

目 次

流域/区域保护与修复

- 京津冀地区流域水质目标管理技术集成研究 王菲菲, 伍海闻, 雷坤, 安立会 (1359)
- 西北干旱区流域水污染特征与控制策略——以宁夏清水河流域为例 马玉坤, 朱翔, 彭福全, 庞晴晴, 倪利晓, 杜鹏 (1369)
- 天津市近岸海域水质变化趋势分析及水质目标研究 许自舟, 李亚芳, 程嘉熠, 吉志新, 张晓霞, 林建国 (1378)
- 北京市典型湖泊中对羟基苯甲酸酯类化合物污染特征 孟甜, 王晓伟, 汪素芳, 董淮晋, 冯学良, 何连生 (1389)
- 巴音布鲁克高寒草原植被覆盖度时空格局及影响因素 吾甫尔·托乎提, 吕田田, 赛·巴雅尔图, 冯朝阳 (1395)
- 国内外水生态健康评价研究进展 曹家乐, 张亚辉, 张瑾, 黄子晏, 杜士林, 孙福红 (1402)
- 基于微生物生物完整性指数的北京市城市河道生态系统健康评价 董婧, 卢少奇, 伍娟丽, 王子康, 王恒嘉, 徐菲 (1411)
- 生物磁效应在环境污染治理与修复中的应用 李卫平, 张明天, 张列宇, 杜彩丽, 祝秋恒, 李晓光 (1420)

生态修复

- 基于“三生空间”的土地利用转型的生态效应及驱动力分析——以苏州市为例 贲薛晨, 余成 (1428)
- 武夷山主峰黄岗山片区生态安全格局构建研究 朱振肖, 柴慧霞, 张箫, 王夏晖, 牟雪洁, 于洋 (1437)
- 基于生态系统服务重要性和生态敏感性的武汉市生态安全格局评价 方臣, 匡华, 贾琦琪, 陈曦, 朱正勇, 叶琴 (1446)
- 基于土地利用变化的广西近 20 年生态系统服务价值研究 丘海红, 胡宝清, 张泽 (1455)
- 清水河流域生态系统服务评估及预测 裴宏伟, 张红娟, 张良, 李雅丽, 张高伟, 刘孟竹 (1466)
- 磺胺甲恶唑胁迫下人工湿地植物与根际微生物的响应 胡劲召, 张璇, 王永强, 徐佳敏, 卢洪斌, 叶长兵, 刘晓晖, 陈中兵, 卢少勇 (1474)

水污染控制

- 改良填料折流式生物滞留系统对雨水中氮磷削减的效果 冉阳, 付峥嵘, 马满英, 王冶, 叶青勇 (1484)
- 基于降水等级分异方法的低影响开发小区雨水径流污染负荷削减率的评估 王生愿, 陈江海, 陈小龙 (1492)
- 含酚废水 $\alpha\text{-Fe}_2\text{O}_3$ 催化臭氧氧化参数优化及机理分析 王勇, 张耀宗, 毕莹莹, 杜明辉, 孙晓明 (1500)
- 厌氧氨氧化在城市污水脱氮处理中的研究与应用进展 刘华光, 董文艺, 王宏杰, 戴仲怡, 王雪, 陈颖童, 侯子沅, 谢晋, 曾志伟 (1508)
- 短程反硝化耦合厌氧氨氧化强化脱氮工艺研究与应用进展 常根旺, 杨津津, 李绍康, 罗景文, 杨一飞, 李翔 (1519)
- 磷对硫自养反硝化效果的影响 赵东华, 岳冬梅, 郑岩皓, 束梦照, 葛俊, 孙菲菲 (1528)
- 污水处理厂二沉池数值模型研究进展 李自改, 张宏, 徐贵华 (1534)
- 基于 AHP-FCE 模型的制药行业清洁生产评价 李娟, 沈亮, 王良杰, 黄晶琳, 钱锋, 曾萍, 王辉锋, 王晨昊 (1541)

地下水治理

- 地下水脱砷技术的研究现状及发展趋势 石乐琪, 郭莉, 吕晨阳, 杜冬云 (1548)
- 西南某退役化工厂场地地下水污染特征及污染物迁移规律分析 李书迪, 谢焜, 张荣海, 张芊, 苏丽丽, 张德明, 黄锦孙, 周永信 (1555)
- 河流入海口潮间带某工业地块石油烃污染特征及迁移规律 张荣海, 陈余道, 韦壮绵, 谢焜, 李书迪, 欧丽 (1564)
- 基于 AHP-TOPSIS 的在产企业地下水铁锰污染修复技术比选 刘锋平, 孙宁, 呼红霞, 丁贞玉 (1572)

大气/废气污染控制与管理

- 双碳背景下煤基产业绿色低碳转型之路 姜华, 李艳萍, 高健 (1580)
- 我国减污降碳与地区经济发展水平差异研究 王涵, 李慧, 王涵, 王淑兰, 张文杰 (1584)
- 汾渭平原典型污染城市 $\text{PM}_{2.5}$ 来源分布及传输分析 崔宏, 刘肖, 秦巧燕 (1593)
- 重庆市典型道路机动车排放 NO_2 污染特征 李永锋, 马杰, 王胜蓝, 蒋月, 杨海蓉, 张潇天, 王俭 (1601)
- 深圳市典型溶剂使用源 VOCs 排放特征、治理现状与减排对策 黄俊霖, 邱向阳, 程义君, 吴家浩 (1609)

土壤与固废污染控制与管理

- 西藏年楚河流域农用地土壤重金属分布与生态风险评价 杜梅, 张强英, 任培, 高爽, 布多 (1618)
- 粉葛对农田土壤镉的富集特征 林小兵, 武琳, 周利军, 黄欠如, 刘少华, 陈锋, 欧阳国平, 张秋梅 (1626)
- 污泥-稻壳协同焚烧对污泥磷资源回收效率的影响 熊巧, 吕航, 吕瑞斌, 吴翔, 吴旭 (1633)
- 改性蓝藻生物炭促进生物电化学系统阴极氢自养反硝化过程研究 熊江磊, 罗嘉豪, 严群 (1640)
- 填埋场防渗系统高密度聚乙烯膜漏洞修补技术探析 朱铭珠, 杨延梅, 徐亚, 姚光远, 刘玉强, 黄启飞 (1647)
- 改性无烟煤材料的制备及其对磷的吸附回收性能 武越, 赵婷, 金彦任, 薛燕, 张凌旋, 李达, 乔晋如, 黄杨 (1653)
- 富含硅铝的工业灰渣合成沸石的研究进展 马慧, 徐德福, 李伯启, 薛震, 王金光, 薛飞, 张军, 刘兆飞 (1660)
- 工业废盐热处理技术研究进展 吴鹭, 袁文蛟, 王洁, 张柯, 田书磊, 李梅彤 (1668)

环境风险评估与管理

- 基于 DPSIR 模型的省域绿色发展绩效评价 解蕾, 姚扬, 但智钢, 史菲菲, 袁殷, 方琳, 苑雯 (1681)
- 基于物联网的固定源大气污染物排放现场执法监管信息系统设计与应用 刘柏音, 刘孝富, 孙启宏, 罗镭 (1687)
- 北方地区农村清洁取暖技术适用性评价——以北京为例 吕连宏, 张楠, 夏捷, 张保留, 白梓函, 罗宏 (1695)
- 四环素水生生物基准及对对中国部分水体的生态风险评估 刘萌硕, 陈浩林, 郝子垚, 王革林, 刘莹莹, 马云龙, 王莉 (1703)
- 基于生物配位体模型的汾河铜水质基准研究 李扬, 牛永华, 李会仙, 孙福红, 苏海磊 (1711)

Contents

Integration of the basin water-quality target management technologies in Beijing-Tianjin-Hebei Region	WANG Feifei, WU Haiwen, LEI Kun, AN Lihui	(1359)
Water pollution characteristics and control strategies in arid areas of Northwest China: a case study of Qingshui River Basin in Ningxia	MA Yushen, ZHU Xiang, PENG Fuquan, PANG Qingqing, NI Lixiao, DU Peng	(1369)
Trends analysis and targets study of the water quality in Tianjin coastal waters	XU Zizhou, LI Yafang, CHENG Jiayi, JI Zhixin, ZHANG Xiaoxia, LIN Jianguo	(1378)
Pollution characteristic analysis of parabens compounds in typical lakes in Beijing	MENG Tian, WANG Xiaowei, WANG Sufang, DONG Huaijin, FENG Xueliang, HE Liansheng	(1389)
Temporal-spatial patterns and influencing factors of vegetation coverage in Bayanbulak Alpine Grassland, China	WUFUER-Tuohuti, LU Tiantian, SAI Bayartu, FENG Chaoyang	(1395)
Research progress of water ecological health assessment at home and abroad	CAO Jiale, ZHANG Yahui, ZHANG Jin, HUANG Ziyang, DU Shilin, SUN Fuhong	(1402)
Evaluation of urban river ecosystem health in Beijing based on the microbial index of biotic integrity	DONG Jing, LU Shaoqi, WU Juanli, WANG Zikang, WANG Hengjia, XU Fei	(1411)
Application of biological magnetic effects in environment pollution control and restoration	LI Weiping, ZHANG Mingtian, ZHANG Lieyu, DU Caili, ZHU Qiheng, LI Xiaoguang	(1420)
Ecological effects of land use transformation and its driving force based on production-living-ecological space: a case study of Suzhou City	BEN Xuechen, YU Cheng	(1428)
Research on the construction of ecological security pattern in Huanggang Mountain area, the Main Peak of Wuyi Mountain	ZHU Xhenxiao, CHAI Huixia, ZHANG Xiao, WANG Xiahui, MOU Xuejie, YU Yang	(1437)
Evaluation of ecological security pattern in Wuhan City based on the importance of ecosystem services and ecological sensitivity	FANG Chen, KUANG Hua, JIA Qiqi, CHEN Xi, ZHU Zhengyong, YE Qin	(1446)
Study on ecosystem service value of Guangxi in the past 20 years based on land use change	QIU Haihong, HU Baoqing, ZHANG Ze	(1455)
Assessment and prediction of ecosystem services in Qingshui River Basin	PEI Hongwei, ZHANG Hongjuan, ZHANG Liang, LI Yali, ZHANG Gaowei, LIU Mengzhu	(1466)
Responses of plants and rhizosphere microorganisms in constructed wetlands under sulfamethoxazole stress	HU Jinzhao, ZHANG Xuan, WANG Yongqiang, XU Jiamin, LU Hongbin, YE Changbing, LIU Xiaohui, CHEN Zhongbing, LU Shaoyong	(1474)
Effect of amended filler fold-flow bioretention system on nitrogen and phosphorus reduction in rainwater	RAN Yang, FU Zhengrong, MA Manying, WANG Ye, YE Qingyong	(1484)
Evaluation of reduction rate of rainwater runoff pollution load in low impact development community based on rainfall grade differentiation method	WANG Shengyuan, CHEN Jianghai, CHEN Xiaolong	(1492)
Optimization and mechanism analysis of α -Fe ₂ O ₃ catalytic ozone oxidation parameters for phenolic wastewater	WANG Yong, ZHANG Yaozong, BI Yingying, DU Minghui, SUN Xiaoming	(1500)
Research and application advances of Anammox in nitrogen removal from municipal wastewater	LIU Huaguang, DONG Wenyi, WANG Hongjie, DAI Zhongyi, WANG Xue, CHEN Yingting, HOU Zilong, XIE Jin, ZENG Zhiwei	(1508)
Research and application progress of partial denitrification coupled with anammox for enhanced denitrification	CHANG Genwang, YANG Jinjin, LI Shaokang, LUO Jingwen, YANG Yifei, LI Xiang	(1519)
Influence of phosphorus on the performance of sulfur autotrophic denitrification	ZHAO Donghua, YUE Dongmei, ZHENG Yanhao, SHU Mengzhao, GE Jun, SUN Feifei	(1528)
Research progress of numerical model of secondary sedimentation tank in sewage treatment plant	LI Zigai, ZHANG Hong, XU Guihua	(1534)
Evaluation of cleaner production technologies in pharmaceutical industry based on AHP-FCE model	LI Juan, SHEN Liang, WANG Liangjie, HUANG Jinglin, QIAN Feng, ZENG Ping, WANG Hui Feng, WANG Chenhao	(1541)
Research status and development trend of the technology for arsenic removal from groundwater	SHI Leqi, GUO Li, LÜ Chenyang, DU Dongyun	(1548)
Analysis of groundwater pollution characteristics and pollutant migration law of a decommissioned chemical plant site in Southwest China	LI Shudi, XIE Tian, ZHANG Ronghai, ZHANG Qian, SU Lili, ZHANG Deming, HUANG Jinsun, ZHOU Yongxin	(1555)
Pollution characteristics and migration law of petroleum hydrocarbons in an industrial site in the intertidal zone of the river estuary	ZHANG Ronghai, CHEN Yudao, WEI Zhuangmian, XIE Tian, LI Shudi, OU Li	(1564)
AHP-TOPSIS-based technology comparison for remediation of iron and manganese contaminated groundwater for operating enterprises	LIU Fengping, SUN Ning, HU Hongxia, DING Zhenyu	(1572)
The road of green and low-carbon transformation of coal-based industry under carbon peak and carbon neutrality background	JIANG Hua, LI Yanping, GAO Jian	(1580)
Research on the difference in air pollution and carbon dioxide reduction and regional economic development levels in China	WANG Han, LI Hui, WANG Han, WANG Shulan, ZHANG Wenjie	(1584)
PM _{2.5} source distribution and transmission analysis in typical polluted cities of Fenwei Plain	CUI Hong, LIU Xiao, QIN Qiaoyan	(1593)
Research on the pollution characteristics of NO ₂ emitted by motor vehicles on typical roads in Chongqing	LI Yongfeng, MA Jie, WANG Shenglan, JIANG Yue, YANG Hairong, ZHANG Xiaotian, WANG Jian	(1601)
Emission characteristics, treatment status and mitigation countermeasures of volatile organic compounds from typical solvent sources in Shenzhen City	HUANG Junlin, QIU Xiangyang, CHENG Yijun, WU Jiahao	(1609)
Distribution of soil heavy metals and ecological risk assessment of agricultural land in Nianchu River basin, Tibet	DU Mei, ZHANG Qiangying, REN Pei, GAO Shuang, BU Duo	(1618)
Accumulation characteristics of cadmium in farmland soil by <i>Pueraria thomsonii</i>	LIN Xiaobing, WU Lin, ZHOU Lijun, HUANG Qianru, LIU Shaohua, CHEN Feng, OUYANG Guoping, ZHANG Qiumei	(1626)
Effect of sludge-rice husk co-incineration on the recovery efficiency of sludge phosphorus resources	XIONG Qiao, LÜ Hang, LÜ Ruibin, WU Xiang, WU Xu	(1633)
Research on modified cyanobacterial biochar promoting cathodic hydrogen autotrophic denitrification in bioelectrochemical system	XIONG Jianglei, LUO Jiahao, YAN Qun	(1640)
Discussion on repair technologies of high-density polyethylene membrane leaks in landfill anti-seepage system	ZHU Mingzhu, YANG Yanmei, XU Ya, YAO Guangyuan, LIU Yuqiang, HUANG Qifei	(1647)
Preparation of modified anthracites and research on their adsorption and recovery performance on phosphorus	WU Yue, ZHAO Ting, JIN Yanren, XUE Yan, ZHANG Lingxuan, LI Da, QIAO Jinru, HUANG Yang	(1653)
Research progress on the synthesis of zeolite from industrial ash rich in silicon and aluminium	MA Hui, XU Defu, LI Boqi, XUE Zhen, WANG Jinguang, XUE Fei, ZHANG Jun, LIU Zhaofei	(1660)
Research progress of industrial waste salt thermal treatment technologies	WU Qian, YUAN Wenjiao, WANG Jie, ZHANG Ke, TIAN Shulei, LI Meitong	(1668)
Evaluation of provincial green development performance based on DPSIR model	XIE Lei, YAO Yang, DAN Zhigang, SHI Feifei, YUAN Yin, FANG Lin, YUAN Wen	(1681)
Design and application of on-site law enforcement and supervision information system for air pollutants emission from stationary sources based on IoT	LIU Baiyin, LIU Xiaofu, SUN Qihong, LUO Lei	(1687)
Applicability evaluation of clean heating technologies in rural areas in northern China: a case study in Beijing	LÜ Lianhong, ZHANG Nan, XIA Jie, ZHANG Baoliu, BAI Zihan, LUO Hong	(1695)
Aquatic life criteria for tetracycline and assessment for the ecological risk of some water bodies in China	LIU Mengshuo, CHEN Haolin, HAO Ziyao, WANG Gelin, LIU Yingying, MA Yunlong, WANG Li	(1703)
Study on water quality criteria of copper in the Fen River based on biotic ligand model	LI Yang, NIU Yonghua, LI Huixian, SUN Fuhong, SU Hailei	(1711)