

PUBLICATIONS

John I. Brauman

1. Steroidal Hormone Analogs. VI. Synthesis of 3'-Acetyl-1', 2':1,2-cyclopentano-1,2,3,4-tetrahydro-6-methoxynaphthalene, N. A. Nelson, J. C. Wollensak, R. L. Foltz, J. B. Hester, Jr., J. I. Brauman, R. B. Garland, and G. H. Rasmusson, *J. Am. Chem. Soc.*, **82**, 2569-2573 (1960).
2. Application of the Molecular Orbital ω -Technique to Aromatic Substitution, A. Streitwieser, Jr., J. I. Brauman, and J. B. Bush, *Tetrahedron*, **19**, Suppl. 2, 379-391 (1963).
3. Acidity of Hydrocarbons. VIII. An HMO Examination of Exchange Rates of Methylarene- α -d's with Lithium Cyclohexylamide, A. Streitwieser, Jr., W. C. Langworthy, and J. I. Brauman, *J. Am. Chem. Soc.*, **85**, 1761-1763 (1963).
4. Spectra of Some Alkali Salts of Hydrocarbons, A. Streitwieser, Jr., and J. I. Brauman, *J. Am. Chem. Soc.*, **85**, 2633-2636 (1963).
5. Supplemental Tables of Molecular Orbital Calculations, A. Streitwieser, Jr. and J. I. Brauman, Pergamon Press, New York, 1965.
6. Equilibrium Acidities of Hydrocarbon Acids in Cyclohexylamine, A. Streitwieser, Jr., J. I. Brauman, J. H. Hammons, and A. H. Pudjaatmaka, *J. Am. Chem. Soc.*, **87**, 384-386 (1965).
7. Mass Spectrometry and Its Application to Structural and Stereochemical Problems. Part LXVII. On the Retro-Diels-Alder Decomposition of Organic Molecules Under Electron Impact, H. Budzikiewicz, J. I. Brauman, and C. Djerassi, *Tetrahedron*, **21**, 1855-1879 (1965).
8. Aryl Coupling by Irradiation of Lithium Aryls, E. E. van Tamelen, J. I. Brauman, and L. E. Ellis, *J. Am. Chem. Soc.*, **87**, 4964 (1965).
9. Automatic Processing of Circular Dichroism Data, G. J. Elman and J. I. Brauman, in P. Crabbe, *Optical Rotatory Dispersion and Circular Dichroism in Organic Chemistry*, Holden-Day, Inc., San Francisco, 1965, pp. 341-351.
10. Bicyclo[2.1.0]pent-2-ene, J. I. Brauman, L. E. Ellis, and E. E. van Tamelen, *J. Am. Chem. Soc.*, **88**, 846-848 (1966).
11. Least Squares Analysis and Simplification of Multi-Isotope Mass Spectra, J. I. Brauman, *Anal. Chem.*, **38**, 607-610 (1966).
12. Ring Inversion, Ultraviolet Spectrum, and Electronic Structure of the Monohomotropylium Ion, S. Winstein, C. G. Kreiter, and J. I. Brauman, *J. Am. Chem. Soc.*, **88**, 2047-2048 (1966).

13. Rates of Proton Exchange between Dimethyl Sulfoxide and Its Conjugate Base, J. I. Brauman and N. J. Nelson, *J. Am. Chem. Soc.*, **88**, 2332-2334 (1966).
14. Rearrangement of a Neopentylamine Oxide, J. I. Brauman and W. A. Sanderson, *Tetrahedron*, **23**, 37-44 (1967).
15. Acidity of Hydrocarbons. XXI. Equilibrium Acidities of Some Hydrocarbons toward Lithium Cyclohexylamide in Cyclohexylamine, A. Streitwieser, Jr., J. H. Hammons, E. Ciuffarin, and J. I. Brauman, *J. Am. Chem. Soc.*, **89**, 59-62 (1967).
16. Hydrocarbon-Carbanion Proton Exchange Reactions in Dimethyl Sulfoxide, J. I. Brauman, D. F. McMillen, and Y. Kanazawa, *J. Am. Chem. Soc.*, **89**, 1728-1730 (1967).
17. Epimerization of 2,4-Diphenylpentane, an Oligomer of Polystyrene, A. D. Williams, J. I. Brauman, N. J. Nelson, and P. J. Flory, *J. Am. Chem. Soc.*, **89**, 4807-4808 (1967).
18. Photolysis of Sodium Cyclopentadienide, E. E. van Tamelen, J. I. Brauman, and L. E. Ellis, *J. Am. Chem. Soc.*, **89**, 5073-5074 (1967).
19. A Stereospecific Friedel-Crafts Reaction. The Alkylation of Benzene with γ -Valerolactone, J. I. Brauman and A. J. Pandell, *J. Am. Chem. Soc.*, **89**, 5421-5424 (1967).
20. The Effect of Alcohol on Proton Exchange Reactions in Dimethyl Sulfoxide. I. Low Alcohol Concentrations, J. I. Brauman, N. J. Nelson, and D. C. Kahl, *J. Am. Chem. Soc.*, **90**, 490-491 (1968).
21. The Effect of Alcohol on Proton Exchange Reactions in Dimethyl Sulfoxide. II. High Alcohol Concentrations, J. I. Brauman and N. J. Nelson, *J. Am. Chem. Soc.*, **90**, 491 (1968).
22. Characteristic Vibrational Frequencies of Cyclic Ketones, J. I. Brauman and V. W. Laurie, *Tetrahedron*, **24**, 2595-2602 (1968).
23. Alternate Electrocyclic Pathways. A. Quantitative Energy Evaluation, J. I. Brauman and D. M. Golden, *J. Am. Chem. Soc.*, **90**, 1920-1921 (1968).
24. Acid-Base Behavior of Excited States. The Photochemistry of Cyclooctatetraene Dianion, J. I. Brauman, J. Schwartz, and E. E. van Tamelen, *J. Am. Chem. Soc.*, **90**, 5328-5329 (1968).
25. Stereospecific Friedel-Crafts Reactions: Alkylation with a Cyclic Ether, J. I. Brauman and A. SolladiE-Cavallo, *Chem. Commun.*, 1124-1125 (1968).
26. Gas-Phase Acidities of Carbon Acids, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **90**, 5636-5637 (1968).

27. Gas-Phase Acidities of Alcohols. Effects of Alkyl Groups, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **90**, 6561-6562 (1968).
28. Fixation of Carbon Dioxide by Carbamyl Phosphate Synthetase of *Escherichia coli*. Evidence for a Reversibly Formed Intermediate, P. H. Duffield, S. M. Kalman, and J. I. Brauman, *Biochim. Biophys. Acta*, **171**, 189-191 (1969).
29. Thermal Unimolecular Isomerization of Bicyclo[2.1.0]pent-2-ene, D. M. Golden and J. I. Brauman, *Trans. Faraday Soc.*, **65**, 464-469 (1969).
30. Gas-Phase Acidities of Amines, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **91**, 2126-2127 (1969).
31. Photodetachment Energies of Negative Ions by Ion Cyclotron Resonance Spectroscopy. Electron Affinities of Neutral Radicals, J. I. Brauman and K. C. Smyth, *J. Am. Chem. Soc.*, **91**, 7778-7780 (1969).
32. Mechanism of Permanganate Oxidation of Tertiary Hydrogen to Hydroxyl, J. I. Brauman and A. J. Pandell, *J. Am. Chem. Soc.*, **92**, 329-335 (1970).
33. Ketone Enolate Photochemistry, E. E. van Tamelen, J. Schwartz, and J. I. Brauman, *J. Am. Chem. Soc.*, **92**, 5798-5799 (1970).
34. The Reaction of Trityl Carbonium Ion with Water, J. I. Brauman and W. C. Archie, Jr., *J. Am. Chem. Soc.*, **92**, 5981-5986 (1970).
35. Gas-Phase Acidities of Alcohols, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **92**, 5986-5992 (1970).
36. Equilibrium Acidities in Dimethyl Sulfoxide, J. I. Brauman, J. A. Bryson, D. C. Kahl, and N. J. Nelson, *J. Am. Chem. Soc.*, **92**, 6679-6680 (1970).
37. Mass Spectrometry, J. I. Brauman, in J. A. Blackburn, Ed., *Spectral Analysis*, Marcel Dekker, Inc., New York, 1970, pp. 235-257.
38. Photodetachment of Negative Ions Using a Continuously Tunable Laser and an Ion Cyclotron Resonance Spectrometer, K. C. Smyth, R. T. McIver, Jr., J. I. Brauman, and R. W. Wallace, *J. Chem. Phys.*, **54**, 2758-2759 (1971).
39. The Chemistry of 1,4 Diradicals. II. The Interpretation of Spin Correlation Effects, L. M. Stephenson and J. I. Brauman, *J. Am. Chem. Soc.*, **93**, 1988-1991 (1971).
40. Synthesis and Thermal Isomerization of *cis*-3,4-Diphenylcyclobutene, J. I. Brauman and W. C. Archie, Jr., *Tetrahedron*, **27**, 1275-1280 (1971).
41. Gas-Phase Acidities of Amines, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **93**, 3911-3914 (1971).

42. Gas-Phase Basicities of Amines, J. I. Brauman, J. M. Riveros, and L. K. Blair, *J. Am. Chem. Soc.*, **93**, 3914-3916 (1971).
43. Alkyl Substituent Effects on Gas-Phase Acidities. The Influence of Hybridization, J. I. Brauman and L. K. Blair, *J. Am. Chem. Soc.*, **93**, 4315-4316 (1971).
44. The Mechanism of Friedel-Crafts Alkylations by Lactones, D. W. Waples and J. I. Brauman, *Chem. Commun.*, 1075-1076 (1971).
45. Photolysis of Lithium Aryls, E. E. van Tamelen, J. I. Brauman, and L. E. Ellis, *J. Am. Chem. Soc.*, **93**, 6141-6144 (1971).
46. Photolysis of Cyclopentadienide and Cyclopentadiene, E. E. van Tamelen, J. I. Brauman, and L. E. Ellis, *J. Am. Chem. Soc.*, **93**, 6145-6151 (1971).
47. Gas-Phase Acidities of Binary Hydrides, J. I. Brauman, J. R. Eyler, L. K. Blair, M. J. White, M. B. Comisarow, and K. C. Smyth, *J. Am. Chem. Soc.*, **93**, 6360-6362 (1971).
48. Ion Cyclotron Resonance, J. I. Brauman, *XXIII International Congress on Pure and Applied Chemistry*, Volume 7, Butterworths, London, 1971, pp. 1-7.
49. Photodetachment of Electrons from Phosphide Ion; the Electron Affinity of PH_2^- , K. C. Smyth and J. I. Brauman, *J. Chem. Phys.*, **56**, 1132-1142 (1972).
50. Shielding Effects of a Cyclopropane Ring, C. D. Poulter, R. S. Boikess, J. I. Brauman, and S. Winstein, *J. Am. Chem. Soc.*, **94**, 2291-2296 (1972).
51. Photodetachment of Electrons from Amide and Arsenide Ions. The Electron Affinities of NH_2^- and AsH_2^- , K. C. Smyth and J. I. Brauman, *J. Chem. Phys.*, **56**, 4620-4625 (1972).
52. Energies of Alternate Electrocyclic Pathways. Pyrolysis of *cis*-3,4-Dimethylcyclobutene, J. I. Brauman and W. C. Archie, Jr., *J. Am. Chem. Soc.*, **94**, 4262-4265 (1972).
53. Photodetachment of an Electron from Selenide Ion; the Electron Affinity and Spin-Orbit Coupling Constant for SeH^- , K. C. Smyth and J. I. Brauman, *J. Chem. Phys.*, **56**, 5993-5997 (1972).
54. The Role of Ion Pairing in Reactions of Metal Carbonyl Anions. I. Cation-Assisted Alkyl-Acyl Migratory Insertions, J. P. Collman, J. N. Cawse, and J. I. Brauman, *J. Am. Chem. Soc.*, **94**, 5905-5906 (1972).
55. Thermal *Cis-Trans* Isomerization of Butadiene, L. M. Stephenson, R. V. Gemmer, and J. I. Brauman, *J. Am. Chem. Soc.*, **94**, 8620-8622 (1972).

56. Homogeneous Catalysis of a Gas-Phase, Ion-Molecule Reaction, J. I. Brauman, C. A. Lieder, and M. J. White, *J. Am. Chem. Soc.*, **95**, 927-928 (1973).
57. Ion Cyclotron Resonance Spectroscopy, J. I. Brauman and L. K. Blair in F. C. Nachod and J. J. Zuckerman, Eds., *Determination of Organic Structures by Physical Methods*, Volume 5, Academic Press, New York, 1973.
58. Thermochemistry, Calculations, and the Barrier to Ring Closure in Short-Chain-Length Diradicals, L. M. Stephenson, T. A. Gibson, and J. I. Brauman, *J. Am. Chem. Soc.*, **95**, 2849-2852 (1973).
59. The Nature of the α -Sulphinyl Carbanion Derived from Methyl 1-Phenylethyl Sulphoxide, M. B. D'Amore and J. I. Brauman, *Chem. Commun.*, 398-399 (1973).
60. Depolarized Rayleigh Scattering and Orientational Relaxation of Molecules in Solution. I. Benzene, Toluene, and Para-Xylene, G. R. Alms, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **58**, 5570-5578 (1973).
61. Mechanism of Isomerization of Bicyclo[2.1.0]pent-2-enes, J. I. Brauman, W. E. Farneth, and M. B. D'Amore, *J. Am. Chem. Soc.*, **95**, 5043-5044 (1973).
62. Concerning the Mechanism of a Nonenzymic Biogenetic-Like Olefinic Cyclization, P. A. Bartlett, J. I. Brauman, W. S. Johnson, and R. A. Volkmann, *J. Am. Chem. Soc.*, **95**, 7502-7504 (1973).
63. Photodetachment of Electrons from Large Molecular Systems: Cyclopentadienide and Methylcyclopentadienide Ions. An Upper Limit to Electron Affinities of $C_5H_5^{\cdot-}$ and $CH_3C_5H_4^{\cdot-}$, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Chem. Phys.*, **59**, 5068-5076 (1973).
64. Generalized Hydrodynamics and the Depolarized Rayleigh Doublet in Anisaldehyde, G. R. Alms, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **59**, 5304-5309 (1973).
65. Depolarized Rayleigh Scattering and Orientational Relaxation of Molecules in Solution. II Chloroform and Nitrobenzene, G. R. Alms, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **59**, 5310-5320 (1973).
66. Depolarized Rayleigh Scattering and Orientational Relaxation of Molecules in Solution. III Carboxylic Acids, G. R. Alms, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **59**, 5321-5328 (1973).
67. The Resonance Energy of Transition States. The Cyclobutene-Butadiene Energy Surface, L. M. Stephenson and J. I. Brauman, *Accts. Chem. Res.*, **7**, 65-71 (1974).

68. Photodetachment of NO_2^- ; Experimental Evidence for a New Isomer, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *Chem. Phys. Letters*, **25**, 318-320 (1974).
69. Photodetachment of Electrons from Ethyl Nitrene Anion. An Upper Limit to the Electron Affinity of $\text{C}_2\text{H}_5\text{N}$, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *Chem. Phys. Letters*, **25**, 321-323 (1974).
70. The Nature of the Chromium Trioxide Intercalation in Graphite, L. B. Ebert, R. A. Huggins, and J. I. Brauman, *Carbon*, **12**, 199-208 (1974).
71. Photodissociation of $\text{Fe}(\text{CO})_4^-$ and $\text{Fe}(\text{CO})_3^-$ in the Gas Phase, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Am. Chem. Soc.*, **96**, 3671-3673 (1974).
72. Detection of Neutral Products in Gas-Phase, Ion-Molecule Reactions, C. A. Lieder and J. I. Brauman, *J. Am. Chem. Soc.*, **96**, 4028-4030 (1974).
73. Gas-Phase Nucleophilic Displacement Reactions, J. I. Brauman, W. N. Olmstead, and C. A. Lieder, *J. Am. Chem. Soc.*, **96**, 4030-4031 (1974).
74. Depolarized Rayleigh Scattering and ^{13}C NMR Studies of Anisotropic Molecular Reorientation of Aromatic Compounds in Solution, D. R. Bauer, G. R. Alms, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **61**, 2255-2261 (1974).
75. Three Isomers of the NO_2^- Ion, P. K. Pearson, H. F. Schaefer III, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Am. Chem. Soc.*, **96**, 6778-6779 (1974).
76. Molecular Reorientation in Liquids. Experimental Test of Hydrodynamic Models, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Am. Chem. Soc.*, **96**, 6840-6843 (1974).
77. Isotope Separation by Selective Unimolecular Isomerization, J. I. Brauman, T. J. O'Leary, and A. L. Schawlow, *Optics Commun.*, **12**, 223-224 (1974).
78. Wide Line Nuclear Magnetic Resonance of ^{19}F in Graphite-Antimony Pentafluoride: Evidence for Rapid Motion of Intercalated Species, L. B. Ebert, R. A. Huggins, and J. I. Brauman, *Chem. Commun.*, 924-925 (1974).
79. Photodetachment of Electrons from Group IVa Binary Hydride Anions: The Electron Affinities of the SiH_3 and GeH_3 Radicals, K. J. Reed and J. I. Brauman, *J. Chem. Phys.*, **61**, 4830-4838 (1974).
80. Carbon Monofluoride. Evidence for a Structure Containing an Infinite Array of Boats, L. B. Ebert, J. I. Brauman, and R. A. Huggins, *J. Am. Chem. Soc.*, **96**, 7841-7842 (1974).

81. Photodetachment of Electrons from Trifluoromethyl and Trifluorosilyl Anions: The Electron Affinities of CF_3 and SiF_3 , J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *Chem. Phys. Letters*, **30**, 17-20 (1975).
82. Photodetachment of Electrons from Phenoxide Ion, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Chem. Phys.*, **62**, 1580-1582 (1975).
83. A Technique for Detection of Neutral Products in Gas-Phase, Ion Molecule Reactions, C. A. Lieder and J. I. Brauman, *Int. J. Mass Spectrom. Ion Phys.*, **16**, 307-319 (1975).
84. Photodetachment of Electrons from Large Molecular Systems: Pyrrolate Ion. The Electron Affinity of $\text{C}_4\text{H}_4\text{N}^-$, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Am. Chem. Soc.*, **97**, 1160-1162 (1975).
85. Electron Affinities of Alkoxy Radicals and the Bond Dissociation Energies in Aliphatic Alcohols, K. J. Reed and J. I. Brauman, *J. Am. Chem. Soc.*, **97**, 1625-1626 (1975).
86. Photodetachment of Electrons from Phenoxides and Thiophenoxide, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Am. Chem. Soc.*, **97**, 2967-2970 (1975).
87. Acid and Base, J. I. Brauman in *McGraw-Hill Yearbook of Science and Technology*, McGraw-Hill, New York, 1975.
88. Photodetachment of Electrons from Large Molecular Systems. Benzyl Anion. An Upper Limit to the electron Affinity of $\text{C}_6\text{H}_5\text{CH}_2^-$, J. H. Richardson, L. M. Stephenson, and J. I. Brauman, *J. Chem. Phys.*, **63**, 74-76 (1975).
89. Depolarized Rayleigh Scattering and Orientational Relaxation of Molecules in Solution. IV. Mixtures of Hexafluorobenzene with Benzene and with Mesitylene, D. R. Bauer, J. I. Brauman, and R. Pecora, *J. Chem. Phys.*, **63**, 53-60 (1975).
90. Depolarized Rayleigh Spectroscopy Studies of Relaxation Processes of Polystyrenes in Solution, D. R. Bauer, J. I. Brauman, and R. Pecora, *Macromolecules*, **8**, 443-451 (1975).
91. Tetrahedral Intermediates in Gas Phase Ionic Displacement Reactions at Carbonyl Carbon, O. I. Asubiojo, L. K. Blair, and J. I. Brauman, *J. Am. Chem. Soc.*, **97**, 6685-6688 (1975).
92. Oxygen Binding to Iron Porphyrins, J. P. Collman, J. I. Brauman, and K. S. Suslick, *J. Am. Chem. Soc.*, **97**, 7185-7186 (1975).
93. Cross Sections for Photodetachment of Electrons from Negative Ions Near Threshold, K. J. Reed, A. H. Zimmerman, H. C. Andersen, and J. I. Brauman, *J. Chem. Phys.*, **64**, 1368-1375 (1976).

94. Reaction of Antimony Pentafluoride with Poly(Carbon Monofluoride), L. B. Ebert, R. A. Huggins, and J. I. Brauman, *Mater. Res. Bull.*, **11**, 615-620 (1976).
95. Binuclear Clusters in Organic Synthesis. Synthetic and Mechanistic Studies of the Reduction of α,β -Unsaturated Carbonyl Compounds by $\text{NaHFe}_2(\text{CO})_8$, J. P. Collman, R. G. Finke, P. L. Matlock, R. Wahren, and J. I. Brauman, *J. Am. Chem. Soc.*, **98**, 4685-4687 (1976).
96. The Isomerization of Bicyclo[2.1.0]pent-2-enes, W. E. Farneth, M. B. D'Amore, and J. I. Brauman, *J. Am. Chem. Soc.*, **98**, 5546-5552 (1976).
97. Nature of O_2 and CO Binding to Metalloporphyrins and Heme Proteins, J. P. Collman, J. I. Brauman, T. R. Halbert, and K. S. Suslick, *Proc. Natl. Acad. Sci. USA*, **73**, 3333-3337 (1976).
98. Depolarized Light Scattering from Liquids, D. R. Bauer, J. I. Brauman, and R. Pecora, *Ann. Rev. Phys. Chem.*, **27**, 443-463 (1976).
99. Dynamics of Proton Transfer Involving Delocalized Negative Ions in the Gas Phase, W. E. Farneth and J. I. Brauman, *J. Am. Chem. Soc.*, **98**, 7891-7898 (1976).
100. Analysis of the Rates of Ion-Molecule Association Reactions. Proton-Bound Dimers of NH_3 , CH_3NH_2 , and $(\text{CH}_3)_2\text{NH}$, W. N. Olmstead, M. Lev-On, D. M. Golden, and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 992-998 (1977).
101. Photodissociation of Butyrophenone Cation. Ionic Analogues of Norrish Type I and II Reactions, R. Gooden and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 1977-1978 (1977).
102. Oxidative-Addition Reactions of the $\text{Na}_2\text{Fe}(\text{CO})_4$ Supernucleophile, J. P. Collman, R. G. Finke, J. N. Cawse, and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 2515-2526 (1977).
103. Book Review: The HMO Model and Its Application. I. Basis and Manipulation. By Edgar Heilbronner and H. Bock, J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 2835 (1977).
104. Electron Photodetachment from Negative Ions of C_{2v} Symmetry. Electron Affinities of Allyl and Cyanomethyl Radicals, A. H. Zimmerman and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 3565-3638 (1977).
105. Reactions and Photochemistry of Vibrationally Excited Cl_2^- , O. I. Asubiojo, H. L. McPeters, W. N. Olmstead, and J. I. Brauman, *Chem. Phys. Lett.*, **48**, 127-131 (1977).
106. Resonances in Electron Photodetachment Cross Sections, A. H. Zimmerman and J. I. Brauman, *J. Chem. Phys.*, **66**, 5823-5825 (1977).

107. Gas-Phase Nucleophilic Displacement Reactions, W. N. Olmstead and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 4219-4228 (1977).
108. Photodetachment of Electrons from Enolate Anions. Gas Phase Electron Affinities of Enolate Radicals, A. H. Zimmerman, K. J. Reed, and J. I. Brauman, *J. Am. Chem. Soc.*, **99**, 7203-7209 (1977).
109. Gas Phase Hydrolysis of Phosphorus Esters, O. I. Asubiojo, J. I. Brauman, and R. H. Levin, *J. Am. Chem. Soc.*, **99**, 7707-7708 (1977).
110. Infrared Photodecomposition of Ethyl Vinyl Ether. A Chemical Probe of Multiphoton Dynamics, R. N. Rosenfeld, J. I. Brauman, J. R. Barker, and D. M. Golden, *J. Am. Chem. Soc.*, **99**, 8063-8064 (1977).
111. Synthetic and Mechanistic Studies of the Reduction of α,β Unsaturated Carbonyl Compounds by the Binuclear Cluster, $\text{NaHFe}_2(\text{CO})_8$, J. P. Collman, R. G. Finke, P. L. Matlock, R. Wahren, R. G. Komoto, and J. I. Brauman, *J. Am. Chem. Soc.*, **100**, 1119-1140 (1978).
112. Model Compounds for the T State of Hemoglobin, J. P. Collman, J. I. Brauman, K. M. Doxsee, T. R. Halbert, and K. S. Suslick, *Proc. Natl. Acad. Sci. USA*, **75**, 564-568 (1978).
113. Cooperativity in O_2 Binding to Iron Porphyrins, J. P. Collman, J. I. Brauman, E. Rose, and K. S. Suslick, *Proc. Natl. Acad. Sci. USA*, **75**, 1052-1055 (1978).
114. Oxygen Binding to Cobalt Porphyrins, J. P. Collman, J. I. Brauman, K. M. Doxsee, T. R. Halbert, S. E. Hayes, and K. S. Suslick, *J. Am. Chem. Soc.*, **100**, 2761-2766 (1978).
115. Electron Photodetachment from Cyclic Enolate Anions in the Gas Phase: Electron Affinities of Cyclic Enolate Radicals, A. H. Zimmerman, R. L. Jackson, B. K. Janousek, and J. I. Brauman, *J. Am. Chem. Soc.*, **100**, 4674-4676 (1978).
116. Lewis Acid Catalyzed $[\text{RFe}(\text{CO})_4]^-$ Alkyl Migration Reactions. A Mechanistic Investigation, J. P. Collman, R. G. Finke, J. N. Cawse, and J. I. Brauman, *J. Am. Chem. Soc.*, **100**, 4766-4772 (1978).
117. Electron Photodetachment Spectroscopy of Polyene Anions. Electron Affinities of Pentadienyl and Heptatrienyl Radicals, A. H. Zimmerman, R. Gygas, and J. I. Brauman, *J. Am. Chem. Soc.*, **100**, 5595-5597 (1978).
118. Electron Photodetachment from Aliphatic Molecular Anions. Gas-Phase Electron Affinities of Methoxyl, *tert*-Butoxyl, and Neopentoxyl Radicals, B. K. Janousek, A. H. Zimmerman, K. J. Reed, and J. I. Brauman, *J. Am. Chem. Soc.*, **100**, 6142-6148 (1978).

119. Structural Changes upon Oxygenation of an Iron(II)(porphyrinato)-(imidazole) Complex, G. B. Jameson, F. S. Molinaro, J. A. Ibers, J. P. Collman, J. I. Brauman, E. Rose, and K. S. Suslick, *J. Am. Chem. Soc.*, **100**, 6769-6770 (1978).
120. Factors Influencing Thermal Ion-Molecule Rate Constants, J. I. Brauman, in P. Ausloos, Ed., *Kinetics of Ion-Molecule Reactions*, Plenum, New York, N. Y., 1979, pp. 153-164.
121. Kinetics and Thermodynamics of Ion-Molecule Association Reactions of Water, Hydrogen Sulfide and Benzene. Comments on Intermolecular Entropy Effects, J. M. Jasinski, R. N. Rosenfeld, D. M. Golden, and J. I. Brauman, *J. Am. Chem. Soc.*, **101**, 2259-2265 (1979).
122. Photodetachment from Ions of High Symmetry. Electron Photodetachment Spectra of the Cyclooctatetraenyl and Perinaphthenyl Anions, R. Gygax, H. L. McPeters, and J. I. Brauman, *J. Am. Chem. Soc.*, **101**, 2567-2570 (1979).
123. Gas Phase Nucleophilic Displacement Reactions of Negative Ions with Carbonyl Compounds, O. I. Asubiojo and J. I. Brauman, *J. Am. Chem. Soc.*, **101**, 3715-3724 (1979).
124. The Infrared Photodissociation of CH_3OH^- , R. N. Rosenfeld, J. M. Jasinski, and J. I. Brauman, *J. Am. Chem. Soc.*, **101**, 3999-4000 (1979).
125. Infrared Multiphoton Electron Detachment from the Benzyl Anion, R. N. Rosenfeld, J. M. Jasinski, and J. I. Brauman, *J. Chem. Phys.*, **71**, 1030-1031 (1979).
126. Electron Affinities, B. K. Janousek and J. I. Brauman in M. T. Bowers Ed., *Gas Phase Ion Chemistry*, Vol. 2, Academic Press, New York, N. Y., 1979, pp. 53-86.
127. An Experimental and Theoretical Determination of the Electron Affinity of the Ethynyl Radical, HC_2 , B. K. Janousek, J. I. Brauman, and J. Simons, *J. Chem. Phys.*, **71**, 2057-2061 (1979).
128. Resonant States at Threshold Observed in Electron Photodetachment Cross Sections of Polyatomic Negative Ions, R. L. Jackson, A. H. Zimmerman, and J. I. Brauman, *J. Chem. Phys.*, **71**, 2088-2094 (1979).
129. Isotope Enrichment and Stereochemistry of the Products from the Reaction of Electronically Excited Iodine Monochloride with *cis*- and *trans*-1,2-Dibromoethylene, S. Datta, J. I. Brauman, and R. N. Zare, *J. Am. Chem. Soc.*, **101**, 7173-7176 (1979).
130. Carbon Monoxide Binding to Iron Porphyrins, J. P. Collman, J. I. Brauman, and K. M. Doxsee, *Proc. Natl. Acad. Sci. USA*, **76**, 6035-6039 (1979).

131. Electron Photodetachment of Thiomethoxyl and Deuteriothiomethoxyl Anions: Electron Affinities, Vibrational Frequencies, and Spin-orbit Splitting in CH_3S and CD_3S , B. K. Janousek and J. I. Brauman, *J. Chem. Phys.*, **72**, 694-700 (1980).
132. Rates of Proton Transfer between Pyridine Bases in the Gas Phase. Steric and Isotope Effects, J. M. Jasinski and J. I. Brauman, *J. Am. Chem. Soc.*, **102**, 2906-2913 (1980).
133. Electron Photodetachment from Mercaptyl Anions (RS^-). Electron Affinities of Mercaptyl Radicals and the S-H Bond Strength in Mercaptans, B. K. Janousek, K. J. Reed, and J. I. Brauman, *J. Am. Chem. Soc.*, **102**, 3125-3129 (1980).
134. Models for the Active Site of Oxygen-Binding Hemoproteins. Dioxygen Binding Properties and the Structures of (2-Methylimidazole)-*meso*-tetra($\alpha,\alpha,\alpha,\alpha$ -*o*-pivalamidophenyl)porphyrinatoiron(II)-Ethanol and its Dioxygen Adduct, G. B. Jameson, F. S. Molinaro, J. A. Ibers, J. P. Collman, J. I. Brauman, E. Rose, and K. S. Suslick, *J. Am. Chem. Soc.*, **102**, 3224-3237 (1980).
135. Saturation Effects in the Fluence Dependence of the Infrared Photodissociation of CH_3OH^- , R. N. Rosenfeld, J. M. Jasinski, and J. I. Brauman, *Chem. Phys. Letters*, **71**, 400-404 (1980).
136. Synthesis and Characterization of "Tailed Picket Fence" Porphyrins, J. P. Collman, J. I. Brauman, K. M. Doxsee, T. R. Halbert, E. Bunnenberg, R. E. Linder, G. N. LaMar, J. Del Gaudio, G. Lang, and K. Spartalian, *J. Am. Chem. Soc.*, **102**, 4182-4192 (1980).
137. Gas-Phase Acidities of Carbon Acids, M. J. Pellerite and J. I. Brauman in *Comprehensive Carbanion Chemistry*, Chap. 2, E. Buncl and T. Durst, Eds., Elsevier, Amsterdam, 1980.
138. Dipole Supported States. A Very Low Lying Excited State of Acetaldehyde Enolate Anion, R. W. Wetmore, H. F. Schaefer III, P. C. Hiberty, and J. I. Brauman, *J. Am. Chem. Soc.*, **102**, 5470-5473 (1980).
139. Neutral Thermochemistry from Ionic Reactions, J.I. Brauman in *Frontiers of Free Radical Chemistry*, W. A. Pryor ed., Academic Press, New York, 1980, p. 23-30.
140. Intrinsic Barriers in Nucleophilic Displacements, M. J. Pellerite and J. I. Brauman, *J. Am. Chem. Soc.*, **102**, 5993-5999 (1980).
141. The Photodissociation of Iron Tricarbonyl Anion, C. M. Rynard and J. I. Brauman, *Inorg. Chem.*, **19**, 3544-3545 (1980).
142. An Infrared Multiphoton Dissociation Study of Radiative and Collisional Relaxation of Vibrationally Excited CF_3O^- Ions, J. M. Jasinski and J. I. Brauman, *J. Chem. Phys.*, **73**, 6191-6195 (1980).

143. Gas-Phase Ion-Molecule Reactions of Phenylnitrene Anion, M. J. Pellerite and J. I. Brauman, *J. Am. Chem. Soc.*, **102**, 676-677 (1981).
144. Electron Photodetachment from HS^- . The Electron Affinity of HS^- . B. K. Janousek and J. I. Brauman, *Phys. Rev. A.*, **23**, 1673-1678 (1981).
145. Threshold Resonances in the Electron Photodetachment Spectrum of Acetaldehyde Enolate Anion. Evidence for a Low-Lying, Dipole-Supported State, R. L. Jackson, P. C. Hiberty, and J. I. Brauman, *J. Chem. Phys.*, **74**, 3705-3712 (1981).
146. Photodetachment of the Azide Anion in the Gas Phase. Electron Affinity of the Azide Radical, R. L. Jackson, M. J. Pellerite, and J. I. Brauman, *J. Am. Chem. Soc.*, **103**, 1802-1805 (1981).
147. The "Pocket" Porphyrin: A Hemoprotein Model with Lowered CO Affinity, J. P. Collman, J. I. Brauman, T. J. Collins, B. Iverson, and J. L. Sessler, *J. Am. Chem. Soc.*, **103**, 2450-2452 (1981).
148. Proton Affinity of the Gaseous Azide Ion. The N-H Bond Dissociation Energy in HN_3 , M. J. Pellerite, R. L. Jackson, and J. I. Brauman, *J. Phys. Chem.*, **85**, 1624-1626 (1981).
149. Rates of Proton Abstraction from Conjugated Dienes in the Gas Phase, F. K. Meyer, M. J. Pellerite, and J. I. Brauman, *Helvetica Chimica Acta*, **64**, 1058-1062 (1981).
150. Infrared Multiphoton Induced Electron Detachment from SF_6^- , P. S. Drzaic and J. I. Brauman, *Chem. Phys. Letters*, **83**, 508-511 (1981).
151. Electron Photodetachment Study of Sulfur Hexafluoride Anion: Comments on the Structure of SF_6^- , P. S. Drzaic and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 13-19 (1982).
152. Proton-Transfer Reactions between 9-Alkylfluorene and (9-Alkylfluorenyl)-lithium in Ether, J. R. Murdoch, J. A. Bryson, D. F. McMillen, and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 600-610 (1982).
153. Infrared Photochemistry of $[(\text{C}_2\text{H}_5)_2\text{O}]_2\text{H}^+$ and C_3F_6^+ . A Comparison of Pulsed and Continuous-Wave Laser Photodissociation Methods, J. M. Jasinski, R. N. Rosenfeld, F. K. Meyer, and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 652-658 (1982).
154. Infrared Multiphoton Dissociation of the Methanol Solvate of the Fluoride Ion, CH_3OHF^- , R. N. Rosenfeld, J. M. Jasinski, and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 658-663 (1982).
155. Infrared Multiphoton Photodetachment of Negative Ions in the Gas Phase, F. K. Meyer, J. M. Jasinski, R. N. Rosenfeld, and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 663-667 (1982).

156. Photodissociation of Stilbene Radical Cation, R. Gooden and J. I. Brauman, *J. Am. Chem. Soc.*, **104**, 1483-1486 (1982).
157. Nucleophilic Substitution, M. J. Pellerite and J. I. Brauman, in D. B. Rorabacher and J. F. Endicott, Eds., *Mechanistic Aspects of Inorganic Reactions*, ACS Symposium Series #198, American Chemical Society, Washington, D.C., Chapt.4.
158. Comparison of O₂ and CO Binding to Iron(II) "Picket Fence" and "Pocket" Porphyrins, J. P. Collman, J. I. Brauman, B. L. Iverson, J. L. Sessler, R. M. Morris, and Q. H. Gibson in *Biomimetic Chemistry*, Kodansha Ltd., Tokyo, 1983.
159. Intrinsic Barriers in Nucleophilic Displacements. A General Model for Intrinsic Nucleophilicity Toward Methyl Centers, M. J. Pellerite and J. I. Brauman, *J. Am. Chem. Soc.*, **105**, 2672-2680 (1983).
160. Synthesis and Characterization of the "Pocket" Porphyrins, J. P. Collman, J. I. Brauman, T. J. Collins, B. L. Iverson, G. Lang, R. B. Pettman, J. L. Sessler, and M. A. Walters, *J. Am. Chem. Soc.*, **105**, 3038-3052 (1983).
161. O₂ and CO Binding to Iron(II) Porphyrins: A Comparison of the "Picket Fence" and "Pocket" Porphyrins, J. P. Collman, J. I. Brauman, B. L. Iverson, J. L. Sessler, R. M. Morris, and Q. H. Gibson, *J. Am. Chem. Soc.*, **105**, 3052-3064 (1983).
162. Multiple Decomposition Pathways in Infrared Multiple-Photon Induced Reactions of Ions, C. R. Moylan, J. M. Jasinski, and J. I. Brauman, *Chem. Phys. Letters*, **98**, 1-5 (1983).
163. Mechanistic Aspects of a Homogeneous Carbon Monoxide Hydrogenation Catalyst-Ir₄(CO)₁₂ in Molten AlCl₃-NaCl, J. P. Collman, J. I. Brauman, G. Tustin, and G. S. Wann III, *J. Am. Chem. Soc.*, **105**, 3913-3922 (1983).
164. Effect of Axial Base on Dioxygen and Carbon Monoxide Affinities of Iron(II) Porphyrins. Imidazole vs. Pyridine, J. P. Collman, J. I. Brauman, K. M. Doxsee, J. L. Sessler, R. M. Morris, and Q. H. Gibson, *Inorg. Chem.*, **22**, 1427-1432 (1983).
165. Gas Phase Acid-Base Chemistry, C. R. Moylan and J. I. Brauman, *Ann. Rev. Phys. Chem.*, **34**, 187-215 (1983).
166. Unimolecular Decomposition and Vibrationally Induced Electron Autodetachment of Acetone Enolate Ion, R. F. Foster, W. Tumas, and J. I. Brauman, *J. Chem. Phys.*, **79**, 4644-4646 (1983).
167. A Silica-Supported Rhodium Hydroformylation Catalyst: Evidence for Dinuclear Elimination, J. P. Collman, J. A. Belmont, and J. I. Brauman, *J. Am. Chem. Soc.*, **105**, 7288-7294 (1983).

168. Isotope Effects as a Mechanistic Probe of Unimolecular Ion Decompositions. *tert*-Butoxide Anion. W. Tumas, R. F. Foster, M. J. Pellerite, and J. I. Brauman, *J. Am. Chem. Soc.*, **105**, 7464-7465 (1983).
169. Entropy Bottlenecks in Ion-Molecule Reactions, J. A. Dodd, D. M. Golden, and J. I. Brauman, *J. Chem. Phys.*, **80**, 1894-1899 (1984); **82**, 2169-2170 (1985).
170. Electron Photodetachment from Gas Phase Molecular Anions, P. S. Drzaic, J. Marks, and J. I. Brauman, in M. T. Bowers, Ed., *Gas Phase Ion Chemistry*, Vol. 3, Academic Press, New York, 1984, pp. 167-211.
171. Epoxidation of Olefins by Cytochrome P-450 Model Compounds: Mechanism of Oxygen Atom Transfer, J. P. Collman, J. I. Brauman, B. Meunier, S. A. Raybuck, and T. Kodadek, *Proc. Natl. Acad. Sci. USA*, **81**, 3245-3248 (1984).
172. A Determination of the Triplet-Singlet Splitting in Phenylnitrene via Photodetachment Spectroscopy, P. S. Drzaic and J. I. Brauman, *J. Am. Chem. Soc.*, **106**, 3443-3446 (1984).
173. Unimolecular Decompositions of Gas-Phase Alkoxide Anions, W. Tumas, R. F. Foster, and J. I. Brauman, *J. Am. Chem. Soc.*, **106**, 4053-4054 (1984).
174. Bond Dissociation Energies in Alcohols: Kinetic and Photochemical Evidence Regarding Ion Thermochemistry, C. R. Moylan and J. I. Brauman, *J. Phys. Chem.*, **88**, 3175-3176 (1984).
175. On the Application of the Marcus Equation to Methyl Transfer (S_N2) Reactions, J. A. Dodd and J. I. Brauman, *J. Am. Chem. Soc.*, **106**, 5356-5357 (1984).
176. Electron Photodetachment from Phenylnitrene, Anilide, and Benzyl Anions. Electron Affinities of the Anilino and Benzyl Radicals and Phenylnitrene, P. S. Drzaic and J. I. Brauman, *J. Phys. Chem.*, **88**, 5285-5290 (1984).
177. Dynamics and Reaction Mechanisms of Organic Ions in the Gas Phase, A. T. Barfknecht, J. A. Dodd, K. E. Salomon, W. Tumas, and J. I. Brauman, *Pure Appl. Chem.*, **56**, 1809-1818 (1984).
178. Infrared Multiple Photon Photochemistry of Gas Phase Ions, W. Tumas, R. F. Foster, and J. I. Brauman, *Israel J. Chem.*, **24**, 223-231 (1984).
179. Spectroscopy and Dynamics of the Dipole-Bound State of Acetaldehyde Enolate, R. D. Mead, K. R. Lykke, W. C. Lineberger, J. Marks, and J. I. Brauman, *J. Chem. Phys.*, **81**, 4883-4892 (1984).
180. Gas-Phase Ion Chemistry, P. B. Comita and J. I. Brauman, *Science*, **227**, 863-869 (1985).

181. Mechanistic Information from Infrared Multiple Photon Decompositions. The Ethylisopropylamine Proton-Transfer System, C. R. Moylan and J. I. Brauman, *J. Am. Chem. Soc.*, **107**, 761-765 (1985).
182. Product Branching in Infrared Multiple Photon Decomposition of Gas-Phase Ions. Mechanistic Implications for Proton Transfer Reactions, C. R. Moylan, J. M. Jasinski, and J. I. Brauman, *J. Am. Chem. Soc.*, **107**, 1934-1940 (1985).
183. Epoxidation of Olefins by Cytochrome P-450 Model Compounds: Kinetics and Stereochemistry of Oxygen Atom Transfer and Origin of Shape Selectivity, J. P. Collman, J. I. Brauman, B. Meunier, T. Hayashi, T. Kodadek, and S. A. Raybuck, *J. Am. Chem. Soc.*, **107**, 2000-2005 (1985).
184. Threshold Resonances in Electron Photodetachment Spectra. Structural Evidence for Dipole-Supported States, J. Marks, P. B. Comita, and J. I. Brauman, *J. Am. Chem. Soc.*, **107**, 3718-3719 (1985).
185. Electron Photodetachment Spectroscopy of Solvated Anions. A Probe of Structure and Energetics, C. R. Moylan, J. A. Dodd, and J. I. Brauman, *Chem. Phys. Letters*, **118**, 38-39 (1985).
186. Mechanism of Oxygen Atom Transfer from High Valent Iron Porphyrins to Olefins: Implications for the Biological Epoxidation of Olefins by Cytochrome P-450, J. P. Collman, T. Kodadek, S. A. Raybuck, J. I. Brauman, and L. M. Papazian, *J. Am. Chem. Soc.*, **107**, 4343-4345 (1985).
187. Experimental and Theoretical Investigation of Azide Ion (N_3^-) in the Gas Phase, E. Illenberger, P. B. Comita, J. I. Brauman, H. P. Fenzlaff, M. Henri, N. Heinrich, W. Koch, and G. Frenking, *Ber. Bunsen-Ges. Phys. Chem.*, **89**, 1026-1031 (1985).
188. Structure and Reactivity in Ionic Reactions, C.-C. Han, J. A. Dodd, and J. I. Brauman, *J. Phys. Chem.*, **90**, 471-477 (1986).
189. Rhodium(III)-to-Rhodium(I) Alkyl Transfer: A Rhodium Macrocycle Which Is Both Nucleophile and Leaving Group, J. P. Collman, J. I. Brauman, and A. M. Madonik, *Organometallics*, **5**, 215-218 (1986).
190. Reactions of a Rhodium(I) Macrocycle with Organic Dihalides: Oxidative-Addition and β -Elimination Pathways, J. P. Collman, J. I. Brauman, and A. M. Madonik, *Organometallics*, **5**, 218-222 (1986).
191. Oxidative Addition Mechanisms of a Four-Coordinate Rhodium(I) Macrocycle, J. P. Collman, J. I. Brauman, and A. M. Madonik, *Organometallics*, **5**, 310-322 (1986).
192. Competing Channels in Infrared Multiple Photon Decomposition, C. R. Moylan and J. I. Brauman, *Int. J. Chem. Kinetics*, **18**, 379-398 (1986).

193. Two-Pulse, Two-Laser, Photodissociations of Molecular Ions: Collisional Relaxation of Bromo-3-(Trifluoromethyl)-Benzene Cation, A. T. Barfknecht and J. I. Brauman, *J. Chem. Phys.*, **84**, 3870-3881 (1986).
194. A Dipole-Supported State in Cyanomethyl Anion, the Conjugate Base of Acetonitrile. Rotational Band Assignments in the Electron Photodetachment Spectrum of CH_2CN^- , J. Marks, D. M. Wetzal, P. B. Comita, and J. I. Brauman, *J. Chem. Phys.*, **84**, 5284-5289 (1986).
195. Dimethylsilanone Enolate Anion: Competitive Fragmentation and Electron Autodetachment of Vibrationally Excited Siloxide Anions, W. Tumas, K. E. Salomon, and J. I. Brauman, *J. Am. Chem. Soc.*, **108**, 2541-2546 (1986).
196. Oxygenation of Styrene by Cytochrome P-450 Model Systems: A Mechanistic Study, J. P. Collman, T. Kodadek, and J. I. Brauman, *J. Am. Chem. Soc.*, **108**, 2588-2594 (1986).
197. Marcus Theory Applied to Reactions with Double-Minimum Potential Surfaces, J. A. Dodd and J. I. Brauman, *J. Phys. Chem.*, **90**, 3559-3562 (1986).
198. Stereochemical and Mechanistic Studies of the "Suicide" Event in Biomimetic P-450 Olefin Epoxidation, J. P. Collman, P. D. Hampton, and J. I. Brauman, *J. Am. Chem. Soc.*, **108**, 7861-7862 (1986).
199. Intermediates and Transition States in Chloride Ion/Acyl Chloride Displacement Reactions, C.-C. Han and J. I. Brauman, *J. Am. Chem. Soc.*, **109**, 589-590 (1987); **112**, 7835 (1990).
200. Intrinsic Nucleophilicity, J. I. Brauman, J. A. Dodd, and C.-C. Han, in *Nucleophilicity*, J. M. Harris and S. P. McManus, Eds., *Advances in Chemistry*, 215, Chap. 2, pp. 23-33 (1987), American Chemical Society, Washington, D.C.
201. A Stepwise Mechanism for Gas-Phase Unimolecular Ion Decompositions. Isotope Effects in the Fragmentation of *tert*-Butoxide Anion, W. Tumas, R. F. Foster, M. J. Pellerite, and J. I. Brauman, *J. Am. Chem. Soc.*, **109**, 961-970 (1987).
202. Involvement of Cyanide in the Regulation of Ethylene Biosynthesis, M. C. Pirrung and J. I. Brauman, *Plant Physiol. Biochem.*, **25**, 55-61 (1987).
203. Photochemistry of Aqueous Permanganate Ion, D. G. Lee, C. R. Moylan, T. Hayashi, and J. I. Brauman, *J. Am. Chem. Soc.*, **109**, 3003-3010 (1987).
204. Spectroscopy of Reactive Intermediates: Electron Photodetachment from Solvated Anions, C. R. Moylan, J. A. Dodd, C.-C. Han, and J. I. Brauman, *J. Chem. Phys.*, **86**, 5350-5357 (1987).
205. Electron Photodetachment Spectroscopy of Trapped Negative Ions, D. M. Wetzal and J. I. Brauman, *Chem. Rev.*, **87**, 607-622 (1987).
- .

206. Capacitance Bridge Detector and Signal Lock for Ion Cyclotron Resonance Spectrometry, J. Marks, P. S. Drzaic, R. F. Foster, D. M. Wetzel, J. I. Brauman, J. S. Uppal, and R. H. Staley, *Rev. Sci. Instrum.*, **58**, 1460-1463 (1987).
207. Photodissociation Spectroscopy of the Negative Ion Dimer of Toluquinone, P. B. Comita and J. I. Brauman, *J. Am. Chem. Soc.*, **109**, 7591-7597 (1987).
208. Effect of Hydrogen Bond Strength on Resorufin Non-Photochemical Hole Burning in Ethanol - 2,2,2-trifluoroethanol Glasses, H. Tanaka, F. Kokai, J. I. Brauman, and M. D. Fayer, *Chem. Phys. Letters*, **142**, 371-375 (1987).
209. An Investigation of the Mechanism of Non-Photochemical Hole Burning of Resorufin in Ethanol Glass, F. Kokai, H. Tanaka, J. I. Brauman, and M. D. Fayer, *Chem. Phys. Letters*, **143**, 1-5 (1988).
210. Manganese "Picnic Basket" Porphyrins: Cytochrome P-450 Active Site Analogues, J. P. Collman, J. I. Brauman, J. P. Fitzgerald, P. D. Hampton, Y. Naruta, and T. Machida, *Bull. Chem. Soc. Japan*, **61**, 47-57 (1988).
211. Mechanistic Studies of Gas-Phase Negative Ion Unimolecular Decompositions. Alkoxide Anions, W. Tumas, R. F. Foster, and J. I. Brauman, *J. Am. Chem. Soc.*, **110**, 2714-2722 (1988).
212. Synthesis, Characterization, and X-ray Structures of the Ruthenium "Picnic-Basket" Porphyrins, J. P. Collman, J. I. Brauman, J. P. Fitzgerald, P. D. Hampton, Y. Naruta, J. W. Sparapany, and J. A. Ibers, *J. Am. Chem. Soc.*, **110**, 3477-3486 (1988).
213. Reversible Binding of Dinitrogen and Dioxygen by a Ruthenium "Picnic-Basket" Porphyrin, J. P. Collman, J. I. Brauman, J. P. Fitzgerald, J. W. Sparapany, and J. A. Ibers, *J. Am. Chem. Soc.*, **110**, 3486-3495 (1988).
214. Spectroscopy and Dynamics of the Dipole-Supported State of Acetyl Fluoride Enolate Anion, J. Marks, J. I. Brauman, R. D. Mead, K. R. Lykke, and W. C. Lineberger, *J. Chem. Phys.*, **88**, 6785-6792 (1988).
215. Electron Transfer Competes with Proton Transfer in Gas-Phase Acid-Base Reactions, C.-C. Han and J. I. Brauman, *J. Am. Chem. Soc.*, **110**, 4048-4049 (1988).
216. Infrared Laser Photolysis, C. E. Johnson and J. I. Brauman, in "Techniques for the Study of Ion Molecule Reactions", J. M. Farrar and W. H. Saunders, Jr., John Wiley, (1988), Chap. X, pp. 563-589.
217. Carbon and Proton Basicity, J. I. Brauman and C.-C. Han, *J. Am. Chem. Soc.*, **110**, 5611-5613 (1988); **111**, 3485 (1989)

218. Infrared Multiple-Photon Decomposition of $[\text{CH}_3\text{OHF}]^-$ and $\text{C}_6\text{H}_5\text{CH}_2^-$, K. E. Salomon and J. I. Brauman, *J. Phys. Chem.*, **92**, 6948-6953 (1988).
219. Quantitative Measure of α -Silyl Carbanion Stabilization. The Electron Affinity of (Trimethylsilyl)methyl Radical, D. M. Wetzel and J. I. Brauman, *J. Am. Chem. Soc.*, **110**, 8333-8336 (1988).
220. Rotational Structure in an Excited Vibronic Band of the Dipole-Supported State of Cyanomethyl Anion, CH_2CN^- , D. M. Wetzel and J. I. Brauman, *J. Chem. Phys.*, **90**, 68-73 (1989).
221. Vibrationally Induced Electron Detachment. A Rate for Electron Loss from Vibrationally Excited Acetone Enolate Anion, R. F. Foster, W. Tumas, and J. I. Brauman, *J. Phys. Chem.*, **93**, 61-68 (1989).
222. Gas Phase Acidities of Organosilanes and Electron Affinities of Organosilyl Radicals, D. M. Wetzel, K. E. Salomon, S. Berger, and J. I. Brauman, *J. Am. Chem. Soc.*, **111**, 3835-3841 (1989).
223. Transesterification in the Gas Phase: Transfer of a Solvent Molecule from Reactant to Product Ions, S. Baer, P. O. Stoutland, and J. I. Brauman, *J. Am. Chem. Soc.*, **111**, 4097-4098 (1989).
224. Gas Phase Proton Transfer from Toluenes to Benzyl Anions, C.-C. Han and J. I. Brauman, *J. Am. Chem. Soc.*, **111**, 6491-6496 (1989).
225. Infrared Multiple Photon Dissociation of Butyrophenone Cation. A Stepwise McLafferty Rearrangement, T. H. Osterheld and J. I. Brauman, *J. Am. Chem. Soc.*, **112**, 2014-2016 (1990).
226. On the Mechanistic Dependence of the Affinity Decay, A. Hjelmfelt, J. I. Brauman, and J. Ross, *J. Chem. Phys.*, **92**, 3569-3578 (1990).
227. Electron Attachment Chemistry of SiCl_4 . Relevance to Plasma Reactions, C. R. Moylan, S. Baer Green, and J. I. Brauman, *Int. J. Mass Spectrom. Ion Proc.*, **96**, 299-307 (1990).
228. Suicide Inactivation of Cytochrome P-450 Model Compounds by Terminal Olefins. 1. A Mechanistic Study of Heme N-Alkylation and Epoxidation, J. P. Collman, P. D. Hampton, and J. I. Brauman, *J. Am. Chem. Soc.*, **112**, 2977-2986 (1990).
229. Suicide Inactivation of Cytochrome P-450 Model Compounds by Terminal Olefins. 2. Steric and Electronic Effects in Heme N-Alkylation and Epoxidation, J. P. Collman, P. D. Hampton, and J. I. Brauman, *J. Am. Chem. Soc.*, **112**, 2986-2998 (1990).
230. Metalloporphyrin-Catalyzed Oxidation of Saturated Hydrocarbons with Sodium Chlorite, J. P. Collman, H. Tanaka, R. T. Hembre, and J. I. Brauman, *J. Am. Chem. Soc.*, **112**, 3689-3690 (1990).

231. Dissociation and Vibration-Induced Electron Autodetachment of 3-Fluoronitrobenzene Radical Anion by Infrared Multiple Photon Excitation, C.-C. Han and J. I. Brauman, *J. Phys. Chem.*, **94**, 3403-3415 (1990).
232. Shape-Selective Olefin Epoxidation Catalyzed by Manganese Picnic Basket Porphyrins, J. P. Collman, X. Zhang, R. T. Hembre, and J. I. Brauman, *J. Am. Chem. Soc.*, **112**, 5356-5357 (1990).
233. Fragment Isotope Distribution as a Signature of Molecular Fluxionality, J. I. Brauman, R. N. Zare, and R. D. Levine, *Chem. Phys. Letters*, **172**, 231-234 (1990).
234. Mechanistic Studies of Olefin Epoxidation by a Manganese Porphyrin and Hypochlorite: An Alternative Explanation of "Saturation Kinetics", J. P. Collman, J. I. Brauman, P. D. Hampton, H. Tanaka, D. S. Bohle, and R. T. Hembre, *J. Am. Chem. Soc.*, **112**, 7980-7984 (1990).
235. Hemiacetal Anions: A Model for Tetrahedral Reaction Intermediates, S. Baer, E. A. Brinkman, and J. I. Brauman, *J. Am. Chem. Soc.*, **113**, 805-812 (1991).
236. Rotational Enhancement of the Proton-Transfer Barrier for Ion-Molecule Reactions on a Double-Minimum Surface, K. F. Lim and J. I. Brauman, *Chem. Phys. Letters*, **177**, 326-330 (1991).
237. Reaction Dynamics on Barrierless Reaction Surfaces: A Model for Isoergic Gas-Phase Proton-Transfer Reactions, K. F. Lim and J. I. Brauman, *J. Chem. Phys.*, **94**, 7164-7180 (1991).
238. Gas Phase Proton Transfer Reactions between Alkoxide Ions, J. A. Dodd, S. Baer, C. R. Moylan, and J. I. Brauman, *J. Am. Chem. Soc.*, **113**, 5942-5949 (1991).
239. Bound Excited Electronic States of Anions Studied by Electron Photodetachment Spectroscopy, E. A. Brinkman, E. Günther, and J. I. Brauman, *J. Chem. Phys.*, **95**, 6185-6187 (1991).
240. Addition and Deprotonation in Reactions of Hydroxide Ion with a β -Hydroxysilane, G. Angelini, C. E. Johnson, and J. I. Brauman, *Int. J. Mass Spectrom. Ion Proc.*, **109**, 1-14 (1991).
241. Intermediates and Potential Surfaces of Gas-Phase S_N2 Reactions, J. L. Wilbur and J. I. Brauman, *J. Am. Chem. Soc.*, **113**, 9699-9701 (1991).
242. Kinetic Models for Gas-Phase Electron Transfer Reactions between Nitrobenzenes, C.-C. Han, J. L. Wilbur, and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 887-893 (1992).

243. Control of Ion Kinetic Energy in Ion Cyclotron Resonance Spectrometry: Very-low-energy Collision Induced Dissociation, K. E. Boering, J. Rolfe, and J. I. Brauman, *Rapid Commun. Mass Spectrom.*, **6**, 303-305 (1992).
244. Electron Photodetachment from Organophosphide Ions. Electron Affinities and Substituent Effects in Organophosphines and Their Conjugate Radicals, S. Berger and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 4737-4743 (1992).
245. Infrared Multiple Photon Studies of Alkoxide-Alcohol Complexes, S. Baer and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 5733-5741 (1992).
246. Infrared Multiple Photon Dissociation of Acetone Radical Cation. An Enormous Isotope Effect with No Apparent Tunneling, T. H. Osterheld and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 7158-7164 (1992).
247. Low Energy Collision Induced Dissociation: Phase-Shifting Excitation Control of Ion Kinetic Energy in Ion Cyclotron Resonance Spectrometry, K. A. Boering and J. I. Brauman, *Int. J. Mass. Spectrom. Ion Proc.*, **117**, 357-386 (1992).
248. Collisional Relaxation of Vibrational Excitation: Effects of Bath Gas Structure, K. A. Boering and J. I. Brauman, *J. Chem. Phys.*, **97**, 5439-5450 (1992).
249. The S_N2 Identity Exchange Reaction ClCH₂CN + Cl⁻ → Cl⁻ + ClCH₂CN: Experiment and Theory, B. D. Wladkowski, K. F. Lim, W. D. Allen, and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 9136-9153 (1992).
250. Energy Dependence and Dynamics of Gas-Phase Ion-Molecule Reactions, B. D. Wladkowski, J. L. Wilbur, and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 9706-9708 (1992).
251. Substitution versus Elimination in Gas-Phase Ionic Reactions, B. D. Wladkowski and J. I. Brauman, *J. Am. Chem. Soc.*, **114**, 10643-10644 (1992).
252. Asymmetric Epoxidation Catalysed by an Iron 'binap Capped' Porphyrin, J. P. Collman, X. Zhang, V. J. Lee and J. I. Brauman, *J. Chem. Soc., Chem. Commun.*, 1647-1649 (1992).
253. Enantioselective Epoxidation of Unfunctionalized Olefins Catalyzed by Threitol-Strapped Manganese Porphyrins, J. P. Collman, V. J. Lee, X. Zhang, J. A. Ibers and J. I. Brauman, *J. Am. Chem. Soc.*, **115**, 3834-3835 (1993).
254. Infrared Multiple-Photon Dissociation of the Nitrobenzene Radical Cation. A Paradigm for Competitive Reactions, T. H. Osterheld, T. Baer and J. I. Brauman, *J. Am. Chem. Soc.*, **115**, 6284-6289 (1993).
255. Regioselective and Enantioselective Epoxidation Catalyzed by Metalloporphyrins, J. P. Collman, X. Zhang, V. J. Lee, E. S. Uffelman, and J. I. Brauman, *Science*, **261**, 1404-1411 (1993).

256. Competing Pathways in Gas-Phase Reactions of Ambident Nucleophiles, B. D. Wladkowski, J. L. Wilbur, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **115**, 8833-8834 (1993).
257. Infrared Multiple-Photon Dissociation of the Acetone Enol Radical Cation. Dependence of Nonstatistical Dissociation on Internal Energy, T. H. Osterheld and J. I. Brauman, *J. Am. Chem. Soc.*, **115**, 10311-10316 (1993).
258. Gas-Phase Proton-Transfer and Substitution Reactions: Energy Dependence and Dissociation Dynamics, J. L. Wilbur, B. D. Wladkowski and J. I. Brauman, *J. Am. Chem. Soc.*, 10823-10829 (1993).
259. Molecular Rotation and the Observation of Dipole-Bound States of Anions, E. A. Brinkman, S. Berger, J. Marks and J. I. Brauman, *J. Chem. Phys.*, **99**, 7586-7594 (1993).
260. Application of Marcus Theory to Gas-Phase S_N2 Reactions: Experimental Support of the Marcus Theory Additivity Postulate, B. D. Wladkowski and J. I. Brauman, *J. Phys. Chem.*, **97**, 13158-13164 (1993).
261. Bound Excited Electronic States of Anions, E. A. Brinkman, E. Günther, O. Schafer and J. I. Brauman, *J. Chem. Phys.*, **100**, 1840 (1994).
262. The Proton-transfer Surface of CH_3OHF^- , B. D. Wladkowski, A. L. L. East, J. E. Mihalick, W. D. Allen and J. I. Brauman, *J. Chem. Phys.*, **100**, 2058-2088 (1994).
263. The S_N2 Identity Exchange Reaction $Cl^- + ClCH_2CN \rightarrow Cl^- + ClCH_2CN$. Kinetic Energy and Temperature Dependence, A. A. Viggiano, R. A. Morris, T. Su, B. D. Wladkowski, S. L. Craig, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 2213-2214 (1994).
264. Intrinsic Structure-Reactivity Relationships in Gas-Phase S_N2 Reactions: Identity Exchange of Substituted Benzyl Chlorides with Chloride Ion, B. D. Wladkowski, J. L. Wilbur and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 2471-2480 (1994).
265. Congruent Multiple Michael Addition for the Synthesis of Biomimetic Heme Analogues, J. P. Collman, X. Zhang, P. C. Hermann, E. S. Uffelman, B. Boitrel, A. Straumanis and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 2681-2682 (1994).
266. The Double-Well Model for Ion-Molecule Reactions, C. R. Moylan and J. I. Brauman, in *Dynamics of Ion-Molecule Reactions*, W. L. Hase, Ed., *Advances in Classical Trajectory Methods*, Vol. 2, pp. 95-114 (1994) JAI Press, Greenwich, CT.
267. Gas-Phase Reactions of Carbocations with Amines. Isotope Effects in Proton Transfer, G. Laguzzi, T. H. Osterheld and J. I. Brauman, *J. Phys. Chem.*, **98**, 5931-5934 (1994).

268. Intermediates and Potential Energy Surfaces in Thermoneutral Carbonyl Addition-Elimination Reactions, J. L. Wilbur and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 5839-5846 (1994).
269. Dioxygen Binding in Iron and Cobalt Picnic Basket Porphyrins, J. P. Collman, X. Zhang, K. Wong and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 6245-6251 (1994).
270. α -Silyl-Substituent Stabilization of Carbanions and Silyl Anions, E. A. Brinkman, S. Berger and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 8304-8310 (1994).
271. Direct Experimental Evidence for a Multiple Well Potential Energy Surface in a Gas-Phase Exothermic Addition-Elimination Reaction, J. L. Wilbur and J. I. Brauman, *J. Am. Chem. Soc.*, **116**, 9216-9221 (1994).
272. The S_N2 Identity Reaction $F^- + CH_3F \rightarrow FCH_3 + F^-$: Definitive *ab Initio* Predictions, B. D. Wladkowski, W. D. Allen and J. I. Brauman, *J. Phys. Chem.*, **98**, 13532-13540 (1994).
273. Transition States and Intermediates in Gas-Phase, Ionic Reactions, J. I. Brauman and J. L. Wilbur, *Proceedings of the Robert A. Welch Foundation*, **XXXVIII**, Chap. 15, pp. 249-257.(1994).
274. Threitol-Strapped Manganese Porphyrins as Enantioselective Epoxidation Catalysts of Unfunctionalized Olefins, J. P. Collman, V. J. Lee, C. J. Kellen-Yuen, X. Zhang, J. A. Ibers and J. I. Brauman, *J. Am. Chem. Soc.*, **117**, 692-703 (1995).
275. Electron Affinities and Gas-Phase Acidities of Organogermanium and Organotin Compounds, E. A. Brinkman, K. E. Salomon, W. Tumas and J. I. Brauman, *J. Am. Chem. Soc.*, **117**, 4905-4910 (1995).
276. 1,3-Hydrogen Rearrangements of Vibrationally Activated Enolate Ions in the Gas Phase, K. A. Sannes and J. I. Brauman, *J. Am. Chem. Soc.*, **117**, 10088-10092 (1995).
277. Some Historical Background on the Double-Well Potential Model, J. I. Brauman, *J. Mass. Spectrom.*, **30**, 1649-1651 (1995).
278. Ambident Reactivity of Enolate Anions in the Gas Phase. Experimental Determination of Carbon vs. Oxygen Acylation with CF_3COCl ., M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **118**, 636-641 (1996).
279. Rearrangement and Fragmentation Mechanisms of Vibrationally Activated Enolate Ions in the Gas Phase, K. A. Sannes and J. I. Brauman, *J. Phys. Chem.*, **100**, 7471-7479 (1996).
280. Alkyl Substituent Effects in the Deprotonation of Unsymmetrical Ketones, C. E. Johnson, K. A. Sannes and J. I. Brauman, *J. Phys. Chem.*, **100**, 8827-8835 (1996).

281. Intramolecular Solvation of Thermoneutral S_N2 Reactions, S. L. Craig and J. I. Brauman, *J. Am. Chem. Soc.*, **118**, 6786-6787 (1996).
282. Electron Photodetachment Spectroscopy of Solvated Anions: $RO^- \cdot HF$ or $ROH \cdot F^-?$, J. E. Mihalick, G. G. Gatev and J. I. Brauman, *J. Am. Chem. Soc.*, **118**, 12424-12431 (1996).
283. Generation and Chemistry of Fluorinated Acetoxyl and Oxyallyl Biradical Anions (Distonic Radical Anions) in the Gas Phase, M. Zhong, M. L. Chabinyk and J. I. Brauman, *J. Am. Chem. Soc.*, **118**, 12432-12436 (1996).
284. Catalytic Activation of H_2 and C-H Bonds By Electron-Deficient Ruthenium(II) Porphyrins, J. P. Collman, H. T. Fish, P. S. Wagenknecht, D. A. Tyvoll, L.-L. Chng, T. A. Eberspacher, J. I. Brauman, J. W. Bacon and L. H. Pignolet, *Inorg. Chem.*, **35**, 6746-6754 (1996).
285. Branching Ratios in Activated Systems, S. L. Craig, M. Zhong, B. Choo and J. I. Brauman, *J. Phys. Chem. A*, **101**, 19-24 (1997); **101**, 5379 (1997).
286. Electron Photodetachment Spectroscopy of (*E*)- and (*Z*)-Propionaldehyde Enolate Anions. Electron Affinities of the Stereoisomers of Propionaldehyde Enolate Radicals, B. C. Römer and J. I. Brauman, *J. Am. Chem. Soc.*, **119**, 2054-2055 (1997).
287. Cyclopentadienyl, Indenyl, and Fluorenyl Anions: Gas-Phase and Solvation Energy Contributions to Electron Detachment Energies, B. C. Römer, G. A. Janaway and J. I. Brauman, *J. Am. Chem. Soc.*, **119**, 2249-2254 (1997).
288. Unimolecular Dynamics in Bimolecular Ion-Molecule Reactions, S. L. Craig and J. I. Brauman, *Ber. Bunsenges. Phys. Chem.*, **101**, 510-515 (1997).
289. Aza-Crown-Capped Porphyrin Models of Myoglobin: Studies of the Steric Interactions of Gas Binding, J. P. Collman, P. C. Herrmann, L. Fu, T. A. Eberspacher, M. Eubanks, B. Boitrel, P. Hayoz, X. Zhang, J. I. Brauman and V. W. Day, *J. Am. Chem. Soc.*, **119**, 3481-3489 (1997).
290. Perturbed Equilibria and Statistical Energy Redistribution in a Gas Phase S_N2 Reaction, S. L. Craig and J. I. Brauman, *Science*, **276**, 1536-1538 (1997).
291. Phase-Shifting Acceleration of Ions in an ICR Spectrometer: Kinetic Energy Distribution and Reaction Dynamics, S. L. Craig and J. I. Brauman, *J. Phys. Chem. A*, **101**, 4745-4752 (1997).
292. Gas-Phase Ionic Reactions of Benzyl and Methoxide Anions, G. G. Gatev, M. Zhong and J. I. Brauman, *J. Phys. Org. Chem.*, **10**, 531-536 (1997).

293. The Reversibility Relationship in Collision-Complex-Forming Bimolecular Reactions, S. C. Smith, M. J. McEwan and J. I. Brauman, *J. Phys. Chem. A*, **101**, 7311-7314 (1997).

294. [FHNO]⁻: An Intermediate in a Spin-Forbidden Proton Transfer Reaction, G. E. Janaway, M. Zhong, G. G. Gatev, M. L. Chabinyk and J. I. Brauman, *J. Am. Chem. Soc.*, **119**, 11697-11698 (1997).
295. An Agostic Alternative to the P-450 Rebound Mechanism, J. P. Collman, A. S. Chien, T. A. Eberspacher and J. I. Brauman, *J. Am. Chem. Soc.*, **120**, 425-426 (1998).
296. Gas-Phase Ionic Reactions: Dynamics and Mechanism of Nucleophilic Displacements, M. L. Chabinyk, S. L. Craig, C. K. Regan and J. I. Brauman, *Science*, **279**, 1882-1886 (1998).
297. α -Stabilization by Silyl- and Phosphino-Substitution, B. C. Römer, G. G. Gatev, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **120**, 2919-2924 (1998).
298. Acidity, Basicity, and the Stability of Hydrogen Bonds: Complexes of RO⁻ + HCF₃, M. L. Chabinyk and J. I. Brauman, *J. Am. Chem. Soc.*, **120**, 10863-10870 (1998).
299. Nonstatistical Reactivity in a Vibrationally Excited S_N2 Intermediate, S. L. Craig, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **120**, 12125-12126 (1998).
300. Intrinsic-Structure Reactivity Relationships in Gas-Phase Transacylation Reactions: Identity Exchange of Substituted Benzoyl Chlorides with Chloride Ion, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **121**, 2508-2515 (1999).
301. Intramolecular Microsolvation of S_N2 Transition States, S. L. Craig and J. I. Brauman, *J. Am. Chem. Soc.*, **121**, 6690-6699 (1999).
302. A Quantitative UV-VIS Probe of Enantioselectivity in Metalloporphyrin Catalyzed Oxygenation Using Aluminium Model Complexes, J. P. Collman, Z. Wang, C. Linde, L. Fu, L. Dang and J. I. Brauman, *J. Chem. Soc., Chem. Commun.*, 1783-1784 (1999).
303. Hydrogen Bond Strength and Acidity. Structural and Energetic Correlations for Acetylides and Alcohols, M. L. Chabinyk and J. I. Brauman, *J. Phys. Chem. A*, **103**, 9163-9166 (1999).
304. Translational Energy Dependence and Potential Energy Surfaces of Gas Phase S_N2 and Addition-Elimination Reactions, S. L. Craig, M. Zhong and J. I. Brauman, *J. Am. Chem. Soc.*, **121**, 11790-11797 (1999).
305. Negative Ion Electron Photodetachment from a Near-Blackbody Photon Source, G. A. Janaway and J. I. Brauman, *J. Phys. Chem. A*, **104**, 1117-1120 (2000).

306. Direct Observation of Spin Forbidden Proton Transfer Reactions: ${}^3\text{NO}^- + \text{HA} \longrightarrow {}^1\text{HNO} + \text{A}^-$, G. A. Janaway and J. I. Brauman, *J. Phys. Chem. A*, **104**, 1795-1798 (2000).
307. Hydrogen Bonded Complexes of Methanol and Acetylides. Structure and Energy Correlations, M. L. Chabinyk and J. I. Brauman, *J. Am. Chem. Soc.*, **122**, 5371-5378 (2000).
308. Unusual Ionic Hydrogen Bonds: Complexes of Acetylides and Fluoroform, M. L. Chabinyk and J. I. Brauman, *J. Am. Chem. Soc.*, **122**, 8739-8745 (2000).
309. Competitive Reaction of Axial Ligands during Biomimetic Oxygenations, J. P. Collman, A. S. Chien, T. A. Eberspacher, M. Zhong and J. I. Brauman, *Inorg. Chem.*, **39**, 4625-4629 (2000).
310. Twist and Fluoresce, J. I. Brauman, *Science*, **290**, 286-287 (2000).
311. Energetics and Mechanism of Alkyl Cleavage Transition States: Relative Gas Phase Acidities of Alkanes, J. Wong, K. A. Sannes, C. E. Johnson and J. I. Brauman, *J. Am. Chem. Soc.*, **122**, 10878-10885 (2000).
312. Multiple Active Oxidants in Cytochrome P-450 Model Oxidations,, J. P. Collman, A. S. Chien, T. A. Eberspacher and J. I. Brauman, *J. Am. Chem. Soc.*, **122**, 11098-11100 (2000).
313. Some Reflections on Characterizing Potential Surfaces for Gas-Phase Ionic Reactions, J. I. Brauman, *Int. J. Mass Spectrom.*, **200**, 591-595 (2000).
314. The $\text{RS}^-\cdot\text{HSR}$ Hydrogen Bond: Acidities of α,ω -Dithiols and Electron Affinities of Their Monoradicals, J. M. Karty, Y. Wu and J. I. Brauman, *J. Am. Chem. Soc.*, **123**, 9800-9805 (2001).
315. The Mechanism of Dihydrogen Cleavage by High-Valent Metal Oxo Compounds: Experimental and Computational Studies, J. P. Collman, L. M. Slaughter, T. A. Eberspacher, T. Strassner and J. I. Brauman, *Inorg. Chem.*, **40**, 6272-6280 (2001).
316. Steric Effects and Solvation Effects in Ionic Reactions, C. K. Regan, S. L. Craig and J. I. Brauman, *Science*, **295**, 2245-2247 (2002).
317. Energy Deposition in $\text{S}_{\text{N}}2$ Reaction Products and Kinetic Energy Effects on Reactivity, J. Ren and J. I. Brauman, *J. Phys. Chem. A*, **106**, 3804-3813 (2002).
318. Conformation Dependent Reaction Thermochemistry: A Study of Lactones and Lactone Enolates in the Gas Phase, J. M. Karty, G. A. Janaway and J. I. Brauman, *J. Am. Chem. Soc.*, **124**, 5213-5221 (2002).
319. Determination of the Acidity of Long Chain Alcohols Using Infrared Multiple Photon Dissociation, J. Wong, D. A. Walthall and J. I. Brauman, *J. Phys. Chem. A*, **106**, 12299-12304 (2002).

320. Dynamics of Competitive Reactions: Endothermic Proton Transfer and Exothermic Substitution, J. Ren and J. I. Brauman, *J. Am. Chem. Soc.*, **126**, 2640-2646 (2004).
321. Donor Ligand Effect on the Nature of the Oxygenating Species in Mn^{III}(salen)-Catalyzed Epoxidation of Olefins: Experimental Evidence for Multiple Active Oxidants, J. P. Collman, L. Zeng and J. I. Brauman, *Inorg. Chem.*, **43**, 2672-2679 (2004).
322. Steric Retardation of S_N2 Reactions in the Gas Phase and Solution, G. Vayner, K. N. Houk, W. L. Jorgensen and J. I. Brauman, *J. Am. Chem. Soc.*, **126**, 9054-9058 (2004).
323. Radical Autoxidation and Autogenous O₂ Evolution in Manganese-Porphyrin Catalyzed Alkane Oxidations with Chlorite, L. M. Slaughter, J. P. Collman, T. A. Eberspacher and J. I. Brauman, *Inorg. Chem.*, **43**, 5198-5204 (2004).
324. Acidities in Cyclohexanediols Enhanced by Intramolecular Hydrogen Bonds, X. Chen, D. A. Walthall and J. I. Brauman, *J. Am. Chem. Soc.*, **126**, 12614-12620 (2004).