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NEWS

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News

Mike Sharpe provides a summary of the latest environmental news, literature and legislation.

FOCUS ON ASIA/PACIFIC ENVIRONMENTAL SCIENCE

EDITORIAL

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Balance between economic growth and environmental protection: sustainability through better science

Eddy Y. Zeng, Jing You and Hefa Cheng

Eddy Zeng, Jing You and Hefa Cheng introduce this issue, which features work presented at the 2010 SETAC Asia/Pacific Meeting held in Guangzhou, China, 4–7 June, 2010.

Contributors to the Asia/Pacific themed issue

Journal of Environmental Monitoring profiles the contributors to this themed issue which includes work presented at the 2010 SETAC Asia/Pacific Meeting held in Guangzhou, China, 4-7 June 2010.

CRITICAL REVIEW

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Chemical techniques for assessing bioavailability of sediment-associated contaminants: SPME versus Tenax extraction

Jing You,* Amanda D. Harwood, Huizhen Li and Michael J. Lydy

This review summarizes a number of studies using matrix-SPME or Tenax extraction to estimate bioavailability and/or toxicity of different classes of HOCs and evaluate the strengths and weakness of these two techniques.

PAPERS

801

The distribution of triclosan and methyl-triclosan in marine sediments of Barker Inlet, South Australia

Milena Fernandes,* Ali Shareef, Rai Kookana, Sam Gaylard, Sonja Hoare and Tim Kildea

The spatial footprint of the bactericide triclosan in coastal sediments is larger than its methylated derivative, with accumulation and *in situ* methylation enhanced by deposition of fine and organic-rich particles.

807

Geochemical characteristics of inorganic sulfur in Shijing River, South China

Yanqing Sheng,* Guangyi Fu, Fanzhong Chen* and Jing Chen

This study investigates the geochemical processes of inorganic sulfur in the water body and sediment of a heavily polluted river.

813

Estrogenic activity profiles and risks in surface waters and sediments of the Pearl River system in South China assessed by chemical analysis and *in vitro* bioassay

Jian-Liang Zhao, Guang-Guo Ying,* Feng Chen,
You-Sheng Liu, Li Wang, Bin Yang, Shan Liu and Ran Tao

Higher estrogenic risks were observed in the wet season than in the dry season for surface waters, due to the input of runoff and direct overflow of small urban streams during heavy rain events.

822

TiO₂ and ZnO nanoparticles negatively affect wheat growth and soil enzyme activities in agricultural soil

Wenchao Du, Yuanyuan Sun, Rong Ji, Jianguo Zhu,
Jichun Wu and Hongyan Guo*

The impacts of nanoparticles on biomass, uptake of particles, content of the corresponding element in wheat, and activities of soil enzymes were investigated, providing information on nanotoxicity under field conditions.

829

Prolonged toxicity characteristic leaching procedure for nickel and copper aluminates

Kaimin Shih* and Yuanyuan Tang

Standard TCLP analysis was modified into a prolonged leaching experiment to investigate the leaching behavior of nickel and copper containing phases.

836

Short-range transport of contaminants released from e-waste recycling site in South China

Huizhen Li, Jinmei Bai, Yetian Li, Hefa Cheng,
Eddy Y. Zeng and Jing You*

Short-range transport of PBDEs and PCBs from an electronic waste recycling site may pose a threat to surrounding areas.

844

Matrix-bound phosphine and phosphorus fractions in paddy soils

Chao Han, Jinju Geng,* Rui Zhang, Xiaorong Wang and Shixiang Gao*

Paddy fields are thought to be one of the main sources for the production and emission of PH_3 in the natural environment.

850

Endocrine disruption effects of 2,2',4,4',6-pentabromodiphenylether (BDE100) in reporter gene assays

Fengxian Zhang, Wei Hu, Hongxia Yu, Hong Sun, Ouxi Shen, Xinru Wang, Hongling Liu,* Michael H. W. Lam, John P. Giesy and Xiaowei Zhang

Our investigation on the endocrine disrupting activity of 2,2',4,4',6-pentabromodiphenylether (BDE100) suggested that BDE100 had the potential to modulate the endocrine systems by the estrogen (ER), thyroid hormone (ThR) or androgen receptors (AR).

855

Occurrence and behavior of non-steroidal anti-inflammatory drugs and lipid regulators in wastewater and urban river water of the Pearl River Delta, South China

Qiuxin Huang, Yiyi Yu, Caiming Tang, Kun Zhang, Jianlan Cui and Xianzhi Peng*

Acidic pharmaceuticals were ubiquitously detected in wastewater and river water in the Pearl River Delta, South China.

864

A novel wet-scrubbing process using Fe(VI) for simultaneous removal of SO_2 and NO

Dehua Xia, Chun He,* Linfei Zhu, Yanling Huang, Hanying Dong, Minhua Su, Mudar Abou Asi and Di Bian

The objective of this work was to develop a novel wet-scrubbing process using Fe(VI) for the simultaneous removal of gaseous NO and SO_2 .

871

Occurrence and behavior of pharmaceuticals, steroid hormones, and endocrine-disrupting personal care products in wastewater and the recipient river water of the Pearl River Delta, South China

Yiyi Yu, Qiuxin Huang, Zhifang Wang, Kun Zhang, Caiming Tang, Jianlan Cui, Jialiang Feng and Xianzhi Peng*

Pharmaceuticals, estrone and endocrine disrupting personal care products were omnipresent in the Pearl River at Guangzhou, South China.

879

Enantioselective ecotoxicity of the herbicide dichlorprop and complexes formed with chitosan in two fresh water green algae

Yuezhong Wen, * Hui Chen, Yuli Yuan, Dongmei Xu and Xiaodong Kang

To reduce the leaching potential, prevent groundwater contamination and maintain the efficacy of a pesticide, natural polysaccharides have received increasing attention.

886

Polybrominated diphenyl ethers (PBDEs) in the riverine and marine sediments of the Laizhou Bay area, North China

Xiaohui Pan, Jianhui Tang, * Jun Li, Guangcai Zhong, Yingjun Chen and Gan Zhang*

The characteristics and pathways of PBDEs were investigated in riverine and marine sediments near a manufacturing base.

REGULAR RESEARCH ARTICLES

PERSPECTIVE

894

Immunoassay-based screening of polychlorinated biphenyls (PCB) in sediments: requirements for a new generation of test kits

Javier Castro-Jiménez* and Catherine Gonzalez

This study clarifies the application framework and limitations of available ELISA test kits as screening tools for PCBs in sediments at present.

901

Application of a battery of biomarkers in mussel digestive gland to assess long-term effects of the *Prestige* oil spill in Galicia and the Bay of Biscay: Lysosomal responses

Larraitz Garmendia, Urtzi Izagirre, Miren P. Cajaraville and Ionan Marigómez*

Lysosomal biomarkers in mussels demonstrated long-term effects of *Prestige* oil spill over 1000 km coastline in Galicia and Biscay Bay.

915

Application of a battery of biomarkers in mussel digestive gland to assess long-term effects of the *Prestige* oil spill in Galicia and Bay of Biscay: Tissue-level biomarkers and histopathology

Larraitz Garmendia, Manu Soto, Unai Vicario, Yungkul Kim, Miren P Cajaraville and Ionan Marigómez*

Tissue-level biomarkers and histopathology in mussels demonstrate prompt and enduring effects of the *Prestige* oil spill in Galicia and the Bay of Biscay.

933

Application of a battery of biomarkers in mussel digestive gland to assess long-term effects of the *Prestige* oil spill in Galicia and Bay of Biscay: Correlation and multivariate analysis

Larraitz Garmendia, Manu Soto, Maren Ortiz-Zarragoitia, Amaia Orbea, Miren P. Cajaraville and Ionan Marigómez*

Integrating biomarkers and tissue contaminant burdens in mussels reveals successive phases of POS impact (2003–2006) in Galicia and Bay of Biscay.

943

Local physical habitat quality cloud the effect of predicted pesticide runoff from agricultural land in Danish streams

Jes Jessen Rasmussen,* Annette Baattrup-Pedersen, Søren Erik Larsen and Brian Kronvang

Improving our knowledge about the impact of pesticides on stream ecosystems is essential for developing proper risk assessment and management strategies for streams.

Incidence of organochlorine pesticides in soils of Shenzhen, China

Hong-Gang Ni, Shan-Ping Cao, Ling-Yun Ji and Hui Zeng*

Occurrence and human exposure of organochlorine pesticides in soil in Shenzhen.

Protein adducts as biomarkers of exposure to aromatic diisocyanates in workers manufacturing polyurethane (PUR) foam

Kirsi Säkkinen, Jarkko Tornaeus, Antti Hesso, Ari Hirvonen, Harri Vainio, Hannu Norppa and Christina Rosenberg*

This study demonstrates that exposures to toluene diisocyanate (TDI) can reliably be assessed by analysing TDI-derived plasma adducts.

Correlation of six anthropogenic markers in wastewater, surface water, bank filtrate, and soil aquifer treatment

Marco Scheurer, Florian Rüdiger Storck, Carola Graf, Heinz-Jürgen Brauch, Wolfgang Ruck, Ovadia Lev and Frank Thomas Lange*

The concept of constant concentration ratios holds for certain persistent wastewater tracers and permits differentiation of sources and usage patterns.

Distribution of mercury and organic matter in particle-size classes in sediments contaminated by a waste water treatment plant: Vidy Bay, Lake Geneva, Switzerland

Andrea Garcia Bravo,* Sylvain Bouchet, David Amouroux, John Poté and Janusz Dominik

The results of this study suggested that the analysis of the bulk sediment seems to be more appropriate for the assessment of the content and spatial distribution of Hg in freshwater sediments contaminated by waste water treatment plants.

983

Development of a sampling method for the simultaneous monitoring of straight-chain alkanes, straight-chain saturated carbonyl compounds and monoterpenes in remote areas

Anaïs Detournay, Stéphane Sauvage,* Nadine Locoge, Vincent Gaudion, Thierry Leonardis, Isabelle Fronval, Pascal Kaluzny and Jean-Claude Galloo

A new sampling method for monitoring terpenes, straight-chain alkanes, straight-chain aldehydes and aromatic compounds in remote areas has been developed.

991

Continuous monitoring of NO in flue gas based on wavelet decomposition

Chi Zhang,* Changku Sun and Bin Liu

A new UV spectroscopy algorithm for continuous monitoring of NO in power plants avoids SO₂ and desulfurization interferences.

999

Spatial analysis and land use regression of VOCs and NO₂ in Dallas, Texas during two seasons

Luther A. Smith, Shaibal Mukerjee,* Kuenja C. Chung and Jim Afghani

LUR and statistical techniques assessed coarse- and fine-scale spatial variability of gaseous pollutants on a seasonal basis in Dallas.

1008

A one year investigation of the occurrence of illicit drugs in wastewater from Brussels, Belgium

Alexander L. N. van Nuijs,* Jean-François Mougel, Isabela Tarcomnicu, Lieven Bervoets, Ronny Blust, Philippe G. Jorens, Hugo Neels and Adrian Covaci

Temporal variations in the occurrence of illicit drugs in wastewater were thoroughly investigated through a one year sampling campaign in Brussels.

1017

Temperature effect of tapered element oscillating microbalance (TEOM) system measuring semi-volatile organic particulate matter

Luis-Antonio Tortajada-Genaro and Esther Borrás

The study determines the losses of semi-volatile organic matter—from biogenic atmospheric pollutants—caused by the work conditions of TEOM.

1027

Characteristics of black carbon aerosol mass concentration over the East Baltic region from two-year measurements

Steigvilė Byčėnkienė, Vidmantas Ulevičius* and Simonas Kecorius

Atmospheric aerosols have significant influence on radiative forcing and climate change, which has become an important research field on a global change.

1039

How does exposure to nitrogen dioxide compare between on-road and off-road cycle routes?

T. Bean, * N. Carslaw, M. Ashmore, A. Gillah and C. Parkinson

Using off-road cycle routes significantly reduces the time-weighted concentration of, and exposure to, NO₂ compared to on-road routes.

1046

Spatial distribution, electron microscopy analysis of titanium and its correlation to heavy metals: Occurrence and sources of titanium nanomaterials in surface sediments from Xiamen Bay, China

Zhuanxi Luo, Zhenhong Wang, Qingzhao Li, Qikun Pan, Changzhou Yan* and Feng Liu

Anthropogenic titanium nanomaterials could be found in surface sediments with elevated Ti concentrations.

1053

Evaluating seasonal dynamics of bacterial communities in marine fish aquaculture: a preliminary study before applying phage therapy

Carla Pereira, Sara Salvador, Cátia Arrojado, Yolanda Silva, Ana L. Santos, Ângela Cunha, Newton Gomes and Adelaide Almeida*

The seasonal variation of the overall bacterial community and of the disease-causing bacteria demonstrates the need for a careful monitoring of water through the year in order to select the suitable phages to inactivate fish pathogenic bacteria.

1059

Microbial activity and water-soluble trace element species in the rhizosphere of spring wheat (*Triticum aestivum* cv. USU-Perigee)

Marie-Claude Turmel,* François Courchesne and Benoît Cloutier-Hurteau

The influence of microbial activity on the concentration and speciation of trace elements (TEs) was assessed in a study on the bioavailability of TEs for edible plants. Root mat produced by *Triticum aestivum* cv. USU-Perigee (Photographed by Nathalie Désilets).

1073

Study of size and mass distribution of particulate matter due to crop residue burning with seasonal variation in rural area of Punjab, India

Amit Awasthi, Ravinder Agarwal, Susheel K. Mittal,* Nirankar Singh, Khem Singh and Prabhat K. Gupta

In the present study, the effect of rice and wheat crop residue burning on the concentration levels of RSPM and their size segregation has been carried out.

1082

Pre-sampling contamination of filters used in measurements of airborne (1 → 3)-β-D-glucan based on glucan-specific *Limulus* amoebocyte lysate assay

Elizabeth S. Shogren and Ju-Hyeong Park*

This study presents a laboratory-based method for cleaning polycarbonate filters of measurable and potentially confounding levels of (1 → 3)-β-D-glucan before their use as media in airborne sampling for (1 → 3)-β-D-glucan.

Phosphorus fractionation in different trophic sediments of lakes from different regions, China

Shouliang Huo,* Fengyu Zan, Beidou Xi,* Qingqin Li and Jingtian Zhang

This study investigated the difference of P_o fractions in the surface sediments of lakes from different lake regions in China.

Concentrations and accumulation profiles of PCDDs, PCDFs and dioxin-like PCBs in adipose fat tissues of Korean women

Hyo-Bang Moon,* Duk-Hee Lee, Yoon Soon Lee and Kurunthachalam Kannan

Environmental contamination by polychlorinated dibenzo-*p*-dioxins, polychlorinated dibenzofurans (PCDD/Fs) and polychlorinated biphenyls (PCBs) is a global concern due to their high toxic potentials to humans and wildlife.