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## EDUCATION

### **University of California, Berkeley, California**

Ph.D. January 2003 *"Structural studies of volatile liquid surfaces using x-ray absorption spectroscopy"*

Advisor: Professor R.J. Saykally

### **St. John's College, Santa Fe, New Mexico**

M.A. Humanities May 1996

Thesis: *"Metaphysics in Husserl's Phenomenology"*

### **Willamette University, Salem, Oregon**

May 1993, B.A. Chemistry

## RELEVANT EXPERIENCE

2011–present

### **Lawrence Berkeley National Laboratory**

Deputy Director for Science, Chemical Sciences Division

2006–present

### **Lawrence Berkeley National Laboratory**

Staff Scientist, Chemical Sciences Division

2004–2006

### **Lawrence Berkeley National Laboratory**

Term Scientist, Chemical Sciences Division

2003–2004

### **Los Alamos National Laboratory, Chemistry Division**

*Fredrick Reines Distinguished Postdoctoral Fellow*

2002–2003

### **University of California, Berkeley, Dept. of Chemistry**

*Advanced Light Source Doctoral Fellow,*

1997–2002

*Graduate Researcher,* Advisor Prof. R.J. Saykally

1994–1997

### **Los Alamos National Laboratory, Los Alamos, New Mexico**

*Researcher,* Supervisor Dr. Jeanne Robinson

## AWARDS

U. S. Department of Energy Early Career Award (2012)

Fredrick Reines Distinguished Postdoctoral Fellowship  
(Feb. 2003-present)

ALS Doctoral Fellowship in Residence (Jan. 2002- Jan. 2003)

## REFEREED PUBLICATIONS:

89. M. R. Canagaratna, P. Massoli, E. C. Browne, J. P. Franklin, K. R. Wilson, T. B. Onasch, T. W. Kirchstetter, E. C. Fortner, C. E. Kolb, J. T. Jayne, J. H. Kroll, and D. R. Worsnop, "[Chemical Compositions of Black Carbon Particle Cores and Coatings via Soot Particle Aerosol Mass Spectrometry with Photoionization and Electron Ionization](#)," J. Chem. Phys. A, DOI: 10.1021/jp510711u (2015)
88. F. A. Houle, W. D. Hinsberg, and K. R. Wilson, "[Oxidation of a model alkane aerosol by OH radical: the emergent nature of reactive uptake](#)," Phys. Chem. Chem. Phys., DOI: 10.1039/C4CP05093B (2015)
87. A. A. Wiegel, K. R. Wilson, W. D. Hinsberg, and F. A. Houle, "[Stochastic methods for aerosol chemistry: a compact molecular description of functionalization and fragmentation in the heterogeneous oxidation of squalane aerosol by OH radicals](#)," Phys. Chem. Chem. Phys., DOI: 10.1039/C4CP04927F (2015)
86. T. Nah, H. Zhang, D. R. Worton, C. Ruehl, B. B. Kirk, A. Goldstein, S. R. Leone, and K. R. Wilson, "[Isomeric Product Detection in the Heterogeneous Reaction of Hydroxyl Radicals with Aerosol Composed of Branched and Linear Unsaturated Organic Molecules](#)," J. Phys. Chem. A, DOI: 10.1021/jp508378z (2014)
85. D. M. Popolan-Vaida, S. R. Leone, and K. R. Wilson, "[Reaction of Iodine Atoms with Submicrometer Squalane and Squalene Droplets: Mechanistic Insights into Heterogeneous Reactions](#)," J. Phys. Chem. A, 118, 10688, DOI: 10.1021/jp5085247 (2014)
84. M. R. Canagaratna, J. L. Jimenez, J. H. Kroll, Q. Chen, S. H. Kessler, P. Massoli, L. Hildebrandt Ruiz, E. Fortner, L. R. Williams, K. R. Wilson, J. D. Surratt, N. M. Donahue, J. T. Jayne, and D. R. Worsnop, "[Elemental ratio measurements of organic compounds using aerosol mass spectrometry: characterization, improved calibration, and implications](#)", Atmos. Chem. Phys. Discuss, **14**, 19791, DOI: 10.5194/acpd-14-19791-2014 (2014)
83. C. Ruehl and K.R. Wilson, "[Surface organic monolayers control the hygroscopic growth of submicron particles at high relative humidity](#)," J. Phys. Chem. A, DOI: 10.1021/jp502844g (2014)
82. T. Nah, S. H. Kessler, K. E. Daumit, J. H. Kroll, S. R. Leone, and K. R. Wilson, "[The influence of molecular structure and chemical functionality on the heterogeneous OH-initiated oxidation of unsaturated organic particles](#)," J. Phys. Chem. A, DOI: 10.1021/jp502666g (2014)
81. K. R. Kolesar, G. Buffaloe, K.R. Wilson and C.D. Cappa, "[OH-Initiated Heterogeneous Oxidation of Internally-Mixed Squalane and Secondary Organic Aerosol](#)," Environ. Sci. Technol., **48**, 3196 (2014)
80. M.N. Chan, H. Zhang, A. H. Goldstein, and K. R. Wilson, "[The Role of Water and Phase in the Heterogeneous Oxidation of Solid and Aqueous Succinic Acid Aerosol by Hydroxyl Radicals](#)," J. Phys. Chem. C, DOI: 10.1021/jp5012022 (2014)

79. D. R. Worton, G. Isaacman, D. R. Gentner, T. R. Dallmann, A. W. H. Chan, C. Ruehl, T. W. Kirchstetter, K. R. Wilson, R. A. Harley, and A. H. Goldstein, "[Lubricating oil dominates primary organic aerosol emissions from motor vehicles](#)," *Environ. Sci. Technol.*, **48**, 3698 (2014)
78. N. Hansen, S. A. Skeen, H. A. Michelsen, K. R. Wilson, and K. Kohse-Höinghaus, "[Flame Experiments at the Advanced Light Source: New Insights into Soot Formation Processes](#)," *J. Vis. Exp.* **87**, doi:10.3791/51369 (2014)
77. H. Zhang, C. Ruehl, A. Chan, T. Nah, D. Worton, G. Isaacman, A. Goldstein, and K. R. Wilson, "[OH- Initiated Heterogeneous Oxidation of Cholestane: A Model System for Understanding the Photochemical Aging of Cyclic Alkane Aerosols](#)," *J. Phys. Chem. A* **117**, 12449 (2013)
76. T. Nah, S. H. Kessler, K. E. Daumit, J. H. Kroll, S. R. Leone, and K. R. Wilson, "[OH- initiated oxidation of sub-micron unsaturated fatty acid particles](#)," *Phys. Chem. Chem. Phys.*, **15**, 18649 (2013)
75. A. W. H. Chan, G. Isaacman, K. R. Wilson, D. R. Worton, C. R. Ruehl, T. Nah, D. R. Gentner, T. R. Dallman, T. W. Kirchstetter, R. A. Harley, J. B. Gilman, W. C. Kuster, J. A. de Gouw, J. H. Offenberg, T. E. Kleindienst, Y. H. Lin, C. L. Rubitschun, J. D. Surratt, and A. H. Goldstein, "[Detailed Chemical Characterization of Unresolved Complex Mixtures \(UCM\) in Atmospheric Organics: Insights into Emission Sources, Atmospheric Processing and Secondary Organic Aerosol Formation](#)," *J. Geophys. Res., [Atmos.]* **118**, 6783 (2013)
74. J. Bouwman, M. Fournier, I. R. Sims, S. R. Leone, and K. R. Wilson, "[Reaction Rate and Isomer-Specific Product Branching Ratios of C<sub>2</sub>H + C<sub>4</sub>H<sub>8</sub>: 1-Butene, cis-2-Butene, trans-2-Butene and Isobutene at 79K](#)," *J. Phys. Chem. A.*, **117**, 5093 (2013)
73. C. W. Harmon, C. R. Ruehl, C. D. Cappa, and K. R. Wilson, "[A Statistical Description of the Evolution of Cloud Condensation Nuclei Activity during the Heterogeneous Oxidation of Squalane and Bis \(2-ethylhexyl\) Sebacate Aerosol by Hydroxyl Radicals](#)," *Phys. Chem. Chem. Phys.*, **15**, 9679 (2013)
72. C. R. Ruehl, T. Nah, G. Isaacman, D. R. Worton, A. W. H. Chan, K. R. Kolesar, C. D. Cappa, A. H. Goldstein, and K. R. Wilson, "[The influence of molecular structure and aerosol phase on the heterogeneous oxidation of normal and branched alkanes by OH](#)," *J. Phys. Chem. A.*, **117**, 3990 (2013)
71. M.N. Chan, T. Nah, and K. R. Wilson, "[In-Situ Chemical Detection of Sub-micron Organic Aerosols using Direct Analysis in Real Time Mass Spectrometry \(DART-MS\): The Effect of Aerosol Size and Volatility](#)," *Analyst*, **138**, 3749 (2013)
70. T. Nah, M.N. Chan, S. R. Leone, and K. R. Wilson, "[Real Time in Situ Chemical Characterization of Submicrometer Organic Particles Using Direct Analysis in Real Time-Mass Spectrometry](#)," *Anal. Chem.*, **85**, 2087 (2013)
69. S. A. Skeen, H. A. Michelsen, K. R. Wilson, D. M. Popolan, A. Violi, and N. Hansen, "[Near-threshold Photoionization Mass Spectra of Combustion-Generated High-Molecular-Weight Soot Precursors](#)," *J. Aerosol Sci.*, **58**, 86 (2013)

68. L. Lee, P. Wooldridge, T. Nah, K. R. Wilson, and R. Cohen, "[Observation of Rates and Products in the Reaction of NO<sub>3</sub> with Submicron Squalane Aerosol](#)," Phys. Chem. Chem. Phys., **15**, 882 (2013)
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66. G. Isaacman, A. W. H. Chan, T. Nah, D. R. Worton, C. R. Ruehl, K. R. Wilson, and A. Goldstein, "[Heterogeneous OH oxidation of motor oil particles causes selective depletion of branched and less cyclic hydrocarbons](#)," Environ. Sci. Technol., **46**, 10632 (2012)
65. J. H. Kroll, J. D. Smith, D. R. Worsnop, and K. R. Wilson, "[Characterisation of lightly oxidized organic aerosol formed from the photochemical aging of diesel exhaust particles](#)," Environ. Chem., **9**, 211 (2012)
64. K. S. Kalogerakis, C. Romanescu, M. Ahmed, K. R. Wilson, and T. G. Slanger, "[CO prompt emission as a CO<sub>2</sub> marker in comets and planetary atmospheres](#)," Icarus **220**, 205 (2012)
63. J. Bouwman, F. Goulay, S. R. Leone, and K. R. Wilson, "[Bimolecular rate constant and product branching ratio measurements for the reaction of C<sub>2</sub>H with ethane and propene at 79 K](#)," J. Phys. Chem. A. **116**, 3907 (2012)
62. S. H. Kessler, T. Nah, K. E. Daumit, J. D. Smith, S. R. Leone, C. E. Kolb, D. R. Worsnop, K. R. Wilson, and J. H. Kroll, "[OH-initiated heterogeneous aging of highly oxidized organic aerosol](#)," J. Phys. Chem. A. **116**, 6358 (2012)
61. G. Isaacman, K. R. Wilson, A. W. H. Chan, D. R. Worton, J. R. Kimmel, T. Nah, T. Hohaus, M. Gonin, J. H. Kroll, D. R. Worsnop, and A. H. Goldstein, "[Improved resolution of hydrocarbon structures and constitutional isomers in complex mixtures using Gas Chromatography-Vacuum Ultraviolet-Mass Spectrometry \(GC-VUV-MS\)](#)," Anal. Chem., **84**, 2335 (2012)
60. C. D. Cappa and K. R. Wilson, "[Multi-generation gas-phase oxidation, equilibrium partitioning, and the formation and evolution of secondary organic aerosol](#)," Atmos. Chem. Phys. Discuss., **12**, 3295-3356, (2012)
59. M. J. Berg, K. R. Wilson, C. Sorensen, A. Chakrabarti, and M. Ahmed, "[Discrete Dipole Approximation for Low-Energy Photoelectron Emission from NaCl Nanoparticles](#)," J. Quant. Spectrosc. Ra. **113**, 259 (2012)
58. K. R. Wilson, J. D. Smith, S. H. Kessler, and J. H. Kroll, "[The statistical evolution of multiple generations of oxidation products in the photochemical aging of chemically reduced organic aerosol](#)," Phys. Chem. Chem. Phys., **4**, 1468 (2012)
57. S. Soorkia, C-L. Liu, J. D. Savee, S. J. Ferrell, S. R. Leone and K. R. Wilson, "[Airfoil sampling of a pulsed Laval beam with tunable vacuum ultraviolet \(VUV\) synchrotron ionization quadrupole mass spectrometry: Application to low-temperature kinetics and product detection](#)," Rev. Sci. Instrum. **82**, 124102 (2011)

56. C. D. Cappa, D. L. Che, S. Kessler, J. Kroll, and K. Wilson, "[Variations in organic aerosol optical and hygroscopic properties upon heterogeneous OH oxidation](#)," Geophysical Research Letters, **116**, D15204 (2011)
55. K. R. Wilson, H. Bluhm, M. Ahmed, Book Chapter: "Aerosol Photoemission," in Fundamentals and Applications in Aerosol Spectroscopy, edited by J.P. Reid and R. Signorell, Taylor and Francis, Publication Date (2011)
54. E. R. Mysak, J. D. Smith, P. D. Ashby, J. T. Newberg, K. R. Wilson, and H. Bluhm, "[Competitive reaction pathways for functionalization and volatilization in the heterogeneous oxidation of coronene thin films by hydroxyl radicals and ozone](#)," Physical Chemistry Chemical Physics, **13**(16): p. 7554-7564 (2011)
53. C-L. Liu, J. D. Smith, D. L. Che, M. Ahmed, S. R. Leone, and K. R. Wilson, "[The direct observation of secondary radical chain chemistry in the heterogeneous reaction of chlorine atoms with submicron squalane droplets](#)," Physical Chemistry Chemical Physics, **13**(19): p. 8993-9007 (2011)
52. J. H. Kroll, N. M. Donahue, J. L. Jimenez, S. H. Kessler, M. R. Canagaratna, K. R. Wilson, K. E. Altieri, L. R. Mazzoleni, A. S. Wozniak, H. Bluhm, E. R. Mysak, J. D. Smith, C. E. Kolb, and D. R. Worsnop, "[Carbon oxidation state as a metric for describing the chemistry of atmospheric organic aerosol](#)," Nature Chemistry, **3**(2): p. 133-139 (2011)
51. S. H. Kessler, T. Nah, A. Carrasquillo, J. T. Jayne, D. R. Worsnop, K. R. Wilson, and J. H. Kroll, "[Formation of secondary organic aerosol from the direct photolytic generation of organic radicals](#)," Journal of Physical Chemistry Letters, **2**(11): p. 1295-1300 (2011)
50. C. D. Cappa and K. R. Wilson, "[Evolution of organic aerosol mass spectra upon heating: implications for OA phase and partitioning behavior](#)," Atmospheric Chemistry and Physics, **11**(5): p. 1895-1911 (2011)
49. J. Zhou, L. K. Takahashi, K. R. Wilson, S. R. Leone, and M. Ahmed, "[Internal energies of ion-sputtered neutral tryptophan and thymine molecules determined by vacuum ultraviolet photoionization](#)," Analytical Chemistry, **82**(9): p. 3905-3913 (2010)
48. S. Soorkia, A. J. Trevitt, T. M. Selby, D. L. Osborn, C. A. Taatjes, K. R. Wilson, and S. R. Leone, "[Reaction of the C<sub>2</sub>H radical with 1-butyne \(C<sub>4</sub>H<sub>6</sub>\): low-temperature kinetics and isomer-specific product detection](#)," Journal of Physical Chemistry A, **114**(9): p. 3340-3354 (2010)
47. S. Soorkia, C. A. Taatjes, D. L. Osborn, T. M. Selby, A. J. Trevitt, K. R. Wilson, and S.R. Leone, "[Direct detection of pyridine formation by the reaction of CH \(CD\) with pyrrole: a ring expansion reaction](#)," Physical Chemistry Chemical Physics, **12**(31): p. 8750-8758 (2010)
46. M. Sleiman, H. Destailats, J. D. Smith, C-L. Liu, M. Ahmed, K. R. Wilson, and L. A. Gundel, "[Secondary organic aerosol formation from ozone-initiated reactions with nicotine and secondhand tobacco smoke](#)," Atmospheric Environment, **44**(34): p. 4191-4198 (2010)
45. A. W. Rollins, J. D. Smith, K. R. Wilson, and R. C. Cohen, "[Real time in situ detection of organic nitrates in atmospheric aerosols](#)," Environmental Science & Technology, **44**(14): p. 5540-5545 (2010)

44. E. R. Mysak, D. E. Starr, K. R. Wilson, and H. Bluhm, "[Note: A combined aerodynamic lens/ambient pressure x-ray photoelectron spectroscopy experiment for the on-stream investigation of aerosol surfaces](#)," *Review of Scientific Instruments*, **81**(1) (2010)
43. S. R. Leone, M. Ahmed, and K. R. Wilson, "[Chemical dynamics, molecular energetics, and kinetics at the synchrotron](#)," *Physical Chemistry Chemical Physics*, **12**(25): p. 6564-6578 (2010)
42. S. H. Kessler, J. D. Smith, D. L. Che, D. R. Worsnop, K. R. Wilson, and J. H. Kroll, "[Chemical sinks of organic aerosol: Kinetics and products of the heterogeneous oxidation of erythritol and levoglucosan](#)," *Environmental Science & Technology*, **44**(18): p. 7005-7010 (2010)
41. M. T. Timko, Z. H. Yu, J. H. Kroll, J. T. Jayne, D. R. Worsnop, R. C. Miake-Lye, T. B. Onasch, D. Liscinsky, T. W. Kirchstetter, H. Destailats, A. L. Holder, J. D. Smith, and K. R. Wilson, "[Sampling artifacts from conductive silicone tubing](#)," *Aerosol Science and Technology*, **43**(9): p. 855-865 (2009)
40. L. K. Takahashi, J. Zhou, K. R. Wilson, S. R. Leone, and M. Ahmed, "[Imaging with mass spectrometry: A secondary ion and VUV-photoionization study of ion-sputtered atoms and clusters from GaAs and Au](#)," *Journal of Physical Chemistry A*, **113**(16): p. 4035-4044 (2009)
39. J. D. Smith, J. H. Kroll, C. D. Cappa, D. L. Che, C-L. Liu, M. Ahmed, S. R. Leone, D. R. Worsnop, and K. R. Wilson, "[The heterogeneous reaction of hydroxyl radicals with sub-micron squalane particles: A model system for understanding the oxidative aging of ambient aerosols](#)," *Atmospheric Chemistry and Physics*, **9**(9): p. 3209-3222 (2009)
38. J. H. Kroll, J. D. Smith, D. L. Che, S. H. Kessler, D. R. Worsnop, and K. R. Wilson, "[Measurement of fragmentation and functionalization pathways in the heterogeneous oxidation of oxidized organic aerosol](#)," *Physical Chemistry Chemical Physics*, **11**(36): p. 8005-8014 (2009)
37. J. L. Jimenez, M. R. Canagaratna, N. M. Donahue, A. H. Prevot, Q. Zhang, J. H. Kroll, P. F. DeCarlo, J. D. Allan, H. Coe, N. L. Ng, A. C. Aiken, K. S. Docherty, I. M. Ulbrich, A. P. Grieshop, A. L. Robinson, J. Duplissy, J. D. Smith, K. R. Wilson, V. A. Lanz, C. Hueglin, Y. L. Sun, J. Tian, A. Laaksonen, T. Raatikainen, J. Rautiainen, P. Vaattovaara, M. Ehn, M. Kulmala, J. M. Tomlinson, D. R. Collins, M. J. Cubison, E. J. Dunlea, J. A. Huffman, T. B. Onasch, M. R. Alfarra, P. I. Williams, K. Bower, Y. Kondo, J. Schneider, F. Drewnick, S. Borrmann, S. Weimer, K. Demerjian, D. Salcedo, L. Cottrell, R. Griffin, A. Takami, T. Miyoshi, S. Hatakeyama, A. Shimono, J. Y. Sun, Y. M. Zhang, K. Dzepina, J. R. Kimmel, D. Sueper, J. T. Jayne, S. C. Herndon, A. M. Trimborn, L. R. Williams, E. C. Wood, A. M. Middlebrook, C. E. Kolb, U. Baltensperger, and D. R. Worsnop, "[Evolution of organic aerosols in the atmosphere](#)," *Science*, **326**(5959): p. 1525-1529 (2009)
36. D. L. Che, J. D. Smith, S. R. Leone, M. Ahmed, and K. R. Wilson, "[Quantifying the reactive uptake of OH by organic aerosols in a continuous flow stirred tank reactor](#)," *Physical Chemistry Chemical Physics*, **11**(36): p. 7885-7895 (2009)

35. D. E. Starr, E. K. Wong, D. R. Worsnop, K. R. Wilson, and H. Bluhm, "[A combined droplet train and ambient pressure photoemission spectrometer for the investigation of liquid/vapor interfaces](#)," *Physical Chemistry Chemical Physics*, **10** (21): p. 3093-3098 (2008)
34. O. Kostko, L. Belau, K. R. Wilson, and M. Ahmed, "[Vacuum-ultraviolet \(VUV\) photoionization of small methanol and methanol-water clusters](#)," *Journal of Physical Chemistry A*, **112**(39): p. 9555-9562 (2008)
33. C. D. Cappa, J. D. Smith, K. R. Wilson, and R. J. Saykally, "[Revisiting the total ion yield x-ray absorption spectra of liquid water microjets](#)," *Journal of Physics-Condensed Matter*, **20**(20) (2008)
32. K. R. Wilson, S. L. Zou, J. N. Shu, E. Ruhl, S. R. Leone, G. C. Schatz, and M. Ahmed, "[Size-dependent angular distributions of low-energy photoelectrons emitted from NaCl nanoparticles](#)," *Nano Letters*, **7**(7): p. 2014-2019 (2007)
31. M. J. Northway, J. T. Jayne, D. W. Toohey, M. R. Canagaratna, A. Trimborn, K. I. Akiyama, A. Shimono, J. L. Jimenez, P. F. DeCarlo, K. R. Wilson, and D. R. Worsnop, "[Demonstration of a VUV lamp photoionization source for improved organic speciation in an aerosol mass spectrometer](#)," *Aerosol Science and Technology*, **41**(9): p. 828-839 (2007)
30. B. F. Henson, K. R. Wilson, J. M. Robinson, C. A. Nobel, J. L. Casson, L. F. Voss, and D. R. Worsnop, "[Nucleation of bulk phases in the HCl/H<sub>2</sub>O system](#)," *Journal of Physical Chemistry A*, **111**(35): p. 8635-8641 (2007)
29. L. Belau, K. R. Wilson, S. R. Leone, and M. Ahmed, "[Vacuum-ultraviolet photoionization studies of the microhydration of DNA bases \(Guanine, cytosine, adenine, and Thymine\)](#)," *Journal of Physical Chemistry A*, **111**(31): p. 7562-7568 (2007)
28. L. Belau, K. R. Wilson, S. R. Leone, and M. Ahmed, "[Vacuum ultraviolet \(VUV\) photoionization of small water clusters](#)," *Journal of Physical Chemistry A*, **111**: p. 10075-10083 (2007)
27. K. R. Wilson, D. S. Peterka, M. Jimenez-Cruz, S. R. Leone, and M. Ahmed, "[VUV photoelectron imaging of biological nanoparticles: Ionization energy determination of nanophasic glycine and phenylalanine-glycine-glycine](#)," *Physical Chemistry Chemical Physics*, **8**: p. 1884-1890 (2006)
26. K. R. Wilson, M. Jimenez-Cruz, C. Nicolas, L. Belau, S. R. Leone, and M. Ahmed, "[Thermal vaporization of biological nanoparticles: fragment-free vacuum ultraviolet photoionization mass spectra of tryptophan, phenylalanine-glycine-glycine, and, beta-carotene](#)," *Journal of Physical Chemistry A*, **110**(6): p. 2106-2113 (2006)
25. K. R. Wilson, L. Belau, C. Nicolas, M. Jimenez-Cruz, S. R. Leone, and M. Ahmed, "[Direct determination of the ionization energy of histidine with VUV synchrotron radiation](#)," *International Journal of Mass Spectrometry*, **249**: p. 155-161 (2006)
24. J. N. Shu, K. R. Wilson, M. Ahmed, S. R. Leone, C. Graf, and E. Ruhl, "[Elastic light scattering from nanoparticles by monochromatic vacuum-ultraviolet radiation](#)," *Journal of Chemical Physics*, **124**: p.034707 (2006)

23. J. N. Shu, K. R. Wilson, M. Ahmed, and S. R. Leone, "[Coupling a versatile aerosol apparatus to a synchrotron: Vacuum ultraviolet light scattering, photoelectron imaging, and fragment free mass spectrometry](#)," Review of Scientific Instruments, **77**(4) (2006)
22. E. Gloaguen, E. R. Mysak, S. R. Leone, M. Ahmed, and K. R. Wilson, "[Investigating the chemical composition of mixed organic-inorganic particles by "soft" vacuum ultraviolet photoionization: The reaction of ozone with anthracene on sodium chloride particles](#)," International Journal of Mass Spectrometry, **258**(1-3): p. 74-85 (2006)
21. K. R. Wilson, M. Cavalleri, B. S. Rude, R. D. Schaller, T. Catalano, A. Nilsson, R. J. Saykally, and L. G. M. Pettersson, "[X-ray absorption spectroscopy of liquid methanol microjets: Bulk electronic structure and hydrogen bonding network](#)," Journal of Physical Chemistry B, **109**: p. 10194-10203 (2005)
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17. E. R. Mysak, K. R. Wilson, M. Jimenez-Cruz, M. Ahmed, and T. Baer, "[Synchrotron radiation based aerosol time-of-flight mass spectrometry for organic constituents](#)," Analytical Chemistry, **77**(18): p. 5953-5960 (2005)
16. B. M. Messer, C. D. Cappa, J. D. Smith, K. R. Wilson, M. K. Gilles, R. C. Cohen, and R. J. Saykally, "[pH dependence of the electronic structure of glycine](#)," Journal of Physical Chemistry B, **109**(11): p. 5375-5382 (2005)
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14. C. D. Cappa, J. D. Smith, K. R. Wilson, B. M. Messer, M. K. Gilles, R. C. Cohen, and R. J. Saykally, "[Effects of alkali metal halide salts on the hydrogen bond network of liquid water](#)," Journal of Physical Chemistry B, **109**(15): p. 7046-7052 (2005)
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## **PATENTS:**

“Electrokinetic Hydrogen Generation in Liquid Microjet Arrays” (filed to office of technology transfer 9/28/04) Kevin R. Wilson, Bruce S. Rude, Richard J. Saykally

## **PRESENTATIONS:**

Contributed Talk: Kevin R. Wilson and R. J. Saykally et al., The 48<sup>th</sup> Western Spectroscopy Association Conference, “X-ray spectroscopy of the Liquid Water Surface,” 2000

Invited Talk: Kevin R. Wilson and R. J. Saykally: ALS Users' meeting Workshop on Atoms and Aerosols “Exploring the structure of liquid surfaces using microjets,” 2002

Contributed Talk: ACCESS VII Colloquium: Gordon Research Conference: Atmospheric Chemistry, “The structure of volatile liquid surfaces, deduced from x-ray absorption spectroscopy: implications for atmospheric chemistry,” 2003

Invited Talk: American Association for Aerosol Research (AAAR), “Aerosol Photoemission,” Symposium entitled, “Non-invasive methods for probing nanoparticles,” 2006

Poster: Atmospheric Chemistry Gordon Conference, 2007

Poster: American Association for Aerosol Research (AAAR) meeting, 2007

Contributed Talk: Advanced Light Source, Lawrence Berkeley National Laboratory, Workshop on Atmospheric Aerosols, 2007

Invited Talk: American Chemical Society in the “Physical chemistry of environmental interfaces,” symposium, 2008

Invited Departmental Seminar: Department of Chemical Engineering, Louisiana State University, “Heterogeneous Chemistry of Organic Aerosols,” 2008

Contributed Talk: Advanced Light Source, Lawrence Berkeley National Laboratory, Workshop on Energy Frontier Research Centers, 2008

Invited Seminar: U.C. Berkeley in the Berkeley Atmospheric Science Center, “Understanding the role of secondary chemistry, functionalization and chemical erosion in the heterogeneous oxidation of organic aerosols,” 2009

Invited Seminar: University of British Columbia Department of Chemistry Seminar, “Heterogeneous Reaction Trajectories: Understanding the Competition between Functionalization and Volatilization Reactions in Chemically Reduced and Oxidized Organic Aerosols,” 2010

Contributed Talk: 240th ACS, “Heterogeneous Reaction Trajectories: Understanding the Competition between Functionalization and Volatilization Reactions in Chemically Reduced and Oxidized Organic Aerosols,” 2010

Contributed Talk: Pacifichem 2010 Congress, "Heterogeneous Oxidation Trajectories," 2010

Invited Talk: 5<sup>th</sup> Workshop on Titan Chemistry, "Laboratory Studies of Low Temperature Gas phase Chemistry and Aerosol Formation in Titan's Atmosphere," 2011

Invited Talk: International Conference on Chemical Kinetics, "Free Radical Heterogeneous Oxidation Trajectories and Low Temperature Gas Phase Reactions for Planetary Atmospheres," 2011

Invited Talk: Aerodyne Research Inc., "Statistical Oxidation and the multi-generational aging of organic aerosols," 2011

Invited Talk: American Chemical Society (ACS) "Statistical Distributions and the Chemical Evolution of Organic," ACS Symposium entitled "Atmospheric Aerosols: Chemistry, Clouds and Climate," 2011

Invited Talk: 2012 American Association for Aerosol Research (AAAR), "Aerosol Photoemission," in symposium entitled, "Nanoscale Aerosol Physics with New Light Sources," 2011

Contributed Talk: American Geophysical Union, "Statistical Distributions and the Multi-Generational Aging of Organic Aerosol," 2011

Invited Talk: 2012 Berkeley Atmospheric Science Center Symposium (BASC) "New Insights into the Photochemical Transformation of Organic Aerosols," 2012

Invited Talk: 2012 Telluride Workshop on Organic Particles in the Atmosphere: Formation, Properties, Processing and Impact, "Understanding How Statistical Distributions of Reaction Products Control the Photochemical Evolution of Organic Aerosol," July 30th, 2012

Invited Talk: Symposium, Kinetics and Mechanism in the Atmosphere, 244th ACS National Meeting, Philadelphia, PA, "Statistical distributions and the chemical evolution of organic aerosol," Aug. 23rd, 2012

Invited Talk: Workshop on The Physical Chemistry of Aerosols, University of British Columbia, Vancouver. "Statistical representations of organic aerosol oxidation," Aug. 27th, 2012

Invited Seminar: Chemical Sciences and Engineering (CSE) Division Colloquium, Argonne National Laboratory, "Statistical Distribution and the Multi-generational Oxidation of Organic Aerosols," Chemical Sciences and Engineering (CSE) Division Colloquium, Argonne National Laboratory, Jan. 8th, 2013

Invited Talk: International Workshop on Photon Tools for Combustion and Energy Conversion, Argonne National Laboratory, "New Approaches for Studying the Chemical Transformations of Organic Particles," March 3rd, 2013

Invited Seminar: Department of Chemistry, University of California, Berkeley. "Heterogeneous Oxidation Trajectories: Developing Reduced Variable Representations of Complex Organic Aerosol Chemistry," April 16th, 2013

Invited Departmental Seminar: University of the Pacific, "Reaction Trajectories: Developing Reduced Variable Representations of Complex Organic Aerosol Chemistry," Feb. 2014

Invited Talk: "Experiments and Simulations of Multiphase Reactive Uptake and the Role of Water and Phase in Controlling Organic Aerosol Transformations," 2014 Telluride Research Conference on "Organic Particles in the Atmosphere: Formation, Properties, Processing, and Impact", Telluride, Colorado, July 28th - August 1st, 2014

Invited Talk, "Aerosol Chemistry". Lorentz Center Workshop: "Gas/Plasma Liquid Interface: Transport, Chemistry and Fundamental Data", Leiden, Netherlands, Aug. 4-8<sup>th</sup>, 2014

Invited Talk, "Multiphase Chemistry of Organic Aerosols," 248th National Meeting of the American Chemical Society, San Francisco, CA. Symposium title: "Fundamental Processes of Atmospheric Chemistry", Aug. 10-14th, 2014

Invited Talk, Photon Tools for Physical Chemistry 2014: "Probing Molecular Weight Growth and Decomposition of Organic Particles in Planetary Atmospheres Using Vacuum Ultraviolet Photoionization Mass Spectrometry", Beatenberg, Switzerland, Sept. 28-Oct. 2<sup>nd</sup>, 2014