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**Geochemical recovery of the Torna--Marcal river system after the Ajka red mud spill, Hungary**

Á. D. Anton, O. Klebercz, Á. Magyar, I. T. Burke, A. P. Jarvis, K. Gruiz and W. M. Mayes\*

Rapid recovery of rivers contaminated by largest recorded release of red mud to the environment is apparent due to fine-grained nature of spill material and remedial efforts.

2686

**Products and kinetics of the heterogeneous reaction of particulate ametryn with NO<sub>3</sub> radicals**

Chang-Geng Liu,\* Ji-Nian Shu,\* Bo Yang and Peng Zhang

The kinetics and products of the heterogeneous reaction between particulate ametryn and NO<sub>3</sub> radicals were investigated.

2692

**Effects of a reservoir flushing on trace metal partitioning, speciation and benthic invertebrates in the floodplain**

Dorothea Hug Peter, Emmanuel Castella and Vera I. Slaveykova\*

Re-suspension of sediments during reservoir flushing influences trace metal partitioning, speciation, and bioavailability to benthic macroinvertebrates and macroinvertebrate diversity.

2703

**Application of chemical vapor generation systems to deliver constant gas concentrations for *in vitro* exposure to volatile organic compounds**

Ying-Hsuan Lin, Kenneth G. Sexton, Ilona Jaspers, Ya-Ru Li, Jason D. Surratt and William Vizuite\*

Schematic representation of the system design coupling a constant emission source from a diffusion vial to a gas phase *in vitro* exposure system (GIVES) for a direct air-liquid interface exposure to volatile organic compounds.

2711

**Effect of permafrost properties on gas hydrate petroleum system in the Qilian Mountains, Qinghai, Northwest China**

Pingkang Wang,\* Xuhui Zhang, Youhai Zhu, Bing Li, Xia Huang, Shouji Pang, Shuai Zhang, Cheng Lu and Rui Xiao

Evolution of gas hydrate petroleum system in the Qilian Mountains permafrost: (A) end of Late Pleistocene and (B) modern day. GHSZ indicates gas hydrate stability zone.

2721

**Filamentous sludge bulking control by nano zero-valent iron in activated sludge treatment systems**

Shengnan Xu, Minghao Sun, Chiqian Zhang, Rao Surampalli and Zhiqiang Hu\*

Sludge bulking causes loss of biomass in the effluent and deterioration of effluent water quality.

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**Use of moss and lichen species to identify  
 $^{210}\text{Po}$ -contaminated regions**

Magdalena Długosz-Lisiecka and Justyna Wróbel

$^{210}\text{Po}$  concentration in urban air fluctuates as a result of natural  $^{222}\text{Rn}$  radionuclide exhalation and technical activity that is especially linked with high-temperature processes.

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**Lead sulfate nano- and microparticles in the acid  
plant blow-down generated at the sulfuric acid  
plant of the El Teniente mine, Chile**Giancarlo M. Barassi, Martin Klimsa, Thomas Borrmann,\*  
Mathew J. Cairns, Joachim Kinkel  
and Fernando Valenzuela

Suspended solids in weak acid waste from a copper smelter have been identified to be anglesite, lead sulphate, nano- and microparticles. The particles bypass filters and could pose a serious environmental threat.

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**Factors influencing uncertainties of *in vivo* bone lead  
measurement using a  $^{109}\text{Cd}$  K X-ray fluorescence  
clover leaf geometry detector system**Sepideh Behinaein,\* David R. Chettle, Leonora Marro,  
Morie Malowany, Mandy Fisher, David E. B. Fleming,  
Norm Healey, Mike Inskip, Tye E. Arbuckle  
and Fiona E. McNeill

A  $^{109}\text{Cd}$  K X-ray fluorescence measurement system consisting of four detectors in clover-leaf geometry is a non-invasive, low-radiation-dose method of measuring bone lead levels.

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**Real time monitoring of gases emitted from soils  
using a multi-turn time-of-flight mass spectrometer  
"MULTUM-S II"**Takahiro Anan, Shuichi Shimma, Yo Toma,  
Yasuyuki Hashidoko, Ryusuke Hatano  
and Michisato Toyoda\*

The ability of simultaneous quantification of the gaseous compounds ( $\text{CO}_2$ ,  $\text{N}_2\text{O}$ ) emitted from soils within 1 minute have been demonstrated by using a fast gas chromatograph - multi-turn time-of-flight mass spectrometer.

2758

**Polychlorinated biphenyl (PCB) and dioxin concentrations in residential dust of pregnant women**

A. L. Hinwood,\* A. C. Callan, J. Heyworth, D. Rogic, J. de Araujo, R. Crough, G. Mamahit, N. Piro, A. Yates, G. Stevenson and J. Ø. Odland

Polychlorinated biphenyls (PCBs) and dioxins are well known for their persistence in the environment.

2764

**Nitrate pollution and its transfer in surface water and groundwater in irrigated areas: a case study of the Piedmont of South Taihang Mountains, China**

Jing Li, Fadong Li,\* Qiang Liu and Yoshimi Suzuki

The yellow river irrigation practice was a critical factor impacting the spatial distribution of nitrate in surface water and groundwater in a yellow river alluvial fan.

2774

**Organochlorines in harbour porpoises (*Phocoena phocoena*) stranded along the southern North Sea between 2010 and 2013**

Céline Mahfouz,\* Françoise Henry, Thierry Jauniaux, Gaby Khalaf and Rachid Amara

7 polychlorinated biphenyls (PCBs), 6 dichlorodiphenyltrichloroethanes (DDXs) and 8 polybrominated diphenyl ethers (PBDEs) were measured in the blubber of 20 harbour porpoises stranded on the coasts of the southern North Sea between 2010 and 2013.

2782

**Bioaccessibility of lead in airborne particulates from car battery repair work**

Emmanuel Dartey,\* Balazs Berlinger, Yngvar Thomassen,\* Dag G. Ellingsen, Jon Ø. Odland, Vincent K. Nartey, Francis A. Yeboah and Stephan Weinbruch

The bioaccessibility of Pb in air particulate matter from two car battery repair workshops in Kumasi (Ghana) was measured (64 full shift personal aerosol samples).

**Acesulfame-K and pharmaceuticals as co-tracers of municipal wastewater in a receiving river**

YingYing Liu, David W. Blowes, Laura Groza, Michelle J. Sabourin and Carol J. Ptacek\*

Artificial sweetener acesulfame-K and the pharmaceuticals carbamazepine, gemfibrozil, and naproxen used as co-tracers of municipal wastewater in a receiving river.

**Evaluation of the photolysis of pharmaceuticals within a river by 2 year field observations and toxicity changes by sunlight**

Seiya Hanamoto, Tsukasa Kawakami, Norihide Nakada, Naoyuki Yamashita and Hiroaki Tanaka\*

A step forward was made in estimating direct photolysis of chemicals and their photoproducts in the aquatic environment.

**Water and sediment quality, nutrient biochemistry and pollution loads in an urban freshwater lake: balancing human and ecological services**

Nathan J. Waltham, Amanda Reichelt-Brushett, Damian McCann and Bradley D. Eyre

Lake Hugh Muntz, Gold Coast, Australia, was studied for its water and sediment quality, nutrient biochemistry, and pollution loads and a series of catchment restoration initiatives were modelled.

**Correction: Statistical modeling of crystalline silica exposure by trade in the construction industry using a database compiled from the literature**

Jean-François Sauvé, Charles Beaudry, Denis Bégin, Chantal Dion, Michel Gérin and Jérôme Lavoué\*