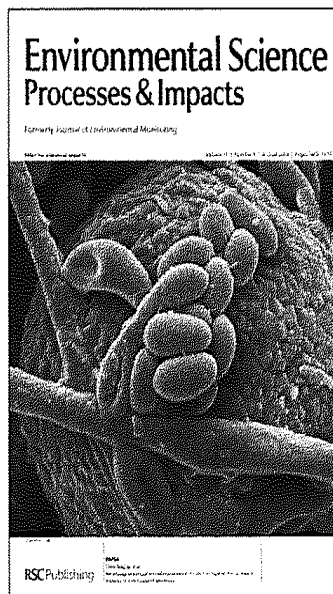


Cover

See Anna Sofía Veyhe *et al.*, pp. 1490–1500.
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Inside cover

See Doris Wagner *et al.*, pp. 1501–1510.
Image reproduced by permission of British Geological Survey © NERC from *Environ. Sci.: Processes Impacts*, 2013, **15**, 1501.

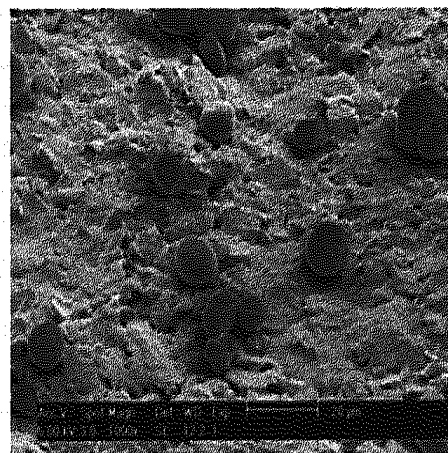
CRITICAL REVIEW

1477

Arrays of microelectrodes: technologies for environmental investigations

Frank Davis* and Séamus P. J. Higson

Arrays of microelectrodes and nanoelectrodes are addressing the increasing requirements for rapid, accurate determination of a range of targets.



PAPERS

1490

Is meconium useful to predict fetal exposure to organochlorines and hydroxylated PCBs?

Anna Sofía Veyhe,* Therese Haugdahl Nøst, Torkjel M. Sandanger, Solrunn Hansen, Jon Øyvind Odland and Evert Nieboer

Hydroxylated PCB concentrations are reported in meconium and in matched maternal sera for the first time, along with the parent PCBs and selected organochlorine (OC) pesticides.

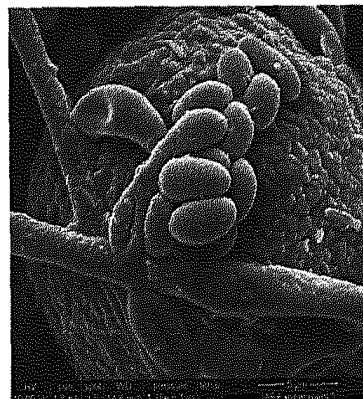


1501

Mineralogical comparisons of experimental results investigating the biological impacts on rock transport processes

Doris Wagner,* Antoni E. Milodowski, Julia M. West, Joanna Wragg and Hideki Yoshikawa

Detail of the clusters of rod-like cells associated with biofilaments on fresh framboidal pyrite.



1511

Real-time particle monitor calibration factors and PM_{2.5} emission factors for multiple indoor sources

Philip J. Dacunto,* Kai-Chung Cheng, Viviana Acevedo-Bolton, Ruo-Ting Jiang, Neil E. Klepeis, James L. Repace, Wayne R. Ott and Lynn M. Hildemann

For several common indoor sources, we present calibration factors for a real-time particle monitor and emission factors, which are helpful in assessing personal exposure to PM_{2.5}.

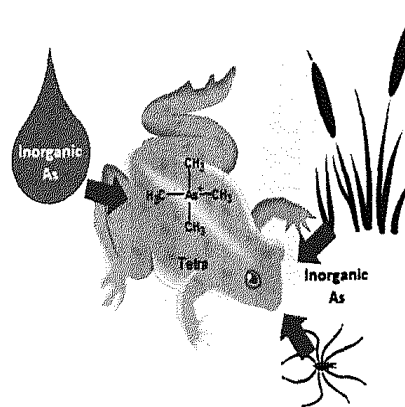


1520

Arsenic species and uptake in amphibians (*Rana clamitans* and *Bufo americanus*)

Maeve M. Moriarty, Iris Koch and Kenneth J. Reimer*

Arsenic speciation in frogs from a contaminated and nearby background site was predominantly inorganic and methylated arsenic species. Tetramethylarsonium content was independent of arsenic body burden and exposure.

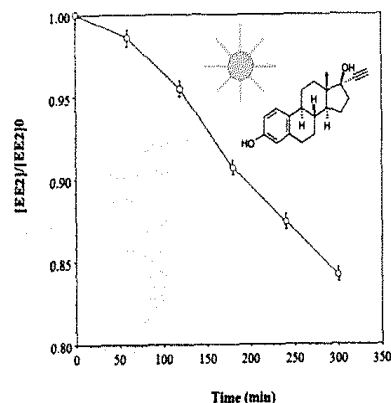


1529

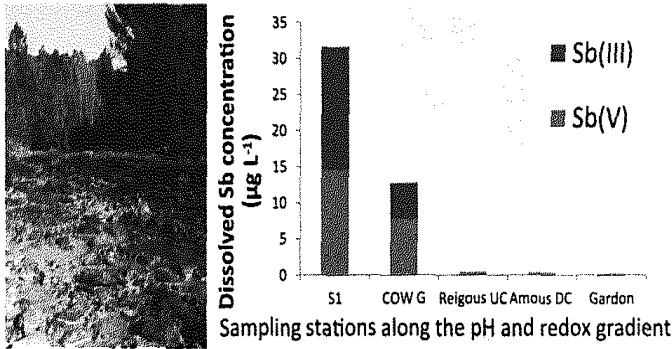
Determination of estrogenic steroids and microbial and photochemical degradation of 17 α -ethinyl-estradiol (EE2) in lake surface water, a case study

Yuegang Zuo,* Kai Zhang and Si Zhou

Occurrence of EE2 and its microbial and photochemical degradation in a lake ecosystem has been studied for the first time.



1536

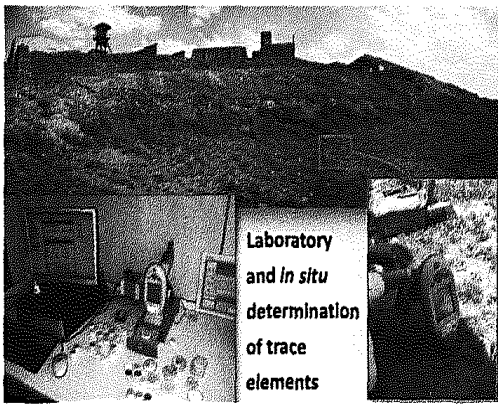


Fate of Sb(v) and Sb(III) species along a gradient of pH and oxygen concentration in the Carnoulès mine waters (Southern France)

Eléonore Resongles, Corinne Casiot,*
 Françoise Elbaz-Poulichet, Rémi Freyrier, Odile Bruneel,
 Christine Piot, Sophie Delpoux, Aurélie Volant
 and Angélique Desoeuvre

Measurement of antimony speciation downstream from the Pb-Zn Carnoulès mine revealed the occurrence of reduced Sb(III) species in acid oxygenated mine waters.

1545

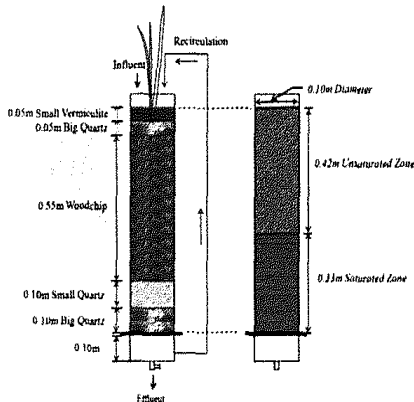


Assessment of field portable X-ray fluorescence spectrometry for the *in situ* determination of heavy metals in soils and plants

María Jesús Gutiérrez-Ginés,* Jesús Pastor
 and Ana Jesús Hernández

Good results for screening diagnosis of heavy metals and trace elements in soils and plants.

1553

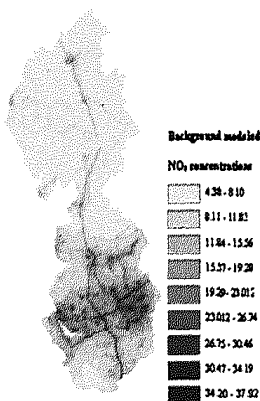


Performance of a vertical subsurface flow (VSF) wetland treatment system using woodchips to treat livestock stormwater

Siping Niu, Heidi B. Guerra, Yaoping Chen, Kisoo Park
 and Youngchul Kim*

Three lab-scale vertical subsurface flow wetlands packed by woodchips were developed to investigate the advantages and disadvantages for the treatment of livestock stormwater.

1562



A comparison of population air pollution exposure estimation techniques with personal exposure estimates in a pregnant cohort

Kimberly Hannam,* Roseanne McNamee, Frank De Vocht,
 Philip Baker, Colin Sibley and Raymond Agius

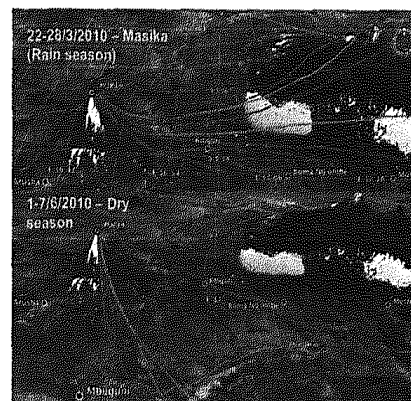
The work provides a comparison of an extensive range of environmental NO_x and NO₂ exposure estimation techniques with personal exposure measurements in a pregnant cohort.

1573

Environmental variables affecting the distribution of POPs on Mt. Meru, Tanzania

Niccolò Guazzoni,* Roberto Comolli, Andrea Binelli and Paolo Tremolada

Tanzania is an equatorial country characterized by warm temperatures, which should increase the volatilization of POPs, but this scenario could be different in mountainous areas like Mount Meru, a volcano situated in the East African Rift (Tz).

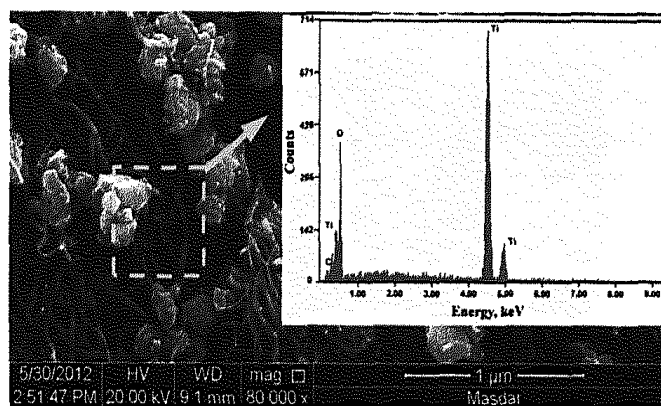


1582

Photo-regenerable multi-walled carbon nanotube membranes for the removal of pharmaceutical micropollutants from water

Qammer Zaib, Bilal Mansoor and Farrukh Ahmad*

Photo-regenerable and water permeable (MWNT-TiO₂) membranes were prepared and tested for the continuous removal of pharmaceuticals from water.

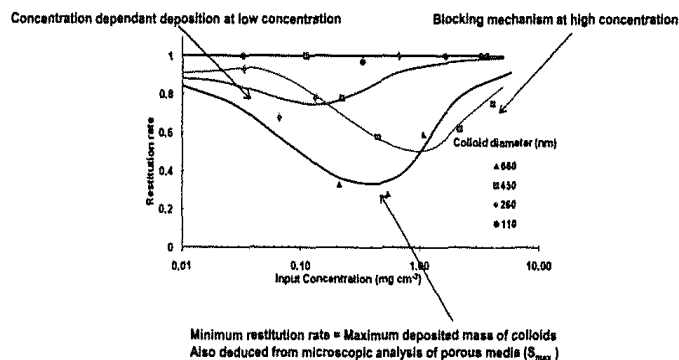


1590

Size- and concentration-dependent deposition of fluorescent silica colloids in saturated sand columns: transport experiments and modeling

Elsa Vitorge,* Stéphanie Szenknect, Jean M. F. Martins and Jean-Paul Gaudet

For a wide range of input concentrations, column experiments were performed. Restitution rates at the output of the column are presented vs. input concentration. The model proposed (lines) is able to reproduce experimental data for the whole ranges of concentrations and colloid sizes tested.



1601

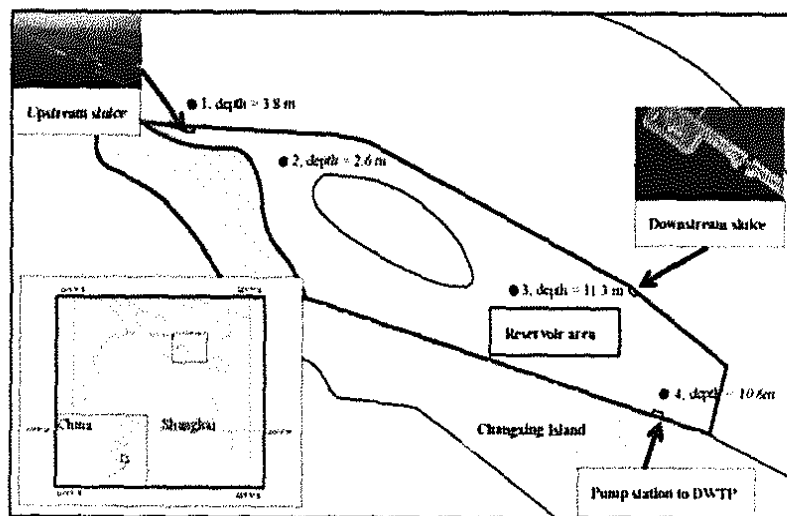
PAH concentration gradients and fluxes through sand cap test cells installed *in situ* over river sediments containing coal tar

Yong Sang Kim, Leila M. Nyberg, Byron Jenkinson and Chad T. Jafvert*

Understanding porewater flow and biodegradation in sediment remediation sand caps is important for evaluating design options and performance.



1613

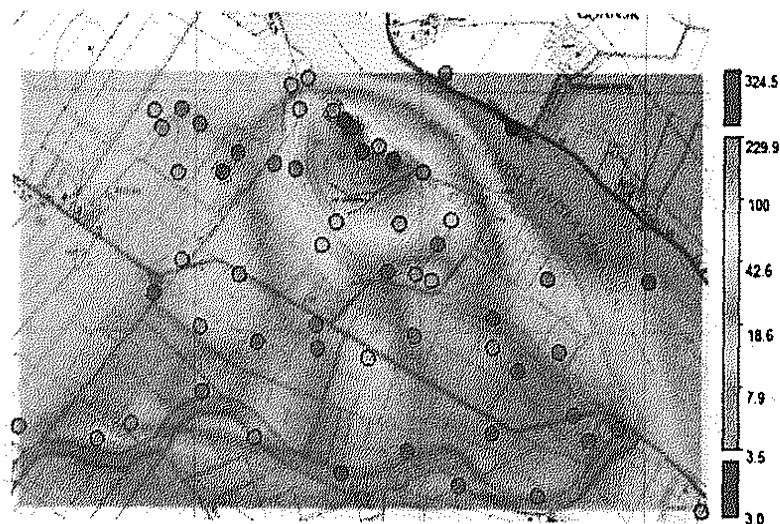


Principal component analysis to assess the composition and fate of impurities in a large river-embedded reservoir: Qingcaosha Reservoir

Hua-Se Ou, Chao-Hai Wei,* Yang Deng and Nai-Yun Gao

Principal component analysis (PCA) was used to identify and integrate the river-type and lake-type impurities in Qingcaosha Reservoir. The spatial and temporal trends of these typical PCA factors were monitored in summer, 2012.

1622



A study on lead (^{210}Pb) and polonium (^{210}Po) contamination from phosphogypsum in the environment of Wiślinka (northern Poland)

Alicja Boryło,* Grzegorz Olszewski and Bogdan Skwarzec

The results of polonium (^{210}Po) and lead (^{210}Pb) determination in different environmental soil samples collected in the vicinity of the phosphogypsum stack in Wiślinka (northern Poland) are presented and discussed in this paper.