14. Aranovich, G. L.; Donohue, M. D. *Phys. Rev. E* **1999**, 60, 5552. "Phase Loops in Density-Functional-Theory Calculations of Adsorption in Nanoscale Pores".

15. Hocker, T.; Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **1999**, 111, 1240. "Monolayer Adsorption of Nonrandom Mixtures".
16. Donohue, M. D.; Aranovich, G. L. *Fluid Phase Equilibria* **1999**, 160, 557. "A New Classification of Isotherms for Gibbs Adsorption of Gases on Solids".
17. Schultze, C.; Donohue, M. D. *Fluid Phase Equilibria* **1999**, 160, 229. "An Equation of State for Square-Well and Lennard-Jones Fluids Based on Lattice Theory".
18. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1999**, 213, 457. "Adsorption of Chain Molecules".
19. Wu, D.-W.; Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1999**, 212, 301. "Adsorption of Dimers at Surfaces".
20. Hocker, T.; Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1999**, 211, 61. "Monolayer Adsorption for the Subcritical Lattice Gas and Partially Miscible Binary Mixtures".
21. Aranovich, G. L.; Donohue, M. D. *Computers Chem.* **1998**, 22, 429. "A Simple Numerical Algorithm for Solution of Non-Linear Equations with Multiple Roots".
22. Donohue, M. D.; Aranovich, G. L. *J. Colloid Interface Sci.* **1998**, 205, 121. "Adsorption Hysteresis in Porous Solids".
23. Schultze, C.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1998**, 37, 2947. "Lattice Theory Predictions of Nonrandom Behavior in Square-Well Fluids".
24. Wu, D.-W.; Cui, Y. P.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1998**, 37, 2936. "Local Composition Models for Lattice Mixtures".
25. Donohue, M. D.; Aranovich, G. L. *Adv. Colloid Interface* **1998**, 77, 137. "Classification of Gibbs Adsorption Isotherms".
26. Schultze, C.; Donohue, M. D. *Fluid Phase Equilibria* **1998**, 142, 101. "Prediction of Henry's Constants for Supercritical Fluids using a van der Waals Equation of State".
27. Aranovich, G. L.; Donohue, M. D. *Physica A* **1997**, 242, 409. "New Approximate Solutions to the Ising Problem in Three Dimensions".
28. Aranovich, G. L.; Hocker, T.; Wu, D.-W.; Donohue, M. D. *J. Chem. Phys.* **1997**, 106, 10282. "Nonrandom Behavior in Multicomponent Lattice Mixtures: Effects of Solute Size and Shape".
29. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1997**, 189, 101. "Predictions of Multilayer Adsorption using Lattice Theory".
30. Loehe, J. R.; Donohue, M. D. *AIChE J.* **1997**, 43, 180. "Recent Advances in Modeling Thermodynamic Properties of Aqueous Strong Electrolyte Systems".

31. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **1996**, 105, 7059. "A New Model for Lattice Systems".
32. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1996**, 181, 313. "Universal Singularities of Multilayer Adsorption Isotherms and Determination of Surface Area of Adsorbents".
33. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1996**, 180, 537. "Adsorption of Supercritical Fluids".
34. Economou, I. G.; Donohue, M. D. *Fluid Phase Equilibria* **1996**, 116, 518. "Equations of State for Hydrogen Bonding Systems".
35. Schultze, C.; Donohue, M. D. *Fluid Phase Equilibria* **1996**, 116, 465. "Equation of State Calculations of Supercritical Fluid Behavior: Effects of Size and Interaction Energy".
36. Donohue, M. D.; Geiger, J. L.; Kiamos, A. A.; Nielsen, K. A. *ACS Symp. Ser.* **1996**, 626, 152. "Reduction of Volatile Organic Compound Emissions during Spray Painting - A New Process using Supercritical Carbon Dioxide to Replace Traditional Paint Solvents".
37. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1996**, 178, 764. "Multilayer Adsorption of Slightly Soluble Organic Compounds from Aqueous Solutions".
38. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1996**, 178, 204. "Adsorption from Binary Solutions of Nonelectrolytes".
39. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys.* **1996**, 104, 3851. "Adsorption on Surfaces with Molecular-Scale Heterogeneities".
40. Bokis, C. P.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1995**, 34, 4553. "Equations of State for Mixtures of Square-Well Molecules: Perturbation and Local Composition Theories for Binary-Mixtures of Equal-Sized Molecules".
41. Aranovich, G. L.; Donohue, M. D. *Carbon* **1995**, 33, 1369. "Adsorption-Isotherms for Microporous Adsorbents".
42. Kuespert, D. R.; Muralidharan, V.; Donohue, M. D. *Mol. Phys.* **1995**, 86, 201. "Microstructure and Phase-Behavior of a Mixed-Dimer Amphiphile".
43. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1995**, 175, 492. "An Equation of State for Multilayer Adsorption".
44. Bokis, C. P.; Donohue, M. D. *Int. J. Thermophys.* **1995**, 16, 1277. "A New Equation of State for Square-Well Molecules".
45. Bokis, C. P.; Donohue, M. D. *J. Phys. Chem.* **1995**, 99, 12655. "A Closed-Form Equation of State for Lennard-Jones Molecules based on Perturbation-Theory".

46. Aranovich, G. L.; Donohue, M. D. *J. Chem. Phys* **1995**, 103, 2216. "Gibbs Adsorption and the Compressibility Equation".
47. Aranovich, G. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1995**, 173, 515. "A New Approach to the Analysis of Multilayer Adsorption".
48. Reilly, J. T.; Bokis, C. P.; Donohue, M. D. *Int. J. Thermophys.* **1995**, 16, 599. "An Experimental Investigation of Lewis Acid-Base Interactions of Liquid Carbon-Dioxide Using Fourier-Transform Infrared (FT-IR) Spectroscopy".
49. Kuespert, D. R.; Donohue, M. D. *J. Phys. Chem.* **1995**, 99, 4805. "Microscale Behavior in Amphiphilic Fluid Mixtures Predicted by the SAFT Equation".
50. Muralidharan, V.; Donohue, M. D.; Argyropoulos, J.; Nielsen, K. A. *J. Supercritical Fluids* **1994**, 7, 275. "Determination of Phase Boundaries from Pressure-Volume data for Polymer-Solvent Carbon-Dioxide Mixtures".
51. Bokis, C. P.; Donohue, M. D.; Hall, C. K. *Ind. Eng. Chem. Res.* **1994**, 33, 1290. "Application of a Modified Generalized Flory Dimer Theory to Normal-Alkanes".
52. Thomas, A.; Donohue, M. D. *Mol. Phys.* **1994**, 81, 43. "Square-well Dimers of Different Bond Lengths: Theory and Simulation for the Equation of State".
53. Kiamos, A. A.; Donohue, M. D. *Macromol.* **1994**, 27, 357. "The Effect of Supercritical Carbon-Dioxide on Polymer-Solvent Mixtures".
54. Bokis, C. P.; Donohue, M. D.; Hall, C. K. *Ind. Eng. Chem. Res.* **1994**, 33, 146. "2nd Virial-Coefficients for Chain Molecules".
55. Thomas, A.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1993**, 32, 2093. "Equation of State for Chain Molecules using a Site-Interaction Model: Theory, Simulation, and Correlation of Experimental-Data".
56. Kuespert, D. R.; Donohue, M. D. *J. Chem. Phys.* **1993**, 98, 9782. "Local Ordering in Asymmetric Chain Fluids".
57. Economou, I. G.; Donohue, M. D.; Hunter, L. W. *Int. J. Thermophys.* **1993**, 14, 199. "Equation-Of-State Calculations of Chemical-Reaction Equilibrium in Nonideal Systems".
58. Bokis, C. P.; Cui, Y. P.; Donohue, M. D. *J. Chem. Phys.* **1993**, 98, 5023. "Thermodynamic Properties of Hard-Chain Molecules".
59. Kuespert, D. R.; Donohue, M. D. *Langmuir* **1993**, 9, 431. "Local Order and Microphase Formation in Fluids Containing Asymmetric Molecules".
60. Thomas, A.; Walsh, J. M.; Donohue, M. D. *AIChE J.* **1993**, 39, 193. "A Parameterization of the Configurational Energy for Short-Chain Molecules".

61. Bokis, C. P.; Donohue, M. D.; Hall, C. K. *J. Phys. Chem.* **1992**, 96, 11004. "Local Composition Model for Square-Well Chains using the Generalized Flory Dimer Theory".
62. Cui, Y. P.; Donohue, M. D. *Macromol.* **1992**, 25, 6489. "Entropy and Energy of Mixing in Polymer-Solutions: Simple Expressions that Approximate Lattice Cluster Theory".
63. Reilly, J. T.; Walsh, J. M.; Greenfield, M. L.; Donohue, M. D. *Spectrochim. Acta A* **1992**, 48, 1459. "Analysis of FT-IR Spectroscopic Data: The Voigt Profile".
64. Economou, I. G.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1992**, 31, 2388. "Equation of State with Multiple Associating Sites for Water and Hydrocarbon Mixtures".
65. Bokis, C. P.; Donohue, M. D. *AIChE J.* **1992**, 38, 788. "Shape-Parameters and the Density Dependence of Hard-Chain Equations of State".
66. Campbell, S. W.; Economou, I. G.; Donohue, M. D. *AIChE J.* **1992**, 38, 611. "Closed-Form Expressions for Chemical Theory of Associating Mixtures".
67. Economou, I. G.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1992**, 31, 1203. "Thermodynamic Inconsistencies in and Accuracy of Chemical-Equations of State for Associating Fluids".
68. Reilly, J. T.; Kim, C. H.; Clark, A. B.; Donohue, M. D. *Fluid Phase Equilibria* **1992**, 73, 81. "High-Pressure Vapor-Liquid-Equilibria of Aromatic-Hydrocarbons with Carbon-Dioxide and Ethane".
69. Vimalchand, P.; Thomas, A.; Economou, I. G.; Donohue, M. D. *Fluid Phase Equilibria* **1992**, 73, 39. "Effect of Hard-Sphere Structure on Pure-Component Equation of State Calculations".
70. Economou, I. G.; Donohue, M. D. *AIChE J.* **1991**, 37, 1875. "Chemical, Quasi-Chemical and Perturbation Theories for Associating Fluids".
71. Economou, I. G.; Vimalchand, P.; Donohue, M. D. *Fluid Phase Equilibria* **1991**, 68, 131. "Measurement of Infinite Dilution Activity-Coefficients using High-Performance Liquid-Chromatography".
72. Economou, I. G.; Cui, Y. P.; Donohue, M. D. *Macromol.* **1991**, 24, 5058. "Hydrogen-Bonding in Polymer Solvent Mixtures".
73. Walsh, J. M.; Jin, G.; Donohue, M. D. *Fluid Phase Equilibria* **1991**, 65, 209. "Thermodynamics of Short-Chain Polar Compounds".
74. Conforti, R. M.; Barbari, T. A.; Vimalchand, P.; Donohue, M. D. *Macromol.* **1991**, 24, 3388. "A Lattice-Based Activity-Coefficient Model for Gas Sorption in Glassy-Polymers".

75. Jin, G.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1991**, 30, 240. "An Equation of State For Electrolyte-Solutions. 3. Aqueous-Solutions Containing Multiple Salts".
76. Economou, I. G.; Ikononou, G. D.; Vimalchand, P.; Donohue, M. D. *AIChE J.* **1990**, 36, 1851. "Thermodynamics of Lewis Acid-Base Mixtures".
77. Economou, I. G.; Donohue, M. D. *AIChE J.* **1990**, 36, 1920. "Mean Field Calculations of Thermodynamic Properties of Supercritical Fluids".
78. Reilly, J. T.; Schubert, C. N.; Lindner, J. R.; Donohue, M. D.; Kelly, R. M. *Chem. Eng. Comm.* **1990**, 93, 181. "Effect of Heterocyclic Amine Additives on the Absorption Rates of Carbonyl Sulfide and Carbon-Dioxide in Aqueous Methyldiethanolamine Solutions".
79. Elliott, J. R.; Suresh, S. J.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1990**, 29, 1476. "A Simple Equation of State for Nonspherical and Associating Molecules".
80. Walsh, J. M.; Greenfield, M. L.; Ikononou, G. D.; Donohue, M. D. *Int. J. Thermophys.* **1990**, 11, 119. "An FTIR Spectroscopic Study of Hydrogen-Bonding Competition in Entranier Cosolvent Mixtures".
81. Katz, J. L.; Donohue, M. D. *High Temp. Sci.* **1989**, 27, 97. "Nucleation With Simultaneous Chemical-Reaction".
82. Walsh, J. M.; Donohue, M. D. *Fluid Phase Equilibria* **1989**, 52, 397. "Hydrogen-Bonding in Entranier Cosolvent Mixtures: A Parametric Analysis".
83. Walsh, J. M.; Greenfield, M. L.; Ikononou, G. D.; Donohue, M. D. *Chem. Eng. Comm.* **1989**, 86, 125. "Hydrogen-Bonding Competition in Entranier Cosolvent Mixtures".
84. Kim, C. H.; Clark, A. B.; Vimalchand, P.; Donohue, M. D. *J. Chem. Eng. Data* **1989**, 34, 391. "High-Pressure Binary Phase-Equilibria of Aromatic-Hydrocarbons with CO₂ and C₂H₆".
85. Vimalchand, P.; Donohue, M. D. *J. Phys. Chem.* **1989**, 93, 4355. "Comparison of Equations of State for Chain Molecules".
86. Donohue, M. D.; Minhas, B. S.; Lee S. Y. *J. Membrane Sci.* **1989**, 42, 197. "Permeation Behavior of Carbon-Dioxide Methane Mixtures in Cellulose-Acetate Membranes".
87. Chiang, P. P.; Donohue, M. D. *J. Colloid Interface Sci.* **1988**, 126, 579. "The Effect of Complex-Ions on Crystal Nucleation and Growth".
88. Vimalchand, P.; Ikononou, G. D.; Donohue, M. D. *Fluid Phase Equilibria* **1988**, 43, 121. "Correlation of Equation of State Parameters for the Associated Perturbed Anisotropic Chain Theory".
89. Jin, G.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1988**, 27, 1737. "An Equation of State for Electrolyte-Water-Solutions. 2. Single Volatile Weak Electrolytes in Water".

90. Jin, G.; Donohue, M. D. *Ind. Eng. Chem. Res.* **1988**, 27, 1073. "An Equation of State for Electrolyte-Solutions. 1. Aqueous Systems Containing Strong Electrolytes".
91. Donohue, M. D.; Vimalchand, P. *Fluid Phase Equilibria* **1988**, 40, 185. "The Perturbed-Hard-Chain Theory: Extensions and Applications".
92. Chiang, P. P.; Donohue, M. D.; Katz, J. L. *J. Colloid Interface Sci.* **1988**, 122, 251. "A Kinetic Approach to Crystallization from Ionic Solution. 2. Crystal Nucleation".
93. Chiang, P. P.; Donohue, M. D. *J. Colloid Interface Sci.* **1988**, 122, 230. "A Kinetic Approach to Crystallization from Ionic Solutions. 1. Crystal-Growth".
94. Ikononou, G. D.; Donohue, M. D. *Fluid Phase Equilibria* **1988**, 39, 129. "Extension of the Associated Perturbed Anisotropic Chain Theory to Mixtures with More Than One Associating Component".
95. Walsh, J. M.; Ikononou, G. D.; Donohue, M. D. *Fluid Phase Equilibria* **1987**, 33, 295. "Supercritical Phase-Behavior: The Entrainer Effect".
96. Ikononou, G. D.; Donohue, M. D. *Fluid Phase Equilibria* **1987**, 33, 61. "COMPACT: A Simple Equation of State for Associated Molecules".
97. Morris, W. O.; Vimalchand, P.; Donohue, M. D. *Fluid Phase Equilibria* **1987**, 32, 103. "The Perturbed-Soft-Chain Theory: An Equation of State Based on the Lennard-Jones Potential".
98. Kim, C. H.; Vimalchand, P.; Donohue, M. D. *Fluid Phase Equilibria* **1986**, 31, 299. "Vapor-Liquid-Equilibria for Binary-Mixtures of Carbon-Dioxide with Benzene, Toluene and Para-Xylene".
99. Vimalchand, P.; Celmins, I.; Donohue, M. D. *AIChE J.* **1986**, 32, 1735. "VLE Calculations for Mixtures Containing Multipolar Compounds using the Perturbed Anisotropic Chain Theory".
100. Kim, C. H.; Vimalchand, P.; Donohue, M. D.; Sandler, S. I. *AIChE J.* **1986**, 32, 1726. "Local Composition Model for Chain-Like Molecules: A New Simplified Version of the Perturbed Hard Chain Theory".
101. Ikononou, G. D.; Donohue, M. D. *AIChE J.* **1986**, 32, 1716. "Thermodynamics of Hydrogen-Bonded Molecules: The Associated Perturbed Anisotropic Chain Theory".
102. Jin, G.; Walsh, J. M.; Donohue, M. D. *Fluid Phase Equilibria* **1986**, 31, 123. "A Group-Contribution Correlation for Predicting Thermodynamic Properties with the Perturbed-Soft-Chain Theory".
103. Donohue, M. D.; Vimalchand, P.; Ikononou, G. D. *Fluid Phase Equilibria* **1986**, 30, 307. "Phase-Equilibrium Predictions for Polar and Hydrogen-Bonding Mixtures".

104. Vimalchand, P.; Donohue, M. D.; Celmins, I. *ACS Symp. Ser.* **1986**, 300, 297. "Thermodynamics of Multipolar Molecules: The Perturbed-Anisotropic-Chain Theory".
105. Mart, C. J.; Papadopoulos, K. D.; Donohue, M. D. *Ind. Eng. Chem. Proc. DD* **1986**, 25, 394. "Application of Perturbed-Hard-Chain Theory to Solid Supercritical-Fluid Equilibria".
106. Morris, W. O.; Donohue, M. D. *J. Chem. Eng. Data* **1985**, 30, 259. "Vapor Liquid Equilibria in Mixtures Containing Carbon-Dioxide, Toluene, and 1-Methylnaphthalene".
107. Donohue, M. D.; Shah, D. M.; Connally, K. G.; Venkatachalam, V. R. *Ind. Eng. Chem. Fund.* **1985**, 24, 241. "Henry Constants for C-5 to C-9 Hydrocarbons in C-10 and Larger Hydrocarbons".
108. Vimalchand, P.; Donohue, M. D. *Ind. Eng. Chem. Fund.* **1985**, 24, 246. "Thermodynamics of Quadrupolar Molecules: The Perturbed-Anisotropic-Chain Theory".
109. Katz, J. L.; Donohue, M. D. *J. Colloid Interface Sci.* **1982**, 85, 267. "Nucleation with Simultaneous Chemical-Reaction".
110. Donohue, M. D.; Herz, A. H. *Photo. Sci. Eng.* **1981**, 25, 92. "Ostwald Ripening Rates of Silver-Iodide Dispersions: The effect of pAg".
111. Kaul, B. K.; Donohue, M. D.; Prausnitz, J. M. *Fluid Phase Equilibria* **1980**, 4, 171. "Henry's Constants and 2nd Virial-Coefficients from Perturbed-Hard-Chain Theory".
112. Donohue, M. D.; Prausnitz, J. M. *AIChE J.* **1978**, 24, 849. "Perturbed Hard Chain Theory for Fluid Mixtures: Thermodynamic Properties for Mixtures in Natural-Gas and Petroleum Technology".
113. Donohue, M. D.; Prausnitz, J. M. *Can. J. Chem.* **1975**, 53, 1586. "Combinatorial Entropy of Mixing Molecules that Differ in Size and Shape: Simple Approximation for Binary and Multicomponent Mixtures".
114. Jarvis, T. J.; Donohue, M. D.; Katz, J. L. *J. Colloid Interface Sci.* **1975**, 50, 359. "Bubble Nucleation Mechanisms of Liquid Droplets Superheated in Other Liquids".