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|  | Hideya Koizumi (870)972-2399  hkoizumi@astate.edu |  |

### Current Position

Position Title:

Current Academic Rank: Instructor

Rank Since: Fall 2009

### Degrees

|  |  |
| --- | --- |
| Ph D | Physical/Chemistry: , University of Utah 2004 |
| BS | Mathematics: , Oklahoma State University 1997 |
| BS | Chemistry: , Oklahoma State University 1996 |

### Scholarly Contributions and Creative Productions

Grants

Koizumi, H. (2011). CRNBAA11-002-Technical and Cost Proposal Ambient Sampling for Materials Analysis of Electronic Components by Electrospray Mass Spectrometry Using Direct Sample Injection Via Swab. DOD - 19946.

Warby, R., Benjamin, E., Koizumi, H., Burns, W., Ali, H., & Rougeau, B.L. (2011). National Center for Science and Civic Engagement Post-Institute Implementation SENCER NSF 2010-2012 Sub-Awards. SENCER NSF - 3000.

Koizumi, H. (2011). NISC XSEDE Supercomputing Allocation Grant Geometrical Property of Light Harvesting Molecules. NSF.

Journal Publications

Saito, K., Reilly, P., Koizumi, E., & Koizumi, H. (2012). A hybrid approach to calculating Coulombic interactions: An effective and efficient method for optimization of simulations of many ions in quadrupole ion storage device with SIMION. International Journal of Mass Spectrometry, 315, 74.

Koizumi, E., & Saito, K. (2012). Application of Parallel Hybrid Algorithm in Massively Parallel GPGPU—The Improved Effective and Efficient Method for Calculating Coulombic Interactions in Simulations of Many Ions with SIMION. Journal of The American Society for Mass Spectrometry.

Song, S., Liyanage, R., Lay, J., Warby, R., & Koizumi, H. (2011). An Investigation of aqueous Sr, Rb, and Crown Ether Mixture Solutions by ESI-QITMS by Post Column Addition. Analytical Letters.

Koizumi, H. (2011). Simulation of duty cycle-based trapping and ejection of massive ions using linear digital quadrupoles: The enabling technology for high resolution time-of-flight mass spectrometry in the ultra high mass range. International Journal of mass spectrometry.

Arora, T., Ali, H., Burns, W., Koizumi, E., & Koizumi, H. (2011). Theoretical and ATR-FTIR Study of Free 12-Crown-4 in Aqueous Solution. Chemical Physics Letters/Elsevier, 502(2011), 253258.

Koizumi, H., Jatko, B., Andrews, W., Whitten, W., & Reilly, P. (2010). A novel phase-coherent programmable clock for high-precision arbitrary waveform generation applied to digital ion trap mass spectrometry. International Journal of Mass Spectrometry, Volume 292(Issues 1-3), Pages 23-31.

Koizumi, H. (2010). Controlling the Expansion into VacuumÂthe Enabling Technology for Trapping Atmosphere-Sampled Particulate Ions. Journal of the American Society for Mass Spectrometry/ELSEVIER SCIENCE BV.

Koizumi, H. (2009). Derivation of mathematical expressions to define resonant ejection from square and sinusoidal wave ion traps. INTERNATIONAL JOURNAL OF MASS SPECTROMETRY/ELSEVIER SCIENCE BV, 286(3-Feb), 64-69.

Patents

Koizumi, H. (2010). Controlling trapping and ejection of ions from multipole guides and traps. ID NUMBER: 200902348.

Koizumi, H. (2012). SEQUENTIAL DIFFERENTIAL MOBILITY ANALYZER AND METHOD of using same. United States

Presentations

Koizumi, H. (2011). A Complete Fluid Dynamics Package for Aerodynamic Lens Simulation with GPU: Affordable Technique for Future Inlet Technology. 59th ASMS Conference on Mass Spectrometry and Allied Topics.

Koizumi, H., james, T., miyazawa, a., & Koizumi, E. (2011). Comformational Analyses of Supramolecular Porphyrin-C60 Complexes. Arkansas INBRE Research Conference.

Koizumi, H., Corbitt, P., & Koizumi, E. (2011). Computational Investigation of Fluorinated Analogues of Porphyrin Derivatives. Arkansas INBRE Research Conference.

Koizumi, H., Saito, K., Dessiaterik, Y., & Koizumi, E. (2011). Computer Modeling of Atmospheric Pressure Electrospray Ionization (AP-ESI). CI-DAY at Arkansas State University.

Koizumi, H., Saito, K., Dessiaterik, Y., & Koizumi, E. (2011). Computer Simulation of Ion Trajectories in Atmospheric Pressure Electrospray Ionization (AP-ESI). Arkansas INBRE Research Conference.

Koizumi, H., Saito, K., Koizumi, E., & Dessiaterik, Y. (2011). Computer Simulation of Ion Trajectories in Atmospheric Pressure Electrospray Ionization (AP-ESI). 59th ASMS Conference on Mass Spectrometry and Allied Topics.

Koizumi, H., Reilly, P., & Lee, J. (2011). Duty Cycle Manipulation of Digital Quadrupolesthe Enabling Technology for High Resolution Time-of-Flight Mass Spectrometry at m/z > 20,000. 59th ASMS Conference on Mass Spectrometry and Allied Topics.

Koizumi, H., She, Y., Zhu, C., & koizumi, E. (2011). Dynamics Simulation of Larger Molecules; Differential Mobility Analyzer with Newly Designed Mass Spectrometer Inlet. 59th ASMS Conference on Mass Spectrometry and Allied Topics.

Koizumi, H., miyazawa, a., James, t., & koizumi, E. (2011). Theoretical Investigation of K+Volinostat-18c6 and its Partition Coefficient. Arkansas INBRE Research Conference.

James, T., Saito, C., Koizumi, H., Benjamin, E., & Benjamin, E. (2010). A Novel One-Pot Synthesis of 3-Nitrothalidomide Using Microwave Irradiation.. Arkansas INBRE Conference.

Reilly, P., Marino, M., Koizumi, H., & Whitten, W. (2010). Applying Digital Waveforms to Mass Spectrometry. FACSS 2010 Conference.

Yi, S., Benjamin, E., Benjamin, E., Koizumi, E., & Koizumi, H. (2010). Breaking Through Limitations: Instrumentation Analysis for Larger Molecules, a Theoretical Study and Simulations. Arkansas INBRE Research Conference Fall 2010.

Shands, B., Neighbors, L., Thomas, J., Koizumi, E., & Koizumi, H. (2010). Conformational Analysis of Nicotine in Aqueous Solution. Arkansas INBRE Research Conference Fall 2010.

Arora, T., Ali, H., Burns, W., & Koizumi, H. (2010). Interaction of 12c4 with alkali metal cation in aqueous solution: Theoretical investigation using polarized continuum model. Fall 2010 National Meeting & Exposition.

Draganjac, M., Burns, W., Kennon, J.T., Panigot, M., Ontko, A., Koizumi, H., Warby, R., Cron, S., & Rougeau, B.L. (2010). Pre- and post-assessment of general chemistry students. 240th ACS National Meeting.

Song, S., Liyanage, R., Lay, J., Warby, R., & Koizumi, H. (2010). Probing Rapid Method of Isotope 87Sr/86Sr Analysis by ESI-QIT-MS. 58th ASMS Conference On Mass Spectrometry and Allied Topics.

Baker, C., Osler, A., James, T., Koizumi, H., Benjamin, E., & Benjamin, E. (2010). Synthesis of Medicines towards the Treatment of Glaucoma.. Arkansas INBRE Conference.

Osler, A., Arnold, L., James, T., Baker, C., Koizumi, H., Benjamin, E., & Benjamin, E. (2010). Synthesis towards the Improved Targeting of Vorinostat and Its Derivatives.. Arkansas INBRE Conference.

Watulok, N., Oostey, A., James, T., Koizumi, H., Benjamin, E., & Benjamin, E. (2010). The Complexation of Curcumin with Al (III) ions.. Midsouth Inorganic Chemist Association Meeting.

Benjamin, E., Watulok, N., Oostey, A., James, T., Koizumi, H., & Benjamin, E. (2010). The Microwave Synthesis and Al (III) Chelation of Nitrospiropyran.. Midsouth Inorganic Chemist Association Meeting.

arora, T., Ali, H., Burns, W., Koizumi, E., & Koizumi, H. (2010). Theoretical and Experimental study of 12-Crown-4 in Aqueous Phase. INBRE Research Conference Fall 2010.

Arora, T., Ali, H., Burns, W., Koizumi, E., & Koizumi, H. (2010). Theoretical and Experimental study of 12-Crown-4 in Aqueous Phase. MICA Meeting.

Koizumi, H. (2009). Derivation of Analytical Expressions to Define Resonant Ejection from Square and Sinusoidal Wave Ion Traps. 57th ASMS Conference on Mass Spectrometry and Allied Topics /Session: Instrumentation: Quadrupoles and Traps - 188.

### Other Institutional Service

Graduate Council Committee (University) Fall 2012 - Present

(Committee Member) Analytical chemist search committee (University) Fall 2010 - Fall 2011

(Committee Member) Chair Search committee (University) Fall 2010 - Fall 2011

(Other) High Achieving students visiting College of Sciences & Mathematics (University) Fall 2010 - Fall 2011

(Faculty Advisor) ACS club (University) Fall 2010 - Fall 2011

(Committee Member) Scholarship Committee (University) Fall 2009 - Fall 2012

### Professional Service

Reviewer, International Journal of Mass Spectrometry Fall 2012 - Present

Reviewer, Taylor & Francis Fall 2012 - Present

Reviewer, Journal Article, Elsevier Editorial System Fall 2010 - Summer 2012

### Honors and Awards

R & D top 100, 2009

### Teaching

Spring 2009 Courses:

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| --- |
| CHEM 1013 004 - General Chemistry I |
| CHEM 1013 4 - GENERAL CHEMISTRY I |
| CHEM 3054 001 - Quantitative Analysis |
| CHEM 3054 1 - QUANTITATIVE ANALYSIS |

Fall 2009 Courses:

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| CHEM 1013 005 - General Chemistry I |
| CHEM 4224 001 - Instrumentation |
| CHEM 4224 002 - Instrumentation |

Spring 2010 Courses:

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| CHEM 2002 001 - Computers in Chemistry |
| CHEM 3054 001 - Quantitative Analysis |
| CHEM 427V 011 - RESEARCH IN CHEMISTRY |
| CHEM 680V 3 - INDEPENDENT STUDY |
| CHEM 689V 2 - THESIS |
| CHEM 689V 3 - THESIS |

Summer 2010 Courses:

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| CHEM 6343 2 - SPECIAL TOPICS |
| CHEM 680V 1 - IND STY TOP IN COMPUTAT CHEMIS |
| CHEM 680V 3 - INDEPENDENT STUDY |

Fall 2010 Courses:

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| --- |
| CHEM 4224 001 - Instrumentation |
| CHEM 427V 003 - RESEARCH IN CHEMISTRY |
| CHEM 427V 009 - RESEARCH IN CHEMISTRY |
| CHEM 427V 010 - RESEARCH IN CHEMISTRY |
| CHEM 5224 1 - INSTRUMENTATION |
| CHEM 689V 5 - THESIS |

Spring 2011 Courses:

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| --- |
| CHEM 2002 001 - Computers in Chemistry |
| CHEM 3054 001 - Quantitative Analysis |
| CHEM 427V 002 - RESEARCH IN CHEMISTRY |
| CHEM 680V 1 - INDEPENDENT STUDY |

Summer 2011 Courses:

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| --- |
| CHEM 427V 001 - RESEARCH IN CHEMISTRY |

Fall 2011 Courses:

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| --- |
| CHEM 4224 001 - Instrumentation |
| CHEM 427V 002 - RESEARCH IN CHEMISTRY |
| CHEM 427V 005 - RESEARCH IN CHEMISTRY |
| CHEM 5224 1 - INSTRUMENTATION |
| CHEM 6273 1 - CASCADE DMA AND SCAN FUNCTION |
| CHEM 689V 6 - THESIS |

Spring 2012 Courses:

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| --- |
| CHEM 2002 001 - Computers in Chemistry |
| CHEM 3154 001 - Survey of Physical Chemistry |
| CHEM 427V 003 - RESEARCH IN CHEMISTRY |
| CHEM 427V 009 - RESEARCH IN CHEMISTRY |
| CHEM 427V 010 - RESEARCH IN CHEMISTRY |

Fall 2012 Courses:

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| --- |
| CHEM 4224 001 - INSTRUMENTATION |
| CHEM 427V 003 - PUMPLESS ESI EXPERIMENT |
| CHEM 5224 001 - INSTRUMENTATION |
| CHEM 6433 001 - ADVANCED PHYSICAL CHEMISTRY |
| CHEM 6433 002 - ADVANCED PHYSICAL CHEMISTRY |
| CHEM 689V 004 - THESIS GAS PHASE SEP METHOD |