Tomas Baer, Kenan Professor of Chemistry
CURRICULUM VITAE

Department of Chemistry 919 962 1580
University of North Carolina 919 962 2388 (FAX)
Chapel Hill, NC 27599-3290 Baer@unc.edu
http://www.chem.unc.edu/people/faculty/baert/tbindex.html

Personal Background:

* Born on August 27, 1939 in Zurich, Switzerland

Educational Background:

*	B.A. in Mathematics, Lawrence University	1962
*	M.A. in Chemistry, Wesleyan University	1964
*	Ph.D. in Chemistry, Cornell University (with S.H. Bauer),	1969
*	Postdoctoral Fellow, Northwestern University (E.W. Schlag)	1969-1970

Employment History

*	Assistant Professor, University of North Carolina		1970-1974
*	Associate Professor	"	1975-1979
*	Professor	"	1979-1991
*	Director of Graduate Studies	"	1981-1986
*	Vice-Chair Chemistry Department	"	1986-1991
*	Kenan Professor of Chemistry	"	1992-2011
*	Professor Emeritus	"	2013-

Professional Activities:

* Visiting Professor, University of Paris June-July 1979; Jan - July 1982, July 1999, Sept 2004
* Adjunct Professor of Chemistry, University of California, Berkeley 2000-2
* Fundamentals Committee Chairman, Am. Soc. Mass Spectrometry 1984-86
* Users Executive Committee, Advanced Light Source, Berkeley, 1987-90
* Program Committee for International Symp. on Synchrotron Radiation, Brookhaven, NY, 1987
* Editorial Board - *International Journal of Mass Spectrometry* 1987-
* Editorial Board - *J. Am. Soc. for Mass Spectrometry*, 1989-96
* Editor - *Wiley Series in Ion Chemistry and Physics* - John Wiley & Sons 1991-
* Program Advisory Committee, National Synchrotron Light Source, Brookhaven, 1988-92
* Chairman - Gordon Conference on "Multiphoton Processes" (1992)
* Chairman - Sanibel Island Conference on "Lasers in Mass Spectrometry" (1992)
* Chairman - Gordon Conference on "Gas Phase Ion Chemistry and Physics" (1999)
* Co-organizer of Mesilla Workshop on *Applications of Statistical Methods in Chemical Dynamics*, Mesilla, New Mexico, 1998
* Co-organizer of Telluride Conference on Chemical and Optical Properties of Atmospheric Aerosols, Telluride, CO (2002)
* Co-organizer of the Mesilla Workshop on Mesilla Workshop on Organometallic complexes: Energetics – Solvation – Reactions, Mesilla, NM 2006
* Co-organizer of 25th Asilomar Conference on Ion Spectroscopy, Asilomar, CA 2009
* Director of Chemical Dynamics beamline at the ALS, Berkeley, CA 2000 – 2002
* Proposal Study Panel (PSP) member, Advanced Light Source, Berkeley, CA 2000 -2006
* Scientific Advisory Committee (SAC) member Swiss National Light Source, 2003 – 2011
* American Physical Society Plyler prize Selection committee (2007 – 9) Chair in 2008
* US Coordinator for Trans Atlantic Science Student Exchange Program (TASSEP) 2002-2010

Honors and Awards:

* J.S. Guggenheim Fellow 1976-1977
* Fellow of the American Physical Society (elected 1985)
* Lucia R. Briggs Distinguished Achievement Award, Lawrence University, 1993
* Tomas Baer "Festschrift" published by the Journal of Physical Chemistry A, **108** (45), 2004
* Morrison Medal (1994) from the Australian and New Zealand Society for Mass Spectrometry

PUBLICATIONS

1. S. H. Bauer, D. Marshall, and T. Baer, "The Role of Vibrational Excitation in Hydrogen-Deuterium Exchange. Nascent Molecules at Room Temperature," J. Am. Chem. Soc. 87, 5514 (1965).

2. T. Baer, W. Peatman, and E. W. Schlag, "Photoionization Resonance Studies with a Steradiancy Analyzer. II. The Photoionization of CH_3I," Chem. Phys. Lett. 4, 243 (1969).

3. T. Baer and S. H. Bauer, "Vibrationally Excited Methyl Chloride. II. The Reactivity of Vibrationally Hot but Translationally Cold CH_3Cl," J. Am. Chem. Soc. 92, 4773 (1970).

4. T. Baer and S. H. Bauer, "Vibrationally Excited Methyl Chloride. I. The Production of CH_3Cl*," J. Am. Chem. Soc. 92, 4769 (1970).

5. T. Baer and B. P. Tsai, "Resonance Photoelectron Spectroscopy from Autoionization States in CH_3I," J. Electron Spectr. 2, 25 (1973).

6. B. P. Tsai, T. Baer, and M. Horovitz, "Time of Flight Energy Analysis for Near Threshold Photoelectron Spectroscopy," Rev. Sci. Instr. 45. 494 (1974).

7. A. S. Werner, B. P. Tsai, and T. Baer, "A Photoionization Study of the Ionization Potentials and Fragmentation Paths of the Chlorinated Methanes and Carbon Tetrabromide," J. Chem. Phys. 60, 3650 (1974).

8. B. P. Tsai and T. Baer, "Analysis of Autoionizing Rydberg States in HI and CH_3I. Comments on Rydberg Electron Wavefunctions," J. Chem. Phys. 61, 047 (1974).

9. T. Baer, L. Squires, and A. S. Werner, "Collisional Dissociation of CH_2Br^+ in Selected Internal Energy States," Chem. Phys. 6, 325 (1974)

10. T. Baer, A. S. Werner, B. P. Tsai, and S. F. Lin, "H Loss from CH_3Cl^+. Evidence for a New Electronic State in CH_3Cl^+?" J. Chem. Phys. 61. 5468 (1974).

11. B. P. Tsai, T. Baer, A. S. Werner, and S. F. Lin, "A Photoelectron Photoion Coincidence Study of the Ionization and Fragment Appearance Potentials of Bromo- and Iodomethanes," J. Phys. Chem. 79, 570 (1975).

12. A. S. Werner and T. Baer, "Absolute Unimolecular Decay Rates of Energy Selected $C_4H_6^+$ Metastable Ions," J. Chem. Phys. 62. 2900 (1975).

13. T. Baer, B. P. Tsai, and A. S. Werner, "Two-Component Unimolecular Decay Rates of Energy Selected Metastable Ions," J. Chem. Phys. 62, 2497 (1975).

14. B. P. Tsai, A. S. Werner, and T. Baer, "A Photoion-Photoelectron Coincidence (PIPECO)

Study of Fragmentation Rates and Kinetic Energy Release in Energy Selected Metastable Ions," *J. Chem. Phys.* **63**, 4384 (1975).

15. T. Baer, B. P. Tsai, D. Smith, and P. T. Murray, "Absolute Unimolecular Decay Rates of Energy Selected Metastable Halobenzene Ions," *J. Chem. Phys.* **64**, 2460 (1976).

16. D. M. Mintz and T. Baer, "Kinetic Energy Release Distributions for the Dissociation of Internal Energy Selected CH_3I^+ and CD_3I^+ Ions," *J. Chem. Phys.* **65**, 2407 (1976).

17. L. Squires and T. Baer, "Cross Sections for Symmetric Charge Transfer Reactions of Xe^+ and NO^+ in Selected Internal and Translational Energy States," *J. Chem. Phys.* **65**, 4001 (1976).

18. C. E. Klots, D. M. Mintz, and T. Baer, "Role of Angular Momentum in Unimolecular Kinetics: Kinetic Energy Release in Fragmentation of $C_4H_6^+$," *J. Chem. Phys.* **66**, 5100 (1977).

19. D. M. Mintz and T. Baer, "Kinetic Energy Release Distributions for the Dissociation of Internal Energy Selected Acetone Ions," *J. Mass Spectr.Ion Phys.* **25**, 39 (1977).

20. T. Baer, D. Smith, B. P. Tsai, and A. S. Werner, "Absolute Unimolecular Fragmentation Rates of Energy Selected Metastable Ions: A Test of the Quasi-Equilibrium Theory," *Adv. Mass Spectrometry* **7A**, 56 (1978).

21. T. Baer, P. T. Murray, and L. Squires, "Total Cross Sections for Symmetric Charge Transfer Reactions of O_2^+ in Selected Translational and Internal Energy States," *J. Chem. Phys.* **68**, 4901 (1978).

22. P. M. Guyon, T. Baer, L. F. A. Ferreira, I. Nenner, A. Tabche-Fouhaile, R. Botter, and T. R. Govers, "Observation of Dissociative States of O_2^+ by Threshold Photoelectron-Photoion Coincidence," *J. Phys. B. Atom. Molec. Phys.* **11**, L141 (1978).

23. W. McLean, P. T. Murray, T. Baer, and R. C. Jarnagin, "Dissociative Photoionization of t-Butyllithium," *J. Chem. Phys*. **69**, 2715 (1978).

24. D. Smith, T. Baer, G. D. Willett, and R. C. Ormerod, "Dissociation Rates of Internal Energy Selected Metastable $C_8H_8^+$ Ions," *Int. J. Mass Spectrom. Ion Phys.* **30**, 155 (1979).

25. P. T. Murray and T. Baer, "Observation of Vibrationally Excited Ions in Franck-Condon Gaps by Threshold Photoelectron Spectroscopy," *Int. J. Mass Spectrom. Ion Phys.* **30**, 165 (1978).

26. T. Baer, "The Fate of Ions as Studied by Photoion-Photoelectron Coincidence," *J. Electron Spectr. Rel. Phenomena* **15**, 225 (1979).

27. T. Baer, "State Selection by Photoion-Photoelectron Coincidence," Gas Phase Ion Chemistry, M. T. Bowers Ed., Academic Press Chapter 5 (1979) pp. 153-196.

28. T. Baer, P. M. Guyon, I. Nenner, A. Tabche-Fouhaile, R. Botter, L. F. A. Ferreira, and T. Govers, "Non-Franck-Condon Transitions in Resonant Autoionization of N_2O," *J. Chem. Phys*. **70**, 1585 (1979).

29. T. Baer, G. D. Willett, D. Smith, and J. S. Phillips, "The Dissociation Dynamics of Internal Energy Selected $C_6H_6^+$," *J. Chem. Phys*. **70**, 4076 (1979).

30. T. Baer, "The Gas Phase Heat of Formation of $C_2H_5^+$ and $C_3H_7^+$," J. Am. Chem. Soc. 102, 2482 (1980).

31. I. Nenner, P. M. Guyon, T. Baer, and T. R. Govers, "A Threshold Photoelectron-photoion Coincidence Study of the N_2O^+ Dissociation Between 15 and 20.5 eV," J. Chem. Phys. 72, 6587 (1980).

32. J. J. Butler and T. Baer, "The Thermochemistry and Dissociation Dynamics of C_4H_4X I. Thiophene," J. Amer. Chem. Soc. 102, 6764 (1980).

33. G. D. Willett and T. Baer, "The Thermochemistry and Dissociation Dynamics of C_4H_4X Ions. II. Furan and 2-Buten-one," J. Am. Chem. Soc. 102. 6769 (1980).

34. G. D. Willett and T. Baer, "The Thermochemistry and Dissociation Dynamics of C_4H_4X Ions. III. $C_4H_4NH^+$," J. Am. Chem. Soc. 102, 6774 (1980).

35. T. Baer, U. Buchler, and C. E. Klots, "Kinetic Energy Release Distributions for the Dissociation of Internal Energy Selected $C_2H_5I^+$," J. Chimie Physique 77, 739 (1980).

36. T. E. Carney and T. Baer, "The Mechanism for Multiphoton Ionization of H_2S," J. Chem. Phys. 75, 4422 (1981).

37. T. Baer, "Theory and Energetics," Chapter I of Specialist Periodical Reports on Mass Spectrometry. The Chemical Society 6, 1-58 (1981).

38. T. E. Carney and T. Baer, "Laser Wavelength Dependence of the REMPI Mass Spectrum of 2,4-Hexadiyne. Direct Evidence for Dissociation Through Ionic State," J. Chem. Phys. 75, 477 (1981).

39. T. Baer and P. T. Murray, "Cross Sections for Symmetric Charge Transfer and Proton Transfer Reactions of Internal Energy Selected NH_3^+ (v)," J. Chem. Phys. 75, 4477 (1981).

40. M. L. Fraser-Monteiro, L. Fraser-Monteiro, J. J. Butler, T. Baer, and J. R. Hass, "Thermochemistry and Dissociation Dynamics of State Selected $C_4H_8O_2$ Ions. I. Dioxane," J. Phys. Chem. 86, 739 (1982).

41. L. Fraser-Monteiro, M. L. Fraser-Monteiro, J. J. Butler, and T. Baer, Thermochemistry and Dissociation Dynamics of State Selected $C_4H_8O_2^+$ Ions. II. Ethyl Acetate," J. Phys. Chem. 86, 747 (1982).

42. J. J. Butler, L. Fraser-Monteiro, M. L. Fraser-Monteiro, T. Baer, and J. R. Hass, "Thermochemistry and Dissociation Dynamics of State Selected $C_4H_8O_2^+$ Ions. III. Butanoic Acid," J. Phys. Chem. 86,752 (1982).

43. T. Baer and T. E. Carney, "The Dissociation Dynamics of State Selected Metastable Aniline Ions by Single and Multiphoton Ionization," J. Chem. Phys 76, 1304 (1982).

44. J. J. Butler and T. Baer, "A Photoionization Study of the Heats of Formation of HCS^+," J. Am. Chem. Soc. 104, 5016 (1982).

45. T. E. Carney and T. Baer, "Translational Energies of Fragment Ions in the Multiphoton Ionization of Benzene," J. Chem. Phys. 76, 5968 (1982).

46. T. Baer, A. E. DePristo, and J. J. Hermans, "Statistical Energy Partitioning in Dissociations to Several Products," J. Chem. Phys. 76, 5917 (1982).

47. J. C. Miller, R. N. Compton, T. E. Carney, and T. Baer "Photoelectron Spectrum of H_2S Following Multiphoton Ionization," J. Chem. Phys. 76 5648 (1982).

48. T. Baer and R. Kury "Random Energy Flow in the Dissociation of Energy Selected Bromobenzene and d5 Bromobenzene Ions," Chem. Phys. Lett. 92, 659 (1983).

49. P. M. Guyon, T. Baer, and I. Nenner, "Interactions between Neutral Dissociation and Ionization Continua in N_2O," J. Chem. Phys. 78, 3665 (1983).

50. W. A. Brand and T. Baer, "The Unimolecular Dissociation of Energy Selected t-butylbenzene Ions and the Effect of Thermal Energy on the Data Analysis," Int. J. Mass Spectrom. Ion Phys. 49 103 (1983).

51. J. J. Butler and T. Baer, "A Photoionization Study of Organo Sulfur Ring Compounds: Thiirane, Thietane, and Tetrahydrothiophene," Org. Mass Spectrom. 18, 248 (1983).

52. W. A. Brand, T. Baer and C. E. Klots, "Kinetic Energy Release Distribution in the Fragmentation of Energy Selected Iodopropane Ions," Chem. Phys. 76, 111 (1983).

53. J. J. Butler, T. Baer, and S. E. Evans, Jr., "Energetics and Structures of Organosulfur Ions. $CH_3SSCH_3^+$, CH_3SS^+, $C_2H_5SH^+$," *J. Am. Chem. Soc.* 105, 3451 (1983).

54. T. Baer, "Dissociation Dynamics of Energy Selected Ions Studied by One and Multiphoton Ionization," in *Ionic Processes in the Gas Phase,* M.A. Almoster Ferreira Ed., Reidel

Publishing Co., Holland, (1983) pp. 205- 255.

55. T. Baer, "Dissociation Dynamics of Large Molecular Ions Studied by One Photon and Multiphoton Ionization," *Comments on Atomic and Molecular Physics*, 13. 141 (1983).

56. T. R. Govers, P. M. Guyon, T. Baer, H. Frolich, S. K. Cole and M. Lavollee, "State Selected Ion-Molecule Reactions: N_2^+ (X,v') and N_2^+ (A,v') + Ar -> N_2 + Ar^+," *Chem. Phys.* 87, 373 (1984).

57. T. Baer, W. A. Brand, T. L. Bunn, and J. J. Butler, "Isomerization of Internal Energy Selected Ions," *Faraday Discuss. Chem. Soc.* 75, 45 (1983).

58. L. Szepes and T. Baer, "Dissociation Dynamics of Energy Selected Hexamethyldisilane Ions and the Heats of Formation of $(CH_3)_3Si^+$ and $(CH_3)_3Si$," *J. Am. Chem. Soc.* 84, 273 (1984).

59. M. Panczel and T. Baer, "A Photoelectron Photoion Coincidence (PEPICO) Study of Fragmentation Rates and Kinetic Energy Release Distributions in Nitrobenzene," *Int. J. Mass Spectrom. Ion Phys.* 58, 43 (1984).

60. B. E. Miller and T. Baer, "Kinetic Energy Release Distributions in the Fragmentation of Energy Selected Vinyl and Ethyl Bromide Ions," *Chem. Phys.* 85, 39 (1984).

61. M. L. Fraser-Monteiro, L. Fraser-Monteiro, J. de Wit, and T. Baer, "Dissociation Dynamics of Energy Selected Phenol Ions," *J. Phys. Chem.* 88, 3622 (1984).

62. W. A. Brand and T. Baer, "Dissociation Dynamics of Energy selected $C_5H_{lO}^+$ Ions," *J. Am. Chem. Soc.* 106. 3154 (1984).

63. T. Baer, "Chemical Dynamics of Energy Selected Ions", *Annals Israel Physical Society* 6, 549 (1984).

64. S. K. Cole, T. Baer, P. M. Guyon and T. R. Govers, "Symmetric Electron Transfer Reactions of State Selected Ions: H_2^+(v=0-10) + H_2 -> H_2 + H_2^+ (v')," *Chem. Phys. Lett.* 109, 285 (1984).

65. T. L. Bunn, W. S. Woodward and T. Baer, "The Design and Operation of a 12.5 ns Multichannel Scaler," *Rev. Sci. Instrum.* 55, 1849 (1984).

66. T. Baer, "Photoelectron Photoion Coincidence," *J. Chimie Phys.* 81, 645 (1984).

67. M. Panczel and T. Baer, "A Photoelectron-photoion Coincidence Study of Nitrobenzene Decomposition, I. Decomposition Dynamics," *Magy. Kem. Foly.* 91, 136 (1985).

68. M. Panczel and T. Baer, "Photoelectron-photoion Coincidence Study of Nitrobenzene

Decomposition, II. Thermochemistry of the Dissociation," *Magy. Kem. Foly.* 91, 153 (1985).

69. T. Baer, "Dissociation Dynamics of Energy Selected Ions," *Adv. in Chem. Phys.* 64, 111 (1986).

70. T. Baer and J.R. Hass, "Dissociation Mechanism of Methylnitrite Ions: Evidence for the Participation of Lower Energy Isomeric Structures," *J. Phys. Chem.* 90, 451 (1986).

71. T. Bunn, A. Richard and T. Baer, "Photodissociation of the Energy Selected Nitrobenzene Ion," *J. Chem. Phys.* 84, 1424 (1986).

72. J. Main-Bobo, S. Olesik, W. Gase, T. Baer, A. Mommers and J. Holmes, "The Dissociation Dynamics of Energy Selected Pyrazole and Imidazole Ions," *J. Am. Chem. Soc.* 108, 677 (1986).

73. T. Baer and P.M. Guyon, "Autoionization and Isotope Effect in the Threshold Photoelectron Spectrum of ^{12}CO and $^{13}CO_2$," *J. Chem. Phys.* 85, 4765 (1986).

74. L. Szepes and T. Baer, "Investigation of $(CH_3)_3SiX$ Type Compounds by Photoelectron-photoion Coincidence Technique," *Magyar Kemiai Folyoirat* 92, 297 (1986).

75. S. Olesik, T. Baer and J.C. Morrow, "Dissociation Rates of Energy Selected Dichloro and Dibromo Benzene Ions," *J. Phys. Chem*. **90**, 3563 (1986).

76. T. Bunn and T. Baer, "Photodissociation of Energy Selected $C_4H_6^+$ Ions: Determination of Isomerization Barriers between Butyne and 1,3 Butadiene Ion Isomers," *J. Chem. Phys*. **85**, 6361 (1986).

77. S.K. Cole and A.E. DePristo, "State-to-State Differential Cross Sections from Semiclassical Energy Conserving Trajectory Calculations: $H_2^+(v) + H_2(0) \rightarrow H_2(v'') + H_2^+(v')$," *J. Chem. Phys.* **85**, 1389 (1986).

78. P.M. Guyon, T.R. Govers and T. Baer, "State Selected Ion-Molecule Reactions," *Z. Phys. D. Atoms, Molecules, and Clusters* 4, 89 (1986).

79. P.M. Guyon, T. Baer, S.K. Cole and T. Govers, "The Charge Transfer and Collision-induced Dissociation Cross Sections of State-selected H^+_2 and N_2^+ Ions," *Chem. Phys.* 119, 145 (1988).

80. T.J. Cornish and T. Baer, "2 + 1 REMPI Spectra of Cyclic Ketones in a Cold Molecular Beam. 1. Studies of the N $\rightarrow$ 3s Rydberg Transition in Unsubstituted Rings," *J. Amer. Chem. Soc.* 109, 6915 (1987).

81. J.D. Shao, T. Baer, J.C. Morrow, and M.L. Fraser-Monteiro, "The Dissociation Dynamics of

Energy Selected Ion-dipole Complexes. 1. The cyclopropane ion-water complex [c-$C_3H_6^+$-OH_2]," *J. Chem. Phys.* 87, 5242 (1987).

82. M.C. Oliveira, T. Baer, S. Olesik, and M.A. Almoster-Ferreira, "The Dissociation Energies of Energy Selected Bromo and Iodo Butanes," *Int. J. Mass Spectrom. Ion Phys*. 82, 299 (1988).

83. T.J. Cornish and T. Baer, "2 + 1 REMPI Spectra of Cyclic Ketones in a Cold Molecular Beam: 2. The n->3s Rydberg Transition of Methyl Substituted Cyclohexanones and Cyclopentanones," *J. Amer. Chem. Soc*., 110 3099 (1988).

84. J.D. Shao, T. Baer, and D.K. Lewis, "The Dissociation Dynamics of Energy Selected Ion-Dipole Complexes. II. The Butyl Alcohol Ions", *J. Phys. Chem*., 92 5123 (1988).

85. T. Baer, J.C. Morrow, J.D. Shao, and S. Olesik, "The Gas Phase Heats of Formation of $C_7H_7^+$ Isomers: The m-Tolyl, p-Tolyl and Benzyl Ions," *J. Amer. Chem. Soc*., 110 5633 (1988).

86. T.J. Cornish and T. Baer, "An Experimental Link between the ^{13}C NMR Chemical Shift of Carbonyl Carbons and the Energy Shifts of the n->3s Optical Transition in Cyclic Ketones," *J. Amer. Chem. Soc*., 110 6287 (1988).

87. T. Baer, O. Dutuit, H. Mestdagh, and C. Rolando, "The Dissociation Dynamics of n-Butylbenzene Ion: The Competitive Production of m/z 91 and 92 Fragment Ions," *J. Phys. Chem.*,92 5674-5679 (1988).

88. J.D. Shao and T. Baer, "The Dissociation Dynamics of Energy Selected o-Nitrotoluene Ions," *Int. J. Mass Spectrom. Ion Phys*., 86 357-367 (1988)

89. J.C. Morrow and T. Baer, "*Ab Initio* Calculations on $C_2H_5Cl^+$ and the Loss of HCl from $C_2H_5Cl^+$ Isomers", *J. Phys. Chem.* 92 6567-6571 (1988)

90. J. Steadman, S.K. Cole, and T. Baer, "Visible and UV Resonance Enhanced Multiphoton Ionization Photoelectron Spectroscopy of H_2S", *J. Chem. Phys.* 89 5498-5506 (1988).

91. J. Steadman and T. Baer, "The Production and Spectroscopy of Sulfur Atoms from the Two-Photon Dissociation of H_2S", *J. Chem. Phys.* 89 5507-5513 (1988)

92. T.J. Cornish, T. Baer, and L.G. Pedersen, "The n->3s Rydberg Transition of Jet-Cooled Tetrahydropyran, 1,4-Dioxane, and 1,4-Dioxane-d_8 Studied by Resonance Enhanced Multiphoton Ionization", *J. Phys. Chem*. 93 6064-6069 (1989).

93. J. Steadman and T. Baer, "The Production and Characterization by Resonance Enhanced Multiphoton Ionization of H_2(v=10-14) from Photodissociation of H_2S", *J. Chem. Phys*. 91 6113-6119 (1989).

94. T. Baer, "Vacuum UV Photophysics and Photoionization Spectroscopy", *Ann. Rev. Phys. Chem.* 40 637-669 (1989).

95. S. Olesik, T. Baer, J.C. Morrow, J.J. Ridal, J. Buschek, and J.L. Holmes, "Dissociation Dynamics of Halotoluene Ions. Production of Tolyl, Benzyl, and Tropylium $C_7H_7^+$ Ions", *Org. Mass Spectrom.* 24 1008-1016 (1989).

96. T.J. Cornish and T. Baer, "Identification of Conformational isomers of Methyl-substituted Cyclohexanone and Tetrahydropyran Frozen in a Molecular Beam", *J. Phys. Chem.* 94 2852-2857 (1990)

97. T.J. Cornish and T. Baer, "Differentiation of Stereoisomers using High Resolution Electronic Spectroscopy Applied to Methyl Substituted Tetrahydropyrans", *Anal. Chem.* 62 1623-1627 (1990).

98. J.S. Riley, T. Baer, and G.D. Marbury "Sequential ortho effects: Characterization on novel $[M-35]^+$ Fragment Ions in the Mass Spectra of 2-alkyl-4,6-Dinitrophenols", *J. Am. Soc. Mass Spectrom.* **2** 69- (1991)

99. K.M. Weitzel, J. Booze, and T. Baer, "Shifts in Photoionization Fragmentation Onsets; a Direct Measure of Cooling in a Supersonic Molecular Beam", *Chem. Phys.* **150** 263-273 (1991)

100. O. Dutuit, T. Baer, C. Metayer, and J. Lemaire, "Isotope effects in the dissociation of partially deuterated dimethyl ether (CH_3OCD_3) ions" *Int. J. Mass Spectrom. Ion Proc.* **110** 67-82 (1991)

101. T. Baer, K.M. Weitzel, and J. Booze, "Photoelectron Photoion Coincidence Studies of Ion Dissociation Dynamics" in *Vacuum Ultraviolet ionization and Dissociation of Molecules and Clusters*, World Scientific, Inc.C.Y. Ng, Ed. Pp 259-96 (1991).

102. T. Baer, The Measurement and Interpretation of Onset Energies", NATO ASI series C, # 347 249-65 (1991)

103. J.A. Booze, K.M. Weitzel, and T. Baer, "The Rates of HCl Loss from Energy Selected Ethylchloride Ions: A Case of Tunneling through an H-atom Transfer Barrier", *J. Chem. Phys*. **94** 3649-3656 (1991)

104. K.M. Weitzel, J.A. Booze, and T. Baer, "TPEPICO Study of the Ethane Loss from Energy Selected n-Pentane Ions Cooled in a Supersonic Expansion", *Int. J. Mass Spectrom. Ion Proc*. **107** 301-317 (1991)

105. K.M. Weitzel, J.A. Booze, and T. Baer, "The Metastable Formation of di-ethylchloronium Ions from Ethylchloride Dimers in a seeded Molecular Beam", *Z. Phys. D*. **18** 383-389

(1991)

106. J.Riley and T. Baer, "Dissociation Dynamics of Phenetole Cations by Photoelectron Photoion Coincidence" *J. Am. Soc. Mass Spectrom*. **2** 464-469 (1991)

107. J.W. Driscoll, T. Baer, and T.J. Cornish, "The Analysis of Conformations of Substituted Cyclic Ketones by Multiphoton Ionization", *J. Mol. Structure,* **249** 95-107 (1991)

108. J.A. Booze and T. Baer, "*Ab initio* Study of $C_3H_8O^+$ Ions", *J. Phys. Chem*. **96** 5710-5715 (1992)

109. J.A. Booze and T. Baer, "Dissociation dynamics of Energy Selected $CH_3CH_2CH_2OH^+$ and $CD_3CH_2CH_2OH^+$ ions", *J. Phys. Chem*. **96** 5715-5719 (1992)

110. J.A. Booze and T. Baer, "On the Determination of Cluster Properties by Ionization Techniques", *J. Chem. Phys*. **96** 5541-5543 (1992)

111. J.W. Driscoll and T. Baer, "2-Methyl Effects in the Rydberg Spectra of Methyl Substituted Cyclohexanones", *Anal. Chem*. **64** 2604-2609 (1992)

112. T. Baer, "Reactions of State Selected Ions Studied with Vacuum-UV Radiation, AIP Conf. Proc. **258** 3-17 (1992)

113. T.N. Feinberg, T. Baer, and L.M. Duffy, "IR Photodissociation and CID Study of Ethene Cluster Ions", *J. Phys. Chem*. **96** 9162-9168 (1992)

114. J.A. Booze and T. Baer "The Photoionization and Dissociation Dynamics of Energy Selected Acetylene Dimers, Trimers, and Tetramers", *J. Chem. Phys*. **98** 186-200 (1993)

115. J.R. Riley and T. Baer, "Unimolecular Decay of Energy Selected Dimethylformamide Cations: A combined molecular orbital and RRKM analysis", *J. Phys. Chem.* **97** 385-390 (1993)

116. J.A. Booze, M. Schweinsberg, and T. Baer, "Transition State Structures and Angular Momentum Effects in the Dissociation Dynamics of Energy Selected $C_4H_8^+$ Ions", *J. Chem. Phys*. **99** 4441-4454 (1993)

117. T.H. Osterheld, T. Baer, and J.I. Brauman, "Infrared Multiple Photon Dissociation of Nitrobenzene Radical Cation. A Paradigm for Competitive Reactions", *J. Am. Chem. Soc*. **115** 6284-6289 (1993)

118. T. Baer "Reactions of State Selected Ions Studied with VUV Radiation" Conference Proceedings # 258 *Synchrotron Radiation and Dynamic Phenomena* A. Beswick Ed. Am. Inst. Phys., N.Y. Pp 3 -17 (1992)

119. T. Baer, J.A. Booze, and J.R. Riley, "Non-dissociative one-photon ionization of clusters - Is it Possible?" in *Laser Techniques for State Selected and State-to-State Chemistry*, C.Y. Ng, Ed. Proc. SPIE **1858** 158-163 (1993)

120. J.W. Keister, J.S. Riley, and T. Baer, "The t-butyl Ion Heat of Formation and the Isobutene Proton Affinity", *J. Am. Chem. Soc*. **115** 12613-12614 (1993)

121. M.A. Almoster Ferreira, B.J. Costa Cabral, M.C. Oliveira, and T. Baer, "Dissociation Mechanisms of Energy-selected Chlorobutane ions: Experiment and Theory", *Org. Mass Spectrom.* **28** 1229-1237 (1993)

122. T. Baer and J.A. Booze, "Long Lived Ion Complexes" in *Advances in Classical Trajectory Methods*, W. Hase Ed. JAI Press (1994) Vol 2 Pp 1-42

123. J.S. Riley and T. Baer, "Kinetic Energy Analysis in Time of Flight Mass Spectrometry - Application of TOF Methods to Clusters and Pyrolysis Studies in Supersonic Expansions", *Int. J. Mass Spectrom. Ion Proc*. **131** 295-305 (1994)

124. D. Schroder, D. Sulzle, O. Dutuit, T. Baer, and H. Schwarz, "Further insight in the surprisingly complex unimolecular fragmentations of the methyl nitrite radical cation", *J. Am. Chem. Soc*. **116** 6395-6400 (1994)

125. J.A. Booze, T.N. Feinberg, J.W. Keister, and T. Baer, "The Dissociative Ionization of Ethylene Dimers, Trimers and Tetramers Studied by Photoelectron Photoion Coincidence" *J. Chem. Phys*. **100**, 4294-4299 (1994)

126. Z.X. Ma, C.L. Liao, C.Y. Ng, Y.S. Cheung, W.K. Li, and T. Baer, "Experimental and Theoretical Studies of Isomeric CH_3S_2 and $CH_3S_2^+$" *J. Chem. Phys.* **100** 4870-4876 (1994)

127. D.R. Nesselrodt and T. Baer, "Cyclic Ketone Mixture Analysis Using 2+1 Resonance Enhanced Multiphoton Ionization Mass Spectrometry", *Anal. Chem.* **66** 2497-2504 (1994)

128. L.M. Duffy, T.N. Feinberg, and T. Baer, "Infrared Vibrational Photodissociation Spectra of Ar_2^+ Ions", *J. Chem. Phys.* **101** 2793-2799 (1994)

129. D.R. Nesselrodt, A.R. Potts, and T. Baer "Observation of Ethyl Substituted Cyclohexanone and Cyclopentanone Rotamers Using Resonance Enhanced Multiphoton Ionization Spectroscopy", *J. Phys. Chem.* **99** 4458-4465 (1995)

130. A.R. Potts, D.R. Nesselrodt, T. Baer, J.W. Driscoll, and J.P. Bays "The 3s Rydberg Spectra of Methyl Substituted Cyclopentanones", *J. Phys. Chem.* **99** 12090-12098 (1995)

131. T. Baer and P.M. Guyon, "An Historical Introduction to Threshold Photoionization" in *High Resolution Ion Spectroscopy* T. Baer, C.Y. Ng, and I. Powis Eds, Wiley & Sons (1995) P. 1-16

132. T. Baer "Recent Progress and Future Trends in Ion Dissociation Dynamics" in *Advances in Mass Spectrometry - Vol. 13* I. Cornides, Gy. Horvath, and K. Vekey Eds. John Wiley & Sons, Chichester, England (1995). Pp 313-332

133. D.R. Nesselrodt, A.R. Potts, and T. Baer, "Stereochemical Analysis of Methyl Substituted Cyclohexanes Using 2+1 Resonance Enhanced Multiphoton Ionization Spectroscopy", *Anal. Chem.***67** 4322-4329 (1995)

134. L.M. Duffy, J.W. Keister, and T. Baer, "Isomerization and Dissociation in Competition - The Pentene Ion Story", *J. Phys. Chem.* **99** 17862-17871 (1995)

135. D.R. Nesselrodt and T. Baer, 2+1 Resonance Enhanced Multiphoton Ionization Spectroscopy as a Tool for Stereochemical and Conformational Analysis of Substituted Five- and Six-Membered Rings, *J. of Mol. Structure*, **377** 201-218 (1996)

136. E. Soh, P.M. Mayer, nd T. Baer The Unimolecular chemistry of ionized 1- and 2-butanethiol *Int. J. Mass Spectrom. Ion Proc.* **160** 63-71 (1997)

137. P.M. Mayer and T. Baer Isomerization and Dissociation in Competition. The Two-Component Decay Rates of Energy Selected Trimethylborate Ions *J. Phys. Chem.* **100** 14949-14957 (1996)

138. P.B. Armentrout and T. Baer Gas-Phase Ion Dynamics and Chemistry *J. Phys. Chem.* **100** 12866-12877 (1996)

139. A.R. Potts and T. Baer Spectroscopic Gas Phase Determination of ΔH^o [axial/equatorial] for 3-methyl Cyclohexanone *J. Chem. Phys.* **105** 7605-12 (1996)

140. T. Baer The Calculation of Unimolecular Decay Rates with RRKM and *ab initio* methods in *The Structure, Energetics, and Dynamics of Organic Ions* T. Baer, C.Y. Ng, and I. Powis, Eds. Wiley Series in Ion Chemistry and Physics (1996) Ch. 3 p. 125-166

141. P.M. Mayer and T.Baer, The Heat of Formation of $ClSO^+$ *Chem.Phys.Lett*. **261** 155-159 (1996)

142. P.M. Mayer and T. Baer A Photoionization Study of Vibrational Cooling in Molecular Beams *Int. J. Mass Spectrom. Ion Proc.* **156** 133-140 (1996)

143. T.Baer and P.M. Mayer Statistical RRKM/QET Calculations in Mass Spectrometry *J.Am.Soc.Mass Spectrom.* **8** 103-115 (1997)

144. J.W. Keister, T.Baer, M.Evans, C.Y. Ng, C-W. Hsu Methyl Loss Kinetics of Energy-Selected 1,3-Butadiene and Methylcyclopropene Cations *J. Phys. Chem.* **101** 1866-1872 (1997)

145. P.M. Mayer, J.W. Keister, T. Baer, M.Evans, C.Y. Ng, and C-W. Hsu The Dimethylamine Dimer Ion Is an Ion-Radical Complex: A Combined TPEPCIO, Variational RRKM and ab initio MO study of the Fragmentation of Ionized Dimers of Dimethylamine *J. Phys. Chem.* **101** 1270-1276 (1997)

146. O.Mazyar, P.M. Mayer, and T. Baer Isomerization and Dissociation in Competition: The two-component dissociation rates of methyl acetate ions *Int. J. Mass Spectrom. Ion Proc.* **167/168** 389-402 (1999)

147. T.Baer, O.A. Mazyar, J.W. Keister, and P.M. Mayer, Isomerization and Dissociation in Competition - The two-component dissociation dynamics of energy selected $C_3H_6O_2^+$ Isomers *Ber. Bunsenges. Phys. Chem.* **101** 478-483 (1997)

148. A.R. Potts and T. Baer, Conformational Enthalpies, ΔH[ax/eq] of 3- and 4-methyl cyclohexanone *J. Mol. Structure (Theochem)* **419**, 11-18 (1997)

149. A.R. Potts and T. Baer, Spectroscopic determination of ΔH□ for axial/equatorial and ethyl rotor conformations in 4-methyl and 4-ethyl cyclohexanone cooled in a supersonic jet *J. Chem. Phys*. **108** 869-875 (1998)

150. A.R. Potts and T. Baer, Conformational and Energetic Analysis of Saturated Organic Ring Compounds by 2 + 1 Resonance-Enhanced Multiphoton Ionization (REMPI) Spectroscopy *J. Phys. Chem*.A (Feature Article) **101** 8970-8978 (1997)

151. J.W. Keister, P. Tomperi, and T. Baer, Ethyl loss kinetics of tetraethylsilane ions studied by TPEPICO *Int. J. Mass Spectrom. Ion Proc.***171** 243-252 (1997)

152. J.W. Keister, T. Baer, R. Thissen, C. Alcaraz, O. Dutuit, H. Audier, and V. Troude, Proton tunneling in the loss of hydrogen bromide from energy selected gas-phase 2-bromobutane cations, *J.Phys.Chem.A* **102** 1090-1097 (1998)

153. O.A. Mazyar and T. Baer, Isomerization and Dissociation in Competition: the two-component dissociation rates of the energy selected methyl formate ions, *J.Phys.Chem.A* **102** 1682-1690 (1998)

154. J.W. Keister, P. Tomperi, and T. Baer, Thermochemistry of gaseous ethylsilane cations *J.Am.Soc.Mass Spectrom.* **9** 597-605 (1998)

155. O.A. Mazyar and T.Baer, Theoretical and experimental studies of unimolecular dissociation of phosphorus tribromide ions, C*hem.Phys.Lett*. **288** 327-332 (1998)

156. O.A. Mazyar and T. Baer Ethene loss kinetics of methyl 2-methyl butanoate ions studied by TPEPICO: The enol ion of methyl propionate heat of formation, *J.Am.Soc.Mass Spectrom*. **10** 200-208 (1999)

157. O.A. Mazyar and T. Baer Isomerization and dissociation in competition: The two-component dissociation rates of methyl propionate ions, *J.Phys.Chem*. **103** 1221-1227 (1999)

158. A. Zelenyuk, J. Cabalo, T. Baer, and R.E. Miller, Mass spectrometry of liquid aniline aerosol particles by IR/UV laser irradiation, *Anal. Chem*. **71** 1802-1808 (1999)

159. T. Baer, R. Lafleur, and O.A. Mazyar, The role of ion dissociation dynamics in the study of ion and neutral thermochemistry, in *Energetics of Stable Molecules and Reactive Intermediates*, M.E. Minas da Piedade (Ed) Kluwer Academic Publ. (1999) Pp. 303-322

160. J. Cabalo, A. Zelenyuk, T. Baer, and R.E. Miller, Two-color laser induced evaporation dynamics of liquid aerosols probed by time-of-flight mass spectrometry, *Aerosol Sci. And Techn*. **33**, 3-19 (2000)

161. G.K. Jarvis, K.M. Weitzel, M. Malow, T. Baer, Y. Song, and C.Y. Ng, High resolution pulsed field ionization photoelectron-photoion coincidence spectroscopy using synchrotron radiation *Rev. Sci. Instrum*. **70** 3892-3906 (1999)

162. K.M. Weitzel, M. Malow, G.K. Jarvis, T. Baer, Y. Song, and C.Y. Ng, High-resolution pulsed field ionization photoelectron-photoion coincidence study of CH_4: Accurate 0K dissociation threshold for CH_3^+ , *J.Chem.Phys*. **111** 8267-8270 (1999)

163. G.K. Jarvis, K.M. Weitzel, M. Malow, T. Baer, Y. Song, and C.Y. Ng, High-resolution pulsed field ionization photoelectron photoion coincidence study of C_2H_2: Accurate 0K dissociation threshold of C_2H^+ *Phys.Chem.Chem.Phys.*, **1**, 5259-5262 (1999)

164. T. Baer, Y.Song, C.Y. Ng, J.Liu, and W. Chen, The heat of formation of 2-$C_3H_7^+$ and proton affinity of C_3H_6 determined by pulsed field ionization - photoelectron photoion coincidence spectroscopy *J.Phys.Chem.-A*, **104**, 1959-1964 (2000)

165. D. Kim and T. Baer, Conformational Study of 3-Methyltetrahydropyran by (2+1) Resonance-Enhanced Multiphoton Ionization Spectroscopy, *J. Phys.Chem. A*; **104**; 509-513 (2000)

166. R.D. Lafleur, B. Sztaray, and T. Baer A photoelectron-photoion coincidence study of the ICH_2CN ion dissociation: The Thermochemistry of $^{\cdot}CH_2CN$, $^{+}CH_2CN$, and ICH_2CN *J. Phys.Chem*. A **104**, 1450-1455 (2000)

167. T. Baer, Y.Song, J.Liu, W. Chen, and C.Y. Ng, Pulsed field ionization - photoelectron photoion coincidence spectroscopy with synchrotron radiation: The heat of formation of the $C_2H_5^+$ ion *Disc. Faraday Soc*. **# 115** 137-145 (2000)

168. D. Kim and T. Baer, Gas-phase measurement of ΔH^o between axial and equatorial

conformations of 3-methylcyclopentanone *Chem. Phys*. **256**, 251-258 (2000).

169. T. Baer and A.R. Potts, Non-statistical chemical reactions: the isomerization over low barriers in methyl and ethyl cyclohexanones, *J. Phys. Chem. A* **104**, 9397-9404 (2000)

170. B. Sztaray and T. Baer, The dissociation dynamics and thermochemistry of energy selected $CpCo(CO)_2^+$ ions *J.Am.Chem.Soc.* **122**, 9219-9226 (2000)

171. T. Baer Ion dissociation dynamics and thermochemistry by photoelectron photoion coincidence (PEPICO) spectroscopy, *In.J.Mass Spectrom*. **200** 443-457(2000)

172. Y.Li, B. Sztaray, and T. Baer, The dissociation kinetics of energy selected $CpMn(CO)_3^+$ ions studied by threshold photoelectron photoion coincidence spectroscopy, *J.Am.Chem.Soc*. **123** 9388-9396 (2001)

173. E. Woods III, G.D. Smith, Y. Dessiaterik, T. Baer, and R.E. Miller, Quantitative detection of aromatic compounds in single aerosol particle mass spectrometry *Anal.Chem.* **73** 2317-2322 (2001)

174. K.-M. Weitzel, G. Jarvis, M. Malow, Y. T. Baer, Song, and C. Y. Ng, Observation of Accurate Ion Dissociation Thresholds in Pulsed Field Ionization Photoelectron Studies, *Phys. Rev. Lett.*, **86** 3526-3529 (2001)

175. E. Woods, III., Y. Dessiaterik, R.E. Miller, and T. Baer, Dynamics in the early stages of decomposition of liquid nitromethane and nitromethane-diethylamine mixtures *J.Phys. Chem. A*. **105** 8273-8280 (2001)

176. E. Woods, III, G.D. Smith, R.E. Miller, and T. Baer, Depth-profiling of heterogeneously mixed aerosol particles using single particle mass spectrometry, *Anal.Chem*. **74** 1642-1649 (2002)

177. Y.Li and T. Baer, Threshold photoelectron-photoion coincidence spectroscopy: Dissociation of the 1-chloroadamantane ion and the heat of formation of the 1-adamantyl cation, *J.Phys.Chem. A*, **106** 272-278 (2002)

178. F. Qi, L. Sheng, M. Ahmed, D.S. Peterka, and T. Baer, Exclusive production of excited state sulfur (^{1}D) from 193 nm photolysis of thietane, *Chem.Phys. Lett*. **357** 204-208 (2002)

179. Y.Li, J.E. McGrady, and T. Baer, Metal-benzene and metal-CO bond energies in neutral and ionic $C_6H_6Cr(CO)_3$ studied by threshold photoelectron photoion coincidence spectroscopy and DFT theory, *J. Am. Chem. Soc*., **124** 4487-4494 (2002)

180. T. Baer, Photoelectron spectroscopy, threshold photoelectron spectroscopy, and pulsed field ionization, Encyclopedia of Mass Spectrometry, P.B. Armentrout, Ed. Elsevier 1 235-241

(2003) Ch. 4

181. T. Baer, Measuring fragment ion appearance energies by photoionization methods, Encyclopedia of Mass Spectrometry, P.B. Armentrout, Ed. Elsevier, 1 381-390 (2003) Ch. 5

182. Y. Li and T. Baer, Neutral and ionic bond energies in $(C_6H_6)_2Cr$ studied by threshold photoelectron photoion coincidence spectroscopy, *J. Phys. Chem. A.* **106** 9820-9826 (2002)

183. T. Baer and Y. Li, Threshold photoelectron spectroscopy with velocity focusing: An ideal match for coincidence studies, *Int. J. Mass Spectrom*. **219** 381-389 (2002)

184. C. Sykes, E. Woods, III, G. D. Smith, T. Baer, and R. E. Miller, Thermal Vaporization – Vacuum Ultraviolet Laser Ionization Time of Flight Mass Spectrometry of Single Aerosol Particles, *Anal. Chem*. **74** 2048-2052 (2002)

185. Y. Li, B. Sztaray, and T. Baer, The dissociation kinetics of energy selected Cp_2Mn^+ ions studied by threshold photoelectron photoion coincidence spectroscopy, *J.Am.Chem.Soc*. **124** 5843-5849 (2002)

186. G.D. Smith, E. Woods, III, C.D. Hauser, T. Baer, and R.E. Miller, Reactive uptake of ozone by oleic acid aerosol particles: Application of single particle mass spectrometry to heterogeneous reaction kinetics *J. Phys. Chem. A.*, **106** 8085-8095 (2002)

187. B. Sztáray, L. Szepes, and T. Baer, Neutral Cobalt–Carbonyl Bond Energy By Combining Threshold Photoelectron Photoion Coincidence Spectroscopy with He(I) Photoelectron Spectroscopy, *J.Phys.Chem.A.* **107** 9486-9490 (2003)

188. Y. Li and T. Baer, Theoretical studies on the isomerization and dissociation of the acrolein ions, *Int. J. Mass Spectrom* **218** 19-37 (2002).

189. Y. Li and T. Baer, The Dissociation Dynamics and Thermochemistry of the Acrolein Ion Studied by Threshold Photoelectron-Photoion Coincidence Spectroscopy, *Int. J. Mass Spectrom.* **218** 37-48 (2002)

190. Y. Li and T. Baer, Dissociation dynamics of ethylene glycol ions studied by photoelectron photoion coincidence, *J.Phys.Chem*.A **106** 8658-8666 (2002)

191. B. Sztaray and T. Baer, Consecutive and parallel dissociation of energy selected $Co(CO)_3NO^+$ ions, *J. Phys. Chem.A* **106** 8046-8053 (2002)

192. E. Woods, III, R.E. Miller, and T. Baer, The internal energy of neutral ethylene glycol molecules created in the laser vaporization of aerosol particles, *J. Phys. Chem. A* **107** 2119-2125 (2003)

193. G.D. Smith, E. Woods, III, T. Baer, and R.E. Miller, Aerosol uptake described by numerical

solution of the diffusion-reaction equations in the particle *J.Phys.Chem*.A **107** 9582-9587 (2003)

194. B. Sztaray and T. Baer, The suppression of hot electron in threshold photoelectron photoion coincidence spectroscopy using velocity focusing optics, *Rev. Sci. Instrum*. **74** 3763-3768 (2003)

195. X.M. Qian, T. Zhang, C. Chang, P. Wang, C.Y. Ng, Y-H Chiu, D.J. Levandier, S.Miller, R.A. Dressler, T. Baer, and D.S. Peterka, High-resolution state-selected ion-molecule reaction studies using pulsed field ionization photoelectron-secondary ion coincidence method, *Rev. Sci. Instrum*. **74** 4096-4109 (2003)

196. T. Baer and B. Sztaray, The statistical theory for unimolecular decay of organic and organometallic ions, volume 4, Encyclopedia of Mass Spectrometry, Elsevier, (2005) Pp. 9-18.

197. Y. Dessiaterik, T. G. Nguyen, T. Baer, and R.E. Miller, IR vaporization mass spectrometry of aerosol particles with ionic solutions: The problem of ion-ion recombination, *J. Phys. Chem. A.* **107** 11245-11252 (2003)

198. W.K. Lewis, B.E. Applegate, J. Sztáray, B. Sztáray, T. Baer, R.J. Bemish, and R.E. Miller, Electron impact ionization in helium nanodroplets: Controlled fragmentation by active cooling of molecular ions, *J. Am. Chem. Soc*. **126** 11283-11292 (2004)

199. E.A. Fogleman, H. Koizumi, J. Kercher, B. Sztaray, and T. Baer, The Heats of Formation of the Acetyl radical and Ion obtained by Threshold Photoelectron Photoion Coincidence, *J. Phys. Chem*. A **108** 5288-5294 (2004)

200. H. Koizumi and T. Baer, The heats of formation of *t*-butyl isocyanide and other alkyl isocyanides by photoelectron photoion coincidence spectroscopy, *J. Phys. Chem.A* **108** 5956-5961 (2004)

201. A. Bodi, J. P. Kercher, T. Baer, and B. Sztáray On the Parallel Mechanism of the Dissociation of Energy-Selected $P(CH_3)_3^+$ Ions, *J. Phys. Chem. B* **109** 8393-8399 (2005).

202. Adam Brooks,[a] Kai-Chung Lau,[b] C.Y. Ng,[b] and Tomas Baer[a] The $C_3H_7^+$ Appearance Energy from 2-Iodopropane and 2-Chloropropane Studied by Threshold Photoelectron Photoion Coincidence, *European J. of Mass Spectrom*., **10** 819-828 (2004)

203. A.F. Lago, J.P. Kercher, A. Bodi, B. Sztáray, B. Miller, D. Wurzelmann, and T. Baer, Dissociative Photoionization and Thermochemistry of Dihalomethane Compounds Studied by Threshold Photoelectron Photoion Coincidence Spectroscopy, *J.Phys.Chem.A* **109** 1802-1809 (2005)

204. J.P. Kercher, E.A. Fogleman, H. Koizumi, B. Sztáray, and T. Baer, The Heats of Formation

of the Propionyl ion and Radical and 2,3 Pentanedione by Threshold Photoelectron Photoion Coincidence Spectroscopy, *J. Phys. Chem*. A **109** 939-946 (2005)

205. D. Nash, F. Liu, E. Mysak, and T. Baer, Aerosol Particle Mass Spectrometry with low Photon Energy laser Ionization, *Int. J. Mass Spectrom*. **241** 89-97 (2005)

206. T. Baer, B. Sztáray, J. P. Kercher, A.F. Lago, A. Bödi, C. Skull, and D. Palathinkal, Threshold Photoelectron Photoion Coincidence Studies of Parallel and Sequential Dissociation Reactions, *Phys. Chem. Chem. Phys*. **7** 1507-1513 (2005)

207. J.Z. Davalos, A.F. Lago, and T. Baer, Thermochemical study of the liquid phase equilibrium reaction of dihalomethanes by NMR spectroscopy, *Chem. Phys. Lett*. **409** 230-234 (2005)

208. Z. Gengeliczki, B. Sztaray, T. Baer, C. Iceman, and P.B. Armentrout, Heats of Formation of $Co(CO)_2NOPR_3$, R = CH_3 and C_2H_5, and Its Ionic Fragments, *J. Am. Chem. Soc*. **127** 9393-9402, (2005)

209. E. Mysak, K. R. Wilson, M. Jimenez-Cruz, M. Ahmed, and T. Baer, Synchrotron Radiation Based Aerosol Time-of-Flight Mass Spectrometry for Organic Constituents, *Anal. Chem.* **77** 5963-5960, (2005)

210. Y. Dessiaterik, T. Baer, and R.E. Miller, Laser Ablation of Imidazolium Based Ionic Liquids, *J. Phys. Chem.A* **110** 1500-1505 (2006)

211. A.F. Lago and T. Baer, A Photoelectron photoion coincidence study of the vinyl bromide and tribromoethane ion dissociation dynamics: Heats of formation of $C_2H_3^+$, C_2H_3Br, $C_2H_3Br^+$, $C_2H_3Br_2^+$ and $C_2H_3Br_3$, *J. Phys. Chem. A.* **110**, 3036-3041 (2006)

212. M. Hochlaf, T. Baer, X.-M. Qian, and C.Y. Ng, A vacuum ultraviolet pulsed field ionization-photoelectron study of cyanogen cation in the energy range of 13.2-15.9 eV, *J. Chem. Phys.* **123** 144302 (2005)

213. A. Bodi, B. Sztaray, and T. Baer, Dissociative Photoionization of Mono-, Di- and Trimethylamine Studied by a Combined Threshold Photoelectron Photoion Coincidence Spectroscopy and Computational Approach, *Phys.Chem.Chem.Phys*. **8**, 613-623 (2006)

214. H. Koizumi, J. Davalos, and T. Baer, Heats of Formation of GeH_4, GeF_4 and $Ge(CH_3)_4$, *Chem. Phys*. **324** 385-392(2006)

215. A. Lago and T. Baer Dissociation dynamics and thermochemistry of chloroform and tetrachloroethane molecules studied by threshold photoelectron photoion coincidence, *Int. J. Mass Spectrom*. **252** 20-25 (2006)

216. James P. Kercher, Bálint Sztáray, and Tomas Baer, On the dissociation of 2-Pentanone ions by threshold photoelectron photoion coincidence spectroscopy, *Int. J. Mass Spectrom*. **249-250**

403-411 (2006)

217. Juan Z. Dávalos and Tomas Baer, Thermochemistry and Dissociative Photoionization of $Si(CH_3)_4$, $BrSi(CH_3)_3$, $ISi(CH_3)_3$, and $Si_2(CH_3)_6$ Studied by Threshold Photoelectron-Photoion Coincidence Spectroscopy, *J.Phys.Chem. A* **110** 8572-8579 (2006)

218. Erin R. Mysak, Yury N. Dessiaterik, C.J. McKinney, Tomas Baer, Roger E. Miller, Design of a timing circuit for random laser triggering on aerosol particles, *Rev. Sci. Instrum*. **77**, 013301/1-013301/6 (2006)

219. Juan Z. Dávalos, and Hideya Koizumi, and Tomas Baer, Threshold Photoelectron-Photoion Coincidence Spectroscopy: Dissociation Dynamics and Thermochemistry of $Ge(CH_3)_4$, $Ge(CH_3)_3Cl$, and $Ge(CH_3)_3Br$, *J. Phys. Chem. A* **110**, 5032-5037 (2006)

220. Agnes Revesz, Csaba I. Pongor, Andras Bodi, Balint Sztaray, and Tomas Baer, Manganese-Chalcarbonyl bond strengths from threshold photoelectron photoion coincidence spectroscopy, *Organometallics* **25,** 6061-6067 (2006)

221. David G. Nash, Michael P. Tolocka, and Tomas Baer, The Uptake of O_3 by Myristic Acid/Oleic Acid Mixed Particles: Evidence for Solid Surface Layers, *Phys.Chem.Chem.Phys*. **8**, 4468 - 4475 (2006)

222. David G. Nash, Tomas Baer, and Murray V. Johnston, Aerosol Mass Spectrometry: An Introductory Review, *Int. J. Mass Spectrom.* **258**, 2 - 12 (2006)

223. Andras Bodi, Curtis Bond, Patcharica Meteesatien, James P. Kercher, Balint Sztaray, and Tomas Baer, Photoion Photoelectron Coincidence Spectroscopy of Primary Amines RCH_2–NH_2 (R = H, CH_3, C_2H_5, C_3H_7, *i*-C_3H_7): Alkylamine and Alkyl Radical Heats of Formation by the Means of Isodesmic Reaction Networks, *J. Phys.Chem. A* **110,** 13425-13433 (2006)

224. James P. Kercher, Zsolt Gengeliczki, Bálint Sztáray, and Tomas Baer, Dissociation dynamics of sequential ionic reactions: Heats of formation of tri−, di− and monoethyl phosphines, *J. Phys. Chem. A* **111**, 16-26 (2007)

225. James P. Kercher, Will Stevens, Zsolt Gengeliczki, and Tomas Baer, Modeling Ionic Unimolecular Dissociations from a Temperature Controlled TPEPCIO Study on *1*-C_4H_9I Ions, *Int. J. Mass Spectrom*. **267**, 159-166 (2007)

226. Zsolt Gengeliczki, László Szepes, Bálint Sztáray, and Tomas Baer, Photoelectron spectroscopy and thermochemistry of tert-butylisocyanide substituted cobalt tricabonyl nitrosyl, *J. Phys. Chem. A* **111**, 7542-7550 (2007)

227. Andras Bodi, Bálint Sztáray, Tomas Baer, Melanie Johnson and Thomas Gerber, Data acquisition schemes for continuous two-particle time-of-flight coincidence experiments, *Rev. Sci. Instrum*. **78**, 084102/1 – 7 (2007)

228. Eva R. Garland, Elias P. Rosen, Laura I. Clarke, and Tomas Baer, Structure of submonolayer oleic acid coverages on inorganic aerosol particles: Evidence for island formation, *Phys.Chem.Chem.Phys.* **10**, 3156-3161 (2008)

229. Eva R. Garland, Elias P. Rosen, and Tomas Baer, The role of morphology on aerosol particle reactivity, in *Atmospheric Aerosols: Characterization, Chemistry, Modeling and Climate*, K.T. Valsaraj and R.R. Kommalapati (editors); ACS Symposium Series, Volume 1005, Division of Environmental Chemistry, ACS, Oxford University Press Chapter 2, Pp13-29 (2009))

230. Alex F. Lago and Tomas Baer, A Photoelectron photoion coincidence study of the vinyl bromide and tribromomethane ion dissociation dyanamics: Heats of formation of $C_2H_3^+$, C_2H_3Br, $C_2H_3Br_2^+$, and $C_2H_3Br_3$. [Erratum for 2006, Volume 110A] *J. Phys. Chem. A* **112**, 5024 (2008)

231. Nicholas S. Shuman, Melony A. Ochieng, Bálint Sztáray, Tomas Baer, TPEPICO Spectroscopy of Vinyl Chloride and Vinyl Iodide: Neutral and Ionic Heats of Formation and Bond Energies, *J. Phys. Chem. A* **112**, 5647-5652 (2008)

232. Elias P. Rosen, Eva R. Garland, and Tomas Baer, Ozonolysis of oleic acid adsorbed on polar and non-polar aerosol particles, *J. Phys. Chem. A* **112**, 10315–10324 (2008)

233. Nicholas S. Shuman, James P. Kercher, and Tomas Baer, The Dissociation Dynamics of Energy-Selected Neopentylamine Ions: Heats of Formation of Neopentylamine and Neopentyl Alcohol, *Int. J. Mass Spectrom.* **287** 26-31 (2008)

234. Nicholas S. Shuman, Linda Ying Zhao, Michael Boles, Bálint Sztáray, and Tomas Baer, The Heats of Formation of $HCCl_3$, $HCCl_2Br$, $HCClBr_2$, $HCBr_3$, and their ions studied photoelectron photoion coincidence. *J. Phys. Chem.A* **112**, 10533-10538 (2008)

235. William Stevens, Bálint Sztáray, Nicholas S. Shuman, Tomas Baer, and Jürgen Troe, Specific Rate Constants k(E) of the Dissociation of Halobenzene Ions: Analysis by Statistical Unimolecular Rate Theories. *J. Phys. Chem. A* **113** 573-582 (2009)

236. Balázs Hornung, Andras Bodi, Csaba Pongor, Zsolt Gengeliczki, Tomas Baer, and Bálint Sztáray, Dissociative photoionization of $X(CH_3)_3$ (X = N, P, As, Sb, Bi): mechanism, trends and accurate energetics, *J. Phys. Chem. A* **113** 8091-8098 (2009)

237. Andras Bodi, Melanie Johnson, Thomas Gerber, Zsolt Gengeliczki, Bálint Sztáray, and Tomas Baer, Imaging photoelectron photoion coincidence spectroscopy with velocity focusing electron optics, *Rev. Sci. Instrum*. **80** 034101/1 - 7 (2009)

238. Eva R. Garland, Amy D. Lee, Tomas Baer, Laura I. Clarke, Growth dynamics and morphology of oleic acid vapor-deposited on a silica surface, J. Phys. Chem. C **113** 2141-2148 (2009).

239. Nicholas S. Shuman, Austin Spencer, and Tomas Baer, Experimental thermochemistry of $SiCl_3R$ (R = Cl, H, CH_3, C_2H_5, C_2H_3, CH_2Cl, $SiCl_3$), $SiCl_3^+$, and $SiCl_3^\bullet$, J.Phys.Chem. A **113** 9458 – 9466 (2009)

240. Nicholas S. Shuman, William R. Stevens, Katherine E. Lower, and Tomas Baer, The heat of formation of the allyl ion by TPEPICO spectroscopy, J.Phys.Chem. A **113** 10710-10717 (2009)

241. Andras Bodi, Nicholas S. Schuman, and Tomas Baer, On the ionization and dissociative photoionization of iodomethane: a definitive experimental enthalpy of formation of CH_3I, *Phys. Chem. Chem. Phys* **11** 11013-11021 (2009)

242. Nicholas S. Shuman, Andras Bodi, and Tomas Baer, Heats of formation of t-butyl peroxy radical and t-butyl diazyl ion: RRKM vs SSCAM rate theories in systems with kinetic and competitive shifts, *J. Phys. Chem. A* **114** 232-240 (2010)

243. William R. Stevens, S. Hunter Walker, Nicholas S. Shuman, and Tomas Baer, Dissociative Photoionization Study of Neopentane:A path to an accurate heat of formation of the *t*-butyl ion, t-butyl iodide, and t-butyl hydroperoxide, *J. Phys. Chem. A* **114** 804 – 810 (2010)

244. Tomas Baer and Robert C. Dunbar, Ion Spectroscopy: Where did it come from; Where is it now; and where is it going? *J.Am.Soc.Mass Spectrom.* **21**, 681-693 (2010)

245. Nicholas S. Shuman, William R. Stevens, and Tomas Baer, Dissociation dynamics of energy selected acetic acid ions: The gas phase heat of formation of the acetyl ion, *Int.J.Mass Spectrom.*, **294**, 88-92 (2010)

246. William R. Stevens, Andras Bodi, and Tomas Baer, Dissociation dynamics of energy selected, propane, and $i\text{-}C_3H_7X^+$ ions by iPEPICO: Accurate Heats of Formation of $i\text{-}C_3H_7^+$, $i\text{-}C_3H_7Cl$, $i\text{-}C_3H_7Br$, and $i\text{-}C_3H_7I$, *J. Phys. Chem. A*, **114**, 11285-11291 (2010)

247. Nicholas S. Shuman, Melanie Johnson, William R. Stevens, Michael E. Harding, John F. Stanton, and Tomas Baer, Tunneling in a simple bond scission: The surprising barrier in the H loss from $HCOOH^+$, *J. Phys. Chem. A.*, **114**, 10016-10023 (2010)

248. William R. Stevens, Branko Ruscic, and Tomas Baer, The heats of formation of $C_6H_5^\bullet$, $C_6H_5^+$, and C_6H_5NO by TPEPICO and Active Thermochemical Tables analysis, *J. Phys. Chem. A.*, **114**, 13134-13145 (2010)

249. Ágnes Révész**,** László Szepes, Tomas Baer, and Bálint Sztáray, Binding energies and iosomerization in metallocene ions from threshold photoelectron photoion concidence spectroscopy, *J.Am. Chem.Soc.* **132**, 17795-17803 (2010)

250. Bálint Sztáray, Andras Bodi, and Tomas Baer, Modeling unimolecular reactions in photoelectron photoion coincidence experiments, *J.Mass Spectrom*. **45**, 1233-1245 (2010)

251. Juan Z. Davalos, Nicholas S. Shuman, Rebeca Herrero, and Tomas Baer, Dissociation Dynamics and Thermochemistry of Tin Species, $(CH_3)_4Sn$ and $(CH_3)_6Sn_2$, by Threshold Photoelectron-Photoion Coincidence Spectroscopy, *J. Phys. Chem. A*. **115**, 402-409 (2011).

252. Andras Bodi, William R. Stevens, and Tomas Baer, Understanding the Complex Dissociation Dynamics of Energy Selected Dichloroethylene Ions: Neutral Isomerization Energies and Heats of Formation by Imaging Photoelectron-Photoion Coincidence, J. Phys. Chem. A, **115**, 726-734 (2011)

253. Tomas Baer, Andres Guerrero, Juan Z. Davalos, and Andras Bodi, The Dissociation of Energy Selected $Sn(CH_3)_4^+$, $Sn(CH_3)_3Cl^+$, and $Sn(CH_3)_3Br^+$ ions: Evidence for isolated excited state dynamics, *Phys. Chem. Chem. Phys*. **13**, 17791-17801 (2011).

254. Tomas Baer, S. Hunter Walker, Nicholas S. Shuman, and Andras Bodi, One- and two-dimensional energy distributions in the iodine-loss dissociation of 1,2-$C_2H_4I_2^+$ and 1,3-$C_3H_6I_2^+$: What does this mean? J. *Phys. Chem. A.* **116** 2833-2844 (2011)

255. Andras Bodi, M. Daniel Brannock, Balint Sztaray, and Tomas Baer, Tunneling in H loss from energy selected ethanol ions, *Phys.Chem.Chem.Phys*, **14** 16047-16054 (2012)

256. Andrés Guerrero, Tomas Baer, Antonio Chana, Javier Gonzalez, and Juan Z. Dávalos, Gas phase acidity measurement of local acidic groups in multifunctional species: Controlling the binding sites in hydroxycinnamic acids *J. Am. Chem. Soc*. **135** 9681-9690 (2013)

257. Andras Bodi, Tomas Baer, Nancy K. Wells, Daniel Fakhoury, David Klecyngier, James P. Kercher, Controlling tunneling in methane loss from acetone ions by deuteration *Phys.Chem.Chem.Phys* **17** 28505-28509 (2015)

258. Tomas Baer and Richard P. Tuckett, Advances in threshold photoelectron spectroscopy (TPES) and threshold photoelectron photoion coincidence (TPEPICO), *Phys.Chem.Chem.Phys* **19** 9698-9723 (2017)

Book:

T. Baer and W.L. Hase Unimolecular Reaction Dynamics: Theory and Experiments *Oxford University Press*, New York, (1996)

Edited Books:C.Y. Ng, I. Powis, and T. Baer Eds, Wiley Series: Ion Chemistry and Physics

Cluster Ions (1993)
Unimolecular and Bimolecular Reaction Dynamics (1994)
High Resolution Laser Photoionization and Photoelectron Studies (1995)
The Structure, Energetics, and Dynamics of Organic Ions (1996)
Large Ions: Their Vaporization, Detection, and Structural Analysis (1996)