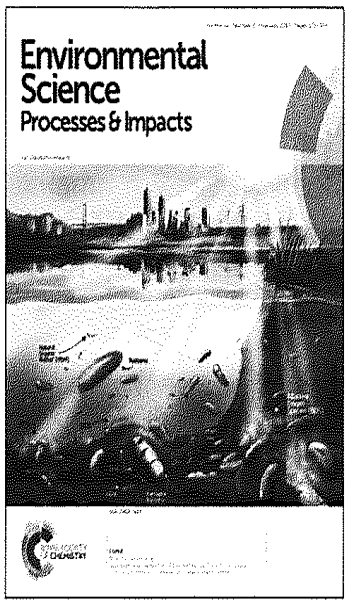
IN THIS ISSUE

ISSN 2050-7887 CODEN ESPICZ 16(2) 171–354 (2014)



Cover
See Alicia A. Taylor *et al.*, pp. 194–202.
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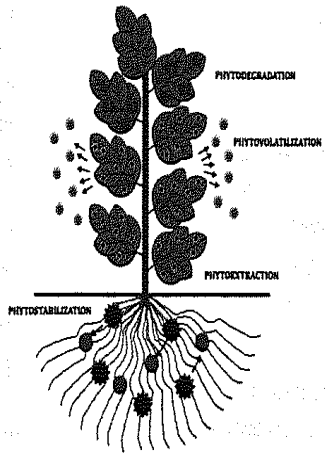
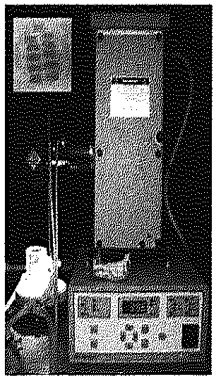
CRITICAL REVIEW



PAPERS



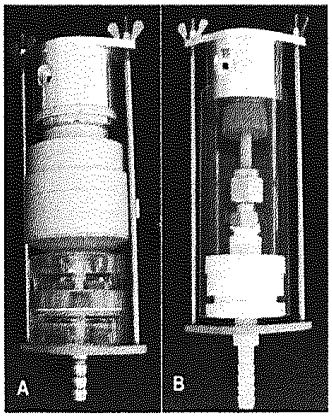
Solar simulator used for disinfection experiments with inset of coated α-Fe_2O_3 quartz slides

203

Evaluation of a novel personal nanoparticle sampler

Yue Zhou,* Hammad Irshad, Chuen-Jinn Tsai, Shao-Ming Hung and Yung-Sung Cheng

This work investigated the performance in terms of collection efficiency and aspiration efficiency of a personal sampler capable of collecting ultrafine particles (nanoparticles) in the occupational environment.

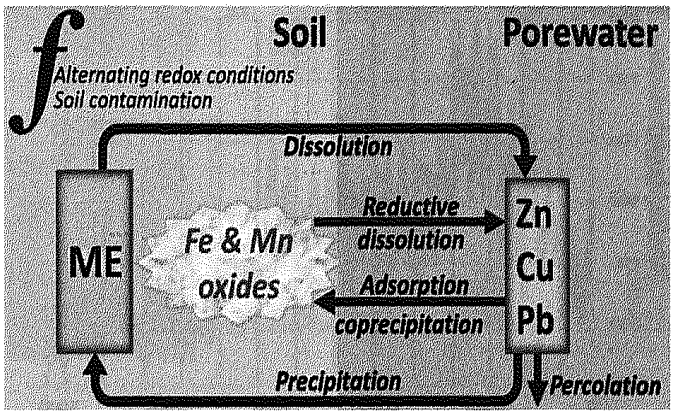


211

Leaching potential of metallic elements from contaminated soils under anoxia

Ramona Balint,* Gheorghe Nechifor and Franco Ajmone-Marsan

The alternation of redox cycles may play a major role in the release, leaching and redistribution of metallic elements from contaminated soils with respect to oxidizing and reducing conditions alone.

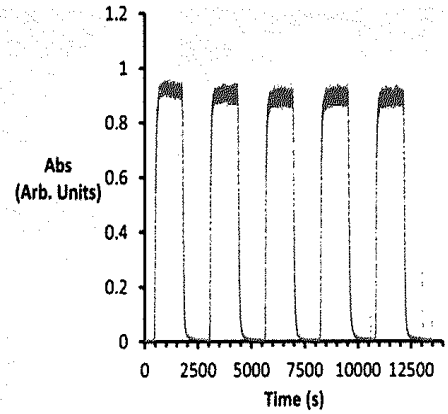


220

Automated method for determining the flow of surface functionalized nanoparticles through a hydraulically fractured mineral formation using plasmonic silver nanoparticles

Samuel J. Maguire-Boyle, David J. Garner, Jessica E. Heimann, Lucy Gao, Alvin W. Orbaek and Andrew R. Barron*

Plasmonic silver nanoparticles offer a high degree of data reliability and statistics for the mobility through mineral formations.

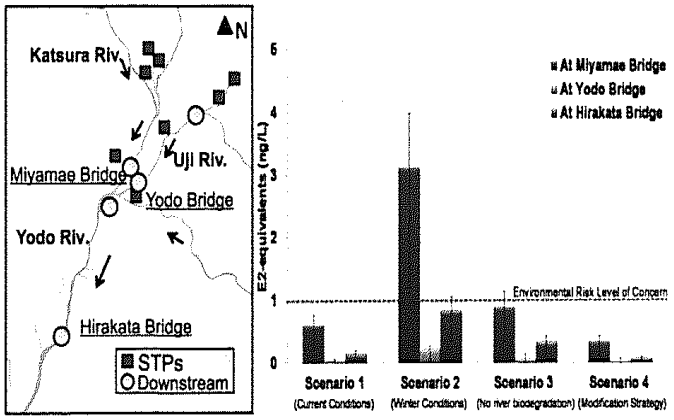


232

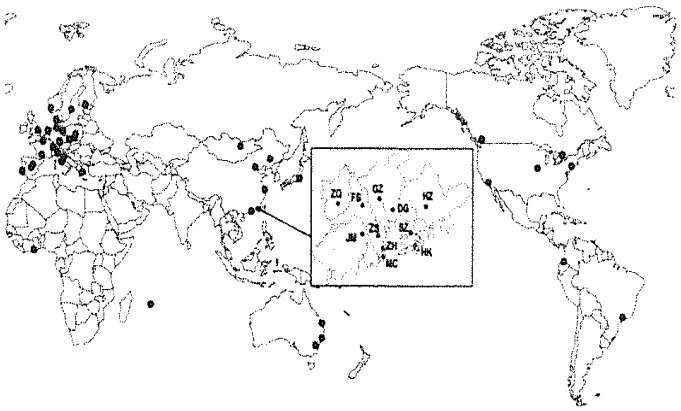
Elevated risk from estrogens in the Yodo River basin (Japan) in winter and ozonation as a management option

Vimal Kumar,* Seiya Hanamoto, Andrew C. Johnson, Naoyuki Yamashita, Norihide Nakada and Hiroaki Tanaka

Use of the ozonation process as a tertiary treatment in winter could prevent the endocrine disruption risk along the Yodo River.



239

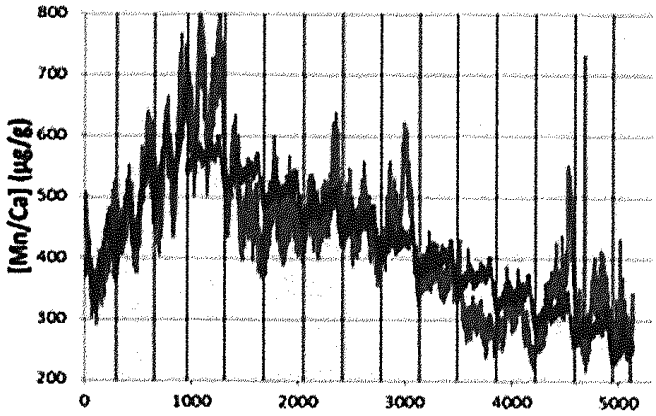


Health impact assessment of exposure to fine particulate matter based on satellite and meteorological information

Hak-Kan Lai,* Hilda Tsang, Thuan-Quoc Thach and Chit-Ming Wong

Air pollution in China, especially in the Pearl River Delta (PRD) region, has drastically increased in recent years.

247



Improving data resolution and statistical rigor in the analysis of bivalve shells as environmental archives

W. Aaron Shoults-Wilson,* Lynne Seymour, Jason M. Unrine, Jason M. Wisniewski and Marsha C. Black

Graph showing average Mn concentrations from bivalve shell annuli (red) and linear model including seasonality (blue). Autoregression models including seasonality decreases model error.

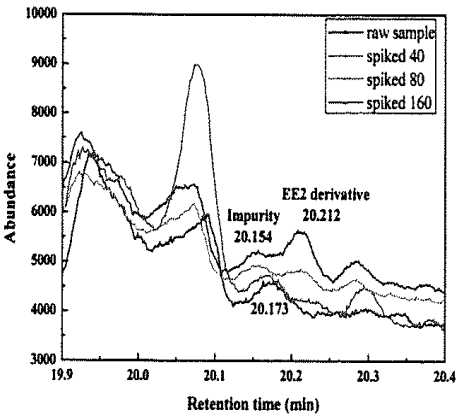
256

Evaluation of methods for analysis of lead in air particulates: an intra-laboratory and inter-laboratory comparison

James M. Harrington,* Clay M. Nelson, Frank X. Weber, Karen D. Bradham, Keith E. Levine and Joann Rice

The updated NAAQS features much lower limits for lead in total suspended particulates, which are more accurately assessed using ICP-MS.

262



Occurrence and removal of free and conjugated estrogens in wastewater and sludge in five sewage treatment plants

Yifeng Xu, Nan Xu,* Neville R. Llewellyn and Huchun Tao*

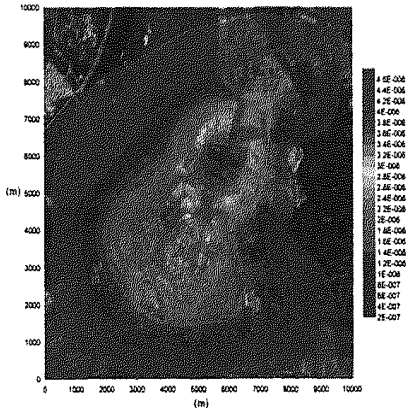
Compared to the rather low predicted concentration with the excretion model and the interlaboratory analysis with LC-MS/MS, overestimation of EE2 concentration with GC-MS could be due to the presence of impurities like tetracosanic acid in wastewater.

271

Underestimated public health risks caused by overestimated VOC removal in wastewater treatment processes

Junchen Yang, Kun Wang,* Qingliang Zhao,* Likun Huang, Chung-Shin Yuan, Wei-Hsiang Chen and Wen-Bin Yang

This study investigated the uncontrolled release of volatile organic compounds (VOCs) from wastewater treatment plants and estimated the cancer risks to the public upon chronic inhalation exposure.

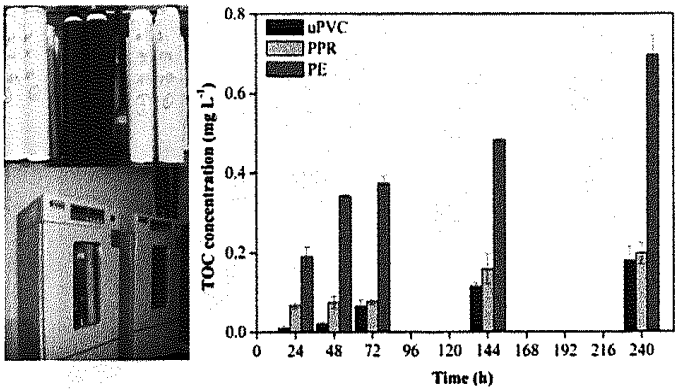


280

Investigation of organic matter migrating from polymeric pipes into drinking water under different flow manners

Ling Zhang, Shuming Liu* and Wenjun Liu

An investigation of polymeric pipes shows that they are capable of releasing organic matter into drinking water.

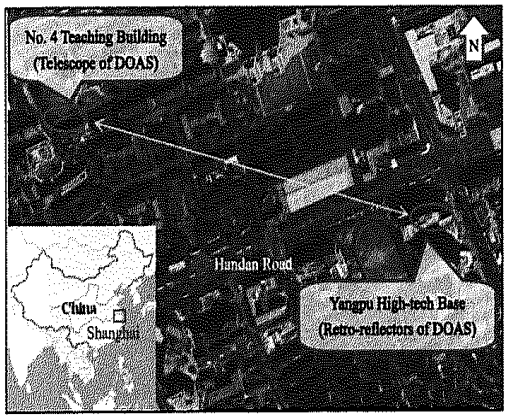


291

Urban atmospheric formaldehyde concentrations measured by a differential optical absorption spectroscopy method

Xiang Li, Shangshang Wang, Rui Zhou and Bin Zhou*

In this study a differential optical absorption spectroscopy (DOAS) method was used to monitor formaldehyde (HCHO) concentrations in Shanghai ambient air at a research station in Fudan University.

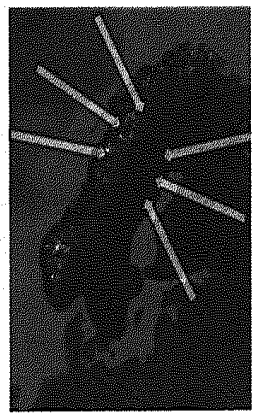


298

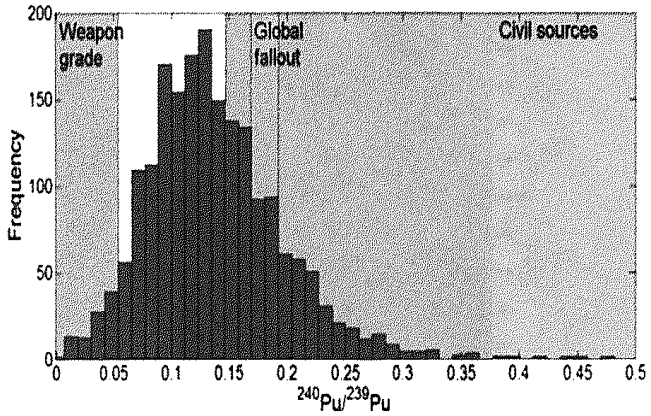
Atmospheric deposition of persistent organic pollutants and chemicals of emerging concern at two sites in northern Sweden

Seth Newton,* Terry Bidleman, Magnus Bergknut, Jacinthe Racine, Hjalmar Laudon, Reiner Giesler and Karin Wiberg

Legacy persistent organic pollutants (POPs) and chemicals of emerging concern contaminate remote arctic and subarctic areas *via* long range atmospheric transport followed by deposition.



306

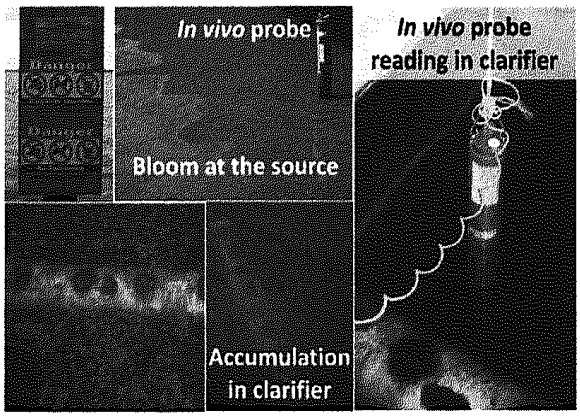


LA-ICP-MS for Pu source identification at Mayak PA, the Urals, Russia

S. Cagno,* K. Hellemans, O. C. Lind, L. Skipperud, K. Janssens and B. Salbu

Information on Pu in environmental samples is traditionally based on the determination of the $^{240+239}Pu$ activity *via* alpha spectrometry (AS). LA-ICP-MS can provide information on the $^{240}Pu/^{239}Pu$ ratio by re-analyzing AS planchettes, allowing distinction between weapons-grade Pu, civil sources or global fallout.

313

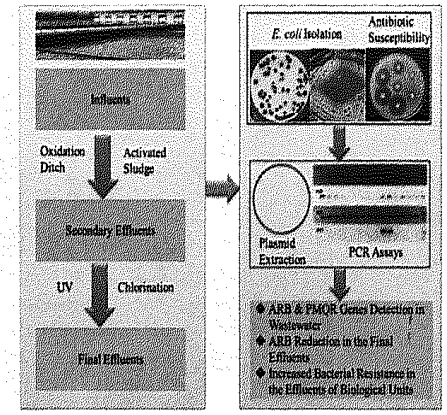


Application of *in vivo* measurements for the management of cyanobacteria breakthrough into drinking water treatment plants

Arash Zamyadi,* Sarah Dorner, Mouhamed Ndong, Donald Ellis, Anouka Bolduc, Christian Bastien and Michèle Prévost

Systematic application of *in vivo* probes to monitor cyanobacterial cells at various water treatment stages in full-scale plants, and adjust treatment.

324

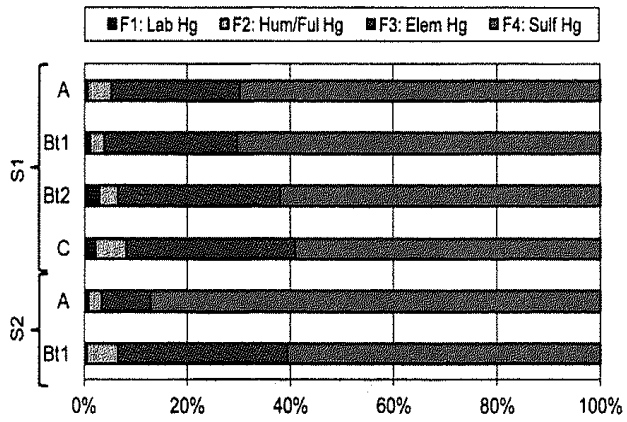


Antibiotic resistance, plasmid-mediated quinolone resistance (PMQR) genes and *ampC* gene in two typical municipal wastewater treatment plants

Hao-Chang Su, Guang-Guo Ying,* Liang-Ying He, You-Sheng Liu, Rui-Quan Zhang and Ran Tao

The disinfection processes (UV and chlorination) could significantly reduce the number of resistant bacteria.

333



Total mercury, organic mercury and mercury fractionation in soil profiles from the Almadén mercury mine area

Rodolfo Fernández-Martínez and Isabel Rucandio*

Soil profiles located in the mining district of Almadén were investigated for total Hg, organic Hg fraction and Hg distribution by selective sequential extraction.

Dissolution of the metal sensitizers Ni, Be, Cr in artificial sweat to improve estimates of dermal bioaccessibility

Aleksandr B. Stefaniak,* Mathew G. Duling, Laura Geer and M. Abbas Virji

Artificial sweat extraction to determine masses of sensitizing ions may provide more accurate estimates of bioaccessibility relative to those dissolved by chemical-specific reactants.