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Inside cover

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NEWS

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News

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

EDITORIAL

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Onwards and upwards

Professor Deborah Swackhamer, Editorial Board Chair, reflects on the past year for *Journal of Environmental Monitoring* and looks forward to the next.

Polyfluoroalkyl compounds in the aquatic environment: a review of their occurrence and fate

Lutz Ahrens*

The present study gives an overview of the occurrence, fate and processes of polyfluoroalkyl compounds (PFCs) in the aquatic environment.

COMMUNICATION

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Identification of tetramethylarsonium in rice grains with elevated arsenic content

Helle R. Hansen,* Andrea Raab, Adam H. Price, Guilan Duan, Yongguan Zhu, Gareth J. Norton, Jörg Feldmann and Andrew A. Meharg

Tetramethylarsonium has for the first time been identified in a commercially grown food product, rice, constituting up to 5.8% of the total arsenic in the rice.

PAPERS

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Multilayer perceptron neural network for flow prediction

P. Araujo, G. Astray,* J. A. Ferrerio-Lage, J. C. Mejuto,* J. A. Rodriguez-Suarez and B. Soto

For proper management of water resources, ANN tools are useful to evaluate in advance the dynamics of river systems.

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Toxicological assessment of TiO₂ nanoparticles by recombinant *Escherichia coli* bacteria

Guoxiang Jiang, Zhenyao Shen,* Junfeng Niu, Yueping Bao, Jing Chen and Tiande He

We applied a strategy for constructing a plasmid-based GFP *Escherichia coli* bacterium, and assessed the toxicological effects of TiO₂ NPs by the change of bacterial fluorescent intensity.

Occurrence of pesticides in surface water bodies: a critical analysis of the Italian national pesticide survey programs

Antonio Finizio,* Giovanna Azimonti and Sara Villa

A proper implementation of pesticides monitoring in surface water is essential to achieve the objectives of the EU Water Framework Directive.

Scottish peat bog records of atmospheric vanadium deposition over the past 150 years: comparison with other records and emission trends

Joanna M. Cloy,* John G. Farmer, Margaret C. Graham and Angus B. MacKenzie

Cores from four Scottish ombrotrophic peat bogs were used to reconstruct the historical record of atmospheric vanadium deposition in Scotland over the last 150 years.

Phosphorus run-off assessment in a watershed

Yirgalem Chebud, Ghinwa M. Naja* and Rosanna Rivero

A novel environmental modeling and analytical method is presented to assess the non-point source phosphorus loadings from a large watershed draining into a lake.

Efficacy of surface sampling methods for different types of beryllium compounds

A. Dufresne,* T. Mocanu, S. Viau, G. Perrault and C. Dion

We evaluate the efficiency of three different sampling methods (Ghost Wipe™, micro-vacuum, and ChemTest®) for the recovery of Be dust.

Effects of the fuel oil spilled by the *Prestige* tanker on reproduction parameters of wild mussel populations

Maren Ortiz-Zarragoitia, Larraitz Garmendia, María Carmen Barbero, Teresa Serrano, Ionan Marigómez and Miren P. Cajaraville*

The *Prestige* oil spill caused transitory alterations in gamete development in wild mussel populations from the North Iberian Peninsula.

Non-steady response of BOD biosensor for the determination of biochemical oxygen demand in wastewater

Siiri Velling,* Alexey Mashirin, Karin Hellat and Toomas Tenno

Curve fitting model for the characterization of output signal of BOD biosensor that enables reliable estimation of BOD₇ of biodegradable organic substrates as well determination of conformity to calibration data and service life, simultaneously.

Occurrence of estrogenic chemicals in South Korean surface waters and municipal wastewaters

Jin-Sung Ra, Sun-Hong Lee, Jiho Lee, Hyun Young Kim, Byung J. Lim, Sang H. Kim and Sang Don Kim*

Korean WWTPs effluents did not directly contribute to the estrogenic activity of the receiving waters, but the livestock industry, wildlife, or conjugates of estrogens may play an important role in the estrogenic contribution to river water.

Performance evaluation of phycocyanin probes for the monitoring of cyanobacteria

Christian Bastien,* Richard Cardin, Éloïse Veilleux, Christian Deblois, Annabelle Warren and Isabelle Laurion

Two probes (YSI and TriOS) were tested in the laboratory and we discuss their performance, reliability and the limit to the interpretation of results.

Factors affecting variability in the urinary biomarker 1,6-hexamethylene diamine in workers exposed to 1,6-hexamethylene diisocyanate

Linda G. T. Gaines, Kenneth W. Fent, Sheila L. Flack, Jennifer M. Thomasen, Stephen G. Whittaker and Leena A. Nylander-French*

Variations observed in 1,6-hexamethylene diisocyanate exposure and 1,6-hexamethylene diamine urine levels are mainly due to dermal and inhalation protection. These workplace factors must be accounted for in exposure assessment.

Risk assessment of soils contaminated by mercury mining, Northern Spain

A. Ordóñez,* R. Álvarez, S. Charlesworth, E. De Miguel and J. Loredo

Risk assessment applied to soils contaminated due to mercury mining to evaluate and categorize them in terms of action priority.

Occurrence and fate of pharmaceutical and personal care products in a sewage treatment works

Rubén Reif,* Ana Santos, Simon J. Judd, Juan M. Lema and Francisco Omil

In this study, pharmaceuticals of different therapeutic groups and cosmetic ingredients present in municipal sewage were monitored along the different units of a pilot plant operating at the premises of a full-scale sewage treatment plant in north-west UK.

Hg bioavailability and impact on bacterial communities in a long-term polluted soil

P. Ruggiero,* R. Terzano, M. Spagnuolo, L. Cavalca, M. Colombo, V. Andreoni, M. A. Rao, P. Perucci and E. Monaci

Hg bioavailability and the remobilization risk over time in a long-term polluted soil are monitored with a multidisciplinary approach.

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Evaluation of four mathematical models to describe dissipation kinetics of 4-*n*-nonylphenol and bisphenol-A in groundwater–aquifer material slurry

Ajit K. Sarmah* and Maheswaran Rohan

Selection and utilisation of appropriate mathematical models are capable of describing the entire dissipation kinetics for 4-*n*-nonylphenol and bisphenol-A in groundwater/aquifer material media.

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Life cycle assessment of solar photo-Fenton and solar photoelectro-Fenton processes used for the degradation of aqueous α -methylphenylglycine

Anna Serra, Xavier Domènech, Enric Brillas and José Peral*

Life cycle assessment of solar photoelectro-Fenton and other AOPs for the treatment of non-biodegradable pollutants in water.

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Polycyclic aromatic hydrocarbons and organochlorine pesticides in surface soils from the Qinghai-Tibetan plateau

Shu Tao,* Wentao Wang, Wenxin Liu, Qian Zuo, Xilong Wang, Rong Wang, Bin Wang, Guofeng Shen, Yuanhe Yang and Jin-shen He

PAHs and OCPs in surface soils from the west and northwest of the Qinghai-Tibetan Plateau, rather than those from the whole area, can serve as the backgrounds in East Asia.

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Indoor and outdoor concentrations of fine particles, particle-bound PAHs and volatile organic compounds in Kaunas, Lithuania

Linus Kliucininkas,* Dainius Martuzevicius, Edvinas Krugly, Tadas Prasauskas, Violeta Kauneliene, Peter Molnar and Bo Strandberg

The complex study on indoor and outdoor air quality at two urban locations in an Eastern-European city has revealed comparable concentrations of PM_{2.5} but twice higher concentrations of PAHs in the city centre compared to the living district.

Widespread microbiological groundwater contamination in the South-eastern Salento (Puglia-Italy)

F. Lugoli, M. I. Leopizzi, F. Bagordo, T. Grassi, M. Guido and A. De Donno*

The present study sought to determine the microbiological and chemical-physical quality of groundwater on the Salento peninsula and to analyse the factors associated with contamination.

Distribution and availability of trace elements in municipal solid waste composts

Remigio Paradelo, * Antía Villada, Rosa Devesa-Rey, Ana Belén Moldes, Marta Domínguez, Jacobo Patiño and María Teresa Barral

The study of the physical and chemical distribution of trace elements in compost suggests that fractionation and bioavailability should be taken into account in the legislation for compost commercialization.

Increased metal concentrations in exhaled breath condensate of industrial welders

Frank Hoffmeyer, * Tobias Weiß, Martin Lehnert, Beate Pesch, Hans Berresheim, Jana Henry, Monika Raulf-Heimsoth, Horst Christoph Broding, Jürgen Bünger, Volker Harth and Thomas Brüning

In this study, we demonstrated increased iron and nickel concentrations in EBC (sampled with ECoScreen2) of occupationally exposed welders, indicating the potential use of this matrix as an approach to monitor pneumotoxic substances in the respiratory tract.