

CURRICULUM VITAE

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BINDESH SHRESTHA

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EDUCATION

- 2004 – 2009** **Doctor of Philosophy** in Chemistry, Department of Chemistry, The George Washington University, Washington DC, Research Director: Professor Akos Vertes
- 2004 – 2008** **Master of Philosophy** in Chemistry, Department of Chemistry, The George Washington University, Washington DC, Research Director: Professor Akos Vertes
- 1999 – 2003** **Bachelor of Science in Chemistry and Bachelor of Arts in Economics**, Moravian College, Bethlehem, PA, Advisor: Professor R. Daniel Libby

RESEARCH EXPERIENCE

- 2010 – present** **Postdoctoral Scientist**, Department of Chemistry, the George Washington University, Washington DC. Research Director: Professor Akos Vertes
- 2005 – 2009** **Research Assistant**, Department of Chemistry, the George Washington University, Washington DC. Research Director: Professor Akos Vertes
- 2002 – 2003** **Undergraduate Research**, Department of Chemistry, Moravian College, Pennsylvania. Research Director: Professor O. Carl Salter, Jr.

TEACHING EXPERIENCE

- 2004 – 2007** **Graduate Teaching Assistant**, Department of Chemistry, The George Washington University, Four laboratory sections for 25 students each for an introductory chemistry class.

AWARDS

ASMS Sanibel Conference 2009 Student Travel Award
Comenius Scholar Award

PROFESSIONAL SERVICES

Reviewer Journal: Analytical Chemistry (American Chemical Society), 2009 to present

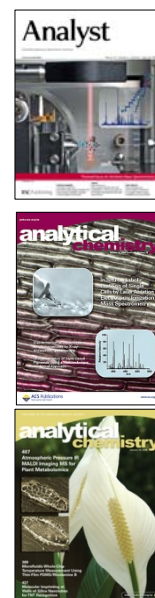
PROFESSIONAL AFFILIATION

American Chemical Society (ACS)
American Society for Mass Spectrometry (ASMS)
American Society of Nepalese Engineers (ASNEng)

PEER REVIEWED PUBLICATIONS

[10] B. Shrestha, and A. Vertes "Direct Analysis of Single Cells by Mass Spectrometry at Atmospheric Pressure," **2010**, *Submitted*.

- [9] P. Sripadi, B. Shrestha, R. L. Easley, L. Carpio, K. Kehn-Hall, S. Chevalier, R. Mahieux, F. Kashanchi, and A. Vertes "Direct Mass Spectrometric Detection of Metabolic Changes in Cells upon Viral Infection," **2010**, *Submitted*.
- [8] C. Stephens, B. Shrestha, H. Morris, M. Bier, P. Whitmore, and A. Vertes, "Monitoring cellulose degradation with desorption electrospray ionization (DESI) and laser ablation electrospray ionization (LAESI) mass spectrometry," *Analyst*, **2010**, *Accepted*.
- [7] B. Shrestha, P. Nemes, and A. Vertes, "Ablation and Analysis of a Single Cell by Consecutive Laser Pulses," **2010**, *Accepted*.
- [6] B. Shrestha, P. Nemes, J. Nazarian, Y. Hathout, E. P. Hoffman, and A. Vertes, "Direct analysis of lipids and other metabolites in mouse brain tissue by AP IR-MALDI and reactive LAESI mass spectrometry," *Analyst*, **2010**, *135*, 751-758. (Cover Page Article)
- [5] B. Shrestha, and A. Vertes, "In Situ Metabolic Profiling of Single Cells by Laser Ablation Electrospray Ionization Mass Spectrometry," *Analytical Chemistry*, **2009**, *81*, 8265-8271. (Cover Page Article, Accelerated Article)
- [4] B. Shrestha, Y. Li, and A. Vertes, "Rapid analysis of pharmaceuticals and excreted xenobiotic and endogenous metabolites with atmospheric pressure infrared MALDI mass spectrometry," *Metabolomics*, **2008**, *4*, 297-311.
- [3] A. Vertes, P. Nemes, B. Shrestha, A. A. Barton, Z. Chen, and Y. Li, "Molecular Imaging by Mid-IR Laser Ablation Mass Spectrometry," *Applied Physics A*, **2008**, *93*, 885-891.
- [2] Y. Li, B. Shrestha, and A. Vertes, "Atmospheric Pressure Infrared MALDI Imaging Mass Spectrometry for Plant Metabolomics," *Analytical Chemistry*, **2008**, *80*, 407-420. (Cover Page Article)
- [1] Y. Li, B. Shrestha, and A. Vertes, "Atmospheric Pressure Molecular Imaging by Infrared MALDI Mass Spectrometry," *Analytical Chemistry*, **2007**, *79*, 523-532.



CONFERENCE PUBLICATIONS

- [21] B. Shrestha, R. Javonillo, J. R. Burns, and A. Vertes, "Unique Protein Identified in a Characid Gill Gland", American Society of Ichthyologists and Herpetologists Annual Meeting, Providence, RI, July 7-12, **2010**.
- [20] B. Shrestha, R. Javonillo, J. Burns, and A. Vertes, "In situ tissue analysis of metabolites, lipids, and proteins in the gill glands of Bloodfin Tetra by LAESI Mass Spectrometry", *Proceedings of the 58th ASMS Conference on Mass Spectrometry and Allied Topics*, Salt Lake City, UT, May 22-23, **2010**.
- [19] J. A. Day, B. Shrestha, P. Nemes and A. Vertes, "Metabolic Profiling of Corn (Zea mays) Roots by Mid-IR Laser Ablation Electrospray Ionization MS", *Proceedings of the 58th ASMS Conference on Mass Spectrometry and Allied Topics*, Salt Lake City, UT, May 22-23, **2010**.
- [18] B. Shrestha, P. Nemes, and A. Vertes, "Laser ablation and analysis of a single cell", *10th International Conference on Laser Ablation*, Singapore, November 22-27, **2009**.
- [17] A. Vertes, P. Nemes, and B. Shrestha, "Laser Ablation Electrospray Ionization (LAESI) Mass Spectrometry for Direct Analysis and Imaging of Cells and Tissues", *36th The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference*, Louisville, KY, October 18-22, **2009**.
- [16] B. Shrestha and A. Vertes, "Metabolic profiling of a single live cells by laser ablation electrospray ionization mass spectrometry", *Proceedings of the 57th ASMS Conference on Mass Spectrometry and Allied Topics*, Philadelphia, PA, May 31 - June 4, **2009**.

- [15] C. H. Stephens, B. Shrestha, P. M. Whitmore, M. E. Bier, and A. Vertes, "Optimization of three atmospheric pressure mass spectrometry (AP-MS) techniques to observe oligosaccharide degradation products in naturally and artificially aged paper", *Proceedings of the 57th ASMS Conference on Mass Spectrometry and Allied Topics*, Philadelphia, PA, May 31 - June 4, **2009**.
- [14] P. Nemes, B. Shrestha, and A. Vertes, "Mid-infrared laser ablation electrospray ionization (LAESI) for spatial imaging of tissue metabolites with mass spectrometry", *Desorption Induced by Electronic Transition (DIET) XII*, Pine Mountain, GA, April 19-23, 2009.
- [13] P. Nemes, B. Shrestha, and A. Vertes, "Direct tissue and single cell metabolomics by LAESI mass spectrometry", *Pittcon Conference & Expo*, Chicago, IL, March 8-13, **2009**.
- [12] C. H. Stephens, B. Shrestha, P. M. Whitmore, H. R. Morris, M. E. Bier, and A. Vertes, "Mass spectroscopic analysis of soluble cellulose oligomers in naturally and artificially aged paper", *237th ACS National Meeting*, Salt Lake City, UT, March 22-26, **2009**.
- [11] B. Shrestha, P. Nemes, P. Sripadi, J. Nazarian, Y. Hathout, S. Trikha, A. Jeremic, E. P. Hoffman, S. A. Moody and A. Vertes, "Lipid analysis from amphibian eggs, cell pellets and tissues by reactive LAESI mass spectrometry", *Proceedings of the 21st ASMS Sanibel Conference "Lipidomics and Lipids in Mass Spectrometry"*, St. Pete's, FL, January 23-26, **2009**.
- [10] A. Vertes, P. Nemes, A. A. Barton, B. Shrestha, and Y. Li, "In vivo analysis and imaging of biological tissue with infrared laser ablation mass spectrometry," *236th American Chemical Society National Meeting*, Philadelphia, PA, August 17-21, **2008**.
- [9] B. Shrestha, P. Nemes, J. Nazarian, E. P. Hoffman, and A. Vertes, "Direct analysis of lipids and other metabolites in mouse brain tissue with infrared laser ablation and mass spectrometry," *Proceedings of the 56th ASMS Conference on Mass Spectrometry and Allied Topics*, Denver, CO, June 1-5, **2008**.
- [8] A. Vertes, Y. Li, B. Shrestha, and P. Nemes, "Atmospheric Pressure IR-MALDI Imaging of Metabolites", *34th The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference*, Memphis, TN, October 12-18, **2007**.
- [7] B. Shrestha, P. Nemes, Z. Chen, Y. Li, and A. Vertes "In vivo molecular imaging by mid-IR laser ablation mass spectrometry," *9th International Conference on Laser Ablation (COLA)*, Tenerife, Spain, September 24-28, **2007**.
- [6] B. Shrestha, Y. Li, and A. Vertes, "Rapid Analysis of Pharmaceuticals and their Metabolites with Atmospheric Pressure Infrared MALDI Mass Spectrometry", *Proceedings of the 55th ASMS Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN, June 3-7, **2007**.
- [5] Y. Li, B. Shrestha, and A. Vertes, "Atmospheric Pressure Infrared MALDI Mass Spectrometry: Imaging and In Vivo Studies of Metabolites in Plants", *Proceedings of the 55th ASMS Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN, June 3- 7, **2007**.
- [4] B. Shrestha, Y. Li, and A. Vertes, "Direct analysis of drugs and their metabolites by infrared atmospheric pressure matrix-assisted laser desorption ionization mass spectrometry", *33rd The Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Conference*, Lake Buena Vista, FL, September 24-28, **2006**.
- [3] Y. Li, Y. Chen, B. Shrestha, and A. Vertes, "Laser desorption from nanostructures and atmospheric pressure molecular imaging by mass spectrometry", *Desorption 2006*, Kifissia, Greece, September 3-7, **2006**.
- [2] Y. Li, B. Shrestha, and A. Vertes, "A. Imaging at Atmospheric Pressure by MALDI Mass Spectrometry", *Proceedings of the 54th ASMS Conference on Mass Spectrometry and Allied Topics*, Seattle, WA, May 28-June 1, **2006**.
- [1] J. Nazarian, B. Shrestha, Y. Hathout, A. Vertes, and E. P. Hoffman, "Proteomic Analyses of *Torpedo Californica* Electroplaque as a Model for the Neuromuscular Junction", *Proceedings of the 54th American Society for Mass Spectrometry (ASMS) Conference on Mass Spectrometry and Allied Topics*, Seattle, WA, May 28-June 1, **2006**.