

## Special Issue

## Soil Environment and Pollution Remediation

## Preface

## Soil environment and pollution remediation

ZHOU Dongmei, SONG Xin, ZHAO Fangjie and Baohua GU ..... 387

## Review Articles

## Assessment of methods for determining bioavailability of trace elements in soils: A review

Jurate KUMPIENE, Laura GIAGNONI, Bernd MARSCHNER, Sébastien DENYS, Michel MENCH, Kristin ADRIAENSEN, Jaco VANGRONSVELD, Markus PUSCHENREITER and Giancarlo RENELLA ..... 389

## Fate processes of chlorobenzenes in soil and potential remediation strategies: A review

Ferdi BRAHUSHI, Fredrick Orori KENGARA, SONG Yang, JIANG Xin, Jean Charles MUNCH and WANG Fang ..... 407

## Morphological and physiological responses of plants to cadmium toxicity: A review

HE Shanying, YANG Xiaoe, Zhenli HE and Virupax C. BALIGAR ..... 421

## Original Articles

## Contamination of phthalate esters in vegetable agriculture and human cumulative risk assessment

CHEN Ning, SHUAI Wenjuan, HAO Xinmei, ZHANG Huichun, ZHOU Dongmei and GAO Juan ..... 439

## Feasibility of tea saponin-enhanced soil washing in a soybean oil-water solvent system to extract PAHs/Cd/Ni efficiently from a coking plant site

YE Mao, SUN Mingming, XIE Shanni, LIU Kuan, FENG Yanfang, ZHAO Yu, WAN Jinzhong, HU Feng, LI Huixin, ZONG Lianggang and JIANG Xin ..... 452

## Comparison of persulfate activation and Fenton reaction in remediating an organophosphorus pesticides-polluted soil

ZHU Changyin, ZHU Fengxiao, WANG Fuwang, GAO Juan, FAN Guangping, ZHOU Dongmei and FANG Guodong ..... 465

## Predicting cadmium safety thresholds in soils based on cadmium uptake by Chinese cabbage

LU Junhe, YANG Xiping, MENG Xuchao, WANG Guoqing, LIN Yusuo, WANG Yujun and ZHAO Fangjie ..... 475

## Effects of silver nanoparticles on soil microbial communities and bacterial nitrification in suburban vegetable soils

WANG Juan, SHU Kunhui, ZHANG Li and SI Youbin ..... 482

## Refinement of methodology for cadmium determination in soil micro-arthropod tissues

ZHU Dong, KE Xin, WU Longhua, HUANG Yujuan, Peter CHRISTIE and LUO Yongming ..... 491

Prediction of polycyclic aromatic hydrocarbon bioaccessibility to earthworms in spiked soils by composite extraction with hydroxypropyl- $\beta$ -cyclodextrin and organic acids

ZHANG Yanan, YANG Xinglun, GU Chenggang, BIAN Yongrong, LIU Zongtang, JIA Mingyun, WANG Fang, WANG Daizhang and JIANG Xin ..... 502

Plant growth-promoting traits in rhizobacteria of heavy metal-resistant plants and their effects on *Brassica nigra* seed germination

Brenda ROMÁN-PONCE, Diana Miryel REZA-VÁZQUEZ, Sonia GUTIÉRREZ-PAREDES, María de Jesús DE HARO-CRUZ, Jessica MALDONADO-HERNÁNDEZ, Yanelly BAHENA-OSORIO, Paulina ESTRADA-DE LOS SANTOS, En Tao WANG and María Soledad VÁSQUEZ-MURRIETA ..... 511

Optimization of *ex-situ* washing removal of polycyclic aromatic hydrocarbons from a contaminated soil using nano-sulfonated graphene

GAN Xinhong, TENG Ying, REN Wenjie, MA Jun, Peter CHRISTIE and LUO Yongming ..... 527

## Pollutant and soil types influence effectiveness of soil-applied absorbents in reducing rice plant uptake of persistent organic pollutants

LIU Cuiying, JIANG Xin, MA Yuchun and Barbara J. CADE-MENUN ..... 537

## Marine bacterial biofilms in bioremediation of polycyclic aromatic hydrocarbons (PAHs) under terrestrial condition in a soil microcosm

Neelam MANGWANI, Supriya KUMARI and Surajit DAS ..... 548

Marigold (*Tagetes erecta*): The potential value in the phytoremediation of chromium

Lívia C. COELHO, Ana Rosa R. BASTOS, Paulo J. PINHO, Guilherme A. SOUZA, Janice G. CARVALHO, Viviane A. T. COELHO, Luiz Carlos A. OLIVEIRA, Rimena R. DOMINGUES and Valdemar FAQUIN ..... 559

## Illumina-based analysis of bulk and rhizosphere soil bacterial communities in paddy fields under mixed heavy metal contamination

HE Huaidong, LI Waichin, Riqing YU and YE Zhihong ..... 569

## Influence of organo-metal interactions on regeneration of exhausted clay mineral sorbents in soil columns loaded with heavy metals

Yasser REFAEY, Boris JANSEN, Pim DE VOOGT, John R. PARSONS, Abdel-Hamid EL-SHATER, Abdel-Aziz EL-HADDAD and Karsten KALBITZ ..... 579

## Impact of a phosphate amendment on the environmental availability and phytoavailability of Cd and Pb in moderately and highly carbonated kitchen garden soils

Christophe WATERLOT, Christelle PRUVOT, Franck MAROT and Francis DOUAY ..... 588

Biodegradation of phthalate esters by a newly isolated *Acinetobacter* sp. strain LMB-5 and characteristics of its esterase

FANG Yue, ZHANG Lishuang, WANG Jing, ZHOU Ying and YE Bangece ..... 606

## Chemical availability of Cd, Pb and Zn in anthropogenically polluted soil: Assessing the geochemical reactivity and oral bioaccessibility

Christophe WATERLOT, Francis DOUAY and Aurélie PELFRÈNE ..... 616

## Letters to the Editor

## Diversity of As metabolism functional genes in Pb-Zn mine tailings

LI Xiaofang, Philip L. BOND and Longbin HUANG ..... 630

Intercropping with *Solanum nigrum* and *Solanum photeinocarpum* from two ecoclimatic regions promotes growth and reduces cadmium uptake of eggplant seedlings

TANG Yi, HE Juan, YU Xuena, XIE Yongdong, LIN Lijin, SUN Guochao, LI Huanxiu, LIAO Mingan, LIANG Dong, XIA Hui, WANG Xun, ZHANG Jing, LIU Zejing, TU Lihua and LIU Li ..... 638