

SWRM-RMRM

Dino Villagran and Brian Leonard, *Program Chairs*

WEDNESDAY AFTERNOON

El Paso Convention Center
El Paso A

Environmental Implications & Applications of Nanotechnology

J. L. Gardea-Torresdey, *Organizer, Presiding*

1:30 1. How mining activities led me to nanotechnology: Engineered nanomaterials and their implications on agriculture. **J.L. Gardea-Torresdey**

2:10 2. Impact of nanoengineered materials on microbial growth. **L. Ringo**, S. Lawless, L. Albert, S. Stokes

2:30 4. Nanopriming with manganese dioxide alleviates salt stress in *Capsicum annuum L.* seedlings: Spectroscopic and gene expression investigation. **Y. Ye**, K. Cota-Ruiz, J.A. Hernández-Viescas, C. Valdes, I. Medina, R. Turley, J. Peralta-Videa, J.L. Gardea-Torresdey

2:50 Intermission.

3:05 5. Effect of nano copper oxide on the physiology of two bok choy (*Brassica rapa*) plant varieties. **C. Deng**, Y. Wang, K. Cota-Ruiz, J.A. Hernández-Viescas, J.L. Gardea-Torresdey

3:25 6. Quantifying titanium dioxide nanoparticles in treated waters using fluorescence sensors. **R. Turley**, J.L. Gardea-Torresdey

3:45 7. Synthetic approaches to nanostructured metal and metal oxides materials with unique surface properties. **R.M. Richards**

4:05 Concluding Remarks.

El Paso Convention Center
El Paso C

Functional Polymers: Synthetic Methodologies & Uses

M. C. Stefan, *Organizer*
N. V. Tsarevsky, *Organizer, Presiding*
M. Stefan, *Presiding*

1:30 8. Importance of non-covalent interactions in the formation of 2D covalent organic frameworks. **R. Smaldone**

2:00 9. Making and modifying polymers using mechanochemistry and continuous flow. **C.E. Hobbs**

2:30 10. Lipoides as building blocks of polymers. **N.V. Tsarevsky**, M. Raeisi, H. Tang

2:50 11. Pnictogen bonded reversed vesicles and their potential application as cargo systems. **S. Moaven**, B.T. Watson, S. Thompson, D. Unruh, D. Pappas, A.F. Cozzolino

3:20 Intermission.

3:30 12. Liquid crystal elastomer 3D structures with designed shape change. **T.H. Ware**

4:00 13. Histone deacetylase inhibitor (HDAC) functionalized polycaprolactones for combination cancer therapy. **M.C. Stefan**, E. Calubaquib, P. Soltantabar, R. Kularatne, H. Wang, A. Bhadrans, M.C. Biewer

4:30 14. Functionalization reactions involving hypervalent iodine compounds with applications in materials science. **N.V. Tsarevsky**, Y. Cao, H. Han, R. Kumar, K. Sayala, A. Vaish

El Paso Convention Center
El Paso B

Innovative Nanomaterials for Electronics, Energy, Photonics & Bioanalytics

Growth & Self-Assembly

Cosponsored by COLL
Financially supported by VWR
S. T. Sreenivasan, *Organizer*
S. Sreenivasan, *Presiding*

1:30 15. Structure and optical properties of transition metal doped wide band gap gallium oxide. **R. Chintalapalle V**

2:10 16. Monitoring growth dynamics of colloidal plasmonic nanoparticles using *in situ* second harmonic generation and extinction spectroscopy. **L.H. Haber**, R. Khoury, J. Ranasinghe, A. Dikkumbura, M. Chen, P. Hamal

2:50 17. Immersion and clustering of nanocubes at liquid-air surfaces. **T.T. Nitka**, P. Kral, L. Vukovic

3:10 18. Laser deposition of conductive, two-dimensional metal structures. **E.H. Lockhart, R.A. Farrer**

El Paso Convention Center
El Paso D

International Chemical Business: Best Practices

Cosponsored by SEED
J. E. Sabol, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 19. SCHB: Your connection to a viable business model. **G.W. Ruger**, J.E. Sabol, M. Chorghade, C.A. Burton

1:55 20. SCORE: your resource for business advice
. **C. Frame, W. Sosa**

2:15 21. International considerations for the solo practitioner. **J.E. Sabol**

2:35 22. Federal regulations and procedures that individuals need to navigate. **J.A. Heppert**

2:55 Intermission.

3:15 23. What to do and not to do when doing business in China. **E. Meyer**

3:35 24. Chirosolve: the chiral chemistry company
. **N.A. Vaidya**

3:55 25. Office of Foreign Assets Control: Sanctions and other information. **J.E. Sabol**

4:15 26. Currency, carbon control, and the parallel economy. **P.A. Comet**

4:35 Concluding Remarks.

El Paso Convention Center
Juarez A

Organometallic & Coordination Chemistry

S. Fortier, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 27. Iron ligand multiple bonds in three-fold symmetry. **J.M. Smith**

2:15 28. Synthesis and characterization of manganese complexes supported by a class of anionic PNP pincer ligands. **A. Narro**, H.D. Arman, Z.J. Tonzetich

2:35 29. Development of tris(phosphine) ligands with appended amines for CO₂ conversion to formate and CO. **C.T. Saouma**, F. Wang

2:55 30. Self-assembly using heavy trivalent pnictogen atoms: Case of routine coordination chemistry, or a fancy supramolecular interaction?. S. Moaven, **A.F. Cozzolino**

3:15 31. Catalytic cyclopropanation evading metal carbene intermediate. **A. Maity**

3:35 Intermission.

3:50 32. Bi-metallic Cr and Fe complexes with bridging silyl groups: Intramolecular phosphine migration from Cr to Fe. **K.H. Pannell**, D. Carrillo, H. Sharma

4:10 33. Utilizing pyrrole-based pincer ligands to gain mechanistic insights of iron-catalyzed hydrosilylation. **C. Thompson**, H.D. Arman, Z.J. Tonzetich

4:30 34. Assembly and reactivity of the interstellar gas molecule P≡N. **J.L. Martinez**, P. Moenne Looco, G. Wu, X. Gao, C. Chen, V. Carta, J.M. Smith

4:50 35. Reduction chemistry of electron-rich titanium platforms. R. Aguilar-Calderón, S. Fortier, **M.A. Gomez Torres**

5:10 36. Copper-alkyne chemistry: Alkyne coordination and transformation. **D. Parasar**, R. Dias

El Paso Convention Center
Hall A

General Posters

Poster Session

B. M. Leonard, D. Villagran, *Organizers*

4:00 - 6:00

37. Shorter chain aldehyde conversion in three strains of yeast. **N.O. Flynn**, M. Shaw

38. Evaluation of nitrate, metformin and/or AMPK inhibitor dorsomorphin on normal and cancer bladder cells. **T. Phan**
39. Ameliorative effect of betanin on experimental cisplatin-induced liver injury: Focus on SIRT-1/PGC-1 α signaling pathways. **I. Hassan**, R. Salama, S. Raouf, D. Boshra, M. Schaalaa
40. Gene-environment interaction in ALS: Viability of forebrain astrocytes from G93A mice after MeHg exposure. **A.d. Miller**
41. Exploring the catalytic reaction path by laminaripentaose-producing β -1,3-glucanase through molecular dynamics simulations. **S. Ma**, X. Zhang, K.A. Osenburg
42. Structure-activity relationships of oxysterol-like compounds binding to oxysterol binding protein (OSBP). **R.S. Fogle**, J.I. Nunez, Z.C. Severance, R.C. Bensen, A.T. Le, C. Malinky, G. Manginelli, H. Rau, K. Snead, C. Bourne, A. Burgett
43. Preservation of strawberries via pH modification and biomolecular coatings. **H. Tu**
44. tRNase activity of Slfn11 is required for impairing HIV-1.. **G. Ahumada**, M. Llano
45. Investigation of glycohydrolase activities in *Penicillium spinulosum* liquid shake cultures supplemented with varying amounts of crushed hemp seeds. **T.D. Neighbours**, S.J. Bonetti, J. Carsella
46. Expression of mouse leukotriene B4 ω -hydroxylase Cyp4f14 in *E. coli* and structural analysis of its active site. **M.M. Jayakody**, D.C. Haines
47. Probing phosphohydrolase activities and exploratory proteomics in modified Raulin-Thom (MRT) media *Penicillium spinulosum* cultures. **S.T. Lira**, S.J. Bonetti
48. *In vitro* sulfur donor efficiency of a novel sulfur donor antidote dimethyl trisulfide in comparison to the present therapy of thiosulfate at various pH. C.T. Rios, **M.M. Gomonit**, L.E. Limon, G.R. Weber, R.D. Gaspé Ralalage, I.K. Warnakula, A.C. Whiteman, I. Petrikovics
49. Analysis of genetic causes of drug side effects using molecular docking. **Z. Huang**, S.M. Reed
50. Stability profiles and targeting capabilities of α 3 β 1 integrin specific HSPC peptide-modified liposomes designed to treat metastatic breast cancer. **S. Phelps**, A. Muniz, J.C. Yarbrough, D. Khan
51. Effects of *Trichoderma viride* VOC combinations on growth inhibition and protein synthesis in *Neolentinus lepideus*. **S. Wilson**, M. Kopecki Fjetland
52. *Trichoderma viride* volatile organic compounds and their role in *Neolentinus lepideus* growth and protein synthesis. **R. Bates**, M. Kopecki Fjetland

53. Investigating biochemical reactions involved in taurine biosynthesis. **S.J. Karpowicz**
54. Discovery of glycan biomarkers for Chagas disease and cutaneous leishmaniasis. **A.L. Montoya**, S. Portillo, I. Estevao, U. Ortega, N.H. Karimi, J.J. Olivas, I. Almeida, K. Michael
55. Biochemical assays for the study of breast cancer cell metabolism. **C. Sanchez**, S. Bose, K.D. Houston, J.P. Houston
56. Reversing the Alzheimer's disease using carbon quantum dots. **J. Ahlawat**, M. Narayan
57. Metabolic profiling breast cancer cells that are sensitive or refractory to tamoxifen treatment using autofluorescence lifetime flow cytometry. **S. Bose**, C. Sanchez, D. Rodriguez, K.D. Houston, J.P. Houston
58. Uptake and translocation of foliar-applied nano-Cu(OH)₂ compared to commercial CuPRO by pea plants. **I. Medina**
59. Study of the Zn transfer kinetics between AztC and AztD in presence of a H138A/H204A AztC mutant. **A. Meni**
60. Mechanisms of action of cholesterol analogs as inhibitors of *Mycobacterium tuberculosis*. **M. Carrillo-Alvarado**, **J. Perez**
61. Self-assembling peptides (Q11) as a platform to create new HPV vaccine candidates. **C. Morales**
62. Potential solution: ABC transport proteins and the future of antibiotics. **D. Valencia**
63. Crystallization of *Paracoccus denitrificans* H-NOX protein. **F. Serrano**
64. Characterization of a chaperonin mutant. **S. Garcia**
65. Mutations in Hsp27 affect phosphorylation regulated chaperone activity. **M. Grajeda**
66. Characterization of H-NOX proteins in *Shewanella oneidensis* and *Legionella pneumophila*. **J. Diaz**, **A. Maldonado**
67. Conditional knockdown of ESAT-6/CFP-10 protein exhibits differential effects than gene knockout on mycobacterial invasion in lung epithelial cells. **L. Wang**
68. Characterization of a putative *Drosophila melanogaster* glycine transporter, and its specificity towards different amino acids. **E. Mendez**
69. Characterization of EsxA/B heterodimer activity in a novel liposomal system. **S. Reyes**
70. GABAergic phenotype of horizontal cells in the mouse retina. **Z. Uresti**

- 71.** Importance of C-terminal domain of the mitochondrial Hsp60 chaperonin in substrate binding. **D. von Salzen**
- 72.** *Mycobacterium marinum* down-regulates miR147 in macrophages in an EsxA/B-dependent manner. **X. Zuo**
- 73.** Understanding the role of a protein intramolecular interaction on Grb7 function and regulation. **A. Biswas**
- 74.** Characterization of the functional state of the Grb7 protein: Potential role of tyrosine phosphorylation. **R. Koirala**
- 75.** Determining the nickel-NTA and cobalt-NTA binding affinity of analog methanobactin peptides as potential affinity tags, using ion mobility mass spectrometry. **A. Flores, V. Cheriya, L.A. Angel**
- 76.** Chlorine and cadmium effects on respiratory public health endpoints in Georgia counties for 2014. **A. Fontenot**
- 77.** Research activities in undergraduate chemistry lab. **S. Kyasa**
- 78.** Synthesis skill transfer from undergraduate general organic chemistry laboratory to research laboratory: Synthesis of various *o*-, *m*-, and *p*-substituted phenylacetates by Fischer esterification reaction and their diastereoselective aldol reactions. **T.L. Walls III, A.Y. Thomas, P.B. Chanda**
- 79.** Angelo State University student chapter activities. **D. Shrestha, B. Krug, E. Osborne, K.A. Boudreaux**
- 80.** Chemical business innovation and entrepreneurship with SCHB. **G.W. Ruger, J.E. Sabol, M. Chorghade, C.A. Burton**
- 81.** U.S. National Chemistry Olympiad at New Mexico State University. **S. Ewing**
- 82.** Study of iodine distribution and concentrations in western Oklahoma brine waters. **J.R. Wickham, B. Baker, K. baugh, D. edlin**
- 83.** Measurement of sugar concentration in Europe's commercial drinks using portable refractometers for development of the STEM program (V). **K. Young Tae**
- 84.** Measurement of the concentration of fine dusts in Ulaanbaatar city for development of the STEM program (V). **K. Young Tae**
- 85.** Glucose-derived nanotemplated carbon adsorbents for water remediation of organic and inorganic pollutants. **L. Barrera, J. Noveron**

- 86.** Lignin-derived graphene quantum dots for environmental and biological applications. **A. Narayanan Nair**, S.T. Sreenivasan
- 87.** UV photodegradation of moxifloxacin in water samples. **R. Shah**, H. Santoke
- 88.** Electrochemical-assisted ultrafiltration membranes for removal of chromium (Cr). **A. Bandegi**, R. Foudazi
- 89.** Adsorption of chromium(VI) by polypyrrole composites. **Z. Abbasian Chaleshtari**, R. Foudazi
- 90.** Synthesis of copper oxide based absorbent for the removal of organic pollutants from water. **M. Ariza**, J. Kikumoto, S. Sheets, M.O. Montes, M.T. Islam
- 91.** Biophysical characterization of DNAJB1-PRKACA in fibrolamellar hepatocellular carcinoma. **T. Nguyen**
- 92.** Inhibitory role of functionalized fullerenes in HIV-1 maturation. **A. Rodriguez**
- 93.** Preparation of tricapas composites, chemically crosslinked, for cartilaginous tissue engineering. **L. Garcia Enriquez**, A. Almirall, G. Fuentes
- 430.** The role of xenobiotics in neurodegenerative diseases. **G. Henriquez**, L. Mendez, E. Guerrero, M. Narayan

THURSDAY MORNING

El Paso Convention Center
El Paso F

Chemistry for Sustainable Water Treatment & Disinfection

F. Perreault, *Organizer, Presiding*
S. Garcia-Segura, *Presiding*

8:00 Introductory Remarks.

8:05 94. Minus approach to eliminate chemical usage for direct-recycle spent filter backwash water. **Y. Chen**

8:45 95. Blowdown water treatment with high scaling potential using membrane distillation. **L. Karimi**, G.H. Stahmer, C. Flores, K. Hickenbottom

9:05 96. Biofilm dispersal from conductive membrane surfaces: Cleaning kinetics and energy consumption analysis. F. Perreault, **D. Rice**

9:25 97. Composite nanomaterials for water treatment applications. **M. Marcos**, D. Villagran, P.J. Alvarez, M. Elimelech, P. Yu, J.L. Gardea-Torresdey, J.A. Hernández-Viescas, Y. Guan, X. Lu

9:45 Intermission.

10:05 98. Water disinfection driven by photoelectrocatalytic processes in off-grid settings: Portable e-DRINK reactor. R. Montenegro-Ayo, A.C. Barrios, J. Morales-Gomero, P.K. Westerhoff, F. Perreault, **S. Garcia-Segura**

10:30 99. Carbon supported platinum and palladium nanoparticles: Opportunity for the reduction of hexavalent chromium. **M.T. Islam**, J. Noveron

10:50 100. Combustion synthesis of zinc oxide nanoparticles and their photocatalytic activities for the degradation of environmental pollutants. **K.A. Sultana**, M.T. Islam, J. Noveron

11:10 101. Sustainable development of nano-composite materials for waste and produced water filtration. **M. Montes**

11:35 102. Electrochemical coagulation processes and their application to wastewater treatments. **A.D. Fajardo**

11:55 Concluding Remarks.

El Paso Convention Center
El Paso B

Innovative Nanomaterials for Electronics, Energy, Photonics & Bioanalytics

Bandgap Engineering & Electronics

Cosponsored by COLL
Financially supported by VWR
S. T. Sreenivasan, *Organizer*
S. Sreenivasan, *Presiding*

8:00 103. Tuning the properties of two-dimensional materials toward efficient photocatalysis. **K.L. Shuford**

8:40 104. Quantum confined materials for electronic and energy applications. **S.T. Sreenivasan**

9:10 Intermission.

9:20 105. Different strategies to modulate the optical band gap of semiconducting two-dimensional materials. **M.A. Mahmoud**

10:00 106. Titanium carbide-based two-dimensional MXenes with tailored properties. **V. Chava,**
S.T. Sreenivasan

El Paso Convention Center
Juarez A

Organometallic & Coordination Chemistry

S. Fortier, *Organizer, Presiding*

8:00 Introductory Remarks.

8:05 107. Studies of mechanism of dehydrogenative borylation of terminal alkynes by (PNP)Ir complexes. **O. Ozerov,** J. Zhou, B.J. Foley

8:35 108. Strong magnetic exchange coupling through cyanide is enabled by π -backdonation. **J.A. Valdez-Moreira,** A. Thorarinsdottir, J. Degayner, S.A. Lutz, C. Chen, Y. Losovyj, D. Harris, J.M. Smith

8:55 325. Correlating thermodynamic parameters of Ru pincer complexes and catalytic activity for CO₂ hydrogenation. **C.T. Saouma,** C. Mathis

9:15 110. Methods for the synthesis and stabilization of late 3D-metal nitrides. **D. Sengupta,** A. Mena, S. Fortier

9:35 111. Iron coordination complexes of BIAN: Synthesis, characterization and catalytic applications. **M. Findlater**

9:55 Intermission.

10:05 112. Understanding metal–carbocation interactions for the development of novel catalysts. **T. Gianetti**

10:25 113. Coordination chemistry of dinuclear gold complexes with bulky formamidinate and guanidinate ligands. **N. Rodriguez,** D. Villagran

10:45 114. Unsupported uranium-arene interactions in sandwich type complexes. **J. Murillo,** S. Fortier

11:05 115. Iron(II) corrole anions: Synthesis, characterization, and reactivity. **K. Caulfield,** J. Conradie, H.D. Arman, A. Ghosh, Z.J. Tonzetich

11:25 116. Understanding the reactions between bidentate phosphines and nickel: Fundamental studies of active catalyst formation. **A. Clevenger**, J. Louie

11:45 117. Experimental and computational thermodynamic studies of displacement of phosphine ligand with pyridine and acetonitrile in iridium pincer complexes. **S. Shafiei-Haghighi**, A. Brar

El Paso Convention Center
Juarez C

Light for Energy: Photonic & Thermal Nanotechnology

A. Alabastri, *Organizer*
O. Neumann, *Organizer, Presiding*
A. Alabastri, *Presiding*

8:20 Introductory Remarks.

8:25 118. Using plasmons for harvesting energy and tuning reaction selectivity. **P.K. Jain**

8:55 119. Visible-light driven artificial photosynthesis via plasmon-induced charge separation. **T. Oshikiri**, X. Shi, Q. Sun, H. Misawa

9:15 120. Dye-sensitized photoelectrochemical cells for artificial photosynthesis and beyond. **B. Sherman**

9:30 Intermission.

9:45 121. Collective response of arrays of nanoparticles. **A. Manjavacas**

10:15 122. Towards nanoscale cytometry with designer thermoplasmonic metasurfaces. **J.C. NDUKAIFFE**, C. Hong, S. Yang

10:35 123. *In vitro* biomedical application and photothermal therapy evaluation of gold nanoparticles. **K. Shennara**

10:50 Intermission.

11:05 124. Photonics of semiconductor nanowires for new solar energy conversion concepts. **E. Alarcon Llado**

11:25 125. Effect of guanidinium salts on the structural, morphological, and photovoltaic performance of Perovskite solar cells. **M.H. Alotaibi**, E. Alharbi, A. Alyamani, A. Albadri, H. Albrithen, i. alehyani, S. Zakeeruddin, M. Graetzel

11:40 126. Stable dye sensitization of metal oxides for efficient water photolysis using visible light for solar hydrogen production. **t. akter**, G. Saupe

El Paso Convention Center
El Paso C

Ultrafast Processes in Chemistry to Picoseconds & Below

Electron Dynamics & Motions in Liquids

Cosponsored by PHYS
D. G. Kuroda, *Organizer, Presiding*

8:30 127. Photoinduced ring currents of electrons and holes in molecules. **A. Jaron-Becker**

9:00 128. Time-resolving electron dynamics in molecules using strong laser fields: Coherent probes of charge migration. **K. Schafer**

9:30 129. Controlling anisotropy in the photoionization of rotational ensembles of molecules. **L. Greenman**

10:00 130. First-principles simulations of attosecond transient X-ray absorption. **M. Chen**, K. Lopata

10:15 Intermission.

10:30 131. Ultrafast H-bond dynamics as a probe of liquid-liquid phase separation. **C.R. Baiz**

11:00 132. Local structure and intermolecular dynamics of mixtures of CS₂ and ionic liquids: Femtosecond OHD-RIKES measurements and molecular dynamics simulations. **E.L. Quitevis**

11:30 133. Using time resolved IR spectroscopy to study the lithium ion solvation. **J.C. Rushing**, F.M. Leonik, D.G. Kuroda

El Paso Convention Center
El Paso E

Advances in Electrochemistry & Electrochemical Analysis

C. Hill, *Organizer, Presiding*

8:40 Introductory Remarks.

8:45 134. Interpreting redox reactions across length scales for printable electronics: Nanoscale visualization and multiscale electrochemical analysis of conductive polymer electrodes. E. Daviddi, Z. Chen, B.B. Massani, J. Lee, C. Bentley, P.R. Unwin, **E.L. Ratcliff**

9:20 135. Probing buried interfaces within bipolar and graphene-sandwich membranes for electrochemical energy conversion. **C.L. Korzeniewski**

9:55 136. Improved methods for probing the electrochemical behavior of single reactive entities. P. Saha, J. Hill, J.D. Walmsley, **C. Hill**

10:30 Intermission.

10:45 137. Kinetic studies of the Volmer-Tafel-Heyrovsky mechanism for the hydrogen evolution reaction in acidic media at nanoparticle ensembles of ultramicroelectrode dimension and at a single nanoparticle and single atomic cluster. **C.G. Zoski**

11:20 138. Plasmon-driven photoelectrochemistry: Hot electrons, hot holes, and hot metal. **K.A. Willets**

El Paso Convention Center
Juarez B

Energy & the Environment

Financially supported by Eastman Chemical Company
M. B. Chambers, *Organizer, Presiding*

8:50 139. Designing molecular photoelectrocatalytic systems for chemical synthesis. J.D. Vasseur, D.R. Holzknicht, S.M. Schwartz, S. Meriam Siddhiaratchi, **M.B. Chambers**

9:15 140. Synthesis of graphene/SnO₂ passivation layer to enhance the charge collection in perovskite solar cells. **H. Javed**, R. Fatima, A. Mahmood

9:40 141. Potent iridium photoreductants for photoredox catalysis. **T.S. Teets**, J. Shon

10:05 142. Copper delafossites: Diverse materials for solar energy conversion and storage. **B.H. Farnum**

10:30 Intermission.

10:45 143. Novel powdered surfactant composites designed for cement spacer applications. **A.M. Shahin**, J. McKellar, S. Sawyshyn, C. Convey

11:10 144. Creating a copper-carbon nanotube hybrid wire via electrochemistry for energy transmission. **V. Gangoli**, E. Kazimierska, C. Barnett, A.R. Barron

11:35 145. Synthesis and modification of mesoporous nanomaterials for catalysis and forensic separations. **B.G. Trewyn**

El Paso Convention Center
El Paso A

Environmental Implications & Applications of Nanotechnology

J. L. Gardea-Torresdey, *Organizer, Presiding*

9:00 Introductory Remarks.

9:05 146. Structure-property-toxicity relationships of carbon nanomaterials: Role of surface chemistry on the mechanisms of interactions with bacteria. **F. Perreault**, A. Barrios

9:25 147. Effect of weathering and surface coating of TiO₂ NPs on carrot (*Daucus carota*) growth. **Y. Wang**, C. Deng, K. Cota-Ruiz, J.A. Hernández-Viescas, J.L. Gardea-Torresdey

9:45 148. Effect of copper nanoparticles on the physiology of alfalfa plants: Implications for sustainable agriculture. **K. Cota-Ruiz**, Y. Ye, C. Valdes, C. Deng, Y. Wang, J.A. Hernández-Viescas, J. Peralta-Videa, J.L. Gardea-Torresdey

10:05 149. Strategic use and implementation of intellectual property and corporate agreements within the field of nanotechnology. **D. Chojnowski**

10:25 150. Evaluation of copper compound effects on corn (*Zea mays*) seedlings: Physiological and molecular responses. **C. Valdes**, K. Cota-Ruiz, Y. Ye, J.A. Hernández-Viescas, J.L. Gardea-Torresdey, k. flores

10:45 3. Photocatalytic decomposition studies of organic compounds with mono- and bi-functional properties. **D.K. Paul**

11:05 Concluding Remarks.

El Paso Convention Center
El Paso D

Nuclear & Radiochemistry

N. Xu, *Organizer, Presiding*

9:00 151. Energy dependence of fission product yields for ²³⁵U, ²³⁸U, and ²³⁹Pu. **M. Gooden**, T.A. Bredeweg, J. Wilhelmy, A. Tonchev, J. Silano, M.A. Stoyer, S. Finch, W. Tornow

9:20 152. Late prompt fission gamma rays from $^{235}\text{(n,f)}$ and $^{252}\text{Cf(sf)}$. **G. Rusev**, E.M. Bond, T.A. Bredeweg, A. Couture, J.M. O'Donnell, M. Jandel, A.E. Lovell, S. Mosby, C.J. Prokop, I. Stetcu, P. Talou, J.L. Ullmann

9:40 153. Nitroplasticizer degradation studies using LC-QTOF. **A.S. Edgar**, D. Yang

10:00 Intermission.

10:10 154. Stable-isotope fractionation of nitrogen by metals in nitric acid. **J.M. Dorhout**, K. Nowak-Lovato, R. Carlson, E.R. Batista, Z. Li, M.P. Wilkerson, S. Clegg

10:30 155. Effects of pyrolytic carbon coatings on oxide and carbide microsphere composition and crystallographic phase. **M.F. Beaux**, D.R. Vodnik, P.J. Reuben, B.L. Bennett, H.M. Kevin, J.D. Goettee, J.D. Journey, G.M. King, A.I. Smith, E.L. Tegtmeier, E.P. Luther, V.R. Dasari, D.J. Devlin, I.O. Usov

10:50 156. Electrolytic driven approach to glovebox decontamination. **B. Karmioli**, J.T. Stritzinger, D. Rodriguez, S. Walsh, J. Monroe, N. Xu, M.J. Monreal

11:10 Intermission.

11:20 157. Americium and plutonium separation and detection with radiochemistry. **J.D. Auxier**, J. Cross, D.R. Porterfield

11:40 158. Potential strategies for uranium chronometry using nuclear counting techniques. **D.R. Porterfield**, J.D. Auxier

THURSDAY AFTERNOON

El Paso Convention Center
El Paso E

Advances in Electrochemistry & Electrochemical Analysis

C. Hill, *Organizer, Presiding*

1:30 159. Electrochemical assessment of molten sodium halide catholytes for sodium batteries. **S. Percival**, M. Gross, I. Small, E. Spoerke

2:00 160. Linking new electrolyte polarity models to the Li-S discharge mechanism. **T.S. Watkins**, K.R. Zavadil

2:30 Intermission.

2:45 161. Optically detected redox changes in single nanoparticles: Tool for understanding heterogeneity. **R.C. Evans**, J. Sambur

3:15 162. Mapping photoelectrochemical behavior within single transition metal dichalcogenide nanosheets. **J. Hill**, C. Hill

3:45 163. Metal-free porphyrins for hydrogen generation. **Y. Ge**, D. Villagran

El Paso Convention Center
El Paso F

Chemistry for Sustainable Water Treatment & Disinfection

F. Perreault, *Organizer*

S. Garcia-Segura, *Presiding*

1:30 Introductory Remarks.

1:35 164. Can nanomaterials be removed by traditional drinking water treatment methods?. **S. Lawless**, L. Ringo, L. Albert, S. Stokes

1:55 165. Treatment of high-scaling propensity hypersaline brines with solvent-induced crystallization. **C. Boo**, H. Qi, I. Billinge, N. Yip

2:35 166. Method development for analyzing fatty acid in adipose tissue using SBSE/GC/MS. **A. Encerrado**, W. Lee

2:55 167. Synthesis of graphene-like MgO for pollutants removal from water. **S. Sheets**, K. Sultana, M. Montes, M.T. Islam, J. Noveron

3:15 168. Development of pre-treatment strategies to mitigate pore wetting in membrane distillation of municipal wastewater desalination brine. **F. Perreault**

3:40 Concluding Remarks.

El Paso Convention Center
Juarez B

Energy & the Environment

Financially supported by Eastman Chemical Company
M. B. Chambers, *Organizer, Presiding*

1:30 169. Carbamates as CO₂ surrogates in electrocatalytic reduction of CO₂ to CO. **C.T. Saouma, M. Bhattacharya**

1:55 170. New carbonylation chemistry at Eastman. **J. Grajeda-Martinez**

2:20 Intermission.

2:35 171. PCET for energy efficient environmental restoration of oxyanion-contaminated waters: Example of chromate reduction. C.M. Stern, D.W. Hayes, L.O. Kgoadi, **N. Elgrishi**

3:00 172. Probing the mechanism of dinitrogen cleavage using electrochemical methods. **B. Lindley, A.J. Miller, S. Schneider**

3:25 173. Taking advantage of the chemistry of heterocycles in actinide selective coordination for sensors. **A.E. Gorden**

3:50 174. Metal-free macrocycles as electrocatalysts for water splitting. **D. Villagran, Y. Ge, Y. Wu**

4:15 175. Unearthing periodicity in the tuning of chemical reactivity by Lewis acidic metal ions. **J.D. Blakemore**

El Paso Convention Center
El Paso B

Innovative Nanomaterials for Electronics, Energy, Photonics & Bioanalytics

Energy

Cosponsored by COLL
S. T. Sreenivasan, *Organizer*
S. Sreenivasan, *Presiding*

1:30 176. Nanotechnology innovations and career opportunities at Savannah River National Laboratory. **S. Hunyadi Murph**

2:15 177. Designing fullerene derivatives for maximum interfacial interactions with perovskite layers and high efficiency solar cells. **S. PAKANATI, O. Fernandez, N.C. Sampaio, L. Echegoyen**

2:45 178. Variation of interfacial interactions in PC₆₁BM-like electron transporting compounds for perovskite solar cells. **O. Fernandez, E. Castro, X. Wu, L. Echegoyen**

3:05 Intermission.

3:15 179. Cellulose nanocrystal-derived high-performance electrodes for advanced Li-based batteries. **S. Morteza Sabet**, S. Chiluwal., T. Zheng, F. Malmir, A. Rao, C.M. Clemons, **S. Pilla**

3:45 180. 2D MoS₂: C₆₀ vdW nanohybrids as efficient multifunctional materials for electrocatalytic and perovskite solar cells applications. **A.P. Puente Santiago**, S. PAKANATI, O.E. Toro, A. Narayanan Nair, S.N. Chava, S.T. Sreenivasan, L. Echegoyen

4:15 181. Graphene-based functional material for nitrogen reduction reaction. **A. Narayanan Nair**, A.P. Puente Santiago, S.T. Sreenivasan

El Paso Convention Center
Juarez C

Light for Energy: Photonic & Thermal Nanotechnology

A. Alabastri, *Organizer*
O. Neumann, *Organizer, Presiding*
A. Alabastri, *Presiding*

1:30 Introductory Remarks.

1:35 182. Micro- and nano-structured materials for photothermal solar energy utilization. **R. Chen**, S. Shin, J. Zeng, Q. Wang

1:55 183. Solar steam generation inside a refractory plasmonic nanocavity. **A. NALDONI**

2:15 184. Performance enhancement of solar thermal desalination with photon flux redistribution and heat recovery. **P. Dongare**, A. Alabastri, O. Neumann, P.J. Nordlander, N.J. Halas

2:35 Intermission.

2:50 185. Enhanced thermal desalination of hypersaline water by direct heating of the membrane/water interface. **J. Wang**, U. Rao, Y. Liu, E. Hoek, T.Y. Cath, N. Tilton, C. Turchi, D. Jassby

3:10 186. Non-evaporative solar thermal desalination of high-salinity brines with temperature swing solvent extraction. **C. Boo**, R. Winton, H. Qi, K.M. Conway, N. Yip

3:40 Intermission.

3:55 187. High-performance, low-cost passive sub-ambient radiative cooling. **B. Bhatia**, A. Leroy, Y. Shen, L. Zhao, M. Soljagic, E. Wang

4:15 188. Time-dependent radiative heat transfer between graphene nanodisks. **L. Zundel**, A. Manjavacas

El Paso Convention Center
El Paso D

Nuclear & Radiochemistry

N. Xu, *Organizer, Presiding*

1:30 189. Radiochemical separation of polonium and actinides in environmental samples. **P. Thakur**

1:50 190. Plutonium isotopes in the terrestrial environment at the WIPP site, USA: Long-term study. **A. Gonzalez-Delgado**

2:10 191. Radioanalytical detection status in environmental samples. C. White, **S. Sandborgh**, J. Garrett, R. Cowan, P. Mark, L. Zhang, S. Marczak

2:30 192. Multivariate analysis methods applied to HHLIBS spectra of post-detonation synthetic nuclear melt glass. **J. Bishop**, J.D. Auxier, N. Xu, D. Labotka

El Paso Convention Center
Juarez A

Organometallic & Coordination Chemistry

S. Fortier, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 193. Thiophene activation by a Ti(II) synthon and its hydrogen induced hydrodesulfurization reactivity. **S. Fortier**, R. Aguilar-Calderón, M.A. Gomez Torres

1:55 194. Understanding metal σ -acceptor interactions in acridine Z-type ligands. **J.M. Veleta**, T.L. Gianetti

2:15 195. Reductive functionalization with cobalt complexes containing a pyrrole-diphosphine pincer ligand: Probing the role of Co(I) versus Co(II). **H. Alawisi**, H.D. Arman, Z.J. Tonzetich

2:35 Intermission.

2:55 197. Activation of N-H bond in aminoferrocene Fc-NH₂ and aminoarenechromium tricarbonyl ($\{\eta^6\text{-C}_6\text{H}_5\}\text{Cr}(\text{CO})_3\text{NH}_2$) by O-siloxy hemiaminals R₃SiOCH₂NMe₂: Role of electronic effects. **H. Sharma**, K.H. Pannell, A. Metta-Magna

3:10 198. Hypervalent iodine supported by metal-organic frameworks (MOFs) as heterogeneous oxidation catalysts. **B. Tahmouresilerd**

3:30 199. N-tethered uranium-arene complexes. **M. Yadav**

3:50 200. Electronic tuning of dichromium and dimolybdenum complexes with unsymmetric arylformamidinate ligands. **I. Cervantes, D. Villagran**

4:10 Concluding Remarks.

El Paso Convention Center
El Paso C

Ultrafast Processes in Chemistry to Picoseconds & Below

Ultrafast Processes & Excited State Dynamics

Cosponsored by PHYS
D. G. Kuroda, *Organizer*
K. Lopata, *Presiding*

1:30 202. Probing quantum many-body correlations with entangled photons. **E.R. Bittner**

2:00 203. Visualizing structures and photoinduced dynamics of materials and interfaces with electrons. **D. Yang**

2:30 204. Intermolecular dynamics of mixtures of 1-methyl-3-pentylimidazolium bis[(trifluoromethane)sulfonyl]amide and hexanenitrile studied by optical heterodyne-detected Raman-induced Kerr effect spectroscopy. **D. Meng, E. Gurung, E.L. Quitevis**

2:45 Intermission.

3:00 205. Modeling coherent exciton-vibrational dynamics and energy transfer in conjugated organic molecules. **T. Nelson**

3:30 206. Ultrafast dynamics of novel tripyrrolic molecular systems. **V. Huxter**

4:00 207. Molecular origins of symmetry breaking in quadrupolar A- π -D- π -A dye molecules. **J. Harvey**

4:30 208. Anisotropic carrier and lattice dynamics of black phosphorus. **M. Chebl, F. Wang, X. He, D. Yang**

El Paso Convention Center
Hall A

General Posters

Poster Session

B. M. Leonard, D. Villagran, *Organizers*

3:00 - 5:00

201. In pursuit of low-coordinate iron nitrides. **A. Mena**, D. Sengupta, S. Fortier

209. Synthesis, isolation and characterization of dysprosium-scandium sulfide clusterfullerenes. W. Cai, **A. Gomez**, R. Letona, L. Echegoyen

210. Superhydrophobic sandwich system to facilitate a contact-free $^1\text{O}_2$ delivery: Efficient 20- μm transport of airborne singlet oxygen. D. Aebisher, D. Bartusik-Aebisher, S.J. Belh, G. Ghosh, Y. Liu, Q. Xu, A.M. Lyons, **A. Greer**

211. Synthesis and characterization of Ru(II) complexes with π -expansive imidazophen ligands for the photokilling of human melanoma cells. G. Ghosh, H. Yin, S.M. Monro, T. Sainuddin, L. Lapoot, **A. Greer**, S.A. McFarland

212. On the origin of hues of elemental nonmetals: Where is the chromophore?. **A. Greer**, S.W. Slayden, J.F. Liebman

213. *Ab initio* calculations of C-C bond activation via protonation or electrophilic methylation in metal complexes. **A. Lin**, F. Rahman

214. Synthesis and characterization of poly(benzoxazaborole)s and bis(benzoxazaborole)s derived from bis(aminophenol)s. **A. Muthumali**, D.E. Gross

215. pH dependent chelation study of a series of hexapeptides with Zn(II), Ni(II), and Co(II) using ESI-IMMS. **A.B. Ilesanmi**, T. Moore, L.A. Angel

216. Solid-state structural study of fluoro-substituted derivatives of 2-methyl-2-phenylpropionamide. **M.I. Barron-Gonzalez**, V. Sena, G. Bogdanov, T. Timofeeva, A.V. Krivoshein

217. Liquefaction of *Chlorella* to bio-oils with water and water/ethanol. K. Largent, E. Cardenas, M. Perez, **B. Jang**

218. Toward the synthesis of a novel N₂S₃ ligand applicable to nitrile hydratase. **B.N. Mullen**, M.A. Cranswick

219. Reducing crowdedness in lanthanide metal organic frameworks. **C. Averette**, R.A. Zehnder

- 220.** Paired convergent electrochemical preparation of Cu₂O semiconducting layers and their surface characterization. **K.F. Genaro-Saldivar**, E. Ramirez-Meneses, C. Juarez-Balderas, **G.R. Negrete-Reyes**, **D.A. Garcia-Najera**, **F. Avendano-SanJuan**, J.G. Ibanez
- 221.** Lanthanide coordination polymers with various terephthalate derivatives. **C. Jimenez**, R.A. Zehnder
- 222.** Niobate photocatalysts for hydrogen generation via water photolysis in visible light. **C.I. Grendahl**, t. akter, J. Ayala, J. Eaton, G. Saupe
- 223.** Development of dialkylboron triflate-mediated *syn*-selective aldol reaction of *N,N*-dialkylphenylacetamides. **D.J. Cambre**, S.W. Primeaux, P.B. Chanda
- 224.** Studying the size and shape changes of silicon nanoparticles upon lithiation with scanning electron microscopy. **P. McDaniel**, G.J. Smith
- 225.** Chromium anchored Al-MCM-41 nanomaterial: FT-IR study of detoxification of organic compounds. **D.K. Paul**
- 226.** Synthesis and characterization of Cu(I) nanometric systems as catalysts in Huisgen cycloaddition in bioconjugation chemistry. **D. Viera**, L. Bravo, C. Iriarte
- 227.** Synthesis of neoglycoproteins as potential vaccines for Chagas disease. **E. Garcia Carvajal**, A.L. Montoya, F. Avci, I. Almeida, K. Michael
- 228.** Carbon structure formation in silicon oxycarbide ceramics. **E. Alasadi**, P. Kroll
- 229.** Biologically important compounds: Synthesis and antitumor studies of nicotinic acid, thionicotinic acid, pyrimidine thiolate and methionine complexes of platinum. E. Ding, A. Lin, K. Thomas, **F. Rahman**
- 230.** Structural and reactivity studies of rhodium hydrides containing mixed triphosphine and monophosphine ligands. **W. Fernandez**, C. Zall
- 231.** Molecular modes of attosecond charge migration. **A. Folorunso**, K. Lopata
- 232.** Green chemistry activities at Angelo State University. **G. Gutierrez**
- 233.** Electrospun nanofiber scaffold-based regeneration of osteochondral defects enhanced by three-layer gradient morphology, cross-linking, and mineralization. **H. Li**
- 234.** New experiments for the organic teaching lab: Semipinacol rearrangements of 1,1-diaryl-1,2-epoxypropanes. **K.M. Hartung**, **E.J. Kantorowski**
- 235.** Investigating effects of methoxy groups on salicyl alcohol derived photolabile protecting groups. **H. Pham**, S.M. Reed, M. Hunsley

- 236.** New photochemical methodologies for the synthesis of linear and cyclic peptides. **P. Del Castillo**, A. Ornelas, K. Michael
- 237.** Utilization of Le Chatelier's principle for the synthesis of diazaborole-linked materials. **I. Haltom**, D.E. Gross
- 238.** Synthesis of *Leishmania* parasite-derived glycans and their functionalization with amino groups. **I. Vinales**, A.L. Montoya, K. Michael
- 239.** Determining the effect of copper on cyclophilin A using mass spectrometry. **J.D. Jones**
- 240.** Application of FMIF as a water-stable fluorescent sensor. **J. Fripp**, C. Williams, J. Ivy
- 241.** Synthesis of homobifunctional photocleavable crosslinkers. **J. Hernandez**, H.P. Del Castillo, A. Cruz Neto, K. Michael
- 242.** Photocatalytic degradation of rhodamine B using TiO₂@rGO nanocomposites. **J. Yu**, H. Luo
- 243.** New dye-sensitized porous titanium niobium metal oxide photocatalysts for solar hydrogen generation. **J. Ayala**, J.C. Eaton, G. Saupe
- 244.** ZnO@Carbon nanocomposites: Synthesis, characterization and application for the removal of BPA from water. **J. Kikumoto Dias**, M. Ariza, S. Sheets, M.O. Montes, M.T. Islam
- 245.** Fe-doped Ni₃S₂ nanowires on nickel foam as overall water splitting catalysts. **J. Fernald**, C. Regalado, H. Luo
- 246.** Molecular modelling and molecular dynamics simulations on murine Cyp4f13: Insight into a homolog of human ω-hydroxylase CYP4F3, a potentiator of tumor cell metastasis. **J.W. Butler**, D.C. Haines
- 247.** Synthesis and characterization of silicon carbide and silicon nitride aerogels. **K. Cordero**, A. Zambotti, G. Soraru, P. Kroll
- 248.** Nitroso Diels-Alder reactions as tools for designing building blocks for ROMP. **K. Sheridan**, C.E. Hobbs
- 249.** Determination of Hansen solubility parameters for a perhydropolysilazane. **K. Hendrix**, A. Hande, P. Kroll
- 250.** Supported palladium catalysts for liquid phase semi-hydrogenation of alkynes to alkenes. **K.O. Vinson**, B. Jang
- 251.** Cyclization of thiol-functionalized triazolyidenes salts induced by disulfide intermediate. **L. Ardon Munoz**

- 252.** Using Ce(IV) to create coordination polymers with various terephthalate derivatives. **L. Glover**, R.A. Zehnder
- 253.** Green synthesis of transition metal nanoparticles embedded on porous carbon matrix for environmental remediation. **M. Ahsan**
- 254.** Water dispersible cobalt ferrite nanoparticles prepared by silane ligand exchange of carboxylate-functionalized hydrophobic nanoprecursors, and their anti-bacterial activity. **M. Johnson**, J. Chacon, C. Gaffney, J. Bechelli, T.M. Trad
- 255.** Analysis and comparison of consumer-based cosmetic products through the usage of X-ray fluorescence, scanning electron microscopy, and energy dispersive X-ray spectroscopy. **K. Mansour**
- 256.** Rational design and synthesis of a photo-redox, unimolecular ligand initiator system for tandem catalysis. **M. Peavy**, C.E. Hobbs
- 257.** Liquefaction of *Chlorella* to bio-oil using ethanol. **M. Perez**, B. Jang
- 258.** Generation of beta-lactones towards a facile formation of substituted pyranones. **M.D. Ruane**, L.Y. Vu, A. Fernandez
- 259.** Effect of co-surfactant on the properties of polymerized high internal phase emulsions. **M. Zhou**, R. Foudazi
- 260.** Gold nanoparticle synthesis, characterization, and kinetics of formation in novel thioether-functionalized ionic liquids. J. Games, **M. Watzky**, H. Zhao
- 261.** Leakage-corrected time-dependent density functional theory simulations of strong-field ionization. **M. Yang**, K. Lopata
- 262.** Synthesis and spectroscopic investigation of novel tetra-iron(III) complexes with D-glucose under reducing and oxidizing reaction conditions. **M. Mamori**, C. Stewart, H.D. Arman, G.T. Musie
- 263.** Pedal motion and thermal expansion properties of imine-based crystals. **N. Juneja**, E. Zahid, D. Unruh, K.M. Hutchins
- 264.** Comparison of the solventless and solvent mediated synthesis of new copper(I) iodide complexes with substituted pyrazole. **A. Diaby**, R. Jawaid, v. Nesterov, A.A. Christopher, M. Omary
- 265.** Using electric fields for controlling polymorph crystallization. E. Fahrenkrug, **P. Gautam**, C. Mweka

- 266.** Exploration of functional groups in N-derivatized nitroindolines. **P. Baily**, P. Del Castillo, A. Paez, M.R. Weaver, R.P. Iturralde, C. Li, K. Michael
- 267.** Optimizing the stability of an optical bio-sensor for differentiating free silver ions (Ag⁺) from silver nanoparticles (AgNPs) in biological medium. **N.A. Perera**, **D. Garcia**, D. Simmons, M. Omary, S. Marpu
- 268.** Assembling lanthanide coordination polymers with pamoic acid. **R. Davis**, R.A. Zehnder
- 269.** Toward the production of novel fibers using extracts from hemp. **R.A. Farrer**, J.M. Mutz, G. Mendel
- 270.** Wittig reactions as tools for post-polymerization functionalization of ROMP-derived materials. **R. Duty**, C.E. Hobbs
- 271.** Foam-templated macroporous polymers. **R. Zowada**, R. Foudazi
- 272.** Anti-selective enolboration-aldolization of *N,N*-dialkylphenylacetamides. **S.W. Primeaux**, D.J. Cambre, P.B. Chanda
- 273.** Highly reactive Co^{III,IV}₂(μ-O)₂ diamond core complex that cleaves C-H bonds. Y. Li, **S. Handunneththige**, E.R. Farquhar, Y. Guo, M. Talipov, F. Li, D. Wang
- 274.** Investigation of the binding selectivity of zinc(II) with associated hexapeptides. **T. Moore**
- 275.** Transport of ZnO nanoparticles in zinc-deficient soil under different growth environments. **B. Dominguez Delgadillo**, I. Medina
- 276.** Impact of secondary coordination sphere nucleophiles on methane activation: Computational study. **T.R. Cundari**, M.E. Anderson
- 277.** Thermodynamic and kinetic studies of dynamic covalent reactions involving benzoxazaboroles. **T.P. Hemachandra**, R. Rathnayaka, D.E. Gross
- 278.** Safe handling of bulk low-density nanomaterials. **V. Gangoli**, P. Raja, A.R. Barron
- 279.** Computational study of cobalt oxynitrides. **M. Mrozek-McCourt**, C. Ladewig, F. Anwar, T. Cundari, J. Kelber
- 280.** Facile synthesis and characterization of ZnO nanocolumns by vapor phase transport and the effects of reaction time, gas flow rate, and pressure on morphology, growth, and photoelectric properties. **Z. Romero**, P. Blount, T.M. Trad, R. Balaraman
- 281.** Synthesis and evaluation of tris(2,2'-bipyridyl)Fe(II) as a photosensitizer dye in unique metal oxide composites for solar photocatalytic water splitting. **J.C. Eaton**, G. Saupe

282. Comparison of electro dialysis desalination performance of conventional ion exchange membranes. **A.G. Hyder**, M.A. Cappelle, W.S. Walker

THURSDAY EVENING

El Paso Convention Center
Rio Grande A

Plenary Symposium

Plenary Talk

D. Villagran, *Organizer, Presiding*

5:30 283. Buckyball maracas: New endohedral fullerene structures, reactivity and mechanistic aspects. **L. Echegoyen**

FRIDAY MORNING

El Paso Convention Center
El Paso A

Bioanalysis

X. Li, *Organizer, Presiding*

8:00 Introductory remarks.

8:05 284. Long-term monitoring of tonic and phasic dopamine signaling *in vivo*. **M. Heien**, D.C. Farrell, J.R. Siegenthaler, B.T. Seaton, T.A. Gee

8:30 285. Acquiring fluorescence decay kinetic measurements with on-chip acoustic focusing cytometry. **J.P. Houston**

8:55 286. Multiplexed instrument-free bar-chart SpinChip integrated with nanoparticle-mediated magnetic aptasensors for visual quantitative detection of multiple pathogens. X. Wei, D. Dominguez, **X. Li**

9:20 287. Microparticle platform for low-energy radionuclide scintillation proximity assay. **M. Han**, C. Janczak, C.A. Aspinwall

9:35 288. Acetylcholine sensor prepared from polymer scaffold stabilized black lipid membranes with reconstituted nicotinic acetylcholine receptor. **Z. Wang**, X. Wang, C.A. Aspinwall

9:50 289. Thermal inkjet bioprinting MCF7 breast cancer cells induces phosphorylation of 19 analytes. **A. Campbell**, M. Huda, J.E. Mohl, D.A. Gutierrez, A. Varela-Ramirez, T. Boland

10:05 Intermission.

10:20 290. High-throughput detection of volatile organic compounds in urine for prostate cancer diagnosis and risk assessment. **W. Lee**

10:45 291. How the histidine and cysteine ligating sites in a series of heptapeptides affects their chelation of zinc(II), nickel(II), copper(II), silver(I), and cobalt(II). **L.A. Angel**, N. Feuntes, E.N. Yousef, L. Truong, A. Flores

11:10 292. Rapid quantitative tuberculosis diagnosis using a thermometer. **W. Zhou**, X. Li, J. Sun

11:25 293. Small non-base paired single stranded circular nucleic acids. **P. Chaturvedi**, L. Vukovic

11:40 294. Studies on the effect of processing method on loss of nutrients in some grains and legumes. **M.C. Azih**

El Paso Convention Center
Juarez B

General Biochemistry

M. Narayan, E. Yukl, *Organizers, Presiding*

8:00 295. V-ATPase proton pumps. **K. Parra**

8:30 296. Dirty chemistry. **C.Y. Kim**

9:00 297. Role of the metallochaperone AztD in bacterial zinc homeostasis. **E. Yukl**

9:30 Intermission.

9:45 298. Structure and function of *Mycobacterium tuberculosis* virulence factors. **J. Sun**

10:15 299. Hit to lead discovery of the benzoylsulfonohydrazide WM-8014 as a potent inhibitor of the histone acetyltransferase KAT6A. **D. Leaver**

10:35 300. Coregulation of DNA-A and ParA proteins in replication initiation and chromosome segregation. **I. Menikpurage**

10:55 301. Analysis of drugs that display toxicity to breast cancer cells pre-exposed to paclitaxel chemotherapy. **C. Clifton**

El Paso Convention Center
El Paso F

New Horizons in Physical Organic Chemistry

Cosponsored by ORGN
E. L. Clennan, *Organizer*
Y. Qin, *Presiding*

8:00 Introductory Remarks.

8:05 302. Porphene: Heterocyclic analog of graphene. T.F. Magnera, P.I. Dron, J. Bozzone, V. Schultz, W. Bu, **J. Michl**

8:45 303. New strategies to achieve photocaging using visible light. **A. Winter**

9:15 304. Molecular motion, phase transitions, and thermal expansion properties of organic crystals. **K.M. Hutchins**

9:45 Intermission.

10:05 305. Developing new photo-electro responsive organic materials for energy storage and nanomechanical switching. **S.C. Blackstock**

10:35 306. Pyrene-like triplet chromophores: How (anti)aromaticity enhances intersystem crossing. **A.J. Ayitou**

11:05 307. New modes of organic reactivity and enantioselectivity from quantum chemical and informatics approaches. **R.S. Paton**

11:35 308. Synthesis of anti-inflammation and anticancer agents from natural lead compound. **Z. Wang**

El Paso Convention Center
Juarez C

General Organic

C. Dirk, B. M. Leonard, D. Villagran, *Organizers*
P. B. Chanda, *Presiding*

8:10 309. Tandem catalysis using a new photo-redox unimolecular ligand initiator system. **C.E. Hobbs**

8:30 310. Stereoselective construction of polysubstituted tetrahydrobenzimidazoles. **M. Singha Roy**

8:50 311. Oxidative disulfide coupling as powerful tool for the formation of tricyclic aromatic heterocycles. **J.L. Bolliger**

9:10 312. Spectroscopic study of the conversion of cannabidiol (CBD) into other cannabinoid derivatives under acidic conditions. **J. Guglielmo, S. Bhattacharyya**

9:30 313. Molecular cursor caliper: Fluorescent sensor for dicarboxylate dianions. **C. Guo, W. Chen, Q. He, X. Chi, V.M. Lynch, Z. Zhang, J. Su, H. Tian, J.L. Sessler**

9:50 Intermission.

10:05 314. Ibuprofen as a probe of lipid metabolism. **J.A. Rosales, J.M. Salvador**

10:25 315. Asymmetric synthesis of azetines via [3+1] cycloaddition and their subsequent reactions. **N. Greco, K. Marichev, M.P. Doyle**

10:45 316. Leveraging metal-organic frameworks' high gas affinity for quantitation of low-retention analytes: Copper-, zirconium-, and iron-1,3,5-benzenetricarboxylate as novel stationary phase for high pressure liquid chromatography (HPLC). **H. Cuchiaro, H. Hibbard, M.M. Reynolds**

11:05 317. Synthesis and activity of atypical carbapenems with activity against *Acinetobacter baumannii*. **M. Alqurafi, N. Al-Kharji, T. Nguyen, W. Chai, N. Stewart, M. Toth, A. He, L. Newman, M. Pan, N. Nformi, S. Koh, Y. Samadzada, M. Raghunathan, R. Malhotra, S. Chebrolu, M. Naidu, R. Garikapati, R. Daulat, A. Pramanik, S. Vakulenko, J.D. Buynak**

El Paso Convention Center
El Paso D

Celebrating the Elements & their Discoverers

N. V. Tsarevsky, *Organizer*
C. Hahn, *Organizer, Presiding*

8:30 318. Birth of the periodic table. **J.L. Marshall, V. Marshall**

9:10 319. Mendeleev's little helpers. **K.H. Pannell**

9:40 320. Two siblings born of the sea: Stories of elements 53 and 35. **N.V. Tsarevsky**

10:10 Intermission.

10:30 321. Discovery and uses of neodymium. **M.C. Stefan**

11:00 322. Ga, In, Tl: Main group III marvels!. **N. Gerasimchuk**

11:30 323. Prospects for discovery of the next superheavy element. **C.M. Folden**

El Paso Convention Center
Juarez A

New Directions in Metal-Mediated Conversions for Fuels & Feedstocks

Cosponsored by INOR
D. M. Roddick, *Organizer*
E. B. Hulley, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 324. Design of molecular catalysts for making and breaking H-H and N-H bonds. **R. Bullock**, P. Dunn, B.J. Cook, S.I. Johnson, E.S. Wiedner, S. Raugei

9:05 326. Formic acid dehydrogenation catalysis using PNP-supported ruthenium and manganese complexes. N. Anderson, J.M. Boncella, **A.M. Tondreau**

9:35 109. Investigation of the mechanistic and thermodynamic parameters of manganese pincer CO₂ hydrogenation catalysts. **K.S. Schlenker**, C.T. Saouma

10:05 Intermission.

10:20 327. Thermodynamic considerations of bifunctional heterolytic C-H activation. **E.B. Hulley**

10:50 328. Fundamental acid-based properties relevant to organometallic C-H activation. **T.R. Cundari**, M.E. Anderson

11:20 329. Inter and intramolecular “inverse” frustrated Lewis pairs: Catalysis and small molecule activation. **C. Krempner**

El Paso Convention Center
El Paso E

General Physical

B. M. Leonard, *Organizer*

D. Villagran, *Organizer, Presiding*

9:00 330. Superlattice structure and dynamics of self-assembled monolayers of alkanethiols on gold. **M. Ghosh**

9:20 331. Hansen solubility parameter for poly(methylhydrosiloxane). **A.B. Hande**, P. Kroll

9:40 332. Electronic structure and chemical properties of long-bonded isonitrosyl compounds. **P.S. Senanayake**, M. Talipov, R. Syrlybaeva

10:00 333. Spectroscopic and theoretical study of the intramolecular pi-type hydrogen bonding and conformations of 3-cyclopenten-1-ol, 2-cyclopenten-1-ol and 2-cyclohexen-1-ol. **E.J. Ocola**, J. Laane

El Paso Convention Center

El Paso B

Innovative Nanomaterials for Electronics, Energy, Photonics & Bioanalytics

Photonics & Photophysics

Cosponsored by COLL

S. T. Sreenivasan, *Organizer*

S. Sreenivasan, *Presiding*

9:00 334. What goes on at the surface of a plasmonic catalyst?. **P.K. Jain**

9:45 335. P-type antimony-doped ZnO nanostructures: Vapor phase transport synthesis and room temperature photoluminescence. **P. Blount**, Z. Romero, T.M. Trad, R. Balaraman

10:05 336. PVP-assisted controlled synthesis of lead perovskite nanocrystals. **K. Ling**, V. Gangoli, A.R. Barron

10:25 Intermission.

10:35 337. Dependence of plasmonic coupling on the degree of oscillating electron density in dimeric nanoparticles. **N. Hooshmand**

11:15 338. Using PbS nanocrystals for photon upconversion. **I. Lee**, E. Raulerson, S.T. Roberts

El Paso Convention Center

El Paso C

Synthesis, Analysis & Function of Biomaterials

Cosponsored by PMSE

K. Michael, *Organizer, Presiding*

9:00 Introductory Remarks.

9:05 339. NIR triggered upconversion nano system for synergistic photodynamic and photothermal cancer therapy. **L. MA**, E. Castro, L. Echegoyen, X. Li

9:25 340. From small molecules to chronically stable neural implants. S. Hosseini, **M. Ecker**

9:55 341. Macroporous chitosan scaffolds obtained from highly concentrated emulsions. **H. SalimiKenari**, K. Pai, R. Foudazi

10:15 342. N-acyl-7-nitroindolines: Application in photodegradable hydrogels. **P. Del Castillo**, P. Baily, K. Michael

10:35 Intermission.

10:50 344. Two-photon photolysis of photoreactive biomaterials. **C. Li**, R.P. Iturralde, M.R. Weaver, A. Paez, H.P. Del Castillo, P.T. Baily, K. Michael, T. Boland, B. Joddar

FRIDAY AFTERNOON

El Paso Convention Center

Juarez D

Celebrating the Elements & their Discoverers

C. Hahn, *Organizer*

N. V. Tsarevsky, *Organizer, Presiding*

1:30 345. Potassium and the Kalimanjaro. **C. Hahn**

2:00 346. Sulfur: Origins, properties, chemistry, and applications. **T. Ready**

2:30 347. History of element silver and synthesis of silver nanomaterials. **P. Kesavan**

3:00 348. Kingsville and uranium: History of the South Texas uranium belt. **J.T. Medina**, C. Hahn

3:30 Intermission.

3:45 349. Overview of the discovery of ruthenium. **P. Villarreal**, C. Hahn

4:15 350. American nuclear chemist: Glenn Seaborg. **D.E. Rodriguez**, C. Hahn

4:45 351. Elemental ads: Learning about the elements from newspaper and magazine advertising materials. **N.V. Tsarevsky**

El Paso Convention Center
Juarez B

General Biochemistry

M. Narayan, E. Yukl, *Organizers, Presiding*

1:30 352. Computational modeling of virucidal inhibition mechanisms of broad-spectrum non-toxic antiviral nanoparticles. **L. Vukovic**

2:00 353. KP372-1-induced DNA damage response as a potent chemotherapeutic strategy against pancreatic cancer. **P. Patidar**

2:30 354. Peroxidase catalyzed reaction of probes by various oxidized organic compounds. **D. Morrone**

3:00 355. Extraction, separation, and analysis of antimicrobial compounds from xeric plants. **T.J. Terry**, S. Sanchez, D. Childress, E. Ashford, D. DeMmon

3:30 Intermission.

3:45 356. Why such a nonlinear process as rotein synthesis is well approximated by linear formulas. **V. Kreinovich**

4:05 357. Role of inducible growth factor binding protein 3 in regulating anti-estrogen drugs in breast cancer cells. **Y. Zheng**

4:25 358. Towards understanding the role of protein kinase A in fibrolamellar hepatocellular carcinoma. **M. Shirani**

El Paso Convention Center
Juarez C

General Organic

C. Dirk, B. M. Leonard, D. Villagran, *Organizers*
C. E. Hobbs, *Presiding*

1:30 359. Diastereoselective enolboration-aldolization of substituted phenylacetates. **P.B. Chanda**, A.Y. Thomas, T.L. Walls III, B.N. Nelson

2:00 360. Synthesis of the first co-crystals and salts containing the pharmaceutical bezafibrate. **J.D. Loya**, D. Unruh, K.M. Hutchins

2:30 361. Synthetic studies towards the total synthesis of laingolide A. **A. Gollhofer**, W.A. Maio

3:00 Intermission.

3:10 362. Approach towards total synthesis of nagelamide C. **O. Ojo**

3:40 363. Cobalt (II)-catalyzed stereoselective olefin isomerization: Facile access to acyclic trisubstituted alkenes. **D. Bedi**, S. Zhang, L. Cheng, D. Unruh, G. Li, M. Findlater

4:10 Intermission.

4:20 364. Synthesis of cystargolide-based β -lactone proteasome inhibitors. **C. Viera**, B. Stevens, C. Zielinski, R. Tello-Aburto

4:50 365. Hammett studies of the cyclopropanation of 1-aryl-1-cycloalkenes. **K.M. Hartung**, E.J. Kantorowski

5:20 366. Zein protein adsorption behavior on fluorinated and silicone treated surfaces. **T. Shimosaka**, T.J. McCarthy

El Paso Convention Center
El Paso B

Innovative Nanomaterials for Electronics, Energy, Photonics & Bioanalytics

Bio-Nanotechnology

Cosponsored by COLL
S. T. Sreenivasan, *Organizer*
S. Sreenivasan, *Presiding*

1:30 367. Endocytosis of varying aspect ratios of gold nanorods in HeLa cells. **Y. Vasquez**, D. Fernando, S. Sulthana

2:10 368. Chitosan-based drug encapsulation system for prevention of Parkinson's disease using rotenone induced mechanism. **J. Ahlawat**, S.T. Sreenivasan, M. Narayan

2:30 369. Clonable metal nanoparticle tags: *In situ* protein labelling for biological electron microscopy. **K. BORGOGNONI**, Z. Butz

2:50 Intermission.

3:00 370. Multiscale modeling of oligonucleotide-carbon nanotube biosensor platforms. **L. Vukovic**, A. Alizadehmojarad

3:40 371. Plasmonically enhanced Raman spectroscopy for monitoring the dynamics of hemoxygenase-1 activation in head and neck cancer cells. **S. Panikkanvalappil**

El Paso Convention Center
Juarez A

New Directions in Metal-Mediated Conversions for Fuels & Feedstocks

Cosponsored by INOR
E. B. Hulley, *Organizer*
D. M. Roddick, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 1. Bond activation reactions by boryl pincer complexes. **O. Ozerov**, Y. Cao, W. Shih, N. Bhuvanesh

2:05 2. Catalysis employing earth abundant metals: Applications in hydroboration and hydrosilylation. **M. Findlater**, S. Zhang, D. Bedi, L. Cheng, D. Unruh, G. Li

2:35 3. Encapsulation and immobilization as tools to fight deactivation in molecular electrocatalysts. R.J. Bujol, J.T. Bruna, **N. Elgrishi**

3:05 Intermission.

3:20 4. Platinum ethylene dimerization catalysts: Diphosphine vs. diimine ligand effects. **D.M. Roddick**, S. Debnath, S. Basu, J.J. Adams, N. Arulsamy

3:50 5. Coinage metal complexes of polyfluorinated ligands, their hydrocarbon coordination and functionalization chemistry. **R. Dias**, T. Ponduru, A. Noonikara Poyil, D. Parasar

4:20 6. Controlling hydrocarbon functionalization with metal oxo excited electronic states. S. Fosshat, S. Meriam Siddharatchi, C.L. Baumberger, V.F. Rodriguez-Ortiz, **M.B. Chambers**

El Paso Convention Center
El Paso F

New Horizons in Physical Organic Chemistry

Cosponsored by ORGN
E. L. Clennan, *Organizer*
A. J. Ayitou, *Presiding*

1:30 378. Actinide-based buckyball maracas: Fullerene cages as effective nanocontainers to stabilize monometallic and actinide clusters inside. **L. Echevoyen**, J.M. Poblet, W. Cai

2:10 379. Helical nanofilament and dark conglomerate phases of bent-core liquid crystals. **D.M. Walba**, N. Clark, D. El-Batal

2:40 380. Torque, lock, and propagate approach for the synthesis of configurationally stable twisted-acenes. **E.L. Clennan**, J. Weber, N. Arulsamy

3:10 Intermission.

3:25 381. Synthesis, photophysical characterization, and solar cell application of Pt-containing conjugated molecules. **Y. Qin**

3:55 382. Secondary thermal-binding process relevant to preventing photooxidative damage. S.J. Belh, N. Walalawela, S. Lekhtman, **A. Greer**

4:25 383. Structure based drug design studies to identify novel GABA_A modulators to treat epilepsy. **H. North**, T. Simmons, G. Yeboah

4:45 384. Bringing atomic oxygen to life. **R.D. McCulla**

5:15 385. Anion binding through pnictogen bonds: Strategies for tight binding of polyatomic anions. **J. Qiu**, A.F. Cozzolino

El Paso Convention Center
El Paso C

Synthesis, Analysis & Function of Biomaterials

Cosponsored by PMSE
K. Michael, *Organizer*
T. Boland, *Presiding*

1:30 386. Photoreactive films and hydrogels. **K. Michael**, A. Ornelas, H.P. Del Castillo, A. Paez, C. Li, B. Joddar, T. Boland

1:50 387. Fabrication of dual-crosslinkable fibrin-gelatin based scaffolds for cardiac tissue engineering applications. **S. Kumar**

2:10 388. Assessment of cell survival and stability of a multi-layered additive manufactured aortic construct. **B.P. Oropeza**, E. Morales, L. Aguirre, T. Boland

2:30 Intermission.

2:45 389. Surface functionalization of nanoparticles for applications from drug delivery to nanoproteomics. **T. Guardado-Alvarez**, Y. Ge, J.I. Zink

3:05 390. Inkjet printed endothelial cells enhance host microvasculature. L. Solis, B. Oropeza, S. Hosseini, **T. Boland**

3:35 Concluding Remarks.

SATURDAY MORNING

El Paso Convention Center
Juarez B

General Biochemistry

E. Yukl, *Organizer*

M. Narayan, *Organizer, Presiding*

8:00 391. Attachment induced variation of bacterial bioenergetics: Examination of the effect of charge regulation and chemiosmosis. **L. Albert**, D. Brown

8:30 392. Reduced alphabet proteins: Generation, biochemical characterization, and evolutionary implications. **D. Morrone**

9:00 393. Paclitaxel directed drug screening: New strategy to identify anti-cancer drugs. **G. Francia**

9:30 Intermission.

9:45 394. Bacterial surface-associated ESAT-6 protein regulates *Mycobacteria marinum* invasion in lung epithelial cells. **Y. Bao**

10:05 395. Phosphorylation regulated chaperoning abilities of heat shock protein 27 are persuaded by individual point mutations and molecular weight of model substrates. **B. Holguin**

10:25 396. Evaluation of cystargolide based beta-lactone proteasome inhibitors. **B. Stevens**, C. Viera, C. Zielinski, R. Tello-Aburto

El Paso Convention Center
El Paso E

General Inorganic

E. B. Hulley, *Organizer, Presiding*

8:00 397. Studying the synergic adsorption of H₂S using iron oxide-carbon composites at room temperature. **K. Ling**, V. Gangoli, A.R. Barron

8:20 398. New lanthanide coordination polymers with multiple organic entities. **R.A. Zehnder**

8:40 399. Synthesis of metal-alkyls: Precursors for material applications. **Z. Hecht**, J. Kephart, B. Livesay, M.P. Shores, C.V. Popescu, N. Arulsamy, E.B. Hulley

9:00 400. Synthesis and reactivity of perfluoroalkylated PNP pincer ligands. **T. Remick**, P. Miller, E.B. Hulley, D.M. Roddick

9:20 401. Developing the chemistry of 9-borafluorenes. **C. Martin**

9:40 402. Bifunctional Pd complexes for tunable heterolytic C-H activation and alkene dimerization. **R. Tenney**, W. Christman, N. Arulsamy, E.B. Hulley

10:00 Intermission.

10:15 403. Polynuclear lanthanide-diketonato clusters: Catalytic hydroboration of carboxamides and esters. **A. Singh**, S.R. Tamang, D. Bedi, A. Rezaei, A. Warner, K. GLOGAU, C. McDonald, D. Unruh, M. Findlater

10:35 404. New donor-acceptor biradical complexes. **J. Chen**, M.L. Kirk

10:55 405. Understanding the nature of the high-g split intermediate in dimethyl sulfoxide reductase. **K. KC**, J. Yang, M.L. Kirk

11:15 406. Vibronic spin-orbit coupling contributions to spin-forbidden radiative decay. **R. Dangi**

11:35 407. Study of synthesis, structure and chemical properties of analogues of Bestmann ylide. **A. Brar**, D. Unruh, C. Krempner

11:55 196. New antenna elaborated molecules for modulating excited state processes. **S. Gao**, M.L. Kirk

El Paso Convention Center
El Paso A

Undergraduate Peer Facilitation of Learning

J. E. Becvar, *Organizer, Presiding*

8:00 408. Doodle polls and trouble topic videos: Listening to student concerns and the creation of online problem explanations. **D.P. Collins**, G. Risica

8:20 409. Critical role of peer feedback in a guided-inquiry organic chemistry laboratory. **S.M. Reed**, V. Fishback, J. Fisk

8:40 410. Combined active learning and explicit teaching of metacognitive strategies reveal better performance on more complex chemistry concepts than active learning alone. **J. Mutambuki**

9:00 411. Strategies and resources for teaching chemical ethics. **S.M. Schelble**

9:20 412. POGIL promotes student success by improving student motivation. **M.A. Horn**, H. Ashworth, R. Qudisat

9:40 413. Chemistry reinforcement module: ALEKS summer prep used as an early warning. **D.P. Collins**, S. McCartney, R.D. Bethel

10:00 Intermission.

10:10 414. Analysis of students' individual and group predictions of a demonstration conducted using the POE (predict, observe, explain) method. **S.G. Prilliman**

10:30 415. Games and manipulatives in learning. **T.J. Terry**

10:50 416. Location is everything: Personalizing teaching laboratories for your region. **T.J. Terry**

11:10 417. Impact of newly adopted peer-led team learning in first year chemistry at UT Permian Basin. **M. Montes**, C. Dong, A. Aranda, J. Muñiz

El Paso Convention Center
El Paso A

Undergraduate Peer Facilitation of Learning

Short Presentations

J. E. Becvar, *Organizer*
M. Montes, *Presiding*

- 11:45 418.** Gallery walk of collaborative learning. **J.E. Becvar**, G. Saupe, M. Narayan, **A. McWilliams**
- 11:50 419.** Learning organic nomenclature interactively: Creative activity used in peer-led workshops. **C. Orozco**, J.E. Becvar, M. Narayan
- 11:55 420.** Jemistry: Learning through competition in PLTL workshop. **S. Chen, D. Chairez, R. Floresca, C. Basurto de Santiago**, G. Saupe, M. Narayan, J.E. Becvar
- 12:00 421.** Twist that chem. **M. Marin, E. Tepezano, C. Moreno, P. Torres**, M. Narayan, G. Saupe, J.E. Becvar
- 12:05 422.** Texchem hold 'em poker finesses Lewis structures: Gallery walk activity. **J. Perez, M. Garza, J. Santiesteban**, G. Saupe, J.E. Becvar
- 12:10 423.** Sequenced first semester chemistry workshops for facilitators: Resource for peer-led team learning. **A. Alfsen, A. Baker**, G. Saupe, J.E. Becvar
- 12:15 424.** Chemium minigames enhance collaborative team learning in PLTL workshop. **P. Parada, N. Ortiz**, M. Narayan, J.E. Becvar
- 12:20 425.** "Enthalpy swap & drop": Facilitating understanding of Hess's indirect method of calculating enthalpy change via an interactive board activity. **K. Avitia, A. Ventura**, G. Saupe, J.E. Becvar
- 12:25 426.** Peer pong. **L. Ibarra, V. Hernandez, S. Linn**, J.E. Becvar, G. Saupe
- 12:30 427.** Learning chemistry nomenclature with Jenga. **K. Gonzalez, C. Melendez, D. Maldonado, H. Vizcarra, K. Gonzalez**, J.E. Becvar
- 12:35 428.** Hands-on learning via chemical explorations. **S. Herren, P. Baily, R. Floresca, C. Garcia-Flores, A. Marin-Sanchez, A. Lazarski**, M. Alexander, G. Saupe, J.E. Becvar
- 12:40 429.** Falcon Chemistry Club: Promoting chemistry in the Permian Basin. **A. Aranda, K. Driver, A. Luján, A. Castillo, Y. Ramirez, F. Montalvillo**, M. Montes