

CURRICULUM VITAE

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Education

- 9/87-12/90 **University of Florida** – Gainesville, FL
Doctor of Philosophy, Analytical Chemistry, 1990
Dissertation Title: “The Optogalvanic Effect in a Hollow Cathode Discharge: A Resonance Detector for Very Weak Light Level,” under guidance of Dr. James D. Winefordner.
- 9/85-6/87 **University of Toronto** – Toronto, Ontario, Canada
Thesis Title: “On the Development of an Ultrasonic Nebulizer for Sample Introduction for Atomic Spectrometric Analysis,” under guidance of Dr. Jon C. Van Loon.
- 9/82-6/85 **University of Toronto** – Toronto, Ontario, Canada
Bachelor of Science, Specialist in Chemistry

Academic Appointments

- 6/15-present **University of Vermont** – Burlington, VT 05405 USA
Professor, Department of Chemistry
- 9/06-5/15 **University of Vermont** – Burlington, VT 05405 USA
Associate Professor, Department of Chemistry
- 9/00-8/06 **University of Vermont** – Burlington, VT 05405 USA
Assistant Professor, Department of Chemistry
Analytical chemistry, methods and instrument development, aerosol analysis, atmospheric heterogeneous chemistry, atomic spectroscopy, aerosol mass spectrometry

3/97-1/00 **Ispra (VA) European Co97**

Scientist, Environment Institute, Atmospheric Processes in Global Change

- [9] R. Harvey and G.A. Petrucci, "Molecular control of reaction kinetics and SOA yield in the ozonolysis of unsaturated volatile organic compounds alkenes," *Environmental Science and Technology*, **122**, 188-195, 2015.
- [10] S. Jain, J. Zahardis and G.A. Petrucci, "Soft ionization chemical analysis of secondary organic aerosol from green leaf volatiles emitted by turf grass," *Environmental Science and Technology*, **48**(9) 4835-4843 (2014).
- [11] R.M. Harvey, J. Zahardis and G.A. Petrucci, "Establishing the contribution of lawn mowing to atmospheric aerosol levels in American suburbs," *Environmental Science and Technology*, **14**, 797-812 (2014)
- [12] M. Subramanian, A.L. Hunt, G.A. Petrucci, Z. Chen, E.D. Hendley and B.M. Palmer, "Differential metal content and gene expression in rat left ventricular hypertrophy due to hypertension and hyperactivity," *Environmental Science and Technology*, **28**(3), 311-316 (2014).
- [13] J. Zahardis, S. Geddes and G.A. Petrucci, "Improved understanding of atmospheric organic aerosols via innovations in soft ionization Aerosol Mass Spectrometry," *Environmental Science and Technology*, **83** (7), 2409-2415 (2011); Cover Feature Article.
- [14] S. Geddes, B. Nichols, S. Flemer Jr., J. Eisenhauer, J. Zahardis and G.A. Petrucci, "Near-Infrared Laser Desorption/Ionization Aerosol Mass Spectrometry for investigating primary and secondary organic aerosols under low loading conditions," *Environmental Science and Technology*, **82**(19) 7915-7923 (2010).
- [15] S. Geddes, B. Nichols, K. Todd, J. Zahardis and G.A. Petrucci, "Near-infrared laser ac 7 (w -ae)-82.6 (Ma)s (s u)2 lwTw 16 >>BDspan.003 Tc 03203 Tw 12

- [27] B.J. Holmes and G.A. Petrucci, "Water-soluble oligomer formation from acid catalyzed reactions of levoglucosan in proxies of atmospheric aqueous aerosols," *Journal of Aerosol Science*, **40** (11) 4983-4989, (2006).
- [28] J. Zahardis, B. W. LaFranchi and G.A. Petrucci, "Photoelectron Resonance Capture Ionization Mass Spectrometry of Fatty Acids in Olive Oil," *Journal of Aerosol Science*, **108** (11), 925-935, (2006).
- [29] B.W. LaFranchi and G.A. Petrucci, "A comprehensive characterization of photoelectron resonance capture ionization aerosol mass spectrometry for the quantitative and qualitative analysis of organic particulate matter," *Journal of Aerosol Science*, **258** (1-3), 120-133, (2006).
- [30] J. Zahardis, B.W. Lafranchi and G.A. Petrucci, "The heterogeneous reaction of particle-phase methyl esters and ozone elucidated by photoelectron resonance capture ionization: direct products of ozonolysis and secondary reactions leading to the formation of ketones," *Journal of Aerosol Science*, **253** 38-47, (2006).
- [31] A.L. Hunt, G.A. Petrucci, P. Biermann and R.G. Finkel, "Metal matrices to optimize ion beam currents for accelerator mass spectrometry," *Journal of Aerosol Science*, **243**, 216-222, (2006).
- [32] J. Zahardis, B.W. LaFranchi and G.A. Petrucci, "Direct Observation of Polymerization in the Oleic Acid-Ozone Heterogeneous Reaction System by Photoelectron Resonance Capture Ionization Aerosol Mass Spectrometry," *Journal of Aerosol Science*, **40**, 1661-1670, (2006)
- [33] J. Zahardis, B.W. LaFranchi and G.A. Petrucci, "Photoelectron resonance capture ionization-aerosol mass spectrometry of the ozonolysis products of oleic acid particles: direct measure of higher molecular weight oxygenates," *Journal of Aerosol Science*, **110**, D08307, doi:10.1029/2004JD005336.
- [34] B.W. LaFranchi, J. Zahardis and G.A. Petrucci, "Photoelectron resonance capture ionization mass spectrometry: A soft ionization source for mass spectrometry of particle-phase organic compounds," *Journal of Aerosol Science*, **18**, 2517-2521, (2004)
- [35] B.W. LaFranchi and G.A. Petrucci, "Photoelectron resonance capture ionization (PERCI): A novel technique for the soft ionization of organic compounds," *Journal of Aerosol Science*, **15**, 424-430, (2004).
- [36] B.W. LaFranchi, M. Knight and G.A. Petrucci, "Leaching as a Source of Residual Particles from Nebulization of Deionized Water," *Journal of Aerosol Science*, **34**(11), 1589-1594, (2003).
- [37] M. Knight and G.A. Petrucci, "A Study of Residual Particle Concentrations Generated by the Ultrasonic Nebulization of Deionized Water Stored in Different Container Types," *Journal of Aerosol Science*, **75**, 4486-4492, (2003).
- [38] A.L. Hunt and G.A. Petrucci, "Analysis of Single Ultrafine and Organic Particles by Aerosol Mass Spectrometry," *Journal of Aerosol Science*, **72**, 74-81 (2002).
- [39] M. Nunez-Hidalgo, P. Cavalli, G. A. Petrucci and N. Omenetto, "Analysis of Sulphuric Acid Aerosols By Laser-Induced Breakdown Spectroscopy And Laser-Induced Photofragmentation," *Journal of Aerosol Science*, **54**(12), 1805-1816, (2000).
- [40] G.A. Petrucci, P.B. Farnsworth, P. Cavalli and N. Omenetto, "A Differentially Pumped Particle Inlet for Sampling of Atmospheric Aerosols into a Time-of-Flight Mass Spectrometer: Optical Characterization of the Particle Beam," *Journal of Aerosol Science*, **33** (1/2), 105-121, (2000).
- [41] H. Beissler, G.A. Petrucci, P. Cavalli and N. Omenetto, "Blank Problems in the Detection of Gold by Electrothermal Atomisation and Laser Induced Fluorescence," *Journal of Aerosol Science*, **54**, 2115-2120, (1999).
- [42] G.A. Petrucci, P. Cavalli and N. Omenetto, "A Feasibility Study of the Use of Electrostatic Deposition and Laser-Induced Fluorescence in a Graphite Furnace for Size-Segregated Analysis of Lead and Gold in Ultrafine (0.02-0.2 μm) Particles," *Journal of Aerosol Science*, **52**, 1597-1615, (1997).

- [43] R.E. Neuhauser, U. Panne, R. Niessner, G.A. Petrucci, P. Cavalli and N. Omenetto, "On-Line and In-Situ Detection of Lead Aerosols by Plasma-Spectroscopy and Laser-Excited Atomic Fluorescence Spectroscopy," **346**, 37-48, (1997).
- [44] H. Beissler, G.A. Petrucci, K. Baechmann, U. Panne, P. Cavalli and N. Omenetto, "Determination of Ultra-Trace Levels of Gold in Size-Segregated Atmospheric Particulate Samples by Laser Induced Fluorescence: Towards and Aerosol Tracer," **355**, 345-347 (1996).
- [45] N. Omenetto, P. Cavalli, M. Hidalgo and G. A. Petrucci, "Laser Induced Photofragmentation and Fluorescence Spectroscopy: Tools for Studying Atmospheric Chemical Reactions and Aerosols," **87**, 241-253, (1997).
- [46] H. Beissler, K. Baechmann, F. Raes, G.A. Petrucci and N. Omenetto, "Applicability of Gold as an Atmospheric Aerosol Tracer,"

[60] G.A. Petrucci and J.D. Winefordner, "Use of the Optogalvanic Effect to Examine the Laser Power

[20]

Title:

(formerly at the Environment Institute, Joint Research Center of
the European Commission, Ispra, Italy)

Graduate Students and Post-doctoral Associates Advised

Brian Lafranchi (Ph.D., 2006)
Adam Hunt (Ph.D., 2007)
Bryan Holmes (Ph.D., 2008)
James Zahardis (Ph.D., 2009)
Scott Geddes (Ph.D., 2011)
Jessica Eisenhauer (nee Mendes) (M.S., 2013)
Colleen Small (M.S., 2013)
Rebecca Harvey (Ph.D., 2016)
Shashank Jain (Ph.D., 2017)
Kevin Fischer (Ph.D., 2021)
Christopher Snyder (Ph.D., current)
Austin Flueckiger (Ph.D., current)
Francesca Milazzo (Ph.D., current)

Undergraduate Honor's Thesis

James Stevens (2006)
Christopher Kenseth (2015)
Alex Taylor (2020)
Janey Masi (2020)
Carly Sottak (current)

