

《地学前缘》

# “土壤污染成因与污染土壤修复” 主题专辑

2019 年 11 月 第 26 卷 第 6 期

## 目次

### 特约主编致读者

陈世宝

### 土壤污染环境监测

- 1 超高效液相色谱-电喷雾串联质谱法同时测定土壤中四环素类抗生素及其降解产物  
陈 莉, 贾春虹, 刘冰洁, 张乙涵
- 7 高效液相色谱-荧光检测同时测定污泥中 7 种氟喹诺酮类抗生素  
陈 莉, 贾春虹, 刘冰洁, 靖俊杰, 赵尔成, 余革中, 贺 敏
- 13 腈菌唑在茶园土壤中的对映体选择性降解与碳同位素分馏  
刘冰月, 张冬冬, 何 玲, 朱优峰
- 19 微塑料对水中甲基橙的吸附特征分析  
宋 欢, 罗锡明, 张 莉, 何宝南, 李佳蔚, 王一鹏
- 28 根细胞壁中镉亚细胞分布对土壤-烟草系统中镉吸收、转运的影响  
雷丽萍, 段淑辉, 周志成, 王 萌, 陈世宝

### 土壤污染与地下水安全

- 35 中国农田土壤重金属污染防治现状与问题思考  
陈世宝, 王 萌, 李彬彬, 郑 涵, 雷小琴, 孙晓艺, 王立夫
- 42 利用体外方法评估不同淋洗剂对土壤中砷的淋洗效果及其健康风险  
岳昌盛, 都慧丽, 彭 犇, 崔岩山
- 49 唐山曹妃甸浅层地下水水化学特征及咸化成因  
侯国华, 高茂生, 党显璋
- 58 海绵城市建设地下水补给计算研究进展  
康宏志, 陈 亮, 郭祺忠, 练继建, 侯 杰
- 66 土壤分形结构对其水力性质的指示作用  
王艳艳, 何雨江

### 污染土壤修复

- 75 基于小麦籽粒降 Cd 率及土壤 Cd 形态变化评价蚯蚓对 Cd 污染土壤的修复效果  
刘 拓, 王 萌, 陈世宝
- 82 实验室与田间条件下骨炭粉与海藻肥对镉污染土壤修复效果评价  
王 萌, 陈世宝, 李彬彬, 李晓越, 郑 涵, 孟 楠
- 89 两种有机废弃物对铅矿区农田污染土壤的修复效果研究  
王小庆, 曲 洋, 王国峰, 田文杰
- 95 促根剂及水分胁迫对 Cd 污染异质土壤中小麦吸收、转运 Cd 的影响  
雷小琴, 王 萌, 郑 涵, 李彬彬, 陈世宝
- 103 草本植物间作对空心菜 Pb 吸收、转运的影响  
孟 楠, 王 萌, 李彬彬, 李晓越, 郑 涵, 陈 莉, 陈世宝

主 编:王成善 本期特约主编:陈世宝

副主编:张立飞 金振民 金之钧 万 力 张培震 王小龙(常务)

本期责任编辑:白兰云 胡伟武 王小龙 马 丽 李学军 编务:杨丽英

本期英文审校:沈 合 潘道均 排版:北京晨皓轩图文设计有限公司

期刊基本参数:CN 11-3370/P\*1994\*b\*A4\*319\*zh\*P\*¥50.00\*1 000\*31\*2019-11

- 112 田间条件下不同农艺措施对烟叶镉吸收及烟叶品质的影响  
段淑辉, 陈世宝, 李晓越, 肖艳松, 单雪华, 邓 祥, 廖雅桦, 刘勇军, 周志成
- 118 不同超富集、富集植物-玉米间作模式对玉米中镉吸收、转运的影响研究  
霍文敏, 赵中秋, 王 丽, 邹 茸, 范洪黎

## 土壤污染与土壤环境质量评价

- 128 全国土地质量地球化学调查二十年  
李 括, 彭 敏, 赵传冬, 杨 柯, 周亚龙, 刘 飞, 唐世琪, 杨 帆, 韩 伟, 杨 峥, 成晓梦, 夏学齐, 关 涛, 骆检兰, 成杭新
- 159 表生地球化学动力学与中国西南土壤中化学元素分布模式的驱动机制  
成杭新, 彭 敏, 赵传冬, 韩 伟, 王惠艳, 王乔林, 杨 帆, 张富贵, 王成文, 刘 飞, 周亚龙, 唐世琪, 李 括, 杨 柯, 杨 峥, 成晓梦, 陈子万, 张 华, 莫春虎
- 192 对农用地土壤环境质量类别划分的思考:以贵州马铃薯产区 Cd 风险管控为例  
宋 静, 许根焰, 骆永明, 高 慧, 唐 伟
- 199 北京城乡接合部地表颗粒物中重金属污染负荷及健康风险评价  
李海燕, 王焱森, 张晓然, 闫 磊, 武利园, 金 弈, 崔 如, 杨志超
- 207 基于土壤重金属污染风险管控的土壤质量评价:以某县级市为例  
李玉峰, 赵中秋, 祝培甜, 陈 勇, 李 茜, 原 野, 李雪珍

## 非主题来稿选登

- 216 火成岩中的超临界流体晶及其研究意义  
罗照华, 杨宗锋, 苏尚国, 刘 翠, 江秀敏
- 228 俄罗斯塔尔纳赫岩浆铜镍硫化物矿床中流体参与成矿的矿物学证据  
蒋俊毅, 苏尚国, 王菁姣
- 244 河北武安玉石洼铁矿中磁铁矿特征及其对铁矿床成因指示意义  
侯晓阳, 苏尚国, 杨跃跃
- 257 河北汉诺坝碱性玄武岩的源区和成因  
崔晓亮, 苏尚国, 宋 晨, 蒋俊毅, 黑慧欣, 伍 月
- 271 天池火山三期浮岩气孔形态的复杂性及其动力学成因  
彭 年, 朱晓艳, 刘永顺, 聂保锋, 李 苏
- 281 深层火山碎屑熔岩形成机理及其指相意义研究:以松辽盆地庆深气田为例  
牛花朋, 王贵文, 鲜本忠, 付健伟, 焦小芹, 李洪娟
- 289 基于信息量法的地质灾害气象风险预警模型:以甘肃省陇南地区为例  
罗鸿东, 李瑞冬, 张 勃, 曹 博
- 298 《攻坚行动方案》实施后北京市 PM<sub>2.5</sub> 中微量元素组成特征  
邵龙义, 常玲利, 张梦媛, 李 杰, 李耀炜, 李文君, 冯晓蕾

### 学术争鸣

- 309 板块运动的机制与动力来源学术争鸣  
万天丰, 李三忠, 杨巍然, 梁光河, 毛小平, 刘银河, 於文辉, 陈志耕, 丁卫平, 胡宝群, 付 虹, 方 曙, 唐春安, 莫宣学

**Determination of tetracyclines and their degradation products in soil using ultra-performance liquid chromatography-tandem mass spectrometry**  
CHEN Li, JIA Chunhong, LIU Bingjie, ZHANG Yihan(1)

**Simultaneous determination of seven fluoroquinolones in sewage sludge by high performance liquid chromatography with fluorescence detection**  
CHEN Li, JIA Chunhong, LIU Bingjie, JING Junjie, ZHAO Ercheng, YU Pingzhong, HE Min(7)

**Enantioselective biodegradation and carbon isotope fractionation of myclobutanil in tea orchard soils**  
LIU Bingyue, ZHANG Dongdong, HE Ling, ZHU Youfeng(13)

**Characteristic analysis of methyl orange adsorption on microplastics in water**  
SONG Huan, LUO Ximing, ZHANG Li, HE Baonan, LI Jiawei, WANG Yipeng(19)

**Effects of subcellular Cd accumulation in root cell wall on Cd transfer and translocation from soil to tobacco cultivars**  
LEI Liping, DUAN Shuhui, ZHOU Zhicheng, WANG Meng, CHEN Shibao(28)

**Current status of and discussion on farmland heavy metal pollution prevention in China**  
CHEN Shibao, WANG Meng, LI Shanshan, ZHENG Han, LEI Xiaoqin, SUN Xiaoyi, WANG Lifu(35)

***In vitro* assessment of the effectiveness and health risks of using different washing reagents in arsenic removal from soil**  
YUE Changsheng, DU Huili, PENG Ben, CUI Yanshan(42)

**Hydrochemical characteristics and salinization causes of shallow groundwater in Caofeidian, Tangshan City**  
HOU Guohua, GAO Maosheng, DANG Xianzhang(49)

**An overview of quantification of groundwater recharge in sponge city construction**  
KANG Hongzhi, CHEN Liang, GUO Qizhong, LIAN Jijian, HOU Jie(58)

**The indicative effect of soil fractal structure on its hydraulic properties**  
WANG Yanyan, HE Yujiang(66)

**Evaluation of the efficiency of remediation of Cd contaminated soil by earthworm based on the rate of Cd reduction in wheat grain and changes in Cd bioavailability in soil experiment**  
LIU Tuo, WANG Meng, CHEN Shibao(75)

**Assessing the efficiencies of remediation of Cd contaminated soil by bone charcoal and seaweed fertilizer in pot and field experiments**  
WANG Meng, CHEN Shibao, LI Shanshan, LI Xiaoyue, ZHENG Han, MENG Nan(82)

**Molybdenum immobilization efficiency of two kinds of organic waste materials for molybdenum contaminated agricultural soils**  
WANG Xiaoqing, QU Yang, WANG Guofeng, TIAN Wenjie(89)

**Effects of root agent and water stress on wheat root elongation and Cd uptake and translocation in heterogeneous Cd contaminated soil**  
LEI Xiaoqin, WANG Meng, ZHENG Han, LI Shanshan, CHEN Shibao(95)

**Effects of intercropping ten herbaceous plants on lead uptake by and accumulation in water spinach**  
MENG Nan, WANG Meng, LI Shanshan, LI Xiaoyue, ZHENG Han, CHEN Li, CHEN Shibao(103)

**Effects of different agronomic practices on Cd uptake by tobacco plant and on tobacco quality under field conditions**  
DUAN Shuhui, CHEN Shibao, LI Xiaoyue, XIAO Yansong, SHAN Xuehua, DENG Xiang, LIAO Yahua, LIU Yongjun, ZHOU Zhicheng(112)

**Study of the effects of intercropping different hyperaccumulator and accumulator plants on Cd uptake and transportation by maize**  
HUO Wenmin, ZHAO Zhongqiu, WANG Li, ZOU Rong, FAN Hongli(118)

**Vicennial implementation of geochemical survey of land quality in China**  
LI Kuo, PENG Min, ZHAO Chuandong, YANG Ke, ZHOU Yalong, LIU Fei, TANG Shiqi, YANG Fan, HAN Wei, YANG Zheng, CHENG Xiaomeng, XIA Xueqi, GUAN Tao, LUO Jianlan, CHENG Hangxin(128)

**Epigenetic geochemical dynamics and driving mechanisms of distribution patterns of chemical elements in soil, Southwest China**  
CHENG Hangxin, PENG Min, ZHAO Chuandong, HAN Wei, WANG Huiyan, WANG Qiaolin, YANG Fan, ZHANG Fugui, WANG Chengwen, LIU Fei, ZHOU Yalong, TANG Shiqi, LI Kuo, YANG Ke, YANG Zheng, CHENG Xiaomeng, CHEN Ziwan, ZHANG Hua, MO Chunhu(159)

**Some thoughts on the classification of soil environmental quality for agricultural land: taking risk control of Cd in potato producing area of Guizhou as an example**  
SONG Jing, XU Genyan, LUO Yongming, GAO Hui, TANG Wei(192)

**Pollution load and health risk assessment of heavy metals in road-deposited sediment in the urban-rural fringe of Beijing**  
LI Haiyan, WANG Yaosen, ZHANG Xiaoran, YAN Lei, WU Liyuan, JIN Yi, CUI Ru, YANG Zhichao(199)

**Soil quality assessment based on risk control of heavy metal pollution in soil: a case study of an industrial city in China**  
LI Yufeng, ZHAO Zhongqiu, ZHU Peitian, CHEN Yong, LI Qian, YUAN Ye, LI Xuezheng(207)

\* \* \* \* \*

**Supercritical fluid crystals in igneous rocks and the implications**  
LUO Zhaohua, YANG Zongfeng, SU Shangguo, LIU Cui, JIANG Xiumin(216)

**Mineralogical evidence for fluid activities in the metallogeny of the Talnakh magmatic Cu-Ni sulfide deposit in Norilsk, Russia**  
JIANG Junyi, SU Shangguo, WANG Jingjiao(228)

**Magnetite characteristics of the Yushiwa iron deposit in Wu'an, Hebei Province and its indication significance to the genesis of iron deposit**  
HOU Xiaoyang, SU Shangguo, YANG Yueyue(244)

**Origin and source of the Hannuoba alkaline basalts**  
CUI Xiaoliang, SU Shangguo, SONG Chen, JIANG Junyi, HEI Huixin, WU Yue(257)

**Complexity and dynamics of vesicle shapes of pumices formed in the three Tianchi volcano eruptions**  
PENG Nian, ZHU Xiaoyan, LIU Yongshun, NIE Baofeng, LI Su(271)

**The formation mechanism of pyroclastic lava and its significance for the identification of volcanic rock faces: a case study from Qingshen gasfield, Songliao Basin**  
NIU Huapeng, WANG Guiwen, XIAN Benzong, FU Jianwei, JIAO Xiaoqin, LI Hongjuan(281)

**An early warning model system for predicting meteorological risk associated with geological disasters in the Longnan area, Gansu Province based on the information value method**  
LUO Hongdong, LI Ruidong, ZHANG Bo, CAO Bo(289)

**Trace element compositions in PM<sub>2.5</sub> after the action for comprehensive control of air pollution in Beijing**  
SHAO Longyi, CHANG Lingli, ZHANG Mengyuan, LI Jie, LI Yaowei, LI Wenjun, FENG Xiaolei(298)

**Academic controversy on the mechanism and driving forces of plate movement**  
WAN Tianfeng, LI Sanzhong, YANG Weiran, LIANG Guanghe, MAO Xiaoping, LIU Yinhe, YU Wenhui, CHEN Zhigeng, DING Weiping, HU Baoqun, FU Hong, FANG Shu, TANG Chunan, MO Xuanxue(309)