Division of Environmental Chemistry

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Division of Environmental Chemistry

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The Division of Environmental Chemistry gratefully acknowledges the financial and other contributions made to the ENVR program by the individuals and institutions listed below.

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Shanghai AB Sciex Analytical Instrument Trading Co., Ltd.
Jeff and Lynne Rosen
Michael J. McGuire
ENVR Governance Meetings

Sunday, April 2, 2017
Golden Gate Ballroom C3, San Francisco Marriott Marquis

Program Planning Committee Meeting     2:00 PM – 3:00 PM
Long Range Planning Meeting     3:00 PM – 5:00 PM
Executive Committee Meeting     7:00 PM – 10:00 PM

ENVR Social & Reception

Tuesday, April 4, 2017   6:00 – 8:00 p.m.

Thirsty Bear Brewing Company
661 Howard St.

Tickets ($20) available at the
ENVR Welcome Table

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### Division of Environmental Chemistry

S. Obare and S. Al-Abed, Program Chairs

#### OTHER SYMPOSIA OF INTEREST:
- **ACS-CEI Award for Incorporating Sustainability into Chemistry Education** (see CHED, Mon)
- **Perspectives on Climate Change Literacy & Education: Local to International** (see CHED, Tue)
- **Environmental Challenges & Solutions in Unconventional Oil & Gas Development** (see GEOC, Wed, Thu)
- **Elucidation of Mechanisms & Kinetics on Surfaces** (see CATL, Sun, Mon, Tue, Wed, Thu)
- **Mineral-Water Interface Chemistry: A Tribute to Glenn Waychunas** (see GEOC, Sun, Mon, Tue, Wed)
- **Chemistry & Physical Chemistry of Thermal Processes for the Circular Carbon Economy** (see CELL, Mon)

#### SOCIAL EVENTS:
- Reception, 6:00 PM: Tue
- Breakfast, 7:45 AM: Mon

#### BUSINESS MEETINGS:
- Program Planning Committee Meeting, 2:00 PM: Sun
- Long Range Planning Committee Meeting, 3:00 PM: Sun
- Executive Committee Meeting, 7:00 PM: Sun

### SUNDAY MORNING

#### Section A
San Francisco Marriott Marquis Salons 10/11

**Tribute to Jerry Schnoor**
J. G. Burken, D. M. Cwiertny, C. L. Just, Organizers, Presiding

- **8:30 ENVR 1.** Climate change adaptation for infrastructure: A grand challenge for civil and environmental engineering. D.A. Dzombak, C. Samaras

- **9:00 ENVR 2.** Mechanisms governing algal mitigation of atmospheric CO₂ in shallow saline lakes of the Chilean Altiplano region. A.L. Prieto, A. de la Fuente

- **9:20 ENVR 3.** Substrate specificity of kinetic isotope effects associated with the dioxygenation of (nitro)aromatic contaminants is due to uncoupling of O₂ activation. S.G. Pati, H.E. Kohler, A. Pabis, P. Paneth, R.E. Parales, T.B. Hofstetter

- **9:40 ENVR 4.** Carbon and nitrogen isotope fractionation reveals the biodegradation of 2,4-dinitroanisole. T.B. Hofstetter, J. Bistolin, M. Palatucci, J.C. Spain

- **10:00 Intermission.**

- **10:15 ENVR 5.** From phytoremediation to nanotechnology: A tribute to Jerry Schnoor. J.L. Gardea-Torresdey

- **10:45 ENVR 6.** Nanoparticle surface affinity as a predictor of trophic transfer. N. Geltner, S. Marinakos, C. Guo, N. O’Brien, M. Wiesner
Section B
San Francisco Marriott Marquis
Salons 12/13
Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma
Oxidation Processes
Cosponsored by ChEED
D. D. Dionysios, J. Fang, Organizers
V. K. Sharma, Organizer, Presiding
A. T. Stone, Presiding
8:30 Introductory Remarks.
8:40 ENVR 9, Bi-Wo-graphene nanocomposites with laminar structure for environmental remediation. B. Ren, M. Nadagouda, D.D. Dionysiou
9:05 ENVR 9, Photocatalytic inactivation mechanisms of bacteria as well as the decomposition of Antibiotic-Resistance Genes (ARG). G. Li, H. Yiu, Q. Jiang, T. An
9:30 ENVR 10, Activation of peroxides by phosphate ion for water purification. Y. Yang, I. Kim, J.J. Pignatello
9:50 ENVR 11, Degradation of the typical macrolide antibiotic roxithromycin by UV/H2O2: Reaction kinetics and degradation byproducts. W. Li, X. Xu, Y. Tang, Y. Zhang
10:10 Intermission.
10:50 ENVR 13, Catalytic ozonation processes not relying on hydroxyl radical oxidation. T. Zhang
11:15 ENVR 14, Role of the propagation reactions on the hydroxyl radical formation in the ozonation and catalytic ozonation of real waters. Y. Liu, J. Ma, J. Jiang, L. Zhang
11:35 ENVR 15, Reaction kinetics and degradation pathway of antipyrine during chlorine dioxide disinfection process. X. Xia, L. Zhang, L. Fang, Y. Liu
Section C
San Francisco Marriott Marquis
Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of Mel Suffet
Cosponsored by CHED
Financially supported by AESSP
M. J. McGuire, F. L. Rosario, Organizers
J. A. Pederson, Organizer, Presiding
8:00 Introductory Remarks.
8:10 ENVR 16, Three decades of research at CIRSEE Suez on taste and odor in drinking water, under the umbrella of Prof. I.H. Mel Suffet. A.L. Bruchet
8:35 ENVR 17, Estimates of threshold, recognition and objection concentrations for crude 4-methylcyclohexanol and methyl t-butyl ether in water. M.J. McGuire, I.H. Suffet
9:00 ENVR 18, Chemical spill of crude MCHM into the Elk River. J. Rosen
9:25 ENVR 19, From Philly to smell A-tracking, measuring, and controlling non-H2S odor nuisances. J. Witherspoon, S. Cowden, I.H. Suffet
9:50 ENVR 20, Importance of sensory analysis and odor activity values in the determination of odors causing nuisance in the wastewater treatment process. T. Vitko, Y. Zhou, I.H. Suffet
10:15 Intermission.
10:30 ENVR 21, Determination of the primary odor nuisances from wastewater treatment plants. Y. Zhou, T. Vitko, I.H. Suffet
11:20 ENVR 23, Two phase inter-actions: A Lynchpin of environmental chemistry. I.H. Suffet
Section D
San Francisco Marriott Marquis
Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisperer
Y. Chin, Organizer
D. M. McKnight, Organizer, Presiding
8:00 Introductory Remarks.
8:10 ENVR 24, In defense of DOM molecular models. J. Leenheer
9:10 ENVR 26, Carbon tracing: Environmental applications of wet oxidation total organic carbon cavity ring-down spectroscopy. G. Conaway
9:35 ENVR 27, High resolution mass spectrometry of leachate from soils subject to simulated wildfire heating. J. Webster, R. Young, T. Borch, F.L. Rosario.
10:00 Intermission.
10:10 ENVR 28, Using the reverse osmosis/ electro dialysis method to isolate natural organic matter from rivers and estuaries in coastal Georgia. E.M. Perdue, S. Driver
11:10 ENVR 30, Classification analysis of humic substances fractionated using size exclusion chromatography based on numerical descriptors generated from the data of Fourier transform mass spectrometry. I.V. Perminova, A.V. Kudryavtsev, M. Kazachkov, A. Konstantinov, E. Belyaeva, A. Gaspar, P. Schmidt-Koppelin, G. Aiken, F. L. Rosario
10:15 Intermission.
10:30 ENVR 32, Retrospectives: The role of contaminants of emerging concern in aquatic systems. T. Zhang
11:05 ENVR 34, Effect of solution conditions on reactive oxidative production during chlorine photolysis. D. Marley, C.K. Remucal
9:55 Intermission.
10:45 ENVR 37, Ag/AgCl @ chiral TiO2 nanoparticles plasmonic photocatalyst for removal of contaminants of emerging concern in simulated and urban wastewater. G. Li Puma, D. Wang, Y. Li
11:10 ENVR 38, Impact of halides on the degradation of amino acid residues in biomolecules. Y. Komaki, J. Choe, W. Mitch
11:35 ENVR 39, Investigation of radical chloride reaction kinetics and thermodynamics under advanced oxidation processes. J. Gleason, S.P. Mozey, K.P. Ishida
Section E
San Francisco Marriott Marquis
Sierra A
Chemistry & Application of Advanced Oxidation Processes for Water Detoxification, Treatment & Reuse
Financially supported by AESSP
D. D. Dionysios, X. He, K. E. O’Shea, X. Quan, Organizers
G. Li Puma, D. Minakata, Organizers, Presiding
8:00 Introductory Remarks.
8:05 ENVR 40, Molecular modeling of aqueous radical chemistry: Estimating chemical properties and elucidating reaction pathways. J. Arey, P. Tentscher, J.J. Guerard, D. Trogolo
10:15 ENVR 42, Discrete molecular dynamics simulation and experimental study of the adsorption of pthalate esters on clay surfaces. J. Willemsen, I.G. Bourg
9:55 Intermission.
10:35 ENVR 45, Development of pH-responsive block copolymers membranes reinforced with nanocellulose for the adsorption of emerging contaminants. J. Herrera, L. Rivera, E.O. Ortiz Quiles, E. Nicolau
10:55 ENVR 46, Withdrawn.
11:15 ENVR 47, Withdrawn.
11:35 ENVR 48, Simultaneous removal of multiple contaminants of emerging concern via biofiltration. K. Greenstein, J. Law, E. Dickerson, E. Wort
11:55 Concluding Remarks.
Section F
San Francisco Marriott Marquis
Sierra C
Accurate Mass/High Resolution Mass Spectrometry for Environmental Monitoring & Remediation
Cosponsored by AINVY
T. Anomui, R. Marfil-Vega, T.M. Young, Organizers, Presiding
8:25 ENVR 50, Broad-scope screening for organic contaminants in wastewater at the sub-seawater scale to identify source contributions. J. Teulek, O. Alama, T.M. Young
8:50 ENVR 51, Organic contaminants monitoring during water treatments by UHPLC-HRAM: From influent to effluents. D.D. Yang, T. Anomui
9:15 ENVR 52, When does a GAC filter become a biofilter for removing seasonal trace organics? Application of LC/QTOF analysis to evaluate (bio-) filter performance. R. Marfil-Vega, M. Surmeier, O. Schneider, E. Dickerson
10:05 Intermission.
11:10 ENVR 56, Quantitative comparison of perfluorinated organic compounds in drinking water between tandem triple quadrupole MS/MS and high resolution mass spectrometry using orbitrap technology-knowns and unknowns. E. George
SUNDAY AFTERNOON
Section A
San Francisco Marriott Marquis
Salons 10/11

Tribute to Jerry Schnoor
J. G. Burken, D. M. Cwiertny, C. L. Just, Organizers, Presiding
1:30 ENVR 79. My academic journey with electron transfer on Fe minerals and my U. Iowa colleague, Jerry Schnoor, M. Scherer, L. N. Andrade, Z. Zhou, J. D. Gabepper, D. Latta
2:00 ENVR 80. Modeling adsorption of copper on goethite in natural water systems
E. Han, S. M. Noman, L. E. Katz
2:40 ENVR 82. Advancing materials and reactor design for catalytic technologies for treatment of nitrate-contaminated water. T. J. Stathmann, C. J. Warth, A. Bengis, X. Hu
3:00 Intermission.
3:45 ENVR 84. Formation and properties of iron(III)-precipitates and their effects on the distribution and fate of phosphorus and arsenic in rice fields and in water treatment. S. J. Hug, A. C. Semm, R. Kaegi, A. Voegelin
4:00 ENVR 85. Comparison of trace compound migration through a natural aquifer sand. P. Behra

Section B
San Francisco Marriott Marquis
Salons 12/13
Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma
Iron & Manganese Chemistry
Sponsored by GeoCh, Cosponsored by COL and ENVR
D. D. Dionysiou, J. Fang, V. K. Sharma, Organizers
D. A. Reckhow, T. Zhang, Presiding
1:30 Introductory Remarks.
1:55 ENVR 86. Iron(III)-based metal organic frameworks as heterogeneous Fenton-like catalysts for organic pollutant degradation. C. Gao, X. Quan
2:20 ENVR 87. Activation of manganese oxidants with bisulfite for enhanced oxidation of organic contaminants: The involvement of Mn(II). X. Quan
2:25 ENVR 88. Role of dissolved Mn(II) in transformation of organic contaminants: Non-oxidative versus oxidative mechanisms. E. Hu, F. He
3:05 Intermission.
3:45 ENVR 91. Synergistic effect of the oxidation of fluoroquinolone antibiotics by a combined use of ferrate(VI) and peroxymonomosulfate. M. Feng, Z. Wang, V. K. Sharma
4:10 ENVR 92. Ferrate(VI) interactions with Natural Organic Matter (NOM) in drinking water treatment. Y. Deng, Y. Liang, C. Li, T. Waite
4:35 ENVR 93. Withdrawn.

Section C
San Francisco Marriott Marquis
Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium highlighting the Contributions of Mel Suffet
Physical & Chemical Processes
Sponsored by CHEI
M. J. McGuire, J. A. Pederson, Organizers
F. L. Rosario, Organizer, Presiding
1:30 ENVR 94. Granular activated carbon adsorption of specific organic compounds: A forty year retrospective of the 1979 National Academy of Science report. R. S. Summers
1:55 ENVR 95. Fate of contaminants of emerging concern and geosmin in GAC biotiers: The roles of sorption and biodegradation. R. M. Hoekstra, B. Ma, W. Arnold
2:20 ENVR 96. Prediction of the adsorption capacities of organic pollutants on activated carbons in natural waters: Model development and validation. T. Lin, W. Bunmahotama, W. Hung
2:45 ENVR 97. Predicting adsorption isotherms from adsorbent and adsorbate properties. D. Knape, I. Mezzai, T. Spith
3:10 Intermission.
4:15 ENVR 100. Sequential manganese desorption-Adsorption in antrhacite coal and silica sand filter media. C. J. Gabeible, F. Geringer, C. Chou
4:40 ENVR 101. Treating ion-exchange waste brines with a reduction-coagulation-filtration process using ferrous chloride. N. Homan, P. G. Green, T. Young
5:05 ENVR 102. Ozone-derived NDMA in water reuse: Formation and mitigation. E. Marti, J. R. Battista, E. Dickinson
Section D
San Francisco Marriott Marquis
Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisperer
Y. Chen, D. M. McKnight, Organizers
K. Cawley, Presiding
2:05 ENVR 104. Forces holding organic matter molecules together: Involvement of exceptionally strong hydrogen bonds. J.J. Pignatello, J. Ni
2:30 ENVR 106. Petroleum as a surrogate to unlock the compositional and structural continuum of dissolved organic matter. D.C. Podgorski, P. Zito, M.A. Tan, R.G. Spencer
3:20 Intermission.
Section F
San Francisco Marriott Marquis
Sierra B
Contaminants of Emerging Concern in Natural & Engineered Systems Cosponsored by AGCRM, ANL and CD
L. M. Blaney, A. J. Hernandez, Organizers, Presiding
1:30 Introductory Remarks.
1:35 ENVR 119. Using fluorescent dissolved organic matter and contaminants of emerging concern to identify leaking wastewater collection systems. K. He, N. Rogers, L.M. Blaney
3:15 Intermission.
5:15 Concluding Remarks.
Section G
San Francisco Marriott Marquis
Sierra C
Accurate Mass/High Resolution Mass Spectrometry for Environment Monitoring & Remediation Cosponsored by ANL
T. Amrud, R. Marfil-Vega, T. M. Young, Organizers, Presiding
1:30 ENVR 129. Unknown microcrystall screening using LC-MS/MS, triggered information dependent acquisition, and confirmation by O-TOF analysis with Personal Compound Database and Library. R.A. Trenhol, B. Vandervost
1:55 ENVR 130. Expanding targets of UPLC-ToF-MS metabolomics and 15N labeling in Cyanobacterial Harmful Algal Bloom (CHAB) research: Microcystins, saxitoxin and nodularin. W.K. Strangman, A. Stewart, J.L. Wright
3:10 ENVR 132. Identification of emerging contaminants from the waste water influenced Tioga River using high resolution accurate mass LC/MS and statistical analysis. J. Zweigenbaum, T. Amrud, L. Knoddy
3:35 Intermission.
3:50 ENVR 133. Comprehensive workflow for micropollutant identification and prioritization using HR/AM tandem mass spectrometry and cheminformatics. L. Ferguson, G.J. Gatzinger
4:15 ENVR 134. Smart target method development for detection of antiviral compounds in aqueous environmental samples based on suspect screening and HRMS. D. Barcelo, B. Zign, A. Gulen, M. Lopez da Aida
4:40 ENVR 135. LC-HRMS data combined with cluster analysis to compare waste-water treatment efficiency. J.E. Scholle, M. Bourgin, C.S. McDade, J. Hollender
5:05 ENVR 136. Using the US EPA’s CompTox Dashboard to support identification and screening of emerging organic contaminants in the environment. A. McElrath, J. Staces, S. Newton, M. Shyman, A.J. Williams

Section H
San Francisco Marriott Marquis
Sierra J
Green Chemistry & the Environment Cosponsored by CEI
Financially supported by AEESP
A. M. Bali, R. Luque, Organizers
S. O. Obare, Organizer, Presiding
T. Dittrich, D. Vardon, Presiding
1:30 ENVR 137. Withdrawn.
2:10 ENVR 139. Chlorate formation in on-site hypochlorite generators: Dependence on pH level, temperature and storage time. L. Krien, R. Niaglioni
2:30 ENVR 140. Alpha-pimeine isomerization over silica supported heteropoly acids. L. Frattili, M. Isaacs, C.M. Parlett, K. Wilson, G. Kyriakos, A.F. Lee
2:50 ENVR 141. Bandgap engineering of Bi2Te3, through foreign ion incorporation via solution combustion synthesis. G.S. Samu, K. Rajeshwar, C. Janaky
3:30 Intermission.
3:25 ENVR 142. Mesoporous manganese oxide catalyzed aerobic oxidative coupling of aliphatic amines to aromatic azo compounds. B. Dutta, S.L. Sub
4:25 ENVR 145. Biopolymers as treatment agents for crude oil-containing seawater. T. Amneh, R. Sirivasa, C. Thompson, B. Beklow, M. Murphy
5:05 ENVR 147. Waste shell biorefinery: Dream or reality? N. Yan

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Sponsored by GECI, Cosponsored by COLL and ENVR

Elucidation of Mechanisms & Kinetics on Surfaces

Science Service
Sponsored by CATL, Cosponsored by COLL and ENVR

Monday Morning
Section A
San Francisco Marriott Marquis
Salons 10/11

Tribute to Jerry Schnoor
J. G. Burken, D. M. Cieciery, C. L. Just, Organizers, Presiding

8:00 ENVR 159. Nanoparticle surface affinity as a predictor of nanoparticle fate, biotopk and trophic transfer. M. Reist. N. Geimer, A. Turner, N. O'Brien

8:30 ENVR 160. Analytical and toxicological studies of emerging water disinfection by-products halobenzoquinones. X. Li, W. Wang, J. Li, G. Huang, L. Blaistock-J�ernst, I. Vanders Molen, J. Zhang

9:00 ENVR 161. DLVO energy of interaction of macromolecule-coated silver nanoparticles. T. Zhu, D. Lawler

9:10 ENVR 162. Waste acid as the energy source for desalination, softening and mechanical work. A.K. Sengupta, M. German

9:30 Intermission.


10:15 ENVR 164. Differential response of Arabidopsis thaliana to Polychlorinated Biphenyls (PCBs) and their hydroylated metabolites (OH-PCBs). B. VanAken, S. Subramanian, J.L. Schnoor

10:35 ENVR 165. Photolysis of 2,4-dinitrotoluol and its metabolites in Arabidopsis leaves. H. Schroer, C.L. Just


Section B
San Francisco Marriott Marquis
Salons 12/13

Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma

Advanced Oxidation Processes Financially supported by Sichina
D. D. Dionysious, J. Feng, V.K. Sharma, Organizers
Y. Lee, W. Mitch, Presiding

8:00 Introductory Remarks.

8:05 ENVR 167. Understanding chloramine-driven photochemistry for water reuse applications. H. Liu

8:30 ENVR 168. Transformation of benzophenone-4 by chlorine, chloramine, and UV/chlorine. J. Lu, Y. Ji

8:50 ENVR 169. Comparison of UV free chlorine, UV/monochloramine, and UV/hydrogen peroxide advanced oxidation processes for contaminant degradation under scenarios relevant to potable reuse. Y. Chuang, W. Mitch

9:10 ENVR 170. Investigation of the iopamidol degradation by UV/chlorine. Y. Xiong, J. Jiang, J. Ma, J. Fang

9:30 ENVR 171. Reactive chlorine species significantly contributes to the degradation of trimethylphosphor in the UV/chlorine process. Z. Wu, K. Guo, C. Shang, J. Fang

9:50 Intermission.


10:30 ENVR 173. Formation and conversion of sulfate radical and hydroxyl radical in UV/peroxymonosulfate system. Y. Guan, J. Ma


11:35 ENVR 176. Denitrification and nitrification processes in sulfate radical-based oxidation of nitroaromatic compounds. Y. Ji

Section C
San Francisco Marriott Marquis
Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of Mel Suffet

Physical & Chemical Processes Financially supported by AESSP
J. A. Pedersen, F. L. Rosario, Organizers
M. J. McGuire, Organizer, Presiding

8:00 ENVR 177. Efficient anaerobic membrane bioreactor treatment of municipal wastewater for energy and biosolids reduction. P. McCarty, J. Kim, G. Shih, J. Bao

8:25 ENVR 178. Optimization of urban groundwater recharge systems that infiltrate combined stormwater and recycled water through surface spreading basins. J.L. Bradshaw, R.G. Luthy

8:50 ENVR 179. Thermal air oxidation during biomass char formation and its effects on adsorption of organic compounds. J.J. Pignatello


10:05 Intermission.

10:20 ENVR 182. Toxicity profiles and metastable disinfection byproducts. D.A. Reckhow, Y. Yu

10:45 ENVR 183. Regeneration of strong base ion exchange resin for hexavalent chromium removal. J.A. Korak, M. Anis-Paci

11:10 ENVR 184. Options for hydrogen sulfide remediation in complex water matrices. L.E. Schweitzer

11:35 ENVR 185. Water disinfection: From laboratory bench to full scale. Where we are and where we need to go. C.N. Haas, B. Faruk, W. Wei

Section D
San Francisco Marriott Marquis
Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisiperer
Y. Chun, D. M. McKnight, Organizers
R. M. Cory, Presiding

8:00 Introductory Remarks.

8:10 ENVR 186. What can simple measurements of DOM tell us when made in new ways? B. Bergamaschi


10:00 Intermission.


11:10 ENVR 192. Concentration discharge relationships during the recession of an extreme flood in the Boulder Creek Watershed: Patterns of lithologic solute concentrations contrast with decreases in concentration and changes in chemical quality of dissolved organic material. G. Rue, D.M. McKnight, N. Rock, R.S. Gabor, M. Talty


ENVR
Section E  
San Francisco Marriott Marquis  
Sierra E  
Chemistry & Application of Advanced Oxidation Processes for Water Detoxification, Treatment & Reuse  
Financially supported by AESPN  
D. D. Dionysiou, X. He, G. Li Puma, D. Minakata, X. Quan, Organizers  
K. E. O'Shea, Organizer, Presiding  
A. Pintar, Presiding  
8:00 ENVR 194, Improved electron-hole separation/migration in anatase TiO₂ nanotube/reduced graphene oxide composites for efficient photocatalytic degradation of bisphenol A, G. Zorzi, S. Arshad, P. Džončev, I. Junkar, J. Kovac, J. Zavaznik, A. Pintar  
8:35 ENVR 196, Nitrogen doped porous carbon with peroxymonosulfate activation capability for effective water treat-  
The effects of carbon-based adsorbents on the removal of micropollutants in wastewater  
9:00 ENVR 199, Post-illumination activity of SnO₂ nanoparticle-coated CuO nanopowders by H₂O₂ production in dark from photocatalytic memory. L. Liu, W. Su, W. Yang, Q. Li, J. Shang  
9:50 Intermission  
10:05 ENVR 198, Efficient contaminant degradation by hydrogen peroxide activated graphite-supported Fe-TAML catalyst. Y. Chang, C. Miller, D. Wake  
10:30 ENVR 199, Evaluations of biotrickling filters for the removal of mixtures of trihalomethanes under two envi-  
10:55 ENVR 200, Reactivity of trichloramine (NCl₃) with amino acids prior to advanced oxidation process treatment. L. Watts, J. Gleason, S.P. Mezyk, K.P. Ishida  
11:20 ENVR 201, Photocatalytic activity enhancement of ZnO thin films under visible light using Bi₄O₃ dots. J.C. Medina, N.S. Portillo-Velaz, M. Bizaro, A. Hernandez-Gordillo, S.E. Rodil  
Section F  
San Francisco Marriott Marquis  
Sierra B  
Contaminants of Emerging Concern in Natural & Engineered Systems  
Cosponsored by AGRO, ANYL and CEI  
L. M. Blaney, A. J. Hernandez, Organizers, Presiding  
8:30 Introductory Remarks  
8:35 ENVR 202, Role of Mn-oxide controlling the pathways of glypho-  
9:05 ENVR 203, Kinetic study of thermal monochloramine reactions with  
9:15 ENVR 204, Impact of sulfate ions on electrochemical oxidation of recalcitrant organic compounds using boron-  
9:35 ENVR 205, Effect of chlorination and chloramination on the removal of micropollutants in wastewater  
10:35 ENVR 207, Coupled titanium dioxide photocatalysis and filtration to mitigate organic matter and  
10:55 ENVR 208, Kinetic study of organo-  
11:05 ENVR 209, Regulated and unregu- 
11:35 Concluding Remarks  
Section G  
San Francisco Marriott Marquis  
Sierra C  
Accurate Mass/High Resolution Mass Spectrometry for Environmental Monitoring & Remediation  
Cosponsored by ANYL  
T. Anumol, R. Marfil-Vega, T.M. Young, Organizers, Presiding  
8:00 ENVR 210, Characterization of nitro-substituted polycyclic aromatic hydrocarbons from standard  
8:50 ENVR 211, Utilization of soft and hard ionization techniques with  
8:25 ENVR 214, Identifying trace environmental contaminants in CO₂ capture solvents from coal-fired power plants using high resolution Time-of-Flight Mass Spectrometry (TOF-MS). J.G. Thompson, S. Bhatnagar, K. Liu  
10:00 ENVR 215, Nontarget analysis of hydrocarbons in flue gas from fossil fuel power plants using GC-ECD, GC×GC-MS and  
11:10 ENVR 216, Targeted analysis of halogenated hydrocarbons in wastewater by GC×GC-TOFMS. J. Kim, J. Lee, S. Lee, I. Son  
11:30 ENVR 217, Trichloroethene dechlori- 
11:35 Discussion.  
11:50 Concluding Remarks  
Section H  
San Francisco Marriott Marquis  
Sierra J  
Sulfidation of Metal-Based Engineered & Natural Nanomaterials: Implications for Their Fate & Effects in the Environment  
Y. Bi, P. K. Westerhoff, Organizers  
D. Fan, P. G. Tranynek, Organizers, Presiding  
8:00 Introductory Remarks  
8:05 ENVR 218, Rates, mechanisms, and impacts of sulfidation of metal and metal oxide nanoparticles on their fate and effects in wastewater treatment plants and fresh water wetland mesocosms. G. Lowry, J.P. Stiegemeyer  
8:35 ENVR 219, Formation and oxidative stability of metal sulfide nanoparti- 
9:05 ENVR 220, Detection of metal nanoparticles and formation of secondary sulfidated silver nanoparti- 
9:35 ENVR 221, Silver nanoparticles 
10:05 ENVR 222, Molecular imprinted composite sol-gel layers for conduc- 
11:05 ENVR 223, Spectroscopic investiga- 
10:30 ENVR 224, Oxidative reaction of iron(II) monosulfide at circumneu- 
11:10 ENVR 225, Reductive immobili- 
11:30 ENVR 226, Trichloroethene dechlori- 
11:35 ENVR 227, Withdrawn.  
Mineral-Water Interface Chemistry  
A Tribute to Glenn Waychunas  
Sponsored by GEOC, Cosponsored by CUL and ENVR  
Science for a Sustainable Energy Future  
Energy Storage  
Sponsored by PES, Cosponsored by  
BIOL, BMTG, CARB, CATL, CEI, CEBL, CULL, ENVR, GEOC, I&EC, MEDI, MPFG, OGEN, and PRCF  
LGBT Graduate & Postdoctoral Student Chemistry Research Symposium  
Frontiers in Analytical & Physical Chemistry: From Atmospheric to Atomic Discoveries  
Sponsored by PROF, Cosponsored by  
ANYL, BOL, CHED, CMA, COLL, COMP, CWD, ENVR, IOPF, MEDI, MPFG, OGEN, PAHS, PARE, POLY, PREP, and WCC  
Teaching, Researching & Community Building in the Global Chemical Enterprise  
Sponsored by IAC, Cosponsored by  
BMTG, ENVR, I&EC, PREP, and PROF  
Advances in Treatment Processes for Metals & Metalloids  
Sponsored by GEOC, Cosponsored by ENVR
Heterogeneous Catalytic Oxidation Processes in Water & Wastewater Treatment
Financially supported by Sizex China
J. Fang, V. K. Sharma, Organizers
D. D. Dionysiou, Organizer, Presiding
T. An, Presiding
1:00 Introductory Remarks.
1:05 ENVR 246. Three-dimensional MnO2 porous hollow microspheres for enhanced activity as ozonation catalysts in water treatment. G. He, Y. Huang, W. Xu, X. Tan
1:30 ENVR 247. Enhanced degradation of organic micropollutants via heterogeneous photo-Fenton reactions on α-FeOOH. W. Zhang, G. Zhang, P. Wang
1:55 ENVR 248. Comparison of catalytic ozonation by LaFeO3 and La2O3-Benzo-triazole degradation, elimination of bromate and androstenone mechanism. Y. Zhang, Y. Xu, Q. Li, B. Xu, F. Qi
2:35 Intermission.
3:15 ENVR 251. LaFeO3 perovskite as a nanocatalyst for dicyclon degradation by heterogeneous activation of ozone process: Efficiency and mechanism. Y. Rao
3:40 ENVR 252. Efficient degradation of carbamazepine in aqueous solution by bismuth oxyxbramide-activated peroxide oxidation. X. Liu, D. Li, T. Zhang
4:00 ENVR 253. BiO2 micro-spheres for pre-treatment of winery wastewater. A. Mera

Section C
San Francisco Marriott Marquis Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of Mel Suffet
Characterization of Natural Organic Matter
Co-sponsored by CHED
Financially supported by AEEPS
M. J. McGuire, F.L. Rosario, Organizers
J. A. Pedersen, Organizer, Presiding
1:00 ENVR 265. Abbreviated review of photochemistry of natural organic matter then (1989) and now (2017). W.J. Cooper, B.A. Campbell
1:25 ENVR 266. Environmental photochemistry of organic matter. F.L. Rosario
2:40 Intermission.
2:55 ENVR 269. Oxidation and characterisation of natural organic matter from Pony Lake, Antarctica. E.M. Perdue, S. Driver
3:20 ENVR 260. NOM: From unfiltered supplies to water boil orders. W.C. Becker
4:10 ENVR 262. Characterization and monitoring of dissolved organic matter at drinking water treatment plants: Methods and application. M. Philbert, C. Cazin, F. Zick<br>Section D
San Francisco Marriott Marquis Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisperer
D. M. McKnight, Organizer
Y. Chiu, Organizer, Presiding
1:00 ENVR 263. Watershed tea in arctic lakes: Comparing carbon chemistry and cycling in red ringer vs. chamaomile waters. R.M. Cory, C.P. Ward, J. Bowran, A. Tusikov, L. Treibergs
1:35 ENVR 264. Pyrolytic degradation of LaFeO3 perovskite activated with Zn-NiOx. G. Zhang, J. Zhang, P. Zhou, Y. Zhang
2:50 Intermission.
3:05 ENVR 265. Chemical and photochemical transformation mechan-ism and risk assessment of typical synthetic musks in water: Theoretical study. G. Yang, G. Li, T. An
3:40 ENVR 266. Theoretical study of the Reaction of OH radicals with benzoic acid in the gas and aqueous phase. C. Wu, A. Venos, I. Gates
4:05 ENVR 267. Activation of Fe-tpeona by hydrogen peroxide to form an unsubtle strong oxidant at circum-neutral pH. C. Miller, Y. Chang, D.P. de Sousa, C.J. McKenzie, D. Wake
4:30 ENVR 268. Degradation mechan-isms of algal odorants of n-cy-cloclor and 1-l-rone during UV photocatalysis and UV/chlorination reactions. T. Kim, T. Kim, M. Kim, K. Zoh
Section I
San Francisco Marriott Marquis
Sierra K
Nanomaterials in Consumer Products: Formulation, Characterization & Applications Across the Product Life Cycle
S. Hussain, A. J. Kennedy, Organizers
C. Sayes, Organizer, Presiding
1:00 Introductory Remarks.
2:00 ENV 210. Aggregation of wood starch containing CaO nanoparticles as UV filters. L. Scifo, A. Mason, P. Chaurand, D. Borschneck, V. Vidal, C. Levard, J. Rose
2:40 Intermission.
2:55 ENV 212. Environmentally relevant physicochemical transformations of silver nanoparticles used in consumer products. S.R. Al-Abad, A. Gitipour, I. Radwan
3:25 ENV 213. Release and transformation of ZnO nanoparticles from coated surfaces during simulated dermal contact. J.G. Clar, E. Baumann, A. Renssen, T. Troye, T. Luxton
3:45 ENV 214. Determination of anions on the surface of Printed Circuit Boards (PCBs) by ICP-TM- 650 method 2.3.28 using HPIC. B. Huang, J. Rohrer
4:05 ENV 215. Influence of wear and tear on the release of silver nanoparticles from socks. V. Gagnon, M. Button, D. O’Carroll, K. Weber
4:25 ENV 216. In vitro characterization of Reactive Oxygen Species (ROS)-generating capacity of commercially available MesoSilver™ used as dietary supplement. H. Rong, S. Gigg, T. Wals
4:45 Concluding Remarks.
Science for a Sustainable Energy Future
Chemical & Biological Conversions Approaches to Energy Conversion
Sponsored by ACS, Cosponsored by BILC, BIOT, BSE, CBEST, CATL, CGEM, COLLO, CRR, DEG, SBE, MEXD, MPPG, ORGN, PSD, PHYSG, POLY, PRAX, PVC, and WCC
Mechanisms of Engineered & Natural Nanomaterials:
Sponsored by ACS, Cosponsored by ENVR and SOCE.
Undergraduate Research Posters
Chemistry
Sponsored by CHED, Cosponsored by ENVRR and SOCE.
Section A
San Francisco Marriott Marquis Salons 12/13
Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma
Disinfection/Oxidation Byproducts Formation & Control
Financially supported by Sciex China
D. D. Dionysiou, V. K. Sharma, Organizers J. Fang, Organizer, Presiding S. D. Richardson, Presiding 8:00 Introductory Remarks.
San Francisco Marriott Marquis Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of Mel Sulfet
Environmental Analytical Chemistry Cosponsored by CHED
San Francisco Marriott Marquis Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisperer Y. Cho, D. M. McIntosh, Organizers P. Maurice, Presiding 8:00 Introductory Remarks.
San Francisco Marriott Marquis Sierra A
Chemistry & Application of Advanced Oxidation Processes for Water Detoxification, Treatment & Reuse
Financially supported by AEESP D. D. Dionysiou, X. He, G. Li Puma, D. Minakata, X. Quan, Organizers K. E. O’Shea, Organizer, Presiding A. Sanroman, M. Valnice Boldrin Zanoni, Presiding 8:00 ENVR 352. Withdrawn 8:35 ENVR 353. Photoelectrochemical cell for simultaneous electricity genera- tion and heavy metals recovery from wastewater. D. Wang, G. Li Puma
Section G
San Francisco Marriott Marquis
Sierra C
Innovative Materials & Technologies for Sustainable Water Purification
Adsorption Technologies
Cospnsorized by CEI
B. P. Chaplin, J. Choe, J. Liu, D. Shuai, W. Zhang, Organizers
E. L. Gates, Organizer, Presiding
8:00 Introductory Remarks.
8:05 ENVR 367, Measuring and modeling U(VI) adsorption to engineered iron oxide nanoparticles, Z. Pan, W. Li, J. Forner, D. Giammar
9:25 ENVR 371, Highly efficient and specific capture of radioactive iodine in water by using gold nanoparticle-immobilized dextran gel columns. J. León, M. Choi, H. Shin, S. Yun, S. Park, D. Choi, B. Jang
9:45 Intermission.
10:00 ENVR 372, Innovative materials for water treatment. From custom designed adsorbents to scalable membranes. A. Onor, G. Ramakrishnan, S.M. Uchimiya
10:40 ENVR 373, Silver binding affinity of silica/melanin nanoparticles. A.P. Zane, M. Morgan, E. Bitto, D. Oliveira, J. Hoyle
11:00 ENVR 374, Removal of hexavalent chromium from aqueous solutions by a novel biochar supported nanoscale iron sulfide composite. Y. Gong, H. Lyu, J. Tang
11:40 ENVR 376, Sorption of heavy metals using tungsten oxide based sorbents. C.K. Perkins, T. Reed, Z. Brown, A.W. Aplinett
TUESDAY AFTERNOON
Section I
San Francisco Marriott Marquis
Sierra K
Processes, Technologies & Sensors for Food-Energy-Water Nexus Research
Cospnsorized by CEI and CHED
Finanially supported by Electric Power Research Institute (EPRI), National Science Foundation (NSF)
W. J. Cooper, Organizer
S. Bushart, N. S. Rao, Organizers, Presiding
W. Cooper, Presiding
10:00 Introductory Remarks.
10:05 ENVR 387, Intensive aquatic protein production using duckweed as a model platform. A. McQuilling, J. Lawson, S. Mukhtar, W. Grieco
11:45 ENVR 390, Redox-based electrochemical technologies for energy-efficient water purification and wastewater treatment. X. Su, T.F. Jamison, T. Hatton
12:25 ENVR 391, Highly permeable thin film composite membranes with nanocomposite barrier layer for desalination applications. K. Liu, H. Ma, B.S. Hsiao
13:00 ENVR 392, Potential uses of graphene oxide for water treatment. Y. Bao, R. Zhang, Y. Zhang
14:00 ENVR 393, Characterization and implications of cometabolic bio-methanol production by ammonia oxidizing bacteria. Y. Su, L. Ariano-Garcia, S. Satyamorysh, K. Chandran
14:40 ENVR 395, Algae cultivation on a pilot-scale Aidal Turf Scrubber® from dairy wastewater for bioremediation and sustainable biofuel production. J. Yan
15:00 ENVR 396, Concluding Remarks.
Mineral-Water Interface Chemistry
Sponsored by GECI, Cospnsorized by COLI and ENVR
Operando Methodology at the Junction between Fundamental Chemistry & Chemical Engineering
Sponsored by CATL, Cospnsorized by ENVR and S&EC
Elucidation of Mechanisms & Kinetics on Surfaces
Electrons
Sponsored by COLI and ENVR
Section A
San Francisco Marriott Marquis
Salons 10/11
ACS Award for Creative Advances in Environmental Science & Technology: Symposium in honor of Dr. Douglas R. Worsnop
Financially supported by E&ST Journal, ES&T Letters
J. L. Jimenez, S. O. Obare, Organizers
M. Canagaratna, Organizer, Presiding
1:30 ENVR 397, Recent advances in atmospheric chemistry studies: Applications of mass spectrometric methods. J.T. Jayne
1:50 ENVR 398, Dielectric spectroscopy and glass transitions of organic molecules and mixtures prepared from submicron particle deposition. P. Davidovits
2:10 ENVR 399, Toward understanding aqueous-phase chemistry of secondary organic aerosol via aerosol mass spectrometry. Q. Zhang
2:30 ENVR 400, Aerosol mass spectrometry of refractory black carbon particles: Black carbon particles in the atmosphere. T.B. Onasch
2:50 ENVR 401, Aerosol composition and properties in the developing world. H. Coe
3:10 Intermission.
3:25 ENVR 402, Bright future of the potential aerosol mass concept and chamber. W. Brune
3:50 ENVR 403, Recent results on organic aerosol sources and properties, and on the experimental systems used to study them. J. Jimenez
4:15 ENVR 404, Award Address (ACS Award for Creative Advances in Environmental Science & Technology sponsored by the ACS Division of Environmental Chemistry & the ACS Publications Journals Environmental Science & Technology & Environmental Science & Technology Letters), Mass spectrometry of atmospheric aerosol: 1 nanometer to 1 micron. D.R. Worsnop
Section B
San Francisco Marriott Marquis
Salons 12/13
Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma
Membrane & Adsorption Technologies
Financially supported by Suez China
D. D. Dionysiou, J. Fang, V.K. Sharma, Organizers
S. Lin, L. Tang, Presiding
1:30 Introductory Remarks.
1:35 ENVR 405, Membrane fouling behavior of composite coalagant PAC-PDMDAAC under different membrane materials in coagulation-ultrafiltration combined process. X. Shan, B. Gao, G. Yue
2:00 ENVR 406, Anti-oil-fouling membranes in membrane distillation: Drivers, materials development, and force spectroscopy for mecha-nisms elucidation. S. Lin, Z. Wang
2:25 ENVR 407, Bioinspired polypoly-a-mine and silver nanoparticles form in situ on membrane surface to mitigate biofouling. L. Tang, K.J. Lii, K. Chen
2:45 ENVR 408, Preparation and properties of PVDF adsorption membrane. Y. Zhang
3:25 Intermission.
3:40 ENVR 410, Enhanced removal of trace antimony(V) in water by iron oxide supported by chitosan/cellulose acetate. J. Yang, H. Chen, Z. Li, R. Bai
4:05 ENVR 411, Adsorption behavior of Cu(II) ions from aqueous medium using TEMPA-3-mediated oxidized cellulose nanofibers. P. Liu, A. Mathew, H. Shaqai
4:25 ENVR 412, Adsorption of Cs in water using functionalized, templated and magnetic mesoporous composites. K. Guo, F.X. Han, Z. Anlan, R. Zhang, Y. Zhang, C. Rogers
4:45 ENVR 413, Ammonia nitrogen adsorption onto modified zeolites at low temperature. L. Qiu, G. Qiu, L. Zhu, S. Zhang
5:05 ENVR 414, Critical effect of solute species and concentrations on cation exchange behavior of thin-film composite membranes in forward osmosis. X. Lu, W. Cheng, Y. Yang, M. Ma
227-TECH
Section C
San Francisco Marriott Marquis
Salons 14/15
Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of Mel Suffet
Source Water Quality
Cosponsored by CHED
Financed by AEGSP
J. A. Pedersen, F. L. Rosario, Organizers
M. J. McGuire, Organizer, Presiding
1:30 ENVR 415. Wildfires: Burning questions regarding drinking water supplies and treatment. A.D. Revchuk, I.H. Suffet
2:20 ENVR 417. Effect of fire-impacted source water on ozonation kinetics in drinking water treatment. Z. Wu, M. Maze, T.M. Young
3:10 Intermission.
3:50 ENVR 420. Barriers to access to chemical data for source water vulnerability assessments. J. Rosen
4:15 ENVR 421. Mexico City: The case for integrative science and policy. T.J. Down
Section D
San Francisco Marriott Marquis
Golden Gate C1
Understanding Dissolved Organic Matter Reactivity: Honoring George Aiken, the DOM Whisperer
Y. Chin, D. M. McKnight, Organizers
E. J. O’Loughlin, Presiding
1:30 ENVR 423. Comparison of the properties of different natural organic matter samples from the Suwannee River (GA, USA). R. Maurice
2:30 ENVR 425. Impact of Natural Organic Matter (NOM) on the formation and reactivity of iron oxides particles formed on Fe(lll) and Fe(ll): Comparison of terrogenous NOM versus Allogenic NOM. S. Garg, K. Wang, D. Waite
3:20 Intermission.
3:30 ENVR 427. Exploring the relationships between the redox and mineral adsorption properties of DOM. D. McAdams, G. Aiken, J. Hudson, Y. Chin
4:55 ENVR 430. Effect of NOM and water hardness on Diffusive Gradient in Thin-Film (DGT) prediction of bioaccumulation by yellow lampmussel and fathead minnow. G.L. Mills, R. Philippis, R. Brinof
5:20 Concluding Remarks.
Section E
San Francisco Marriott Marquis
Sierra A
Chemistry & Application of Advanced Oxidation Processes for Water Detoxification, Treatment & Reuse
Financed by AEGSP
X. He, G. Li, Puma, D. Minakata, K. E. O’Shea, X. Quan, Organizers
D. D. Dionysiou, Organizer, Presiding
D. Hermosa, Presiding
1:30 ENVR 431. 1,4-dioxane treatment by advanced oxidation processes: Current situation, future perspectives, and potential industrial implementation. D. Hermosa, N. Marayo, A. Blanco
2:05 ENVR 432. Withdrawn.
2:30 ENVR 433. TiO2 Photocatalytic degrad-ation of the flame retardant, tris (t-chloroethyl) phosphate: Kinetic and mecha-nistic studies. A. Abdullaah, K.E. O’Shea
2:55 ENVR 434. Kinetic modeling of sunlight-assisted degradation of trace organic substances. H. Yo
3:20 Intermission.
3:35 ENVR 435. Withdrawn
4:00 ENVR 436. Color-stripping of dye-con-taining wastewater by a new H2O2/ Cu(ll)-phenanthroline AOP. E. Wolger, F. Molton, C. Duboc, N. Marlin, G. Mortha
4:25 ENVR 437. Withdrawn
4:50 ENVR 438. Is it time to replace traditional UV lamps by UV-Light containing wastewater by a new H2O2/Cu(ll)-phenanthroline AOP. E. Wolger, F. Molton, C. Duboc, N. Marlin, G. Mortha
5:20 ENVR 439. Sustainable applications of magnetic nano-catalysts and graphitic carbon nitrides. R.S. Varma
5:55 ENVR 440. Advancing greener reductive and photosensitization strategies. M.E. Kopach
2:15 ENVR 441. Chemistry’s Shuttle™ process: New technology platform to produce caustic soda and ECC while eliminating chlorine gas and saving energy. M.K. Leclerc
2:35 ENVR 442. Green process development using chiral resolution. N.A. Vaidya
2:55 ENVR 443. Evolution of chiral HPLC towards greener techniques. R. Romero
3:15 Intermission.
3:30 ENVR 444. Biologicals: The new frontier for green chemistry in the pharma industry. K. Budzinski, D. O’Connor
3:50 ENVR 445. Key consideration when choosing a manufacturing solvent in pharmaceutical manufacturing. A. Mehta
4:10 Panel Discussion.
Section F
San Francisco Marriott Marquis
Sierra C
Innovative Materials & Technologies for Sustainable Water Purification
Adsortion Technologies
Cosponsored by CEI
B. P. Chapelin, Organizer, Presiding
1:30 Interim Remarks.
1:55 ENVR 447. Colloidal materi-als for reversible, selective per-chlorate trapping. S. Oliver
2:15 ENVR 448. Selective silica sep-arations from waste water using iron-exchange media. K. Basan, T.M. Nenoff, P.B. Brady, J. Kurnhansl
2:35 ENVR 449. Withdrawn.
2:55 Intermission.
3:10 ENVR 450. Removal of oxyanion pollutants from water by bicomponent metal oxide adsorbents. Y. Zou, Y. Wang
3:30 ENVR 451. Removal of heavy metals from drinking water using hydrothermalchar. M.T. Timko
4:10 ENVR 453. Withdrawn.
4:30 ENVR 454. Removal of porphyrin-alkyl substances from water using molecularly engineered coatings on sand and silica. P. Edmiston
4:50 ENVR 455. Arsenic, cadmium, nickel and lead adsorption mechanisms and thermodynamics of copper based and iron based metallic organic framework. A. Yurduse, Y. Yurum
Section H
San Francisco Marriott Marquis
Sierra J
From the Bench to the Field: Evaluating Innovative Remediation & Detection Technologies
S. R. Al-Abed, H. Henry, Organizers, Presiding
1:30 ENVR 456. Unexpected ring cleavage products from OH• and SO4•-treatment of contaminants. J. Van Buren, C. Prasse, B. Shail, D.L. Sedak
1:50 ENVR 457. Mechanisms on the impacts of alkalinity, pH and chloride on heterogeneous persulfate activation for groundwater remediation. W. Li, H. Liu
2:30 ENVR 459. Investigating poly-chlorinated biphenyl biodegradation potential in contaminated sediments with chemical and molecular biology approaches. Y. Liang, A. Martinez, J. Ewalt, A. Awad, J.L. Schnoor, T. Mattes
2:50 Intermission.
3:30 ENVR 461. Probing active acidophilic methanotrophs involved in chlorinated solvent biodegradation. Y. Shao, K. Chu
3:50 ENVR 462. Bioprocess development for 1,4-dioxane treatment: Bench through field investiga-tion. R. Shirazi, A. Razavi, A. Gregg, C. McGrath, N. Haviarck, J. Salentin
4:30 ENVR 464. From infancy to full-scale demonstration: The twenty year development of electrokinetically-enhanced bioremediation for successful treatment of chlorinated solvents in clays and silts. N.D. Durant, J. Wang, E. Cox, D. Gert
Section I
San Francisco Marriott Marquis
Sierra K
Science & Perception of Climate Change
Cosponsored by CEI and CHED
Financed by AEGSP
S. O. Obare, Organizer
E. Schoffers, Organizer, Presiding
1:30 ENVR 465. How culture shapes the climate change debate. A.J. Hoffman
2:10 ENVR 466. Climate science literacy: An imperative for the next generation. J.A. Vo
2:40 ENVR 467. Facing the new world of climate disruption. J.A. Bell
3:00 ENVR 468. Visualizing and understanding the science of climate change. P.G. Mahaffy
3:30 ENVR 469. Why do students respond favorably to attempts to teach climate change? G.M. Bodner
Wednesday Morning

Section A
San Francisco Marriott Marquis
Salons 12/13

9:00 Introductory Remarks.
9:05 ENV 473. Biological and chemical activities of extracts from plastics collected from the North Pacific Gyre and plastics treated with UV-light. D. Schlenk, T.B. Hofstetter, N. Bock, A. Holian
9:30 ENV 474. Explaining the presence of respiratory tract opportunistic bacterial pathogens in drinking water systems. L. Raskin, S. Haig, N. Kotlarz, D. Jassby
9:50 ENV 475. Stable isotope view of the formation of N-nitrosodimethylamine during water disinfection with chlorine. T.B. Hofstetter, S. Spatt, L. von Gunten
10:20 ENV 476. Is bioremediation of PAH contaminated soil worth it? S. Simonich
10:45 ENV 477. Photochemical conversions at the interfaces of semiconductor hybrids for environmental applications. W. Chol
10:10 Intermission.
10:50 ENV 479. Investigation into the transfer of biological species from the ocean to the atmosphere: Mother nature’s way of controlling climate? K.A. Prather, C. Gaston
11:15 ENV 480. Working on environmental challenges as an engineer gone wrong. M.S. Maier
11:45 Concluding Remarks.

Section B
San Francisco Marriott Marquis
Salons 10/11

Oxidation Processes, Nanoparticles & Membranes in Water & Wastewater Treatment: A Symposium in honor of Prof. Jun Ma

9:00 Introductory Remarks.
9:30 ENV 482. Application of natural organic matter coated magnetic iron oxide nanoparticles for the remediation of arsenic and selenium. M. Rashid, Y. Cai, G. Sterbinsky, K.E. O’Shea
9:50 ENV 483. Withdrawn.
10:10 ENV 484. Nanoparticles removed by AOPs in the process of coagulation. L. Zhang
10:30 ENV 485. Advances of nanosized metal oxides formed in situ for the enhanced coagulation of surface water and removal of heavy metals, algae. L. Wang, Y. Liu, J. Ma
11:05 ENV 489. Development and application of layered carbon materials in advanced oxidation processes for water purification. F. Qi, B. Xu, Z. Song

Section C
San Francisco Marriott Marquis
Salons 14/15

Chemical Principles of Environmental, Cellular & Organismal Nanotoxicology
Co-sponsored by COLL

9:00 ENV 491. Contribution of phagolysosomal membrane permeability to micro and nanoparticle toxicity. A. Holian
9:30 ENV 492. Structure activity relationships of engineered nanomaterials in inducing NLRP3 inflammasome activation and chronic lung fibrosis. T. Xia
10:10 ENV 494. Impact of silver nanowire length and diameter on rainbow trout RTg11 and RTg11TG cell lines. D. Arndt, D. Toybou, J. Simonato, C. Celle, B. Gilbert, L.L. Charlet, C. Valve, S. Lehmann
10:30 ENV 495. Toward safer silver nanowires by design: Modulation of surface properties and characterization of evaluation of dermal toxicity. S. Lehmann, G. Kuo, D. Toybou, J. Simonato, C. Celle, T. Mattils, L.L. Charlet
10:50 Intermission.
11:00 ENV 496. Spectroscopic insights into the role of defects in nano-bio interactions. P. Podila, J. Brown
11:40 ENV 498. Biological impact of nanoscale lithium-intercalating battery materials to model bacterium Bacillus subtilis. V. Fang, M. Fang, T. Linh, B. Miller, R.J. Hamers
11:00 ENV 499. Integrated chemical and toxicological investigation of fullerene after UV/UV-chlorine drinking water treatment. C. Zhang, Q. Zhang

Section D
San Francisco Marriott Marquis
Golden Gate C1

Novel Membrane Materials & Processes for Water Purification

9:00 ENV 500. Artificial water channel based membranes. M. Kumar, Y. Shan, T. Ran
9:30 ENV 501. Artificial water channels exhibiting enhanced dissipation of water translation. M.D. Barbou

Section E
San Francisco Marriott Marquis
Sierra A

Chemistry & Application of Advanced Oxidation Processes for Water Detoxification, Treatment & Reuse

9:00 ENV 504. Polycrystalline metal-organic framework membranes for water purification. D. Zhao, X. Wang
9:50 Intermission.
10:40 ENV 506. Understanding graphene oxide swelling properties in aqueous phase. S. Zheng, J. Urban, G. Tu, S. Li, B. Mi
11:00 ENV 507. Breathable graphene oxide toxicant barriers. R. Spitz, M. Cruz, N. Maltouz, Y. Qi, R. Hurt
Section F
San Francisco Marriott Marquis
Sierra B
Aquatic Photochemistry
Co-sponsored by GECC

Financially supported by AESSP
W. Arnold, V. Lin, Organizers
K. P. McNeill, Organizer, Presiding

8:30 ENVR 518. Identification and toxicity testing of the photochemical degradation products of octyl methoxycinnamate, a common organic UV filter chemical. C. Berg, H. Stain, J. Maung, L. O’Connor, A. Pagano, M. G. Paul, D. Ruuska, L. Drukia, S. Eustis

8:50 ENVR 519. Photocatalytic fate of lampricides in tributaries of the Great Lakes. C. K. Remucal, M. McConnell, A. Ward


9:50 ENVR 522. Singlet oxygenation of dyes in water and methanol: Dimocrit, acid, sorbate, and sorbic alcohol. M. Jaramillo, K. E. O’Shea

10:10 Intermission.


11:00 ENVR 525. QSARs for phenols and phenolates: Oxidation potential as a predictor of reaction rate constants with photochemically produced oxidants. W. Arnold, Y. Quas, M. O’Connor, J. Rinaman, M. Taggart, R. McCarthy, K. Foster, D. E. Latch

11:20 ENVR 526. Chemically accurate aqueous redox potentials for organic pollutants via high-speed cyclic voltammetry and Molecular Dynamics (MD)/Equation-of-Motion Coupled Cluster (EOM-CCSD) simulations. M. Paul, D. Ruuska, S. Eustis


Section G
San Francisco Marriott Marquis
Sierra C
Innovative Materials & Technologies for Sustainable Water Purification

Membrane & Other Treatment
Co-sponsored by CEI
E. L. Cates, B. P. Chaplin, J. Liu, D. Shuai, W. Zhang, Organizers
J. Choe, Organizer, Presiding

8:30 Introductory Remarks.

8:35 ENVR 528. Pseudocapacitive deionization: Desalination of water using high capacity MnOx electrodes. S. Hand, R. Custck


9:15 ENVR 530. Effect of pre-ozonation and membrane modification with carbon nanotubes on fouling control. J. Guo


9:55 Intermission.


11:30 ENVR 535. Preventing regrowth of nitroaromatics during wastewater reuse by manipulating chlorination chemistry. D. McCurry

Section H
San Francisco Marriott Marquis
Sierra Poly- & Perfluoralkyl Substances:
Where, When, Why, Who & How

K. Chu, L. S. Lee, J. Liu, V. Yingling, Organizers, Presiding

8:00 ENVR 536. Perfluoralkyl ether carboxylic acids: Occurrence in the Cape Fear watershed and fate in drinking water treatment processes. D. Knappe, M. Sun, L. Dudley, E. Arealo, V. Styan, A. Lindstrom

8:25 ENVR 537. Minnesota Poly-and Perfluoralkyl Substances (PFAS) megaplume: A case study of PFAS fate and transport and implications for site investigation and drinking water treatment. V. Yingling

8:50 ENVR 538. Poly- and perfluoroalkyl substances in soil following aqueous film forming foam deployment during firefighting efforts after the train derailment in Lac-Mégantic, Québec. S. Mejia-Avendaño, G. Munoz, S. Vo-Duy, M. Desrosiers, S. Sauvé, J. Liu


9:40 Intermission.


10:35 ENVR 541. Isomer-Specific biotransformation of N-Ethyl Perfluorooctanoate Sulfonylamine Ethanol (EFOSE) in aerobic soil. J. Liu, G. Zhong, W. Li, S. Mejia-Avendaño

11:00 ENVR 542. Sorption of Poly- and Perfluoralkyl Substances (PFAS) relevant to Aqueous Film Forming Foam (AFFF)-impacted groundwater by biocatalysts and activated carbon. X. Xiao, B. Urich, B. Chen, C.R. Higgins

11:25 ENVR 543. Fate and transport modeling of co-occurring PFOS, MTBE, and ETX in a fractured chalk aquifer. I. Ross, J. Bardick, J. McDonough, J. Miles, J. Hurst, E. Houtz

11:30 Concluding Remarks.

Section I
San Francisco Marriott Marquis
Sierra K
Whole Organism Metabolism to Support Nanotoxicology Research in the Environment

S. K. Hanna, C. M. Sims, Organizers
M. Johnson, B. C. Nelson, Organizers, Presiding

8:30 Introductory Remarks.


9:00 ENVR 545. High-throughput single-cell iCP-MS methods development and application to study algicidene and nanoparticle interaction and toxicity to unicellular organism cyanobacteria. H. Shi, K. Li, H. Zhang, H. Jiang, C. Stephan


9:50 Intermission.

10:05 ENVR 547. Single cell and single particle iCP-MS analysis of nanohybrids. J. Lead

10:30 ENVR 548. Systems-level approach to characterizing effects of ENMs in terrestrial organisms and eco-systems. C.M. Rico, M.G. Johnson, J.R. Reichman, C.P. Andersen


11:20 ENVR 550. Novel image and data fusion method to improve spatial resolution and spectral content of biological images using ToF-SIMS. T.M. Milillo, R. Fischione, A. Montes, J.A. Gardella

Evolving Nanoparticle Reactivity throughout Nucleation, Growth & Dissolution

Co-sponsored by GECC, Sponsorepy by COLT, ENVR and NUCLE

Mineral-Water Interface Chemistry

Co-sponsored by GECC, Sponsorepy by COLT and ENVR

Operando Methodology at the Jointten between Fundamental Chemistry & Chemical Engineering

Fundamental Structure-Activity Relationships: The Interface of Operando with Physical Sciences

Sponsored by CATL, Co-sponsored by ENVR and BEC

Elucidation of Mechanisms & Kinetics on Surfaces

Organic Oxygenates

Sponsored by CATL, Co-sponsored by COLT and ENVR

Wednesday Afternoon

Section A
San Francisco Marriott Marquis
Salons 10/11
Pesticides in Surface Water: Monitoring, Modeling, Mitigation, Risk Assessment & Regulation

Sponsored by Compliance Services International (CSI)

Y. Luo, D. Young, Organizers
J. Gan, K. S. Goh, Organizers, Presiding

1:10 Introductory Remarks.

1:30 ENVR 551. Agricultural and urban pesticide signatures in wadeable streams from regional stream-qual-

Section D
San Francisco Marriott Marquis
Golden Gate C1
Novel Membrane Materials & Processes for Water Purification
D. Jassy, B. Mi, Organizers, Presiding
1:30 ENVR 879. Novel membranes with special wetting properties for anti-fouling and anti-wetting membrane distillation. Z. Wang, Y. Huang, S. Lin
2:00 ENVR 880. Accurately determining convective heat transfer coefficients in membrane distillation cas- settes. M.S. Mauter, M. Lelitch, G. Lowry
2:40 ENVR 882. Desalting water with electric double-layers: Assessing impacts of material chemistry and operation strat- egies on capacitive deionization energy consumption and cost. S. Hand, R. Dusick
3:00 Intermission.
4:10 ENVR 885. Integration of reactive ceramic membrane with ozone for advanced treatment of reclaimed water. X. Zhang
4:30 ENVR 886. Novel nanohybrids enables microwave radiation to disinfection water. N.B. Saleh
4:50 ENVR 887. Integration of in-situ ozon- ation and ceramic UF membrane for effective algal and MC-LR removal and mem- brane fouling control in the treatment of algal-rich water. Z. Zhang, Y. Tao, X. Zhang
Section E
San Francisco Marriott Marquis
Sierra A
Chemistry & Application of Advanced Oxidation Process for Water Detoxification, Treatment & Reuse
Financially supported by AESSP
X. He, D. Minakata, K. E. O'Shea, X. Qian, Organizers
D. D. Dionysiou, G. Li Puma, Organizers, Presiding
A. Ghauch, Presiding
2:05 ENVR 889. Electrochemical enhancement of oxidation process using persulfate activated by nanozi- zed zero-valent iron. G. Kim, I. Hyang
3:20 Intermission.
3:35 ENVR 892. Effect of synthesis- is parameters in the removal of 4-chlorophenol under visible light irradia- tion using ammonium iron (II) sulfate-doped nano-titania photocata- lyst. F.A. Villaluz, M. Liu, M.G. de Luna
4:50 ENVR 895. Microemulsions as tools for efficient water decontamina- tion. D. Viola García, J. Parmar, S. Sanchez
5:15 Concluding Remarks.
Section F
San Francisco Marriott Marquis
Sierra B
Aquatic Photochemistry
Cosponsored by AGRO
Financially supported by ACS
W. Arnold, K. P. Michelli, Organizers
V. Lin, Organizer, Presiding
1:30 ENVR 896. Characterizing the role of photochemical reactions in the oxidation of hydrocarbons released during the Deepwater Horizon disaster. C.F. Ward, C. Reddy
1:50 ENVR 897. Time dependence of aldehyde and ketone photoproduction gen- eration from crude oil-seawater systems under solar irradiation. X. Cao, M.A. Tarr
2:10 ENVR 898. Steric hindrance reduces aquatic photochemical transformation rates of alkylated sulfur heterocycles. P. Saranjampour, K.L. Armbrust, B. Marx
2:50 ENVR 900. Petroleum provides model compounds to assess the compositional and structural controls of dissolved organic matter photoactiv- ity. P. Zito, M.A. Tarr, D.C. Podgorski
3:10 Intermission.
4:00 ENVR 901. Analytical approaches to evaluate the photolysis of organ- ioclasses in natural waters. T. Keane, E. Conover, R. Battersby
4:15 ENVR 902. Photolysis of aromatic pol- lutants in natural waters. T. Keane, E. Conover, R. Battersby
4:30 ENVR 903. Photolysis of aromatic pol- lutants in natural waters. T. Keane, E. Conover, R. Battersby
4:45 ENVR 904. Photolysis of aromatic pol- lutants in natural waters. T. Keane, E. Conover, R. Battersby
5:00 ENVR 905. Photolysis of aromatic pol- lutants in natural waters. T. Keane, E. Conover, R. Battersby
5:15 ENVR 906. Photolysis of aromatic pol- lutants in natural waters. T. Keane, E. Conover, R. Battersby
Section G
San Francisco Marriott Marquis
Sierra C
Innovative Materials & Technologies for Sustainable Water Purification
Photocatalytic
Cosponsored by CEI
E.L. Cates, B.P. Chaplin, J. Choe, J. Liu, W. Zhang, Organizers
D. Shuai, Organizer, Presiding
1:30 Introductory Remarks.
1:35 ENVN 606. Boosting the photocatalytic activity of m-BiVO₄ with Pd nanodomains and BiOBr nanosheets dual heterogeneous: Highly efficient photocatalytic degradation of polychlorinated biphenyls. E. Zahran, M. Palma, S. Angaramo, M.R. Knecht, L. Bachas
2:35 ENVN 609. Microreactor-assisted photocatalytic PBR for intensified solar photocatalysis: A study of the effects of packing material on light absorption. S. Okawara, A.S. Taveira
2:55 Intermission.
3:30 ENVN 611. Designing photocatalytic nano-adsorbents with greater specificity through shape and size using advanced spectroscopy techniques. A.W. Lounsby, N. Dillmeyer, J. Yamani, D. Peak, J.B. Zimmerman

Section H
San Francisco Marriott Marquis
Sierra J
K. Chu, L.S. Lee, J. Liu, V. Yingling, Organizers, Presiding
1:30 ENVN 614. Encapsulation of legacy and emerging perfluoroalkyl substances by cyclodextrins. M.J. Weiss-Errico, Z. Hopkins, D. Knappe, K.E. O’Shea
2:20 ENVN 616. Novel approach to the enhancement of PFAS adsorption in groundwater systems. V. Aly, M.F. Smock
2:45 ENVN 617. Selective and fast adsorption of perfluoroalkane sulfonate from wastewater by magnetic fluorinated vermiculite. S. Deng, P. Meng, G. Yu
3:10 Intermission.
3:40 ENVN 618. Abiotic transformation of perfluoroalkane sulfonate by catalyzed perammonia under amenable in-situ conditions. S. Park, L.S. Lee
4:30 ENVN 620. Remediation of perfluorinated surfactants in groundwater by injection of nanoscale zerovalent iron particles. Y. Zhang, Y. Zhi, J. Liu, S. Ghsoul
5:20 Concluding Remarks.

Section I
San Francisco Marriott Marquis
Sierra K
Whole Organism Metabolism to Support Nanotoxicology Research in the Environment
S. K. Hanna, M. Johnson, Organizers
B. C. Nelson, C. M. Sims, Organizers, Presiding
1:30 ENVN 622. Development of correlative optical microscopy and focused ion beam tomography for quantitation of metal nanoparticles in whole cells. K. Jeerage, A. Sanders
3:10 Intermission.
3:25 ENVN 626. Transfer and accumulation of TQ nanoparticles along a marine benthic food chain. J. Zhao, Z. Wang, B. Xing
3:50 ENVN 627. Toxicity studies of nanosilver on the anaerobic sulfate reducing bacteria Desulfovibrio alaskensis. M.O. Montes, J.M. Sdnik
4:15 ENVN 628. Effects of pH and dissolved organic carbon on the toxicity of silver nanowires to Daphnia magna: Acute toxicity and spLC-MS/MS measurement of silver nanowire uptake. L.D. Scanlan, M.D. Montano, N. Karunaratne, M. Eng, T. Cun, J.Y. Hsu, C. ter Haar, B. Gilbert, C. Yulpe
4:40 ENVN 629. Monitoring toxicity of oral nanomagnetite nanoparticles in vivo using drosophila melanogaster. X. Bi

Evoking Nanoparticle Reactivity throughout Nucleation, Growth & Dissolution
Sponsored by GEOD, Cosponsored by COLL, ENVR and NUCL
Operando Methodology at the Junction between Fundamental Chemistry & Chemical Engineering
Fundamental Structure-Activity Relationships: The Interface of Operando with Physical Sciences
Sponsored by CIL, Cosponsored by ENVR and IEC

Wednesday Evening
Section A
Moscone Center
Hall D
Accurate Mass/High Resolution Mass Spectrometry for Environmental Monitoring & Remediation
Cosponsored by ANYL
T. Arumol, R. Marfi-Vega, T.M. Young, Organizers
6:00 - 8:00
ENVN 630. Screening and quantitation of micro-pollutants from sewage water in the process of bank filtration using UHPLC-HRAM. E. George
ENVN 632. Withdrawn
ENVN 634. Microcytometric screening of water samples using LC-MS/MS and triggered information dependent acquisition for non-targeted variant detection. R.A. Tresham, B. Vandenford

Section B
Moscone Center
Hall D
Advances in Resource Recovery & Conservation in Water Systems
S. Ahuja, L.M. Blaney, T.H. Boyer, Organizers
6:00 - 8:00
ENVN 643. Effect of humic analogue on micro-pollutant leaching of iron from hematite into seawater. A. Anekamp
ENVN 644. Phosphate recovery using pelletized adsorptive materials: Study of desorption for potential reuse. E. Martín, M. Nastapoulou, S. Chao
ENVN 645. Integrated seawater aquaculture and agriculture as an avenue for food and energy security in arid regions. Z. Almeir
ENVN 646. Efficacy of Hydrotalcite-based nanocomposites for sorbing heavy metal in industrial wastewater. Y. Li, J.J. Ma, P.J. Alvarez
ENVN 647. Phosphate ion exchange on cross-linked cationic surfactant micelles across dialysis membranes. M. Chen, C.T. Jalvert
Section A Moscone Center Hall D

Chemistry of Water Treatment from Sorption to Taste & Odor: Symposium honoring the Contributions of M. J. McGue, J. A. Pedersen, F. L. Rosario, Organizers 6:00 - 8:00


ENV 708. Characterizing the properties and release kinetics of dissolved organic carbon from thermally treated soils in arid climates. A. Retuta, Y. Yu, F.L. Rosario

ENV 709. Do all reduced sulfur compounds in foul air vary in the same manner over a daily fluctuation in the wastewater treatment process? T. Vitko

Section A Moscone Center Hall D

Clay Minerals Selectivity & Its Environmental Applications
M. ElSayed, Organizer 6:00 - 8:00


Section A Moscone Center Hall D

Contaminants in Urban & Coastal Estuarine Ecosystems Cosponsored by AGRO
K. L. Armbrust, M. Sanarajpoom, Organizers 6:00 - 8:00

ENV 712. Determination of total copper concentration and copper speciation in Humboldt Bay, California through use of competitive ligand exchange-adsortive cathodic stripping voltammetry. M.A. Amezcua, N. Tuttle, M.P. Hurst

ENV 713. Soil degradation and sorption of azithromycin in simulated California river and river bed conditions. M.L. Maier, R.S. Tjeerdema

ENV 714. Anti-depressant and legacy contaminant fate in the Gulf of Mexico. J. Landry, K.L. Armbrust

ENV 715. Potential mechanisms of 2,6-dichloro-4-nitroaniline (Dicloran) phototoxicity to Pimephales promelas (Fathead Minnow). E.N. Voborsky, K.L. Armbrust


ENV 717. From sediment to top predators: Broad exposure of polyhalogenated carbazoles in San Francisco Bay (U.S.A.) Wu, H. Tan, H.A. Button, D. Chen

ENV 718. Withdrawn.

Section A Moscone Center Hall D

Contaminants of Emerging Concern in Natural & Engineered Systems Cosponsored by AGRO, ANLY and CB
L. M. Blaney, A. J. Hernandez, Organizers 6:00 - 8:00

ENV 719. UV-driven antibiotic-to-antibiotic transformation pathways and kinetics of sulfonamides. D. Ocasio, H.A. Adeljune, K. Mangaligi, K. He, L.M. Blaney


ENV 721. Photocatalytic degradation of 1,4-dioxane and trihalomethanes by zinc oxide. M. Hwangbo, Y. Shi, E. Claycomb, B.S. Alada, K. Chu

ENV 722. Occurrence and fate of low molecular weight aldehydes in potable water reuse systems. E. Maron, C. Prasse, D. Sedlak


ENV 724. Withdrawn.


ENV 726. Toxicity and degradation of a polycarbonate glycol-based hydraulic fluid. Y. Yang, K.K. Das, R. Murhane, J. Hou, V. Edirveerasingam


ENV 728. Hexachlorobutadiene in agricultural soils from the Yangtze River Delta of China. J. Sun, X. Li


ENV 730. Predicting sorption of anionic pharmaceuticals to soils: An evaluation of potential probe compounds. L. Alper, A. Lopez, D. Vasudevan

ENV 731. Characterizing in-situ methane-enhanced biostimulation potential for 1,4-dioxane biodegradation in groundwater. V. Sadeghi, D. Chiang, R. Mora

ENV 732. Withdrawn.

ENV 733. New analytical method for analysis of a broad range of chemicals found in Australian waters and wastewaters. A. Kahl

Section A Moscone Center Hall D

Environmental Chemistry: Undergraduate & Graduate Classroom, Laboratory & Local Community Learning Experiences Cosponsored by ANLY and CB
M. A. Benvenuto, E. Roberts-Kirchoff, Organizers 6:00 - 8:00

ENV 734. Seasonal differences in mercury concentrations in fish from Flint Creek, Alabama: Implications for monitoring. P. Okewye

ENV 735. Measurement of hazardous air pollutants with regard to environmental justice policy in the Atlanta metropolitan region. W. Hudson, D. Patel, K. Zimmerman


ENV 737. Localized surface plasma resonance and electrochemical analysis of electron transfer mediators. D. Panflow, P.W. Hall

ENV 738. Effects of wastewater treatment on Azithromycin. E. Avila, A. Ramírez, M. Perri

ENV 739. Withdrawn.

ENV 740. Gas-phase mercury cycles during May at urban/industrial sites on Svallbard. S. Le Gras, M.H. Hemanon, A. Naumina


Section A Moscone Center Hall D

From the Bench to the Field: Evaluating Innovative Remediation & Detection Technologies
S. R. Al-Abed, H. Henry, Organizers 6:00 - 8:00

ENV 743. Enhanced field screening methods of soil gas in petroleum hydrocarbon contaminated sites. C.S. Chen, C. Tien, C. Kuo

ENV 744. Evaluation of oxidizer hazard in sorbents used to solidify transuranic waste for the waste isolation pilot plant. B.A. Crawford, T. Hayes, J. Lucchini, C. Chancellor, C. Poulos

ENV 745. Development and demonstration of high pressure direct push jet injection for controlled remediation of treatment agents in low-permeability geologic matrices. N.D. Durant, C. Ross, W. Slack

ENV 746. Utilization of multivariate analysis for evaluating geographic material on fluoride removal from water. E. Kim, J. Park, S. Han, Y. Lim, K. Jong, J. Do


ENV 748. Electrokinetic enhanced amendment transport at a contaminated field site. D.M. O’Carroll, A. Chobatouw, J. Gerhard, N. Haad, A. Inglis, A. Nunez Garcia

Section A Moscone Center Hall D

General Posters
S. R. Al-Abed, S. O. Obare, Organizers 6:00 - 8:00


ENV 750. Adsorption of fluoride in soil solids solution using Jamun (Syzygium cumini) seed derived activated carbon. R. Araga, C. Sharma

ENV 751. Fabrication and characterization of surface-patterned thin-film composite membranes. A. Heinz, S.H. Maruf, M. Aghajari, A.R. Greenberg, Y. Ding

ENV 752. Image analysis for assessment of nanomaterial uptake and elimination kinetics. T. Kettal, M. Mortimer, P. Holdon


ENV 754. Caffeine analysis of wastewater using online SPE-LC high resolution mass spectrometry. S. Sopause, P.R. Gardinal

ENV 755. Correlation of chemical composition of wood smoke and diesel exhaust particulate matter with light absorbance and toxicity. K. Kukowski, B.C. Brimch, M. Kopp, M. Mortimer, P. Holdon


ENV 759. Effect of absorber and desorber unit interactions on N-nitrosamine formation during amine-based carbon capture. Z. Wang, Z. Zhang, W. Mitch

ENV 760. Characterization of heavy metal adsorption using precipitates in acid mine water from abandoned metal mine. J. Kim, J. Kim, C. Seo, J. Seo, Y. Kim


ENV 762. Comparison of the persistence of caffeine in constructed wetlands versus conventional wastewater treatment systems. P.R. Alvaro, C. Tipp, M.P. Hurst

ENVR

234-TECH
Section A
Moscone Center
Hall D
Sulfidation of Metal-Based Engineered & Natural Nanomaterials: Implications for Their Fate & Effects in the Environment
Y. Bi, D. Fan, P. G. Tratnyek, P. K. Westerhoff, Organizers
6:00 - 8:00
ENVR 886, Fe²⁺- and sulfidized Fe²⁺-activated persulfate in oxidative degradation of benzoic acid: A comparative study. C. Lee, M. Rayaroth, Y. Chang, Y. Chang
ENVR 887, Withdrawn.
ENVR 888, Controlled evaluation of surface coating effects on silver nanoparticle dissolution. C. Liu, W. Leng, P. J. Volesky
ENVR 889, In situ chemical reduction with Z-ray micrometal ZVI and sulfide and bioaugmentation cultures. J. Freim, M. Lao, J. Harvey, D. Raymond
ENVR 890, Effect of NaBiH₄ on catalytic reduction of p-nitrophenol by sulfidized nanoscale zerovalent iron. S. Bae, S. Gim, H. Kim, K. Hanna
ENVR 891, Preliminary study on wettability alteration of surface of carbonate rocks using SiO₂ nanofluids. D. Wang
ENVR 892, Material and reactivity characterization of iron sulfides and sulfidized zerovalent iron during reductive dechlorination. Y. Lan, E.G. Butler, P.G. Tratnyek
ENVR 893, Abiotic transformation of hexabromocyclododecane by sulfidized nanoscale zerovalent iron: Kinetics, mechanism and influencing factors. D. Li, Y. Zhong, W. Huang, P. Pang
ENVR 894, Effect of aging on reactivity and surface chemistry of sulfidized nanoscale zerovalent iron. S. Ghosal, S. Papajayavel

Advances in Treatment Processes for Metals & Metalloids
Sponsored by GEOC, Cosponsored by ENVR
Contaminants Transport, Uptake & Remediation at Contaminated Sites
Sponsored by GEOC, Cosponsored by ENVR
Environmental Challenges & Solutions in Unconventional Oil & Gas Development
Sponsored by GEOC, Cosponsored by ENVR
Mineral-Water Interface Chemistry
Sponsored by GEOC, Cosponsored by COLL and ENVR

THURSDAY MORNING
Section A
Moscone Center
Hall 2007
Pesticides in Surface Water: Monitoring, Modeling, Mitigation, Risk Assessment & Regulation
Financially supported by Compliance Services International (CSI)
K. S. Geh, D. Young, Organizers
J. Gan, Y. Luo, Organizers, Presiding
8:00 Introductory Remarks.
8:05 ENVR 895, Withdrawn.
8:25 ENVR 896, Examination of the relative contributions of aqueous and dietary uptake to pyrethroid accumulation in organisms at different aquatic trophic levels. J. Freim, J. Giddings
8:45 ENVR 897, Toxicity of pesticide mixtures in the USGS national water quality network. M. Shoda, W.W. Stone
9:25 ENVR 899, Electrolytic degradatation of pesticides in surface water using an activated carbon-based electrode system. Y. Li, W. Mitch
9:45 Intermission.
10:25 ENVR 901, Environmental fate of double-stranded RNA (dsRNA) biopesticides from RNA interference (RNAi)-based crop protection. K.M. Parker, M. Santer
10:45 ENVR 902, Mechanistic insight into remediation and isomerization of methyl-parathion by mixed metal oxide nanocomposites: aqueous solutions. S. Merlos, K. Nick, C.C. Perry, M.M. Allard
11:05 ENVR 903, Chirality in metathetical can be used to date groundwater in agricultural settings. C.P. Rice, C.J. Hapeman, G. McCarty
11:25 ENVR 904, Implications of sorption nonlinearity on the environmental fate of penconazole. D.T. Kuo
11:45 Concluding Remarks.

Section B
Moscone Center
3008
Advances in Resource Recovery & Conservation in Water Systems
Sponsored by AGFD, CSI and GEOC
S. Ahuja, L. M. Blaney, T. Boyer, Organizers, Presiding
8:00 Introductory Remarks.
8:05 ENVR 905, Nanowire-modified 3D electrode enabling low-voltage electrotoprocation for water disinfection. Z. Huo, H. Hu, X. Xie
8:25 ENVR 906, Synthesis and microstructural characterization of novel manganese oxide coated titanium dioxide ceramic nanofiltration membranes for dye in wastewater filtration. J.K. Machania, J. He, L. Achola, S.L. Suba
8:45 ENVR 907, Beneficial reuse of produced water from oil & gas fields. W. Stringfellow, M. Carmonito, N. Spycher, P.S. Nuo
9:05 ENVR 908, Anaerobic digestion of renewable materials for biogas production: Experimental stage to the field. O.O. Aduke
9:25 ENVR 909, Microbial fuel cells integrate energy production with nutrient management in municipal wastewater plant sidestreams. K. Omer, C. Costo, J. Mihalic, J.A. Cunningham
9:45 Intermission.
10:05 ENVR 910, Comparative transcriptomic analysis of lipid producing yeast Cryptococcus albidus. S. Vajpay, K. Chandran
10:25 ENVR 911, Silver recovery from laundry wastewater: Role of regeneration and detergent chemistry. T. Nawat, S. Sargupta
10:45 ENVR 912, Selective removals of heavy metals (Pb²⁺, Cu²⁺, and Cd²⁺) from wastewater by gelation with alginate for effective metal recovery. F. Wang, X. Li
11:05 ENVR 913, Withdrawn.
11:25 ENVR 914, Effect of ion composition and electrode properties on electrochemical lithium ion recovery process for application in various source waters. S. Kim, J. Yoon
11:45 Concluding Remarks.

Section C
Moscone Center
3002
Contaminants in Urban & Coastal Estuarine Ecosystems
Environmental Processes Affecting Chemical Availability & Toxicity
Sponsored by AGRO
K. L. Armburst, P. Saranjampour, R. A. Sutton, Organizers, Presiding
8:00 ENVR 915, Multiple stressors in coastal ecosystems: Measurements responses across biological scales and generations in model estuarine organisms. S. Brander
8:25 ENVR 916, Metal oxide nanomaterials in marine and estuarine organisms. C. Torres, G.N. Cherr
8:50 ENVR 917, Photolysis and phototoxicity of dibenzothiophene and 4,6-diethyl dibenzothiophene in marine ecosystems. P. Saranjampour, E.N. Vebrosky, K.L. Armburst
9:15 ENVR 918, Phototoxic toxicological impacts of 2,6-dichloro-4-nitrotrione (Dichloran) in varying salinities on Myndia beryllina (Inland Silversides). E.N. Vebrosky, K.L. Armburst
9:40 Intermission.
10:00 ENVR 919, Binding of antibacterial agents at FelIlI oxyhydroxides surfaces: Experimental study and modeling. K. Hanna, R. Marsac, S. Martin, J. Boly
10:25 ENVR 920, Withdrawn.
10:50 ENVR 921, Synthesis, occurrence and risk assessment of chlorinated by-prod-ucts of benzophenone-type UV filters in various aquatic matrices. M.M. Tsui, K. Ng, S. Chiu, T. Ma, Y. Ho, T. He, M.H. Lam, R. Kong, P.K. Lam, M.B. Murphy

Section D
Moscone Center
3004
Novel Membrane Materials & Processes for Water Purification
D. Jasby, B. Mi, Organizers, Presiding
8:30 ENVR 923, Structurally and synthetically designed next generation novel polyamides for reverse osmosis application. A. Roy
9:00 ENVR 924, High-performance thin-film composite forward osmosis membranes based on self-assembled amphiphilic block copolymer supporting substrate. Y. Hu, X. An
9:20 ENVR 925, Membrane surface modification by graphene oxide: In situ regeneration for ultimate fouling control. C. Finnerty, E. Garcia, C. Evans, R. Kalfit, B. Mi
10:00 Intermission.
10:50 ENVR 928, Engineering of thin-film composite polyamide membranes with silver nanoparticles during their fabrication process for providing antibiofouling properties. Z. Liu, L. Q., Y. Hu
Environmental Challenges & Solutions in Unconventional Oil & Gas Development
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Contaminants Transport, Uptake & Remediation at Contaminated Sites
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Operando Methodology at the Junction between Fundamental Chemistry & Chemical Engineering
Engineering Operando to Larger Scale: Shaped Catalysts & Process Control
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Elucidation of Mechanisms & Kinetics on Surface
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THURSDAY AFTERNOON

Section A
Moscone Center
2007
Pesticides in Surface Water: Monitoring, Modeling, Mitigation, Risk Assessment & Regulation
Financially supported by Compliance Services International (CSI)
J. Gan, K. S. Goh, Organizers
Y. Luo, D. Young, Organizers, Presiding
1:00 Introductory Remarks.
1:05 ENVR 973. Modeling spray drift and runoff related inputs of pesticides to receiving water. X. Zhang, K.S. Goh
1:25 ENVR 974. Pesticide uptake into runoff evaluated at the field scale. D. Young
1:45 ENVR 975. Improved modeling approaches for pesticide registration evaluation for surface water protection in California. Y. Luo, X. Xina, N. Singhasekaran, X. Dong, K.S. Goh
2:25 Intermission.
Section B
Moscone Center 3008
Advances in Resource Recovery & Conservation in Water Systems
Cosponsored by AGFD, CEI and GEOC
A. Avila
Moscone Center 3008
Advances in Resource Recovery & Conservation in Water Systems
Cosponsored by AGFD, CEI and GEOC
A. Avila
Introductory Remarks.

Section C
Moscone Center 3002
Contaminants in Urban & Coastal Estuarine Ecosystems

Temporal & Spatial Assessment of Persistent-Bioaccumulative Chemicals in Coastal & Urban Waters
Cosponsored by AGRO
J. Meador, D. Mu, R. A. Sutton, Organizers, Presiding
1:00 ENVR 990. Legacy and emerging organic contaminants in urban estuaries: A global perspective. E. Zeng, L. Lu
1:30 ENVR 991. Survey of legacy pollutants in margin sediments of central San Francisco Bay. D. Yee, P. Troubridge, J.A. Davis
2:20 ENVR 993. Characterizing the advection of Polychlorinated Biphenyls (PCBs) from the sediments in the Lower Duwamish Waterway Superfund site. J. Apell, D. Shull, C. Grimmett, P.M. Gschwandtner
2:45 Intermission.
3:05 ENVR 994. Perspectives on environmental monitoring and bioaccumulation of contaminants of emerging concern in urban coastal systems. B.W. Brooks, S. Burkt, S. Hadlaid, C. Scott
4:00 ENVR 996. Tracking contaminant trends, spatial patterns, and pathways over 20 years of fish contaminant monitoring in San Francisco Bay. J. Sun, J.A. Davis, P. Troubridge
4:50 ENVR 998. Tracking contaminant trends, spatial patterns, and pathways over 20 years of fish contaminant monitoring in San Francisco Bay. J. Sun, J.A. Davis, P. Troubridge
5:15 ENVR 999. Application of non-targeted analysis approaches to assess input of organic micropollutants to San Francisco Bay. L. Ferguson, K. Odnevahl, N. Dal etal., R.A. Sutton, J. Sun
2:00 ENVR 1000. Antifouling properties of molybdenum disulfide and graphene oxide for water filtration. I. Alain, L. Guiney, M. Hersan, I. Cheow
4:40 ENVR 1004. Fabrication of microfiltration membrane to mitigate organic fouling during water treatment. E. Igbiniuen
4:00 ENVR 1005. Membrane surface charge and wettability parallel tuning through layer by layer assembly for antifouling. X. Zhu, B. Chen

Section E
Moscone Center 3016
Applications of Cheminformatics & Computational Chemistry in Environmental Health

C. Gruke, A. J. Williams, Organizer, Presiding
1:00 ENVR 1006. Estimation of hydrolysis rate constants for carbamates. J. Patel, C. Tatses-Stevens, E.J. Weber
1:50 ENVR 1008. Using experimental data and computational chemistry to predict reactive sites of polycyclic aromatic hydrocarbons. I. Titalev, D. Walden, O. Ogba, P. Cheong, S.L. Simovich
2:40 Intermission.
3:25 ENVR 1011. Structure-based understanding of binding affinity and mode of estrogen receptor α agonists and antagonists. S. Lee, M.G. Barron
4:15 ENVR 1013. OPERA: A QSAR tool for physiochemical properties and environmental fate predictions. K. Mansouri, C. Gruke, R. Judson, A.J. Williams
4:40 Panel Discussion.

Section F
Moscone Center 3021
AquaPhotochemistry
Cosponsored by CEI
E. L. Cates, B. P. Chaplin, J. Choe, J. Liu, D. Shuai, W. Zhang, Organizers
W. Zhang, Presiding
1:00 Introductory Remarks.
1:05 ENVR 1024. Oxidant and disinfection byproduct production of a point-of-use electrochemical water treatment device. J. Bliss, D.A. Reckhow
1:25 ENVR 1025. Classification and quantification of electrochemical oxidants generating electrodes with chlorine generation. J. Kim, J. Yoon
1:45 ENVR 1026. Redox-mediated electrochemical methods for water purification and environmental remediation of nitroaromatics and contaminants of emerging concern. X. Su, L. Bromberg, J.M. Barazesh, C. Prasad, J. Work, D. Schlick
2:00 ENVR 1027. Using electrocatalytic oxidation as pretreatment to improve As(III) removal by reverse osmosis membranes. Y. Hou, B. Mayer

2:45 Intermission.

3:00 ENVR 1029. Highly active palladium nanoparticles for catalytic reduction of N-nitrosodimethylamine. H. Ma, T. Wu, C. Na


3:40 ENVR 1031. Reduction of waterborne contaminants on graphitic carbon nitride supported Pd-based catalysts. T. Ye, D. Shuai

4:00 ENVR 1032. Catalytic destruction of emerging contaminants by structured palladium-based materials. X. Min, Y. Wang

Section I

Moscone Center

Bioprocesses for Engineered Nanomaterials in Soil-Plant Systems

J. C. White, B. Xing, Y. Yang, Organizers, Presiding

1:00 ENVR 1033. pH-Dependent surface chemistry of biologically and environmentally relevant ligands on oxide nanoparticles. V.H. Grassian

1:25 ENVR 1034. Withdrawn.

1:50 ENVR 1035. Effect of humic acid on the remediation of hexabromocyclododecane contaminated soil using an integrated nano-bio system. Y. Chang, T.T. Le, H. Yoon, J. Kim


2:55 Intermission.

3:10 ENVR 1038. Assessing the risk of engineered nanomaterials in the environment using the nanoFate model. A.A. Keller, K. Ganner


4:00 ENVR 1040. Impacts of copper oxide nanoparticles on soil enzyme activities across diverse ecosystems. A.J. Margenot, S.J. Parikh


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