



ON-SITE MEETING PROGRAM



**237th American Chemical Society
National Meeting & Exposition
Salt Lake City, UT
March 22 – 26, 2009**



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 HO₂ 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. Njegie, 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 HO₂ radicals. **G. Tyndall**, Y. Tang, J. J. Orlando, A. S. Hannon
- 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. Thieme
- 2:50** 9. Sulfur containing radical chemistry: CH₃SO₂ → CH₃ + SO₂. **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-N₂ and HO₂-N₂ 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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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-Fadi, 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. Ozeta, J. R. Fishpaugh
- 18.** Development of a LC/MS/MS method using selected markers for establishing a chemical fingerprint for clandestine methamphetamine. **S. B. Madreddy**, 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 (ESI/MS) of intact lipids and fatty-acid methyl esterification/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 Pb²⁺ and UO₂²⁺ 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. Peister**, 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 ¹³C 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. Spanning, 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. Sopaci, A. S. Demir
- 58.** Functionalization of porous graphite 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. Ahlstrom, 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. Namboodi, 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. Grinshteyn, **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-deceny sulfate and 10-undeceny leucinate as pseudo-stationary phases in MEKC. **C. Akbay**, D. Ahlstrom, 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. About-Fadi**, A. M. Mahmoud, I. A. Darwish, N. Y. Khalil, A. Alobaid
- 67.** Extraction of potential chemical attractants from the Blackeye Susan. **R. N. Juddkins**, 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 nano-electrospray 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/237/nm/techprogram/.



NOTE: Abstracts public availability on January 26, 2009; rooms and times subject to change.

Linear solvation energy relationships of novel binary mixed surfactants in micellar electrokinetic chromatography

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The use of monomeric surfactants of sodium 8-nonyl sulfate (SNoS), sodium 10-undecenyl leucinate (SUL) and their five binary mixtures were examined as pseudostationary phases for separation of 29 benzene derivatives in micellar electrokinetic chromatography (MEKC). Sodium dodecyl sulfate, a surfactant commonly used in MEKC, was also evaluated. The critical micelle concentration (cmc), efficiency of surface tension reduction (C_{20}), surface tension at cmc (γ_{cmc}), partial specific volume (PSV), methylene selectivity, electrophoretic mobility values and the elution window of all surfactant systems were determined using a variety of analytical techniques. The mixed surfactants were found to have cmc values between those of SNoS and SUL. The C_{20} , methylene selectivity and mobility values were significantly different while PSV and γ_{cmc} values were similar or slightly different for each surfactant system. Although the elution orders of non-hydrogen bonding benzene derivatives were similar in all surfactant systems, those of hydrogen bond-acceptor and hydrogen bond-donor derivatives were somehow different. In addition, the retention times were found to be dependent on surfactant type. Linear solvation energy relationships (LSER) and free energy of transfer studies were also successfully applied to investigate the effect of the type and composition of pseudostationary phases on the retention mechanism and selectivity in MEKC. Based on LSER data, the overall nature of the solute-surfactant system interactions was found to be significantly different due mostly to the different nature of the surfactants' systems.

[General Posters](#)

7:00 PM-9:00 PM, Sunday, March 22, 2009 Salt Palace Convention Center -- Hall 5, Poster

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[The 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009](#)