

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

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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. Nielsen, A. D. Quast, J. W. Workman**
- 9:30 164.** Monitoring surface chemical functionalization by sum-frequency generation spectroscopy. **A. Yatawara, G. Tiruchinappally, A. N. Bordenyuk, P. R. Andreatina, 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: Ultra-sensitive 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/SiO₂. **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 Pb²⁺ and UO₂²⁺. **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 α -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. Vulev**
- 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. Chiest, 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**

Frontier Applications of Nanotechnology in Engineering Extracellular Matrices Sponsored by COLL, Cosponsored by ANYL, BIOT, and NANO⁺

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

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WEDNESDAY MORNING

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THURSDAY MORNING

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