FRIDAY AFTERNOON

California State University, San Marcos
USU 2300D

Fire & Water

S. P. Thompson, Organizer
K. Ikehata, Organizer, Presiding

1:30 1. Forest fire arson: Linking field investigative data to potential sources. D.A. Birkholz
2:00 2. Marijuana extraction labs: Assessing the explosion dangers. D. Kirby, L. Higgins, T. Burton
2:30 3. Experimental observation of large mass-independent isotopic anomalies from diffusion of H₂O. G. Dominguez
3:00 Intermission.
3:30 4. Self-healing corrosion resistant coatings: An enabling technology for the use of alternate waters for cooling. G. Rajagopalan
4:00 5. Standard heats of oxidation for characterized soils in the remediation of chemically-contaminated groundwater. N. Moulton, S.P. Mezyk

California State University, San Marcos
SBSB 1102

Inorganic Nanomaterials

K. Ikehata, Organizer
M. T. Kleinman, Organizer, Presiding

1:30 7. Fine tuning the magnetic properties of cobalt ferrite thin films by controlling the nanoscale structure. S. Robbennolt, A. Buditama, H. Kang, P. Nordeen, G. Carman, S.H. Tobert
2:00 8. Preparation of fluorescent magnetic nanomaterials. L. Dong
2:30 9. Using bulky terphenyl thiolates as capping ligands for gold thiolate nanoclusters. N. Mendelson
3:00 Intermission.
4:00 11. Synthesis and characterization of PtSn bimetallic nanoparticles: Comparison between two synthesis strategies. R. Morales

California State University, San Marcos
USU 2300C

Natural Products

K. Ikehata, M. T. Kleinman, Organizers
Z. Haque, S. P. Thompson, Presiding

1:30 12. The culture and chemistry of chocolate. J.A. Trischman
2:00 13. Efficacy of highly antioxidative aqueous extract of olive leave as cargo in nano-vesicular emulsion system. Z. Haque, A.C. Saddam, X. Zhang
3:00 Intermission.
3:30 15. Folding, unfolding, and misfolding of the RNA pseudoknot structural motif via massively parallel molecular dynamics. K. Nguyen
4:00 16. Peroxyl radical formation chemistry of tobacco-specific nitrosamines. B. Daws
Organic Chemistry

Biological Chemistry and Novel Reactions

K. Ikehata, M. T. Kleinman, Organizers
S. P. Sun, Presiding

1:30  17. Synthesis, guest binding, and metal coordination of functionalized self-folding deep cavitands. M. Mettry, R.J. Hooley
2:00  18. Fluorescent cytidine analogues for the study of nucleic acids. D.D. Burns, R. Lee, B.W. Purse
3:00 Intermission.
3:30  20. Nucleophile, radical trap, or both? The role of alkenes in the intramolecular reactions of oxime and oxime ether radical cations. N. Armada, P. De Lijser

FRIDAY EVENING

California State University, San Marcos
USU 2300A&B

WRM Poster Session

K. Ikehata, M. T. Kleinman, Organizers

6:00 - 8:00

23. Observations during prolonged sample exposure with 5N sodium hydroxide on the stability of memantine HCl internal standard in samples. S. Ghosh, C. Weng, A. Ng
27. 3-D interconnected mesoporous tantalum nitride as a novel water splitting photocatalyst. H. Kang, S.H. Tolbert
29. Monitoring atmospheric ammonia through passive diffusion collection on California State Polytechnic University Pomona campus. L. Aranda, M. Torres, Y. Liu
30. Preparation of γ-aminoalcohols with pendant quinolyl moiety by reduction of ketoimines with sodium borohydride. K.J. Goosherst, D.B. Green, J.M. Fritsch
32. Nanocrystalline magnesium as an anode material for lithium-ion battery applications. T.C. Lin, E. Detsi, J.B. Cook, S.H. Tolbert
33. Stress-induced lift-off silicon foil using epoxy. H. Chang
34. The study of spectroscopic and electrochemical properties of substituted anthraquinone an undergraduate laboratory setting. M.M. Allard, J.D. Rojas, R.M. Morales
35. New cellular delivery vehicles: Polymyxin B and guanadinopolyoxymyxin B. K. Hamill, L.C. McCoy, Y. Tor
38. Online spectra database for undergraduate organic chemistry laboratories. J. Charonnat, K. Hazen, N. Paronian
40. Towards continuous flow syntheses of levomilnacipran. M. Nguyen, C. Ayoub, A.C. Evans, J. Feng
41. Enzyme degassing for RAFT polymerization in continuous flow. S. Matsuda, A.C. Evans
42. Thermally controlled multivalent interactions between biomimetic polymer NPs and target biomacromolecules. A.C. Weisman, K.J. Shea, K. Yoshimatsu
43. A β-hairpin peptide derived from transthyretin 106-121 that forms square hydrophobic channels. S. Yoo, N. Truex, A. Kreutzer, J.S. Nowick
44. X-ray crystallographic structures of amyloid oligomers: A dodecamer of Aβ17-36 that forms an annular pore. A. Kreutzer, I.L. Hamza, J.S. Nowick
46. Formation and stability of silver nanoparticles formed by the reduction of silver ions by humic acid. R. Leslie, D. Pullman
47. NMR characterization of ionicity and transport properties for a series of diethylmethylamine based protic ionic liquids. F. Thompson
48. Application of α,β-dipeptides in organocatalysis under solvent-free conditions. C.G. Ortiz
49. Synthesis of imidazolium chiral ionic liquids derived from (S)-prolinamine and their application in asymmetric Michael reaction. A. Zuniga
50. Alkylation of acids, alcohols, and phenols using N-(1)-adamantyl-O-isopropyl-4-nitrobenzenesulfonimidate. H. Truong
51. Gaining structural insights into folding of the carboxyl-terminal domain of GIV using circular dichroism spectroscopy. A. Maddox
52. Structural elucidation of the nano-bio interface: Histidine on fumed silica nanoparticles. H. Swanson
53. Novel thermochromic compounds as sensors for high strain experiments. J. Sanz, J.R. de Alaniz
54. Aryl di-n-butyl phosphates and derivatives as selective inhibitors of butyrylcholinesterase: Compounds with potential for the treatment of Alzheimer’s disease. T. Tran
55. Binding properties of curcumin with DNA: Influence of the water network in the DNA minor groove. A. El-Magboub
56. In-class and online student performance in a pharmacy problem-based learning class. A. El-Magboub
57. Synthesis of bivalent organothiophosphate compounds and their inhibition of butyrylcholinesterase for potential treatment of Alzheimer’s disease. A. Tahira
58. Synthesis of nanoparticle polymer and testing affinity with IgG. R. Dalal
59. Effects of tetra-alkyl bisphosphates on BuChE activity using HEPES as a function of pH. K. Villarreal
60. A unique approach to identify solid tumor selective compounds using a combination of two in vitro cancer cell screenings. L. Liu
61. Progress toward the synthesis of gelsedilam. C.M. Saunders, F.D. Fernandes, J.T. Shaw
62. New α-helix mimetics targeting the E6 protein in the human papillomavirus. E. Armenta
63. Investigation of LEF-1 flexibility vs. DNA binding activity. A. Pientka
64. An efficient domino amination-oxidation reaction for the copper-catalyzed synthesis of anilines. C. Thomas
65. PLGA film formulations for sustained release of a water-soluble drug. A. Tumabayeva
66. Identification, characterization, and modification of fatty acid alkyl esterases found in Staphylococcus aureus. B. Saylor, J.J. Love
67. Development of redox mediators for lithium-sulfur batteries. A. Scheuermann
68. X-ray single crystal analysis of n-type organometallic dopants for organic semiconductors. E. Jucov
69. Targeting bacterial antioxidant defense to improve antibiotic treatment efficacy of stationary phase E. coli. J. Wang
70. Sensitive nonlinear multi-photon laser wave-mixing detection methods for environmental and biomedical applications. M. Murphy
71. Synthesis and in vitro evaluation of asymmetric 1,5-diheteroarylpenta-1,4-dien-3-ones as anti-prostate cancer agents. X. Zhang
72. Assessment of UCH-L3 substrate selectivity using engineered ubiquitin fusions with varying linker lengths. P. Suon, J.J. Love
73. Anti-mycobacterial drug discovery using extract UA 774 from the surface of Ulva californica. J. Guzman, J.A. Trischman
74. Analytical method for reliable H2O-ice production for astrochemical experiments. M. Park
75. Effect of hydrophobicity and charge in the oligomerization of amyloidogenic peptides and the design of a pH-switchable oligomer. Y. Wang, J.S. Nowick
76. Using protein design to engineer the Cif epoxide hydrolase for neutralization of mycotoxins. M. Acevedo, P. Suon, J.J. Love
77. Isotopic fractionation as a result of sublimation of water-ice. E. Christensen, M. Park
78. Identification of anti-mycobacterial compounds from the extract of a marine bacterial isolate (UA446) taken from the surface of Ulva californica. T. Fallert, J.A. Trischman
80. Synthesis of small molecules for potential hepatitis C virus translation inhibition. W. Frauman
81. New small molecule α-helix mimetics targeting protein-protein interactions of the human papillomavirus. E. Kroneberger
82. Synthesizing redox probes to increase the capabilities of biosensors. H. Effarah
83. Chapters in novel antibiotics: Isolating a natural product of marine bacteria challenged with Mycobacterium marinum. A. Bulthuis, J.A. Trischman
84. 3-O-alkyl-2,3-dehydrosilibinins: Synthesis and antiproliferative activity towards prostate cancer cells. S. Zhang
85. Regulation of vascular mitochondrial plasticity: Role of cellular crosstalk. C. Saucedo
86. Ball milling as an approach to molecular encapsulation. S. Journey, B.W. Purse
87. Investigation and review of surrogate parameters to evaluate oxidation of trace organic contaminants during ozonation of wastewater effluents. R. Tackaert
88. Mixed quantum and classical simulation of the hydrated electron: Temperature dependence in resonance Raman spectra, excited states relaxation, and whether the electron resides in a cavity. C. Zhou
89. Oxidative cyclization reactions of benzaldehyde oximes with built-in heteroaromatic nucleophiles. A.A. Alshreimi
90. Antimycobacterial ceramides produced by a marine surface bacterium. J.A. Trischman, G. Allognon, A. Bulthuis
92. Structural study of isotopically modified antifreeze glycoproteins (AFGPs) using high-resolution nuclear magnetic resonance (NMR) spectroscopy. C. Her, S. Vazquez, S. Maity, K.V. Krishnan
94. First semester general chemistry undergraduates’ ability to distinguish variables in the experimental design of a stoichiometry activity in structured and guided inquiry modes. E. Hoong
95. Fabrication of wafer-scale, low resistance, single carbon nanotube devices. A. Rajapakse, P.G. Collins
96. Formation and stability of silver nanoparticles formed by the reduction of silver ions by humic acid. R. Leslie
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103. Fabrication of wafer-scale, low resistance, single carbon nanotube devices. A. Rajapakse, P.G. Collins
104. Conformational equilibrium dynamics of β-methyl-amino-L-alanine (BMAA) and its carbamate adducts using NMR spectroscopy. A. Alonzo
105. Analysis of mercury concentration in three common cigarette brands sold in the United States as a viable source of human exposure. S. Freitag, S. Aloisio
106. A lanthanum(III)-catalyzed multi-component reaction for the synthesis of substituted malonamides with interesting photophysical properties. J. Jennings, C.P. Bhatt, A.K. Franz
107. Effect of the overlap between the vertical ionization energies and the adiabatic ionization energies of DNA nucleobases. H. Kwon, K.G. Bacani, V. Andrianarivona

SATURDAY MORNING
California State University, San Marcos
USU 2300C

Analytical Chemistry
K. Ikehata, M. T. Kleinman, Organizers
R. D. Lai, Presiding

8:30 101. Development of separation and detection method for chemotherapeutic drugs. K. Ng
9:00 102. Sensitive detection of nicotine and its metabolites by laser wave-mixing spectroscopy for second- and third-hand smoke studies. Z. Munshi, J.S. Pradel, W.G. Tong
9:30 103. Development of an analytical method for quantifying chemical tracers associated with livestock activities. D. Ricci, J. Miller-Schulze
10:00 Intermission.
11:00 105. Sensor for the detection of petroleum analytes in air and aqueous environments. S.T. Hobson
11:30 106. Applications of nuclear magnetic resonance spectroscopy in nanomaterials characterization. C. Guo, J.L. Yarger

California State University, San Marcos
SBSB 1105

Biochemical Technology
K. Ikehata, M. T. Kleinman, Organizers

K. M. Hamadani, Presiding

8:30 107. Purification and characterization of the *Drosophila melanogaster* (Dm) IkKβ/IkKγ complex. W. Rogers, T. McDowell, T. Huxford

9:00 108. Structural study of prolonged NF-κB responses regulated by IkBβ. T.T. Nguyen, T. Huxford


10:00 Intermission.


11:00 111. Using QM/MM to guide the engineering of an artificial haloperoxidase. G. Anderson, R. Gomatam, R.N. Behera


California State University, San Marcos

USU 2300D

**Chemical Education**

**Laboratory Approaches**

K. Ikehata, M. T. Kleinman, Organizers

R. L. Deming, Presiding

8:30 113. A simple experiment to introduce nanophytotoxicity to first-year undergraduate students. S. Ross, M. Owen, B. Pedersen, G. Liu, W.J. Miller

9:00 114. Microwave-assisted esterification: A discovery-based microscale laboratory experiment. M. Reilly, R.P. King, A.J. Wagner, S.M. King

9:30 115. Optimizing the learning experience in the general chemistry laboratory. S. Abbas

10:00 Intermission.

10:30 116. Trying to elucidate the spectroscopic and electrochemical properties of substituted anthraquinones using undergraduate research students using a joint experimental and computational chemistry approach. M.M. Allard

11:00 117. Qualitative analysis in the general chemistry II laboratory: How much is too much? S. Abbas

11:30 118. Electronic lab notebooks in the organic chemistry laboratory: Optimization of hardware and software parameters. K. Albizati

California State University, San Marcos

SBSB 1107

**Colloids and Surface Chemistry**

K. Ikehata, M. T. Kleinman, Organizers

B. Chou, Presiding


9:00 120. Protein-based protonic transistors. D.D. Ordinario, L. Phan, J. Jocson, T.N. Nguyen, A.A. Gorodetsky

9:30 121. Polymer hydrogel nanoparticles used as artificial heat shock proteins for immunoglobulin G. B. Chou, R. Dalal, K.J. Shea

10:00 Intermission.

10:30 122. Box effects in nonliving and living polymerization of slow or nondiffusing monomers confined to a 2D surface. A. Benedicto

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**Environmental Chemistry**

Ecology, Analysis, and Wastewater
K. Ikehata, Organizer, Presiding
G. Rajagopalan, Presiding

8:30 123. Possible factors in seagrass decline. E.L. Johnson, S. Wyllie-Echeverria, R.A. Lyons
9:00 124. Co-digestion of high strength wastes: Need for a holistic approach. G. Rajagopalan
10:00 Intermission.
10:30 126. A novel isolation and separation scheme for the characterization of dissolved organic matter in landfill leachate. B. Cottrell, M. Pinto, S. Bolyard, D.P. Soulsby, W.J. Cooper, D. Reinhart
11:00 127. Detecting neonicotinoid pesticides with QCM detectors in a gas chromatograph. W.K. Tolley

California State University, San Marcos
SBSB 1109

Medicinal Chemistry

K. Ikehata, M. T. Kleinman, Organizers
D. Van Vranken, Presiding

8:30 129. Discovery of potent and kinase-selective p21-activated kinase 1 (PAK1) inhibitors. W. Lee
9:00 130. Potent synergy between small molecules and fluconazole against Candida albicans. D. Van Vranken, H. Liu, U. Ilanndari, F. Wang, K.A. Scott, C. Shen, S. Lane
9:30 131. Wnt mimetics as anti-cancer drugs: Design and synthesis of drugs that reduce β-catenin and attenuate cell proliferation. A. Jelowicki
10:00 Intermission.
10:30 132. X-ray crystallographic structure of oligomers formed by a toxic β-hairpin derived from α-synuclein: Trimmers and higher-order oligomers. P. Salveson
11:00 133. X-ray crystallographic structures of amyloid oligomers: A toxic crosslinked trimer of β-hairpins derived from Aβ17-36. A. Kreutzer, R.K. Spencer, S. Yoo, J.S. Nowick

California State University, San Marcos
SBSB 1103

Organic Chemistry

Metal Catalysis

K. Ikehata, M. T. Kleinman, Organizers
S. Dey, Presiding

9:00 135. Methodology and mechanistic studies of catalytic asymmetric annulations to form silyl-spirooxindoles. B. Armstrong, B. Shupe, A.K. Franz
10:00 Intermission.
11:00 138. Nickel-catalyzed cross-electrophile coupling reactions of primary and secondary benzylic esters with aryl halides. M. Konev

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SBSB 2109

Organometallic Chemistry
8:30 140. Isolation of bis(copper) key intermediates in Cu-catalyzed azide-alkyne "click reaction". D. Tolentino, L. Jin, M. Melaimi, G. Bertrand

9:00 141. Highly encumbered group VI transition metal catalysts capable of exploiting minor polarization of alkynes to give high regioselectivity in hydrostannation. K. Mandla


10:00 Intermission.

10:30 143. Organoferrous compounds as antitumor agents. C. Hoong

11:00 144. Insight into the mechanism and reactivity of ruthenium ROMP catalysts at the single-molecule and single-particle level. Q. Easter


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SBSB 2111

Physical Chemistry

K. Ikehata, M. T. Kleinman, Organizers

8:30 146. Quantum-mechanical definition of atoms and bonds in molecules. P.W. Langhoff, J.D. Mills, J. Boatz

9:00 147. Range-separated hybrids with correct scaling to the high-density limit. B. Krull, F. Furche, J. Yu

9:30 148. Cubic scaling random phase approximation for molecular systems. G. Chen

10:00 Intermission.

10:30 149. Reexamining the hydrated electron's first excited state lifetime through temperature-dependent femtosecond transient absorption. E. Farr

11:00 150. Visualization of electron-photon-plasmon coupling in single azulene molecules with the STM. A. Yu, S. Li, W. Ho

11:30 151. Probing intermolecular coupled vibration by STM inelastic electron tunneling spectroscopy. Z. Han, C. Xu, C. Chiang, G. Czap, D. Yuan, R. Wu, W. Ho

California State University, San Marcos
SBSB 2140

Polymer Nanomaterials

K. Ikehata, M. T. Kleinman, Organizers

8:30 152. Synthesis of polybenzoquinolines as graphene nanoribbon precursors. D.J. Dibble, Y. Park, M. Umerani, A. Mazaheripour, A.A. Gorodetsky

9:00 153. Assembly of graphene oxide. S. Zhang


10:00 Intermission.


11:00 156. Molecular dynamics simulations of stacked DNA base surrogates. C.B. Markegard, A. Mazaheripour, J. Jocson, A.G. Wardrip, A.M. Burke, M. Dickson, A.A. Gorodetsky, H. Nguyen


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The Many Faces of CHAL
S. P. Thompson, Organizer, Presiding

8:30 158. Intellectual property considerations for small and mid-size chemical businesses. S.P. Thompson
9:00 159. Pay for delay settlements in pharmaceutical cases. G.M. Halpenny
9:30 160. Processing invention disclosures at a university technology transfer office. R.C. Smith
10:00 Intermission.
10:30 161. Review of recent federal circuit decisions relevant to what scientists need to know about patent filing and prosecution. S.P. Thompson

California State University, San Marcos
SBSB 1102

Theory and Experiment Working Together: From Synthetic Chemistry to Drug Design: Symposium in Honor of Kendall Houk

D. J. Tantillo, Organizer, Presiding

8:30 162. Hidden in plain site: Discovery of a widespread, yet highly sought-after enzyme function. J.B. Siegel
9:00 163. Catalytic enantioselective dihalogenation for the synthesis of polyhalogenated natural products. N.Z. Burns
9:30 164. Diverse origins of isotope effects revealed by experiment and theory. D.J. O’Leary
10:00 Intermission.
10:45 166. Phosphines and phosphinocatalysis. O. Kwon
11:15 167. Automated reaction analysis and the power of data-rich reaction progress measurements. J. Hein

SATURDAY AFTERNOON

California State University, San Marcos
SBSB 1102

Theory and Experiment Working Together: From Synthetic Chemistry to Drug Design: Symposium in Honor of Kendall Houk

D. J. Tantillo, Organizer, Presiding

1:15 168. Interplay of theory and experiment in (I) the design of GK-GKRP inhibitors and (II) the origins of rate acceleration in heteroaryl-substituted SnAr substrates. M.D. Bartberger
1:45 169. The interplay of experiment and computation in rearrangement reactions relevant to alkaloid synthesis. C.D. Vanderwal
2:15 170. Mediated electron transfer: An electrochemical approach. R.D. Little
2:45 Intermission.
3:30 172. Adventures in aldehyde C-H bond activation. V.M. Dong
4:00 173. Computational studies of cation-π interactions and applications to neuroscience. D.A. Dougherty
4:30 174. My career in chemistry with Woodward, cycloadditions, and the interplay of computation and experiment. K.N. Houk

California State University, San Marcos
SBSB 1105

Biochemical Technology

K. Ikehata, M. T. Kleinman, Organizers
K. M. Hamadani, Presiding

1:30 175. Mechanical analysis of three coaxial electrospun synthetic biopolymers. R. Anderson
California State University, San Marcos
USU 2300D

Chemical Education

Classroom Innovations

K. Ikehata, M. T. Kleinman, Organizers
R. L. Deming, Presiding

1:30 176. College students' understandings of phase transitions: Semantic, experiential, and energy-related difficulties. P.G. Jasien
2:00 177. Three questions: What have students absorbed from lecture? J.A. Parr
2:30 178. Interdisciplinary and collaborative methods in chemical education. L.H.G. Solomon, D.L. Garin, M. McBane
3:00 Intermission.
3:30 179. Nine years and counting: S-STEM scholarships as a tool for success at CSUSB. K.R. Cousins
4:00 180. Contextualized chemistry: Bringing career relevance to your classroom. J. Clarke
4:30 181. Using technology to reach out to new generation for a fully online chemistry course. K. Ng

Crystallography for the Next Generation

K. A. Kantardjieff, Organizer
B. Rupp, Presiding

1:30 182. Protein crystallography facilities at the Stanford Synchrotron Radiation Laboratory. S. Russi
2:00 183. X-ray crystallography and HIV-1 vaccine design. R. Stanfield
2:30 184. Protein molecular modeling for chemical biology. A. Orry
3:00 Intermission.
3:30 185. Elucidating chemical structure at beamline 11.3.1 at the advanced light source. K.J. Gagnon, G.Y. Morrison, J.R. Nasiatka, S.J. Teat
4:00 186. Targeted crystal growth of rare earth intermetallics with synergistic magnetic and electrical properties. J. Chan
4:30 Panel Discussion.

Environmental Chemistry

Advanced Oxidation

K. Ikehata, Organizer, Presiding
G. Rajagopalan, Presiding

1:30 187. Advanced oxidation applied to water reuse and drought mitigation. D. Hokanson
2:00 188. Chloramine reactivity in wastewater: Kinetics and mechanisms of chlorinated byproduct formation. J. Gleason, J. Castillo, S.P. Mezyk
2:30 189. Sulfate radical remediation of pharmaceutical contaminated wastewaters: Impact of dissolved organic matter. T. Reutershan, S. Mezyk
3:00 Intermission.
3:30 190. Investigating the impact of solution chemistry on advanced oxidative processes in reverse osmosis permeate treatment. W. Li, S.D. Patton, H. Liu
4:00 191. Treatment of groundwater contaminated with volatile and semi-volatile organics using ozone- and UV-based advanced oxidation processes. L. Qu, Y. Li, L. Wang, K. Ikehata
4:30 192. Chlorine radical and chloramine reactivity with wastewater constituent species in support of advanced oxidation processes. K.D. Couch, S.P. Mezyk
Inorganic Chemistry
K. Ikehata, M. T. Kleinman, Organizers
C. H. Larsen, Presiding

2:00 194. Isolable variants of an iron nitridocarbonyl cluster [Fe₄N(CO)₁₂]ⁿ in two states of charge (n = 0, -1). M. J. Drance, J. S. Figueroa
2:30 195. Co(CNArMes₂)₄, an isolobal analogue of Co(CO)₄, and its reactivity. C. Chan, J. S. Figueroa
3:00 Intermission.
3:30 196. A room temperature stable singlet phosphinidene. D. A. Ruiz, L. Liu, G. Bertrand

Medicinal Chemistry
K. Ikehata, M. T. Kleinman, Organizers
J. Gustafson, Presiding

1:30 197. Novel α-helix mimetics for inhibition of protein-protein interactions associated with human papillomavirus. A. Orchard
2:00 198. Docking studies illuminate a likely binding mode of noncanonical opioid peptides. M. J. Ferracane, J. V. Aldrich
2:30 199. Exploiting atropsiomerism to increase the target selectivity of promiscuous inhibitors. J. Gustafson
3:00 Intermission.
4:00 201. Sensitive detection of colorectal cancer biomarker carcinoembryonic antigen by laser wave-mixing spectroscopy and capillary electrophoresis. J. S. Pradel, W. G. Tong

Organic Chemistry
Polymers and Novel Materials
K. Ikehata, M. T. Kleinman, Organizers
T. Palazzo, Presiding

1:30 203. Disiloxanediols as anion-binding and hydrogen-bonding catalysts. K. Diemoz, S. Wilson, A. K. Franz
2:00 204. Metal-free cationic polymerization of styrene utilizing a boron-rich cluster photo-catalyst. P. Chong
2:30 205. Withdrawn.
3:00 Intermission.
4:00 207. Chemical compartmentalization for controlling reactivity in kinetically stable molecular capsules. B. W. Purse
4:30 208. Unlocking the genome of halogenated polycyclic aromatic hydrocarbons. B. Schatschneider

Physical Chemistry
K. Ikehata, M. T. Kleinman, Organizers
S. G. Sayres, Presiding

1:30 209. Utilizing tabletop XUV spectroscopy to explore how electronic spin influences the alignment from strong-field multiple ionization. **S.G. Sayres**

2:00 210. Non-adiabatic molecular dynamics with spin-symmetry breaking for describing photochemistry of acetaldehyde. **J. Vincent**

2:30 211. Methods for qNMR: Spin counting in NMR coil volume. **M. Huang, L. Chi, R.E. Gerald, K.H. Woelk**

3:00 Intermission.

3:30 212. Moderated PEF from transitioning between the micro and macroscopic usage of Coulomb’s law. **E.G. Zoebisch**

4:00 213. *Ab initio* kinetic model for parallel addition reactions of interesting radicals. **P. Winter, A. Lopez, A.L. Cooksy**

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SBSB 2140

**Polymer Nanomaterials**

K. Ikehata, M. T. Kleinman, Organizers
M. T. Fontana, Presiding


3:00 Intermission.

3:30 217. Tracking transplanted cells with paramagnetic fluorinated nanoemulsions. **A.A. Kislukhin**

4:00 218. Evaluation of the cellular biocompatibility of collagen- and synthetic polymer-coated gold nanoparticles. **O.T. Truica, J. Rejman, N. Leopold**

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California State University, San Marcos
SBSB 1107

**Process Organic Chemistry**

K. Ikehata, M. T. Kleinman, Organizers
A. Evans, Presiding

1:30 219. Prebiotic flow synthesis of bioactive nucleoside precursors. **A. Evans, J. Kading, J. Feng**

2:00 220. Towards a continuous flow synthesis of levomilnacipran. **C. Ayoub, M. Nguyen, A.C. Evans**

2:30 221. Flow chemistry enabling safer and novel chemistry. **H. Graehl, L. Kocsis, R.V. Jones**

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California State University, San Marcos
SCI2 243

**Recent Advances in Base Metal Catalysis**

E. Tollefson, Organizer, Presiding

1:30 222. Cyclopropane synthesis via stereospecific intramolecular reductive cross-electrophile couplings. **E. Tollefson, L. Erickson, E.R. Jarvo**

2:00 223. Still paying for Pd in your Pd-catalyzed reactions? Why? Use Fe nanoparticles containing naturally occurring ppm Pd, and get it for free! **S. Handa, Y. Wang, F. Gallou, B.H. Lipshutz, E.B. Landstrom**


3:00 Intermission.

3:30 225. Nickel-catalyzed asymmetric reductive cross-coupling between heteroaryl iodides and α-chloronitriles. **N.T. Kadunce**
4:00 Panel Discussion.

California State University, San Marcos
SBSB 1105

Energy and Fuel Chemistry

K. Ikehata, M. T. Kleinman, Organizers
S. P. Thompson, Presiding

2:00 226. Review of biofuels and biofuels-related technology patents and patent applications. S.P. Thompson
2:30 227. Mesoporous MoS2 as a transition metal dichalcogenide exhibiting pseudocapacitive Li and Na-ion charge storage. J.B. Cook, H. Kim, Y. Yan, J. Ko, B. Dunn, S.H. Tolbert
3:00 Intermission.
3:30 228. Photochemical charge transfer observed in nanoscale hydrogen evolving photocatalysts using surface photovoltage spectroscopy. J. Wang
4:00 229. Numerical and experimental study of a reactive flow with a perovskite catalyst. J. Arbelaez, C. Nieto, W. Silva

California State University, San Marcos
USU 2300A&B

WRM Poster Session

K. Ikehata, M. T. Kleinman, Organizers

2:00 - 5:00

230. Effectiveness of socially-mediated and online learning tools in general chemistry. K.A. Kaiser
232. DFT calculations relating hydricities, pK_a, and redox potentials in coordination and organometallic iridium(III) complexes. R. Adams, A. Lopez, S. Bellows, T. Cundari
233. Alkylation of amino acids by anticancer drug, chlorambucil. T. Wang, B. Brook
234. A historical perspective of the STS (science-technology-society) movement and an application of STS teaching approach in the community college chemistry classroom. G. Perkins
235. Synthesis of alkanethiolate-capped platinum nanoparticle catalysts with enhanced activity using alkylthiosulfate ligand precursor. K. San, Y. Shon
236. C-H amination of tetrahydroisoquinoline. K. Bay, S. Han, B.M. Stoltz
237. Plant growth and soil chemistry: Standard solution models and measurement errors. P. Johnson, L. Huang
238. The effects of high leverage on the optimum product yield of oxazoline. P. Johnson, L. Huang
239. Get involved with the ACS Division of Chemical Education. J.L. Sarquis
240. Characterizing the Rubisco / Rubisco activase interaction via assembly studies. A.J. Serban
242. Thin film crystallization. K. Ulle
243. Activity and selectivity of Pd nanoparticle catalysts for alkylene hydrogenation in water: Effects of graphene oxide supports and thiolate surface ligands. V. Chen, Y. Shon
244. TNA protects DNA and RNA from nuclease digestion under simulated physiological conditions. M. Culbertson, K.W. Temburnikar, S. Sau, J. Liao, S. Bala, J.C. Chaput
245. Antioxidant activity, total phenolics and total flavonoids content study of Yucca whipplei blossoms. C. Bwiza, M. Quach, A. Hidalgo, T. Yoon, D. Paez, J. Kalimba, J. Luong, D. McCarthy, M. Barth, Y. Hu
246. Dye-sensitized solar cell based on the natural dye extract from elderberry leaves. J. Kalimba, J. Luong, Y. Hu
247. Effects of steric hindrance near the metal surface of unsupported palladium nanoparticle catalysts for alkene isomerization. P. Tieu, Y. Shon
248. Elucidating molecular pathways of prostate field cancerization: Potential role of EGR-1 as a master regulator. K. Gabriel, M. Bisoffi
250. Computational study of the addition of ammonia, methylamine, and dimethylamine to acetaldehyde catalyzed by a single water molecule: Energetics for carbamolamine formation. J.E. Perez, M.K. Louie, A. Sinha
251. β-hairpins: Molecular accessories for helical peptide expression. M.E. Lokensgard, J.J. Love

253. Triplet state dynamics in the visible light absorbing zinc chlorodipyrirr. W. Thornbury, S. Das, A. Bartynski, M.E. Thompson, S.E. Bradforth

254. A synthetic siderophore as a molecular shuttle. A.A. Avanes, J. Saboury, A. Davidian, C. Bezjian, B. Ulloa, M. Pinto, C.G. Gutierrez


256. A poster session demonstrating graduate student teaching assistants’ competence in the design and implementation of a student-centered lesson plan. M.A. Boerneke, H. Dembinski, S. Brydges

257. Relationship between speech and gesture to support molecular-level explanations of macroscopic phenomena in the context of acid-base titration. A. Lien, B.L. Gonzalez


259. Photoelectrochemical characterization CuGaSe hotocathodes. B. Bachman, T.G. Deutsch, J. Young


261. Visualization of organic molecules: An analysis of students' visual-spatial ability at a large primarily undergraduate institution. A. Garcia, L. Perez

262. Novel synthesis of modified nucleic acids and nucleoside analogs for solid phase synthesis of ribonucleic guanidine (RNG). A. Chavez

263. Systematic structure modifications of imidazo[1,2-a]pyrimidines to reduce and predict aldehyde oxidase-mediated metabolism. M.A. Ornelas


265. Real-time reaction kinetics by quantitative nuclear magnetic resonance spectroscopy. J. Singh, C. Her, K.V. Krishnan

266. Revolutionary view on third-hand smoke by NMR spectroscopy: A chemometric approach. J. Vang, K.V. Krishnan, A. Hasson

267. Thermodynamic and electrochemical studies of a [Ni(bisphosphine)2]2+ complex in water and organic solvents. B.M. Ceballos, J.Y. Yang, C. Tsay

268. Fragmentation studies of flubendiamide under various atmospheric conditions. E. Rangel


270. Small molecule activation using transition metal-Si complexes. A. Bartrom, H. Harman


272. Automatic classification of surface-bound bacteria cell motion by image analysis and tracking algorithms. S. Shen

273. Reactions of a germylene and stannylene with water and methanol: Evidence of sigma-bond metathesis in the formation of {Sn(µ-OR)}2. J. Erickson