

9/2/2008

Curriculum Vitae, James P. Reilly

Department of Chemistry
Indiana University
Bloomington, IN 47405

Phone: (812) 855-1980
Fax: (812) 855-8300
E-mail: reilly@indiana.edu

- 1950 Born, Mt. Vernon, NY
- 1968 Graduated, Chaminade High School, Mineola, NY
- 1971 Recipient, William Foster Memorial Prize, Princeton University
- 1972 A.B., Chemistry, Princeton University
Recipient, Robert Thornton McKay Prize
- 1972-3 Winston Churchill Scholar, Cambridge University
(Certificate of post-graduate study in physical chemistry awarded)
- 1973-7 Ph.D., Physical Chemistry, University of California, Berkeley (Research in collaboration with Prof. George C. Pimentel and Prof. C. Bradley Moore. Thesis title: Probing Optical Transitions with Intraactivity Dye Laser Spectroscopy)
- 1973 Summer Research Fellow, National Center for Atmospheric Research, Boulder, Colorado
- 1978-9 Guest Researcher, Max Planck Institute, Projektgruppe für Laserforschung, Garching, West Germany (Research in collaboration with Prof. Karl L. Kompa in the area of UV laser development and applications)
- 1979 Recipient, Camille and Henry Dreyfus Foundation Young Faculty Award
- 1979-83 Assistant Professor, Department of Chemistry, Indiana University. Research interests: photochemistry, kinetic spectroscopy, laser photoelectron spectroscopy, laser mass spectrometry.
- 1982 Selected as Alfred P. Sloan Fellow
- 1983 Selected as Camille and Henry Dreyfus Teacher-Scholar
- 1984-6 Associate Professor, Department of Chemistry, Indiana University
- 1987 Professor, Department of Chemistry, Indiana University
- 1988 Invited Lecturer, Academia Sinica, PRC
- 1998 Departmental Teaching Excellence Award, Indiana University
- 1999 Departmental Teaching Excellence Award, Indiana University
- 2005 Indiana University Trustee Teaching Award
- 2007 Chair, Department of Chemistry, Indiana University, Sept. 19, 2007
- *2007 Journal of Chromatography, Top Cited Article 2002-2007 Award, James P. Reilly (publication 117)

Publications, James P. Reilly

1. J.P. Reilly, Ph.D. Thesis, "Probing optical transitions with intracavity dye laser spectroscopy," Dept. of Chemistry, University of California, Berkeley (1977).
2. E.R. Bernstein and J.P. Reilly, "Absorption spectrum of the 2000 Å system of borazine in the gas phase," *J. Chem. Phys.* **57**, 3960 (1972).
3. E.A. Ogryzlo, J.P. Reilly, and B.A. Thrush, "Vibrational excitation of CO from the reaction C + O₂," *Chem. Phys. Lett.* **23** 37 (1974).
4. J.P. Reilly and G.C. Pimentel, "Intracavity dye laser spectroscopy as a gain probing technique," *Applied Optics* **15**, 2372-2377 (1976).
5. A.P. Baronavski et al., "The photophysics and photochemistry of formaldehyde", Proceedings of the Loen Conference, Norway, Springer Verlag, 108, (1976) and "The photophysics and photochemistry of formaldehyde investigated by laser flash photolysis," *J. Photochemistry* **9**, 322-336 (1978).
6. D.J. Ekstrom, J.R. Barker and J.P. Reilly, "Intracavity dye laser absorption measurements of candidate chemical laser reactions," *Electronic Transition Lasers, Vol. II*, L.E. Wilson, S.N. Suchard and J.I. Steinfeld, ed., MIT Press, Cambridge, 115 (1977).
7. J.H. Clark, C.B. Moore and J.P. Reilly, "HCO radical kinetics: conjunction of laser photolysis and intracavity dye laser spectroscopy," *Int. J. of Chem. Kinetics* **10**, 427-431 (1978).
8. D.J. Eckstrom, J.R. Barker, J.G. Hawley and J.P. Reilly, "Intracavity dye laser spectroscopy studies of Ba + N₂O, Ca + N₂O and Sr + N₂O reactions," *Applied Optics* **16**, 2102-2107 (1977).
9. J.P. Reilly and J.H. Clark, "Broadband detection of two photon absorption by intracavity dye laser spectroscopy," *Adv. in Laser Chemistry*, A.H. Zewail, ed., Springer Series in Chemical Physics, Springer, New York, 355 (1978).
10. J.P. Reilly, J.H. Clark, C.B. Moore and G.C. Pimentel, "Spectroscopy and relaxation of vibrationally excited HCO radicals," 43, *ibid.*
11. J.P. Reilly, J.H. Clark, C.B. Moore and G.C. Pimentel, "HCO production, vibrational relaxation, chemical kinetics and spectroscopy following laser photolysis of formaldehyde," *J. Chem. Phys.* **60**, 4381-4394 (1978).
12. S. Rockwood, J.P. Reilly, K. Hohla and K.L. Kompa, "UV laser induced molecular multiphoton ionization and fragmentation," *Optics Comm.* **28**, 175-178 (1979).
13. H. Pummer, K. Hohla, M. Diegelmann and J.P. Reilly, "Discharge pumped F₂ laser at 1580 Å," *Optics Comm.* **28**, 104-106 (1979).

14. J.P. Reilly and K.L. Kompa, "Multiphoton ionization mass spectrometry", Laser Spectroscopy IV, ed. by H. Walter and K. W. Rothe, Springer Verlag, 631-633 (1979).
15. J.P. Reilly and K.L. Kompa, "Laser induced multiphoton ionization mass spectrum of benzene," J. Chem. Phys. **73**, 5468-5476 (1980).
16. K.L. Kompa et al., "Multiphoton processes and laser-induced chemical changes," Proceedings of the Europhysics Conf. on Multiphoton Processes at Benodet, (1979).
17. J.P. Reilly and K.L. Kompa, "Multiphoton ionization mass spectra of a pair of aldehydes," Advances in Mass Spectrometry, **8**, Heyden and Son, London, 1800-1805 (1979).
18. J.T. Meek, R.K. Jones, and J.P. Reilly, "Photoelectron energy distribution following UV laser ionization of gas phase benzene," J. Chem. Phys. **73**, 3503-3505 (1980).
19. S.R. Long and J.P. Reilly, "VUV laser induced photodissociation of ICN: CNB²O⁺ state population and kinetics," J. Phys. Chem. **86**, 56-59 (1982).
20. J.T. Meek, S.R. Long, and J.P. Reilly, "Observation of polyatomic ion vibrational state distribution by laser photoelectron spectroscopy," J. Phys. Chem. **86**, 2809-2811 (1982).
21. G. Rhodes, R.B. Opsal, J.T. Meek, and J.P. Reilly, "Sensitive and selective detection of molecules with ultraviolet laser ionization gas chromatography/mass spectrometry," Anal. Chem. **55**, 280-286 (1983).
22. J.T. Meek, S.R. Long and J.P. Reilly, "Laser ionization photoelectron spectroscopy," Lasers as Reactants and Probes in Chemistry, ed. by Jackson and Harvey, Howard Univ. Press (1985).
23. J.T. Meek, S.R. Long, R.B. Opsal and J.P. Reilly, "Laser ionization studies of gas phase and surface adsorbed molecules," Laser Chemistry **3**, 19-28 (1983).
24. S.R. Long, J.T. Meek, P.J. Harrington and J.P. Reilly, "Benzaldehyde photochemistry studied with laser ionization mass and photoelectron spectroscopy," J. Chem. Phys. **78**, 3341-3343 (1983).
25. R.B. Opsal, G. Rhodes and J.P. Reilly, "Alkylbenzenes and polyaromatic compounds studied with laser ionization MS and GC/MS," Proceedings of the 1982 Scientific Conference on Chemical Defense Research, Aberdeen Proving Ground, 321 (1982).
26. R.B. Opsal and J.P. Reilly, "Ultraviolet laser induced ionization of molecules near surfaces," Chem. Phys. Lett. **99**, 461-464 (1983).
27. S.R. Long, J.T. Meek and J.P. Reilly, "Laser photoelectron spectrum of gas phase benzene," J. Chem. Phys. **79**, 3206-3219 (1983).
28. J.W. Chai, G. Rhodes, J.T. Meek and J.P. Reilly, "Laser mass spectrometry," Proceedings of the

- International Society for Optical Engineering, **426**, 129-137 (1983).
29. W.G. Wilson, K.S. Viswanathan, E. Sekreta and J.P. Reilly, "Rotationally resolved laser photoelectron spectrum of gas phase NO," J. Phys. Chem. **88**, 672-673 (1984).
 30. J.W. Chai and J.P. Reilly, "Multiple peak formation in laser ionization mass spectrometry," Optics Comm. **49**, 51-54 (1984).
 31. J.P. Reilly, "Laser Photoelectron Spectroscopy," Israel J. of Chemistry **24**, 266-272 (1984).
 32. J.T. Meek, K.S. Viswanathan, E. Sekreta and J.P. Reilly, "The laser photoelectron spectrum of gas phase aniline," J. Chem. Phys. **82**, 1741-1749 (1985).
 33. C. Douketis, D. Anex, G. Ewing and J.P. Reilly, "High resolution overtone spectroscopy of H₂O in a molecular beam," J. Phys. Chem. **89**, 4173-4175 (1985).
 34. R.B. Opsal, K. Owens and J.P. Reilly, "Resolution in the linear TOF mass spectrometer," Anal. Chem. **57**, 1884-1889 (1985).
 35. K.G. Owens and J.P. Reilly, "Probing argon-benzene van der Waals molecules and isotopically substituted benzene with laser-ionization mass spectrometry," J. Optical Soc. America, B **2**, 1589-1593 (1985).
 36. M. Yang, J.R. Millard and J.P. Reilly, "Improved TOF mass spectrometric resolution with UV laser irradiation of a metal surface," Optics Comm. **55**, 41-44 (1985).
 37. K.S. Viswanathan, E. Sekreta, E.R. Davidson and J.P. Reilly, "Rotationally resolved laser photoelectron spectra of gas phase NO: Rotational propensity rules in photoionization," J. Phys. Chem. **90**, 5078-5084 (1986).
 38. C. Douketis, D. Anex and J.P. Reilly, "High resolution overtone spectroscopy on a molecular beam," Proceedings of the SPIE **669**, 137 (1986).
 39. R.B. Opsal and J.P. Reilly, "Selective Analysis of NO containing compounds by laser ionization gas chromatography/mass spectrometry," Anal. Chem. **58**, 2919-2923 (1986).
 40. R.B. Opsal and J.P. Reilly, "Chromatographic effluent detection with laser ionization mass spectrometry," Optics News **12**, 18-21 (1986).
 41. K.S. Viswanathan, E. Sekreta and J.P. Reilly, "Ionization of the A(²Ó⁺) state of NO: An investigation of non-Franck-Condon behavior in photoionization," J. Phys. Chem. **90**, 5658-5661 (1986).
 42. E. Sekreta, K. Owens and J.P. Reilly, "Intensity dependent laser ionization experiments involving the ¹B_{1u} state of benzene," Chem. Phys. Lett. **132**, 450-455 (1986).

43. M. Yang and J.P. Reilly, "A reflectron mass spectrometer with UV laser induced surface ionization," *Int. J. of Mass Spectrom. and Ion Processes* **75**, 209-219 (1987).
44. M. Yang and J.P. Reilly, "A new high-resolution TOF mass spectrometer," *Analytical Instrumentation*, **16**, 133-150 (1987).
45. J.R. Millard, M. Yang and J.P. Reilly, "Mechanisms of pulsed UV laser ionization of molecules adsorbed to thin metal films," *J. Phys. Chem.* **91**, 4323-4329 (1987).
46. R.B. Opsal and J.P. Reilly, "Ionization of alkylbenzenes studied by gas chromatography/laser ionization mass spectrometry," *Anal. Chem.* **60**, 1060-1065 (1988).
47. E. Sekreta, K. Owens, A. Engel and J.P. Reilly, "Applications of laser ionization spectroscopy," *Spectrochimica Acta* **B43** 679-686 (1988).
48. E. Sekreta and J.P. Reilly, "Direct observation of intersystem crossing in benzene by laser photoelectron spectroscopy," *Chem. Phys. Lett.* **149** 482-486 (1988).
49. E. Sekreta, K.S. Viswanathan and J.P. Reilly, "The laser photoelectron spectrum of gas phase p-difluorobenzene," *J. Chem. Phys.* **90** 5349-5359 (1989).
50. M. Yang and J.P. Reilly, "Comparison of two methods of UV laser-induced desorption ionization." *Optics Comm.* **71** 193-196 (1989).
51. C. Douketis and J.P. Reilly, "High resolution vibrational overtone spectroscopy of hydrogen peroxide in the $\Delta v=4$ region," *J. Chem. Phys.*, **91**, 5239-5250 (1989).
52. C. Douketis and J.P. Reilly, "New methods of probing the vibrational overtone spectrum of hydrogen peroxide," *Proceedings of the International Laser Science Conference*, (November, 1987).
53. E. Sekreta, C.W. Wilkerson, Meiying Hou and J.P. Reilly, "Probing excited state dynamics with laser photoelectron spectroscopy," *The Structure of Small Molecules and Ions*, R. Naaman and Z. Vager, eds., Plenum Publishing, 181 (1988).
54. R.B. Opsal, S.M. Colby, C.W. Wilkerson, Jr., and J.P. Reilly, "Resolution and sensitivity in laser ionization mass spectrometry," *Lasers in Mass Spectrometry*, D. Lubman, ed., Oxford University Press (1990).
55. X. Song, E. Sekreta, J.P. Reilly, H. Rudolph, and V. McKoy "Dependence of NO rotational photoionization propensity rules on electron kinetic energy," *J. Chem. Phys.*, **91**, 6062-6070 (1989).
56. M. Yang and J.P. Reilly, "Kinetic energy distributions of aniline molecules and cations following their UV-laser induced desorption from a metal surface," *J. Phys. Chem.*, **94**, 6299-6305 (1990).

57. C.W. Wilkerson, Jr., S.M. Colby and J.P. Reilly, "Determination of polycyclic aromatic hydrocarbons using GC/laser ionization mass spectrometry with picosecond and nanosecond light pulses," *Anal. Chem.*, **61**, 2669-2673 (1989).
58. X. Song, C. Wilkerson, J. Lucia, S. Pauls and J.P. Reilly, "Direct observation of time dependent intramolecular vibrational relaxation in jet cooled p-n-alkylanilines," *Chem. Phys. Lett.*, **174**, 377-384 (1990).
59. M. Yang, J. Millard and J.P. Reilly, "Ultraviolet laser-induced desorption of molecules and ions from thin metal films," *Laser Photoionization and Desorption Surface Analysis Techniques*, Nicolas S. Nogar, Editor, *Proc. SPIE* **1208**, 106 (1990).
60. C.W. Wilkerson, Jr., and J.P. Reilly, "Variations in detection efficiency of halobenzenes studied using gas chromatography/laser ionization mass spectrometry: Correlation with Excited State Lifetimes," *Anal. Chem.*, **62**, 1804-1808 (1990).
61. C.W. Wilkerson, Jr., E. Sekreta and J.P. Reilly, "Raman shifting of picosecond light pulses in hydrogen gas," *Applied Optics*, **30**, 3855-3861 (1991).
62. S.M. Colby, M. Stewart and J.P. Reilly, "Laser ionization gas chromatography/mass spectroscopy of tetraethyltin," *Anal. Chem.*, **62**, 2400-2403 (1990).
63. X. Song, S. Pauls, J. Lucia, P. Du, E.R. Davidson and J.P. Reilly, "Dependence of p-n-propylaniline ionization potential on molecular conformation: Comparison of experiment with theory," *J. Am. Chem. Soc.*, **113**, 3202-3203 (1991).
64. J.R. Millard and J.P. Reilly, "Pulse rate dependence of laser desorption and ionization of molecules on thin metal films: I. Measurements of pulse rate dependence and fraction of molecules desorbed," *J. Phys. Chem.* **95**, 4045-4050 (1991).
65. J.R. Millard and J.P. Reilly, "Pulse rate dependence of laser desorption and ionization of molecules on thin metal films: Mathematics of laser heating and pulse rate dependence" *Proc. of the Workshop on Laser Ablation*, ed. J.C. Miller, Springer-Verlag, Munich (1991).
66. Z. Lin, K. Boraas and J.P. Reilly, "The vibrational overtone spectrum of propyne in the $\tilde{\nu} = 4$ region", *J. Mol. Spect.*, **156**, 147-153 (1992).
67. K. Boraas, C. Douketis and J.P. Reilly, "Detection of a steady state concentration of HNO by photoacoustic spectroscopy", *Spectrochim. Acta*, **48A**, 1529-1532 (1992).
68. C. Douketis and J.P. Reilly, "The NH stretch in pyrrole: A study of the fundamental ($\tilde{\nu} = 1$) and third overtone ($\tilde{\nu} = 4$) bands in the bulk gas and in a molecular beam", *J. Chem. Phys.* **96**, 3431-3439 (1992).
69. K. Boraas, D.F. DeBoer, Z. Lin and J.P. Reilly, "The Stark effect in methane's $3\nu_1 + \nu_3$ vibrational

- overtone band”, J. Chem. Phys. **99**, 1429-1432 (1993).
70. X. Song, M. Yang, E.R. Davidson and J.P. Reilly, “Zero kinetic energy photoelectron spectra of jet-cooled aniline”, J. Chem. Phys. **99**, 3224-3233 (1993).
 71. K. Boraas and J.P. Reilly, “A low temperature intracavity photoacoustic spectrometer”, Rev. Sci. Inst. **64**, 3108-3110 (1993).
 72. S.M. Colby and J.P. Reilly, “Photoemission electron impact ionization in time-of-flight mass spectrometry: An examination of experimental consequences”, Int. J. Mass Spectrom. and Ion Processes **131**, 125-138 (1994).
 73. Z. Lin, K. Boraas and J.P. Reilly, “The vibrational overtone spectrum of fluoroform in the $\Delta v=4$ C-H stretching region”, Chem. Phys. Lett. **217**, 239-244 (1994).
 74. X. Song, E.R. Davidson, S.R. Gwaltney and J.P. Reilly, “High-resolution zero kinetic energy photoelectron spectra of propylaniline”, J. Chem. Phys. **100**, 5411-5421 (1994).
 75. K. Boraas, Z. Lin and J.P. Reilly, “A high resolution study of methane's $3\nu_1 + \nu_3$ vibrational overtone band”, J. Chem. Phys. **100**, 7916-7927 (1994).
 76. P.T.A. Reilly and J.P. Reilly, “Laser desorption/gas phase ionization of the amino acid tryptophan”, Rapid Comm. Mass Spectrom. **8**, 731-734 (1994).
 77. S. M. Colby, T. B. King and J. P. Reilly, “Improving the resolution of MALDI TOF mass spectrometry by exploiting the correlation between ion position and velocity”, Rapid Comm. Mass Spectrom. **8**, 865-868 (1994).
 78. K. Boraas and J.P. Reilly, “The $3\nu_1 + \nu_3$ vibrational overtone spectrum of $^{13}\text{CH}_4$ ”, Chem. Phys. **190**, 301-309 (1995).
 79. J.P. Lucia and J.P. Reilly, “A dye laser-based amplifier for a CW mode-locked titanium sapphire laser and its use in the production of tunable ultraviolet light pulses”, Optics Comm. **114**, 125-130 (1995).
 80. Z. Lin, K. Boraas and J. P. Reilly, “Analysis of an overtone band of CH_3D at 11931 cm^{-1} ”, J. Molec. Spectrosc. **170**, 266-278 (1995).
 81. T. B. King, S. M. Colby and J. P. Reilly, “High resolution MALDI-TOF mass spectra of three proteins obtained using space-velocity correlation focusing”, Int. J. Mass Spectrom. Ion Processes **145**, L1-L7 (1995).
 82. N.P. Christian, S.M. Colby, L. Giver, C.T. Houston, R.J. Arnold, A.D. Ellington and J.P. Reilly, “High Resolution MALDI-TOF Analysis of Single-Stranded DNA of 27 to 68 Nucleotides in Length”, Rapid Comm. Mass Spectrometry **9**, 1061-1066 (1995).
 83. S.M. Colby and J.P. Reilly, “Space-Velocity Correlation Focusing”, Anal. Chem. **68**, 1419-1429 (1996).

84. N.P. Christian, L. Giver, A.D. Ellington and J.P. Reilly, "Effects of matrix variations and the presence of iron on MALDI mass spectra of DNA", *Rapid Comm. Mass Spectrometry* **10**, 1980-1986 (1996).
85. C.R. Silva and J. P. Reilly, "Theoretical calculations on excited states of benzaldehyde and observation of the $S_2 \leftarrow S_0$ jet-cooled spectrum, *J. Phys. Chem.* **100**, 17111-17123 (1996).
86. C.R. Silva and J.P. Reilly, "Laser ionization measurements of the photodissociation kinetics of jet-cooled benzaldehyde", *J. Phys. Chem. A* **101**, 7934-7942 (1997).
87. C.T. Houston, A.G. Baker, M.V. Novotny and J.P. Reilly, "Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry as a tool to probe the reactions of *trans*-hex-2-enal with proteins", *J. Mass Spectrom.* **32**, 662-665 (1997).
88. C.T. Houston and J.P. Reilly, "Rapid analysis of hemoglobin from whole human blood by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry", *Rapid Comm. Mass Spectrom.* **11**, 1435-1439 (1997).
89. R.J. Arnold and J.P. Reilly, "High resolution time-of-flight mass spectra of alkylthiolate-coated gold nanocrystals", *J. Am. Chem. Soc.* **120**, 1528-1532 (1998).
90. C.S. Hoaglund, S.J. Valentine, C.R. Sporleder, J.P. Reilly, and D.E. Clemmer, "Three-dimensional ion-mobility/TOFMS analysis of electrosprayed biomolecules", *Anal. Chem.* **70**, 2236-2242 (1998).
91. S.J. Valentine, A.E. Counterman, C.S. Hoaglund, J.P. Reilly, and D.E. Clemmer, "Gas-phase separations of protease digests", *J. Am. Soc. For Mass Spectrom.* **9**, 1213-1216 (1998).
92. R.J. Arnold, and J.P. Reilly, "Fingerprint matching of *E. coli* strains with MALDI-TOF mass spectrometry of whole cells using a modified correlation approach", *Rapid Commun. Mass Spectrom.* **12**, 630-636 (1998).
93. J.A. Karty, S. Lato, and J.P. Reilly, "Detection of the bacteriological sex factor in *E. coli* by MALDI-TOF mass spectrometry", *Rapid Commun. Mass Spectrom.* **12**, 625-629 (1998).
94. R.J. Arnold and J.P. Reilly, "Observation of *Escherichia coli* ribosomal proteins and their post-translational modifications by mass spectrometry", *Anal. Biochem.*, **269**, 105-112 (1999).
95. R.J. Arnold, J.A. Karty, A.D. Ellington and J.P. Reilly, "Monitoring the growth of a bacteria culture by MALDI-MS of whole cells", *Anal. Chem.* **71**, 1990-1996 (1999).
96. C.T. Houston and J.P. Reilly, "Toward a simple, expedient and complete analysis of human hemoglobin by MALDI-TOFMS", *Anal. Chem.* **71** 3397-3404 (1999).
97. R.J. Arnold, B. Polevoda, J.P. Reilly and F. Sherman, "The action of N-terminal acetyltransferases on yeast ribosomal proteins", *J. Biol. Chem.* **274**, 37035-37040 (1999).

98. L.J. Klein, K.S. Alleman, D.G. Peters, J.A. Karty, J.P. Reilly, "Catalytic reduction of ethyl chloroacetate by cobalt(I) salen electrogenerated at vitreous carbon cathodes", *J. Electroanalytical Chemistry* **481**, 24-33 (2000).
99. R.C. Beavis, S.M. Colby, R. Goodacre, P.de B. Harrington, J.P. Reilly, S. Sokolow, and C.W. Wilkerson, "Artificial Intelligence and Expert Systems in Mass Spectrometry", in *Encyclopedia of Analytical Chemistry Applications, Theory and Instrumentation*, edited by R.A. Meyers, 11558-11597 (John Wiley & Sons, LTD, NY, 2000).
100. R. J. Arnold and J. P. Reilly, "Observation of tetrahydrofolyl-poly-glutamic acid in bacteria cells by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry", *Analytical Biochem.* **281**, 45-54 (2000).
101. N.P. Christian, R.J. Arnold and J.P. Reilly, "Improved calibration of time-of-flight mass spectra by simplex optimization of electrostatic ion calculations", *Anal. Chem.* **72**, 3327-3337(2000).
102. C.T. Houston, W.P. Taylor, T.S. Widlanski and J.P. Reilly, "Investigation of enzyme kinetics using quench-flow techniques with MALDI-TOF mass spectrometry", *Anal. Chem.* **72**, 3311-3319 (2000).
103. S. Lee, T. Carlson, N.P. Christian, K. Lea, J. P. Reilly, J. J. Bonner, "The Yeast Heat Shock factor changes conformation in response to superoxide and temperature", *Mol. Biol. of the Cell* **11**, 1753-1764 (2000).
104. C.T. Houston and J.P. Reilly, "Photoionization studies of chromophore-labeled amino acids and peptides", *J. Phys. Chem. A*, **104**, 10383-10391 (2000).
105. A.N. Gashti, J.C. Huffman, A. Edwards, G. Szekeley, A.R. Siedle, J.A. Karty, J.P. Reilly, L.J. Todd, "Fluorination studies of the [compo-3,3'-Co(3,1,2-CoC₂B₉H₁₁)₂⁻¹] ion", *J. Organometallic Chem.*, **614-615**, 120-124 (2000).
106. R. Beardsley, J.A. Karty and J.P. Reilly, "Enhancing the intensities of lysine-terminated tryptic peptide ions in MALDI mass spectrometry", *Rapid Commun. Mass Spectrom.* **14**, 2147-2153 (2000).
107. N.P. Christian, A.W. Alexander and J.P. Reilly, "Design and evaluation of a low-cost and high-speed signal amplifier" *Rev. of Sci. Instrum.* **72**, 243-246 (2001).
108. N.P. Christian, V.R. Mokler, F.E. Wincott, A.D. Ellington and J.P. Reilly, "Elucidation of the initial step of oligonucleotide fragmentation in MALDI using modified nucleic acids", *J. Am. Soc. Mass Spectrom.* **12**, 744-753 (2001).
109. C. Ji, D.G. Peters, J.A. Karty, J.P. Reilly, and M.S. Mubarak, "Direct and Cobalt(I) salen-catalyzed reduction of 2, 6-Bis(chloromethyl)pyridine at carbon cathodes in acetonitrile", *J. Electroanal. Chem.* **516**, 50-58 (2001).
110. C. Ji, M.S. Mubarak, D.G. Peters, J.A. Karty, J.P. Reilly, "Electrochemical reduction of 2,6-Bis(chloromethyl)pyridine at carbon cathodes in acetonitrile", in *Reactive Intermediates in Organic and Biological Electrochemistry: Proc. of the Sym. in Honor of the late Professor Eberhard Steckhan*, D.G. Peters, H.J. Schafer, M.S. Workentin and J.-I Yoshida, editors (The Electrochemical Society, Inc., Pennington, NJ) 2001, pp. 85-88.

111. R.J. Arnold and J.P. Reilly, "Analysis of methylation and acetylation in *E. coli* ribosomal proteins", in Posttranslational Modifications of Proteins: Tools for Functional Proteomics, edited by Christoph Kannicht, Chapter 13, 205-210 (Humana Press, Totowa, NJ, Methods in Molecular Biology Series 2002).
112. R. L. Beardsley and J.P. Reilly, "Optimization of guanidination procedures for MALDI mass mapping", *Anal. Chem.* **74**, 1884-1890 (2002).
113. M.M.E. Ireland, J.A. Karty, J.P. Reilly and Y.V. Brun, "Proteomic analysis of the *Caulobacter crescentus* stalk indicates competence for nutrient uptake", *Mol. Microbiol.* **45**, 1029-1041 (2002).
114. J.A. Karty, M.M.E. Ireland, Y.V. Brun and J.P. Reilly, "Defining absolute confidence limits in the identification of *Caulobacter* proteins by peptide mass mapping", *J. Proteome Res.* **1**, 325-335 (2002).
115. W.A. Harris and J.P. Reilly, "On-probe digestion of bacterial proteins for MALDI-MS", *Anal. Chem.* **74**, 4410-4416 (2002).
116. A.J. Moad, L.J. Klein, D.G. Peters, J.A. Karty, J.P. Reilly, "Catalytic reduction of ethyl chloroacetate by cobalt(I) salophen electrogenerated at vitreous carbon cathodes", *J. Electroanal. Chem.* **531**, 163-169 (2002).
117. *J.A. Karty, M.M.E. Ireland, Y.V. Brun and J.P. Reilly, "Artifacts and unassigned masses encountered in peptide mass mapping", *J. Chromatogr. B*, **782**, 363-383 (2002).
118. W.A. Harris, D.J. Janecki, and J.P. Reilly, "Use of matrix clusters and trypsin autolysis fragments as mass calibrants in matrix-assisted laser/desorption ionization time-of-flight mass spectrometry", *Rapid Commun. Mass Spectrom.* **16**, 1714-1722 (2002).
119. R.L. Beardsley and J.P. Reilly, "Quantitation using enhanced signal tags: a technique for comparative proteomics", *J. Proteome Res.* **2**, 15-21 (2003).
120. R. M Alvey, J.A. Karty, E. Roos, J.P. Reilly, and D. M. Kehoe, "Lesions in Phycoerythrin Chromophore Biosynthesis in *Fremyella diplosiphon* reveal coordinated light regulation of apoprotein and pigment biosynthetic enzyme gene expression, *The Plant Cell*, **15**, 2448-2463 (2003).
121. Jishou Xu and J.P. Reilly, "Chemically modified diamond powders as bead material for proteomics", in Proceedings Intertech 2003, an international technical conference on diamond, cubic boron nitride and their applications, Vancouver, B.C., Canada, July 28-Aug. 1, 2003.
122. R.L. Beardsley and J.P. Reilly, "Fragmentation of amidinated peptide ions", *J. Am. Soc. Mass Spectrom.*, **15**, 158-167 (2004).
123. J.A. Karty, T-Y. Kim, J.P. Reilly, "Utility of chemical derivatization schemes for peptide mass fingerprinting" in Sample Preparation for Hyphenated Analytical Techniques, edited by J.A. Rosenfeld, (Blackwell Publishing, CRC Press, Oxford, UK) pp. 52-79 (2004).

124. D.M. Goken, D.G. Peters, J.A. Karty, J.P. Reilly, "Alkylation of [2,2'-([2,2'-bipyridine]-6,6'-diyl)bis[phenolato]-N,N',O,O']nickel(II) during catalytic reduction of 1-iodooctane", *J. Electroanal. Chem.*, **564**, 123-132 (2004).
125. M. S. Thompson W. Cui, and J.P. Reilly, "Fragmentation of singly-charged peptide ions by photodissociation at $\lambda = 157 \text{ nm}$ ", *Angewandte Chem.* **116**, 4895-4898 (2004).
126. J.D. Persinger, J.L. Hayes, L.J. Klein, D.G. Peters, J.A. Karty, J.P. Reilly, "Catalytic reduction of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113) by cobalt(I) salen electrogenerated at vitreous carbon cathodes", *J. Electroanal. Chem.* **568**, 157-165 (2004).
127. D. Janecki and J.P. Reilly, "Photoimmobilization of proteins for affinity capture with MALDI TOF MS analysis", *Anal. Chem.* **76**, 6643-6650 (2004).
128. T.J. Tegeler, Y. Mechref, K. Boraas, J.P. Reilly, M.V. Novotny, "Microdeposition device interfacing capillary electrochromatography and microcolumn liquid chromatography with matrix-assisted laser desorption/ionization mass spectrometry", *Anal. Chem.* **76**, 6698-6706 (2004).
129. T.-Y. Kim, Y.V. Brun, and J.P. Reilly, "Effects of tryptic peptide esterification in MALDI mass spectrometry", *Anal. Chem.* **77**, 4185-4193 (2005).
130. R.J. Arnold, J.A. Karty and J.P. Reilly, "Bacterial strain differentiation by mass spectrometry-Chemical Analysis" (book chapter in *Identification of Microorganisms by Mass Spectrometry*, edited by Charles L. Wilkens (John Wiley and Sons, 2006), Ch. 9, pg. 181-201.
131. D. Janecki and J.P. Reilly, "Denaturation of metalloproteins with EDTA to facilitate enzymatic digestion and mass fingerprinting", *Rapid Commun. Mass Spectrom.* **19**, 1268-1272 (2005).
132. R.L. Beardsley, L.A. Sharon, and J.P. Reilly, "Peptide de novo sequencing facilitated by a dual labeling strategy" *Anal. Chem.* **77**, 6300-6309 (2005).
133. W. Cui, M.S. Thompson and J.P. Reilly "Pathways of peptide ion fragmentation induced by vacuum ultraviolet light", *J. Am. Soc. Mass Spectrom.* **16**, 1384-1398 (2005).
134. J.A. Karty and J.P. Reilly, "Application Note: Deamidation as a consequence of β -elimination of phosphopeptides", *Anal. Chem.* **77**, 4673-4676 (2005).
135. T.-Y. Kim, M.S. Thompson and J.P. Reilly, "Peptide photodissociation at 157nm in a linear ion trap mass spectrometer", *Rapid Comm. in Mass Spectrom.* **19**, 1657-1665 (2005).
136. D.J. Janecki, R.L. Beardsley, and J.P. Reilly "Probing Protein Tertiary Structure with Amidination, *Anal. Chem.*, **77**, 7274-7281 (2005).
137. A. Devakumar, M.S. Thompson and J.P. Reilly, "Fragmentation of Oligosaccharide Ions with 157 nm Vacuum Ultraviolet Light", *Rapid Commun. Mass Spectrom.* **19**, 2313-2320 (2005).
138. R.M. Sandoval, J.P. Reilly, W. Running, W. Campos, S.B. Santos, and B.A. Molitoris, "A non-nephrotoxic bacterial component of gentamicin", *J. Am. Soc. Nephrology*, **17**, 2697-2705 (2006).
139. D.M. Goken, M.A. Ischay, D.G. Peters, J.W. Tomaszewski, J.A. Karty, J.P. Reilly, M.S. Mubarak, "Alkyl group incorporation into nickel salen during controlled potential electrolyses in the presence of alkyl halides", *J. Electrochem. Soc.*, **153**, E71-E77 (2006).
140. J.K. Wagner, S. Setayeshgar, L.A. Sharon, J.P. Reilly, Y.V. Brun, "A nutrient uptake role for

- bacterial cell envelope extensions”, PNAS **103**(31) 11772-11777 (2006).
141. J.P. Reilly, “Laser Ionization Tutorial” in Encyclopedia of Mass Spectrometry, Vol. 6, (edited by Michael L. Gross), Elsevier Publishing, (2006).
 142. R.L. Beardsley, W.E. Running, J.P. Reilly, “Probing the structure of the *Caulobacter crescentus* ribosome with chemical labeling and mass spectrometry”, J. Proteome Res. **5**, 2935-2946 (2006).
 143. L. Zhang, W. Cui, M.S. Thompson, J.P. Reilly, “Structures of *a*-type ions formed in the 157 nm photodissociation of singly-charged peptide ions”, J. Am. Soc. Mass Spectrom., **17** 1315-1321 (2006).
 144. H. Tang, R. J. Arnold, P. Alves, Z. Xun, D.E. Clemmer, M.V. Novotny, Reilly, J. P.; P. Radivojac, “A computational approach toward label-free protein quantification using predicted peptide detectability” Bioinformatics, **22** (14), e481-e488 (2006).
 145. J.A. Karty, W.E. Running, J.P. Reilly, “Two dimensional liquid phase separations of proteins using online fractionation and concentration between chromatographic dimensions”, J. Chromatog. B **847**, 103-113 (2007).
 146. M.S. Thompson, W. Cui, J.P. Reilly, “Factors that impact the vacuum ultraviolet photofragmentation of peptide ions”, J. Am. Society for Mass Spectrom., **18**, 1439-1452 (2007).
 147. W. Running, S. Ravipaty, J. Karty and J.P. Reilly, “A Top-down/bottom-up study of the ribosomal proteins of *Caulobacter crescentus*”, J. Proteome Res. **6**, 337-347 (2007).
 148. A. Devakumar, Y. Mechref, P. Kang, M.V. Novotny, J.P. Reilly, “Laser-Induced photofragmentation of neutral and acidic glycans inside an ion-trap mass spectrometer”, Rapid Commun. Mass Spectrom. **21**, 1452-1460 (2007).
 149. X. Liu, W.C. Broshears and J. P. Reilly, “Probing the structure and activity of trypsin with amidination”, Anal. Biochem., **367**, 13-19 (2007).
 150. Yi He and J.P. Reilly, “Does a charge tag really provide a fixed charge?, Angewandte Chemie., **120**, 2497-2499 (2008).
 151. A. Devakumar D.K. O’Dell, J. M. Walker and J.P. Reilly, “Structural analysis of leukotriene C₄ isomers using collisional activation and VUV photodissociation”, J. Am. Soc. Mass Spectrom., **19** 14-26 (2008).
 152. R. J. Arnold, William Running and J.P. Reilly, “Analysis of Methylation, Acetylation and other Modifications in Bacterial Ribosomal Proteins” Chap. 11 , pgs, 151-161, Post-translational Modifications of Proteins, Tools for Functional Proteomics, 2nd Edition, Kannicht, Christoph (Ed.), Methods in Molecular Biology, Vol 446 (2008).
 153. L. Zhang and J.P. Reilly, Use of 157 nm photodissociation to probe structures of *y*- and *b*-type ions produced in collision induced dissociation of peptide ions, J. Am. Soc. Mass Spectrom., **19** (5) 695-702 (2008).
 154. A. Devakumar, Y. Mechref, P. Kang, M.V. Novotny and J.P. Reilly Identification of Isomeric N-Glycan Structures by Mass Spectrometry with 157 nm Laser-Induced Photofragmentation, J. Am. Soc. Mass Spectrom. **19**, 1027-1040 (2008).
 155. W. Running and J.P. Reilly, Ribosomal Proteins of *Deinococcus radiodurans*: their Solvent Accessibility and Reactivity, submitted (2008).

156. J.P. Reilly, Ultraviolet photofragmentation of biomolecular ions, *Mass Spectrometry Reviews*, in press (2008).

157. W.A. Harris and J.P. Reilly, "Investigations in the use of 193 nm for in-source decay MALDI-TOF", **in preparation for submission** to J. of Am. Soc. Mass Spectrom.