ANYL

Division of Analytical Chemistry

D. J. Phillips, *Program Chair*

OTHER SYMPOSIA OF INTEREST:

Physical Chemistry Awards Symposium (see *PHYS*, Tue)

SUNDAY MORNING

Section A

Salt Palace Convention Center
155 F

Current Practices in Understanding Atmospheric Chemistry
Tropospheric Chemistry

J. Hansen, *Organizer*

8:30 1. Laboratory studies of some mechanisms for OH radical production involving long wavelength solar radiation. **A. Sinha**
9:10 2. OH and HO_2 radical chemistry in the atmosphere: Field measurements, modeling and chamber studies. **D. E. Heard**
9:50 3. Surface reactions of oxides of nitrogen in the atmosphere.
B. J. Finlayson-Pitts, J. D. Raff, B. Njegic, M. A. Kamboures, W. Chang, D. Dabdub, R. B. Gerber
10:30 4. Light initiated chemistry on atmospheric organic aerosols. **V. Vaida**
11:10 5. Multifunctional organic nitrates and tropospheric ozone: Perspectives from laboratory, smog chamber and field observations. **R. C. Cohen**
11:50 6. Chlorine activation in the troposphere via heterogeneous reactions.
A. R. Ravishankara, J. Roberts, H. Osthoff, S. Brown

Frontiers in Imaging Biological Nanostructures Sponsored by BIOL, Cosponsored by ANYL, COLL, PHYS, POLY, and NANO‡

Nano Meets Neuro: Novel Challenges for Nanoscience in Probing Brain Chemistry Sponsored by MEDI, Cosponsored by ANYL, BIOL, COLL, and NANO‡

SUNDAY AFTERNOON

Section A

Salt Palace Convention Center
155 F

Current Practices in Understanding Atmospheric Chemistry
Radical Molecule Chemistry in the Atmosphere

J. Hansen, *Organizer*

1:30 7. Atmospheric reactions of HO_2 radicals. **G. Tyndall**, Y. Tang, J. J. Orlando, A. S. Hasson
2:10 8. Dual stable and radiogenic isotope measurements for understanding sulfur chemistry in the atmosphere.
L. A. Brothers, G. Dominguez, A. Abramian, A. M. Corbin, B. Bluen, M. H. Thiemens
2:50 9. Sulfur containing radical chemistry: $CH_3SO_2 \rightarrow CH_3 + SO_2$. B. Alligood, B. Ratliff, B. L. FitzPatrick, X. Tang, E. J. Glassman, **L. J. Butler**, D. E. Szpunar, K-C. Lau
3:30 10. Spectroscopic characterization and stability of OH-N_2 and HO_2-N_2 radical-molecule complexes. **J. S. Francisco**
4:10 11. Weakly-bound radical-molecule adducts of atmospheric interest: Kinetics, spectroscopy and thermochemistry.
P. H. Wine, J. M. Nicovich, M. L. McKee, Z. Zhao, P. L. Laine, V. Dookwah-Roberts, D. T. Huskey
4:50 12. Chemistry and spectroscopy of peroxy radicals. **M. Okumura**, S. P. Sander

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Nano Meets Neuro: Novel Challenges for Nanoscience in Probing Brain Chemistry Sponsored by MEDI, Cosponsored by ANYL, BIOL, COLL, and NANO‡

SUNDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

General Posters

S. Lunte, *Organizer*

7:00–9:00
13. Synthesis and evaluation of head-to-tail cyclic proline chiral stationary phase.
P. J. Pham, T. Wang, T. Li
14. Highly sensitive enzyme immunoassay for evaluation of 2'-deoxycytidine plasma level as a prognostic marker for breast cancer chemotherapy. **I. A. Darwish**, A. M. Mahmoud, T. Aboul-Fadl, A-R. A. Al-Majed, N. Y. Khalil
15. Identification of hydroxyl radical oxidation products of *n*-hexanoyl-homoserine lactone by reversed-phase high-performance liquid chromatography coupled with electrospray ionization tandem mass spectrometry. **Y. Cui**, R. L. Frey, J. L. Ferry, P. L. Ferguson
16. Isotopic characterization of carbon single amino acids in modern human infants by LC-IRMS. **B. T. Fuller**, C. I. Smith, K. Choy, M. P. Richards
17. LC/MS/MS quantitation of cyclosporine levels in proficiency and patient samples. **C. S. Ramsay**, H. Xie, P. F. Ozaeta, J. R. Fishpaugh
18. Development of a LC/MS/MS method using selected markers for establishing a chemical fingerprint for clandestine methamphetamine. **S. B. Madireddy**, J. O. Boles
19. Development of an infinite parallel plate emulating cell for Fourier transform ion cyclotron resonance mass spectrometry. **T. R. McJunkin**, D. A. Dahl, J. R. Scott
20. Does thin-layer deposition of MALDI matrices on metallic substrates allow for two-photon ionization? An ab initio investigation. **O. M. Ramirez**, F. Mansilla, A. S. Venable, K. A. Beran
21. Electrospray ionization mass spectrometry (ESIMS) of intact lipids and fatty-acid methylesterification/gas chromatography (FAME-GC) as complementary methods to differentiate lipidomic profiles of physiological states. **C. L. Earl**, C. McKeown, J. Moulton, L. Yang, K. Reue, M. R. Linford, C. D. Thulin
22. Novel electrospray ionization technique using a porous polymer and wedge-shaped tip. **D. R. Huffmire**
23. Real-time virus analysis via electrospray ionization, electrostatic acceleration, surface induced dissociation and mass spectrometry. S. T. Call, **D. E. Austin**
24. TOF-SIMS and XPS analysis of ancient and forensic materials. **Y. Lee**, J. Lee, S. W. Ham, K. Lee, K-J. Kim
25. Aqueous monorhamnolipid complexes with Pb^{2+} and UO_2^{2+} by FTIR and mass spectrometry. **T. A. Veres**, A. Somogyi, J. E. Pemberton
26. Development of a quantitative method for silicone oil using FT-IR for pre-filled syringe components. **L. Pelster**, M. R. Toler
27. Characterization of organic molecules attached to gold nanoparticle surface using high resolution magic angle spinning NMR. H. Zhou, F. Du, X. Li, B. Zhang, **W. Li**, B. Yan
28. Camphorsulfonic acid as a chiral auxiliary for analysis of enantiomers of alcohols by ^1H and ^{13}C NMR spectroscopy. **D. Clarke**, T. Lobasso, C. Iwanoski, S. Saba
29. Differentiation of rotavirus strains using SERS with silver nanorod arrays-based platform. **Y. Zhu**, J. D. Driskell, C. Kirkwood, Y. Zhao, R. A. Tripp, R. A. Dluhy
30. Rupture force determination using atomic force microscopy. **E. Costello**, S. Akaygun, K. A. O. Pacheco
31. Application of femtosecond laser in biotechnology: Manipulation and detection. **J. Gong**
32. Highly selective fluorescent probe for copper ions. M. Tian, J. Fan, S. Sun, **X. Peng**
33. Laser induced breakdown spectroscopy (LIBS) as a surface characterization tool: Chemical mapping of deposited material. **M. A. Perez**, J. R. Almirall
34. Luminescent probes in hydrophobic silica aerogels. **C. J. Backlund**, M. K. Carroll, A. M. Anderson
35. Molecular orientation and interfacial interactions in aromatic fluid-aryl thiol SAM interfaces. **M. C. Schalnat**, J. E. Pemberton
36. Study of the effects of magnesium ion on the thermal stability of a monomer-excimer molecular beacon that has potential in detection of synthetic DNA of human genotype *Cryptosporidium*. **M. L. Davis**, G. D. McEwen, A. Zhou
37. Multifunctional silver embedded magnetic nanoparticles as SERS nanoprobe and their applications. **B-H. Jun**, M. Noh, J. Kim, G. Kim, H. Kang, Y-T. Seo, J. Baek, J. Park, S. Kim, Y-K. Kim, T. Hyeon, M-H. Cho, D. H. Jeong, Y. S. Lee
38. Novel series of ratiometric fluorescent calcium indicators. **V. V. Martin**, J. Bradford, K. R. Gee
39. Pulsed-laser excited photothermal study of cadmium sulfoselenium nanoparticle doped glasses. **P. Joshi**, S. Bialkowski
40. Quantitative optical modeling of infrared microspectroscopy. **B. J. Davis**, P. S. Carney, R. Bhargava
41. Rapid analysis of tin in zirconium alloys by X-ray fluorescence. **J. S. Barrett**, R. E. Maass, B. J. Burnett, K. D. Ashby, E. B. Walker
42. Spectrophotometric reagents for extraction and determination of Hg(II). **E. Archibong**, S. D. Deiab, M. Boatwright, N. N. Mateeva
43. Spectroscopic characterization of semi-fluoroalkyl self-assembled monolayers. **S. Watt**, C. B. Kristalyn, R. A. Barnard, S. A. Spanninga, Z. Chen
44. Spectroscopic studies of interactions involving antiretrovirals. **C. Kennemore**, N. Phambu
45. Understanding infrared attenuated total reflection microspectroscopy through optical modeling. **B. J. Davis**, P. S. Carney, R. Bhargava
46. Use of real-time FT-IR monitoring of a pharmaceutical compound under high-stress atmospheric conditions for characterizing its solid-state degradation kinetics. **P. J. Skrdla**, C. S. Harrington, Z. Lin
47. Analysis of inks using laser-induced breakdown spectroscopy. **D. M. Albaugh**, **N. K. Machamer**, R. R. Hark
48. Statistical analysis methods for the quantitative detection of single molecules in fluorescence microscopy images. **E. M. Peterson**, J. R. Wayment, J. M. Harris
49. Fluorescence spectroscopic microscopy of the interior pH of single vesicles. **E. C. Heider**, J. M. Harris
50. Detecting mercury in aqueous media by a selective and turn-on fluorescent sensor. **J. Du**, J. Fan, **X. Peng**, H. Li, S. Sun
51. Confocal Raman microscopy of pH-gradient-based enrichment of compounds inside single phospholipid vesicles. **G. A. Myers**, J. M. Harris
52. Fluorescence determination of CMC and aggregation number for monorhamnolipids harvested from *P. aeruginosa* ATCC 9027. **L. Begay**, J. E. Pemberton
53. Fluorescence microscopy of thin films formed by forced dewetting. **A. Mudalige**, J. E. Pemberton
54. Analysis of titanium oxide in liquid paint by X-ray fluorescence spectroscopy. **R. E. Maass**, H. A. Choi, E. B. Walker
55. Retention and separation of highly polar compounds on a novel HPLC phase. **R. Gaita**, S. Anderson, N. Herbert, J. Wang
56. Thin-film molecularly imprinted polymer membranes for selective detection of carbohydrates. **S. E. Campbell**, M. M. Collins, J. J. BelBruno
57. Separation and purification of benzoylformate decarboxylase via immobilization on magnetic solid support. **B. Tural**, S. B. Sopacı, A. S. Demir
58. Functionalization of porous graphitic carbon for liquid chromatography. **D. S. Jensen**, L. A. Wiest, M. A. Vail, A. Dadson, M. R. Linford
59. Linear solvation energy relationships of novel binary mixed surfactants in micellar electrokinetic chromatography. **H. Arslan**, D. Ahlstorm, B. Graham, Y. Hoyos, C. Akbay
60. Trace analysis of DEET in water using an on-line preconcentration column and liquid chromatography with UV photodiode array detection. **W. A. Adams**, V. V. Namboodiri, C. A. Impellitteri
61. Lipid-modified colloidal crystals for chromatographic determination of membrane partition behavior. **S. Bugni**, E. E. Ross
62. Effect of pH, EDTA and phosphate on SAX column performance. Z. Cheng, M. Grinshtein, **K. Radloff**, A. Van Geen
63. Isolation of drug molecules from preparative HPLC fractions using a high surface area polymeric stationary phase. **P. A. Boguszewski**, F. Button, J. W. Davies, G. Margetts, J. Wheeler
64. Application of binary mixtures of 9-decenyl sulfate and 10-undecenyl leucinate as pseudostationary phases in MEKC. **C. Akbay**, D. Ahlstorm, Y. Hoyos, S. Nagdas, H. Arslan
65. Media platform that allows seamless method transfer between UHPLC and traditional HPLC applications. **M. Jacyno**, S. Anderson
66. Evaluation of the pharmacokinetic of new amantadine prodrugs as hepatic delivery systems to enhance its activity against HCV by a new HPLC method. **T. Aboul-Fadl**, A. M. Mahmoud, I. A. Darwish, N. Y. Khalil, A. Alobaid
67. Extraction of potential chemical attractants from the Blackeyed Susan. **R. N. Judkins**, P. L. Lang, G. Dodson
68. Fast antibody analysis using large pore, sub-two micron columns. **R. Nguyen**, S. Anderson, I. Chappell
69. High-resolution peptide mapping using sub-two micron columns. **R. Nguyen**, J. Wang
70. Reverse phase ion pairing separation of heparin oligosaccharides. **N. Membreno**, C. Jones, C. K. Larive
71. Confocal Raman microscopic analysis of wetting of RPLC stationary phases. **J. L. Gasser-Ramirez**, J. M. Harris
72. In vitro studies of arsenic extraction in multiple myeloma cells: Evaluation of solvents. **L. Yehiayan**, N. Membreno, S. Matulis, Y. Cai, L. Boise
73. Method development for the analysis of the gun surveillance compound diphenylamine and its nitrated derivatives by HPLC, GC-FID and GC-MS. **P. A. Wiley**, D. B. Summers, X. Pan
74. Nanoliquid chromatography coupled with nanoelectrospray tandem mass spectrometry for the analyses of penicillins. **S-H. Hsieh**, P-H. Lu, Y-C. Shen, C-J. Hsieh, H-Y. Huang
75. Novel high performance liquid chromatographic method for the simultaneous determination of creatinine and uric acid in human urine samples. **Y. Zuo**, C. Wang, J. Zhou, A. Sachdeva, V. Ruelos
76. Optimizing stationary phase design for difficult GC separations. **A. N. Smith**, A. N. Bloom, S. Federle, S. Gardner, P. D. Schettler, F. L. Dorman

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

77. Ultrahigh pressure LC selectivity options for high speed separations. **M. Jacyno**, J. Wang
78. Aminex columns in purification of active pharmaceutical compounds. **S. Ghassemi**
79. Fabrication of polymeric microfluidic devices for use in bioanalysis. **D. L. Mathews**, W. Yang, D. J. Eves, A. T. Woolley
80. Embedded orthogonal planar waveguide with integrated fluidic networks for high throughput fluorescence detection. **P. I. Okagbare**, J. M. Emory, P. Datta, S. A. Soper
81. Multiplexing strategies for surface plasmon resonance imaging based on microfluidics and microelectrode arrays. **S. A. Poff**, B. Endrizzi, R. J. Stewart, J. Shumaker-Parry
82. Detection of chemical, biological and explosive agents in an engineered nanopore. **X. Guan**, Q. Zhao, D. A. Jayawardhana, R. S. De Zoysa, D. Wang
83. Withdrawn.
84. Micropatterning by silicon subsurface oxidation. **F. Zhang**, K. Sautter, R. C. Davis, M. R. Linford
85. Nanopore stochastic detection of anions using a pyrrole host. **R. S. De Zoysa**, D. A. Jayawardhana, X. Guan
86. 2-D DOSY and 3-D DOSY-COSY ^{1}H NMR as efficient tools for analysis of herbal drugs and identification of possible adulterants. S. Balayssac, **V. Gilard**, M. Malet-Martino, R. Martino
87. Carbon nanotube-based electrochemical sensors for PSA in polyethylene glycol-diacrylate (PEG-DA) hydrogels. **A. Mugweru**, N. Havens
88. Design and development of gold nanoparticles-based biosensor for accurate estimation of luteinizing harmone. **Z. Afrasiabi**, R. Shukla, A. Upendran, R. Almodhafar, R. Kannan, K. Katti
89. Immunoassay with SPR-based biosensor using polymer matrix. **A. Shoji**, **S. Kondo**, D. S. Kumar, S. Ishii, Y. Yoshida
90. Development of a Prussian blue-modified electrochemical sensor for the detection of hydrogen peroxide. **D. M. Budner**, J. Hauck
91. Electrochemical detection of genetically modified plants by means of heated electrodes. **M. Mix**, H. Duwensee, G-U. Flechsig
92. Electrochemistry of ferritin adsorbed on carboxylic acid terminated monolayers on gold electrodes. **N. Ritzert**, S. S. Casella, D. C. Zapien
93. Performance of single-walled carbon nanotubes following electrochemical pretreatment. **S. Alwarappan**, S. Prabhulkar, C-Z. Li
94. Reagentless amperometric micro-immunosensor based on direct electrochemistry of ferrocene for the detection of tumor biomarkers. **S. Prabhulkar**, S. Alwarappan, C. Li
95. Real-time bioanalytical measurement of dopaminergic neurotransmission using rotating disk electrode voltammetry. **T. J. Volz**, S. J. Farnsworth, G. R. Hanson, A. E. Fleckenstein
96. Electrochemical aptamer-based sensor optimization: Moving from benchtop to bedside. **R. J. White**, N. Phares, A. Lubin, K. W. Plaxco
97. Electrochemical sensor for homemade explosives detection. **D. Lu**, J. Wang
98. Acenaphthopyrrolone-dipicolylamine derivative: A novel chemosensor for group IIB cations. **F. Liu**, S. Sun
99. Computational study of the isoprene hydroxyalkyl peroxy radical-water complexes ($C_5H_8(OH)O_2$-H_2O). **J. Clark**, J. Hansen
100. Aging of secondary organic aerosol from terpene ozonolysis over long time scales. **D. L. Bones**, S. Mang, D. K. Henricksen, A. Bateman, T. B. Nguyen, S. Nizkorodov
101. Analysis of the reactions of amines with O_3 and NO_x in a smog chamber to understand the ambient chemistry of amines measured in Cache Valley, Utah. **D. J. Price**, P. J. Silva
102. Chemical analysis of particulate matter in Augsburg, Germany: A case for regional transport. **P. B. Kelly**, R. Zimmermann, J. Schwind, J. Weh
103. Detection of biomolecules using a nanopore probe. **X. Guan**, Q. Zhao, D. Wang, R. S. De Zoysa, D. A. Jayawardhana
104. Deuterium propagation through the atmospheric carbon cycle: Experiment, theory and modeling. **M. S. Johnson**
105. Withdrawn.
106. Laboratory studies of mineral dust aerosol influence on chemistry and climate. **M. A. Young**
107. Measurements of $CO_2(\nu_2)$–O vibrational energy transfer: Implications for the upper atmospheric energy budget. **J. A. Dodd**, K. J. Castle
108. Measurements of peroxy radicals using chemical amplification/cavity ring-down spectroscopy. **J. Zhang**, Y. Liu, R. Morales-Cueto, J. Hargrove, D. Medina
109. Molecular dynamics study of water adsorbed on model organic surfaces. **M. Roeselová**, M. Szöri, D. J. Tobias
110. Polymer-modified nanoporous membranes for sensoric applications. R. Burtovyy, O. Burtovyy, K. G. Kornev, **I. Luzinov**
111. Rapid determination of gold during plating operations by X-ray fluorescence. **A. B. Giles**, B. J. Burnett, A. L. Anderson, T. Darger, K. D. Ashby, E. B. Walker
112. Withdrawn.
113. Understanding the role of isoprene in mediating atmospheric nitrogen chemistry. **A. Iwasaki**, A. E. Cavender, K. A. Hill, C. J. Moffat, A. L. Lockwood, L. H. Mielke, A. E. Perring, R. C. Cohen, P. B. Shepson
114. Binding affinity of hydrazine bisphosphonates by a constant composition method of crystal growth. **J. Yewle**, D. Puleo, L. G. Bachas
115. Closing the peroxy acetyl (PA) radical budget: Observations of acyl peroxy nitrates (PAN, PPN and MPAN) during BEARPEX 2009. **B. W. LaFranchi**, G. M. Wolfe, J. A. Thornton, E. C. Browne, K-E. Min, P. J. Wooldridge, M. McKay, A. H. Goldstein, J. B. Gilman, D. Welsh-Bon, W. C. Kuster, J. A. deGouw, J. Mao, Z. Chen, X. Ren, W. H. Brune, R. C. Cohen
116. Complexation of cyclodextrins with chromophore-labeled drugs. **M. Boatwright**, S. D. Deiab, E. Archibong, N. N. Mateeva
117. Computational studies of peroxy radicals and RO_2·H_2O complexes derived from 2-Z-hexenal. B. J. Nielson, L. Zemp, M. Snow, S-C. Lee, D. Osborne, **R. S. DaBell**, J. Clark, J. Hansen
118. Designing custom electric fields in resistive electrode ion traps. **Y. Peng**, Z. Zhang, B. Hansen, S. E. Tolley, M. L. Lee, A. R. Hawkins, D. E. Austin
119. Effect of pH on physical properties of amino acid-based surfactants. **J. L. De Santos**, A. Clark, C. Corpus, F. Billiot, E. Billiot
120. Host-guest chemistry of crown ethers containing ligands: Complexation with metal ions and amino acids. **N. N. Mateeva**, S. D. Deiab, E. Archibong, M. Boatwright
121. Inkjet printed explosive standards. **A. N. Bloom**, G. Gillen, M. Najarro, E. Windsor
122. Isoprene oxidation by nitrate radical: Alkyl nitrate and secondary organic aerosol yields. **A. W. Rollins**, J. L. Fry, A. Kiendler-Scharr, P. J. Wooldridge, S. S. Brown, H. Fuchs, W. P. Dubé, A. Mensah, R. Tillmann, H-P. Dorn, T. Brauers, R. C. Cohen
123. Method development and validation for chemical purity determination of DCGB. **L. Feng**, L. Formanski, H. Zhang, J. Lin
124. Model cellular membrane for the study of nonclassical protein transport. **S. M. Sterling**, L. Li, J. Fick, M. D. Mason, I. Prudovsky, D. J. Neivandt
125. Novel aza-crown ethers containing chromo- and fluoroionophores: Complexation with amino acids. **S. D. Deiab**, E. Archibong, M. Boatwright, M. Lebel, N. N. Mateeva
126. Rapid analysis of copper ore in pre-smelter head flow slurry. **N. J. Lawrence**, E. B. Walker
127. SEM/EDX analysis of pigmentation found on Neolithic bone fragments. **A. F. Oliveri**, R. R. Hark
128. Studies of the 4-*tert*-butylphenyl group as a simple tag for solution phase synthesis. **P. J. Pham**, H. Chen, T. Wang, C. U. Pittman Jr., T. Li
129. Sum frequency generation in a copropagating beam geometry from model cellulose films. **L. Li**, S. M. Sterling, J. Fick, M. D. Mason, D. J. Neivandt
130. Radical transfer between noncovalently bound peptides in the gas phase. **C. Meneses**, T. Ly, R. R. Julian

MONDAY MORNING

Section A

Salt Palace Convention Center
155 F

Current Practices in Understanding Atmospheric Chemistry
New Insights into Chlorine Chemistry

J. Hansen, *Organizer*

8:30 131. Impact of recent laboratory measurements of the ClOOCl cross section on our understanding of polar ozone chemistry. **R. Salawitch**, T. Canty, R. Stimpfle, D. Wilmouth, J. G. Anderson, M. von Hobe, F. Stroh, M. Rex, R. Schofield, M. Santee, D. E. Kinnison, M. J. Kurylo, B-M. Sinnhuber
9:00 132. Understanding of ozone loss rates in the polar vortex: Models and measurements. **M. Rex**, R. Schofield, T. Canty, R. Salawitch
9:30 133. Laboratory studies of rate-limiting steps in the catalytic destruction of polar stratospheric ozone. **S. Sander**, K. Bayes, K. Hume
10:00 134. Halogen photochemistry and its impact on polar stratospheric ozone. **J. B. Burkholder**
10:30 135. Chlorine catalyzed stratospheric ozone destruction: New insights and open questions. **M. von Hobe**, F. Stroh
11:00 136. Photochemical studies of atmospheric chlorinated species. **S. North**, K. S. Dooley, M. P. Grubb
11:30 137. Accurate predictions of the thermodynamic properties of the halogen oxides including the XYO_2 isomers for X and Y = Cl, Br and I. **D. A. Dixon**, M. H. Matus, M. T. Nguyen, D. J. Grant, E. B. Garner, K. A. Peterson, J. S. Francisco
12:00 138. Accurate ab initio electronic spectra of Cl_2O_2 isomers. **K. A. Peterson**, M. H. Matus, D. A. Dixon, J. S. Francisco
12:30 139. How to predict theoretical quantitative thermokinetic parameters: Application to halogenated systems of atmospheric interest. **F. Louis**, S. Canneaux, J-F. Pauwels

Section B

Salt Palace Convention Center
251 E

Nonlinear Optical Methods for Surface Analysis and Characterization

J. C. Conboy, *Organizer*

8:30 Introductory Remarks.
8:40 140. Selective adsorption of ions at liquid surfaces studied by UV SHG spectroscopy. D. E. Otten, R. M. Onorato, P. B. Petersen, **R. J. Saykally**
9:10 141. At the water's edge: Understanding environmentally important processes at aqueous surfaces. **G. L. Richmond**

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9:40 142. Surface vibrational spectroscopy of the HDO:D_2O/silica interface. A. Eftekhari-Bafrooei, **E. Borguet**
10:10 Intermission.
10:25 143. Ultrabroadband vibrational sum-frequency spectroscopy of hydroxyl overtones at mineral/aqueous interfaces. **O. Isaienko**, E. Borguet
10:45 144. Phase-sensitive sum-frequency vibrational spectroscopy for isotopically mixed water interfaces. C. Tian, **Y. R. Shen**
11:15 145. Orientational motions of chemical groups at the air/water interface. **K. B. Eisenthal**, Y. Rao
11:45 146. Polarization-rotation and 2-D IR-visible sum frequency generation spectroscopy for surface analysis. **K. C. Chou**

MONDAY AFTERNOON

Section A

Salt Palace Convention Center
155 F

Ultra High Stability Materials for Separations Science

M. R. Linford, *Organizer*

1:30 147. Boron-doped diamond particles as a stationary phase in electrochemically modulated liquid chromatography. **G. W. Muna**, V. M. Swope, G. M. Swain, M. D. Porter
2:00 148. Direct polymer attachment on hydrogen/deuterium-terminated diamond particles with solid phase extraction on the resulting sorbents. **L. Yang**, M. A. Vail, A. Dadson, M. R. Linford
2:30 149. Sol-gel titania-, zirconia- and germania-based hybrid organic-inorganic coatings and monolithic beds for ultrahigh stability in separation and sample preparation under aggressive environments. **A. Malik**, S. S. Segro, L. Fang, E. Turner, A. M. Shearrow, J. Triplett
3:00 150. Highly stable core shell diamond for solid phase extraction and high performance liquid chromatography. **G. Saini**, M. A. Vail, A. Dadson, M. R. Linford
3:30 151. Surface modification of silica and alumina for selective metal ions' extraction. **T. M. Abdel-Fattah**, M. E. Mahmoud, M. M. Osman
4:00 152. Direct attachment of epoxides and isocyanates to hydroxyl-terminated microdiamond surfaces for use in chemical separations. **L. A. Wiest**, G. Saini, S. S. Tartakoff, S. L. Castle, M. A. Vail, A. Dadson, M. R. Linford
4:30 153. Hybrid, high-temp midpolarity siloxanes for high temp GC. **S. L. Reese**
5:00 154. Progress in the mechanistic studies of electrochemically modulated liquid chromatography. **G. F. M. Pimienta**, M. D. Porter

Section B

Salt Palace Convention Center
251 E

Nonlinear Optical Methods for Surface Analysis and Characterization

J. C. Conboy, *Organizer*

1:30 155. Nonlinear spectroscopic characterization of model membrane systems. **K. A. Briggman**
2:00 156. Interfacial structures of lipid films studied by SFG spectroscopy. **S. Ye**, Y. Tong, H. Liu, N. Li, M. Osawa
2:30 157. Influence of transmembrane peptides on lipid flip-flop studied by sum-frequency vibrational spectroscopy. T. C. Anglin, K. L. Brown, **J. C. Conboy**
3:00 Intermission.
3:15 158. Nonlinear optical ellipsometry: Methods and applications. **G. J. Simpson**

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3:45 159. Combining sum frequency spectroscopy and fluorescence microscopy: Motivation, instrumentation and sample preparation. S. M. Sterling, E. S. Allgeyer, M. Gunewardene, S. T. Hess, M. D. Mason, **D. J. Neivandt**
4:15 160. Sum frequency generation imaging of surfaces. **S. Baldelli**, K. Cimatu
4:45 161. DNA at interfaces studied by SHG and SFG. **F. M. Geiger**

Frontiers in Imaging Biological Nanostructures Sponsored by BIOL, Cosponsored by ANYL, COLL, PHYS, POLY, and NANO‡

Undergraduate Research Poster Session: Analytical Chemistry Sponsored by CHED, Cosponsored by ANYL and SOCED

TUESDAY MORNING

Section A

Salt Palace Convention Center
155 F

Nonlinear Optical Methods for Surface Analysis and Characterization

J. C. Conboy, *Organizer*

8:30 162. Studying the structure of aqueous interfaces with VSFS. **P. S. Cremer**, Y. Fan, L. Yang, Y-Q. Gao
9:00 163. Links between molecular structure and performance at interfaces. **J. E. Patterson**, L. R. Baker, A. D. Curtis, S. B. Moxley, B. J. Nielson, A. D. Quast, J. W. Workman
9:30 164. Monitoring surface chemical functionalization by sum-frequency generation spectroscopy. A. Yatawara, G. Tiruchinapally, A. N. Bordenyuk, P. R. Andreana, **A. V. Benderskii**
10:00 Intermission.
10:15 165. Vibrational sum frequency studies of carboxylic acid deprotonation initiated by cation binding. C. Y. Tang, **H. C. Allen**
10:45 166. Charged species adsorption on fluorocarbon and hydrocarbon self-assembled monolayers. **A. J. Hopkins**, G. L. Richmond
11:05 167. Using molecular structure to control interfacial organization in films and bulk liquids at polar solid surfaces. **R. A. Walker**, M. R. Brindza, F. Ding, J. Fourkas, Q. Zhong
11:35 168. Combined Raman and SFG study of the adsorption of cationic surfactants on silica. **C. D. Bain**, E. C. Tyrode, D. Woods

TUESDAY AFTERNOON

Section A

Salt Palace Convention Center
155 F

Nonlinear Optical Methods for Surface Analysis and Characterization

J. C. Conboy, *Organizer*

1:30 169. SFG studies on buried polymer interfaces. **Z. Chen**
2:00 170. Nonlinear optical studies of polymer interfaces. **L. J. Richter**
2:30 171. Nonlinear light scattering spectroscopy from polymorph microspheres: Ultrasensitive detection of buried nanoscopic domains. **S. Roke**
3:00 172. Second harmonic generation of chiral crystals: Applications for the rapid and selective detection of protein crystallization. **R. D. Wampler**, D. J. Kissick, H. Wang, E. J. Gualtieri, C. J. Dehen, G. J. Simpson
3:20 Intermission.
3:40 173. Surface vibrations of a noncentral symmetric crystal probed by sum-frequency spectroscopy. **W-T. Liu**, Y. R. Shen
4:00 174. Local interfacial electronic structure of thin oligothiophene films on Si/SiO_2. **M. P. Steele**, M. L. Blumenfeld, O. L. A. Monti
4:20 175. Extraordinary plasmon coupling in gold nanoparticle arrays for enhanced second harmonic generation. **D. K. Roper**, W. Ahn, B. Taylor, A. G. Dall'Asén
4:40 176. Nonlinear optical characterization of silver nanoparticle substrates for single molecule SERS. **N. J. Borys**, M. J. Walter, J. M. Lupton

WEDNESDAY MORNING

Section A

Salt Palace Convention Center
155 F

Clinical Chemistry Adopting LC/MS/MS: Esoteric and Routine Assays

A. L. Rockwood, *Organizer*

8:30 177. Integrated serum proteomics approach that allows for predictive biomarker discovery. **S. W. Graves**
9:00 178. Development of a Dx peptide assay: A plasma renin activity mass spectrometry assay. **N. Clarke**, C. Bystrom
9:20 179. Reference intervals and urine/serum correlation for hepcidin 25. **R. Panahi**
9:40 180. High throughput characterization of amplified nucleic acids by ESI-TOF mass spectrometry: Applications to pathogen detection and characterization. **S. A. Hofstadler**, L. Blyn, R. Sampath, K. S. Sannes-Lowery, J. J. Drader, M. Eshoo, T. Hall, D. J. Ecker
10:00 181. Determination of vitamin D metabolites in serum using LC-MS and LC-MS/MS. **M. Bedner**, K. W. Phinney, L. C. Sander
10:20 182. Liquid chromatography mass spectrometry in clinical chemistry for esoteric and routine assays. **M. P. George**
10:40 183. Analyzing nicotine and related substances in urine, serum/plasma by liquid chromatography-tandem mass spectrometry for clinical drug abuse. **B. Yue**, A. L. Rockwood
11:00 184. Steroid profiles in ovarian follicular fluid. **M. M. Kushnir**, T. Naessen, A. L. Rockwood, J. Bergquist
11:20 185. Development of tandem mass spectrometry assays for biomarkers of oxidative stress in urine. **D. Milligan**, S. P. Young, A. Tolun, J. Sztaray, D. Il'Yasova

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WEDNESDAY AFTERNOON

Section A

Salt Palace Convention Center
155 F

Addressing Analytical Challenges with Mass Spectrometry

K. Van Horne, *Organizer, Presiding*

1:30 Introductory Remarks.
1:35 186. Meeting the challenge to search for signs of life using laser desorption Fourier transform ion cyclotron resonance mass spectrometry. **J. R. Scott**, C. D. Richardson, N. W. Hinman, J. M. Kotler, T. R. McJunkin
2:05 187. Characterization of biomolecules using matrix-assisted laser desorption electrospray ionization coupled to Fourier transform ion cyclotron resonance mass spectrometry. **J. S. Sampson**
2:25 188. Depth profiling of organic light emitting diodes in ToF-SIMS and XPS using in situ cluster ion beam sputtering. B-Y. Yu, W-C. Lin, W-B. Wang, Y-C. Lin, J-H. Jou, **J-J. Shyue**
2:45 189. Design and performance of the halo ion trap mass analyzer. **M. Wang**, D. E. Austin, S. E. Tolley, B. J. Hansen, A. R. Hawkins, E. D. Lee, M. L. Lee
3:05 Intermission.
3:35 190. GC-MS and GC-IRD studies on the ring isomers of N-methyl-1-methoxyphenyl-1-methyl-2-propanamines related to 3,4-MDMA. **T. Awad**, H. M. Maher, J. DeRuiter, C. R. Clark
3:55 191. MALDI triple quadrupole mass spectrometry: A high throughput acquisition tool in enzyme inhibitor screening. **P. J. Vollmerhaus**, R. Rathore, J. J. Corr, K. D. Greis
4:15 192. Mass spectrometric speciation of monorhamnolipids from *P. aeruginosa* ATCC 9027 and their complexation chemistry with Pb^{2+} and UO_2^{2+}. **T. A. Veres**, A. Somogyi, J. E. Pemberton
4:35 193. Ultrafast ion activation offers significant advantages for tandem mass spectrometry. C. L. Kalcic, T. C. Gunaratne, A. D. Jones, G. Reid, **M. Dantus**

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THURSDAY MORNING

Section A

Salt Palace Convention Center
155 F

Advances in Micro- to Nano-fluidic Separations and Systems Microfluidics Cosponsored by NANO

A. T. Woolley, *Organizer, Presiding*

8:30 194. Teaching old liquids new tricks: Aqueous two-phase systems for cell and reagent micropatterning. **S. Takayama**, H. Tavana, A. Jovik, B. Mosadegh
9:00 195. Proteomics: A digital microfluidic approach. **V. N. Luk**, M. J. Jebrail, A. R. Wheeler
9:20 196. Integrated affinity column/capillary electrophoresis microdevices for *alpha*-fetoprotein analysis in human serum. **W. Yang**, X. Sun, A. T. Woolley
9:40 197. Print-and-peel fabrication for microfluidics. M. Thomas, B. Millare, J. M. Clift, **V. I. Vullev**
10:00 Intermission.
10:15 198. Improvements to multilayer polymer microfluidic systems: Increased template robustness and integrating affinity agents to enhance protein analysis. **D. J. Eves**, A. T. Woolley
10:35 199. Withdrawn.
10:55 200. Development of an integrated microfluidic device for RNA structural analysis. **B. Wang**, W. Kunin
11:15 201. Analysis of organic biomolecules in challenging "real-world" samples by microchip capillary electrophoresis on the Mars organic analyzer. **A. Stockton**, T. N. Chiesl, J. R. Scherer, R. A. Mathies
11:35 202. Polymeric microfluidic platforms for the proteins separation. **J. K. Osiri**, S. A. Soper

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THURSDAY AFTERNOON

Section A

Salt Palace Convention Center
155 F

Advances in Micro- to Nano-fluidic Separations and Systems Nanofluidics and Surfaces Cosponsored by NANO

A. T. Woolley, *Organizer, Presiding*

1:30 203. Optical nanofluidics. **C. D. Bain**, A. D. Ward, C. D. Mellor, D. Woods
2:00 204. Coulombic dragging of molecular assemblies on nanotubes. **P. Kral**
2:20 205. Electrically gated nanopores for single molecule separation. **J. B. Edel**, M. Ayub, T. Albrecht
2:40 206. On-chip integration of plasma separation and multiplexed cancer marker detection. **O. Vermesh**, U. Vermesh, R. Fan, A. Srivastava, B. Yen
3:00 Intermission.
3:15 207. Sodium silicate-based sol-gel structures as proton exchange membranes for microfluidic fuel cells. **D. Dutta**, C. Macdonald, N. Yanagisawa
3:35 208. Reversible glycoprotein capture by surface-immobilized boronic acids possessing a low pK_a. **J. M. de Guzman**, R. L. McCarley
3:55 209. In situ microarray fabrication and analysis using a microfluidic flow cell array integrated with surface plasmon resonance microscopy. **J. Liu**, M. A. Eddings, B. K. Gale, J. Shumaker-Parry

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BIOT

Division of Biochemical Technology

H. Zhao, *Program Chair*

MONDAY AFTERNOON

Undergraduate Research Poster Session: Biochemistry Sponsored by CHED, Cosponsored by BIOL, BIOT, and SOCED

TUESDAY MORNING

Naturally Nano Sponsored by CHED, Cosponsored by PRES‡, NANO, BIOT‡, I&EC, and INOR‡

TUESDAY AFTERNOON

Naturally Nano Sponsored by CHED, Cosponsored by PRES‡, NANO, BIOT‡, I&EC, and INOR‡

WEDNESDAY MORNING

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WEDNESDAY AFTERNOON

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THURSDAY MORNING

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THURSDAY AFTERNOON

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