

NEWS

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Environmental digest

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CRITICAL REVIEWS

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Arsenobetaine formation in plankton: a review of studies at the base of the aquatic food chain

G. Caumette, I. Koch and K. J. Reimer*

A review of arsenic speciation in plankton from marine and freshwater environments reveals that non-toxic arsenobetaine first appears in zooplankton.

2854

The influence of climate change on the global distribution and fate processes of anthropogenic persistent organic pollutants

Roland Kallenborn,* Crispin Halsall, Maud Dellong and Pernilla Carlsson

This review article summarises today's *state-of-the-science* on research elucidating the linkage between climate change and persistent organic pollutants (POPs).

PAPERS

2870

Flame retardants in eggs of American kestrels and European starlings from southern Lake Ontario region (North America)

Da Chen, Robert J. Letcher* and Pamela Martin

American kestrel, European starlings and herring gull eggs from the Canadian Great Lakes contain different PBDE and flame retardant contamination.

2877

Water quality assessment using the AREc32 reporter gene assay indicative of the oxidative stress response pathway

Beate I. Escher,* Mriga Dutt, Erin Maylin, Janet Y. M. Tang, Simon Toze, C. Roland Wolf and Matti Lang

The reporter gene assay AREc32 was used to evaluate the effects of environmental pollutants that cause oxidative stress in a wide range of water samples from sewage to drinking water.

2886

Assessing spatial variability of soil petroleum contamination using visible near-infrared diffuse reflectance spectroscopy

Somsubhra Chakraborty, David C. Weindorf,* Yuanda Zhu, Bin Li, Cristine L. S. Morgan, Yufeng Ge and John Galbraith

Visible near-infrared (VisNIR) diffuse reflectance spectroscopy (DRS) is a rapid, non-destructive method for sensing the presence and amount of total petroleum hydrocarbon (TPH) contamination in soil.

2893

Lead isotopes in marine surface sediments reveal historical use of leaded fuel

Martin M. Larsen,* Jerzy S. Blusztajn, Ole Andersen and Ingela Dahllöf

Leaded fuel has been banned in most of the world since the 1990s, but is still one of the main sources of lead in the upper sediment layers around the world.

2902

Potential sources affecting the activity concentrations of ^{238}U , ^{235}U , ^{232}Th and some decay products in lettuce and wheat samples

M. Jeambrun,* L. Pourcelot,* C. Mercat, B. Boulet, E. Pelt, F. Chabaux, X. Cagnat and F. Gauthier-Lafaye

A better understanding of the main sources of each natural radionuclide from U- and Th-series in wheat and lettuce.

2913

Impacts of mire reclamation on dynamics of dissolved nutrients in fluvial systems in the Sanjiang Plain, Northeast China

Yuedong Guo, Changchun Song,* Lili Wang and Zhongmei Wan

We study the effects of the long-term reclamation on the dynamics of the dissolved nutrients in fluvial systems.

2921

Will stringent total nitrogen wastewater treatment plant discharge regulations achieve stream water quality goals?

Ji-Hee Son and Kenneth H. Carlson*

The Colorado Department of Public Health and Environment (CDPHE) proposed the in-stream numeric nutrient criteria as 2 mg TN per L and 0.16 mg TP per L for warm surface waters and 0.40 mg TN per L and 0.11 mg TP per L for cold surface waters.

2929

Phosphorus concentration and loading reductions following changes in fertilizer application and formulation on managed turf

K. W. King,* J. C. Balogh, S. G. Agrawal, C. J. Tritabaugh and J. A. Ryan

Phosphorus application rate reduction and conversion from inorganic to organic sources mitigates phosphorus losses from managed turf.

2939

Open air mineral treatment operations and ambient air quality: assessment and source apportionment

M. Escudero,* A. Alastuey, T. Moreno, X. Querol and P. Pérez

We present a methodology for evaluating and quantifying the impact of inhalable mineral dust resuspension close to a potentially important industrial point source, in this case an open air plant producing sand, flux and kaolin in the Capuchinos district of Alcañiz (Teruel, NE Spain).

2952

Regional variation in pesticide concentrations in plasma of delivering women residing in rural Indian Ocean coastal regions of South Africa

Kalavati R. Channa,* Halina B. Röllin, Kerry S. Wilson, Therese H. Nøst, Jon Ø. Odland, Inakshi Naik and Torkjel M. Sandanger

This study found a high concentration of pesticides in rural delivering women in South Africa which is of concern for prenatal exposures.

2961

One-year measurement of organic and elemental carbon in size-segregated atmospheric aerosol at a coastal and suburban site in Southeast China

Zhenchuan Niu, Fuwang Zhang, Xiangrui Kong, Jinsheng Chen,* Liqian Yin and Lingling Xu

The size distribution and seasonal variations of carbonaceous aerosol were studied at a coastal and suburban site in China.

2968

The effect of humic acid on uranyl sorption onto bentonite at trace uranium levels

Peter Ivanov,* Tamara Griffiths, Nick D. Bryan, Gospodin Bozhikov and Serguei Dmitriev

The effect of humic acid (HA) on U(VI) sorption on bentonite was studied in batch experiments at room temperature and ambient atmosphere at a $^{237}\text{U(VI)}$ concentration of 8.4×10^{-11} M and HA concentration of 100 mg L^{-1} .

2976

An application of passive samplers to understand atmospheric mercury concentration and dry deposition spatial distributions

Jiaoyan Huang, Hyun-Deok Choi, Matthew S. Landis and Thomas M. Holsen*

Two modified passive samplers were evaluated at multiple field locations.

2983

Comparative analysis of classical and molecular microbiology methods for the detection of *Escherichia coli* and *Enterococcus* spp. in well water

A. F. Maheux, V. Huppé, L. Bissonnette, M. Boissinot, L. Rodrigue, É. Bérubé and M. G. Bergeron*

The microbiological quality of 165 1 litre well water samples of the Québec City region was assessed by culture-based methods and by a molecular microbiology strategy, CRENAME-rtPCR, developed for the detection of *Escherichia coli*, *Enterococcus* spp., and *Bacillus atrophaeus* subsp. *globigii*.

2990

Modeling volatilization and adsorption of disinfection byproducts in natural watersheds

Wenbiao Jin, Jin Zhou, Baiyang Chen,* Xiaoshan Zhu* and Chongwei Cui

Volatilization and adsorption of five classes of disinfection byproducts under four types watershed conditions were evaluated and compared.

3000

Chemical composition, sources, and deposition fluxes of water-soluble inorganic ions obtained from precipitation chemistry measurements collected at an urban site in northwest China

Zhenxing Shen,* Leiming Zhang, Junji Cao, Jing Tian, Li Liu, Geihui Wang, Zhuzi Zhao, Xin Wang, Renjian Zhang and Suixin Liu

Precipitation samples were collected at an urban site in Xi'an, northwest China during March to November in 2009 and were then analyzed to determine the pH and ion concentrations.

3009

Monitoring the occurrence of PAHs in Irish wastewater effluent

Lisa Jones,* Brian Kinsella, Ambrose Furey and Fiona Regan

Polycyclic aromatic hydrocarbons (PAHs) are commonly occurring environmental pollutants, 8 of which have been chosen from the list of priority substances in the EU Water Framework Directive (WFD).

3015

Study of indoor radon concentrations and associated health risks in the five districts of Hazara division, Pakistan

Fayaz Khan,* Nawab Ali, Ehsan U. Khan, Nimat U. Khattak, Iftikhar A. Raja, Muzahir A. Baloch and Muhammad U. Rajput

A total of 200 indoor air samples were collected to measure radon concentration levels and its contribution to the mean effective doses during different seasons of the period 2009–2010 at different sites of the five districts of Hazara division, Pakistan.

3024

Dynamic interactions between cyclodextrin, an organic pollutant, and granular activated carbon in column studies

William J. Blanford and Heng Gao*

In this study, the dynamic interactions between cyclodextrin (CD), an organic chemical and granular activated carbon (GAC) were investigated using column studies.

3029

Uptake of human pharmaceuticals and personal care products by cabbage (*Brassica campestris*) from fortified and biosolids-amended soils

Cheryl S. Holling, Jonathon L. Bailey, Brian Vanden Heuvel and Chad A. Kinney*

Pharmaceuticals and personal care products present in soils and biosolids can accumulate in the edible portion of crops.

3037

Identification and modelling the HRT distribution in subsurface constructed wetland

Lijuan Cui,* Yan Zhang, Manyin Zhang, Wei Li, Xincheng Zhao, Shengnan Li and Yifei Wang

A high hydraulic efficiency of constructed wetlands is an important contributor to the improvement of water quality.