February 15, 2004

Environmental Science & Technology

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PBDEs *in the* Environment and *in* People

Hexachlorocyclohexanes in the North American Atmosphere

In Vitro and in Vivo Antiestrogenic Effects of Polycyclic Musks

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THE AMERICAN
CHEMICAL SOCIETY

Environmental Modeling

Environmental Measurements Methods

An assay based on different organic substrates in multiwell plates, in which soil was spiked with sulfachloropyridazine and bacterial communities showed increased tolerance to this antibiotic, demonstrates how sulfonamide antibiotics might affect the structure of soil bacterial communities.

1154
Use of Passive Samplers To Mimic Uptake of Polycyclic Aromatic Hydrocarbons by Benthic Polychaetes

Amy E. Vinturella, Robert M. Burgess, Brent A. Coull, Kimberly M. Thompson, and James P. Shine

Passive samplers made of low-density polyethylene can estimate the extent of uptake of polycyclic aromatic hydrocarbons by benthic polychaetes (*Nereis virens*) in contaminated marine sediments.

■ 1161
Bilevel Thresholding of Sliced Image of Sludge Floc

C. P. Chu and D. J. Lee

A combined algorithm, including Otsu's and maximum convex perimeter methods, is recommended to determine the bilevel thresholding value of sludge floc's image.

Remediation and Control Technologies

1170
Surfactant-Enhanced Air Sparging in Saturated Sand

Heonki Kim, Hyo-Eun Soh, Michael D. Annable, and Dong-Jin Kim

The extent of air intrusion and air saturation during air sparging is investigated as a function of an applied surfactant.

1176
A Hierarchical Modeling Approach for Estimating National Distributions of Chemicals in Public Drinking Water Systems

Song S. Qian, Andrew Schulman, Jonathan Koplos, Alison Kotros, and Penny Kellar

A Bayesian hierarchical model was developed for supporting the U.S. EPA's Six-Year Review of Existing National Primary Drinking Water Regulations.

1183
Treatment of Saline Wastewater Contaminated with Hydrocarbons by the Photo-Fenton Process

José Ermírio F. Moraes, Frank H. Quina, Cláudio Augusto, O. Nascimento, Douglas N. Silva, and Osvaldo Chiavone-Filho

This work reveals the technical viability of the photochemically enhanced Fenton process in the treatment of wastewaters contaminated with hydrocarbons in a high-salinity medium.

■ 1188
Remediation of Methyl Iodide in Aqueous Solution and Soils Amended with Thiourea

Wei Zheng, Sharon K. Papiernik, Mingxin Guo, and Scott R. Yates

Using thiourea, a nitrification inhibitor, as a chemical remediation reagent may abiotically transform the fumigant, MeI, in aqueous solution and soil and reduce fumigant atmosphere emission.

1195
Removal of Chlorophenols Using Industrial Wastes

Ajay K. Jain, Vinod K. Gupta, Shubhi Jain, and Suhas

A number of low-cost adsorbents prepared from industrial wastes are investigated and found suitable for the removal of phenols from aqueous solutions.

1201
Removal of PCDD/Fs from Flue Gas by a Fixed-Bed Activated Carbon Filter in a Hazardous Waste Incinerator

Aykan Karademir, Mithat Bakoglu, Fatih Taspinar, and Savas Ayberk

Removal of PCDD/F congeners and homologues by a fixed-bed activated carbon column in a hazardous waste incinerator is evaluated.

1208
Effects of Separate Urine Collection on Advanced Nutrient Removal Processes

J. A. Wilsenach and M. C. M. Van Loosdrecht

Urine separation decreases the total nitrogen effluent concentration, allows primary sedimentation without worsening denitrification, and increases the treatment capacity of existing advanced wastewater treatment plants.

1216
Approach to Highly Efficient Dechlorination of PCDDs, PCDFs, and Coplanar PCBs Using Metallic Calcium in Ethanol under Atmospheric Pressure at Room Temperature

Yoshiharu Mitoma, Taizo Uda, Naoyoshi Egashira, Cristian Simion, Hideki Tashiro, Masashi Tashiro, and Xiaobo Fan

With ethanol acting as both solvent and accelerator, nearly 100% detoxification of PCDDs, PCDFs, and coplanar PCBs can be achieved by stirring for 24 hours.

1221
Metribuzin Degradation by Membrane Anodic Fenton Treatment and Its Interaction with Ferric Ion

Qiquan Wang, Emily M. Scherer, and Ann T. Lemley

Weak interaction of metribuzin and several other triazine/triazinone herbicides with ferric ion greatly slows their degradation by hydroxyl radicals during membrane anodic Fenton treatment.

1228
Start-up of Autotrophic Nitrogen Removal Reactors via Sequential Biocatalyst Addition

Kris Pynaert, Barth F. Smets, Daan Beheydt, and Willy Verstraete

Sequential addition of nitrifying and anaerobic sludge to a biofilm reactor under controlled nitrogen load can bring about high nitrogen losses via oxygen-limited autotrophic nitrification–denitrification.

1236
Enhanced Reduction of Cr(VI) by Direct Electric Current in a Contaminated Clay

Sibel Pamukcu, Antoinette Weeks, and J. Kenneth Wittle

The influence of low-level direct electric current to enhance the in situ reduction of hexavalent chromium with ferrous iron is examined in kaolinite clay.

Sustainability Engineering and Green Chemistry

■ 1242
Multilevel Cycle of Anthropogenic Copper

T. E. Graedel, D. van Beers, M. Bertram, K. Fuse, R. B. Gordon, A. Gritsinin, A. Kapur, R. J. Klee, R. J. Lifset, L. Memon, H. Rechberger, S. Spatari, and D. Vexler

Comprehensive extraction-to-discard cycles for copper are presented for 61 countries, 9 regions, and the planet.

■ 1253
Exploratory Data Analysis of the Multilevel Anthropogenic Copper Cycle

T. E. Graedel, M. Bertram, A. Kapur, B. Reck, and S. Spatari

Statistical approaches are used to provide the first coordinated multilevel analysis of the stocks and flows of a material resource.

Correspondence and Rebuttal

1262
Comment on "Biomagnification Study on Organochlorine Compounds in Marine Aquaculture: The Sea Bass (*Dicentrarchus labrax*) as a Model"

V. Zitko

1263
Response to Comment on "Biomagnification Study on Organochlorine Compounds in Marine Aquaculture: The Sea Bass (*Dicentrarchus labrax*) as a Model"

Roque Serrano, Angela Simal-Julián, Elena Pitarch, Félix Hernández, Inmaculada Varó, and Juan C. Navarro

Additions and Corrections

1264
Perfluorooctanesulfonate and Related Fluorinated Hydrocarbons in Mink and River Otters from the United States.

Kurunthachalam Kannan, John Newsted, Richard S. Halbrook, and John P. Giesy

■ Supporting Information is available free of charge via the Internet at http://pubs.acs.org.