46th Midwest/39th Great Lakes Joint Regional Meeting of the American Chemical Society

Technical Program

Keith J. Stine, Program Chair
Darrell Clinton, Program Co-Chair

Sheraton Westport Chalet Hotel
Saint Louis, MO

WEDNESDAY AFTERNOON SESSIONS
OCTOBER 19, 2011

Wednesday, October 19, 2011, 1:00 PM – 5:20 PM
Nanoscience General Session A
Room: Alpine I


1:40 3. Aniline capped gold colloids by solvated metal atom dispersion method. Y. Sun, K. J. Klabunde

2:00 4. Effects of the potential energy landscape on exciton delocalization in single 1-d quantum wires. V. L. Wayman, R. A. Burnett, B. S. Hoener, P. J. Morrison, F. Wang, W. E. Buhro, R. A. Loomis

2:20 5. Effect of doping transition metal ions on silica and titania aerogel systems. M. N. Weerasinghe, K. J. Klabunde

2:40 6. Coaxial Silicon Coating on Vertically Aligned Carbon Nanofibers for High-Performance Lithium-Ion Batteries. S. A. Klankowski, J. Li, R. Rojeski

3:00 Break.

3:40  8. Tuning titanium dioxide nanomaterials for renewable energy applications. X. Chen

4:00  9. Hybrid titanium dioxide nanomaterials for dye-sensitized solar cells. H. He, Y. Zhong, M. Dubey, M. Shrestha, L. Si


5:00 12. Solution-based synthesis of crystalline titanium disulfide nanobelts. V. V. Plashnitsa, P. Tongying, G. Krylova, M. K. Kuno

Wednesday, October 19, 2011, 1:00 PM – 4:40 PM
Organic Chemistry General Session A
Room: Geneva

1:00 13. Synthesis of hybrid arylene ethynylene macrocycles via alkyne metathesis depolymerization. D. E. Gross, J. S. Moore

1:20 14. Aromatics from pyrones: 4-Substituted alkyl benzoates from alkenes, coumalic acid and methyl coumalate. S. J. Riley, G. A. Kraus

1:40 15. Modular Syntheses of Tetrahydro Benzoquinolines and Dihydro Benzoindoles via Sequential Copper, Ruthenium and Palladium Catalyzed Reactions. S. N. Raikar, H. Malinakova

2:00 16. Reaction pairing: A modular approach to diversity-oriented synthesis of benzofused sultams. J. K. Loh, T. B. Samarakoon, A. Rolfe, S. Yoon, P. R. Hanson*


3:00 Break.


3:40 20. Enhancing photoreactivity of co-crystals by utilizing molecular pedal motion in the organic solid state. R. H. Groeneman, E. Elacqua, L. R. MacGillivray
4:00 21. New insights into an alternate mechanism for oxidation of alcohols using iodine (V) reagents. B. Raya, K. K. Madne, S. Jajam, T. K. Vinod


Wednesday, October 19, 2011, 1:25 PM – 5:00 PM
Small Chemical Businesses - True Stories of Success from Chemical Entrepreneurs
Room: Alpine II

Joseph Sabol, Organizer

Supported by Division of Small Chemical Businesses

1:25 Introductory Remarks.
1:30 23. From sewage sludge to ebooks: An academician's ventures into the small business world. S. E. Manahan
2:05 24. So, you want to be a consultant? Here's how to do it. D. Webster
2:40 Break.
3:00 25. NUtech Ventures: Catalyzing startup success. J. Garrity
3:35 26. Terminated to terminator. J. Jost
4:10 Panel Discussion
4:55 Concluding Remarks.

Wednesday, October 19, 2011, 1:30 PM – 4:40 PM
Pharmaceutical Chemistry
Room: St. Moritz

Todd Stark, Organizer

1:30 Introductory Remarks.
1:40 27. Chemistry in the pharmaceutical industry, part one. T. M. Stark

3:00  Break.

3:20  29. Pyrrole-imidazole Polyamides active against Human Papillomavirus (HPV) in cell and tissue culture. J. K. Bashkin

4:00  30. Chemistry in the pharmaceutical industry, part two. T. M. Stark

   A special roundtable discussion associated with this symposium will be held from 7pm – 8pm in the St. Moritz room.

   “The Business of Pharmaceutical Chemistry”: A roundtable of scientists will discuss their current roles in the pharmaceutical industry that involve placing dollar values on chemistry effort, chemical compounds, and pharmaceutical products. Each panelist will describe how they arrived at their current position and together discuss the skills required to succeed in business-focused, pharmaceutical chemistry careers.

   Participants:

   Todd Stark, Business Development Manager, Johnson Matthey Pharma Services
   Helen Anderson, VP Commercial Development, Harvard Drug Group
   Karthik Raghavan, CEO, Sentio BioSciences LLC
   Katie Grayson, Sr Director, Technical Affairs, EAG Life Sciences division of Evans Analytical Group
   Umashanker Sampath, Director, New Business Development, Reliable Biopharmaceutical Corporation
   Matthew T Reding, Procurement Specialist Consultant II, Biologics Strategic Sourcing–Small Molecules, EMD Millipore

Wednesday, October 19, 2011, 1:30 PM – 5:00 PM
Revitalizing the Heartland's Chemical Economy
Room: Davos

John Borchardt, Lisa Balbes, Organizers

Supported by Division of Professional Relations, and an ACS Innovative Project Grant for Divisional Enhancement

1:30  Introductory Remarks.


2:05  32. R&D phoenix: new labs arising from the ashes. J. K. Borchardt

2:35  33. Tech transfer & commercialization: Applied research and gap funding. R. Silva
3:05  Break.

3:25  34. Divergence: From startup to acquisition, a success story.  **D. Rapp**

3:55  35. Innovators turning into entrepreneurs: How to get started.  **D. J. Broderick**

4:25  Panel Discussion.

4:55  Concluding Remarks.

**Wednesday, October 19, 2011, 5:00 PM – 7:00 PM**
Chemistry of Ice Cream
Room: Matterhorn

Brent Znosko, *Organizer*

*Supported by Education Division of the American Chemical Society*

5:00  36. Designing ice cream quality with the aid of a microscope.  **H. Goff**

The Undergraduate Ice Cream Social begins at 5:40 pm.
Wednesday, October 19, 2011, 7:00 PM – 9:00 PM
SciMix Poster Session
Versailles Ballroom


38. In search for natural tau fibrillization inhibitors: Preliminary evaluation of horse apple fruit extract. S. Awan, A. Abraha, E. A. Abourashed


40. Chemical synthesis of α-deuterated amino acid, biosynthesis of Clostridium symbiosum glutamic dehydrogenese (cs-GDH) and study of kinetic isotope effect of dehydrogen reaction of glutamic acid catalyzed by cs-GDH. X. Chen, S. J. Maniscalco, H. F. Fisher

41. Time-averaging approximation in the interaction picture for absorption line shape and vibrational energy transfer in liquid water. M. Yang, J. L. Skinner

42. Control of surface functionality via photopatterning: Self-assembled monolayers for small molecule and protein attachment. M. Hynes, J. Maurer

43. Contribution of core/shell and core/shell/shell lattice interfaces on the optical properties of quantum dots? B. O. Omogo, M. Benamara, C. D. Heyes

516. Increasing biochar surface area: Effects of various milling parameters. S. C. Peterson, M. A. Jackson, S. Kim, D. Palmquist

45. Characterization of arsonic acid self-assembled monolayers (SAMs): A new class of monomers. N. A. LaFranzo, J. A. Maurer

46. Mineral Levels in Mature Soybean Seed Are Not Altered by Glyphosate Treatment or the Glyphosate Tolerance Trait. D. R. Lundry, R. M. Alba, A. H. Culler, M. S. Bleek

47. Self-assembly and dynamics in pore formation by amphiphilic heptapeptides. S. Negin

48. 19F NMR studies reveal pH susceptibility of domain 2 of anthrax PA. F. Chadegani, J. Bann


51. Theoretical studies on the optoelectronic properties of N-fused quinazolininiums. O. Alawode, S. Rayat


53. Morphology-controlled synthesis of nanosize cuprite (Cu₂O). K. M. Shrestha, K. J. Klabunde

54. Computational investigation of the extrusion of PhSi⁺⁺ from a 7-phenyl-7-silanorbornadienyl cation in solution. S. E. White, P. P. Gaspar


56. Reaction of hemiacetals with Pd π-allyls: Stereoselective synthesis of cyclic ethers. S. Dawadi, C. D. Spilling

57. AFM imaging analysis of pUC19 DNA on modified mica. N. Nezamabadi, J. C. Goeckner, C. Wei, E. J. Voss

58. NMR observations of optical pumping events in si-GaAs and GaAs quantum wells. D. Wheeler, E. Sesti, W. Worthoff, C. Stanton, S. E. Hayes

59. Elucidating the energy-transfer mechanisms at the interface between the chlorosome and FMO protein in green sulfur bacteria. G. S. Orf, D. Bina, R. E. Blankenship


62. Preparative Studies of Re(I)-Terpyridine Complexes. D. R. Black, S. E. Hightower

63. Tether-Mediated Ring-Closing Metathesis Studies. S. Maitra, R. Chegondi, J. Markley, P. R. Hanson*
64. Selective sialylations by the use of C-5 modified S-benzoxazolyl sialyl donors. C. Gobble, C. De Meo, M. Stark, P. Patel, B. Harris


68. Reductive Photoelimination of Bromine from a Pt(IV) Perylene Complex. M. Masjedi, A. Raphael Karikachery, P. R. Sharp

69. Synthesis and reactivity of bidentate phosphine platinum(II) peroxo compounds. M. A. Moody, P. R. Sharp

70. Triflic acid promoted synthesis of various azapolycyclic aromatic compounds. A. Kethe, A. Li, R. Naredla, D. A. Klumpp*

71. Assignment of proton resonances for damaged DNA using two-dimensional nuclear magnetic resonance. S. P. Kramer, B. Medrano, G. Meints


73. Nanorattles: Silver nanoparticles entrapped in porous polymer nanocapsules. S. N. Shmakov, E. Pinkhassik

74. Synthesis and functionalization of Rhenacarboranes as drug-delivery vehicles. D. Pruitt, P. Jelliss

75. Studies towards the electrooxidative coupling of heterocycles to olefins. J. A. Smith, K. D. Moeller


78. Anodic olefin coupling reactions: Probing reaction mechanisms and relative reaction rates via competition experiments. J. M. Campbell, H. Xu, K. D. Moeller


81. Amphiphilic Behavior of Alkyl-chained Resorcinarenes. **P. Ogirala**


83. Hydrogen atom abstraction from rhodium hydrides by nitroxy radicals and generation of LRh²⁺. **J. F. Dunne**, A. Bakac

84. Microelectrode array-based chemistry. J. Bartels, **S. Uppal**, K. D. Moeller
THURSDAY MORNING SESSIONS
OCTOBER 20, 2011

Thursday, October 20, 2011, 8:00 AM – 12:00 PM
Biological Mass Spectrometry
Room: Alpine I

Henry Rohrs, Joshua Coon, Michael Gross, Organizers

Supported by Advion, Leco, Waters, JEOL, Thermo Scientific, Bruker, AB Sciex, Agilent Technologies, Shimadzu, and Division of Analytical Chemistry

8:00 Introductory Remarks.

8:05 85. Redox profiling and protein characterization via MS to investigate thiol-based regulatory mechanisms induced by oxidative stress in plants. L. M. Hicks, J. M. Jez, S. Alvarez, A. Galant, Z. Liu

8:50 86. Functional proteomics in Arabidopsis G-protein signaling in response to ABA. S. Alvarez, L. M. Hicks, S. Pandey


10:05 Break.


11:10 89. The use of hydrogen/deuterium exchange-mass spectrometry in VDR modulator development. J. Zhang

Thursday, October 20, 2011, 8:00 AM – 12:00 PM
Nanoscience General Session B
Room: Basel

8:00 90. Formation of Hydrogen-Bonded Nanostructures through the Self-Assembly of Mixed Macrocycles. C. R. Pfeiffer, A. K. Maerz, D. A. Fowler, M. Mistry, C. L. Barnes, J. L. Atwood

8:40  92. Nanocapsules with programmed nanopores. **E. Pinkhassik**

9:00  93. Liposome-templated polymer nanocapsules: from synthetic methods to smart containers. **S. A. Dergunov**, M. D. Kim, E. Lindner, E. Pinkhassik


9:40  Break.

10:00 95. Polymeric “single molecule magnet” nanoparticle as a magnetic resonance imaging contrast agent. **D. Pan**, B. Kim, A. H. Schmieder, A. J. Stacy, S. A. Wickline, G. M. Lanza


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Thursday, October 20, 2011, 8:00 AM – 12:00 PM
Natural Products Synthesis
Room: Zurich

Christopher D. Spilling, **Organizer**

Supported by Division of Organic Chemistry, Reliable Biopharmaceutical, Covidien

8:00  101. Approaches to Tetrahydrofuran-Containing Natural Products. **C. D. Spilling**
8:30  102. Semi-synthetic opioids from diene natural products. T. Mannino

9:00  103. Natural product synthesis through tandem cationic reactions. D. F. Wiemer

9:30  104. Phosphate tether-mediated protocols for natural product synthesis. P. R. Hanson

10:00 Break.

10:20  105. Progress toward the synthesis of Antascomicin B. J. M. Hutchison, D. R. Clay, J. Rivero, M. C. McIntosh

10:50  106. Total synthesis of marine alkaloids. C. J. Lovely


Thursday, October 20, 2011, 8:00 AM – 11:40 AM
Organic Chemistry General Session B
Room: Geneva

8:00  108. Iodine Lewis acid catalysis in organic chemistry: Iodine bonding between molecular iodine and triethyl orthoformate. S. Coyle, R. Glaser


8:40  110. Intramolecular hydroamination of olefins using a novel salicylaldimine calcium complex. K. Kunchithapatham, J. P. Stambuli

9:00  111. A four step route to a benzannulated benzocarbazole. J. Beasley, G. A. Kraus


9:40  Break.

10:00 113. Supported patterned lipid bilayers on glycol-terminated monolayers: Formation and characterization. M. K. Strulson, J. A. Maurer

10:20 114. Improved substituent constant for predicting the strength of cation-\(\pi\) binding. S. Wireduaah, T. M. Parker, C. C. Kirkpatrick, M. Lewis

11:00 116. Anodic electrochemistry: New reaction development and the use of solar power. A. M. Redden, K. D. Moeller

11:20 117. Effects of antioxidants on atomic oxygen O(3P) induced cleavage of DNA. J. Korang, R. D. McCulla

Thursday, October 20, 2011, 8:00 AM – 11:40 AM
Physical Chemistry General Session A
Room: Zermatt

8:00 118. CREPES, a tool for conformational searching on a potential energy surface. M. P. Ver Haag, T. A. Holme

8:20 119. Development and testing of torsional potentials for peptides and proteins. Y. Jiao, F. Chen, P. E. Smith


9:00 121. Calixarene and pyrogallolarene "suction cups" for the tethering of peptides. M. D. Breite, J. E. Adams


9:40 Break.


10:20 124. TDDFT studies of optical properties of silver nanoparticles: Octahedra, truncated octahedra, and icosahedra. G. Bae, C. M. Aikens

10:40 125. Structural and single particle and ensemble spectroscopic studies of various core-shell biofunctional quantum dots: Implications for biological imaging. C. D. Heyes

11:00 126. Attempts to fabricate high efficiency chalcogenide solar cells through patterned growth of nanowires. M. Nath, S. Patil

11:20 127. Fluorescence intermittency of CdSe nanorods in PMMA/P3HT polymer blend. S. Roy, D. A. Higgins, V. Chikan

**Thursday, October 20, 2011, 8:00 AM – 12:00 PM**  
**Plant Biotechnology: Blurring the Line between Chemistry and Biology**  
**Room: Bern**

Joseph Jez, Xuemin Wang, *Organizers*

*Supported by Pioneer – A Dupont Business, EPL Analytical Services, Divergence, VWR, Integrated DNA Technologies, Inc., Monsanto, Sequoia Sciences*

**8:00** Introductory Remarks.

**8:05**  **128.** Carbonyl chemistry-based biorenewable chemicals: Diversifying fatty acid synthesis with polyketide synthesis biocatalysts. **B. J. Nikolau**

**8:45**  **129.** Engineering proteins to improve biological function: Applications to Ag Biotech. **S. J. Franklin**

**9:05**  **130.** From climate change to proteins: redox proteomics of ozone-induced responses in soybean. **J. M. Jez**, A. Galant, R. P. Koester, E. A. Ainsworth, L. M. Hicks

**9:25**  **131.** Vacuolar glyphosate-sequestration correlates with glyphosate resistance in ryegrass (*Lolium spp.*): a $^{31}$P-NMR investigation. **X. Ge**, D. A. d'Avignon, J. J. Ackerman, A. Collavo, E. L. Ostrand, R. D. Sammonse

**9:45** Break.

**10:10**  **132.** Tailoring plant biomass for biofuel production. **Z. Ye**

**10:40**  **133.** Improvement of soybean nutritive value by overexpression of a key enzyme involved in the sulfur assimilatory pathway. **W. Kim**, J. M. Jez, **H. B. Krishnan**

**11:00**  **134.** Carbons for lipids or carbohydrate: identifying a potential point of metabolic modulation. **M. Li**, S. Bahn, L. Guo, W. Musgrave, A. Saettele, M. Tang, H. Berg, R. Welti, X. Wang


**Thursday, October 20, 2011, 8:15 AM – 11:30 AM**
Small Chemical Businesses - What Every Small Business Owner Needs to Know about Patents, Trademarks, and Intellectual Property
Room: Alpine II

Harry J. Guttman, Organizer

Supported by Division of Small Chemical Businesses

8:15 Introductory Remarks.

8:20 136. Small business IP – red flags and core concepts. H. J. Guttman

9:05 137. Patent information research and its role in managing intellectual property. E. S. Simmons

9:50 Break.

10:10 138. So you have an invention, now what? Important considerations when filing a patent application (develop a patent strategy!). C. M. Tellez

10:55 139. When is your molecule or method eligible for patent protection? Lessons from recent court cases and practical business guidance. S. M. Lee

Thursday, October 20, 2011, 8:30 AM – 10:00 AM
General Poster Session I
Versailles Ballroom


141. Recycling gold from electronics. A. W. Hummer, H. J. Gregg, T. L. Troyer


143. Biomimetic studies of manganese (II) dioxygenase and cobalt-substituted enzymes. J. Transmeier, F. E. Jacobsen, T. A. Jackson


145. Preparation and testing of nanoparticle materials and thin films for use as substrates in dye-sensitized solar cells. C. A. Nicholson, E. A. Wovchko
146. Complexation studies of Ru(II) and Re(I) pendant polyamine host complexes. A. M. Putt, M. Harris

147. Preparation and investigation of gallium-based materials for hydrogen storage. A. A. Fratantuono, E. A. Wovchko

148. Novel synthesis and characterization of various pyrazolylsilane compounds. N. C. Boyde, S. Mason


151. Predicting the dimensionality of metal halides and oxides. S. R. Cowin, A. M. Beatty

152. Synthesis and binding studies of anion-responsive terpyridine functionalized calixarenes. G. Chen, N. Y. Edwards

153. Synthesis of some new tridentate ligands to complex silver. L. R. Verheyen, E. Bosch

154. The (1,1) band of the $b\,^1\Sigma^+ - X\,^3\Sigma^-$ transition of $O_2$ by intracavity laser absorption spectroscopy. L. C. O'Brien, E. C. O'Brien, J. J. O'Brien

155. Reciprocal kinetic curves in electrochemical systems. M. Hankins, I. Kiss, G. Yablonsky


158. Using Knudsen effusion to measure the vapor pressure of compounds. Y. Li, C. Greenlief, G. A. Baker

159. Accurate monitoring of $x$, $y$, and $z$ magnetization at any point in an NMR pulse sequence. E. T. Satterfield, K. Woelk

160. Low-field NMR spin-lattice relaxation time-constant distributions of shale. R. E. Gerald II, L. Chi, H. Zhang, K. Woelk

162. Spontaneously synchronized current oscillations of nickel electrodissolution in an epoxy-based dual electrode microchip flow cell. Y. Jia, I. Z. Kiss

163. Using streamlined mutagenesis and screening to increase electron transfer to the B-branch pathway in bacterial photosynthetic reaction centers. K. M. Faries, P. D. Laible, L. Kressel, M. Wander, D. Holten, D. K. Hanson, C. Kirmaier

164. Photoreactions in the solid state: An NMR study. S. J. Mattler, D. A. Hirsh, K. Harstein, S. E. Hayes

165. Ship-in-a-bottle assembly of molecules in porous hollow nanocapsules. S. N. Shmakov, S. A. Dergunov, E. Pinkhassik


167. Nucleic Acid-Directed Self-Assembling Nanoparticles for Imaging and Therapy. Z. Li, J. A. Taylor

168. Enhancement of commercial antibiotics by synthetic ion channels. J. Atkins, M. Patel

169. Coadsorbent effects on DSSC performance and dye loading. J. Kofford, B. Logue

170. Self-catalyzed growth of semiconducting samarium sesquisulfide nanowires. C. M. Marin, H. Liu, M. S. Thompson, C. Cheung

171. Impact of “click” functionalization on the toxicity of titanium dioxide nanoparticles in zebrafish embryos. S. P. Yang, K. M. Louis, O. Bar-Ilan, R. J. Hamers, R. E. Peterson, W. Heideman, J. A. Pedersen

172. Conjugated polymers as photocatalysts to promote homolytic pinacol coupling of aryl-aldehydes: Effects of Lewis and Brønsted acids. W. D. Rouch, M. Zhang, R. McCulla


174. Superelectrophilic chemistry of various nitriles. E. K. Raja, D. Klumpp*

175. Rapid access to exocyclic allenes by double hydride reduction of 3-trimethylsilylthynyl-2-cycloalkenones. J. M. Kum, A. K. Urick, M. Hulce

176. Synthesis and spectra of methyl-3α-carboethoxy-7α-(4-iodobenzoxyloxy)-5β-cholanoate. H. Veeramachaneni, M. Turkyilmaz, H. Karabulut, J. R. Dias
Neutral picket fence porphyrins that bind the head group of phosphatidylglycerol, a phospholipid found in bacterial membranes. A. Alliband, D. H. Burns

From NP-HPLC to RP-UPLC: Ultra performance liquid chromatography for in-process analytical support of narcotics in the pharmaceutical industry. H. Zhong

Building addressable libraries: UV-Cross-linkable di-block copolymer strategy for functional reaction surfaces on microelectrode arrays. L. Hu, K. D. Moeller

Band-gap engineering of carborane-containing conducting polymers: A computational study. E. Harak, J. Varberg, P. Bobadova-Parvanova

Synthesis and characterization of polyionic mixed polymer nanobrushes on gold by ATRP and surface-initiated photopolymerization techniques. B. Mitrovic, C. Scott

Soybean-based epoxy-anhydride thermoset coatings. A. Paramarta, T. Nelson, X. Pan, D. Webster


Synthesis, extraction and analysis of molecularly imprinted quercetin polymers. A. Heck, B. Schenavar, G. Mwangi


Reactivity of cyclic carbonates as substrates for non-isocyanate polyurethanes. O. Bilic, I. Javni, D. Hong, J. Hong, Z. S. Petrovic

Thursday, October 20, 2011, 8:55 AM – 12:00 PM
Chemical Education Research and Practice
Room: Davos

Steve Kinsley, Susan Wiediger, Organizers

8:55 Introductory Remarks.

9:00 188. High school students' attitude towards chemistry as a science and chemistry studies. F. Mumba, V. M. Chabalengula, A. Banda, S. M. Mbewe
9:20 189. Successes and challenges in the implementation of the laboratory components of a dual credit general chemistry course. J. L. Torres y Torres, B. D. Caldwell, M. W. Ducey

9:40 190. Evaluating the probability of success in general chemistry coursework using placement testing and course prerequisite information. Y. Law, E. G. Olmstead, Jr

10:00 191. Targeting diverse learning needs in general chemistry with a buffet redesign model. K. Woelk

10:20 Break.

10:40 192. Teaching chemistry in inclusion classrooms: Implications for chemistry teacher education. F. Mumba

11:00 193. Zambian pre-service science teachers' ranking of chemistry education goals. A. Banda, F. Mumba, V. M. Chabalengula, S. Mbewe

11:20 194. Teaching assistants' successes and challenges in Assessment, Review and Instruction System (ARIS) program. G. Kinsel, V. Wong, F. Mumba

11:40 195. Impact of computer-based structured learning workshop on graduates teaching assistant's specific chemistry content. V. Wong, K. K. Priyasantha, G. Kinsel, F. Mumba

Thursday, October 20, 2011, 8:55 AM – 12:00 PM
Supramolecular Chemistry in Membranes
Room: St. Moritz

George W. Gokel, Jerry L. Atwood, Organizers

Supported by Division of Organic Chemistry

8:55 Introductory Remarks.


9:30 197. Transmembrane ion transporters made from various natural products and their analogs. S. Bahmanjah, N. Zhang, S. Rastogi, J. T. Davis

10:00 198. Protein-binding molecular switches: Designs based on supramolecular and nucleic acid chemistry. J. Jayawickramarajah, D. C. Harris, X. Su

10:30 199. Nor-seco-cucurbit[n]uril molecular containers. L. Isaacs
11:00 200. Assembly and binding properties of deep-cavity cavitands in water. B. C. Gibb

11:30 201. New strategy of transforming pharmaceutical crystal forms. J. L. Atwood, J. Tian, S. J. Dalgarno

Thursday, October 20, 2011, 10:30 AM – 12:00 PM
General Poster Session II
Versailles Ballroom


204. Self-assembled nanoparticles from non-lanthanide metal oleates for magnetic resonance imaging application. D. Pan, C. Yalaz, A. Senpan, A. H. Schmieder, S. A. Wickline, G. M. Lanza


206. Infrared studies of photochemistry of adsorbed species over semiconducting nanoparticles. J. Kristalyn, J. VanAuker, S. Bandaru, D. K. Paul, K. J. Klabunde


208. Analytical strategies for monitoring and quantifying interactions of gold nanoparticles with thiolated molecules in solution. C. Burke, M. Roca

209. Construction of functional group arrays on SAMs with the guanidium-sulfonate macromolecular synthon. G. Ruan, M. Hynes, A. Munir, J. A. Maurer

210. Attachment of a Fluorescent Dye to Core-Shell Quantum Dots. K. Luepke, S. Adrian, B. Eichler

211. Does the reaction of thiol with surface cluster atoms of Au nanoparticles, prepared by the solvated metal atom dispersion (SMAD) method, yield RS-H or RS- interactions? J. E. Matthiseen, K. J. Klabunde, D. Jose, Y. Kuo
212. Degradation of Rhodamine B Using TiO$_2$ Nanofibers Calcined in O$_2$ and H$_2$. J. Benoy, E. Obuya

213. Effects of two commercial nanoparticles on two unique environmental bacteria. K. Ruedinger, K. Crawford, S. Mueller-Spitz


215. Study of the relation of nanoporous gold structure to optical and electrochemical responses to protein binding. J. K. Bhattarai, Y. Tan, A. V. Demchenko, K. J. Stine

216. Electroanalytical studies to determine the surface morphology of nanoporous gold. A. Sharma, Y. H. Tan, J. Bhattarai, A. V. Demchenko, K. J. Stine, B. Pandey

217. Surface area and pore size characteristics of nanoporous gold subjected to thermal, mechanical, or chemical modifications studied using BET isotherm analysis, cyclic voltammetry, and scanning electron microscopy. J. A. Davis, Y. Tan, A. V. Demchenko, K. J. Stine

218. The effect of 1-methyl, 2,3 dimethylimidazolium tetrafluoroborate BDMIMBF$_4$ ionic liquid as a mobile phase additive on the adsorption behavior of tryptophan. T. Ahmad, K. Aluguvelli

219. Investigation of the effect of 1-butyl -3-methyl imidazolium tetrafluoroborate ionic liquid on the separation of basic drugs. T. Ahmad, K. Aluguvelli, T. Ahmad, S. Salam

220. Dye-loaded porous polymer nanocapsules as new optical sensor platform. M. D. Kim, S. A. Dergunov, E. Lindner, E. Pinkhassik

221. Surface chemistry studies of CO$_2$ with the MgO(100) surface. J. Wang, C. Greenlief, T. R. Marrero

222. Analysis of variance components in spectroscopic imaging data. J. Kwak, R. Reddy, S. Sinha, R. Bhargava

223. Improving the compatibility of macrocyclic polyamide compounds within ion-selective membranes for fluoride analysis. Q. Zhang, J. T. Mitchell-Koch, K. Bowman-James

224. Method for testing antibiotic residues in milk, fish, and distiller grain. J. Baldwin


228. Effect of sodium hydroxide and sodium pyrophosphate on the extraction of humic acid and humin from different source materials. C. Johnson-Edler, G. Chilom, J. Rice


231. Developing oligoureia-based anion ligands inspired by metal coordination. C. Jia, S. Li, B. Wu, K. Bowman-James

232. Diffusion of tin from TEC-8 conductive glass into mesoporous titanium dioxide in dye sensitized solar cells. J. Cabell, R. J. LeSuer

233. (Triphos)Ir(III)-Complexes for photo Chemistry Study. A. Ross, P. R. Sharp, C. Barnes

234. Elucidating the mechanism of electrocatalytic dioxygen reduction with copper complexes. M. A. Thorseth, C. S. Letko, T. B. Rauchfuss, A. A. Gewirth

235. Rhenium complexes as photocatalysts in the reduction of CO_2 to CO. E. Oweggi, V. Komreddy, D. Rillema

236. Preparation, characterization and photocurrent efficiency of Re(I) and Ru(II) bipyrazine complexes. V. Komreddy, N. Subbaiyan, E. Oweggi, D. Rillema, C. Wilkinson

237. Effect of graphene nanofillers on flexible molded polyurethane foam properties. N. Bilic, I. Javni, Z. S. Petrovic


239. Foam from cashew nut shell liquid. D. Hong, M. Ionescu, I. Javni, Z. S. Petrovic

240. Dynamic solid phase microextraction sampling for monoterpenes in the present of ozone. W. Hua, K. E. Huff Hartz


244. Dual control of selectivity in the synthesis of donor-acceptor cyclopropanes via the addition of alcohols to in situ generated cyclopropenes. P. G. Ryabchuk, J. P. Matheny, I. A. Babkov, M. Rubina, M. Rubin

245. Investigating the mechanism of formation of phenanthridine fused quinazoliniminiums from heteroenoynne-allenes. K. Robb, S. Rayat

246. Molecular Scaffold in Biocatalysis. X. Song, W. Niu, J. Guo


Thursday, October 20, 2011, 1:00 PM – 4:40 PM
Analytical Chemistry General Session A
Room: Basel

1:00  250. Enhanced Fourier transform infrared (FT-IR) spectroscopic imaging. R. K. Reddy, P. S. Carney, R. Bhargava

1:20  251. Towards the design of an enzymatic breath sensor for acetone. N. Hausmann, S. D. Minteer


2:00  253. Sub-diffraction determination of changes to the actin network by stimulated emission depletion microscopy. M. D. Lesoine, S. Bose, J. W. Petrich, E. A. Smith

2:20  254. Measurements of integrin mobility in the membrane of cultured cells using fluorescence recovery after photobleaching (FRAP) and single molecule imaging. D. Mainali, N. Arora, E. Smith

2:40  Break.

3:00  255. Scanning Angle Total Internal Reflection Raman Microscopy of Plant Cell Wall Biopolymers. E. A. Smith, K. McKee, M. Meyer, J. Lupoi

3:20  256. Design and characterization of a dual-signaling DNA sensor based on target hybridization-induced change in DNA probe flexibility. W. Yang, R. Y. Lai


4:00  258. Quantitative investigation of surface functionalization of cylindrical nanopores derived from polystyrene-poly(methylmethacrylate) diblock copolymers. F. Li, R. Diaz, T. Ito

4:20  259. In vitro simulation studies for the development of a nocturnal hypoglycemic alarm based on near-infrared spectroscopy. S. Ranasinge Pathirajage, G. W. Small
Thursday, October 20, 2011, 1:00 PM – 5:00 PM  
Biochemistry General Session  
Room: Bern

1:00  260. Utilizing enzyme cascades for deep oxidation of a variety of biofuels. **D. Sokic-Lazic**, S. D. Minteer

1:20  261. Optimizing the growth of *M. smegmatis* with respect to cell mass yield and fermentation cost. **S. O. Wendel**, A. S. Perera, P. H. Pfromm, P. Czermak, S. H. Bossmann


2:00  263. Diffusion dynamics of single molecules confined in biomimetic crowded environment. R. Welty, J. Bentley, D. Wickramasinghe, **A. A. Heikal**


2:40  Break.


4:00  268. Rapid and accurate determination of entrapped volume and permeability in liposomal suspensions. **J. T. Buboltz**


Thursday, October 20, 2011, 1:00 PM – 4:50 PM
Biological Mass Spectrometry
Room: Alpine I

Henry Rohrs, Joshua Coon, Michael Gross, Organizers

Supported by Advion, Leco, Waters, JEOL, Thermo Scientific, Bruker, Ab Sciex, Agilent Technologies, Shimadzu, and Division of Analytical Chemistry

1:00 271. New mass spectrometry technology for protein sequence analysis and beyond. J. J. Coon

1:45 272. Characterization of D-amino acid-containing peptides (DAACPs) in the central nervous system. L. Bai, E. V. Romanova, I. Livnat, J. V. Sweedler


3:00 Break.


Thursday, October 20, 2011, 1:00 PM – 2:30 PM
General Poster Session III
Versailles Ballroom


277. Anisotropy tensor alignment in \{Fe^{III}_{n}Ni^{II}_{m}\} cyanometalate-based single-molecule magnets. P. J. Janini, Y. Zhang, U. P. Mallik, N. Rath, R. Clérac, S. M. Holmes

278. Coordination of bqpp on Rhenium(I). C. J. Bosworth, D. J. Losey, D. R. Black, S. E. Hightower

279. Electronic communication and reaction chemistry of dinuclear anthracene bridged platinum complexes. Y. Li, P. R. Sharp
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<td>Reductive Photoelimination of Chlorine from Organoplatinum(IV)Chloro Complexes.</td>
<td>T. A. Perera, M. Moody, P. R. Sharp</td>
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<td>281</td>
<td>Cloning, Purification and Characterization of Acetate Kinase from Methicillin resistant <em>Staphylococcus aureus</em> Mu50 strain.</td>
<td>T. McCune, C. Wu</td>
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<td>282</td>
<td>An Exploration on Purification of putative Fructose 1, 6-Bisphosphate Adolase from Methicillin resistant <em>Staphylococcus aureus Mu50</em> strain.</td>
<td>E. Girad, C. Wu</td>
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<td>Comparative analysis of protein phosphorylation in the Protein Databank: What have we known?</td>
<td>M. Zha, J. Warnke, H. Zhong</td>
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<td>Synthesis of 3-pyridylmethyl glucosinolate from 3-pyridylacetonitrile.</td>
<td>J. W. Keppen, J. J. Clark, J. R. Mays</td>
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<td>Exploring the Significance of F427 in Anthrax Protective Antigen using $^{19}$F-NMR.</td>
<td>L. J. Ferris, J. G. Bann</td>
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<td>Optical and DNA binding studies of $N$-fused heterocyclic cations based on quinazoline scaffold.</td>
<td>C. Galloway, C. A. Larson, O. Alawode, V. K. Naganaboina, S. Rayat</td>
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<td>288</td>
<td>A putative mammalian riboswitch in the spermine biosynthetic pathway.</td>
<td>K. Del Vecchio, J. Monahan, M. McDevitt, G. Soukup, J. Soukup</td>
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<td><em>glmS</em> ribozyme mechanism and development of artificial agonists as candidate antibiotics.</td>
<td>E. Johnson, M. McDevitt, D. Renner, X. Fei, D. Berkowitz, G. Soukup, J. Soukup</td>
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<td>Thermodynamic contribution of pseudouridine-adenosine base pairs in oligoribonucleotides.</td>
<td>G. A. Hudson, R. Bloomingdale, W. Qu, V. E. Ponnusamy, B. M. Znosko</td>
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<td>Establishment of photo-activated localization microscopy (PALM) for imaging signaling complexes on the surfaces of cells.</td>
<td>B. E. Iverson, A. Hoppe</td>
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<td>Potential for using waste glycerol from biodiesel production as a carbon source for heterotrophic algal feedstock production.</td>
<td>C. Wooldridge</td>
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296. Fluorescence polarization imaging of sub-resolution membrane curvature during endocytic events. E. D. Swanson, J. G. Kerkvliet, H. D. Adam

297. Determination of adenine nucleotide levels in rat urine by HPLC to elucidate the role of resveratrol in reducing cisplatin toxicity. H. J. Gregg, A. W. Hummer, T. L. Troyer, M. A. Valentovic


301. Synthesis and Characterization of Novel 2,3,4,5-Tetraarylsilacyclopentadienes. J. Drenkow, B. Eichler

302. Soluble Luminescent 2,3,4,5-Tetraarylsiloles Synthesis and Characterization for Use in OLED Devices. B. Jackson, B. Eichler


304. Synthesis of isothiocyanates with electron-deficient aromatic rings. Z. Erickson, J. R. Mays

305. Selective COX-2 inhibition and anticancer activity of diarylalkynylsulfonamides complexed with hexacarbonyl dicobalt. P. Mancina, S. Debbert


308. Synthetic efforts towards a selective photodynamic therapy agent. F. A. Venable, Q. A. Best, C. N. Scott


311. Synthesis and DNA or RNA intercalation of 4-substituted naphthalimides. Y. Ren, T. Zahrli, L. K. Hardebeck, M. Lewis


313. Toward $^{18}$F-naproxen radiotracer synthesis via reductive elimination of a diaryliodonium salt. K. S. Glaspy, J. C. Easdon, L. Qin, K. Neumann, S. DiMagno


315. Mechanistic Investigation of the $\gamma$-C-alkylation of $\beta$-Ketoesters using Equilibrating Conditions. J. G. Hinman, W. B. Bosma, B. Andersh

316. Utilization of $\beta$-Ketoester Monoanions for Amide Formation. J. J. Remsza, B. Andersh

317. $\gamma$-C-alkylation of $\beta$-Ketoesters using Equilibrating Conditions: The Identity of the $\beta$-Ketoester. M. E. Roark, B. Andersh


319. Synthesis of 3-oxo-$\delta$-lactones via $\gamma$-C-alkylation of $\beta$-Ketoesters using Equilibrating Conditions. F. S. Couri, B. Andersh

320. Towards the synthetic development of an anion binding molecule. E. Sullivan, S. Garvey, A. Dawson, C. Bagwill, M. Lewis


Thursday, October 20, 2011, 1:00 PM – 4:40 PM
Organic Chemistry General Session C
Room: Geneva
1:00 324. “Click, Click, Click, Cyclize” strategy to novel tricyclic sultams. K. Jeon, P. R. Hanson*

1:20 325. Tether-mediated, one-pot metathesis processes: Application in small molecule and total synthesis. P. K. Venukadasula, G. M. Suryn, R. Chegondi, S. Maitra, P. R. Hanson*


2:00 327. Buckytriplet: Cyclotrimerization of Corannulyne. M. Yanney, A. Sygula, F. Fronczek, W. P. Henry, D. Beard


2:40 Break.

3:00 329. Comparing Reductive Cleavage Methods in the Structure Determination Of Natural Products. K. P. Manfredi

3:20 330. Isolation and characterization of novel natural products isolated from plants utilized in traditional folk medicine. K. N. Whitlatch, J. D. Wagoner, J. Sparks, L. G. Huggins, T. L. Troyer

3:40 331. Phosphate tether-mediated synthetic studies towards the total synthesis of fostriecin and analogs. S. Jayasinghe Mudiyanselage, J. P. McParland, P. R. Hanson

4:00 332. Synthetic studies towards (–)-lyngbouilloside and phosphate tether-mediated ring-closing metathesis studies. R. Chegondi, S. Maitra, J. Markley, P. R. Hanson

4:20 333. Recent developments on the homoallylation reaction and its application in the synthesis of the tetrahydrofuran ring. M. P. Paudyal, C. D. Spilling

Thursday, October 20, 2011, 1:00 PM – 5:00 PM
Supramolecular Chemistry in Membranes
Room: St. Moritz

George W. Gokel, Jerry L. Atwood, Organizers

Supported by Division of Organic Chemistry

1:00 334. Crystal engineering cocrystals: Application in the structure determination of a chiral ladderane. L. R. MacGillivray

1:30 335. Structural variations, dynamics, and molecular intercalation and transport in layered ammonium carboxylates. A. M. Beatty
2:00 336. Molecular pipes and boxes: Containers for anions. Q. Wang, V. W. Day, K. Bowman-James

2:30 337. Supramolecular concepts in mechanochemical synthesis. T. Friscic

3:00 338. Exploring the surface modifications of macrocycles via copper catalyzed azide-alkyne cycloaddition “click” coupling. S. M. Grayson, Y. Li, B. Gibb

3:30 339. Responsive nanoassemblies. S. Thayumanavan

4:00 340. Glowing rotaxanes: a new paradigm for optical imaging. B. D. Smith

4:30 341. Metal-organic calixarene assemblies. S. J. Dalgarno

Thursday, October 20, 2011, 1:00 PM – 3:00 PM
Technical Symposium on Plant Chemistry
Room: Davos

Brent M. Znosko, Organizer

Supported by Education Division of the American Chemical Society, Principia College

1:00 342. Evolution of herbicide resistance. D. Sammons


Thursday, October 20, 2011, 1:30 PM – 4:45 PM
High Sensitivity Spectroscopy
Room: Zermatt

James J. O'Brien, Organizer

Supported by Division of Physical Chemistry, Division of Analytical Chemistry, Coherent

1:30 Introductory Remarks.

2:10  
**346.** Fiber laser-induced fluorescence and laser-induced phosphorescence spectroscopy for atmospheric measurements. **F. Keutsch**

2:45  
**347.** New approaches to high-resolution, high-sensitivity spectroscopy of molecular ions. **B. J. McCall**

3:20  
Break.

3:35  
**348.** Single-conformation spectroscopy of synthetic foldamers, peptides, and model lignin compounds. E. G. Buchanan, J. C. Dean, **T. S. Zwier**

4:10  
**349.** Transient absorption microscopy studies single metal and semiconductor nanostructures. **G. V. Hartland**

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**Thursday, October 20, 2011, 1:30 PM – 5:00 PM**

**Small Chemical Businesses - What Every Small Business Owner Needs to Know about Patents, Trademarks, and Intellectual Property**

Room: Alpine II

Harry. J. Guttman, **Organizer**

*Supported by Division of Small Chemical Businesses*

1:30  Introductory Remarks.

1:35  **350.** Who owns patented technology? A review of the U.S. Supreme Court's recent decision in Stanford v Roche and how it applies to federally-funded research. **S. C. Hall**


3:05  Break.

3:25  **352.** Small businesses and their assets: Building an intellectual property wall. **T. J. Welch**

4:10  Panel Discussion.

4:55  Concluding Remarks.

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**Thursday, October 20, 2011, 3:00 PM – 4:30 PM**

**General Poster Session IV**

Versailles Ballroom
353. Development and Practice of “Air Pollution” Educational Material Unit Aiming at Education for Sustainable Development (ESD) in Korea. Y. Kong

354. Comparison on Elementary Science Achievement between Korea and Japan in TIMSS 2007. Y. Kong

355. Tutorial on the facile determination of the number of Kekulé and Dewar resonance structures in conjugated systems. J. R. Dias

356. Impact of participation in the Indiana Science Initiative on teachers' beliefs about student learning in science. N. Cook, G. C. Weaver, B. Walker

357. Discovering $^{13}$C-NMR, $^1$H-NMR and IR spectroscopy in the General Chemistry laboratory through a sequence of guided-inquiry exercises. D. C. Justice, H. Iler

358. Kinetic study of the reaction $\text{H}_2\text{O}_2 + 3 \text{I}^- + 2 \text{H}^+ \rightarrow \text{I}_3^- + 2 \text{H}_2\text{O}$ employing spectroscopic methods. H. R. Krueger


360. Project SEED in Kansas City. E. W. Hellmuth

361. Buffer standards for the zwitterionic buffer (ACES) at $I = 0.16 \text{ mol\cdot kg}^{-1}$ from 5 to 55 °C. I. B. Henson, J. M. Stegner, J. J. Dinga, L. Dieterman, L. N. Roy, R. N. Roy


363. New microboiling point technique for the undergraduate laboratory. W. J. King, J. A. Lehman, M. Hood, K. N. Whitlatch, J. D. Wagoner, T. L. Troyer

364. Using Non-Silver photography as a discovery based lab for non-science majors. J. Yukna, M. Sparks


366. Kinetics of Pore Formation and Receptor (CMG2) Dissociation from the Anthrax Protective Antigen. K. K. Andra

367. Structure and function of the Alternative Complex Three from the photosynthetic bacteria Chloroflexus aurantiacus and Roseiflexus castenholzii. E. L. Wunderlich Majumder, R. E. Blankenship
368. Probing the effect of the electron density distribution in the primary electron on the directionality of charge separation in photosynthetic reaction centers. M. A. Harris, P. D. Laible, L. Kressel, C. Luehr, M. Wander, D. Holten, D. K. Hanson, C. Kirmaier


371. Length requirements of the Hoogsteen bound third strand for the formation of RNA triple helices. J. A. Holland, A. Cardozo


374. Exploring lipid interactions in the *E. coli* mechanosensitive channel of small conductance (MscS). H. R. Malcolm, Y. Heo, D. E. Elmore, J. A. Maurer

375. Development of specific inhibitors of JmjC-domain histone demethylases. B. Gordon, L. M. Mirica


378. Use of chromatography to characterize a substrate binding constant for a His-tag immobilized ascorbate peroxidase. F. A. Kovacs, B. White, A. Moser

379. Covalent immobilization of C-terminal hydrazide labeled proteins to ketone-presenting self-assembled monolayers (SAMs). A. T. Castner, J. A. Maurer


Adenine-4-aminobiphenyl formation by acid hydrolysis of TP53 exon7 cDNA in the presence of 4-aminobiphenyl as evidenced by LC-ESI-MS/MS. **P. R. Knoll**, J. C. Means


Fluorescent sphingolipid precursors and click chemistry cholesterol analogs for imaging of sphingolipid and cholesterol distribution in the plasma membranes of living cells. **K. Lou**, R. Kim, M. L. Kraft

Zinc homeostasis and swarm expansion in *Myxococcus xanthus*. **L. N. Brumley**, F. E. Jacobsen, R. G. Taylor

Study of heparin oligosaccharides binding to proteins using affinity capillary electrophoresis. **M. Dinges**, B. Rogers, A. Korir


Halogen bonding interactions in substituted tetraphenylethylenes. **P. P. Kapadia**, D. C. Swenson, F. Pigge


Studies of the Bodroux reaction in tetrahydrofuran. **D. C. Hawkinson**, A. Furness

Anhydrobase mediated annulation reactions of substituted pyridines. **A. I. Lansakara**, S. G. Parameswarappa, F. Pigge

Kinetic resolution of N-acyl-β-lactams via non-enzymatic enantioselective alcoholysis. **V. D. Bumbu**, V. B. Birman

Kinetic resolution of β-lactams via catalytic, enantioselective N-acylation. **V. D. Bumbu**, X. Yang, V. B. Birman

Nucleosome Phase Greatly Affects Deamination rate of a 5-Methylcytosine Containing DNA Photoproduct. **Q. Song**, V. Cannistraro, J. A. Taylor

Exploring site-selective oxidative cyclizations on microelectrode arrays. D. Kesselring, **B. H. Nguyen**, K. D. Moeller
Development of fluorescent chemosensors for divalent and trivalent cations based on carboxylated ethynylarenes. A. T. Gallagher, J. T. Fletcher

Unusual secondary kinetic isotope effect behaviors in a hydride transfer reaction in solution. B. A. Hammann, Q. Liu, Y. Lu

Carboxymethylated 1,2,3-triazole-based bidentate and tridentate chelators: Preparation and amide bond conjugation under solution-phase and solid-phase conditions. J. T. Fletcher, B. S. Bruck, H. Ahn, M. G. Keeney

New functionalized resin for solid extraction of heavy metal ions in water samples. S. Khazaeli, M. Rabbani, N. Nezamabadi

Thursday, October 20, 2011, 3:00 PM – 6:00 PM
Midwest ACS Award Symposium
Zurich

Lichang Wang, Patrick Dussault, Organizers

Supported by Division of Computers in Chemistry, St. Louis Section of the American Chemical Society

3:00 401. Transition metal nanoparticles as catalysts in fuel cell applications. L. Wang

3:30 402. DFT optical properties and growth mechanisms of gold nanoparticles. C. M. Aikens, B. M. Barngrover, E. B. Guidez

4:00 403. Nanoporous organic structures: Creation and novel properties. B. Gong

4:30 Break.

5:00 404. Computer-aided nanoscience research: Nanoice, nanoclusters, and superhydrophobicity. X. Zeng

The reception for the Midwest/Great Lakes Awards banquet starts at 6:00 pm followed by the banquet at 7:00 pm in Matterhorn.
FRIDAY MORNING SESSIONS
OCTOBER 21, 2011

FRIDAY, OCTOBER 21, 2011, 8:00 AM – 12:00 PM
Analytical Chemistry General Session B
Room: Basel


10:00 Break.


10:40 412. Finite-element computer simulations on cyclic voltammograms measured at recessed nanodisk-array electrodes derived from Polystyrene-Poly(methylmethacrylate) diblock copolymers. **K. Tran Ba**, B. Pandey, T. Ito

11:00 413. Characterization of Lignin from Prairie Cordgrass and Switchgrass by GC-MS analysis of Cupric Oxide and Nitrobenzene Oxidation products, Pyrolysis-GC-MS and MALDI-TOF-MS. **N. K. Bathula**


Friday, October 21, 2011, 8:00 AM – 12:00 PM
Inorganic Chemistry General Session A
Room: Bern

8:00  416. B ring methylated flavonols: Effects on hydrogen bonding, Al$^{3+}$ chelation and the structures and redox chemistry of ruthenium complexes. K. V. Peiris, E. Hughes, B. Spears, J. Browning, S. R. Gwaltney, W. P. Henry


8:40  418. Phosph(on/in)ate-bridging dimers of vanadium (IV) complexes as potential oxidation catalysts. C. C. McLauchlan, A. E. Anderson, X. Riart-Ferrer, M. P. Weberski

9:00  419. Stable mononuclear Pd(III) and Pd(IV) complexes in identical ligand environment: Characterization and direct reactivity comparison. F. Tang, J. R. Khusnutdinova, N. P. Rath, L. M. Mirica


9:40  421. Evaluation of platonic solids as atoms in covalent bonds. D. Wang, J. Van Horn

10:00  Break.

10:20  422. Novel green light sensitiers for the near-infrared emission of lanthanide ions. H. He, Y. Zhong, A. G. Sykes


11:20  425. Scanning electrochemical microscopy investigation of tribolayer surface corrosion on CoCrMo alloys used in metal-on-metal (MoM) hip joint bearings. R. J. LeSuer

Friday, October 21, 2011, 8:00 AM – 12:00 PM
Nanoscience General Session C
Room: Alpine I


8:20  428. Correlating Molecular Surface Coverage and Solution-Phase Nanoparticle Concentration to SERS Intensities. M. S. Pierre, A. J. Haes, P. M. Mackie, M. Roca

8:40  429. Comparison of stability and particle size distribution of gold colloids prepared by the solvated metal atom dispersion method and inverse micelle method. D. Jose, K. J. Klabunde


9:40  Break.


10:20 433. Development of electrochemical immunoassay for prostate specific antigen (PSA) and carcinoembryonic antigen (CEA) on nanoporous gold. B. P. Pandey, A. V. Demchenko, K. J. Stine

10:40 434. Withdrawn


8:00 438. Synthesis and structural analysis of a novel iodinated cyclopentadienone via ring-contraction iodination and its application as a substrate for oxygen-free Sonogashira reactions. X. Chen, X. Bai, T. C. Sandreczki, J. R. Dias


9:00 441. Metal-assisted photochemical conversion of carboxylic acids to alkanes, alkenes, and halocarbons. J. M. Carraher, A. Bakac


9:40 Break.

10:00 443. Deciphering intermolecular communication between 2-aminopyrimidines and carboxylic acids. A. B. Grommet, C. B. Aakeroy, J. Desper

10:20 444. Thiophilicity of atomic oxygen in solution. M. Zhang, R. McCulla

10:40 445. cis-5,6-Dihydro-1,10-phenanthrolines as a new class of ligands: Enzymatic resolution of cis and trans phenoxy alcohol isomers and assignment of absolute stereochemistry. E. Schoffers, L. Kohler, E. Driscoll, M. Zeller, S. Carla

11:00 446. Total synthesis of (±)-cis-trikentrin B via intermolecular indole aryne cycloaddition and Stille cross-coupling reaction. N. Chandrasoma, N. Brown, A. Brassfield, A. Nerurkar, S. Suarez, K. R. Buszek


11:40 571. Modulating supramolecular reactivity using covalent “switches” on a pyrazole platform. E. P. Hurley, C. B. Aakeroy, J. Desper
Room: Zermatt

8:00 448. Dynamics of networked electrochemical reactions: coupling topology and synchronization. M. Wickramasinghe, I. Z. Kiss

8:20 449. Talk moved to Physical Chemistry I, Zermatt, Thursday, 11:40 am.

8:40 450. SAPT calculations: Methods for large system computation. C. C. Kirkpatrick, M. Lewis, B. K. Welch, J. N. Coleman, J. Wang, K. Hacke


9:20 452. Theoretical study of hydrolization of B$_2$O$_3$. T. A. Holme, C. C. De Silva

9:40 Break.

10:00 453. Obtaining partial molar quantities from computer simulations. E. A. Ploetz, P. E. Smith

10:20 454. Application of correlation-gas chromatography to problems in thermochemistry. J. S. Chickos, Dmitry A. Lipkind


11:00 456. Viscosity and thermal conductivity of potassium atoms at high temperatures. L. Biolsi

11:20 457. Influence of atom recombination and molecular relaxation on the properties of high-enthalpy flows. S. Doraiswamy, J. Kelley, G. V. Candler

11:40 458. Theoretical Investigation of reaction of lactic acid on MgO clusters. L. B. Pandey, C. M. Aikens

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Friday, October 21, 2011, 8:15 AM – 11:50 PM
NMR-The Next Generation (of Techniques)
Room: St. Moritz

Sophia Hayes, Christopher Jaroniec, Nathan Oyler, Organizers

Supported by Bruker Biospin Corporation, Division of Physical Chemistry

8:15 Introductory Remarks.

9:00 460. A study of residual solvent in aspirin by variable contact time CRAMPS; shelf lives of drugs. B. Gerstein, X. Hsu


10:00 Break.


11:00 463. Shifting shapes: Seeing a protein's moves. A. McDermott

Friday, October 21, 2011, 8:20 AM – 11:00 PM
Polymer Chemistry General Session
Room: Alpine II


9:00 466. Polymer brush 'nanosponges' for fast protein separation with MALDI mass spectrometry analysis. C. N. Scott, B. Mitrovic, S. Eastwood, G. Kinsel, V. Wong, D. Dyer

9:20 467. Fe(II)/MAO catalyzed olefin polymerization: Oxophilicity of cyclic and acyclic aluminoxane ligands in Fe(II) Complexes. R. Glaser, X. Sun

9:40 Break.

10:00 468. Stepped growth of sp-sp² conjugated oligomers and its applications. X. Chen, X. Bai, T. C. Sandreczki, J. R. Dias


10:40 470. Synthesis, photophysical properties, and photovoltaic applications of non-aggregated hyperbranched phthalocyanine dyes. Y. Li, P. Lu, M. Jiang, P. Thapaliya, X. Yan
Friday, October 21, 2011, 8:25 AM – 11:40 AM
Biomolecular Structure and Function
Room: Zurich

Dana Baum, Cynthia M. Dupureur, J. Strauss Soukup, Organizers

Supported by Division of Biological Chemistry, Sigma-Aldrich, ChemGenes Corporation, RNA Society, New England Biolabs, Inc., Integrated DNA Technologies, Horiba Scientific, Trilink Biotechnologies

8:25 Introductory Remarks.

8:30 471. Understanding DNA flexibility in vitro and in vivo. J. Peters, N. Becker, J. Maher

9:05 472. DNA as a catalyst for covalent modification of biomolecules. S. K. Silverman

9:40 Break.

10:00 473. Structure-activity relationships of G-quadruplex interloop photocrosslinking. J. E. Smith, J. A. Taylor

10:25 474. Targeting dynamic ribosomal RNA sites with small molecules. C. S. Chow

11:00 475. Computational Model for Predicting Experimental RNA and DNA Nearest-Neighbor Free Energy Rankings. C. A. Johnson, R. J. Bloomingdale, V. E. Ponnusamy, C. A. Tillinghast, B. M. Znosko, M. Lewis

Friday, October 21, 2011, 8:30 AM – 10:00 AM
General Poster Session V
Versailles Ballroom

8:30 - 10:00

476. Quantum dynamics of a Morse oscillator in real and imaginary time. C. Hanson, B. Dey

477. Periodic and complex waveform current oscillations of copper electrodissolution in phosphoric acid in an epoxy-based microchip flow cell. A. Bi, Y. Jia, I. Kiss


480. Theoretical analysis of surface plasmon resonance of silver and gold nanowires. **E. B. Guidez**, C. M. Aikens


482. Structures and water dissociation reactions of Mn-doped TiO₂ clusters. **C. Lee**, C. M. Aikens


484. Extensive SAPT and SAPT-DFT energy comparison on small systems: applications towards larger dimers. **B. K. Welch**, C. C. Kirkpatrick, M. Lewis, K. Hacke

485. Fast Marching algorithm for reaction dynamics: A new perspective for Monte Carlo sampling and reaction paths. **N. W. Truex**

486. A computational study of the bonding interaction between chromium, molybdenum, or tungsten carbonyl complexes and cyanoethylenes or fluoroethylenes. **S. L. Johnson**, D. L. Cedeño

487. Comparison of structures of CH₂ClF...C₂H₃F and CH₂F₂...C₂H₃F as determined by Fourier-transform microwave spectroscopy. **C. L. Christenholz**, D. A. Obenchain, R. A. Peebles, S. A. Peebles


490. Computational study of substituent effects on the band gap of porphyrin based polymeric systems. **M. A. Hammer**, Z. L. Dunn, T. M. Perrine


494. Convenient approach to composition tunable uncapped semiconducting nanocrystals. **S. Li**, G. Tan, Z. Peng
495. Self-Regenerative Redox Catalyst: Palladium Oxide Nanoparticles on Cerium Oxide Nanorods. **Y. Zhou**

496. Quenching of coumarin luminescence by CdSe quantum dots. **A. Baride**, S. P. May, D. Engebretson

497. Structural diversity in MgSe nanocrystals. **P. Morrison**, W. E. Buhro

498. Role of Chloride in the growth of Silver nanowires by the polyol synthesis. **W. M. Schuette**, W. E. Buhro


500. Insights into AuSR nanocluster growth via Au(III) chloride. **B. M. Barngrover**, C. M. Aikens


504. Rational design and preparation of polyarginine capped gold nanoparticle for siRNA delivery. **Z. Zhang**, J. A. Taylor

505. Retention of palladium and phosphine ligands using nanoporous polydicyclopentadiene thimbles. **A. Gupta**, N. Bowden

506. Effects of particle size, shape, and temperature on dodecanethiol assisted digestive ripening of Au nanoparticles. **C. Parsons**, D. Jose, K. J. Klabunde


511. Study of Lignin by Pyrolysis GC - MS. **V. R. Sakampally**, R. Douglas

512. Analysis of dissolved methylmercury in environmental samples using Hg-complex ion chromatography: A reoptimized method with increased sensitivity and reduced noise. **A. C. Yerkes**, R. J. Hudson


44. Expression, purification and oligomer formation of amyloid beta(1-42) associated with Alzheimer's disease. **C. Zhang**, N. Oyler


518. Synthesis of isosorbide diallyl ether in presence of phase transfer catalysts. **M. Sandhu**, M. Ionescu


Sulfuraphane Regulation of Cellular Redox and Growth, C. Lensing, J. Duffy-Matzner.

*In situ* high pressure and temperature NMR analysis of metal carbonate formation from CO$_2$ with implications for carbon capture, conversion, and sequestration. **J. A. Surface**, P. A. Skemer, S. E. Hayes, M. S. Conradi

Friday, October 21, 2011, 8:30 AM – 10:00 AM
Small Chemical Business Poster Session
Versailles Ballroom

Joseph Sabol, Organizer

*Supported by Division of Small Chemical Businesses*

522. The future of the chemical enterprise. J. E. Sabol

Friday, October 21, 2011, 9:00 AM – 12:00 PM
Chemical Education Research and Practice
Room: Davos

Susan Wiediger, Steven Kinsley, Organizers

Supported by Division of Chemical Education

9:00 Introductory Remarks.


10:25 Break.

10:40 527. Guided inquiry laboratory projects built upon endothermic reaction demonstrations. A. O. Ward, R. L. Petersen

11:00 528. Impact of the first-year implementation of process oriented guided inquiry learning in an organic chemistry course on students' attitudes and learning. T. Chase, M. Stains

11:20 529. Modifying POGIL to Improve Student Perception of Relevance of Organic Chemistry. E. Bucholtz

11:40 530. Development and implementation of streaming online media to enhance pre-lab instruction in first semester organic chemistry laboratory courses. J. T. Fletcher

Friday, October 21, 2011, 10:30 AM – 12:00 PM
General Poster Session VI
531. Comparison of phenanthrene and 1,10-phenanthroline derivatives as potential sensors. J. J. Whitcomb, L. Kohler, S. Obare, E. Schoffers

532. The Viscosity Lowering of Ionic Liquids. B. Anderson, D. E. Raynie

533. The effect of 1-methyl-3-butylimidazolium tetrafluoroborate BMIMBF₄ ionic liquid as mobile phase additive on the peak shapes and resolution of nitroaromatics and nitroanilines on reversed phase liquid chromatography. B. Redlinski, T. Ahmad, T. Ahmad, C. Utterback

534. The effect of counter ion of 1-methyl-3-butylimidazolium ionic liquid as a mobile phase additive on the adsorption behavior of tryptophan on reversed phase liquid chromatography. T. Ahmad, B. Redlinski, A. Alalwiat


536. Determination of phenol concentration in spiked wastewater samples through multivariate regression modeling of UV-visible spectral data. E. Gripka, M. Vaughn, J. Ingle

537. Characterization of tannins from *Quercus actissma* leaf extracts by LC-ESI-MS and bioassay directed HPLC fractionation. L. Rudolf, C. Zanaboni, K. Severa, C. M. Scholes, J. M. Chapman

538. HDXMS reveals folding of calcineurin upon binding calmodulin. F. I. Rusinga, T. Creamer, D. D. Weis


540. Optimization of ETD parameters for top-down proteomics analysis with an ultrahigh-resolution QTOF mass spectrometer. J. R. Unverferth, J. B. Sperry, J. A. Carroll

541. Method development for structural characterization of sulfated steroids with mass spectrometry: Applications in animal communication. Y. Yan, T. Holy, M. L. Gross

542. Focusing of bacteria and fungi from mixed samples using the isotachophoresis mode of capillary electrophoresis. J. Bennett, A. W. Lantz

543. Binding Studies of Dopamine Imprinted Polymers. A. Goffeney, D. Goede, G. Mwangi

545. Characterization of human apolipoprotein E3 and E4 isoforms' interactions with amyloid β42 by the mass spectrometry-based FPOP protein footprinting method. **B. Gau**, K. Garai, C. Frieden, M. Gross


548. UHPLC-MS-MS analysis of pesticides in aqueous environmental samples: An educational outreach program. **M. T. Popko**, R. E. Jackson, B. A. Logue


550. Alternative fragmentation pathways of a model glycopeptide. **V. Kolli**, E. D. Dodds

551. Gas-phase release and sequencing of subunits from non-covalent protein complexes. **D. Rathore**, E. D. Dodds

552. HPLC method to monitor methylcarbonate/acid reaction progress. **E. E. Arens**, S. J. Jamison, D. E. Weisshaar, G. W. Earl


558. Effect of different oxidants on epoxidation of alpha olefins. **J. Hong**, D. DeGruson, Z. S. Petrovic
559. Utilizing the hydroxyalkylation reaction to prepare bis(benzocrown ethers). **M. E. Zielinski**, A. F. Tracy, D. A. Klumpp*  

560. Fluorinated dienes in the Diels-Alder reaction. **N. Ehterami**, T. Patrick  


563. 1,10-Phenanthroline derivatives as potential organophosphate sensors. **M. N. Moses**, L. Kohler, S. Obare, E. Schoffers  

564. Synthetic studies of dipyrromethene ligand systems for the discovery of manganese (III)-based peroxynitrite decomposition catalysts. **A. Kamadulski**, S. Rausaria, D. Salvemini, W. L. Neumann  

565. Preparation, characterization and *Human Carbonyl Reductase* (HCBR) inhibition studies of 2,4-dichlorophenyl-cyanoxime, H(2,4-diCl-PhCO). M. Hilton, **N. N. Gerasimchuk**, H. Charlier  


567. Synthesis of several ionic liquid perbromides for the regioselective bromination of polyalkylated aromatic hydrocarbons. **M. L. Miller**, M. J. Kulig, A. Zeiszler  

568. Investigation of ruthenium complexes, with the introduction of a novel chiral phosphinoxazoline ligand, to be employed as a catalyst in the Mukaiyama Aldol reaction. **N. Curvev**, A. Widaman, E. Bauer  


570. Influence of aromatic amines on the spectroscopic properties of 1,10-phenanthroline. **K. L. Huynh**, S. Obare, E. Schoffers  

178. Synthesis of inosamine derivatives to function as nutritional mediators for nitrogen fixation. **J. L. Meloche**, E. Schoffers

573. Progress towards the synthesis of a long wavelength fluorescent biosensor for citrate metabolite. C. Liu, N. Sattenapally, Q. A. Best, L. Wang, M. McCarroll, C. G. Scott

574. Synthesis and conformational characterization of N-alkyl hydroxamic acids. H. L. Schenck, R. Zolondek

575. Seeking evidence for electrophilic C-H activation at palladium(IV) centers. R. Ruffie

576. Chemical constituents of the Burmese python (Python molurus bivittatus) sexual attractiveness pheromone. A. Balloon, J. Goff, C. Carmichael, S. Snow

577. The total synthesis of (S)-2,4-dihydroxy-1-butyl (4-hydroxyl)benzoate. S. David, J. Seagren, A. Radkov

578. Site-selective, cleavable linkers: Quality control and the characterization of small molecules on microelectrode arrays. B. Bi, R. Y. Huang, K. Maurer, C. Chen, K. D. Moeller
FRIDAY AFTERNOON SESSIONS
OCTOBER 21, 2011

Friday, October 21, 2011, 1:00 PM – 4:40 PM
Analytical Chemistry General Session C
Room: Basel

1:00  579. Metal oxide interferences on lead analysis in tungsten filament atomic absorption spectrometry. D. Poci, E. C. Navarre


1:40  581. Characterization of deep eutectic solvents and comparison with room temperature ionic liquids. G. Degam, D. Raynie

2:00  582. Cavity ring-down spectroscopy of liquids using standard cuvettes. B. J. Culbertson, S. C. Foster

2:20  583. Determination and quantification of dimethyl methylphosphonate from activated carbon particles. B. L. Mitchell, B. A. Logue

2:40  Break.

3:00  584. Beeswax processing and refining in supercritical carbon dioxide. G. N. Gachumi

3:20  585. Application of 1-ethyl-3-methylimidazolium acetate (EmimAc) in the isolation of lignin and hemicellulose. V. Essel, D. Raynie

3:40  586. Synthesis and characterization of 1-ethyl-3-methylimidazolium alkylbenzene sulfonate (EMIM ABS) ionic liquids. H. Kandala, D. Raynie

4:00  587. Diffusion-ordered independent component analysis: Separating nuclear magnetic resonance spectra of analytes in a mixture. J. Zhong, N. DiDonato, P. G. Hatcher


Friday, October 21, 2011, 1:00 PM – 5:00 PM
Chemical Education Research and Practice
Room: Davos
Safety in Chemistry Education: This invitation-only symposium will focus on how safety can and should be incorporated in the chemistry major curriculum. A closing panel discussion will feature local industry representatives discussing what a graduating senior should know about safety.

1:00 Introductory Remarks.

1:05 589. ACS CHAS: Where chemistry and safety meet. K. P. Fivizzani

1:25 590. Development, advantages, educational value, challenges, and implementation of a green, microscale organic chemistry laboratory. T. E. Goodwin

2:05 591. Improving safety education in undergraduate chemistry programs. D. C. Finster

2:45 Break.

3:00 592. Laboratory safety and management for teaching assistants. B. L. Foster

3:40 Panel Discussion.

Friday, October 21, 2011, 1:00 PM – 4:00 PM
Environmental Chemistry General Session
Room: Alpine II

1:00 593. Developing nanoparticles as mercury eliminating agents. L. Amarapalli, P. K. Fu


2:00 596. Effects of biodiesel composition on pollutant emissions from a single cylinder diesel engine. Y. Zhong, E. Peltier, M. Mangus, C. Depcik, A. Duncan, S. Williams

2:20 597. Speciation and Formation of SOA Generated from Ozonolysis of Realistic Terpene Mixtures. H. S. Amin, K. E. Huff Hartz

2:40 Break.


3:40  **600.** Determination of pharmaceuticals and personal care products, endocrine disrupting compounds and metabolites in Illinois groundwater by LC/MS/MS. **M. Salske**, K. A. Johnson

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**Friday, October 21, 2011, 1:00 PM – 5:00 PM**
**Inorganic Chemistry General Session B**
**Room: Bern**

1:00  **601.** “Tensegrity” as an organizing architecture for covalent molecular structure. **J. D. Van Horn**, C. Smith, J. Wade, D. Wang

1:20  **602.** Enhancing the Thermal Barrier to Reversible Electron Transfer in Cyano-Bridged \{Fe₂Co₂\} Squares. **Y. Zhang**, D. Siretanu, R. Ababei, R. Clérac, C. Mathonière, S. Holmes

1:40  **603.** Dithiocarbamate ligands bearing amino functionality for polyoxometalate functionalization. **K. Sharma**, J. Karcher, E. A. Maatta, J. Desper

2:00  **604.** Some novel phosphine complexes of platinum and palladium and their catalytic applications. **S. Acharya**, J. Braddock-Wilking, N. P. Rath

2:20  **605.** Study of siloles and optical properties related to coordination with metal ions. **J. B. Carroll**, J. Braddock-Wilking

2:40  **606.** Synthesis and characterization of a series of cyclic germanium compounds for potential use as fluorescent biological probes. **T. Bandrowsky**, J. Braddock-Wilking

3:00  Break.

3:20  **607.** Synthesis, characterization and applications of light-insensitive silver(I) cyanoximates. S. Gross, R. Hougas, **N. N. Gerasimchuk**

3:40  **608.** Redox chemistry of cationic [η⁵-C₅H₅Ru(PPh₃)₂]⁺ vinylidene complexes. **M. J. Shaw**, A. Hansen, B. M. Schutte

4:00  **609.** Non-bridging ligand supported d⁸-d⁸ bond in the Pd\(^{II}\) and Pt\(^{II}\) complexes. **J. Luo**, N. P. Rath, L. M. Mirica

4:40  **611.** New iPrN4 Pd complexes. **F. Qu**, L. Mirica

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**Friday, October 21, 2011, 1:00 PM – 5:00 PM**

**NMR: The Next Generation (of Techniques)**

**Room: St. Moritz**

Chris Jaroniec, Nathan Oyler, Sophia Hayes, **Organizers**

*Supported by Bruker Biospin Corporation, Division of Physical Chemistry*

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1:00  **612.** Direct measurement of exchange rate of hydrogen and deuterium between gas and hydride phases. **M. S. Conradi**, R. L. Corey

1:40  **613.** Local physical structure in hydrogenated boron carbide materials. **N. A. Oyler**, W. Li, M. Paquette, A. Caruso

2:20  **614.** *In situ* high pressure and temperature NMR analysis of metal carbonate formation from CO₂ with implications for carbon capture, conversion, and sequestration. **J. A. Surface**, P. A. Skemer, S. E. Hayes, M. S. Conradi

2:40  Break.

3:00  **615.** Studies of atomic and molecular interactions of laser-polarized xenon and parahydrogen for magnetic resonance applications. **B. M. Goodson**, N. Whiting, P. He, P. Nikolaou, L. Walkup, A. Coffey, K. Groome, H. Newton, B. Gust, K. Ranta, A. Hunter, N. Eschmann, M. J. Barlow, E. Chekmenev

3:40  **616.** Dynamic nuclear polarization for enhanced sensitivity in solid-state NMR experiments. **M. Rosay**, S. Pawsey, R. J. Temkin, R. G. Griffin, W. E. Maas

4:20  **617.** Chemical and biochemical reactions investigated by dynamic nuclear polarization. **C. Hilty**

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**Friday, October 21, 2011, 1:00 PM – 4:40 PM**

**Organic Chemistry General Session E**

**Room: Geneva**

1:00  **618.** Co-Crystals of Photochromic Compounds. **B. A. DeHaven**, C. B. Aakeroy, S. Panikkattu, J. Desper
Balancing hydrogen and halogen bonding in co-crystal assembly. **S. K. Dembowski**, C. B. Aakeröy, P. D. Chopade, J. Desper

An exacting test of whether activation energy controls regioselectivity of competitive nucleophilic aromatic substitutions from an excited state. **G. G. Wubbels**, R. Tamura, E. J. Gannon

New iron pyridyl amine complexes and their catalytic activity in oxidation reactions. **M. Lenze**, E. Bauer

Synthesis and characterization of Iron(II) complexes of α-Imino pyridine and their catalytic application in oxidation of activated methylene group and secondary alcohols. **P. Shejwalkar**, E. Bauer

Efforts toward the synthesis of high oxidation state iridium complexes. **S. Whittemore**, J. Stambuli

Break.


Iodine bonding stabilizes methyl iodide in Midas pesticide. **K. Prugger**, R. Glaser


Long Wavelength Fluorophores for the Generation of Singlet State Oxygen. **Q. A. Best**, C. Scott, M. McCarroll

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Friday, October 21, 2011, 1:20 PM – 5:10 PM
Sigma-Aldrich Symposium on Nanomaterials
Room: Alpine I

Shashi Jasty, Angel Thompson, Organizers

Supported by Sigma-Aldrich

Introductory Remarks.

Chemically directed assembly of charge-transferring hybrid nanostructures. **R. J. Hamers**

Synthetic pathway to and optical properties of CdSe quantum belts. **W. E. Buhro**
2:45 630. Controlled assembly of nanoparticles to superlattice crystals. D. Jose, J. Matthiesen, C. Parsons, Y. Sun, C. Sorensen, K. Klabunde

3:25 Break.

3:45 631. Wrapping up nanorods. C. J. Murphy


5:05 Concluding Remarks.

Friday, October 21, 2011, 1:30 PM – 4:50 PM
Biomolecular Structure and Function
Room: Zurich

Cynthia M. Dupureur, Dana Baum, J. Strauss Soukup, Organizers

Supported by Division of Biological Chemistry, Sigma-Aldrich, ChemGenes Corporation, RNA Society, New England Biolabs, Inc., Integrated DNA Technologies, Horiba Scientific, Trilink Biotechnologies

1:30 Introductory Remarks.


2:10 634. Structural and biophysical studies of proline catabolic enzymes. J. J. Tanner

2:45 635. DNA binding properties of a large antiviral polyamide. G. He, K. J. Koeller, C. M. Dupureur, J. K. Bashkin

3:05 Break.


4:00 637. Mass spectral studies of intrinsically disordered proteins. D. D. Weis

Workshop on Peer-Led Team Learning
Alpine II

Susan Wiediger, Steve Kinsley, Organizers

9:00  639. Incorporating peer-led team learning (PLTL) into lower-level chemistry courses: implementation and insights. R. F. Frey