

ENVR

DIVISION OF ENVIRONMENTAL CHEMISTRY

G. Coimbatore, *Program Chair*

SOCIAL EVENTS:
Division Dinner: Tue
Social Hour: Tue

BUSINESS MEETINGS:
Division Open Business Meeting: Mon
Executive Committee Meeting: Sun

SUNDAY MORNING

Section A

Moscone Convention Center -- Room 206

Catalysis for Water Purification and Remediation

Cosponsored with AEESP

M. Reinhard, *Organizer*

T. J. Strathmann, *Organizer, Presiding*

8:30 — Introductory Remarks.

8:40 —**1.** Metal ion-catalyzed transformation of tetracycline antibiotics. **C. H. Huang**, W -R. Chen

9:10 —**2.** Horseradish peroxidase mediated reactions of estrogenic phenols: Quantifying the impact of enzyme-substrate binding. **L. M. Colosi**, Q. Huang, W. J. Weber Jr.

9:30 —**3.** Comprehensive kinetic model of laccase-catalyzed oxidation of aqueous phenol. **S. Kurniawati**, J. A. Nicell

9:50 —**4.** Application of iron oxide-coated ceramic membranes combined with ozone for the control of disinfection by-products in drinking water. **B. S. Karnik**, S. H. Davies, M. J. Baumann, S. J. Masten

10:10 — Intermission.

10:30 —**5.** Perchlorate formation via heterogeneous catalytic ozone reactions on chloride-coated sand. **N. Kang**, T. A. Anderson, W. A. Jackson

10:50 —6. Surfactant templated sol-gel synthesis of mesoporous TiO₂ photocatalysts and their application in the destruction of cyanobacterial toxins. **H. Choi**, M. G. Antoniou, A. A. de la Cruz, J. A. Shoemaker, D. D. Dionysiou

11:10 —7. Application of mesoporous TiO₂ photocatalysts for the degradation of microcystin-LR: The degradation pathway. **M. G. Antoniou**, H. Choi, A. A. de la Cruz, J. A. Shoemaker, D. D. Dionysiou

11:30 —8. Titanium dioxide photocatalysis of brevetoxin. **K. E. O'Shea**, N. Ben Abderrazik

Section B

Moscone Convention Center -- Room 202/204

After Oil What?

Cosponsored with PRES

G. Coimbatore and G. Coimbatore, *Organizers, Presiding*

8:30 — Introductory Remarks.

8:40 — The Power of the Sun.

9:40 — Discussion.

10:00 — Intermission.

9. Withdrawn.

10. Withdrawn.

10:15 —11. Solar power. **W. Kohn**

10:40 —12. Wind and water power. **N. S. Lewis**

Section C

Moscone Convention Center -- Room 200

Ferrates: Synthesis, Properties and Applications in Water and Wastewater Treatment

Cosponsored with INOR

V. K. Sharma, *Organizer*

K. Bouzek, *Presiding*

8:30 — Introductory Remarks.

8:40 —13. Recent advances in Fe(VI) salt syntheses and dissemination for water treatment. **S. L. Licht**

9:10 —14. Electrochemical ferrate(VI) synthesis: The role of the electrolyte composition in iron anode

dissolution kinetics. **K. Bouzek**, Z. Macova

9:35 —15. Electrochemical ferrate(VI) synthesis: Effect of anode material and electrolyte composition. **Z. Macova**, K. Bouzek

10:00 — Intermission.

10:15 —16. Ferrate (VI) in a molten NaOH-KOH system. **J. Hives**, M. Benova, K. Bouzek, V. K. Sharma

10:40 —17. Synthesis of potassium ferrate and sodium ferrate. **L. Ninane**, N. Kanari, C. Criado, C. Jeannot, O. Evrard, N. Neveux

11:05 —18. Preparation of potassium ferrate by the wet oxidation method using waste potash lye. **C. Jiang**, C. Liu

11:30 —19. Synthesis of ferrates(VI) by ozonation. **Y. D. Perfiliev**, E. Benko, D. Pankratov, V. K. Sharma, S. Dedushenko

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Spósito

Aqueous Speciation and Mineral Formation

Sponsored by GEOC, Cosponsored with COLL, and ENVR

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Past, Current, and Future Directions of Single Walled Carbon Nanotubes

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

SUNDAY AFTERNOON

Section A

Moscone Convention Center -- Room 200

Catalysis for Water Purification and Remediation

Catalytic and Photocatalytic Oxidation Processes

Cosponsored with AEESP

T. J. Strathmann and M. Reinhard, *Organizers*

C -H. Huang, *Presiding*

1:30 — Introductory Remarks.

1:35 —20. Photocatalytic oxidation of pharmaceutical compounds: Kinetics and pathways. **H. Tungudomwongsa**, T. Mill, J. O. Leckie

1:55 —21. Visible light-mediated TiO₂ photocatalytic degradation of fluoroquinolone antibacterial agents. **T. Paul**, P. L. Miller, T. J. Strathmann

2:15 —22. Photocatalytic water purification: Kinetics and mechanism for degradation of sulfa drug micropollutants. **L. Hu**, P. Flanders, P. L. Miller, T. J. Strathmann

2:35 —23. Enhanced photocatalytic degradation of select toxic industrial chemicals and materials (TICs and TIMs). **I. Hua**, I. C. Poyer, J. C. Bezares-Cruz, A. Nienow, C. T. Jafvert

2:55 — Intermission.

3:10 —24. Photocatalytic oxidation of arsenic(III): Evidence of hydroxyl radicals. **S. O. Pehkonen**, A. Ray, V. K. Sharma, P. Dutta

3:30 —25. Polyoxometalate as an electron-transfer catalyst and a photocatalyst in water treatment. **W. Choi**

3:50 —26. Effects of TiO₂ nanostructure and various ceramic supports. **S. Ciston**, L. Chen, G. Li, M. Hausner, R. M. Lueptow, K. A. Gray

4:10 —27. Removal of 1,2-dichlorobenzene from air in a photonic-crystal-titania photocatalytic reactor. **K. T. Valsaraj**, M. Ren, R. Ravikrishna

Section B

Moscone Convention Center -- Room 202/204

Microbially Mediated Redox Dynamics in the Shallow Subsurface

Cosponsored with AEESP

E. E. Roden, *Organizer*

F. W. Picardal, *Organizer, Presiding*

1:30 —28. Fe(II) adsorbed on minerals and microbes. **M. M. Scherer**, P. Larese-Casanova

1:50 —29. Anaerobic Fe(II) bio-oxidation in sedimentary environments. **K. A. Weber**, E. J. Miller, B. E. Wintle, D. Saidou, L. A. Achenbach, J. D. Coates

2:10 —30. Inhibition of NO₃⁻ and NO₂⁻ reduction by microbial Fe(III) reduction. **A. J. Coby**, D. C. Cooper, F. W. Picardal

2:30 —31. Iron and redox properties of clayey soils and sediments in the control of agrochemicals. **V. Ernstsén**

2:50 —32. Role of organically-complexed iron(II) species in the transformation of 1,3,5-trinitro-1,3,5-triazine (RDX) in anoxic aquifer systems. **D. Kim**, T. J. Strathmann

3:10 —33. Redox changes during alternating saturated and unsaturated conditions below an artificial recharge pond. **J. Greskowiak**, H. Prommer, G. Massmann, G. Nützmann, A. Pekdeger

3:30 —34. Microbially mediated, nitrate-dependent U(IV) oxidation: Mechanisms and controls. **J. M. Senko**

3:50 —35. Re-oxidation of uranium precipitated during long-term iron/uranium reducing conditions. **J. Komlos**, R. K. Kukkadapu, J. M. Zachara, P. R. Jaffe

Section C

Moscone Convention Center -- Room 206

Ferrates: Synthesis, Properties and Applications in Water and Wastewater Treatment

Cosponsored with INOR

V. K. Sharma, *Organizer*

M. D. Johnson, *Presiding*

1:30 —36. Aqueous high oxidation state iron: Generation and reactivity. **D. E. Cabelli**, V. K. Sharma

1:55 —37. Identification and characterization of aqueous ferryl(IV) ion. **O. Pestovsky**, A. Bakac

2:20 —38. Ferrate(VI) oxidation of nitrogenous compounds. **M. D. Johnson**, B. J. Hornstein, J. R. Wischnewsky

2:45 —39. Kinetics and product identification of oxidation by ferrate(VI) of water and aqueous nitrogen-containing solutes. **J. D. Carr**

3:10 — Intermission.

3:25 —40. Recent advances in Fe(VI) charge transfer. **S. L. Licht**

3:50 —41. Insight into the aqueous chemistry of ferrate(VI) and ferrate(III): A frozen solution Mössbauer study. **Z. Homonnay**, N. Smith, V. K. Sharma, P. A. Szilagy, E. Kuzmann

4:15 —42. New view on the thermal behavior of K_2FeO_4 in static air. L. Machala, **R. Zboril**, V. K. Sharma, J. Filip, O. Schneeweiss

4:40 —43. Absorption of NO and CO by the alkaline solutions of sodium ferrate. **D. A. Golovko**, I. V. Goncharova, I. D. Golovko, E. A. Belyanovskaya, F. I. Danilov

5:05 —44. Systematic studies of high oxidation states of iron in Moscow University. **S. K. Dedushenko**

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Spósito

Adsorption-Desorption at Particle Surfaces

Sponsored by GEOC, Cosponsored with COLL, and ENVR

SUNDAY EVENING

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Carbon Nanostructure Research: Products, Perspectives, and Spinoffs of Smalley's Influence

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

MONDAY MORNING

Section A

Moscone Convention Center -- Room 202/204

Catalysis for Water Purification and Remediation

Catalytic Reduction Processes

Cosponsored with AEESP

T. J. Strathmann, Organizer

M. Reinhard, Organizer, Presiding

8:30 — Introductory Remarks.

8:35 —**45.** Metal-mediated perchlorate reduction. **M. M. Abu-Omar**

9:05 —**46.** Catalytic reduction by hydrogen of perchlorate in water. **K. D. Hurley, J. R. Shapley**

9:25 —**47.** UV-catalytic reduction of perchlorate. **M. D. Gurol**

9:45 —**48.** Fouling and regeneration of Pd-based catalysts used for nitrate reduction. **B. P. Chaplin, J. R. Shapley, C. J. Werth**

10:05 — Intermission.

10:20 —**67.** Catalytic reduction in the water phase: Long-term performance of Pd-catalysts. **C. Schueth, F.-D. Kopinke**

10:40 —**50.** Selecting a catalyst for the reduction of N-nitrosodimethylamine in water using hydrogen gas as the reductant. **M. G. Davie, J. R. Shapley, M. Reinhard**

11:00 —**51.** Catalytic reduction of nitrosamine disinfection by-products with porous nickel catalysts. **A.**

J. Friedrich, T. J. Strathmann, J. R. Shapley

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Modeling and Management

B. Jansson, D. Mackay, K. C. Jones, D. Muir, M. Petreas, G. Zhang, L. Birnbaum, K. Kannan, S. Tanabe, and N. Yamashita, *Organizers*

M. MacLeod, *Presiding*

R. L. Lipnick, *Organizer, Presiding*

8:30 — Introductory Remarks.

8:40 —**52.** The Stockholm Convention: Science-based international decision-making or political fix? **M. Hyman**

9:20 —**53.** Incorporating overall persistence and long-range transport potential as PBT criteria into the new chemicals legislation of the EU. **M. Scheringer**, M. MacLeod, M. Matthies, C. Schulte

9:40 —**54.** Regulatory initiatives: The Washington State PBT Rule example. **D. G. Graham**

10:00 — Intermission.

10:20 —**55.** Spatial distribution of hexachlorocyclohexanes (HCHs) in the atmosphere from Bohai Sea to the Arctic area. **X. Ding**, X. Wang, Z. Xie, C. Xiang, B. Mai, L. Sun, G. Sheng, J. Fu, E. Y. Zeng

10:40 —**56.** Trans-Pacific atmospheric transport of PBTs from Asia to the Pacific northwest of the U.S.A. in spring 2004. **T. Primbs**, D. Schmedding, G. Wilson, C. Higginbotham, S. L. Simonich

11:00 —**57.** Modeling diel variability in concentrations of semi-volatile organic chemicals in air. **M. MacLeod**, M. Scheringer, H. Pody, K. Hungerbühler

11:20 —**58.** Evaluating potential PBT substances: The fractional approach to toxic effects (FATE) model. J. Arnot, **D. Mackay**, E. Webster

Section C

Moscone Convention Center -- Room 206

Ferrates: Synthesis, Properties and Applications in Water and Wastewater Treatment

Cosponsored with INOR

V. K. Sharma, *Organizer*

N. J. D. Graham, *Presiding*

8:30 —59. Ferrate(VI) oxidation of recalcitrant organic compounds. **V. K. Sharma**, N. Noorhasan-Smith, S. K. Mishra, N. Nesnas

8:55 —60. Advances in the use of ferrate(VI) as a coagulant and oxidant in the treatment of water and sewage. **J -Q. Jiang**

9:20 —61. Evaluating the coagulation performance of ferrate: A preliminary study. **N. J. D. Graham**, K. T. Tien, J. Jiang

9:45 —62. Evaluation of ferrate(VI) as an alternative conditioner for wastewater biosolids. **H. Kim**, V. K. Sharma, L. L. McConnell, A. Torrents, P. Millner, C. P. Rice, M. Ramirez

10:10 — Intermission.

10:25 —63. Preparation and properties of encapsulated potassium ferrate for oxidative remediation of trichloroethylene contaminated groundwater. **B. L. Yuan**, M. R. Ye, H. C. Lan

10:50 —64. Ferrate(VI) oxidation of 2-chloroethyl ethyl sulfide. **B. M. O'Brien**, V. K. Sharma

11:15 —65. Oxidation of nonylphenol using ferrate(VI) in water. **M. Yu**, G. Park, H. Kim

11:40 —66. Removal of estrogenic compounds in dairy waste lagoons by ferrate(VI): Oxidation/coagulation. **J. R. Remsberg**, C. P. Rice, K. Hyunook

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Spósito

Adsorption-Desorption at Particle Surfaces

Sponsored by GEOC, Cosponsored with COLL, and ENVR

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Applications and Modifications of SWNTs Which Have Economic Impact

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

MONDAY AFTERNOON

Section A

Moscone Convention Center -- Room 202/204

Catalysis for Water Purification and Remediation

Catalytic Reduction Processes

Cosponsored with AEESP

T. J. Strathmann and M. Reinhard, *Organizers*

J. R. Shapley, *Presiding*

1:30 — Introductory Remarks.

1:35 —49. Multi-electron transfer reduction of organohalide pollutants at heme functionalized nanocrystalline TiO₂ interfaces. **G. J. Meyer**

1:55 —68. From laboratory study to full-scale application: Treating groundwater for TCE removal using catalyzed reductive dechlorination. **M. Reinhard**, G. D. Hopkins, J. Cunningham, C. A. Lebrón

2:15 —69. Engineering Pd-on-Au bimetallic nanoparticle catalysts for aqueous-phase trichloroethene remediation. M. O. Nutt, K. N. Heck, P. J. J. Alvarez, **M. S. Wong**

2:35 —70. Application of catalytic reduction by palladium and formic acid: Bench-scale treatment of groundwater contaminated with chlorinated aliphatic hydrocarbons, nitroaromatic compounds and nitrate. **A. Agrawal**, M. N. Goltz, K. Pallavi, D. L. Phillips, M. D. Welling, M. R. Stevens

2:55 — Intermission.

3:15 —71. Making the liquid-phase catalytic hydrodechlorination of tetrachloroethylene safer. **N. C. Concibido**, T. Okuda, W. Nishijima, M. Okada

3:35 —72. Effect of solvent composition on the palladium-catalyzed hydrodehalogenation of tetrachlorobenzene and pentachlorophenol. **H -Y. Wee**, J. A. Cunningham

3:55 —73. Effect of solvents in water on electrocatalytic dechlorination of 2-Cl BP at a palladium modified granular-graphite electrode. **Y. Fang**, S. R. Al-Abed

4:15 —74. Catalytic dechlorination of 2-Cl BP in sediments and water-solvent systems by Fe/Pd bimetal. **Y. Fang**, S. R. Al-Abed

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Modeling and Management

R. L. Lipnick, B. Jansson, K. C. Jones, D. Muir, M. Petreas, G. Zhang, L. Birnbaum, K. Kannan, S. Tanabe, and N. Yamashita, *Organizers*

M. Scheringer, *Presiding*

D. Mackay, *Organizer, Presiding*

1:30 —75. Assessing B(ioaccumulation) of commercial chemicals. **F. A. Gobas**, J. Arnot

2:00 —76. Big picture: New concepts and method development for B. **A. V. Weisbrod**

2:30 —77. Can temporal trends of legacy POPs in Arctic biota help infer pathways and future trends of new chemicals? **D. Muir**, B. Braune, E. Sverko, C. Butt, S. A. Mabury

3:00 — Intermission.

3:20 —78. Distribution of organochlorine pesticides in the South China Sea: Implications for continental outflow and air-sea exchange. **G. Zhang**, J. Li, S -H. Qi, H -R. Cheng, W. Xu

3:40 —79. Observation of organochlorine pesticides at Mt. Waliguan, a GAW background station in Northwest China: Implications for long-range atmospheric transport. **H -R. Cheng**, G. Zhang, J. Li, X. Liu, S -H. Qi

4:00 —80. Passive sampling of atmospheric deposition of persistent organic pollutants. **T. Gocht**, G. O. Thomas, K. C. Jones, P. Grathwohl

4:20 —81. Persistent organic pollutants in the ambient air: European regional and local trends. **I. Holoubek**, J. Klanova, V. Shatalov, E. Mantseva, J. Kohoutek, P. Cupr, K. C. Jones, E. Brörström-Lundén

4:40 —82. Persistent and endocrine-disrupting chemicals in indoor dust. **H. M. Hwang**, T. M. Young

Section C

Moscone Convention Center -- Room 206

Ferrates: Synthesis, Properties and Applications in Water and Wastewater Treatment

Cosponsored with INOR

V. K. Sharma, *Organizer*

J -Q. Jiang, *Presiding*

1:30 —83. Heterogeneous photocatalytic reduction of Fe(VI) in UV-irradiated titania suspensions: Effect of ammonia and formic acid. **B. V. Chenay**, V. K. Sharma

1:55 —84. Degradation of di-butyl phthalate in aqueous solution by a combined ferrate and photocatalytic oxidation process. **X. Z. Li**, B. L. Yuan, N. Graham

2:20 —85. Preparation of potassium ferrate for the degradation of tetracycline. **S -F. Yang**, R -A. Doong

2:45 —86. Degradation of cationic surfactant by ferrate(VI). Y. Y. Eng, V. K. Sharma, **A. K. Ray**

3:10 — Intermission.

3:25 —87. Combined process of ferrate preoxidation and activated carbon filtration for upgrading water quality. **J. Ma**, C -J. Li

3:50 —88. Arsenite oxidation by ferrate in aqueous solution. **M. Fan**, N. Li, C -L. Chuang, Y. Shi, J.

Qu

4:15 —89. Enhanced removal of cadmium and lead from water by ferrate preoxidation in the process of coagulation. **J. Ma**, W. Liu

4:40 —90. Use of potassium ferrate for groundwater treatment. **N. Costarramone**, C. Boesinger, X. Dubois, A. Castetbon

5:05 —91. Use of ferrate(VI) in enhancing the coagulation of algae-bearing water: Effect and mechanism study. **W. Liu**, Y. M. Liang

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Sposito

Sorption Modeling

Sponsored by GEOC, Cosponsored with COLL, and ENVR

Recovery from and Prevention of Natural Disasters

Chemical Education and Chemical Safety Issues in the Aftermath of Disasters — Gulf Coast Hurricanes, Mid-west Tornados, and Laboratory Fires

Sponsored by DSTR, Cosponsored with CHAS, CHED, ENVR, GEOC, and SOCED

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Past, Current, and Future Directions of Carbon Nanostructures

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

Undergraduate Research Poster Session: Environmental Chemistry

Sponsored by CHED, Cosponsored with SOCED, and ENVR

MONDAY EVENING

Section A

Moscone Convention Center -- Hall D

Sci-Mix

G. Coimbatore, *Organizer, Presiding*

8:00 - 10:00

149-150, 156, 160, 165, 171, 177, 183, 193, 197, 202, 204, 206, 210-211, 213, 215. See subsequent listings.

TUESDAY MORNING

Section A

Moscone Convention Center -- Room 202/204

Catalysis for Water Purification and Remediation**Novel Treatment Applications**

Cosponsored with AEESP

T. J. Strathmann and M. Reinhard, *Organizers*

S. O. Pehkonen, *Presiding*

8:30 —92. Nanoiron: Reactant or catalyst? **G. V. Lowry**, Y. Liu

8:50 —93. Effects of stabilizers and synthesizing conditions on the reactivity and transportability of Fe-Pd nanoparticles for enhanced dechlorination of trichloroethene. **F. He**, D. Zhao

9:10 —94. Catalytic reduction of trichloroethylene by a new surfactant-stabilized bimetallic nanoscale zero-valent iron from water. **A. Ryu**, S. Han, S. R. Kanel, H. Choi

9:30 —95. Synergistic effect of silicon and nickel ion on the dechlorination of tetrachloroethylene. **C -C. Lee**, R -A. Doong

9:50 — Intermission.

10:05 —96. Nanoporous transition metal phosphate materials for sequestration of redox sensitive contaminants. **D. Wellman**, S. V. Mattigod, G. E. Fryxell, L. N. Clayton, J. N. Glovack, K. E. Parker

10:25 —97. Performance and preparation of Ti/SnO₂-Sb₂O₅ electrode by electrodeposition. **Y. Feng**, H. Ding, W. Zhang, J. Liu

10:45 —98. Effect of inorganic anions on the titanium dioxide-based photocatalytic oxidation of aqueous ammonia and nitrite. **X. Zhu**, M. A. Nanny, E. C. Butler

11:05 —99. Enhanced biodegradation of chloronitrobenzene by zero-valent iron pretreatment. H. Lin, **X. Xu**, J. Feng

Section B

Moscone Convention Center -- Hall D

Persistent, Bioaccumulative, Toxic Chemicals

Perfluoro

R. L. Lipnick, N. Yamashita, B. Jansson, K. C. Jones, D. Mackay, M. Petreas, G. Zhang, L. Birnbaum, and S. Tanabe, *Organizers*
D. Muir and K. Kannan, *Organizers, Presiding*

8:30 — Introductory Remarks.

8:40 —**100.** PFOS/PFOA environmental contamination: What do we know and what remains? **S. A. Mabury**

9:20 —**101.** SPE considerations for UPLC-MS determination of perfluorinated carboxylic acids and perfluoroalkylsulfonates in various matrices. **M. S. Young**, K. Tran

9:40 —**102.** Ultra trace analysis of persistent perfluorinated chemicals in the wet deposition matrixes. **S. Taniyasu**, P. Rostkowski, M. K. So, Y. Miyake, P. K. S. Lam, J. Falandysz, N. Yamashita

10:00 —**103.** Efficient decomposition of perfluoroalkylsulfonates using zero-valent iron in subcritical water. **H. Hori**, Y. Nagaoka, A. Yamamoto, T. Sano, N. Yamashita, S. Taniyasu, S. Kutsuna, I. Osaka, R. Arakawa

10:20 — Intermission.

10:40 —**104.** Modeling perfluorochemical surfactant sorption onto sediment materials: An *a priori* approach. **C. P. Higgins**, R. G. Luthy

11:00 —**105.** Pharmacokinetic behavior of PFOA and PFOS in chickens (*G. gullus*) administered through subcutaneous implantation. **H. Yoo**, K. S. Guruge, C. Sato, N. Yamashita, J. Giesy

11:20 —**106.** Mass balance idea of persistent perfluorinated chemicals in environmental samples using trace level total organic fluorine analysis. **N. Yamashita**, Y. Miyake, S. Taniyasu

11:40 — Discussion.

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Sposito

Particle Structure and Reactivity

Sponsored by GEOC, Cosponsored with COLL, and ENVR

Recovery from and Prevention of Natural Disasters

Characterizing Flood Waters and Flood Sediments Produced by Hurricanes Katrina and Rita: Implications for the Environment, Human Health, and Cleanup

Sponsored by DSTR, Cosponsored with CHAS, CHED, ENVR, GEOC, and SOCED

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Past, Current, and Future Directions of Carbon Nanostructures

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

TUESDAY AFTERNOON

Section A

Moscone Convention Center -- Room 202/204

Environmental Chemistry Awards

Cosponsored with YCC

T. A. Anderson, *Organizer, Presiding*

1:30 — Introductory Remarks.

1:35 —107. Thermally stable porous nanocrystalline TiO₂ photocatalysts prepared by sol-gel method modified with water immiscible room temperature ionic liquid: Synthesis, properties and environmental applications. **H. Choi**, D. D. Dionysiou

2:00 —108. Environmentally benign hardness removal using ion exchange fibers and snowmelt. **J. Greenleaf**, A. K. SenGupta

2:25 —109. Effect of sorbed arsenic species on bacterial reduction of hydrous ferric oxide (HFO). **K. M. Campbell**, D. Malasarn, C. Saltikov, D. Newman, J. G. Herring

2:50 —110. Measurement of fluid-fluid interfacial area in environmental porous media as a function of hysteretic wetting/drying history. **L. Chen**, T. C. G. Kibbey

3:15 — Intermission.

3:30 —111. Thermal enhanced recovery and abiotic degradation of chlorinated solvents in contaminated field samples. **J. Costanza**, K. D. Pennell

3:55 —112. Environmental photochemical kinetics of tetracycline as a function of pH and water hardness. **J. J. Werner**, W. A. Arnold, K. McNeill

4:20 —113. N-nitroso compounds produced in deer mice (*Peromyscus maniculatus*) exposed to

hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX). **X. Pan**, B. Zhang, J. Smith, M. San Francisco, T. A. Anderson, G. P. Cobb

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Perfluoro

D. Mackay, R. L. Lipnick, B. Jansson, K. C. Jones, D. Muir, M. Petreas, G. Zhang, L. Birnbaum, K. Kannan, and S. Tanabe, *Organizers*

S. A. Mabury, *Presiding*

N. Yamashita, *Organizer, Presiding*

1:30 —114. Perfluorocarboxylates in the environment: Can we explain where they come from? **R. C. Buck**, S. H. Korzeniowski, M. H. Russell, W. R. Berti, N. Wang, B. Szostek, C. R. Powley

2:10 —115. Mass balance study of persistent perfluorinated chemicals in human blood. **Y. Miyake**, K. Kannan, M. K. So, S. Taniyasu, P. K. S. Lam, N. Yamashita

2:30 —116. High resolution atmospheric modeling of fluorotelomer alcohols and perfluorocarboxylic acids in the North American troposphere. **G. Yarwood**, S. Kemball-Cook, R. L. Waterland, R. C. Buck, S. H. Korzeniowski, M. H. Russell, M. Keinath, S. T. Washburn

2:50 —117. Model for predicting perfluorinated carboxylates in an Arctic food chain. **J. M. Conder**, R. J. Wenning, R. C. Buck, S. H. Korzeniowski, R. A. Hoke, C. R. Powley, M. H. Russell, R. Gentry, S. T. Washburn

3:10 — Intermission.

3:30 —118. Temporal trends of halogenated organic contaminants in Lake Ontario lake trout from 1979-2004. N. Ismail, K. Pleskach, D. M. Whittle, V. Furdui, E. Reiner, **P. Helm**, S. A. Mabury, C. Marvin, G. Tomy

3:50 — Discussion.

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Spósito

Mineral Dissolution and Biotic Catalysis

Sponsored by GEOC, Cosponsored with COLL, and ENVR

Recovery from and Prevention of Natural Disasters

Characterizing Flood Waters and Flood Sediments Produced by Hurricanes Katrina and Rita: Implications for the Environment, Human Health, and Cleanup

Sponsored by DSTR, Cosponsored with CHAS, CHED, ENVR, GEOC, and SOCED

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Production, Purification, and Properties of Single Walled Carbon Nanotubes

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

WEDNESDAY MORNING

Section A

Moscone Convention Center -- Room 202/204

Digital Resources for Environmental Chemistry

C. K. Larive, *Organizer*

S. E. Manahan, *Organizer, Presiding*

8:30 —119. Analytical Sciences Digital Library: Past, present and future. **T. Kuwana**, S. E. Manahan, A. Carlson

8:50 —120. The Analytical Sciences Digital Library: What are web-based tools for instruction in environmental chemistry? **C. K. Larive**, A. Scheeline

9:10 —121. Web-based green chemistry resource exchange. **J. L. Young**, J. C. Rea, P. T. Anastas

9:30 —122. Greener analytical methods on-line in the National Environmental Methods Index. **J. L. Young**, R. K. Brahma, P. T. Anastas, L. H. Keith

9:50 —123. GEMs: Lessons for building a community centered digital resource. **J. A. Haack**

10:10 —124. View from industry. **F. K. Wood-Black**

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Levels in Abiotic Systems

R. L. Lipnick, B. Jansson, K. C. Jones, D. Mackay, D. Muir, M. Petreas, L. Birnbaum, K. Kannan, S. Tanabe, and N. Yamashita, *Organizers*
 E. G. Stephanou, *Presiding*
 G. Zhang, *Organizer, Presiding*

8:30 — Introductory Remarks.

8:40 —125. Visual perspective for understanding chemical fate, behavior and accumulation within living vegetation. **K. C. Jones**, E. Wild, J. Dent, G. Thomas

9:20 —126. Polybrominated diphenyl ethers in outdoor, indoor and car interior air in Greece. M. Mandalakis, V. Atsarou, **E. G. Stephanou**

9:40 —127. Inventory of sources and environmental releases of polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofurans (PCDF) in the United States for the years 1987, 1995 and 2000. **D. H. Cleverly**

10:00 — Intermission.

10:20 —128. Temporal change of PCDD/Fs contamination in Japanese paddy soils. **N. Seike**, T. Otani

10:40 —129. Vertical profiles of brominated flame retardants, polybrominated diphenyl ethers and hexabromocyclododecane in the sediment core from Tokyo Bay. **T. Isobe**, N. H. Minh, D. Ueno, K. Matsumoto, N. Kajiwara, S. Takahashi, S. Tanabe

11:00 —130. Photochemical degradation of decabrominated diphenyl ether and GC-MS study of the products. **X. Zeng**, S. L. Simonich, D. F. Barofsky

11:20 —131. Persistent organic pollutants in soils from the Czech Republic: Levels, spatial and temporal trends. **I. Holoubek**, J. Klanova, J. Hofman, M. Sanka, R. Vacha, J. Zbiral, P. Cupr

11:40 —132. Passive air sampling technique as a tool for long-term air quality monitoring. **J. Klanova**, P. Cupr, J. Kohoutek, I. Holoubek

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Spósito

Natural Weathering Environments

Sponsored by GEOC, Cosponsored with COLL, and ENVR

Recovery from and Prevention of Natural Disasters

Chemical and Biological Concerns in Post-Katrina New Orleans

Sponsored by DSTR, Cosponsored with CHAS, CHED, ENVR, GEOC, and SOCED

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Future Global Energy Prosperity: The Terawatt Challenge

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

WEDNESDAY AFTERNOON

Section A

Moscone Convention Center -- Room 202/204

Digital Resources for Environmental Chemistry

C. K. Larive, *Organizer*

S. E. Manahan, *Organizer, Presiding*

1:30 —133. Methods and scenarios for utilizing digital resources in the teaching of undergraduate environmental courses for chemistry majors. **L. J. Archer**, M. W. Ducey

1:50 —134. Web-based environmental chemistry course for both on-campus and distributed learning students. **R. D. Foust Jr.**

2:10 —135. Turning techno-savvy into info-savvy: Authentically integrating information literacy into the science curriculum. **M. A. Nanny**, C. Brown, T. J. Murphy

2:30 —136. Web-based green chemistry teaching modules. **M. C. Cann**

2:50 —137. Digital resources for teaching green science and technology to non-technical students. **S. E. Manahan**

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Levels in Abiotic Systems

N. Yamashita, R. L. Lipnick, B. Jansson, D. Mackay, D. Muir, M. Petreas, G. Zhang, L. Birnbaum, and K. Kannan, *Organizers*

I. Holoubek, *Presiding*

K. C. Jones, *Organizer, Presiding*

1:30 — Introductory Remarks.

1:40 —**138.** PBTs in high places: Western U.S. national parks. **L. K. Ackerman**, S. Usenko, K. J. Hageman, D. H. Campbell, D. H. Landers, S. L. Simonich

2:00 —**139.** Quantifying the importance of the atmospheric sink for PCDD/Fs relative to other global loss processes. **R. Lohmann**, E. Jurado, J. Dachs, U. Lohmann, K. C. Jones

2:20 —**140.** Levels and gas-particle distribution of polychlorinated biphenyls in the urban indoor and outdoor atmosphere. M. Apostolaki, S. Koudouri, **E. G. Stephanou**

2:40 —**141.** Sampling and analysis considerations in conducting a pilot survey of levels of dioxins, furans, PCBs and mercury in rural soils of the U.S. **M. E. Schrock**, J. Schaum

3:00 — Intermission.

3:20 —**142.** Photochemical bimolecular processes in ice and snow. **J. Klanova**, N. Matykiewiczova, J. Dolinova, P. Klan

3:40 —**143.** Recent advances in understanding desorption kinetics of hydrophobic compounds. **F. M. Dunnivant**, S. Saalfield, M. Murray, K. Taylor

4:00 —**144.** Determination of Henry's law constants by an internal standard method. **C. Ji**, E. M. Evans

4:20 —**145.** Estimation of organic carbon partitioning coefficients (K_{oc}) and bioconcentration factors (BCF) using EPI Suite (TM). **W. P. Eckel**, J. Tunkel, W. M. Meylan, D. Aronson

4:40 —**146.** Polybrominated diphenyl ethers in the urban atmosphere of Guangzhou, China. **M. Bi Xian**, C. Lai Guo, **E. Y. Zeng**

5:00 — Discussion.

Physical Chemistry of Soil and Aquifer Systems: A Symposium in Honor of Garrison Sposito

Anthropogenic Effects and After-word

Sponsored by GEOC, Cosponsored with COLL, and ENVR

Recovery from and Prevention of Natural Disasters

Industry Response

Sponsored by DSTR, Cosponsored with CHAS, CHED, ENVR, GEOC, and SOCED

SWNTs From Synthesis to Application, From the Lab to the Fab: In Memory of Dr. Richard Smalley

Applications of Single Walled Carbon Nanotubes

Sponsored by PRES, Cosponsored with COLL, ENVR, FUEL, IEC, INOR, ORGN, PHYS, PMSE, POLY, SCHB, and COMSCI

WEDNESDAY EVENING

Section A

Moscone Convention Center -- Hall D

General Papers

G. Coimbatore, *Organizer, Presiding*

6:00 - 8:00

147. Effects of P and Ca on adsorption kinetics and filtration removal of As(V) by AA, GFO and TiO₂.

M. Zhu, X. Meng, J. Hao

148. Occurrence of perfluorinated organic compounds in wastewater treatment plant samples from Kentucky and Georgia, USA. **B. G. Loganathan**, E. Sinclair, K. S. Sajwan, K. Kannan

149. Abraham's solubility descriptors for diazinon. **D. Das**, N. T. Huynh, T. M. Nahir

150. Adsorption of As(III) on mesoporous titania and Ti-containing mesoporous silica molecular sieve.

D. Han, B. Batchelor

151. Advanced oxidation processes of phenolic mixtures. **O. Gimeno**, M. Carbajo, B. Acedo, P. M. Alvarez, J. F. García Araya, E. Rodriguez

152. Arsenic removal using titanium dioxide nanoparticles synthesized with sol-gel methods. **G.**

Jegadeesan, V. Sundaram, H. Choi, D. Dionysiou, S. R. Al-Abed

153. Assessing speciation and release of heavy metals from coal combustion products. **S. R. Al-Abed**,

G. Jegadeesan, P. Pinto

154. Biodegradation of monochlorobenzoate in the wastewater by a *Rhodococcus* strain. **Y. Qi**, L. Zhao

155. Bioaccumulation of heavy metals in fauna and flora obtained in Ijaw area of the Niger Delta of Nigeria. **B. C. Gbaruko**, J. C. Igwe, P. N. Gbaruko, E. Odo

156. Biological reduction kinetics of perchlorate and its effect by pH. **C. Wang**, X. Meng, L. Lippincott

157. Catalytic mineralization of phenolic mixtures: Ozone in the presence of perovskites. M. Carbajo, O. Gimeno, **F. J. Rivas**, F. J. Beltran

- 158.** Cements from rice hull ash I: Synthesis variables. **F. A. Rodrigues**, J. S. Romano
- 159.** Cements from rice hull II: Encapsulation of heavy metals. **F. A. Rodrigues**, R. P. Amorim, M. A. Alves
- 160.** Comparison of metal speciation tools at a Superfund site. **W. Hillwalker**, K. A. Anderson
- 161.** Combination of chlorine-free electrolytic and photochemical methods for sterilization of contaminated waters. **N. N. Barashkov**, M. Raiss El Fenni, D. Eisenberg, S. Eisenberg, L. Lam, B. Hernlem
- 162.** Denitrification of nitrate using bimetallic Ni/Fe nanoparticles. **H. Kang**, T. Li, Z. Xiu, L. Sun, Z. Liu, Z. Jin
- 163.** Effect of low levels of sorbed nonylphenol on phenanthrene sorption and site energy distribution on sediments and kaolinite. L. Wang, Y. Gao, Y. Wu, **H. Sun**, S. Dai
- 164.** Occurrence and biodegradation of NPnEO small metabolites in aquatic environments in Tianjin, China. **H. Sun**, H. Zhai, Y. Yu
- 165.** Effect of organic property acting as a promoter or inhibitor in radical reaction on degradation efficiency of homogeneous catalytic ozonation. **T. Shao-ping**, **L. Wei-ping**, M. Chun-an
- 166.** Treatment of atrazine-contaminated water by Ni/Fe bimetallic system. **T. Shao-ping**, L. Wei-ping, M. Chun-an
- 167.** Effective chemical remediation method for bisphenol A. **R. T. Malecky**, E. Beach, C. P. Horwitz, T. J. Collins
- 168.** Contamination and remediation of lead at shooting range sites. **X. Cao**
- 169.** Development of cellular absorptive tracers (CATs) for a quantitative characterization of the complexity of nanoscale biological systems. **J. Choi**, D. Meldrum, K. P. Saripalli, J.-Y. Lee
- 170.** Effects of Ginkgo Biloba extract on Cu/Zn superoxide dismutase in the liver of senescence accelerated mice. **K. Liu**, Y. Chen, C. Wang, M. Zhang
- 171.** Environmental chemistry and toxicology of fluoroquinolone antibiotics in aquatic systems: Interactions with natural organic matter and effects on photosynthetic organisms. **L. Aristilde**, G. Sposito
- 172.** ECSTM study of arsenic-carbonate complexes. **M -J. Han**, G. P. Korfiatis, C. Christodoulatos, X. Meng
- 173.** Evaluate the characters of leachate from Chinese biosolids blended with different additives. L. Nie, **Z. Xu**
- 174.** Evaluation of Chinese zeolite for ammonia removal. C. Sun, **Y. Cao**
- 175.** Factors controlling the amounts and distribution of bioavailable phosphorus in stream sediments in

an agricultural watershed. **A. R. Hoffman**, D. E. Armstrong, M. R. Penn, R. C. Lathrop

176. Historic analysis of heavy metals concentration in reprocessed amalgamation tailings in Mexico. I. G. Gavilan, E. S. Santos, **A. Gavilán-García**, M. Yarto, R. Rosiles, S. T. Suarez, J. Olmos Sr.

177. Hyperaccumulation of arsenic by sorghum (*Sorghum bicolor*) in soil medium. **N. Haque**, N. Mokgalakab, J. L. Gardea-Torresdey

178. Impacts of biomass characteristics and operational conditions on membrane fouling in a submerged membrane bioreactor. N. O. Yigit, G. Civelekoglu, **M. Kitis**

179. Immobilization of mercury from water and soils by stabilized iron sulfide nanoparticles. **Z. Xiong**, D. Zhao, M. O. Barnett

180. Implications for perfluorochemical ecotoxicology: Inhibition and induction of an efflux transporter in the marine mussel, *Mytilus californianus*. **C. Stevenson**, **L. A. MacManus-Spencer**, T. Luckenbach, R. G. Luthy, D. Epel

181. Imprinted polymers for heavy metal ion removal from wastewater. M. Randhawa, S. A. Ashraf, C. Mercado, M. Chai, **A. Mueller**

182. Initial coagulation study of polymeric and monomeric aluminum species using a coagulant charge analyzer. R. Murphy, A. Hess, **M. Koether**

183. Investigation of Cr(III)-NTA speciation and transformation reactions using capillary electrophoresis. M. E. Mendola, **R. F. Carbonaro**

184. Investigation on the photocatalytic degradation kinetics of reactive brilliant X-3B at different light intensities. **Z. Han**, X. Qi, Y. Zhuang

185. Lead adsorption by functionalized nanospheres. **P. K. Jayaradu**, X. Zhang

186. Mobilization of DNAPL residuals in porous media. **S. Yoon**, M. Y. Corapcioglu

187. Modification of Fenton-like reaction for degradation of TNT-contaminated groundwater. **S -W. Seo**

188. Occurrence and removal of organic sunscreen agents in a wastewater reclamation plant. **W. Li**, C. Guo

189. Occurrence of nonylphenol polyethoxylates in the Yellow River and their degradation. L. Wang, Y. Wu, **Y. Xin**, **H. Sun**

190. Removal of methyl *tert*-butyl ether with modified photo Fenton reaction. **M. Kim**

191. PAHs biodegradation by *Pseudomonas* sp. KM1. **M. Kim**, H -Y. Kim, J -H. Park

192. Pd/Mg bimetallic corrosion cells for dechlorinating PCBs. **S. Agarwal**, S. R. Al-Abed, D. D. Dionysiou

193. Pilot scale reactor for electrochemical dechlorination of model chlorinated contaminants. **S. Agarwal**, S. R. Al-Abed, D. D. Dionysiou

- 194.** Perchlorate reduction using electrochemically activated zero-valent titanium. **C. Lee**, T. A. Kramer
- 195.** Photocatalytic degradation of lindane in potable water systems. **I. Hua**, A. Nienow, J. C. Bezares-Cruz, I. C. Poyer, C. T. Jafvert
- 196.** Photocatalytic degradation of methylene blue using Ag-loaded BiVO₄ catalyst under visible light irradiation. **H. Li**, H. Xu, C. Wu, J. Chu, Y. Yan
- 197.** Predicting relative anaerobic biodegradation rates of fumarate addition to alkylbenzenes. **K. W. Kohler**, J. M. Suflita, M. Nanny
- 198.** Profile analysis of particle-associated polycyclic aromatic hydrocarbons from six sites in a northern city in China. Y. Feng, **G. Shi**, J. Wu, Y. Pei, T. Zhu
- 199.** Quantifying the sorption role of selected volatile organic chemicals on carbon multiwall nanotubes. **Y -H. Shih**, M -S. Li
- 200.** Sorption and desorption kinetics of toluene on organoclays. **Y -H. Shih**, S -M. Chou, C. Lin
- 201.** Quantitative determination of 1,4-dioxane and tetrahydrofuran in groundwater by solid phase extraction GC-MS/MS. **C. W. Isaacson**, J. A. Field, T. K. Mohr
- 202.** Radioisotope and metals' analysis of two Lake Michigan sediment cores. **C. Contreras**, G. F. Peaslee, C. Avery, P. DeYoung, N. L. Hoogeveen, R. Rediske, U. Khadka
- 203.** Rate constants for the reactions of hydroxyl radical with several fluoroethers by the relative rate method. **E. W. Wilson Jr.**, W. A. Hamilton, H. R. Mount, W. B. DeMore
- 204.** Reductive transformation of carbon tetrachloride by sulfide-treated goethite. **H. Shao**, E. C. Butler
- 205.** Removal of copper, nickel and zinc from stormwater using low cost adsorbents. **C. C. van Lienden**, H. M. Hwang, T. Young
- 206.** Removal of heavy metals from water with forest-based materials. **J. D. McSweeney**, R. M. Rowell, G. C. Chen, T. L. Eberhardt, S -H. Min
- 207.** Size distribution and chemical properties of urban paved road dust in several Chinese cities. **X. Chen**, J. Wu, Y. Feng, T. Zhu
- 208.** Sorption and desorption characteristics of atrazine and naphthalene in soils. Y -G. Lee, S -Y. Chung, **J -H. Park**
- 209.** Study on ozone generation from H₂S and NH₃ removal by pulsed corona discharge. **J. J. Ruan**, Y. Shi, W. L. Pan
- 210.** Transformation of pharmaceutical pollutants by disinfection processes: Kinetics and reaction pathway of the aqueous chlorination of cimetidine. **J. M. Buth**, W. A. Arnold, K. McNeill
- 211.** Treatment of PAHs and PCBs using sulfate radical-based oxidation processes. **A. Rastogi**, S. Al-

Abed, D. D. Dionysiou

212. Verifying the presence of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) in bacon fat through high resolution NMR spectroscopy. **S. M. Abernathy**, D. Maxwell

213. Utilizing 3D fluorescence's red-shift cascade to monitor microbial degradation of aged petroleum. **J. Sinski**, J. Exner, A. New

214. Non-lethal samples predict organic contaminant concentrations in marine fish. **R. Heltsley**, W. G. Cope, D. H. Adams

215. Prozac elicits spawning in native freshwater mussels. **R. Heltsley**, W. G. Cope, R. Bringolf, C. Eads, D. Shea

Section B

Moscone Convention Center -- Hall D

Catalysis for Water Purification and Remediation

Poster Session

Cosponsored with AEESP

M. Reinhard, *Organizer*

T. J. Strathmann, *Organizer, Presiding*

6:00 - 8:00

216. Effects of pumice source and particle size on catalytic oxidation of natural organic matter by iron-coated pumice and hydrogen peroxide. S. S. Kaplan, **M. Kitis**

217. Use of grafting materials as catalysts to improve the flocculating efficiency of *Plantago psyllium* in textile wastewater treatment. **R. Srinivasan**, A. Mishra

218. Service life of Ti-coated SnO₂-Sb₂O₅ with interlayer anodes. **H. Ding**, Y. Feng, W. Zhang, J. Liu

219. Performances of a full-scale combined Fe/C reduction and A/O process for treatment of chloronitrobenzene manufacture wastewater. H. Xu, **X. Xu**

220. Bio-catalysis for the continuous removal of 4-chloroaniline by aerobic granular sludge. **L. Zhu**, X. Xu, W. Luo, N. Zhang

Section C

Moscone Convention Center -- Hall D

Microbially Mediated Redox Dynamics in the Shallow Subsurface

Poster Session

Cosponsored with AEESP

F. W. Picardal and E. E. Roden, *Organizers*

G. Coimbatore, *Presiding*

6:00 - 8:00

221. Degradation of chlorinated ethenes in flow-through mesocosms simulating constructed wetlands: Effect of vegetation on biogeochemical processes. R. Parthasarathy, C. L. Smith, S. J. Tritschler, **A. Agrawal**

222. Degradation of groundwater contaminated with chlorinated ethenes in a constructed wetland: Seasonal effects on biodegradation processes. **C. L. Smith**, P. Schlater, Y. Mohamud, A. Agrawal

223. Kinetics of iron oxide reduction by *Geobacter sulfurreducens*. L. H. MacDonald, **P. R. Jaffe**

224. Microbially mediated Fe(II) removal from acidic coal mine drainage. **W. D. Burgos**, J. M. Senko, M. A. Bruns

225. Organic carbon's influence on redox and iron and sulfur cycling in acid mine drainage formation under saturated and unsaturated water flow. **J. D. Jenkins**, J. Silverstein

Section D

Moscone Convention Center -- Hall D

Persistent, Bioaccumulative, Toxic Chemicals

Poster Session

R. L. Lipnick, B. Jansson, K. C. Jones, D. Mackay, D. Muir, M. Petreas, G. Zhang, L. Birnbaum, K. Kannan, S. Tanabe, and N. Yamashita, *Organizers*
G. Coimbatore, *Presiding*

6:00 - 8:00

226. Comparison of organochlorine compound concentrations in colostrum and mature milk. **L. Palkovicova**, Z. Yu, B. Drobna, J. Petrik, A. Kocan, T. Trnovec, I. Hertz-Picciotto

227. Effects of prenatal PCB exposure on birth weight in eastern Slovakia. **D. Sonneborn**, H -Y. Park, J. Petrik, A. Kocan, L. Palkovicova, T. Trnovec, D. Nguyen, I. Hertz-Picciotto

228. Effects of prenatal PCB exposure on thymus size in neonates in eastern Slovakia. **H -Y. Park**, I. Hertz-Picciotto, J. Petrik, A. Kocan, T. Trnovec

229. Degradation mechanism of phthalate ester by heterogeneous photocatalysis at nanometer TiO₂ pillared montmorillonite. **T. An**, X. Ding, G. Li, X. Nie, G. Sheng, J. Fu

230. Rapid method development for BDEs in twelve diverse human exposure assessment media using the concept of core analytical tools. **K. D. Andrews**, J. R. Thorn, M. F. Misita, M. G. Nishioka, N. S.

Tulve, R. C. Fortmann

- 231.** Chemical and stable carbon isotope composition of indoor particulate-bound polycyclic aromatic hydrocarbons (PPAHs) source. L. Zhang, **Z. Bai**, Y. You, J. Wu, T. Zhu
- 232.** Biodegradation of dimethyl phthalate (DMP) under anoxic conditions. **W. Donglei**, Z. Ping, Q. Mahmood
- 233.** Elemental mercury balance of a San Francisco Bay dominant tidal plant species, *Salicornia virginica*. **P. G. Green**, **J. Jensen**
- 234.** Congener profiles of polybrominated biphenyls, -dibenzo-*p*-dioxins and -dibenzofurans as impurities in technical preparations of polybrominated diphenyl ether. **N. Hanari**, K. Kannan, Y. Miyake, T. Okazawa, P. R. S. Kodavanti, N. Yamashita
- 235.** Dechlorane Plus in the Niagara River: Temporal trend in archived suspended sediments from 1980 to 2002. E. Reiner, G. Ladwig, **P. Helm**, C. Marvin
- 236.** Polybrominated diphenyl ethers, polybrominated biphenyls and polybrominated dibenzo-*p*-dioxins and furans in seafood samples purchased from Chinese markets. **Q. Jiang**, Y. Miyake, N. Hanari, N. Yamashita, P. K. S. Lam
- 237.** Stability of Hg-thiol and other metal-thiol complexes in the presence of oxidants. **H. Hsu-Kim**
- 238.** X-ray fluorescence (XRF) as a screening tool for brominated compounds in consumer products. **C. Li**, H. Romine, M. Petreas
- 239.** Oceanic deep water formation as a sink of persistent organic pollutants. **R. Lohmann**, E. Jurado, J. Dachs, M. Q. Pilson
- 240.** Waste plastics as a source of novel pollutants. **K. Saido**, S -Y. Chung, S. Yada, N. Ogawa, Y. Kodera
- 241.** Nonionic surfactant effect on the PAHs degradation and biofilm formation during surfactant enhanced bioremediation. **Y. Seo**, P. L. Bishop
- 242.** Identifying polycyclic aromatic hydrocarbon contaminant sources using passive sampling devices. **G. J. Sower**, K. A. Anderson
- 243.** Emerging contaminants: Analysis of biocides and corrosion inhibitors in wastewater treatment plants using liquid chromatography tandem mass spectrometry. S. Kargaki, K. Mylona, A. Kouvarakis, S. A. Pergantis, **E. G. Stephanou**
- 244.** PBDEs and organochlorines in farmed and wild grouper (*Epinephelus fuscoguttatus*) from Lampung Mariculture area, Indonesia. **A. Sudaryanto**, N. Kajiwara, S. Takahashi, P. Hartono, I. Muawanah, K. Omori, S. Tanabe
- 245.** Comparative evaluation of six surrogate surfaces for collecting dry deposition of polycyclic aromatic hydrocarbons. **H. Wang**, X. Wang
- 246.** Partitioning of polycyclic aromatic hydrocarbons between sediments from Yellow River and their

porewaters. **J. Xu**, Y. Yu, P. Wang, S. Dai

247. Influence of combination state on treatment efficiency of pyrene-contaminated soil by Fenton oxidation. **Q. Yan**, H. Sun

248. Research on environmental fate of phenanthrene in Lanzhou Reach of Yellow River. **L. Zhang**, S. Dai, J. Xu

249. Applications of Markov Model to the environmental fate evaluation of phenanthrene in Lanzhou Reach of Yellow River. **L. Zhang**, S. Dai, J. Xu

THURSDAY MORNING

Section A

Moscone Convention Center -- Room 202/204

Understanding and Controlling Biofouling in Aquatic Systems

Cosponsored with AEESP

S. L. Walker, *Organizer*

E. M. Hoek, *Organizer, Presiding*

8:30 —250. Role of microbial biofilms in the fouling of surfaces. **J. W. Costerton**

9:10 —251. Localized bacterial biofilm formation as a diffusion mediated process. **M. E. Parent**, D. Velegol

9:35 —252. Role of divalent cations in the deposition kinetics of *Pseudomonas aeruginosa* on quartz surfaces. **A. J. de Kerchove**, M. Elimelech

10:00 — Intermission.

10:15 —253. Role of solution chemistry on the adhesion kinetics of freshwater and marine bacteria. **S. L. Walker**, G. Chen

10:40 —254. Evaluation of bacterial pathogen and non-pathogen migration in model subsurface environments. F. Castro, **N. Tufenkji**, G. Faubert, C. Madramootoo

11:05 —255. EPS biofouling on RO/NF membranes. **A. S. Kim**, H. Chen, R. Yuan

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Biotic Effects and Exposure

M. Petreas, R. L. Lipnick, B. Jansson, K. C. Jones, D. Mackay, D. Muir, G. Zhang, K. Kannan, and N. Yamashita, *Organizers*

L. Birnbaum and S. Tanabe, *Organizers, Presiding*

8:30 — Introductory Remarks.

8:40 —**256.** Health effects of brominated flame retardants (BFRs). **L. Birnbaum**

9:20 —**257.** Gene expression profile associated with organochlorine contaminants in the liver of common minke whales. **S. Niimi**, H. Iwata, M. Imoto, M. X. Watanabe, T. Kunisue, E -Y. Kim, K. Nakayama, G. Yasunaga, Y. Fujise, S. Tanabe

9:40 —**258.** Effects of dioxins and related compounds on hepatic cytochrome P450 and thyroid hormone in pigs from an Indian open waste dumping site. **M. X. Watanabe**, T. Kunisue, H. Iwata, A. Subramanian, S. Tanabe

10:00 — Intermission.

10:20 —**259.** Assessing exposure to polybrominated diphenyl ethers, PBDEs. **M. N. Lorber**, D. H. Cleverly

10:40 —**260.** Depuration of PBDEs and PCBs from breast milk during lactation in California first-time mothers. K. Hooper, J. She, M. Sharp, R. Gephart, E. Silver, B. Leslie, **A. Holden**

11:00 —**261.** Routes of human exposure to PCBs in Anniston, Alabama. **M. H. Hermanson**, G. W. Johnson, D. O. Carpenter

11:20 —**262.** Distribution and placental transfer of PCBs and their metabolites (OH-PCBs) in eastern Slovakia birth cohort. **J -S. Park**, Å. Bergman, L. Linderholm, M. Athanasiadou, M. J. Charles, A. Kocan, J. Petrik, B. Drobna, T. Trnovec, I. Hertz-Picciotto

11:40 —**263.** Elevated levels of dieldrin are associated with Parkinson's disease. **K. D. Pennell**, J. M. Hatcher, W. M. Caudle, J. R. Richardson, M. Gearing, A. I. Levey, D. P. Jones, G. W. Miller

Recovery from and Prevention of Natural Disasters

Local and State Government Response

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THURSDAY AFTERNOON

Section A

Moscone Convention Center -- Room 202/204

Understanding and Controlling Biofouling in Aquatic Systems

Cosponsored with AEESP

E. M. Hoek, *Organizer*

S. L. Walker, *Organizer, Presiding*

1:30 —264. Microbial life at engineered interfaces: Genesis and control. **H. Ridgway**

2:10 —265. Direct observation of microbial adhesion to polymeric membranes. **E. M. Hoek, A. Subramani**

2:35 —266. Biofouling of reverse osmosis membrane: Mechanisms and performance. **M. Herzberg, M. Elimelech**

3:00 — Intermission.

3:15 —267. Use of aqueous ozone in biofilm control. **M. D. Gurol, V. Zlotopolski**

3:40 —268. Effects of localized, low-voltage pulsed electric fields on inhibiting the adhesion of *Pseudomonas aeruginosa*. **R. E. Pérez-Roa, D. R. Noguera, D. T. Tompkins, C. A. Grimes, M. Paulose, M. A. Anderson**

4:05 —269. Pilot study on understanding membrane fouling in wastewater reclamation. **P. Xu, J. Drewes, C. Bellona**

Section B

Moscone Convention Center -- Room 200

Persistent, Bioaccumulative, Toxic Chemicals

Biotic Effects and Exposure

R. L. Lipnick, L. Birnbaum, B. Jansson, K. C. Jones, D. Mackay, D. Muir, G. Zhang, K. Kannan, S. Tanabe, and N. Yamashita, *Organizers*

A. Subramanian, *Presiding*

M. Petreas, *Organizer, Presiding*

1:30 — Introductory Remarks.

1:40 —270. Organochlorines in human breast milk in Chennai and Kolkata mothers, India. **A. Subramanian, T. Kunisue, M. Ohtake, M. Someya, P. Charaborty, S. Tanabe**

2:00 —271. Assessing human exposure to polycyclic aromatic hydrocarbons by urinary biomonitoring. **Z. Li, L. C. Romanoff, D. A. Trinidad, N. Hussain, R. S. Jones, E. N. Porter, L. L. Needham, D. G. Patterson Jr., A. Sjodin**

2:20 —272. Polybrominated diphenyl ethers in biota and sediments from the Pearl River estuary, South China Sea. **L. Xiao Jun, X. Cai Hong, M. Bi Xian**

2:40 —273. Concentrations of PBDEs in the Scottish environment. **M. Russell, L. Webster, P.**

Walsham, E. J. Dalgarno, C. F. Moffat

3:00 — Intermission.

3:20 —274. Polybrominated diphenyl ether (PBDE) concentrations in wild avian eggs from San Francisco Bay from 2000 to 2003. **J. She**, A. Holden, M. Tanner, T. L. Adelsbach, S. E. Schwarzbach, J. L. Yee, C. W. Thompson, K. Hooper

3:40 —275. Brominated flame retardants in the environment of Indonesia. **A. Sudaryanto**, T. Isobe, S. Takahashi, S. Tanabe

4:00 —276. Measurements of PCBs and their metabolites (OH-PCBs) in blubber and liver of harbor seals from California and Maine. **J -S. Park**, O. Kalantzi, D. Kopec, M. Petreas

4:20 —277. Levels and distribution of organohalogen compounds in blue mussels (*Mytilus edulis*) from coastal waters of Korea. **K. Ramu**, N. Kajiwara, T. Isobe, S. Takahashi, E -Y. Kim, B -Y. Min, S -U. We, S. Tanabe

4:40 —278. Contamination status of PBDEs in the Asia-Pacific region: A review of recent studies on marine mammals, fish/shellfish, human breast milk and terrestrial environments including waste dumping sites. **S. Takahashi**, T. Isobe, A. Sudaryanto, K. Ramu, T. Kunisue, N. H. Minh, T. B. Minh, A. Subramanian, N. Kajiwara, D. Ueno, S -I. Sakai, S. Tanabe

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