

目 次

大气/废气污染控制与管理

- 北京地区冬季重污染期间的雾层特征 田润泽,徐峻,张众志,唐柳榕,程苗苗 (975)
北京市与呼和浩特市空气质量对比分析 张轲,许学慧,李海港 (985)
昆明城区大气污染物时空分布特征 郭丽辉,尹惠敏,颜翔,徐小峰,黄晓 (992)
不同粒径大气颗粒物中金属元素分布与风险评估研究进展 支敏康,张凯,吕文丽 (998)
基于轨迹模型的和田绿洲沙尘移动轨迹及气象特征分析 艾沙江·艾力,徐至远,徐海量,木合塔尔·吾提库尔,麦麦提艾力·麦麦提敏 (1007)
内蒙古主要农作物秸秆燃烧释放烟气污染物研究 张恒,王柏杰,王飞 (1015)
景观格局对大气污染的影响 黄菲,赵青,郑鑫程,陈瑾,巫志龙,邱荣祖,胡喜生 (1022)
基于车载测试的轻型汽车排放特征 陈婷,何潇,陈文倩,颜敏,徐光仪,郑轩 (1033)
北京市城市生活垃圾处理温室气体排放特征及减排策略 刘春红,郝学军,刘枫 (1041)
技术生命周期评价进展及其在碳中和领域应用趋势分析 李媛媛,葛晓华,王文静,王顺扬,闫冠玉,李华,朱宇恩 (1048)
新型双介质气动雾化喷淋系统在城市污水厂恶臭气体处理中的应用 刘建伟,臧娜娜,韩昌福,陈欣玥,冯文韬,鲁晨,孙建斌 (1058)

流域/区域保护与修复

- 长江干流江苏段及环太湖区域典型城市水生态环境问题解析及控制对策 王峰,朱洪涛,孙德智 (1064)
江库连通条件下珠海市饮用水源水质分布特征及水资源调配措施 谢琼,付青,昌盛,樊月婷,涂响,王山军 (1075)
近20年全球农业生产对地下水影响研究的热点与趋势 李雅丽,张红娟,闫海琴,刘孟竹,裴宏伟 (1086)
淡水环境中微塑料污染及毒性效应研究进展 钱亚茹,石磊磊,沈茜,贺亚楠,贾玉巧,伍海闻,王菲菲 (1096)

生态修复

- 人工湖草型清水态生态系统构建技术研究与实践 王建富,辛玮光,张超,刘鸿渐,李娜,惠介龙,李颖 (1105)
京津冀地区生态系统服务价值时空变化及驱动因子分析 李魁明,王晓燕,姚罗兰,石云 (1114)
2005—2019年辽宁省城镇化与生态环境质量耦合协调时空分异及影响因子研究 郭力娜,王刚,姜广辉,赵艳霞,訾丰娇,叶林,刘洪义 (1123)

大清河水系滨岸带入侵草本植物分布特征及影响因素

任颖,侯利萍,何萍 (1134)

水污染治理

- 基于数学规划法的工业园区间接循环水网络优化 胡官墨,毕莹莹,董莉,孙晓明 (1144)
城市市政排水管网污染物溯源技术研究进展 季晓楠 (1153)
基于AHP-模糊综合评价法的城市排水管网状态和运行效能评价 王俊岭,熊玉华,张现国,邓玉莲 (1162)
海绵型雨水口初期雨水截污能力优化研究 廖晓数,吴志权,朱成煜,林冰,苏君豪,张倩,仇琪 (1170)
菌藻共生系统净化污水处理厂尾水的条件探究与优化 贾晓彤,何小娟,封吉猛,沈剑,王欣泽 (1177)
城市污水处理厂微生物气溶胶逸散特性研究进展 康心悦,刘建伟 (1185)
缓释碳源填充管式生物反应装置强化脱氮性能及其微生物分布特征 崔贺 (1194)
表征微滤膜过滤性能的膜堵塞模型演变及其新模型理念 王亚军,李金守,常莺娜 (1203)
赤泥淋滤液特征污染物在饱和砂土中的迁移规律研究 王俊萍,齐跃明,马仪鹏,马超,邵光宇,池玉花,兰璇 (1210)
一种新型水处理剂合成及其对阴离子污染物的选择性去除 张志超,段亮 (1217)

土壤与固废污染控制与管理

- 基于GIS的上海市不同功能区土壤重金属污染评价及健康风险评估 张施阳 (1226)
废纸再生过程综合效能评估研究 刘雪敏,马强,王宏伟,高学鸿,黄国忠,司念朋 (1237)
锌冶炼用氧化锌富集物再生综合效益评价 向治锦,张庆,吕庆,黄国忠,高学鸿,司念朋 (1245)
芬顿调理对含铅工业污泥电渗透脱水减量效果的影响 吕航,李佳旭,黄烨,熊巧,吴旭 (1253)
废液晶面板钢浸出调控研究 李晓晗,王艺博,阮久莉,李妍林,张建强,郭玉文 (1259)

环境风险评估与管理

- 黄河流域山西矿区自然资源占用动态评估及驱动机制 蒋毓琪,杨怡康,朱少英 (1264)
雄安新区社会经济承载力评价指标体系构建与应用 王秦 (1272)
甘肃省经济发展与生态环境保护耦合协调关系研究 薛婧,白璐,武琛昊,满贺诚,孙启宏,谢明辉 (1280)
多情景分析的农业面源污染关键源区识别软件开发及应用 覃苑,胡海棠,淮贺举,李存军,张巧玲,杨铁利,王佳宇 (1288)

微纳米气泡相关研究与应用专栏

- 固液界面纳米气层研究进展 方衡鑫,胡钧,张立娟 (1298)
体相纳米气泡的消除与尺寸调控研究进展 张睿毅,陈岚,葛广路 (1310)
基于臭氧微纳米气泡的O₃-H₂O₂体系降解有机污染物的效能与影响因素 程莹,臧纪,宋骏杰,李伟平,刘桂建 (1317)
微纳米气泡特性及在土壤环境改善中的应用 黄青,刘爱荣,张立娟 (1324)
高盐有机废水真空膜蒸馏处理中膜污染的微纳米气泡控制研究 黄超,刘倪佺,叶宇兵,徐晨翱,李攀,于水利 (1333)
氧气微纳米气泡在地下水原位修复中的应用研究 元妙新,占升,张欣,范占煌,徐华鍊,陈欢,魏宇琦 (1342)
文丘里串联结构气泡发生器气液混合和发泡特性试验 郭云霞,蔡小垒,李爽,邢宇涵 (1350)

其他

- 科技快讯——基于生态系统途径的气候变化应对和生物多样性保护 (1225)

Contents

Characteristics of fog layer during heavy pollution in winter in Beijing	TIAN Runze, XU Jun, ZHANG Zhongzhi, TANG Jiarong, CHENG Miaoqiao (975)
Comparative analysis of air quality between Beijing and Hohhot	ZHANG Ke, XU Xuehui, LI Haigang (985)
Temporal and spatial distribution characteristics of atmospheric pollutants in urban area of Kunming City	GUO Lihui, YIN Huimin, YAN Xiang, XU Xiaofeng, HUANG Xiao (992)
A review of research advances in the distributions and risk assessments of metal elements in atmospheric particles with different particle sizes	ZHI Minkang, ZHANG Kai, LÜ Wenli (998)
Analysis of the origin and meteorological characteristics of dust-storm in Hetian Oasis based on a trajectory model approach	AISHAJIANG Aili, XU Zhiyuan, XU Hailiang, MUHETAER Wutikuer, MAIMAITAILI Maimaitimin (1007)
Study on flue gas pollutants from burning of main crop straws in Inner Mongolia	ZHANG Heng, WANG Baijie, WANG Fei (1015)
Impact of landscape pattern on air pollution: a case study of Fujian Province	HUANG Fei, ZHAO Qing, ZHENG Xincheng, CHEN Jin, WU Zhilong, QIU Rongzu, HU Xisheng (1022)
Emission characteristics of light-duty vehicles based on portable emission measurement system (PEMS)	CHEN Ting, HE Xiao, CHEN Wenqian, YAN Min, XU Guangyi, ZHENG Xuan (1033)
Greenhouse gas emission characteristics and emission reduction strategies of municipal solid waste treatment in Beijing	LIU Chunhong, HAO Xuejun, LIU Feng (1041)
Progress of technology life cycle assessment and its application trends in carbon neutrality	LI Yuanxuan, GE Xiaohua, WANG Wenjing, WANG Shunyang, YAN Guanyu, LI Hua, ZHU Yuen (1048)
Application of a new-type double medium pneumatic atomization spray system in odour treatment in a municipal wastewater treatment plant	LIU Jianwei, ZANG Nana, HAN Changfu, CHEN Xinyue, FENG Wentao, LU Chen, SUN Jianbin (1058)
Analysis and control countermeasures of water eco-environment problems in typical cities in Jiangsu Province reach of the Yangtze River and the area around Taihu Lake	WANG Zheng, ZHU Hongtao, SUN Dezhi (1064)
Water quality distribution characteristics and water resources allocation measures of river-reservoir connected drinking water sources in Zhuhai City	XIE Qiong, FU Qing, CHANG Sheng, FAN Yueting, TU Xiang, WANG Shanjun (1075)
Research hot spots and trends on the impacts of global agricultural production on groundwater in the past two decades	LI Yali, ZHANG Hongjuan, YAN Haiqin, LIU Mengzhu, PEI Hongwei (1086)
Research progress on pollution and toxic effects of microplastics in freshwater environment	QIAN Yaru, SHI Leilei, SHEN Qian, HE Yanan, JIA Yuqiao, WU Haiwen, WANG Feifei (1096)
Research and practice on the construction technology of macrophytes-dominated clear water ecosystem in the artificial lake: taking a new artificial lake in the northwest as an example	WANG Jianfu, XIN Weiguang, ZHANG Chao, LIU Hongjian, LI Na, HUI Jielong, LI Ying (1105)
Spatio-temporal change and driving factor analysis of ecosystem service value in the Beijing-Tianjin-Hebei Region	LI Kuiming, WANG Xiaoyan, YAO Luolan, SHI Yun (1114)
Spatial-temporal differentiation and influencing factors of coupling coordination between urbanization and eco-environmental quality in Liaoning Province from 2005 to 2019	GUO Lina, WANG Gang, JIANG Guanghui, ZHAO Yanxia, ZI Fengjiao, YE Lin, LIU Hongyi (1123)
Distribution characteristics and influencing factors of invasive herbaceous plants in the coastal zone of Daqing River system	REN Ying, HOU Liping, HE Ping (1134)
Indirect circulating water network optimization of industrial parks based on mathematical planning method	HU Guanmo, BI Yingying, DONG Li, SUN Xiaoming (1144)
Recent advances in pollution source identification technologies in municipal drainage pipe networks	JI Xiaonan (1153)
Evaluation of the state and operational effectiveness of urban drainage pipe network based on AHP-fuzzy comprehensive evaluation method: taking Huai'an District of Huai'an City as an example	WANG Junling, XIONG Yuhua, ZHANG Xianguo, DENG Yulian (1162)
Research on optimization of initial rainwater interception capacity of sponge-type rainwater inlet	LIAO Xiaoshu, WU Zhiqian, ZHU Chengyu, LIN Bing, SU Junhao, ZHANG Qian, QIU Yue (1170)
Optimization of conditions for purification of wastewater treatment plant effluent by microalgae-bacteria symbiotic system	JIA Xiaotong, HE Xiaojuan, FENG Jimeng, SHEN Jian, WANG Xinze (1177)
Research progress of emission characteristics of microbial aerosols in municipal wastewater treatment plants	KANG Xinyue, LIU Jianwei (1185)
Enhanced denitrification performance and microbial distribution characteristics of Tubular Bio-reactor Device filled with slow-release carbon source	CUI He (1194)
Evolution of the membrane clogging model to characterize the filtration performance of the microfiltration membrane and its new model concept	WANG Yajun, LI Jinshou, CHANG Yingna (1203)
Study on the transport law of characteristic pollutants in red mud leachate in saturated sand	WANG Junping, QI Yueming, MA Yipeng, MA Chao, SHAO Guangyu, CHI Yuhua, LAN Xuan (1210)
Synthesis of a new water treatment agent and its selective removal of anionic pollutants	ZHANG Zhichao, DUAN Liang (1217)
Assessment of soil heavy metal pollution and health risk in different functional areas of Shanghai City based on GIS	ZHANG Shiyang (1226)
Study on comprehensive efficiency evaluation of waste paper recycling process	LIU Xuemin, MA Qiang, WANG Hongwei, GAO Xuehong, HUANG Guozhong, SI Niampeng (1237)
Comprehensive benefit evaluation of zinc oxide enrichment regeneration for zinc smelting	XIANG Zhipin, ZHANG Qing, LÜ Qing, HUANG Guozhong, GAO Xuehong, SI Niampeng (1245)
Effect of Fenton conditioning on the reduction of lead-containing industrial sludge by electroosmotic dewatering	LÜ Hang, LI Jiaxu, HUANG Ye, XIONG Qiao, WU Xu (1253)
Study on indium leaching control of waste LCD panels	LI Xiaohan, WANG Yibo, RUAN Jiuli, LI Yanlin, ZHANG Jianqiang, GUO Yuwen (1259)
Dynamic evaluation and driving mechanism of natural capital occupation in Shanxi mining areas of the Yellow River Basin	JIANG Yuqi, YANG Yikang, ZHU Shaoying (1264)
Construction and application of evaluation index system of social and economic carrying capacity in Xiong'an New Area	WANG Qin (1272)
Study on the coupling coordination relationship between economic development and ecological environment protection in Gansu Province	XUE Jing, BAI Lu, WU Chenhao, MAN Hecheng, SUN Qihong, XIE Minghui (1280)
Software development and application of key source areas identification of agricultural non-point source pollution based on multi-scenario analysis	QIN Yuan, HU Haitang, HUAI Heju, LI Cunjun, ZHANG Qiaoling, YANG Tieli, WANG Jiayu (1288)
Research advances in nano gas layers at the solid-liquid interface	FANG Hengxin, HU Jun, ZHANG Lijuan (1298)
Research progress on elimination and size control of bulk nanobubbles	ZHANG Ruiyi, CHEN Lan, GE Guanglu (1310)
Degradation efficiency and influencing factors of organic contaminants in O₃-H₂O₂ system based on ozone micro-nanobubbles	CHENG Ying, ZANG Ji, SONG Junjie, LI Weiping, LIU Guijian (1317)
Characteristics of micro-nanobubbles and their applications in soil environment improvement	HUANG Qing, LIU Airong, ZHANG Lijuan (1324)
Study on micro-nanobubble control of membrane fouling in vacuum membrane distillation of high salt organic wastewater	HUANG Chao, LIU Niquan, YE Yubing, XU Chen'ao, LI Pan, YU Shuili (1333)
Research on the application of oxygen micro-nanobubbles <i>in-situ</i> remediation of groundwater	YUAN Miaoxin, ZHAN Sheng, ZHANG Xin, FAN Zhanhuang, XU Huazhong, CHEN Huan, WEI Yuqi (1342)
Experimental study on gas-liquid mixing and foaming characteristics of Venturi series bubble generator	GUO Yunxia, CAI Xiaolei, LI Shuang, XING Yuhan (1350)