
1201

Oil spill problems and sustainable response strategies through new technologies

Irena B. Ivshina, Maria S. Kuyukina,
Anastasiya V. Krivoruchko, Andrey A. Elkin,
Sergey O. Makarov, Colin J. Cunningham,
Tatyana A. Peshkur, Ronald M. Atlas and James C. Philp*

Crude oil and petroleum products are widespread water and soil pollutants resulting from marine and terrestrial spillages.

1220

Photochemical behavior of antibiotics impacted by complexation effects of concomitant metals: a case for ciprofloxacin and Cu(II)

Xiaoxuan Wei, Jingwen Chen,* Qing Xie, Siyu Zhang,
Yingjie Li, Yifei Zhang and Hongbin Xie

Cu(II) complexation altered the light absorption, direct photolytic pathways, $^1\text{O}_2$ photo-generation ability, and the reactivity of H_2CIP^+ towards $^1\text{O}_2$ by changing its molecular orbitals and atomic charge distribution.

1228

Evaluating the PAS-SIM model using a passive air sampler calibration study for pesticides

Andrés Ramírez Restrepo, Stephen J. Hayward, James M. Armitage* and Frank Wania

The performance of a model for simulating the accumulation of organic chemicals on XAD-2 passive air samplers under variable meteorological conditions is evaluated using a calibration study for pesticides.

1238

Impact of hydrocarbons from a diesel fuel on the germination and early growth of subantarctic plants

Gabriella K. Macoustra, Catherine K. King, Jane Wasley, Sharon A. Robinson and Dianne F. Jolley*

Development of early life stages (root and shoot growth for up to 28 days) were generally a more sensitive indicator of exposure effects than germination.

1249

Male-specific coliphages for source tracking fecal contamination in surface waters and prevalence of Shiga-toxicogenic *Escherichia coli* in a major produce production region of the Central Coast of California

Subbarao V. Ravva,* Chester Z. Sarreal and Michael B. Cooley

F+ RNA coliphages are invaluable for predicting the sources of fecal contamination in the environment and their prevalence data may aid in preventing the spread of enteric pathogens from likely sources.

1257

Occupational exposure to airborne contaminants during offshore oil drilling

Niels E. Kirkhus,* Yngvar Thomassen, Bente Ulvestad, Torill Woldbæk and Dag G. Ellingsen

The aim was to study exposure to airborne contaminants in oil drillers during ordinary work.

Toxicity of lanthanum oxide (La₂O₃) nanoparticles in aquatic environments

Brabu Balusamy,* Burcu Ertit Taştan,
Seyda Fikirdesici Ergen, Tamer Uyar and Turgay Tekinay*

The study demonstrated the ecotoxic potential of lanthanum oxide nanoparticles on fresh-water aquatic microalgae *Chlorella* sp. and the crustacean *Daphnia magna*. Lanthanum oxide nanoparticles showed no toxic effects on algae and severe toxic effects on the crustacean. Results may play a vital role in the risk assessment process for exposure of lanthanum oxide nanoparticles in aquatic environments.

Urban soil exploration through multi-receiver electromagnetic induction and stepped-frequency ground penetrating radar

Ellen Van De Vijver,* Marc Van Meirvenne,
Laura Vandenhaute, Samuël Delefortrie,
Philippe De Smedt, Timothy Saey and Piet Seuntjens

A high-resolution survey with two state-of-the-art geophysical sensors was performed to investigate an urban soil including various anthropogenic disturbances.

***Burkholderiales* participating in pentachlorophenol biodegradation in iron-reducing paddy soil as identified by stable isotope probing**

Hui Tong, Min Hu, Fangbai Li,* Manjia Chen and Yahui Lv

As the most prevalent preservative worldwide for many years, pentachlorophenol (PCP) has attracted much interest in the study of biodegradation in soil and aquatic ecosystems.

Investigations of freezing and cold storage for the analysis of peatland dissolved organic carbon (DOC) and absorbance properties

Mike Peacock,* Chris Freeman, Vincent Gauci,
Inma Lebron and Chris D. Evans

The loss of peatland dissolved organic carbon (DOC) in filtered samples under long-term storage (4 °C in the dark) can be modelled simply using a calculated half-life.

1302

The impact of carbon nanomaterials on the development of phenanthrene catabolism in soil

Ayodeji O. Oyelami and Kirk T. Semple*

The presence of high concentrations of MWCNTs and fullerene soot affected the development of catabolism.

1311

Modelling the increased frequency of extreme sea levels in the Ganges–Brahmaputra–Meghna delta due to sea level rise and other effects of climate change

S. Kay,* J. Caesar, J. Wolf, L. Bricheno, R. J. Nicholls, A. K. M. Saiful Islam, A. Haque, A. Paradaens and J. A. Lowe

A hydrodynamic model of the Bay of Bengal has been used to explore increasing frequency of extreme sea levels in the Ganges–Brahmaputra–Meghna delta over the 21st century.

1323

Simulation of nonylphenol degradation in leafy vegetables using a deuterated tracer

Kun Fang, Zejun Jiang, Jing Wang,* Yongxin She, Maojun Jin, Fen Jin and Mao Yang

After the safety interval period, nonylphenol (NP) residues from the application of several pesticides in leafy vegetables were still considerably high.

1331

Estimating baseline toxicity of PAHs from marine chronically polluted sediments and bioaccumulation in target organs of fish hypothetically exposed to them: a new tool in risk assessment

Elisa Rojo-Nieto* and José Antonio Perales

Using C_{free} and specific BSAFs, the concentrations in target organs of benthic fish, hypothetically exposed to sediments under specific environmental real conditions, can be estimated.

Spatial variation and sources of polycyclic aromatic hydrocarbons (PAHs) in surface sediments from the Yangtze Estuary, China

Ying Wang,* Chanchan Shen, Zhenyao Shen, Di Zhang and John C. Crittenden

The spatial distributions and sources of polycyclic aromatic hydrocarbons (PAHs) in surface sediments from the Yangtze Estuary were systematically analyzed.