

## 2010 Hieftje Group Presentations

### PROFESSIONAL MEETINGS, COLLOQUIA, AND SEMINARS

#### **Name Lectureships:**

*“Models, Methods and Machines for Chemical Measurements”*, G.M. Hieftje. **34<sup>th</sup> William J. Probst Memorial Lecture** (Scientific lecture), Southern Illinois University-Edwardsville, Mar 29, 2010. (Name Lectureship presented by **Dr Gary M. Hieftje**)

*“Teaching and Research: Symbiosis or Conflict?”*, G.M. Hieftje. **34<sup>th</sup> William J. Probst Memorial Lecture** (Public lecture), Southern Illinois University-Edwardsville, Mar 29, 2010. (Name Lectureship presented by **Dr Gary M. Hieftje**)

#### **Invited papers or talks:**

*“Frontiers in Plasma Spectrochemistry”*, Gary M. Hieftje, Steven J. Ray, George C.-Y. Chan, Eyal Elish, Christie G. Enke, Carsten Engelhard, Jeremy A. Felton, Alexander W. Graham, Meghan C. McCormick, Kevin P. Pfeuffer, Duane A. Rogers, Gregory D. Schilling, Jacob T. Shelley, Michael R. Webb, M. Bonner Denton, Roger P. Sperline, David W. Koppenaal, Charles J. Barinaga. **2010 Winter Conference on Plasma Spectrochemistry**, Sanibel, FL, Jan 2-9, 2010. (Plenary lecture presented by **Dr. Gary M. Hieftje**)

*“Array Detectors for Simultaneous Mass Analysis”*, G.M. Hieftje, Greg Shilling, Jeremy Felton, Steven J. Ray, Jacob Shelley, M. Bonner Denton, Roger P. Sperline, David Koppenaal, Charles Barinaga. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Invited lecture presented by **Dr. Gary M. Hieftje**)

*“Diagnostics and Features of the Solution-Cathode Glow Discharge (SCGD): An Atmospheric Pressure Glow Discharge for the Direct Analysis of Environmentally Relevant Samples”*, S.J. Ray, A. Rubinshtein, G. Chan, E. Elish and G.M. Hieftje. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Invited lecture presented by **Dr. Steven J. Ray**)

*“Distance of Flight Mass Spectrometry – A Proof-of-Concept Instrument”*, C.G. Enke, S.J. Ray, A.W. Graham and G.M. Hieftje. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Invited lecture presented by **Dr. Christie G. Enke**)

*“Fundamental Studies of the Inductively Coupled Plasma and Glow Discharge”*, G.M. Hieftje, George Chan, and J.T. Shelley. DOE-BES Separation and Analysis Contractors’ Meeting, Baltimore, MD, April 25-28, 2010. (Invited paper presented by **Dr. G.M. Hieftje**).

*“The Next Generation of Instrumentation for Atomic Spectroscopy: Novel Mass Analyzers, Detectors, and Sources”* Steven J. Ray, Ph.D., Duane Rogers, Greg Schilling, Alex Graham, Christie Enke, Jeremy Felton, and Gary M. Hieftje., Society for Applied Spectroscopy Tour Speaker, Brecksville, OH, May 26, 2010. (Invited Lecture given by **S.J. Ray**)

*“Sources, Spectrometers, and Systems for Plasma Spectrochemistry”*, G.M. Hieftje. **Nordic Plasma Conference 2010**, Loen, Norway, June 6-9, 2010. (Plenary lecture presented by **G.M. Hieftje**)

## 2010 Hieftje Group Presentations

***“Glow Discharges Old and New”***, G.M. Hieftje. **Nordic Plasma Conference 2010**, Loen, Norway, June 6-9, 2010. **(Invited short course presented by G.M. Hieftje)**

***“Novel Glow Discharges and Spectrometers to Use Them With”***, Gary M. Hieftje, Steven J. Ray, Charles G. Barinaga, Elise A. Dennis, Carsten Engelhard, Christie G. Enke<sup>1</sup>, Gerardo Gamez, Alexander W.G. Graham, Volker Hoffmann, David W. Koppenaar, Jacob T. Shelley, Michael Webb. **International Glow Discharge Spectroscopy Symposium**, Albi France, August 22-26, 2010. **(Invited lecture presented by G.M. Hieftje).**

***“Frontiers in Plasma Spectrochemistry”***, Gary M. Hieftje. **11<sup>th</sup> Rio Symposium on Plasma Spectrochemistry**, Mar del Plata, Argentina, October 24-29, 2010. **(Plenary lecture presented by G.M. Hieftje). – Not Presented**

***“The Versatile Glow Discharge: New Applications in Atomic and Molecular Spectrometry”***, Steven J. Ray, Jacob T. Shelley, George C.Y. Chan, Eyal Elish, Carsten Engelhard, Kevin P. Pfeuffer and Gary M. Hieftje. **Preconference: Asia-Pacific Winter Conference on Plasma Spectrochemistry**, Beijing, China, November 26-30, 2010. **(Invited lecture presented by S.J. Ray)**

***“Novel Mass Spectrometers for Plasma Spectrochemistry”***, G. M. Hieftje, S. J. Ray, C. G. Enke, A. W. G. Graham, D. A. Rogers, E. A. Dennis, D. W. Koppenaar, C. J. Barinaga, M. B. Denton, R. P. Sperline. **Asia-Pacific Winter Conference on Plasma Spectrochemistry**, Chengdu, China, November 26-30, 2010. **(Invited lecture presented by G.M. Hieftje).**

***“Glow Discharge Excitation and Ionization Sources in Atomic and Molecular Spectroscopy”***, Steven J. Ray, Jacob Shelley, Kevin Pfeuffer, George Chan, Maxim Voronov, Carsten Engelhard, Wolfgang Buscher, Volker Hoffmann, and Gary M. Hieftje. **Asia-Pacific Winter Conference on Plasma Spectrochemistry**, Chengdu, China, November 26-30, 2010. **(Invited lecture presented by S.J. Ray).**

***“Sources, spectrometers, and systems for plasma spectrochemistry”***, G.M. Hieftje, Eyal Elish, Carsten Englehard, Jeremy A. Felton, Alexander W. Graham, Meghan C. McCormick, Kevin P. Pfeuffer, Steven J. Ray, Jacob T. Shelley, Christie G. Enke, David W. Koppenaar, Charles Baringer. **Pacificchem 2010**, Honolulu, Hawaii, December 15-20, 2010. **(Invited lecture presented by G.M. Hieftje)**

***“Novel mass analyzers and excitation sources for atomic spectroscopy”***, Steven J. Ray, Elise Dennis, Alex Graham, Eyal Elish, Gary M. Hieftje, Christie Enke, Charles Barinaga, David Koppenaar. **Pacificchem 2010**, Honolulu, Hawaii, December 15-20, 2010. **(Invited lecture presented by S.J. Ray)**

### **Contributed or competitive papers:**

***“Mass Spectrograph Equipped with a Novel 1696-Channel Faraday-cup Array Camera for use in Plasma-Source MS”***, Jeremy A. Felton, Steven J. Ray, and Gary M. Hieftje, Gregory D. Schilling, Roger P. Sperline and M. Bonner Denton, Charles J. Barinaga and David W. Koppenaar. **2010 Winter Conference on Plasma Spectrochemistry**, Sanibel, FL, Jan 2-9, 2010. **(Presented by Jeremy A. Felton)**

***“The Flowing Atmospheric-Pressure Afterglow (FAPA) Ionization Source: Fundamental Investigations and Novel Applications”***, Jacob T Shelley, Kevin P. Pfeuffer, Steven J. Ray, and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry**, Sanibel, FL, Jan 2-9, 2010. **(Presented by Jacob T. Shelley)**

## 2010 Hieftje Group Presentations

***"A Radio-Frequency Glow Discharge Instrument for Imaging of Gel-Separated Proteins"***, Carsten Engelhard, Meghan C. McCormick, Steven J. Ray, Wolfgang Buscher, Maxim Voronov, Volker Hoffmann and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Presented by Dr. Gary M. Hieftje)**

***"3-D Mapping of Multi-Layered Metal Samples with GD OES"***, Meghan C. McCormick, Carsten Engelhard, Steven J. Ray, and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Presented by Meghan C. McCormick)**

***"The Solution-Cathode GD: A compact, Simple and Effective Excitation Source for the Direct Analysis of Liquid Samples b AES"***, Steven J. Ray, Arnold Rubinshtein, George Chan, and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Presented by Dr. Steven J. Ray)**

***"On the Importance of Penning Ionization in the ICP"***, George Chan and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Presented by Dr. George Chan)**

***"Performance of a Miniaturized Microwave Plasma Source for AES"***, S.J. Ray and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Poster presented by Dr. Steven J. Ray)**

***"A New Paradigm for Elemental mass Spec: The DOFMS"*** Steven J. Ray, Alexander W.G. Graham, Gary M. Hieftje, Christie G. Enke, David W. Koppenaal, Charles J. Barinaga. . **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Poster presented by Dr. Steven J. Ray)**

***"Towards Robust Automated Detection for Matrix-Effect Cross-Over Points in the ICP-AES"***, George Chan and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Poster presented by Dr. George Chan)**

***"Dual-Source Time-of-Flight Mass Spectrometer: A Tool for Chemical Speciation Studies"***, " Alexander W. G. Graham, Duane A. Rogers, Steven J. Ray, and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Poster presented by Alexander W. Graham)**

***"A New Approach to the Quantification of B and B Isotope Ratios Using a Second-Generation Focal-Plane Faraday Strip Detector (FPFSAD) Coupled to an Inductively Coupled Plasma Mattauch-Herzog Geometry Mass Spectrograph (ICP-MHMS), A New Approach to the Quantification of B and B Isotope Ratios Using a Second-Generation Focal-Plane Faraday Strip Detector (FPFSAD) Coupled to an Inductively Coupled Plasma Mattauch-Herzog Geometry Mass Spectrograph (ICP-MHMS)"***, Isaac (Joe). B Brenner: Gregory D. Schilling, Arnon Rubinstein, Steven J. Ray, Roger P. Sperline, M. Bonner Denton, Charles J. Barinaga, David W. Koppenaal, and Gary M. Hieftje. **2010 Winter Conference on Plasma Spectrochemistry, Sanibel, FL, Jan 2-9, 2010. (Presented by Dr. I.B. Joe Brenner)**

***"Ambient Desorption /Ionization Mass Spectrometry"***, E. Elish and G.M. Hieftje Presented by Dr. Eyal Elish to the Head of R & D Division of NRCN, Ft. Lauderdale, FL, February 2010

***"Mass Spectrograph Equipped with a Novel Faraday-Cup Array Camera for Use in Plasma-Source Mass Spectrometry"***, J.A. Felton, G.D. Schilling, S.J. Ray, R.P. Sperline, M.B. Denton, C.J. Barinaga, D.W. Koppenaal. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Orlando, FL, Feb 27-Mar 5, 2010. (Presented by Jeremy A. Felton)**

## 2010 Hieftje Group Presentations

***“A New Approach to the Quantification of B and B Isotope Ratios Using a Second-Generation Focal-Plane Faraday Strip Array Detector (FPFSAD) Coupled to an Inductively Coupled Plasma Mattauch-Herzog Geometry Mass Spectrograph (ICP-MHMS)”***, Isaac B. Brenner, Jeremy Felton, Gregory Schilling, Steven J. Ray, and Gary M. Hieftje. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Presented by S.J.Ray)

***“Microstrip Plasma Coupled to Hydride Generation for Mass Spectral Detection of Metalloids and Volatile Organics”***, K.P. Pfeuffer, J.T. Shelley, S.J. Ray, J.A.C. Broekaert and G.M. Hieftje. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Presented by Kevin P. Pfeuffer)

***“Developments and Novel Biological Applications of the Flowing Atmospheric-Pressure Afterglow Ambient Ionization Source”***, J.T. Shelley, J.M. Wiseman and G.M. Hieftje. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Presented by Jacob T. Shelley)

***“Distance of Flight Mass Spectrometry – A Proof-of-Concept Instrument”***, C.G. Enke, S.J. Ray, A.W. Graham, G.M. Hieftje, D. Koppenaal and C.J. Barinaga. **2010 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy**, Orlando, FL, Feb 27-Mar 5, 2010. (Presented by Dr. Christie G. Enke)

***“Improving Selectivity and Sensitivity of Anti-Terrorism Detection Equipment with FAPA-IMS-IMS”***, Jonathan Dilger; Jeff Everett; Jake Shelley; Stephen Valentine; Gary M. Hieftje; David E. Clemmer. **58th ASMS Conference on Mass Spectrometry, Salt Lake City, UT, May 23-27, 2010** (Presented by Jonathan Dilger)

***“Focal Plane Array Detectors on a Multi-collector ICPMS – Preliminary Results”***, Charles J. Barinaga, David W. Koppenaal · Anthony Carado · M. Bonner Denton , Roger P. Sperline, Gary M. Hieftje , Steven J. Ray , Jeremy A. Felton, Gregory D. Schilling , Gene Atlas.**58th ASMS Conference on Mass Spectrometry, Salt Lake City, UT, May 23-27, 2010** (Poster presented by Dr. Charles Barinaga)

***“Elemental Analysis by Distance-of-Flight MS and Array Detection ”***, Christie G. Enke, Steven Ray, Alexander W. Graham, Gary M. Hieftje, David W. Koppenaal, Charles J. Barinaga. **58th ASMS Conference on Mass Spectrometry, Salt Lake City, UT, May 23-27, 2010** (Presented by Dr. Christie G. Enke)

***“Improvements and Applications of the Flowing Atmospheric-Pressure Afterglow Ambient Ionization Source”***, Jacob Shelley, Justin Wiseman, Gary M. Hieftje. **58th ASMS Conference on Mass Spectrometry, Salt Lake City, UT, May 23-27, 2010** (Presented by Jacob T. Shelley)

***“New Sources for Atomic and Molecular Spectrometry”***, Gary M. Hieftje. **Midwestern Universities Analytical Chemistry Conference (MUACC), Purdue University, West Lafayette, IN, October 7-9, 2010.** (Presented by G.M. Hieftje)

***“Development and Evaluation of a Borosiloxane Polymer for Selective Sensing of Amines”***, Andrew Storey, Jacob T. Shelley, Wenjun Liu, Radislav A. Potyrailo, Dongwhan Lee, and Gary M. Hieftje. **Turkey Run Analytical Chemistry Conference, Marshall, IN, November 5-6, 2010** (Presented by Andrew P. Storey)

***“Development and Characterization of a Glow-Discharge Distance-of-Flight Mass Spectrometer”***, Alexander W.G. Graham, Steven J. Ray, Christie G. Enke, David W. Koppenaal, Charles J. Barinaga, Anthony J. Carado, and Gary M. Hieftje. **Turkey Run Analytical Chemistry Conference, Marshall, IN, November 5-6, 2010** (Presented by Alexander W.G. Graham)