Draft Final Program, 245th ACS National Meeting
New Orleans, LA -- April 7-11, 2013

ENVR
DIVISION OF ENVIRONMENTAL CHEMISTRY

S. Al-Abed, *Program Chair*

SUNDAY MORNING

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Oxidative Transformations and the Removal of Contaminants of Emerging Concern

S. Canonica, K. Oshea, *Organizers*
D. Dionysiou, G. Li Puma, *Organizers, Presiding*
W. Cooper, *Presiding*

8:30 Introductory Remarks.
8:35 1. Quantitative structure-activity relationships (QSARs) for the assessment of oxidative transformation of micropollutants: Options and limitations. **U. von Gunten**, Y. Lee
9:05 2. Benzotriazoles: Reactivity toward UV-C light and the hydroxyl radical, and removal by the UV/H_2O_2 process. **S. Canonica**, S. Bahnmüller, C. Loi, C. A. Joll, K. L. Linge, U. von Gunten
9:25 3. Mechanistic insights in peroxyl radical formation and degradation and associated reaction rate constants prediction in aqueous phase advanced oxidation processes. **D. Minakata**, S. P. Mezyk, J. Jones, J. C. Crittenden
9:45 4. Computer assisted pathway generation for atrazine degradation in advanced oxidation processes. **F. Zeng**, **K. Li**, X. Li
10:05 5. WITHDRAWN
10:25 Intermission.
10:40 6. UV-visible photocatalytic degradation of 17β-estradiol and estrogenic activity assessment. V. Maroga-Mboula, **V. Hequet**, Y. Andres, Y. Gru, R. Colin, J. Dona Rodriguez, L. Pastrana Martinez, A. Silva, P. Falaras
11:00 7. Photodegradation of natural and synthetic estrogens: Estrone (E1), 17β-estradiol (E2), 17α-ethynylestradiol (EE2) and estriol (E3) by advanced oxidation processes. N. B. Parilti, **G. Li Puma**
11:20 8. Kinetic and mechanical aspects of the destruction of cyanobacterial toxin cylindrospermopsin by UV-254 nm-mediated advanced oxidation processes. X. He, A. A. de la Cruz, **D. D. Dionysiou**
11:40 9. Green tide inactivation with layered-structure cuboids of Ag/$CaTiO_3$ under UV light. L. Lozano-Sánchez, S. Lee, **V. Rodríguez-González**

Section B

New Orleans Downtown Marriott at the Convention Center
Mississippi Queen

Nexus of Food, Energy and Water
Cosponsored by AGFD and CEI
Financially supported by Global Innovation Imperatives
S. Ahuja, *Organizer, Presiding*

8:00 10. Nexus of water, food, and energy. **S. Ahuja**
8:20 11. Materials for dye-sensitized solar cells. **Y. H. Hu**
8:50 12. One century of water quality monitoring and assessment for sustainable development. **D. N. Myers**
9:10 13. Destroying pharmaceutical activity in water: How much energy is enough? **S. P. Mezyk**
9:30 14. Chemistry at the interface: Chemical transformations at the air-water interface. F. S. Ehrenhauser, A. A. Heath, T. P. Liyana-Arachchi, M. J. Wornat, F. R. Hung, P. R. Herckes, **K. T. Valsaraj**
9:50 Intermission.
10:00 15. Development of the data utility in 2025: Water, energy, and all community data services under one utility. **D. Bromley**

10:20 16. WITHDRAWN
10:40 17. Impact of coal combustion residues on water quality. **L. S. Ruhl**, A. Vengosh, G. S. Dwyer, H. Hsu-Kim, G. E. Schwartz
11:00 18. Water management for hydraulic fracturing: An analysis of the key water chemistry considerations. **N. Mehta**, F. O. Sullivan
11:20 19. Sustainability in foods and food production cycles: Role of peer-reviewed science. **J. N. Seiber**, L. Kleinschmidt
11:40 20. Beyond the brink. **J. Thebaut**, S. Ahuja

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Carbon Dynamics and the Biogeochemical Cycling of Major and Minor Elements
Cosponsored by GEOC
E. J. O'Loughlin, M. McCormick, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 21. Increased sedimentation and altered nutrient cycling in the aftermath of the Macondo oil well blowout. **S. B. Joye**, M. Crespo-Medina, K. Hunter, V. Asper, A. Diercks, U. Passow, J. Montoya, C. Benitez-Nelson, W. Moore, A. Demopoulos, R. Highsmith
8:25 22. Biogeochemistry of carbon, heavy metals, and trace elements in the Grand Bay National Estuarine Research Reserve. J. McComb, **F. X. Han**, P. B. Tchounwou
8:45 23. Non-resonant inelastic X-ray scattering to analyze carbon chemistry in unaltered samples. B. Mishra, E. J. O'Loughlin, J. Jastrow, M. Balasubramanian, **K. M. Kemner**
9:05 24. Chlorine and sulfur cycling in permafrost profiles. **R. L. Sanders**, S. B. Hodgkins, T. C. Onstott, L. G. Whyte, J. P. Chanton, S. C. Myneni
9:25 25. Coupled biogeochemical cycles. **W. H. Schlesinger**
10:05 Intermission.
10:25 26. Mineralogical constraints on iron cycling and microbial activity at the mineral-water interface. **C. M. Hansel**, C. J. Lentini, Y. Tang
10:45 27. Dissimilatory reduction and transformation of ferrihydrite-natural organic matter co-precipitates. **T. Borch**, M. Shimizu, J. Zhou, M. Obst, C. Schröder, M. Zhu, A. Kappler
11:05 28. Hard X-ray fluorescence microscopy techniques for investigations of aquatic systems of soil colloids. **S. C. Gleber**, B. Weinhausen, J. D. Ward, S. Köster, S. Vogt
11:25 29. Geochemical explanation for the prevalence of sulfur reduction among nominally iron-reducing bacteria. **T. M. Flynn**, E. J. O'Loughlin, K. M. Kemner
11:45 30. Composition and spatial distribution of organic matter in soil: Analysis with FTIR-microscopy. **M. C. Hernandez-Soriano**, B. Kerre, E. Smolders
12:05 Concluding Remarks.

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Sorption Reversibility of Organic and Inorganic Pollutants in Natural Solids: The Elephant in the Room?

Gaining a Mechanistic Understanding of Desorption Resistance and Quasi-Reversibility
Cosponsored by COLL and GEOC
J. Pignatello, *Organizer*
S. Uchimiya, *Organizer*, *Presiding*

8:00 Introductory Remarks.
8:05 31. Sorption reversibility: Introduction and perspective. **J. J. Pignatello**
8:40 32. Chemical nature of adsorption reversibility: Impact to thermodynamic theories and new adsorption phenomena.**G. Pan**
9:15 33. Surface precipitation mechanisms and their role in metal sequestration in natural environments. **D. L. Sparks**
9:50 Intermission.
10:10 34. Sorption-desorption of organic contaminants on carbon nanomaterials. **B. Xing**
10:45 35. Reversibility of particle retention with transients in solution chemistry. **S. A. Bradford**, S. Torkzaban
11:20 36. WITHDRAWN

11:40 37. Sorption reversibility of organic acids by kaolinite and gamma alumina. **D. M. Bailey**, M. J. Kelley

Section E

New Orleans Downtown Marriott at the Convention Center
Delta Queen

Food and Its Environment: What Is In What We Eat?
Cosponsored by AGFD and CEI
M. Benvenuto, E. Roberts-Kirchhoff, *Organizers*, *Presiding*

8:30 Introductory Remarks.
8:35 38. Trends of persistent organic and emerging pollutants in Great Lakes fish. **J. J. Pagano**, B. S. Crimmins, X. Xia, P. K. Hopke, M. S. Milligan, T. M. Holsen
9:00 39. Manganese and zinc in rice: Unconscious intake of essential elements through non-dietary food sources. **T. Tongesayi**, C. Brock, P. Fedick, L. Lechner, C. Bray
9:25 40. Analysis of various edible clay supplements and protein powders via energy dispersive X-ray fluorescence spectrometry. **N. H. Stroeters**, **J. L. LaBond**, E. S. Roberts-Kirchhoff, M. A. Benvenuto
9:50 41. US Food and Drug Administration regulation of color additives in food. **J. N. Barrows**
10:15 Intermission.
10:30 42. Food packaging: Strategies for rapid phthalate screening in real time by ambient ionization tandem mass spectrometry. **E. Crawford**, J. Horner, C. Crone
10:55 43. Energy dispersive X-ray fluorescence and NMR studies of the composition of patent medicines and nostrums archived at the Henry Ford Museum. **A. Diefenbach**, D. M. Garshott, E. MacDonald, T. Sanday, M. Fahey, **M. A. Benvenuto**
11:20 44. Inadvertent exposure of chemical toxicants to humans through food: A case for cadmium and lead in rice. **T. Tongesayi**
11:45 Concluding Remarks.

Applied Nanotechnology for Food and Agriculture
Sponsored by AGFD, Cosponsored by ENVR

Approaching the Surface: Interrogating Chemical Interactions at the Mineral-Water Interface
Sponsored by GEOC, Cosponsored by COLL and ENVR

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species
Sponsored by COLL, Cosponsored by ENVR

SUNDAY AFTERNOON

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Mechanisms of Molecular Free Radicals Attack on Emerging Contaminants and Viruses

G. Li Puma, K. Oshea, S. Canonica, *Organizers*
D. Dionysiou, *Organizer*, *Presiding*
V. Hequet, *Presiding*

1:30 45. Advances in our understanding of the free radical chemistry of diclofenac and trimethoprim. **W. J. Cooper**, W. Song
2:00 46. Singlet oxygen-mediated photodegradation of dissolved combined amino acids (DCAAs). **R. A. Lundeen**, K. McNeill
2:20 47. Advanced oxidation of cylindrospermopsin (cyanobacterial toxin): Mechanistic and practical considerations. **K. O'Shea**, C. Zhao, D. D. Dionysiou, M. Pelaez, W. Song, J. A. Byrne, S. C. Pillai
2:40 48. Water purification from organic pollutants and off-odor compounds using UV-vis light in the presence of polyoxometalates. T. E. Fotiou, T. M. Triantis, T. S. Kaloudis, E. Papaconstantinou, **A. E. Hiskia**
3:00 49. Polyoxometalate-catalyzed oxidation of organic compounds using different oxidants. **B. Yang**, J. J. Pignatello, D. Qu
3:20 Intermission.

3:35 50. Inactivation of human adenovirus by UV and singlet oxygen as examined by quantitative protein mass spectrometry. F. Bosshard, F. Armand, R. Hamelin, **T. Kohn**
4:05 51. Sunlight-induced inactivation of human and porcine rotavirus in the presence of different sensitizers. O. Romero-Maraccini1, N. J. Sadik, C. R. Pugh, X. Niu, J. Croue, **T. H. Nguyen**
4:25 52. Photocatalytic oxidation for inactivation of human adenovirus: Impact of ROS type and mechanism of inactivation.**M. V. Liga**, Y. J. Tao, P. J. Alvarez, Q. Li
4:45 53. Transformation of β-blockers by photosensitized hydroxyl radical, singlet oxygen, and triplet states dissolved organic matter in NOM enriched solutions. **X. Niu**, C. Liu, T. H. Nguyen, J. Croue
5:05 54. Persistence of *Bacteroides ovatus* under simulated sunlight in the presence of algal natural organic matters: A molecular-based approach. **S. Dong**, P. Hong, T. Nguyen

Section B

New Orleans Downtown Marriott at the Convention Center
Mississippi Queen

Energy Recovery from Waste: Technological and Environmental Issues
Cosponsored by CEI
K. Fenlon, *Organizer*
S. Al-Abed, K. Kawamoto, *Organizers, Presiding*
K. Fenlon, *Presiding*

1:30 Introductory Remarks.
1:35 55. Energy recovery from waste: Technological and environmental issues. **K. Kawamoto**
1:55 56. Use of spent agricultural plastic to produce biochar from animal manures. **K. S. Ro**, P. G. Hunt, K. B. Cantrell, S. R. Yates, M. Jackson, D. Compton
2:15 57. Conversion of food waste to valuable energy sources via hydrothermal carbonization. **L. Li**, J. R. Flora, N. D. Berge
2:35 58. Multiple byproduct pathways for olive mill waste mitigation: Pyrolysis and combustion of supercritical CO_2extracted biomass. **J. L. Goldfarb**, L. Buessing
2:55 59. Comparing the biogas yield of different biodegradable materials: Nigerian experience. **O. O. Adetule**
3:15 Intermission.
3:30 60. Development of a grease-to-fuel technology for producing an alternative to low-sulfur fuel oil. **H. Kuramochi**, T. Kobayashi, K. Fukui, K. Maeda, M. Osako
3:50 61. Energy recovery from organic waste via low voltage electrooxidation. **J. Baltrusaitis**, W. Cheng, N. Singh, J. Maciá-Agulló, G. D. Stucky, E. McFarland
4:10 62. Extracting electron from food waste for drinking water treatment. **D. Belanger**, K. Fischbach, **C. R. Azevedo**, **S. Sarsembayeva**, **J. Kilduff**, **V. Gadhamshetty**
4:30 63. Benefical reuse of coal combustion products: Environmental benefits and determining risk. **K. A. Fenlon**, N. Koralegedara, S. Al-Abed
4:50 64. Bioremediation of organic contaminants for energy production. **V. Gadhamshetty**, **W. Willner**, M. Nyman, A. P. Hynes
5:10 65. Environmental friendly conditions for a versatile conversion of biomass-derived wastewater compounds under supported TiO_2 photocatalysts. **J. Colmenares Quintero**, A. Magdziarz
5:30 Concluding Remarks.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Nanotoxicity and Human Health Risk: Relevance to Environmental Chemistry and Fate

S. Hussain, A. Allen, *Organizers, Presiding*
1:30 Introductory Remarks.
1:35 66. Fulvic acid mitigated CuO nanoparticle-induced bacteria toxicity. **J. Zhao**, Z. Wang, B. Xing
1:55 67. Adsorption of bovine serum albumin on functionalized carbon nanotubes. **P. Du**, J. Zhao, B. Xing
2:15 68. Dynamic aggregation and fractal structure determination of gold nanoparticles in biological media conditions. **N. B. Saleh**, S. M. Hussain, A. Afrooz
2:35 69. Life cycle approach for understanding risk of nanoscale materials in advanced technologies. **J. Steevens**, M. Bates, A. Bednar, M. Chappell, A. Kennedy, R. Moser, A. Poda, C. Weiss
2:55 Intermission.
3:15 70. Evaluating the toxicity of titanium dioxide nanotubes and nanorods in human nasal cells: Microfluidic dispersion.**L. L. Kerr**, T. Tilly, H. Jiang, L. Braydich-Stolle, S. Hussain

3:35 71. Effect of washing on antimicrobial properties of textiles containing nanosilver particles. **J. Virkutyte**, S. R. Al-Abed, M. Turner, D. Meyer
3:55 72. Bioavailability of silver nanoparticles in artificial physiological fluids: Coating and pH impact on degree of ionic dissociation. **L. K. Braydich-Stolle**, E. Breitner, E. Maurer, B. Stacy, S. Hussain
4:15 73. Separation and characterization of nanostructures in feminine hygiene products. **J. Lim**, P. C. Howard, S. W. Linder
4:35 74. Modeling of lipid bilayers using first principles method. **C. Liu**, R. Pandey, S. Carna, S. Hussain
4:55 Concluding Remarks.

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Sorption Reversibility of Organic and Inorganic Pollutants in Natural Solids: The Elephant in the Room?

Modeling Resistant/Reversible Fractionation and the Sorption Process Itself
Cosponsored by COLL and GEOC
S. Uchimiya, *Organizer*
J. Pignatello, *Organizer*, *Presiding*

1:30 75. Application of analytical microscopy techniques for the elucidation of modes of sorption. **T. Gocht**, M. A. Wahl, M. Obst
2:05 76. Partitioning of munitions constituents to soil. R. Gonzalez, A. Miglino, D. M. Di Toro, **H. E. Allen**
2:25 77. Site transformation model of adsorption-desorption hysteresis. **D. M. Di Toro**
3:00 78. Phenanthrene sorption with different organic matter fractions from a same soil: Role of structure and conformation. **K. Sun**, J. Jin, M. Kang, D. Xu, B. Gao
3:20 Intermission.
3:35 79. Effects of exogenous DOM on binding reversibility of polar organic pollutants. **B. Chefetz**, A. Oren, H. Haham, R. Navon
4:10 80. Characterization of pesticide sorption reversibility in soil. **W. C. Koskinen**
4:45 81. Herbicide sorption/desorption by biochars produced from traditional kiln and low-cost gasifier systems: Applications in sustainable decentralized water treatment for developing communities. **J. Kearns**, K. Shimabuku, R. Noikaew, S. Niamjan, N. Reents, E. Mansfield, D. Rutherford, H. McLaughlin, D. Knappe, R. S. Summers
5:05 82. Poly-parameter linear free energy relationships and predictive models for the adsorption of aromatic compounds onto solid adsorbents based on phase-conversion analysis: Polymeric adsorbents as a case study. B. Pan, **H. Zhang**
5:25 83. Biosorption characterization of sunflower seed hull for decolonization of Azure A chloride dye contaminated solutions. **G. B. Oguntimein**

Applied Nanotechnology for Food and Agriculture
Sponsored by AGFD, Cosponsored by ENVR

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species
Sponsored by COLL, Cosponsored by ENVR

Redox Processes at Mineral-Water Interfaces and their Impacts on Metal Biogeochemical Cycling and Contaminant Remediation
Sponsored by GEOC, Cosponsored by ENVR

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Technological Applications of AOPs for Removal of Emerging Contaminants

G. Li Puma, D. Dionysiou, S. Canonica, *Organizers*
K. Oshea, *Organizer*, *Presiding*
D. Sannino, *Presiding*

8:30 84. Advanced treatments (solar AOPs and nanofiltration) for elimination of micropollutants in municipal wastewater treatment plant effluents. **S. Malato**, I. Oller, A. Agüera, L. Prieto, S. Miralles
9:00 85. Removal of emerging micropollutants during UV-C and UV-A/TiO_2 disinfection. **J. Marugán**, R. van Grieken, C. Pablos
9:20 86. Urban wastewater disinfection by heterogeneous photocatalysis: Effect of different light sources and TiO_2loadings on a multi drug resistant *Escherichia coli* strain. **L. Rizzo**, A. Della Sala, A. Fiorentino, G. Li Puma
9:40 87. Engineering aspects of solar water detoxification systems for the removal of estrogens, antibiotics, and other contaminants of emerging concern. **G. Li Puma**, I. Oller, J. Colina Marquez, M. A. Mueses, A. Aguera, F. Machuca-Martínez, S. Malato
10:00 88. Evaluation of organic micropollutants in water regeneration processes. **A. Agüera**, M. Gómez, M. Martínez Bueno
10:20 Intermission.
10:35 89. Development of a continuous flow arsenic removal system using solar oxidation. **L. W. Gill**, C. O'Farrell
10:55 90. Advanced oxidation processes for the degradation of CCL3 compounds: Assessment of the toxicity of transformation products. **H. Mestankova**, N. Bramaz, K. Schirmer, S. Canonica, U. von Gunten, K. G. Linden
11:15 91. Highly efficient bismuth-based photocatalyst for the degradation of pharmaceuticals under solar light irradiation.**Y. Lester**, H. Mamane, D. Avisar
11:35 92. Assessment of UV/H_2O_2 advanced oxidation process on degradation of veterinary ionophore antibiotics. **P. Sun**, H. Yao, D. Minakata, J. Crittenden, C. Huang

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Occurrence, Detection, Fate and Removal of Pharmaceutical and Personal Care Products in Potable Water Sources
Cosponsored by CEI
A. Hernandez, L. Blaney, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 93. High resolution mass spectrometry (LC/Q-TOF-MS) for the detection of pharmaceuticals in water. **I. Ferrer**, M. Thurman
8:30 94. Occurrence and removal of emerging contaminants in drinking water in California. **G. Loraine**
8:50 95. Trends in attention deficit hyperactivity disorder (ADHD) drug use on a college campus as evidenced through wastewater analysis. **D. A. Burgard**, R. Fuller, B. Becker, R. Ferrell, M. J. Dinglasan-Panlilio
9:10 96. Regional and seasonal profiling of selected pharmaceuticals, stimulatory drugs, pesticides, and their metabolites in local water bodies by SPE-HPLC-QqQ and UPLC-QTOF analysis. **S. Madireddy**, V. Bodeddula, M. J. Wells, J. O. Boles
9:30 97. Detection of 17β-estradiol in drinking water sources using DNA aptamer-based electrochemical detection. **X. Xu**, S. Akki, S. Silverman, C. J. Werth
9:50 Intermission.
10:05 98. Evaluation of temporal influence on bioaccumulation of contaminants of emerging concern in aquatic organisms in estuaries along the Gulf of Mexico. **B. Du**, K. A. Connors, W. C. Scott, L. A. Kristofco, C. Breed, B. Byars, C. K. Chambliss, B. W. Brooks

10:25 99. So many PPCPs, which to study? A systematic approach to select representative compounds for water treatment studies. X. Jin, **S. Peldszus**
10:50 100. Quantitative structure-property relationships (QSPR) to predict removal of EDCs/PPCPs in water treatment processes. **A. R. Kennicutt**, L. Morkowchuk, J. E. Kilduff, C. M. Breneman
11:10 101. On-line SPE coupled to LC MS/MS for rapid, sensitive, and simultaneous analysis of multiple PPCPs in water. **T. Anumol**, S. Merel, S. A. Snyder
11:30 102. Detection and quantification of antidepressants in aqueous matrices. **K. J. Chodara**, J. McIntosh, M. Gettle, D. G. Sykes

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges

Water Treatment

D. Plata, J. Fortner, B. Lafferty, *Organizers, Presiding*

8:00 Introductory Remarks.
8:05 103. Iron redox in a carbon nanotube electrochemical filter. **C. D. Vecitis**, M. H. Schnoor
8:35 104. Effect of competing anions on arsenic removal via magnetite nanoparticles. **B. B. Karakocak**, A. Terenyi, A. Martahus, J. D. Fortner, O. Yenigun
8:55 105. Nanoporous graphene as a water desalination membrane: How would it work in practice? **D. Cohen-Tanugi**, J. C. Grossman
9:15 106. Influence of nanoporous thin-film coatings of SiO_2 or Al_2O_3 on carbon electrodes for electrosorption in capacitive deionization. **J. J. Wouters**, J. J. Lado, I. Tejedor-Tejedor, M. A. Anderson
9:35 Intermission.
9:50 107. Conducting polymer nanodispersion (CPND) as the next generation anti-corrosion pigment. **S. Wang**, J. Wang
10:10 108. Integration of stable carbon nanotube mats on the inner surface of hollow fiber membranes for enhanced water purification. **M. Lahr**, B. Teychene, H. Huang, K. Schwab, H. Fairbrother
10:30 109. Self-supporting carbon nanotube particulates for contaminant sorption. **H. Wang**, H. Ma, C. Na
10:50 110. Evaluating the capacity of conventional water treatment for removal of TiO_2 nanoparticles. **R. J. Honda**, S. L. Walker

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Sorption Reversibility of Organic and Inorganic Pollutants in Natural Solids: The Elephant in the Room?

Implications of Quasi-Reversibility on Partitioning and Bioavailability in the Field
Cosponsored by COLL and GEOC
S. Uchimiya, J. Pignatello, *Organizers, Presiding*

8:00 111. Non-equilibrium sorption of flutriafol and its effect on predicted environmental concentrations. **Q. Ma**, R. Reiss, P. Whatling
8:20 112. Using passive samplers to assess porewater-sediment equilibration of PCBs at a site with surface water infiltration. **J. N. Apell**, J. MacFarlane, P. M. Gschwend
8:40 113. Adsorption of sulfamethoxazole on biochar and its impact on reclaimed water irrigation. **Y. Yao**, B. Gao, H. Chen
9:00 114. Sorption and desorption of glyphosate on Australian soils cultivated with genetically modified canola. K. Nahar,**R. Niven**, S. Pearson, K. Badek, H. Riesen, A. Mokhlesur Rahman
9:20 115. Sorption and desorption of testosterone on different soil particle fractions. **Y. QI**, **T. Zhang**
9:40 116. Trace element sorption reversibility and bioavailability during earthworm and plant bioassays. **N. T. Basta**
10:00 Intermission.
10:15 117. Rate of fixation by frayed-edge site controls transfer of radiocesium from soil-to-rice plant. **N. Yamaguchi**, H. Tsukada, A. Takeda
10:35 118. Biochar-attenuated desorption of heavy metals in small arms range soils. **S. M. Uchimiya**, D. I. Bannon
10:55 119. Adsorption, desorption, and diffusion of heavy metals across a regenerated cellulose membrane. T. Zhang, J. Stansbury, M. Moussavi, D. Richter-Egger, **M. Klein**

11:15 120. Recapture and reuse of methyl bromide on activated carbon. **W. A. Hall, 4th**, S. Walse
11:35 121. PCB sorption-mediated bed sediment-to-water flux estimations by congener, space, and time. **N. L. Howell**, H. S. Rifai
11:55 122. Water column partition modeling: Distinctions between PCDD/Fs and PCBs using different natural organic matter and black carbon sorbents. **N. L. Howell**, H. S. R
12:15 Concluding Remarks.

Section E

New Orleans Downtown Marriott at the Convention Center
Blaine Kern B

Sustainable Energy, Food Risk and Emerging Pollutants: Expect the Unexpected
Cosponsored by AGFD and CEI
E. Lichtfouse, J. Schwarzbauer, A. Cheronet, *Organizers, Presiding*
8:00 Introductory Remarks.
8:05 123. WITHDRAWN
8:25 124. WITHDRAWN
8:45 125. Fate of chemical warfare agents in municipal wastewater treatment systems. **L. Racz**, S. Willison, M. Magnuson, S. J. Schuldt, E. Walters, A. Janeczko
9:05 126. WITHDRAWN
9:25 127. Organic contaminant burden in water and sediment from Jakarta Bay, Indonesia, and its implication for seafood consumption. **L. Dsikowitzky**, **J. Schwarzbauer**, D. Dwiyitno
9:45 Intermission.
10:00 128. Toxicity of cyanobacterial microcystins on biological activity of soil and growth of the tomato *Solanum lycopersicum* var. MicroTom. **S. Corbel**, N. Bouaicha, C. Mougin
10:20 129. Uptake and translocation of engineered nanoparticles in plants. **B. Xing**
10:40 130. Novel cellular screening system for nanoparticle safety testing. **D. W. Bahnemann**, F. Sambale, F. Stahl, T. Scheper
11:00 131. High impact articles in *Environmental Chemistry Letters* and *Agronomy for Sustainable Development* . **E. Lichtfouse**, D. Millot, M. Hamelin
11:20 Concluding Remarks.

Analytical Chemistry of the Deep-Water Horizon Spill
Sponsored by ANYL, Cosponsored by ENVR

Applied Nanotechnology for Food and Agriculture
Sponsored by AGFD, Cosponsored by ENVR

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species
Sponsored by COLL, Cosponsored by ENVR

MONDAY AFTERNOON

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Photocatalysis and Applications

G. Li Puma, D. Dionysiou, K. Oshea, *Organizers*
S. Canonica, *Organizer, Presiding*
L. Rizzo, s. MALATO, *Presiding*

1:30 132. On the mechanism of the photoactivity under visible light of N-doped titanium dioxide (TiO_2). S. Livraghi, M. Paganini, **E. Giamello**
2:00 133. Visible light activated (VLA) TiO_2 photocatalysis of 6-hydroxymethyl uracil as a model compound for the cylindrospermopsin. **C. Zhao**, M. Pelaez, D. D. Dionysiou, S. C. Pillai, J. A. Byrne, K. O'Shea
2:20 134. Rapid solar photocatalytic disinfection of water using graphene-titania composites. **P. Fernandez-Ibanez**, M. I. Polo-López, S. Wadhwa, J. W. Hamitlon, R. D'Sa, M. Pelaez, J. A. Byrne, K. O'Shea, D. D. Dionysiou

2:40 135. Photocatalytic removal of spiramycin from wastewater with visible active photocatalysts. **D. Sannino**, O. Sacco, V. Vaiano, P. Ciambelli
3:00 136. Degradation of the organic pollutants (dyes and drugs) in an aqueous system using TiO_2 nanomaterials and UV-simulated sunlight: An extended kinetic study. **E. F. Pino**, M. V. Encinas
3:20 Intermission.
3:35 137. Solar photocatalysis of domestic greywater using TiO_2-coated textile fibers: Hair colorants issue. **I. Grčić**, D. Vrsaljko, S. Papić, N. Koprivanac
3:55 138. Biologically inspired synthesis of a photocatalytically active membranes for water treatment. **N. Kinsinger**, A. Dudchenko, K. Nelson, C. Alcaraz, N. Dakak, D. Li, D. Kisailus
4:15 139. Role of platinum oxide TiO_2 for the degradation of phenol under simulated solar light irradiation. **H. S. Kibombo**, C. Wu, R. Peng, J. Baltrusaitis, R. T. Koodali
4:35 140. TiO_2 photocatalytic oxidation of indoor VOCs at ppb levels in a multi-pass dynamic reactor: Influence of VOCs mixture on reaction intermediates concentrations. O. Debono, **C. Raillard**, V. Héquet, F. Thévenet, N. Locoge, L. Le Coq

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Occurrence, Detection, Fate and Removal of Pharmaceutical and Personal Care Products in Potable Water Sources
Cosponsored by CEI
A. Hernandez, L. Blaney, *Organizers, Presiding*

1:30 141. Modelling fate and transport of pharmaceuticals and personal care products in the Santa Cruz River in Tucson, Arizona. **A. Kahl**, B. Arnold, L. Abrell, S. Snyder
1:50 142. Behavior of anticancer drugs during water chlorination. **B. Roig**, B. Marquenet, I. Delpla, V. Bessonneau, J. Weiss, R. Bolek, M. Scheider, A. Tooolaram, M. Lamoree, O. Thomas, K. Kummerer
2:15 143. Formation of iodinated disinfection by-products as a function of iodinated pharmaceuticals, chlorinated oxidants, and natural organic matter. **D. R. Bridenstine**, P. Kumkum, M. J. Plewa, T. A. Ternes, S. D. Richardson, S. E. Duirk
2:35 144. Analysis of humic acid interference on estrogenic activity using an estrogen-sensitive yeast assay. **M. Bedard**, K. Sienerth, V. Del Gaizo Moore
2:55 145. Antibiotics and antibiotic resistant genes (ARGs) in water and sediments of the Pearl River Estuary, South China. B. Chen, X. Liang, X. Huang, T. Zhang, **X. Li**
3:15 Intermission.
3:30 146. Photocatalytic degradation of cortisone acetate in water. **J. Baltrusaitis**, J. Romao, G. Mul
3:50 147. Removal of pharmaceutical and personal care products from water using transition metal modified and partially calcined inorganic-organic pillared clays. **A. J. Hernandez-Maldonado**, W. A. Cabrera-Lafaurie, F. R. Roman
4:10 148. Ozonation of tetracycline antibiotics: Modeling the apparent second order rate constant using pI. **L. Blaney**, Z. Hopkins
4:30 149. WITHDRAWN
4:50 Concluding Remarks.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges Remediation Applications

D. Plata, J. Fortner, B. Lafferty, *Organizers, Presiding*

1:30 Introductory Remarks.
1:35 150. Nutrient-doped silica nanoparticle Pickering emulsions for enhanced oil biodegradation. **G. D. Bothun**, H. Zhang, S. Fields, A. Gupta, V. Oyanedel-Craver
2:05 151. Novel biodegradable soybean oil and ethylene glycol-based amphiphilic copolymers for the treatment of zerovalent iron nanoparticles. **H. Kalita**, B. J. Chisholm, A. Bezbaruah
2:25 152. Environmental remediation of dense non-aqueous phase liquids using adsorptive-reactive nanoparticulate systems. **B. Sunkara**, V. T. John, Y. Wang, G. L. McPherson, J. He
2:45 153. Magnetically responsive carbon nanotubes for oil-water separation. **C. Na**, H. Wang, K. Lin, B. Jin, T. Wu, P. McGinn, Y. Zhu

3:05 Intermission.
3:20 154. Nanotechnology based smart surfaces with switchable superoleophilicity and superoleophobicity in aqueous media: Toward controllable oil/water separation. L. Zhang, **P. Wang**
3:40 155. Cationic inorganic materials for trapping of anionic pollutants. **S. R. Oliver**
4:00 156. Optimizing photocatalytic performance of electrospun TiO_2 nanofibers for removal of emerging organic contaminants. **D. Shuai**, M. Nalbandian, Y. Choa, N. V. Myung, D. M. Cwiertny
4:20 157. In situ immobilization of selenite in soil and groundwater using stabilized Fe-Mn nanoparticles. W. Xie, Q. Liang,**D. Zhao**

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Environmental Fate of Petroleum Oils and Dispersants in the Marine Environment
Cosponsored by ANYL and GEOC
R. Conmy, *Organizer*, *Presiding*

1:30 Introductory Remarks.
1:35 158. Deepwater Horizon oil spill: A systems biology approach to an ecological disaster. **T. C. Hazen**
1:55 159. Corexit 9500® substantially increases the biodegradation of otherwise undispersed oil. **R. C. Prince**, J. D. Butler
2:15 160. Biodegradation of crude oil in the Louisiana salt marshes following the BP Deepwater Horizon oil spill. **G. N. Kasozi**, A. R. Zimmerman, B. R. Silliman
2:35 161. Effects of oil dispersants on sorption capacity and hysteresis of polycyclic aromatic hydrocarbons with Gulf Coast marine sediments. Y. Gong, X. Zhao, S. O'Reilly, **D. Zhao**
2:55 162. Indigenous arctic micro-organisms degrade oil in Arctic seawater. **K. McFarlin**, M. Leigh
3:15 Intermission.
3:30 163. Industry-sponsored subsea dispersant injection research. **T. Nedwed**, T. Coolbaugh
3:50 164. Selectively wetting surfaces: A new approach to oil spill remediation. **D. P. Prendergast**, D. Deng, R. Bagatin, F. Stellacci, P. M. Gschwend
4:10 165. Iron oxide nanoparticles stabilized by p-amino benzoic acid terminated carbon black particles for oil spill remediation. **P. Venkataraman**, E. Frenkel, O. Owoseni, V. T. John, A. Bose
4:30 166. Enhanced dispersed oil droplet stability using modified natural biopolymer. **J. Tang**, P. Venkataraman, E. Frenkel, G. L. McPherson, J. He, S. R. Raghavan, V. Kolesnichenko, V. T. John
4:50 167. Gulf of Mexico oil spill ketone transformation products revealed by increased acid/analyte concentration positive ion ESI FT-ICR MS. **B. M. Ruddy**, C. L. Hendrickson, V. V. Lobodin, M. Huettel, J. E. Kostka, C. M. Reddy, R. P. Rodgers, A. G. Marshall
5:10 168. Molecular dynamics simulations of oil hydrocarbons and surfactants at atmospheric air/salt water interfaces. **T. P. Liyana-Arachchi**, K. T. Valsaraj, F. R. Hung
5:30 Concluding Remarks.

Analytical Chemistry of the Deep-Water Horizon Spill
Sponsored by ANYL, Cosponsored by ENVR

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species
Sponsored by COLL, Cosponsored by ENVR

Safety of Nanomaterials Used in Food and Food Packaging
Sponsored by AGFD, Cosponsored by ENVR

Sustainability in the Chemical Sciences: Models and Case Studies for Education
Sponsored by CEI, Cosponsored by CHED, ENVR, and SCHB

Undergraduate Research Posters

Environmental Chemistry
Sponsored by CHED, Cosponsored by ENVR and SOCED

MONDAY EVENING

Section A

Morial Convention Center
Hall D

Sci-Mix

S. Al-Abed, *Organizer*

8:00 - 10:00
65. See previous listings.
316, 317, 319, 320, 321, 325, 331, 332, 333, 335, 340, 341, 342, 346, 348, 350, 354, 356, 357, 358, 361, 364, 365, 366, 367, 368, 369, 371, 372, 373, 376, 377, 379, 380, 382, 383, 384, 385, 391, 392, 393, 394, 396, 402, 403, 404, 406, 409, 411, 413, 415, 416, 419, 421, 422, 423, 426, 427, 430, 432, 433, 434, 435, 436, 437, 438, 439, 440, 442, 443, 444, 445, 450, 452, 455, 457, 458, 460, 462, 464. See subsequent listings.

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species

Poster Session
Sponsored by COLL, Cosponsored by ENVR

TUESDAY MORNING

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Advances on Photocatalytic Materials for Contaminants Oxidation

G. Li Puma, K. Oshea, S. Canonica, *Organizers*
D. Dionysiou, *Organizer*, *Presiding*
E. Giamello, *Presiding*

8:30 169. Kinetics of the photocatalytic oxidation of nitrogen(II) oxide at the surface of TiO_2. **D. W. Bahnemann**, A. Engel, J. Große, R. Dillert
9:00 170. UV-vis light-activated, Ag-decorated monodisperse TiO_2 for treatment of antibiotics in water. C. Han, M. N. Nadagouda, J. A. Khan, P. Falaras, P. Rosales-Lombardi, **D. D. Dionysiou**
9:20 171. Optimization of photocatalytic performance of TiO_2 glass photospheres by using response surface methodology and the application for degradation of dimethyl phthalate. **W. Jiang**, J. Joens, D. Dionysiou, K. O'Shea
9:40 172. Size exclusion of different natural organic matter (NOM) fractions for enhancing the oxidation of target contaminants on engineered TiO_2. A. Zakersalehi, **H. Choi**
10:00 173. Synthesis and characterization of WO_3/CNT nanocomposite: Enhanced photocatalytic activity. **T. A. Saleh**
10:20 Intermission.
10:35 174. Evaluation of integrated photocatalytic adsorbents in water treatment. **A. Morrissey**, K. Nolan, Z. Gholamvande, D. Keane, R. O'Dwyer
10:55 175. TEMPO-oxidized cellulose nanofibers as template for ceramic aerogels: Synthesis, characterization, and photocatalytic properties. **L. Melone**, L. Altomare, L. De Nardo, I. Alfieri, A. Lorenzi, **C. Punta**
11:15 176. Preparation of a new coral reef stone material and TiO_2 to prevent biodeterioration of ancient building heritage in marine areas. **A. Barbosa**, D. Tatis
11:35 177. Synthesis of co-doped Pd -TiO_2-SO_4^{2-} and its synergetic effect on the solar photodegradation of Trypan Blue dye. **M. Swaminathan**

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

Characterization of Organic Matter

F. Rosario, E. Thurman, *Organizers, Presiding*

8:00 Introductory Remarks.
8:05 178. WITHDRAWN
8:35 179. Low molecular weight components in an aquatic humic substance as characterized by membrane dialysis and Orbitrap mass spectrometry. **C. K. Remucal**, R. M. Cory, M. Sander, K. McNeill
9:00 180. Novel application of HPLC with online charged aerosol detection for the structural characterization of dissolved organic matter. **G. C. Woods**, A. N. Pisarenko, D. Mawhinney, E. R. Dickenson
9:25 181. Framework for using fluorescence spectroscopy to evaluate changes in organic matter. **J. A. Korak**, F. Rosario-Ortiz, R. Summers
9:50 182. Characterization of algal material during growth: A case study of four marine algae. **L. Dramas**, T. Merle, C. Aubry, J. Croue
10:15 Intermission.
10:30 183. Characterization of organic matter fouling of anion exchange by HPSEC. **C. A. Rokicki**, T. H. Boyer, J. Morran, M. Drikas
10:55 184. Impact of secondary organic aerosol formation on soot properties. **C. Qiu**, A. F. Khalizov, R. Zhang
11:20 185. Aquatic humic substances: A short history through the lens of the Hirsch factor. **E. Thurman**
11:45 Panel Discussion.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges

Materials Development and Analyses

D. Plata, J. Fortner, B. Lafferty, *Organizers, Presiding*

8:00 Introductory Remarks.
8:05 186. Nanoparticle formation during geologic CO_2 sequestration. **Y. Jun**, Y. Hu, H. Shao, J. R. Ray
8:35 187. Development of traceable metal oxide nanoparticles for environmental fate and transport studies. **B. Rowbotham**, J. A. Nason
8:55 188. Size tuned aqueous nC_{60}s and nC_{70}s stabilized with biocompatible surface coatings. **N. Aich**, L. Boateng, J. R. Flora, N. B. Saleh
9:15 189. Fractal electrode enhanced organic photovoltaic cells. **R. L. Chamousis**, F. E. Osterloh, S. E. Shaheen, R. P. Taylor, B. Ilan, A. J. Moule
9:35 Intermission.
9:50 190. How to realize oleophobicity without relying on perfluorinated chemicals. **A. Hozumi**, C. Urata, D. F. Cheng, B. Masheder
10:10 191. WITHDRAWN
10:30 192. Ceramic and composite systems for furthering applicability of upconversion materials to antimicrobial technologies. **S. L. Chinnapongse**, E. L. Cates, J. Kim
10:50 193. New host crystal systems for improved antimicrobial visible-to-UVC upconversion phosphors. **E. L. Cates**, J. Kim

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Green Chemistry Fostered Advances for Chemicals and Fuel Production

Biomass and Waste Valorization
Cosponsored by CEI
R. Luque, S. Obare, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 194. Chemicals and fuel production: Examples from the Presidential Green Chemistry Challenge Awards. **M. M. Kirchhoff**
8:50 195. Starbucks biorefinery development: Valorisation of bakery waste from Starbucks Hong Kong for the production of biodegradable plastics. W. Han, L. C. Cheung, M. W. Lee, H. M. Lei, K. Y. Lo, W. Y. Ng, **C. S. Lin**
9:20 196. Valorization of rice bran and other agro-industry wastes by extraction of oil and esterification over solid catalysts. **N. Ravasio**, F. Zaccheria, M. Mariani, R. Psaro
9:40 197. Cr-modified nanosized TiO_2 photocatalyst in organic wastes valorization and water decontamination. **J. Colmenares Quintero**, A. Magdziarz
10:00 Intermission.
10:15 198. WITHDRAWN
10:35 199. Conversion of lignocellulosic biomass to fuels and chemicals by combined hydrothermal – catalytic process using solid acid catalysts. **K. Triantafyllidis**, F. Pileidis, K. Avramidou, C. Nitsos
10:55 200. Sonochemical techniques to increase the efficiency of methyl esters production from non-food oils. **D. C. Boffito**, C. Pirola, C. L. Bianchi, G. S. Patience
11:15 201. Renewable feedstocks from the oceans: Transformations of aminocarbohydrates. **F. M. Kerton**

Section E

New Orleans Downtown Marriott at the Convention Center
Blaine Kern B

ACS National Award for Creative Advances in Environmental Science and Technology: Symposium in Honor of Donald R. Blake

R. Hathaway, B. Finlayson Pitts, *Organizers*
S. Nizkorodov, *Presiding*

8:30 Introductory Remarks.
8:40 202. Decade record of the mass independent isotopic composition of carbon dioixde and application to understanding the global carbon cycle. **M. H. Thiemens**, S. Chakraborty
9:05 203. Observations of atmospheric halogens by chemical ionization mass spectrometry. **G. Huey**
9:30 204. Impact of increasing westerly winds on dimethyl sulfide flux and reflectivity over the Southern Ocean and Antarctica: Possible climate feedback. **O. W. Wingenter**, O. O. Ogunro, S. Nance, S. M. Elliott, N. J. Blake
9:55 Intermission.
10:15 205. Roles of HFCs and N_2O in Earth's environment: Science behind the issues. **A. R. Ravishankara**
10:40 206. Spatial and temporal variations in the isotopic composition of atmospheric nitrous oxide. **K. A. Boering**
11:05 207. Fundamental studies of the chemistry of interfaces relevant to the troposphere. **J. C. Hemminger**

Chemical Pictures of Environmental Interfaces: Advances in Molecular-Level Understanding and Quantitative Analysis of Species
Sponsored by COLL, Cosponsored by ENVR

Natural Hydrocarbon Seeps: Toward Understanding a Complex Natural System
Sponsored by GEOC, Cosponsored by ENVR

Redox Processes at Mineral-Water Interfaces and their Impacts on Metal Biogeochemical Cycling and Contaminant Remediation
Sponsored by GEOC, Cosponsored by ENVR

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Chemical Oxidation and Free Radicals

G. Li Puma, D. Dionysiou, S. Canonica, *Organizers*
K. Oshea, *Organizer*, *Presiding*
V. Sharma, *Presiding*

1:30 208. WITHDRAWN
2:00 209. Advances of catalytic permanganate oxidation and catalytic ozonation for selective and nonselective degradation of organic micropollutants. **J. Ma**, J. Jiang, S. Pang, Y. Liu
2:30 210. Enhanced *N*-nitrosamine formation in pool water by UV irradiation of chlorinated secondary amines in presence of monochloramine. **U. von Gunten**, F. Soltermann, M. Lee, S. Canonica
2:50 211. Roles of hydroxyl radicals (HO·) and chlorine atoms (Cl·) on micropollutant degradation in the UV/chlorine system. **Y. Fu**, J. Fang, C. Shang
3:10 212. Oxidation of groundwater contaminants by metal oxide activation of persulfate: Radical chain mechanisms and product formation. **H. Liu**, T. Bruton, F. Doyle, D. Sedlak
3:30 Intermission.
3:45 213. UV photolysis of lampricides in the presence and absence of dissolved organic matter. M. McConville, **C. K. Remucal**
4:05 214. Investigation into bimetallic and trimetallic iron-based systems for the activation of sodium persulfate toward water treatment and sustainability: Application to sulfamethoxazole antibiotic. **A. GHAUCH**
4:25 215. Activation energy for utilizing peroxy-acid for PAH treatment. **E. F. Tentori**, M. C. Nyman
4:45 216. Sulfate radical generation from peroxymonosulfate induced by a magnetically separable $CuFe_2O_4$ spinel in water: The efficiency, stability, and mechanism. **T. Zhang**, H. Zhu, J. Croue
5:05 217. Sulfate radical ($SO_4^{\bullet-}$) oxidation kinetics of organic contaminants in aquatic media. **Y. Kim**, P. G. Tratnyek

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

Optical and Redox Properties of Organic Matter

F. Rosario, E. Thurman, *Organizers*, *Presiding*

1:30 218. Investigating the structural basis of the optical and photochemical properties of humic substances and CDOM.**N. V. Blough**, R. Del Vecchio
2:00 219. Halide quenching of reactive oxygen species photoproduced from organic matter. **C. Glover**, F. Rosario-Ortiz
2:25 220. Effects of borohydride reduction on the structure and composition of humic substances as observed by ESI FT-ICR mass spectrometry. **D. R. Baluha**, N. V. Blough
2:50 221. Photochemical formation of singlet oxygen from wastewater derived organic matter. **S. Mostafa**, F. Rosario-Ortiz
3:15 Intermission.
3:30 222. Identifying the factors that influence the reactivity of effluent organic matter with hydroxyl radicals. **O. Keen**, K. Linden, F. Rosario-Ortiz
3:55 223. Oxidation of green leaf volatiles in fog water: Part 1 – SOA formation. **A. K. Hansel**, F. S. Ehrenhauser, R. Kaur, C. Anastasio, K. T. Valsaraj
4:20 224. Oxidation of green leaf volatiles in fog water, part 2: Reaction kinetics. **N. K. Richards**, C. Anastasio
4:45 Panel Discussion.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges

Nano-Bio Interactions

D. Plata, J. Fortner, B. Lafferty, *Organizers, Presiding*

1:30 Introductory Remarks.
1:35 225. Bacterial biofilm interaction with engineered nanoparticles. **H. Jing**, B. Mezgebe, **A. A. Hassan**, E. Sahle-Demessie, G. Sorial, C. Bennett-Stamper
2:05 226. Stimulatory effect on poplar by low (sub-lethal) concentrations of silver nanoparticles (AgNPs). **J. Wang**, A. Alexander, Y. Koo, Y. Yang, H. L. Puppala, Q. Zhang, V. L. Colvin, J. L. Schnoor, J. Braam, P. J. Alvarez
2:25 227. Time-dependent nanotoxicity mechanisms in *Escherichia coli* revealed by a genome-wide investigation. **V. C. Reyes**, M. Li, E. M. Hoek, S. Mahendra, R. D. Damoiseaux
2:45 Intermission.
3:00 228. Interactions and fate of carbon nanotube polymer composites in the presence of aerobic bacteria. **D. Goodwin**, K. Marsh, H. Fairbrother, E. Bouwer
3:20 229. Electrically conducting nanocomposite polymer thin film reverse osmosis membranes for biofilm prevention. **D. Jassby**, C. de Lannoy, K. Glow, A. Gordon, M. Wiesner
3:40 230. Ceramic water purifier with metallic nanopatches for water disinfection. **J. A. Smith**, B. Ehdaie, C. Krause

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Green Chemistry Fostered Advances for Chemicals and Fuel Production

Green Catalytic Protocols
Cosponsored by CEI
R. Luque, S. Obare, *Organizers, Presiding*

1:30 Introductory Remarks.
1:35 231. Hierarchical nanostructured catalysts for sustainable chemical synthesis. **A. F. Lee**
2:05 232. Reaction mechanism of glycerol dehydration into acrolein in gas phase over a solid catalyst. **I. Martinuzzi**, Y. Azizi, H. Poirot, O. Zahraa, J. LeClerc
2:25 233. Deep eutectic solvents (DES) as new green and bio-renewable solvents for metal-mediated homogeneous catalysis. **J. Garcia-Alvarez**, C. Vidal
2:45 Intermission.
3:00 234. Reducing the need for petroleum based solvents through mechanochemistry. **J. Mack**, W. C. Shearouse, D. C. Waddell, T. L. Cook
3:20 235. Carbon-magnetite nanoparticle hybrids: Toward advanced heterogeneous catalysts. M. Ojeda, **A. M. Balu**, O. Ershova, H. Sixta, R. Luque, A. A. Romero
3:40 236. Tin-containing zeolite nanosheets are active catalysts for the Baeyer-Villiger oxidation of bulky cyclic ketones. H. Y. Luo, L. Bui, W. R. Gunther, E. Min, **Y. Roman-Leshkov**

Section E

New Orleans Downtown Marriott at the Convention Center
Blaine Kern B

ACS National Award for Creative Advances in Environmental Science and Technology: Symposium in Honor of Donald R. Blake

B. Finlayson Pitts, R. Hathaway, *Organizers*
J. C. Hemminger, *Presiding*

1:00 237. Re-examining the role of volatile organic compounds in atmospheric oxidation chemistry. **W. H. Brune**, X. Ren, J. Mao, L. Zhang, P. Feiner, D. Miller
1:25 238. Hydrocarbon emissions associated with hydraulic fracturing in northeastern Colorado and southwestern Pennsylvania: A lot of fracking gas. **B. C. Sive**, R. Swarthout, B. Miller, B. Mitchell, E. Horsman, R. Russo, Y. Zhou

1:50 239. Alkyl nitrate distributions and seasonal variation of trace gases observed over the Pacific Ocean during the HIPPO mission. **E. L. Atlas**, K. Smith, X. Zhu, L. Pope, R. Lueb, R. Hendershot, F. Moore, B. Miller, S. Montzka, J. Elkins, S. Wofsy
2:15 Intermission.
2:30 240. Photochemical aging of atmospheric organics in ambient particles and aqueous droplets. **S. A. Nizkorodov**
2:55 241. Award Address (ACS Award for Creative Advances in Environmental Science and Technology sponsored by ACS Division of Environmental Chemistry and ACS Publications Divisions). Long-term trends in global concentrations of atmospheric methane and ethane. **D. R. Blake**, I. J. Simpson, S. J. Meinardi, M. J. Sulbaek Andersen, L. Bruhwiler
3:40 Concluding Remarks.

Approaching the Surface: Interrogating Chemical Interactions at the Mineral-Water Interface
Sponsored by GEOC, Cosponsored by COLL and ENVR

WEDNESDAY MORNING

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Degradation of Emerging Contaminants by Ozonation and Plasma Processes

G. Li Puma, D. Dionysiou, K. Oshea, *Organizers*
S. Canonica, *Organizer, Presiding*
U. von Gunten, *Presiding*

8:30 242. Pre-ozonation applied to a water treatment plant in Campinas (SP), Brazil: Efficiency in removal of emerging contaminants. C. C. Montagner, **W. F. Jardim**, S. L. Siqueira
9:00 243. New N-nitrosodimethylamine (NDMA) precursors that react with ozone: Evaluation of NDMA yields and implications to the application of ozone in water reuse. **E. Marti**, A. Pisarenko, E. Dickenson
9:20 244. Formation of oxidation byproducts—nitrosamines and perfluoroalkyl acids during ozonation and advanced oxidation for water reuse: Role of molecular ozone and hydroxyl radical. **A. N. Pisarenko**, E. Marti, D. Gerrity, J. R. Peller, E. Dickenson
9:40 245. Evaluating the toxicity of CCL3 contaminants post UV and ozone based AOP treatment. E. Spangler, **A. M. Parker**, U. von Gunten, K. G. Linden
10:00 246. WITHDRAWN
10:20 Intermission.
10:35 247. Polybrominated diphenyl ethers degradation in sewage sludge by ozonation treatment. **G. Mascolo**, V. Locaputo
10:55 248. Plasmacatalytic and plasmaphotocatalytic destruction of airborne VOCs. **A. V. Vorontsov**, M. N. Lyulyukin, A. S. Besov
11:15 249. WITHDRAWN
11:35 250. Role and transformation of Ag^+ in the TiO_2 catalyzed photo-ozonation of phenol and oxalic acid. **Y. Xie**, Y. Chen, **H. Cao**

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

Organic Matter as a Substrate in Environmental Processes

F. Rosario, E. Thurman, *Organizers, Presiding*

8:00 251. Understanding the interaction of hydrophobic organic pollutants and dissolved organic matter in the aquatic environment. **M. Suffet**, M. Hsu
8:30 252. Rotavirus interaction with different natural organic matter (NOM). **L. Gutierrez**, R. Lu, J. Croue, T. H. Nguyen

8:55 253. Impact of NOM on nanoparticle aggregation depends on NOM molecular weight distribution. **S. M. Louie**, R. D. Tilton, G. V. Lowry
9:20 254. Natural organic matter (NOM) adhesion behavior on mica. **C. Aubry**, L. Gutierrez, H. Nguyen, J. Croue
9:45 255. WITHDRAWN
10:10 Intermission.
10:25 256. Interrelationship of polycyclic aromatic hydrocarbons in sediment corers from sub-tropical region with algae-derived organic matter and global change. **D. Duan**, **Y. Ran**
10:50 257. Vertical and temporal variability of carbonaceous aerosol and contributions from organic matter: Preliminary results from aerosol samples collected at the Boulder Atmospheric Observatory tower in Erie, CO. **T. R. Duhl**, E. Lee, M. Hannigan, F. Rosario-Ortiz, N. Clements, L. Blackwell
11:15 258. Investigating interfacial chemistry of indoor organic and its potential health impact. **Y. Liu**, G. Zeng, D. Fu, S. Holladay
11:40 259. Effect of riboflavin on the reductive degradation of carbon tetrachloride by nanoscale zerovalent iron. **S. Bae**, W. Lee
12:05 Panel Discussion.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges

Fate of Nanomaterials

D. Plata, J. Fortner, B. Lafferty, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 260. Light-driven formation and transformation of silver nanoparticles in the presence of natural organic matter. **W. Hou**, R. G. Zepp
8:35 261. Heteroaggregation of capped gold nanoparticles and natural colloids under relevant environmental conditions. **B. Smith**, J. A. Nason
8:55 262. Transport of aluminum oxide nanoparticle in porous media: Effects of size, ionic strength, and flow rate. **T. Rahman**, J. George, H. J. Shipley
9:15 263. Effects of surface chemistries and environmental aging on the aggregation and deposition behaviors of engineered magnetite nanocrystals in aquatic systems. **W. Li**, J. Wu, J. D. Fortner
9:35 264. Mechanistic hetero-aggregation of gold nanoparticles in presence of nonionic polymer modified single-walled carbon nanotubes. **A. Afrooz**, I. A. Khan, S. M. Hussain, N. B. Saleh
9:55 Intermission.
10:10 265. Chlorination of hydroxylated C_{60} (Fullerenol) and C_{60} aggregates (nC_{60}) in water: Reaction kinetics and product characterization. **J. Wu**, K. Peter, W. Li, J. Fortner
10:30 266. Photochemistry of aqueous fullerene aggregates as a function of size fractionation and surface functionalization. **S. D. Snow**, K. Moore, J. Lee, J. Kim
10:50 267. Effects of solution chemistry on the stability and transport of graphene oxide nanoparticles in saturated porous media. **J. D. Lanphere**, S. L. Walker
11:10 268. Photochemical transformation of carboxylated multiwalled carbon nanotubes (COOH-MWNTs) under sunlight.**X. Qu**, P. J. Alvarez, Q. Li
11:30 Concluding Remarks.

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Green Chemistry Fostered Advances for Chemicals and Fuel Production

Alternative/Renewable Energy
Cosponsored by CEI
R. Luque, S. Obare, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 269. Novel routes for synthesis of hydrogen-bonded "green" organic semiconductors. **M. Irimia-Vladu**, E. D. Glowacki, G. Voss, B. Stadlober, N. S. Sariciftci
8:35 270. Biomimetic approach for solar fuel production. **N. Nuraje**, Y. Lei, A. Belcher
8:55 Intermission.

9:10 271. Regenerative microfluidic fuel cell for high efficient H_2 production and utilization. **J. Xuan**, H. Wang, H. Xu, M. K. Leung, L. Zhang, D. Y. Leung
9:30 272. Green algae *Chlorella* for food and energy: Products, metabolism, and novel function. **Z. Sun**
9:50 273. Miniature hydrogen generator based on aluminum-water reaction for micro fuel cells. **H. Wang**, D. Y. Leung, J. Xuan

Section E

New Orleans Downtown Marriott at the Convention Center
Blaine Kern B

Advanced Nanoscale and Membrane Technologies in Energy and Food Production
Cosponsored by AGFD and CEI
B. Van der Bruggen, P. Luis, A. Sotto, J. Kim, *Organizers*, *Presiding*

8:30 Introductory Remarks.
8:35 274. Binary metal oxides for nanocomposite ultrafiltration membranes. **A. Sotto**, J. Kim, B. Van der Bruggen, P. Luis, J. Arsuaga
8:55 275. Boosting TiO_2 nanotube array based photocatalysis efficiency for energy conversion. Z. Zhang, **P. Wang**
9:15 276. Regenerable antimicrobial activity in thin film composite membranes for sustainable control of membrane biofouling. **J. Wu**, Q. Li
9:35 277. ZnO-graphene hybrid nanostructure for energy harvesting using photon and sound. K. Vijayarangamuthu, **K. Jeon**
9:55 Intermission.
10:10 278. High flux ethanol dehydration using multilayered graphene oxide membranes. **T. Yeh**, D. Mahajan, B. S. Hsiao, B. Chu
10:30 279. Fundamentals of selective ion transport through polyelectrolyte multilayer films. **C. Cheng**, A. Yaroshchuk, M. Bruening
10:50 280. Superhydrophobic polypropylene coatings for fouling reduction in membrane distillation. **S. R. Hogg**, V. V. Tarabara, M. L. Bruening
11:10 281. Effect of operational parameters on biogas production in the pilot-scale thermophilic two-stage anaerobic digester coupled with UF membrane system utilizing food waste leachate. **Y. Kim**, D. Jun, J. Bae, J. Kim
11:30 Concluding Remarks.

Arsenic Contamination of Food and Water
Sponsored by AGFD, Cosponsored by AGRO, ENVR, and SCHB

Beyond Using n-alkanes and PAHs: What Else Have We Learned About Environmental Geochemistry since Deepwater Horizon?
Sponsored by GEOC, Cosponsored by ENVR

WEDNESDAY AFTERNOON

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Photoelectrochemical and Sonolytic Processes

G. Li Puma, D. Dionysiou, K. Oshea, S. Canonica, *Organizers*
G. Mascolo, J. Byrne, *Presiding*

1:30 282. Photoelectrochemistry: 170+ years and counting.. **M. A. Anderson**
2:00 283. Probing the mechanism of visible light photocatalytic activity using photoelectrochemistry. **J. A. Byrne**, J. W. Hamitlon, P. S. Dunlop, M. Pelaez, S. C. Pillai, K. O'Shea, D. D. Dionysiou
2:20 284. Chlortetracycline degradation using nanostructured photoanode electrodes in an electrolytic cell. R. Daghrir, **P. Drogui**, M. A. El Khakani
2:40 285. Elimination of organic pollutants in industrial wastewater using ozonation coupled with boron doped diamond (BDD) electrode electrooxidation. **C. E. Barrera-Diaz**, G. Roa-Morales, M. Garcia, B. Bilyeu

3:00 286. Photoelectrocatalytic hydrogen production and phenol degradation by using nitrogen-doped titania-graphene composite films on stainless steel as photoanodes. M. I. Carreño-Lizcano, **J. A. Pedraza-Avella**, V. Rodríguez-González, M. E. Niño-Gómez
3:20 Intermission.
3:35 287. Membrane with electrochemical functions for enhanced removal of chemical pollutants from water. X. Fan, **H. Yu**,**X. Quan**
3:55 288. Kinetics of the electrochemical oxidation of phenol and intermediates in the presence of chloride under different reaction conditions. **L. Chen**, M. J. Kupferle
4:15 289. Oxidation of pharmaceuticals and personal care products in water using hydrodynamic cavitation. **G. Loraine**, G. Chahine
4:35 290. Mechanistic study on the degradation of gasoline oxygenates by sonolysis. **D. K. Kim**, K. E. O'Shea, W. J. Cooper
4:55 291. Characterizing a novel ultrasonic horn design for use as an advanced oxidation process. **Z. Wei**, R. Xiao, M. Cai, L. K. Weavers

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

Impact of Organic Matter on Water and Wastewater Treatment

F. Rosario, E. Thurman, *Organizers*, *Presiding*

1:30 292. Properties of natural organic matter (NOM) related to membrane fouling. **M. M. Benjamin**, J. Liu, B. Malczewska, N. Lee
2:00 293. Improving disinfection byproduct precursor characterizations and removal using asymmetric flow-field flow fractionation. **J. Fairey**, C. Mash, T. Do
2:25 294. WITHDRAWN
2:50 295. Soluble microbial product improves bacteriophage MS2 removal by fouling ultrafiltration membrane. **R. Lu**, D. Goodwin, H. Fairbrother, T. H. Nguyen
3:15 Intermission.
3:30 296. Activated carbon adsorption and trihalomethane formation potential of aquatic and terrestrial fulvic and humic acids. M. Y. Abouleish, **M. J. Wells**
3:55 297. Analysis of k_{NOM-OH}**.** for NOM isolates and drinking water samples with rapid background scavenging technique.**J. H. Donham**, E. Rosenfeldt, K. R. Wigginton
4:20 298. Identification of OM components that compete with target sorbates to powdered activated carbon (PAC). **K. Shimabuku**, E. Townsend, R. Summers, F. Rosario-Ortiz
4:45 299. Characterization of aquatic phase natural organic matter by self-assisted laser desorption/ionization mass spectrametry. **R. Wang**

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Biofuels: Current Issues and Environmental Implications

Biofuels Production, Chemical Composition and Stability
Cosponsored by AGFD, CEI, and ENFL
D. Grosjean, *Organizer*
J. De Andrade, *Organizer*, *Presiding*

1:30 Introductory Remarks.
1:35 300. Brazilian clay-based catalysts for biodiesel production. **P. A. Suarez**, **A. C. Pinto**, M. J. Rezende, M. S. Pereira, G. F. Santos, G. O. Aroeira, T. C. Albuquerque
2:00 301. Co-production of lipids for biofuels, pigment, and protein in mixed microalgal/cyanobacterial cultures. **M. T. Gutierrez-Wing**, M. Mohtashamian, A. Prudente, K. A. Rusch
2:25 302. WITHDRAWN
2:50 303. Molecular composition and oxidative stability of biodiesels from non-edible plants relevant to the economic development of Brazil's northeastern states. V. R. Neto, A. L. de Carvalho, L. S. Texeira, **D. M. Grosjean**
3:15 Intermission.

3:30 304. Additives to extend oxidative stability of biodiesel. **A. S. Mangrich**, P. B. Ferrari, C. I. Yamamoto, V. F. Ferreira, A. K. Jordao
3:55 305. Ion chromatography study of the reaction products of soy biodiesel in the EN14112 (Rancimat) oxidative stability test. A. L. de Carvalho, E. A. Cardoso, G. Olimpia Rocha, L. S. Texeira, I. M. Pepe, **D. M. Grosjean**
4:20 306. N-heptane as a fuel surrogate for n-alkane components of diesel and biodiesel fuels. H. Lai, C. Depcik, **E. Peltier**, M. Mangus, C. Ragone
4:45 Panel Discussion: Biofuels vs. Food.

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Green Chemistry Fostered Advances for Chemicals and Fuel Production

Nanoscale Science and Biorenewables
Cosponsored by CEI
R. Luque, S. Obare, *Organizers, Presiding*

1:30 Introductory Remarks.
1:35 307. Adsorption and reaction of aromatic oxygenates on Pd(111): Unique reaction pathways for multifunctional reagents. **J. Medlin**, S. Pang
2:05 308. Some impacts of nanotechnology on catalysis by precious metal nanoparticles. **R. Jin**
2:25 309. Nanocatalytic approach to the conversion of biorenewables. **R. Y. Ofoli**, X. Ma, R. Lin, S. O. Obare
2:45 310. Biodegradable and biocompatible functional nanomaterials. **R. R. Ozer**
3:05 Intermission.
3:20 311. Sustainable organic synthesis in continuous flow environments. **C. Kappe**
4:05 312. Use of renewable raw materials for biocatalytic continuous flow process. **R. O. de Souza**, I. I. Itabaiana, L. S. Miranda, F. K. Sutili, H. S. Ruela, I. C. Leal
4:25 313. Isosorbide *tert*-butyl ethers (ITBE): Continuous production and reaction kinetics. **M. S. Rose**, R. Pfützenreuter, R. Palkovits
4:45 314. Continuous flow transformations of platform molecules to valuable chemicals and biofuel precursors. **R. Luque**, J. M. Campelo, A. A. Romero, A. Pineda, M. Ojeda, A. Yepez, C. M. Lastres, A. Franco
5:05 315. Towards the use of lipases under continuous flow conditions. **R. O. de Souza**, I. Itabaiana, L. S. Miranda, F. K. Sutili, H. S. Ruela, I. C. Leal
5:25 Concluding Remarks.

Arsenic Contamination of Food and Water
Sponsored by AGFD, Cosponsored by AGRO, ENVR, and SCHB

Nanostructured Photocatalysts for Direct CO_2 Reduction

Nanostructured Photocatalysts
Sponsored by COLL, Cosponsored by ENVR

WEDNESDAY EVENING

Section A

Morial Convention Center
Hall D

Air Monitoring
Cosponsored by ANYL
J. Maclachlan, *Organizer*

6:00 - 8:00
316. Peroxide measurements in the Deep Convective Clouds and Chemistry campaign using multi-reagent ion chemical ionization mass spectrometry and ab initio calculations. D. W. O'Sullivan, I. K. Silwal, **A. S. McNeill**, V. A. Treadaway, B. G. Heikes
317. NO_x effects on nighttime secondary organic aerosol (SOA) formation. **D. C. Draper**, D. K. Farmer, J. L. Fry
318. Modeling hydroxyl, hydroperoxy, and alkylperoxy radicals in an upper Midwest forest boundary layer. G. D. Edwards,**P. R. Stratton**

319. Decrease in acid rain over 23-year study at Paradise, Mt. Rainier National Park. **J. Agren**, C. Johnson, R. Lofgren, B. Samora, A. M. Johansen
320. Fluorescence detection of nitric oxide in methanol solution by Cu^{2+} complex of tridentate ligand. **M. A. Fayissa**, V. R. Morris, Y. Gultneh
321. Values of stable isotope ratios delta 15N/14N in nitrogen oxide substances within the aerosol samples were clearly correlated with declination in Singapore. **H. Katsura**
322. Radical reactions with terpenes in the atmosphere. **H. Pan**, S. P. Mezyk
323. WITHDRAWN

Section A

Morial Convention Center
Hall D

Biofuels: Current Issues and Environmental Implications
Cosponsored by AGFD, CEI, and ENFL
D. Grosjean, J. De Andrade, *Organizers*

6:00 - 8:00
324. Biodiesel production from fatty acids esterification using Brazilian clay-based catalyst. **M. J. Rezende**, **A. C. Pinto**
325. Investigation of biodiesel potential of oleaginous algae and yeast biomass by NMR spectroscopic techniques. **A. S. Sarpal**, **P. R. Silva**, V. F. Silva, **V. S. Cunha**, **R. J. Daroda**, J. L. Martins, R. F. Pinto, J. J. Amaral, W. Souza

Section A

Morial Convention Center
Hall D

Carbon Dynamics and the Biogeochemical Cycling of Major and Minor Elements
Cosponsored by GEOC
E. J. O'Loughlin, M. McCormick, *Organizers*

6:00 - 8:00
326. Humic acid and fulvic acid fractions extracted from prairie restoration soils and control soils in Illinois. **N. Voleti**, S. Bomma, M. Bertels, L. Buffington, M. Davis, S. Wailand, L. Zeman, **J. McConnell**
327. Humic acid and fulvic acid fractions extracted from native prairie soils and control soils in Illinois. **S. Bomma**, N. Voleti, M. Bertels, L. Buffington, D. Davis, S. Wailand, L. Zeman, **J. McConnell**
328. Biogeochemical cycling of organic carbon, uranium, and sulfur in an alluvial aquifer. **N. Janot**, J. S. Lezama-Pacheco, D. Q. Pham, D. Hausladen, M. E. Jones, S. Fendorf, J. M. Cerrato, D. E. Giammar, K. H. Williams, P. E. Long, C. Cismasu, P. S. Nico, G. E. Brown, J. R. Bargar
329. Impact of ice-shelf loss on geochemical profiles and microbial community composition in marine sediments of the Larsen A embayment, Antarctic Peninsula. **M. L. McCormick**, A. D. Seraichick, E. M. Bucceri, E. J. Huebner, M. Shimizu, D. A. Antonopoulos, J. C. Koval, M. Cape, M. Vernet, L. Grange, C. R. Smith, E. Domack, A. Leventer
330. Effects of electron donor on the biogeochemical dynamics of Fe, S, and C under sulfate- and iron-reducing conditions. M. Kwon, M. I. Boyanov, D. A. Antonopoulos, J. M. Brulc, E. Johnston, K. M. Kemner, **E. J. O'Loughlin**

Section A

Morial Convention Center
Hall D

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern
G. Li Puma, D. Dionysiou, S. Canonica, K. Oshea, *Organizers*

6:00 - 8:00
331. Degradation of sulfamethoxazole in sonicated and silent Fe^0/H_2O_2 systems: Micrometric vs. nanometric Fe^0 activator.**A. Ghauch**, H. Baydoun, P. Dermesropian
332. Advanced ozone membrane reactor for treatment of endocrine disrupting compounds in water. J. Jouët, W. Chan, **H. Chen**, K. Yeung
333. Fenton treatment of wastewater containing sulfa drugs and influence of various experimental parameters. **S. Hussain**, S. Gul, D. W. Miwa, A. J. Motheo

334. Electrochemical treatment of wastewater containing antibiotic tetracycline. **S. Gul**, S. Hussain, D. W. Miwa, A. J. Motheo
335. Study of irradiance and Fe concentration effect for removal of contaminants at µg/L scale by solar photo-Fenton at natural pH. **J. Sánchez Pérez**, I. Carra, E. Ortega Gómez, B. Esteban, J. Casas López, S. Malato
336. Aqueous photocatalytic oxidation of prednisolone. **D. Klauson**, J. Pilnik-Sudareva, O. Budarnaja, M. Krichevskaya, Y. Kulyasova, A. Käkinen, K. Juganson, S. Preis
337. Aqueous photocatalytic oxidation of doxycycline. **M. Krichevskaya**, D. Klauson, N. Pronina, A. Poljakova, S. Preis
338. Influence of size, composition, and shape of noble metal nanoparticles on photocatalytic oxidation reactions. **S. Zhao**, G. Ramakrishnan, D. Su, X. Tong, Y. Li, A. Orlov
339. Application of advanced oxidation processes in treatment of high salinity organic wastewater: Kinetics and AOX formation. R. Yuan, Z. Wang, **J. Liu**
340. Solar photocatalytic removal of pharmaceutical contaminants by enhanced materials: Phtalocyanine and nanotubular TiO_2 catalysts. **F. Méndez-Arriaga**, G. Herrera, J. Sosa Sánchez, A. Toledo, R. Salgado
341. Adsorption and photocatalysis of poultry process wastewater using chicken by-products and UV-light. **A. F. Lopez Vasquez**, A. F. Suarez Escobar, G. Carlos
342. Sunlight-mediated wastewater treatment processes for micropollutant removal and pathogen inactivation. **J. Wenk**, K. L. Nelson, D. L. Sedlak
343. WITHDRAWN
344. Visible light sensitized N-S co-doped polymorphic TiO_2 for photocatalytic destruction of microcystin-LR. **G. Zhang**, M. Nadagou, C. Han, K. O'Shea, S. M. El-Sheikh, D. D. Dionysiou
345. Zerovalent iron degradation of pharmaceuticals present in sewage treatment plant effluent. **R. F. Pupo Nogueira**, J. A. Perini
346. Photoelectrocatalytic degradation of phenol by using Bi-Nb-M (M = Al, Fe, Ga, In) mixed oxide films on stainless steel as photoanodes. J. L. Ropero-Vega, **J. A. Pedraza-Avella**, R. J. Candal, M. E. Niño-Gómez
347. Greywater treatment for reuse: Study of pathogenic microorganisms and phage survival using photolysis and photocatalysis treatments. R. Khalaphallah, V. MAROGA MBOULA, **V. Hequet**, Y. Andres, M. Pelaez, D. D. Dionysiou
348. Sulfathiazole oxidation mediated by photo-Fenton reaction. M. Velásquez, O. Rozas, D. Contreras, M. Pérez-Moya, **H. D. Mansilla**
349. Ozonation catalyzed by Fe-PILCS. **C. E. Barrera-Diaz**, M. Bernal, R. Natividad, G. Roa, R. Romero
350. Cerium and nitrogen doping studies on the photocatalytic performance of $Ti_{1-x}Ce_xO_{2-}N$ compounds. **R. Rangel**, P. Bartolo-Perez, R. Trejo-Itzab, P. Quintana, I. Espita, J. Garcia-Espinoza
351. Effect of gelatin-grenetine in biocomposites of chitosan, TiO2, and iron films for cyanide oxidation to cyanate. **A. Barbosa**, L. Mesino
352. Peroxidation with ultraviolet radiation for inactivation of total coliforms, *Escherichia coli*, and *Clostridium perfringens*. R. Guadagnini, L. U. dos Santos, R. Cantusio-Neto, R. B. Franco, **J. Guimarães**
353. Radical based removal of iodonated carboxylic acids from wastewater. **L. M. Olson**, S. P. Mezyk, M. P. Schramm, J. A. LaVerne, K. A. Rickman
354. Kinetics of chloramine speciation in real-world wastewaters. **B. L. Sjelin**, S. P. Mezyk
355. Comparison of energy requirements for removal of organic micropollutants by ozone, O_3/H_2O_2, UV, UV/H_2O_2 and boron-doped diamond (BDD) electrodes. **G. Matafonova**, S. Zimmermann, P. Dimitriou-Christidis, S. Arey, U. von Gunten
356. Kinetic modeling of gas-phase mercury oxidation by halides (Cl and Br) in combustion effluents: The importance of NOx and SOx. **I. Auzmendi-Murua**, J. W. Bozzelli
357. Mercury oxidation via chlorine and bromine under atmospheric conditions: Thermochemistry and kinetics. I. Auzmendi-Murua, **J. W. Bozzelli**
358. Visible light induced degradation of humic acid using nitrogen doped TiO_2. **M. Bekbolet**, C. Birben, C. Uyguner-Demirel
359. Removing antibiotic activity from waters using sulfate radicals. **D. K. Asamoto**, S. P. Mezyk

Section A

Morial Convention Center
Hall D

Energy Recovery from Waste: Technological and Environmental Issues
Cosponsored by CEI
K. Kawamoto, S. Al-Abed, K. Fenlon, *Organizers*

6:00 - 8:00
360. WITHDRAWN
361. Fenton's oxidation pretreatment of landfill leachate for biogas production. **J. Nie**, D. D. Gang, S. Dufreche, R. Subramaniam, R. Bajpai, M. Zappi
362. Promotion of coal combustion kinetics by blended biomass ash. **Z. Liu**, Y. Cao, K. Zhang, W. Pan
363. Light-assisted biomass fuel cell for renewable electricity generation from wastewater. **F. E. Osterloh**, R. L. Chamousis
364. Bioelectrochemical reactor for energy production from food wastes. **V. Gadhamshetty**, **D. Belanger**, K. Fischbach, **J. E. Kilduff**, S. Sarsembayeva

Section A

Morial Convention Center
Hall D

Environmental Fate of Petroleum Oils and Dispersants in the Marine Environment
Cosponsored by ANYL and GEOC
R. Conmy, *Organizer*

6:00 - 8:00
365. Photochemical degradation and bacterial growth response crude oil. **G. Daniel**, N. Harris, R. Atkinson, R. Pichulo, D. Brankle, J. Trindell, W. Jeffrey, P. Vaughan
366. Photodegradation and salinity effects on crude oil PAH partitioning kinetics. **R. Pichulo**, R. Atkinson, D. Brankle, **P. Vaughan**
367. Organic matter in ocean water as a proxy for indirect photochemical degradation of the dispersants used in the Deepwater Horizon oil spill. **C. M. Glover**, A. M. Parker, K. G. Linden, F. L. Rosario-Ortiz
368. Effects of oil dispersants and sediment sorption on photodegradation and ozonation of persistent oil compounds in the Gulf Coast ecosystems. **Y. Gong**, X. Zhao, S. O'Reilly, D. Zhao

Section A

Morial Convention Center
Hall D

Food and Its Environment: What Is In What We Eat?
Cosponsored by AGFD and CEI
E. Roberts-Kirchhoff, M. Benvenuto, *Organizers*

6:00 - 8:00
369. Levels lead in rice food products imported into the United States of America. **T. Tongesayi**, **C. Bray**, **C. Brock**, **P. W. Fedick**, **L. S. Lechner**
370. Atomic absorption spectrometry in the measurement of zinc uptake by grass shrimp. **N. A. Baghiae**, N. Mehrabi, J. Laming, K. C. Lanigan

Section A

Morial Convention Center
Hall D

General Posters

S. Al-Abed, *Organizer*

6:00 - 8:00
371. Thermodynamic studies of wastewater treatment from rubber processing factory using snail shell. **I. O. Asia**, E. O. Jatto
372. Correlational studies of some effluent parameters in a petroleum industry in Nigeria. **I. O. Asia**, A. A. Bisong

373. Kinetic studies of wastewater treatment from rubber processing factory using snail shell. **E. O. Jatto**, I. O. Asia, F. Egharevba
374. Chlorine-free disinfection of water contaminated with *Campylobacter jejuni* by treatment with an alternating current: Role of hydrogen peroxide formation. **N. Barashkov**, D. Eisenberg, L. Lam, I. Irgibaeva, T. Novikova
375. Acid mine drainage (AMD) production characteristics depending on environmental conditions. **Y. Kim**, J. Kim, J. Kim, M. Kim
376. City of Milwaukee Childhood Lead Poisoning Prevention Program. **J. L. McCann**
377. ^{40}K, ^{238}U and ^{232}Th activity in soil and water samples from some rural communities in Akwa Ibom State, Nigeria. **E. Inam**, K. Ite, E. Udosen, P. Tchokossa
378. Environmental characterization of leachate and tailing in Yonghwa Mine, Korea. **J. Kim**, Y. Kim, H. Jeong, J. Yun
379. Uptake of As(V) and Cr(VI) from aqueous environment by cationic poly(Acrylonitril-co-3-Acrylamidopropyl)trimethylammonium chloride) hydrogels. **T. Ersen**, D. Alpaslan, T. Sahan, N. Aktas, N. Sahiner
380. Removal of As(V), Cr(III) and Cr(VI) from aqueous environment by modifiable hydrogels. **D. Alpaslan**, T. Ersen, S. Kubilay, **N. Aktas**, **N. Sahiner**
381. WITHDRAWN
382. Enhanced transformation and dechlorination of p-Chloronitrobenzene in the combined ZVI-anaerobic sludge system.**L. Zhu**, X. Xu, H. Lin, J. Qi
383. Virucidal activity of a multilevel antimicrobial coating based of encapsulated chlorine dioxide. **Q. CHANG**, Y. LUI, Y. LI, J. KWAN, K. YEUNG
384. Plastics are invading not only the ocean but also the Great Lakes. **L. M. Rios Mendoza**, **C. Evans**
385. Protecting our families, homes, and the environment from cytotoxic chemotherapy drugs. **J. T. Mullowney**, T. O'Keefe
386. Detection of polycyclic aromatic hydrocarbons in environmental sediment samples. **A. L. Gomez**, B. L. Macaulay, K. L. Foster
387. Flame retardants in household dust after introduction of new furniture. **N. Strunsky**, K. Wovkulich, A. Keimowitz
388. Impact of a particle concentrator on physical and chemical properties. **G. A. Montoya**, L. M. Wingen, L. Mendez, A. Keebaugh, M. T. Kleinman, B. J. Finlayson-Pitts
389. Capacitive deionization for water desalination: Influence of operational mode on kinetics, charge efficiency and energy consumption. **L. M. Ruotolo**, M. A. Anderson
390. Sensitivity of a particle concentrator output to operating conditions. **L. M. Wingen**, G. A. Montoya, L. Mendez, A. Keebaugh, M. T. Kleinman, B. J. Finlayson-Pitts
391. Investigating the mechanism of photosensitized phenol degradation by humic substances. **K. S. Golanoski**, N. V. Blough, R. DelVecchio
392. Feasibility study on the use of *Pseudomonas putida* and *Pseudomonas fluorescens* for the biodegradation of oxygenated polyaromatic hydrocarbons. **R. E. Williamson**, C. L. Yestrebsky
393. Photoproduced reactive species in natural waters: Influence of chromophoric dissolved organic matter properties. **K. Malecha**, J. Thoemke
394. Cr(VI) adsorption and reduction by humic acid coated magnetite: Surface structure. **W. Jiang**, Q. Cai, W. Xu, D. Dionysiou, K. O'Shea
395. Removal of arsenic by electrocoagulation in reactor with separated anode and cathode. **J. Chen**, Y. Wang, C. Wu
396. Spatial variation of organic volatile compounds associated with gas production operations in southwestern Pennsylvania. **B. L. Mitchell**, B. Miller, R. Swarthout, Y. Zhou, B. C. Sive
397. Evaluation of Apatite II™ for removal of copper and zinc from highway stormwater runoff. **J. Provolt**, J. A. Nason
398. Green solvents for aerospace components. **K. Bookstaver**, P. Maloney, C. Yestrebsky, C. A. Clausen III
399. Simultaneous sorption of cationic and anionic dyes by chitosan/cellulose beads for water purification. **A. L. Vega-Negrón**, L. A. Alamo-Nole, O. Perales-Perez, F. R. Roman, A. Gonzalez
400. Chemical recycling of poly(ethylene terephthalate) waste using ethylendiamine. **A. alabdulrahman**, F. Alsewailem, H. Al-Megren, K. Fukushima, H. Horn, J. Rice, J. Hedrick
401. Atmospheric oxidation of benzene: Biphenyl formation in the bulk aqueous phase vs. the air-water interface. **A. A. Heath**, F. S. Ehrenhauser, K. T. Valsaraj
402. Fate of Lipitor: What happens in a living machine? **S. Yap**, M. C. Nyman
403. Potential treatment of hypergolic fuel waste streams. **C. Franco**, C. A. Clausen, C. L. Yestrebsky
404. Phototransformation of the herbicide acetochlor: Effects of surface water composition. **M. Claflin**, J. D. Thoemke

405. Simulated solar light photocatalysis of amitrole and atrazine in combination with external oxidants. **J. Andersen**, M. Pelaez, L. Guay, Z. Zhong, D. D. Dionysiou
406. Towards greener soil washing: A two-step process for extraction and dechlorination of polychlorinated biphenyls. **S. E. Novaes-Card**, C. L. Yestrebsky, C. A. Clausen
407. Raman and FTIR spectroscopy as process control techniques for sorbent manufacturing. **J. E. Tomaszewski**, B. J. Winters
408. Bio-renewable carbon substrates as mercury sorbents. **C. Slinger**, B. J. Winters
409. Preparation of cellulose nanofibers from rice hull. **F. A. Rodrigues**, R. A. Campos
410. Synthesis, purification, characterization, and gas phase studies of atmospherically relevant and model hydroxy nitrate esters. **T. D. Le**, M. A. Leon, E. L. Cardenas, D. L. Ward, M. P. Stephenson, N. M. Vizenor, A. K. Scruggs, A. S. Hasson, S. Maitra
411. Reconstruction of pesticide, polychlorinated biphenyls, polybrominated diphenyl ethers, and mercury profiles in gray and blue whale earplugs. **E. Robinson**, S. Trumble, B. Subedi, S. Usenko
412. Mass loadings and source apportionment of quinones in fine particulate matter air pollution. **K. T. Vu**, C. Olea, A. Lolinco, N. Tello, A. Clark, A. Hasson
413. Indoor aldehyde analysis within apartments retrofitted for energy efficiency. **S. E. Frey**, H. Destaillats, P. Herckes, M. P. Fraser
414. Conversion of the explosive RDX into biomass using photosynthetic *Rhodobacter sphaeroides*. **K. Millerick**, K. Finneran
415. Photochemical studies of current use bisphenols: BPA replacements BPS and BPF. **A. J. Hiranaka**, **K. T. Tran**, D. E. Latch
416. Pyrethroid pesticides in the Duwamish River Superfund site: Development and optimization of analysis methods. **J. C. Berude**, W. L. Whitlow, D. E. Latch
417. Degradation of RDX by bio-reduced lepidocrocite and soil. **C. Cho**, S. Bae, W. Lee
418. San Jacinto River waste pits, Texas: Analysis of polychlorinated dibenzo-p-dioxins, furans, and biphenyls in surficial river sediment. **L. Aguilar**, B. Subedi, E. S. Williams, J. P. Berninger, B. W. Brooks, S. Usenko
419. New method to evaluate backwash performance of rapid filter in water treatment facility. H. Tsai, **C. Wu**, M. Wan, C. Kan
420. DDT dechlorination with magnesium and acidified alcohol. **V. Hernandez**, C. A. Clausen, C. L. Yestrebsky
421. Isolation of an electron transport system in cyanobacteria. **N. G. Charles**, H. Nørgaard, M. Bollinger Jr.
422. Transport of TiO_2 nanoparticles and nanostructured particles through a porous media. **S. Al-Abed**, J. Virkutyte, H. Choi, C. Isaac, C. Bennett-Stamper
423. Synthesis of greener vinyl ester resin. **Y. Lee**, W. Collins, U. Shin, L. Renna, L. Keogh, R. F. Kovar
424. Assessing the feasibility of soils for edible vegetation at a university campus. **J. K. Williams**, R. A. Richards
425. WITHDRAWN
426. Effects of nutrient additions on benthic metabolism in the Southern Everglades. **M. S. Noguera**
427. Does ozonolysis of surface adsorbed methoxyphenols produce ring-cleaved products? **E. M. O'Neill**, A. Z. Kawam, R. Z. Hinrichs
428. Synthesis of organoaminated-cubic mesoporous silicas for adsorption of Cu(II) ions from wastewater. **S. Manickam**
429. Single-solute and bi-solute sorption of phenanthrene and dibutyl phthalate (DBP) onto biochars. **J. JIN**, **K. SUN**, M. KANG

Section A

Morial Convention Center
Hall D

Green Chemistry Fostered Advances for Chemicals and Fuel Production
Cosponsored by CEI
R. Luque, S. Obare, *Organizers*

6:00 - 8:00
430. Developing green nanofillers via in situ methods of process monitoring and optimization. **R. Tejerina-Anton**, G. Ramakrishnan, J. Ging, Q. Wu, C. Korach, A. Orlov
431. Utilizing demolished concrete as efficient NO_2 adsorbent and beneficial concrete admixture. **G. Ramakrishnan**, S. Peethamparan, A. Orlov
432. Production of materials, chemicals, and biofuels from waste valorisation. **R. Luque**, J. M. Campelo, A. A. Romero, A. Pineda, M. Ojeda, A. Yepez, C. M. Lastres, A. Franco

433. Valorization of lignocellulosic biomass towards sustainable chemicals, materials and fuels. **A. M. Balu**, O. Ershova, H. Sixta
434. Metal and metal oxide nanoparticles for biorenewable conversion via hydrogenation and photocatalytic reactions. **L. Ariyadasa**, R. Wadwa, S. Obare
435. Synthesis, catalytic properties, and immobilization of monodisperse bimetallic alloy nickel-based nanoparticles. **S. Tahmasebi Nick**, S. O. Obare
436. In situ upgrading of biomass fast pyrolysis vapors using acidic, basic, and metal-acid bifunctional catalysts. **K. S. Triantafyllidis**, S. Stefanidis, A. A. Lappos, S. Karakoulia, P. Lazaridis
437. Ultrasound and microwave assisted preparation of high Fe loaded supported catalysts for biosyngas Fischer–Tropsch conversion. C. Pirola, C. L. Bianchi, A. Di Fronzo, **D. C. Boffito**, A. Di Michele, G. S. Patience
438. Solid catalysts for terpenes valorisation. **N. Ravasio**, F. Zaccheria, R. Psaro

Section A

Morial Convention Center
Hall D

Identification of Environmental Abiotic and Biotic Reactions Using Computational Chemistry
Cosponsored by COMP
S. Jang, W. Lee, H. Kim, *Organizers*

6:00 - 8:00
439. Enhancement of RNIP reactivity and longevity with organic ligands for the transformation of persistent nitro explosives. **D. Kim**, S. Song
440. Effects of electrolytes on CH_4-CO_2 hydrate swapping process: Molecular dynamic simulation and experimental validation. **N. Lee**, D. Kyung, W. Lee
441. Molecular-scale investigation of interaction mechanism between U(VI) and nZVI. **Y. Sihn**, W. Lee
442. Molecular dynamic simulation of dual polyelectrolyte coagulation for removal of natural organic matters in aqueous system. H. Lee, Y. Choi, S. Park, J. Choi, **S. Jang**

Section A

Morial Convention Center
Hall D

Nanotoxicity and Human Health Risk: Relevance to Environmental Chemistry and Fate

S. Hussain, A. Allen, *Organizers*

6:00 - 8:00
443. Glutathione as an assay for determining the oxidative ability of ultrafine particles. **J. Peters**, S. McNall, A. M. Johansen
444. Carbonaceous nanoparticle toxicity as a function of ferrous iron content. **D. Hinz**, H. Teng, H. Ting, A. M. Johansen

Section A

Morial Convention Center
Hall D

Occurrence, Detection, Fate and Removal of Pharmaceutical and Personal Care Products in Potable Water Sources
Cosponsored by CEI
A. Hernandez, L. Blaney, *Organizers*

6:00 - 8:00
445. Comparison between sulfate radicals and hydroxyl radicals for the decomposition of pharmaceuticals and personal care products. P. Nfodzo, **H. Choi**
446. Removal of extensive use trace organic contaminants from Bio-Bio River (Chile) water by activated carbon. **C. Baeza**, C. Carvajal, N. Moreno, D. Contreras, J. Freer
447. Detection of NDMA in potable water by a novel GC-MS-MS method. **A. Kahl**, S. Snyder
448. Adsorptive removal of carbamazepine and salicylic acid from water using a zeolite modified with extra framework transition metal cations and a surfactant. **W. A. Cabrera-Lafaurie**, F. R. Roman, A. J. Hernandez-Maldonado
449. Occurrence and removal mechanisms of selected micropollutants in water treatment plant. **K. Zoh**, S. Nam

450. Iodinated pharmaceuticals as precursors to total organic halogen formation in the presence of chlorinated oxidants and natural organic matter. P. Kumkum, D. R. Bridenstine, N. B. Ackerson, T. A. Ternes, M. J. Plewa, S. D. Richardson, **S. E. Duirk**
451. In situ degradation of aqueous and soil-sorbed estradiol by stabilized manganese dioxide nanoparticles. **B. Han**, D. Zhao, Y. Feng
452. Transport of pharmaceuticals from soil to plant following wastewater land application. **B. Hosseini Amoli**, C. Fedler

Section A

Morial Convention Center
Hall D

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

F. Rosario, E. Thurman, *Organizers*

6:00 - 8:00
453. Mechanisms of hydrogen peroxide photoproduction by humic substances. **Y. Zhang**, N. V. Bough, R. Del Vecchio
454. Studies of phosphorus sequestration and carbon humification in wetland soils by LC-MS, ^{31}P and ^{13}C NMR. **A. Imvittaya**, R. Hamdan, S. Newman, W. T. Cooper
455. Correlating the spectroscopic properties of organic matter to the photochemical formation of hydroxyl radical in natural waters. **E. B. Townsend**, C. M. Glover, F. L. Rosario-Ortiz
456. Characterization of the physicochemical properties of organic matter in aerosols. **E. Lee**, T. Duhl, N. Clements, M. Hannigan, F. L. Rosario-Ortiz
457. Unfolding the optical and chemical properties of humic substances (HS). **A. A. Andrew**, R. Del Vecchio, M. Sander, M. Aeschbacher, N. V. Blough
458. Investigation of humic acid aggregation by zeta potential and dynamic light scattering. **M. R. Esfahani**, H. A. Stretz, M. J. Wells
459. In situ spectroscopic studies of aqueous Cu(II)-organic complexes. **C. L. Phillips**, D. Peak
460. Characterizing algal organic matter and its transformations during oxidation using fluorescence spectroscopy. **J. A. Korak**, E. Wert, M. Dong, F. Rosario-Ortiz

Section A

Morial Convention Center
Hall D

Transformative Nanotechnologies: Energy and Environment, Solutions and Challenges

D. Plata, J. Fortner, B. Lafferty, *Organizers*

6:00 - 8:00
461. Hydrophilic stability and dispersion from ligand exchange. **M. D. Reyna**, R. Knutson, L. Penn
462. Photocatalytic activity of hydrogen evolution over Rh doped $SrTiO_3$ prepared by polymerized complex method. **P. Shen**, J. C. Lofaro Jr, W. Worner, M. G. White
463. WITHDRAWN
464. Catalytic hydrodechlorination of trichloroethylene in water using a new class of Pd catalysts supported on polymeric ion exchange resins. **J. Li**, D. Zhao
465. TiO_2 nanowire membranes for wastewater treatment: Microfiltration and photocatalytic degradation of humic acid. **Q. Zhang**, Y. Li, J. Rogers

Section A

New Orleans Downtown Marriott at the Convention Center
River Bend 2

Chemistry and Applications of Advanced Oxidation Processes for Removal of Contaminants of Emerging Concern

Fenton, Photo-Fenton and UV-H_2O_2 Advanced Oxidation

K. Oshea, S. Canonica, *Organizers*
D. Dionysiou, G. Li Puma, *Organizers*, *Presiding*

8:00 466. Oxidative transformation of microcystin-LR by ferrate. A. Rakha, **V. K. Sharma**, D. D. Dionysiou, K. E. O'Shea, J. Westrick
8:30 467. Identification of biorecalcitrant micropollutants in food industry: Removal alternatives and characterization of generated transformation products. **J. Sánchez Pérez**, B. Esteban, A. Cabrera Reina, I. Carra, C. Sirtori, A. Agüera
8:50 468. Heterogeneous photo-Fenton oxidation MTBE on structured catalysts. **D. Sannino**, V. Vaiano, L. A. Isupova, P. Ciambelli
9:10 469. Photodegradation of paracetamol by photo-Fenton process. E. Yamal-Turbay, E. Ortega, M. Graells, H. D. Mansilla, O. M. Alfano, **M. Pérez-Moya**
9:30 470. WITHDRAWN
9:50 Intermission.
10:05 471. WITHDRAWN
10:25 472. Re-engineering an artificial sweetener: Transforming sucralose residuals in water *via* advanced oxidation. **O. Keen**, K. Linden
10:45 473. UV and UV-H_2O_2 treatment of fluoroquinolone and tetracycline antibiotics. **L. Blaney**, R. K. Burton, S. Snowberger
11:05 474. Advanced oxidation processes for flumequine degradation: Evaluation of antimicrobial activity and byproducts formed. C. Rodrigues-Silva, M. G. Maniero, S. Rath, **J. Guimarães**
11:25 475. Antibiotic removal efficiencies for advanced oxidation process (AOP) radical reactions. **S. Otto**, S. P. Mezyk
11:45 Concluding Remarks.

Section B

New Orleans Downtown Marriott at the Convention Center
River Bend 1

Physicochemical Characterization of Organic Matter: Past, Present, Future, and Role in the Environment

Optical and Redox Properties of Organic Matter

F. Rosario, E. Thurman, *Organizers*, *Presiding*

8:00 476. Redox reactivity of humic substances in aquatic ecosystems: Multiple lines of evidence and the potential for understanding natural systems using fluorescence spectroscopy. **D. M. McKnight**
8:30 477. Reduction and oxidation of humic substances (HS): Linking optical and electrochemical properties to chemical structure. **R. Del Vecchio**, A. Andrew, M. Sander, M. Aeschbacher, N. V. Blough
8:55 478. Treatment of EfOM with UV light and subsequent copper binding. **A. Dotson**, C. Rodriguez
9:20 479. Dissolved organic matter as a photosensitizer and an inhibitor of triplet-induced transformation of water contaminants. **S. Canonica**, J. Wenk, S. Bahnmüller, U. von Gunten
9:45 480. Photo-driven cycling of model organic aerosol matter. **M. I. Guzman**, S. Xia, E. Pillar, R. Zhou
10:10 Intermission.
10:25 481. Oxidation of dissolved organic matter with ozone, chlorine, and chlorine dioxide: Effects on optical and antioxidant properties. **J. Wenk**, M. Aeschbacher, E. Salhi, U. von Gunten, M. Sander, S. Canonica
10:50 482. Modeling DOM reactivity with the hydroxyl radical using polymers. **G. McKay**, **S. P. Mezyk**
11:15 483. Reactivity of the hydroxyl radical with natural organic matter: Molecular size vs. chemical composition. **G. McKay**, S. P. Mezyk
11:40 484. Photochemical formation of hydroxyl radical from wastewater derived organic matter. **E. Lee**, F. L. Rosario-Ortiz
12:00 Panel Discussion.

Section C

New Orleans Downtown Marriott at the Convention Center
Blaine Kern F

Biofuels: Current Issues and Environmental Implications

Vehicle Emissions and Environmental Impacts
Cosponsored by AGFD, CEI, and ENFL
J. De Andrade, *Organizer*
D. Grosjean, *Organizer*, *Presiding*

8:00 Introductory Remarks.
8:05 485. WITHDRAWN
8:30 486. NO_x and particulate matter emissions from a diesel engine burning Jatropha biodiesel-ULSD fuel blends. J. Nuhn,**E. Peltier**, C. Depcik, M. Mangus, S. M. Stagg-Williams
8:55 487. Composition of particulate matter emissions from gasoline vehicles with different ethanol and butanol fuel blends. D. Short, D. Vu, T. Durbin, G. Karavalakis, **A. Asa-Awuku**
9:20 488. Particle mass and particle number size distribution from a site impacted by heavy-duty diesel vehicles using diesel/biodiesel blend. L. L. Guarieiro, **J. B. de Andrade**, A. Guarieiro, G. O. da Rocha, J. P. Anjos, J. S. Santos
9:45 Intermission.
10:00 489. WITHDRAWN
10:25 490. WITHDRAWN
10:50 491. Biodiesel produced wastewater treatment combined with desalination in bioelectrochemical systems. B. Kokabian, **V. Gude**
11:15 Panel Discussion: Biofuels vs. Food.

Section D

New Orleans Downtown Marriott at the Convention Center
Blaine Kern E

Identification of Environmental Abiotic and Biotic Reactions Using Computational Chemistry
Cosponsored by COMP
S. Jang, *Organizer*
W. Lee, H. Kim, *Organizers*, *Presiding*

8:00 Introductory Remarks.
8:05 492. Development of MOFs for environmental applications: Computational screening and scale up of production. **D. S. Sholl**, K. Walton
8:25 493. Improved design of metal organic frameworks for CO_2 capture by ab initio-based simulations. **S. Han**, Y. Jung
8:45 494. First-principles study on interaction of C_{60} with water. **J. Choi**, **S. Jang**
9:05 495. Molecular dynamics simulation of cationic polyelectrolytes with natural organic matters. **S. Park**, J. Choi, S. Jang
9:25 496. Molecular dynamics simulations of green leaf volatiles and OH radicals on atmospheric air/water interfaces. **T. P. Liyana-Arachchi**, K. T. Valsaraj, F. R. Hung
9:45 Intermission.
10:00 497. First principles based theory complemented with electrospray ionization mass spectrometry to address environmental abiotic and biotic reactions. **W. A. Goddard, III**, H. Mishra, A. J. Colussi, T. A. Pascal, R. J. Nielsen
10:20 498. Effect of soil minerals and organic matter on CO_2 hydrate formation kinetics. **D. Kyung**, H. Kim, W. Lee
10:40 499. Calculation of redox potentials of environmental organic contaminants in aquatic systems. **J. Guerard**, P. Tentscher, J. Arey
11:00 500. Oxidation of sulfonamide antibiotics: Aromatic nucleophilic substitution of an aniline radical cation. **P. R. Tentscher**, S. Eustis, K. McNeill, J. Arey
11:20 501. Quantum chemical studies of drinking water treatment: Investigation of reaction pathways and development of predictive models for detoxification and formation of disinfection by-products. **T. T. Sanan**, M. L. Magnuson, M. Heath
11:40 502. As(V), As(III) and PO_4 removal by an iron impregnated activated carbon in a single, binary, and tertiary adsorbate system: Surface complexation modeling approach. **T. Ngantcha-Kwimi**, B. E. Reed
12:00 Concluding Remarks.

Section E

New Orleans Downtown Marriott at the Convention Center
Blaine Kern B

Air Monitoring
Cosponsored by ANYL
Financially supported by PID Analyzers, LLC
J. Maclachlan, *Organizer*, *Presiding*

8:30 Introductory Remarks.
8:35 503. WITHDRAWN
8:55 504. Rapid analysis of chemical agents in the atmosphere using gas chromatography-mass spectrometry (GC-MS). **P. A. Smith**
9:15 505. Denuder based real-time air monitoring methods. **A. L. Jenkins**, L. C. Buettner, M. W. Ellzy, E. J. Bruni
9:35 506. Fabrication of multiwalled carbon nanotube multilayers-coated electrospun fibers for DMMP detection. **K. Saetia**, J. M. Schnorr, M. M. Mannarino
9:55 507. Sources of organic aerosol in eastern Iowa. **E. A. Stone**, C. Rathnayake, T. Jayarathne, J. Downard
10:15 Intermission.
10:30 508. Monitoring ppb levels of ambient air pollutants via hyphenated techniques: HRGC/ in-series selective detection.**J. N. Driscoll**, J. L. Maclachlan
10:50 509. Analysis of surface ozone concentrations within the Saharan air layer during AERosols and Ocean Science Expeditions (AEROSE). **E. D. Roper**, E. Joseph, N. R. Nalli, V. R. Morris
11:10 510. Thirty-five year study of trace metal deposition from the Navajo Generating Station, a 2,250 MW coal-fired power plant located in northeastern Arizona. **R. D. Foust, Jr.**, K. J. Kaur, J. Moore
11:30 Panel Discussion.
11:50 Concluding Remarks.

Approaching the Surface: Interrogating Chemical Interactions at the Mineral-Water Interface
Sponsored by GEOC, Cosponsored by COLL and ENVR

Arsenic Contamination of Food and Water
Sponsored by AGFD, Cosponsored by AGRO, ENVR, and SCHB

Nanostructured Photocatalysts for Direct CO_2 Reduction

Single-Site Photocatalysts
Sponsored by COLL, Cosponsored by ENVR

THURSDAY AFTERNOON

Arsenic Contamination of Food and Water
Sponsored by AGFD, Cosponsored by AGRO, ENVR, and SCHB

Nanostructured Photocatalysts for Direct CO_2 Reduction

Electrocatalysts and Other Catalysts
Sponsored by COLL, Cosponsored by ENVR