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Environmental digest

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Characterization and environmental implications of nano- and larger TiO₂ particles in sewage sludge, and soils amended with sewage sludge

Bojeong Kim,* Mitsuhiro Murayama, Benjamin P. Colman and Michael F. Hochella Jr.

We conducted two field-scale investigations to better describe TiO₂ nano- and larger particles in their most likely route of entry into the environment, *i.e.*, the application of biosolids to soils.

1138

Verification of a depth-integrated sample arm as a means to reduce solids stratification bias in urban stormwater sampling

William R. Selbig,* Amanda Cox and Roger T. Bannerman

A new depth-integrated sample arm (DISA), verified in a controlled laboratory setting, was able to mitigate bias associated with the stratification of solids in stormwater runoff.

1145

Pollution characteristics of volatile organic compounds in the atmosphere of Haicang District in Xiamen City, Southeast China

Zhenchuan Niu, Han Zhang, Ya Xu, Xu Liao, Lingling Xu and Jinsheng Chen*

The pollution characteristics of volatile organic compounds were investigated in a district of Xiamen City, Southeast China.

1153

Nitrate and ammonium ions removal from groundwater by a hybrid system of zero-valent iron combined with adsorbents

Min-Kyu Ji, Won-Bae Park,* Moonis Ali Khan, Reda A. I. Abou-Shanab, Yongje Kim, Yunchul Cho, Jaeyoung Choi, Hocheol Song and Byong-Hun Jeon*

The present work highlights the feasibility of hybrid systems of Fe⁰ combined with different adsorbents (sepiolite, filtralite, and GAC) for simultaneous removal of NO₃⁻ and NH₄⁺ ions from groundwater samples.

1159

Light non-methane hydrocarbons at two sites in the Indo-Gangetic Plain

S. Lal,* L. K. Sahu, S. Venkataramani and C. Mallik

Variations of surface ozone and precursors including light NMHCs and emission characteristics based on their inter-correlations over the Indo-Gangetic Plain during a winter month.

1167

Propanil in a Manitoba soil: an interactive spreadsheet model based on conventional chemical kinetics

Donald S. Gamble,* G. R. Barrie Webster
and Marc Lamoureux

A pesticide model for slurried soil uses sorption sites stoichiometry and time dependent rate coefficients for conventional chemical kinetics predictions.

1174

Occurrence and behaviour of dissolved, nano-particulate and micro-particulate iron in waste waters and treatment systems: New insights from electrochemical analysis

R. Matthies,* A. C. Aplin, B. R. Horrocks
and L. K. Mudashiru

Electrochemical methods employed to monitor changes in iron speciation and redox chemistry in mine waters and passive treatment systems.

1182

Evaluation of soil contamination in intensive agricultural areas by pesticides and organic pollutants: south-eastern Spain as a case study

Patricia Plaza-Bolaños, Juan Antonio Padilla-Sánchez,
Antonia Garrido-Frenich,* Roberto Romero-González
and José Luis Martínez-Vidal

Survey of the presence of pesticides and persistent organic contaminants in agricultural soils from an intensive agricultural area under integrated pest management.

1190

Uranium series radionuclides in surface waters from the Shu river (Kazakhstan)

Mukhambetkali Burkitbayev, Bolat Uralbekov,*
Sholpan Nazarkulova, Ilona Matveyeva and Luis León
Vintró

Isotopic disequilibrium of uranium has been used to assess the impact of past uranium mining activities to measured uranium concentrations along the Shu River.

1196

A novel approach to rapid detection of acute water toxicity and its policy implications for grassroots sustainable environmental monitoring

Jie Liu, Lee Liu,* Li Yu, Guoqiang Yang and Xia Wang

An approach to fast and reliable detection of acute water toxicity enhances emergency management and policy for grassroots monitoring.

1203

Locating pollutant emission sources with optical remote sensing measurements and an improved one-dimensional radial plume mapping technique

Chang-fu Wu,* Shih-Chun Lin and Cheng-Kai Yeh

This study proposes a two-line one-dimensional radial plume mapping technique to locate the emission sources of air pollutants based on optical remote sensing measurements.

1211

Apportionment of the airborne PM10 in Spain. Episodes of potential negative impact for human health

M. S. Callén,* J. M. López and A. M. Mastral

The apportionment of the airborne PM10 in Zaragoza, one of the major polluted cities in Spain according to the World Health Organization, can help in understanding the main pollution sources.

1221

Seasonal variation for the ratio of BaP to BeP at different sites in Great Xiamen Bay

Shui-Ping Wu,* Ran-Ran Qian, Tsung-Chang Lee, Xing-Hong Wang, Hua-Sheng Hong and Chung-Shin Yuan

Samples were collected and analyzed for polycyclic aromatic hydrocarbons (PAHs) at eight sampling sites in Great Xiamen Bay, China.

1231

Toxicity assessment of sediments associated with the wreck of *s/s Stuttgart* in the Gulf of Gdańsk (Poland)

Błażej Kudlak,* Justyna Rogowska, Lidia Wolska, Maciej Kałas, Leszek Łęczyński and Jacek Namieśnik

Application of biotests to assessing sediments quality around shipwrecks on the basis of *s/s Stuttgart* (Polish coast) proves their usefulness in ecotoxicological studies.

1237

PET bottle use patterns and antimony migration into bottled water and soft drinks: the case of British and Nigerian bottles

Aminu Tukur,* Liz Sharp, Ben Stern, Chedly Tizaoui and Hadj Benkreira

This study used survey information on the pattern of PET bottle handling in Nigeria and Britain to design laboratory investigations on antimony leaching.

1248

Occurrence, distribution and bioaccumulation of antibiotics in the Haihe River in China

Lihong Gao, Yali Shi, Wenhui Li, Jiemin Liu and Yaqi Cai*

The occurrence, distribution and bioaccumulation of antibiotics in water, sediment and fish samples collected from Haihe River were investigated.

1256

Source and risk assessment of PCBs in sediments of Fenhe reservoir and watershed, China

Wei-Hong Li, Ying-Ze Tian, Guo-Liang Shi,* Chang-Sheng Guo, Yin-Chang Feng and Xiu-Ping Yue*

Levels, spatial and temporal characteristics, sources, and risks of PCBs were investigated in the sediments from the Fenhe reservoir and watershed, China.

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Uranium oxide and other airborne particles deposited on cypress leaves close to a nuclear facility

Reto Gieré,* Ramona Kaltenmeier and Laurent Pourcelot

Uranium-rich particles, emitted from a nuclear facility, and other airborne particles are trapped by the leaves of cypress trees.

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Seasonal distribution, source investigation and vertical profile of phenolic endocrine disrupting compounds in Dianchi Lake, China

Bin Wang, Bin Huang, Wei Jin, Yu Wang, Shimin Zhao, Farong Li, Ping Hu and Xuejun Pan*

Phenolic endocrine disrupting compounds, including NP2EO, NP1EO, 4-NP, BPA, 4-CP and 4-*t*-OP, were investigated in water, surface sediment and sediment cores in Dianchi Lake to track their seasonal distributions, pollution sources and historical trends.