



F5000

ISSN 1000-6923
CODEN ZHKEEI

中国环境科学

CHINA
ENVIRONMENTAL
SCIENCE

第43卷
Vol.43

第03期
NO.03



2023 / 03

中国环境科学学会

CHINESE SOCIETY FOR ENVIRONMENTAL SCIENCES

目次

大气污染与控制

基于环流指数研究天津长序列细颗粒物大气污染气象条件演变规律	蔡子颖 韩素芹 邱晓滨 姚青 汪靖 樊文雁 杨旭 郝团 唐颖潇 张敏 (993)
上海海陆风分类特征、环流背景及对 O ₃ 的影响	毛卓成 许建明 瞿元昊 殷长秦 杨丹丹 周广强 (1002)
生物质燃烧排放 PM _{2.5} 颗粒萃取的水溶性有机碳液相光化学氧化	朱龙伟 崔尧嘉 盖鑫磊 叶招莲 赵竹子 (1014)
天津市大气中多环芳烃衍生物污染特征和来源	高玉宗 姬亚芹 杨益 王淼 肖扬 王冰冰 杨夏微 (1026)
典型工程机械排放碳质气溶胶组成特征研究	向璇 孔少飞 程溢 胡尧 苏维峰 姚立全 刘晓勇 朱宽广 丁峰 刘巍 祁士华 (1035)

铜掺杂 Fe-β 分子筛 CO 选择性催化还原 N ₂ O 反应性能	赵菲琳 曾洁 校融 邱磊 郭文 陈浩辉 常化振 (1044)
基于多源碳卫星融合产品的中国地区 XCO ₂ 与人为 CO ₂ 排放时空变化	王震山 绳梦雅 肖薇 杨凤珠 林彬 徐兴祝 柳艺博 (1053)
新型 PTFE 熔融喷冲纤维微孔膜滤料制备及除尘机理研究	陈宜华 邱树永 郭敬中 吕真虎 王攀 贾勇 (1064)

水污染与控制

全球水系统与水网构建研究进展	王易初 倪晋仁 (1074)
低温下 PAA/载钴颗粒基反硝化滤池处理含杂环类药物生化尾水研究	马杰 朱珊珊 张徐祥 任洪强 黄辉 (1087)
磷源调控蛋白核小球藻胞外聚合物及生物絮凝性	郑蕾 邢钰梓 宋建昕 彭铮 刘婷婷 谢恩 (1097)
氮掺杂还原氧化石墨烯泡沫吸附/活化过硫酸盐协同去除双酚 A 的研究	和丽金 龙俊宏 金华蕾 左怡丹 宋洁 夏丽红 石苗 罗利军 戴建辉 (1107)
预沉积生物炭强化重力驱动超滤膜处理受污染地表水的效能研究	何强 左庆扬 陈子惟 刘彩虹 张唐龙 智悦 (1122)
不同热解温度 BC 对 BAF 处理水产养殖废水的影响机制	刘思强 信欣 杨雯钰 延雪花 戴有学 胡劲涛 (1131)
改性微生物絮凝剂在污水处理过程中的应用及膜污染缓解机制	申渝 毛鑫 申静 张冰 时文歆 (1142)
微生物燃料电池回收氨氮合成微生物蛋白研究	李孝越 王悦 贾佩 李雅洁 陈佳琪 金丽军 王雯 杨紫怡 (1152)
Fe ₃ O ₄ 耦合厌氧微生物强化低碳源废水还原砷(IV)的研究	孙杰 侯博文 汤婧瑶 胡良慧 李海铭 梁越敢 (1160)
镁铝层状双金属氢氧化物及其煅烧产物对水体 W(VI) 的吸附特征与机制	袁秀娟 曾萍 任嗣利 罗武辉 (1166)
正交试验优化垂直潜流人工湿地实现短程硝化	严渊 马娇 党鸿钟 吴新波 曾天续 李维维 陈永志 (1177)
微量铜离子联合碳酸氢盐类芬顿体系降解水中双酚 A	辛丽红 晏彩霞 聂明华 张艺民 袁玉龙 丁明军 王鹏 (1186)
混凝-异相 Fenton 工艺处理渗沥液纳滤浓缩液研究	孙越 张聪慧 白皓 刘鑫 刘恩卓 (1197)
BaSnO ₃ 钙钛矿光催化降解邻苯二甲酸二乙酯的机理研究	叶权运 李想 马晓蕊 李沛然 柳玉荣 贺德春 余磊 (1208)
基于负荷历时曲线法的流域污染负荷特征解析与纳污能力研究——以沙河流域为例	刘晓荣 杜新忠 韩玉国 李泽利 雷秋良 刘宏斌 (1216)

固体废物

中国报废飞机的资源回收潜力评估	熊新 曾现来 胡兆吉 (1225)
城市污泥膨胀特性对可吸入颗粒物排放的影响机理研究	贾里 张柳 程鹏 陈世虎 王晨星 于跃 王建成 张建春 金燕 (1235)
厨余垃圾厌氧消化反应器起泡的驱动因子	李蕾 张智 黄茜 杨屏锦 王小铭 彭绪亚 (1244)

土壤污染与控制

整合表面活性剂 LED3A 对镉-花复合污染土壤的洗脱修复研究	刁静茹 刘兴瑞 张淋淋 董葛军 赵保卫 蒋煜峰 (1256)
基于 APCS-MLR 和 PMF 的铅锌矿流域土壤重金属来源解析	刘楠 唐莹影 陈盟 潘泳兴 (1267)
氧化石墨烯固化土壤中重金属离子的有效性及界面能特征	武海燕 白冰 (1277)

环境生态

不同冻结温度黑土渐次解冻过程有机碳矿化特征及影响因素	刘会敏 宋媛 栗现文 胡亚鲜 (1288)
山西南部中条山生态系统碳储量时空分布及驱动因素	韩玉 丁素婷 杨太保 (1298)
沉湖 130 年来湖泊沉积物有机碳、氮稳定同位素变化及其环境指示意义	张雅 刘力 李朋 胡元平 李琳静 苏业旺 邢新丽 冯江 叶婷 (1307)
人为干扰对生态脆弱性动态演变过程的影响——以兰西城市群为例	石晶 石培基 王梓洋 万雅 (1317)
高原盐化湖泊沉积物氮代谢特征解析	杨文焕 甄玉 姚植 尹强 黄晓慧 李卫平 (1328)
土地利用变化对京津冀热环境时空演变的影响	徐宏超 李春林 王昊 刘淼 胡远满 (1340)
春末东海北部冷涡区环境特征及藻华成因探讨	赵宇航 韦钦胜 辛明 谢琳萍 孙霞 王保栋 (1349)
沉水植物残体堆积量对沉积物理化性质的影响——以马来眼子菜为例	徐达 金伟 尉艺 王春柳 朱伯淞 化柯 周攀 刘新 (1360)

环境微生物

温湿度对建筑室内典型霉菌生长影响及其动力学模型	路冰洁 杜晨秋 郭芯竹 喻伟 李百战 (1368)
高温和高盐对 <i>Nitrosomonas eutropha</i> CZ-4 的交叉保护效应	杨睿 葛红梅 程凯 (1378)
镉耐性菌对黑麦草生长特性及镉吸收的影响	宋兰萍 徐晓阳 洪婉悦 艾艳梅 汪洋 张泽锟 周守标 周际海 (1386)
宏基因组解析不同温度饥饿胁迫下污泥中胞外耐药基因的动态特征	唐振平 刘博阳 高媛媛 段毅 杨正卿 周帅 (1397)

环境毒理与健康

橡胶防老剂 6PPD 及其臭氧化产物 6PPD-Q 的环境分布和生物毒性	李嘉瑶 申慧敏 徐婷婷 郭英 (1407)
慢性噪声暴露对高脂饮食小鼠肝脏脂代谢的影响	徐丹 曹双凤 刘莉洁 (1422)
2,6-二叔丁基-4-硝基苯酚与镉(II)联合暴露对水生生物急性毒性的影响及生态风险评估	袁尧 张灵汉 周楠 刘会会 杨先海 (1429)

环境影响评价与管理

长江经济带电力碳排放时空变化及影响因素——基于区域和产业视角	郭艺 张鹏飞 葛力铭 曾刚 万媛媛 (1438)
以“绿”待劳:环境规制与重污染企业就业——基于生产全过程绿色技术创新的视角	秦炳涛 杨坤 葛力铭 (1449)
农业碳排放驱动因素——区域间贸易碳排放转移网络视角	信猛 陈菁泉 彭雪鹏 师岚 钱辉 (1460)
环境规制、声誉诉求与亲环境行为绩效的研究	赵佳佳 刘灵芝 (1473)

CHINA ENVIRONMENTAL SCIENCE

(monthly)

Volume 43 Number 3

March 20, 2023

CONTENTS

Air Pollution Control

- Study on the evolution of meteorological conditions of air pollution in Tianjin based on circulation index..... CAI Zi-ying et al. (993)
- Classification characteristics, circulation background and its effect on O₃ of land and sea breeze in Shanghai MAO Zhuo-cheng et al. (1002)
- Aqueous-phase photochemical oxidation of extracted WSOC in PM_{2.5} from biomass burning ZHU Long-wei et al. (1014)
- Pollution characteristics and sources of polycyclic aromatic hydrocarbon derivatives in the atmosphere of Tianjin GAO Yu-zong et al. (1026)
- Study on compositions of carbonaceous aerosols emitted by typical construction machinery XIANG Xuan et al. (1035)
- Selective catalytic reduction of N₂O by CO over lanthanum doped Fe-beta zeolite ZHAO Fei-lin et al. (1044)
- Spatiotemporal changes of XCO₂ and anthropogenic CO₂ emission in China based on multi-source carbon satellite fusion product WANG Zhen-shan et al. (1053)
- Research on the preparation and dust removal mechanism of new PTFE melt-punched fiber microporous membrane filter media CHEN Yi-hua et al. (1064)

Water Pollution Control

- Recent progress of the global river network patterns and water network constructions WANG Yi-chu et al. (1074)
- Treatment of biochemical tail water containing heterocyclic drugs by PAA/ cobalt-loaded ceramic granule-based denitrification biofilter at low temperature..... MA Jie et al. (1087)
- Phosphorus source regulates extracellular polymers and bioflocculation of *Chlorella pyrenoidosa* ZHENG Lei et al. (1097)
- Removal of bisphenol A by nitrogen-doped reduced graphene oxide foam via adsorption/peroxydisulfate activation HE Li-jin et al. (1107)
- Pre-deposition of biochar layer improves the performance of gravity-driven membrane (GDM) filtration system for polluted surface water treatment..... HE Qiang et al. (1122)
- Influence mechanisms of BC filters of different pyrolysis temperatures on BAFs treating aquaculture wastewater LIU Si-qiang et al. (1131)
- Application of modified microbial flocculants in wastewater treatment process and mechanisms for membrane fouling mitigation SHEN Yu et al. (1142)
- Microbial protein production by using nitrogen extracted from microbial fuel cells LI Xiao-yue et al. (1152)
- Enhancing Se(IV) reduction in the wastewater with a low-carbon source by Fe₃O₄ coupling with anaerobic microorganism SUN Jie et al. (1160)
- Adsorption characteristics and mechanism of W(VI) from aqueous solution using MgAl layered double hydroxide and its calcined product YUAN Xiu-juan et al. (1166)
- Orthogonal experiment to optimize vertical subsurface flow constructed wetland for short-cut nitrification YAN Yuan et al. (1177)
- Degradation of bisphenol A by Fenton-like system using trace copper ions combined with bicarbonate in water XIN Li-hong et al. (1186)
- Study on leachate nanofiltration concentrate treated by a coagulation-heterogeneous fenton process SUN Yue et al. (1197)
- Insights into photocatalytic degradation of diethyl phthalate over BaSnO₃ perovskite..... YE Quan-yun et al. (1208)
- Analysis of pollution load characteristics and assimilative capacity in Shahe watershed based on Load Duration Curve Method..... LIU Xiao-rong et al. (1216)

Solid Waste

- Measuring the recycling potential of spent aircraft in China XIONG Xin et al. (1225)
- Study on the influence of sewage sludge coke expansion characteristics on the inhalable particle emission JIA Li et al. (1235)
- Driving factors of foaming in anaerobic digestion of food waste LI Lei et al. (1244)

Soil Pollution Control

- Remediation of cadmium and pyrene co-contaminated soil by washing with biodegradable chelating surfactant LED3A DIAO Jing-ru et al. (1256)
- Source apportionment of soil heavy metals in lead-zinc area based on APCS-MLR and PMF LIU Nan et al. (1267)
- Availability and interfacial energy characteristics of heavy metal ions in soils solidified by graphene oxide WU Hai-yan et al. (1277)

Environmental Ecology

- Influences of freezing temperature on the inter-layer variations of mollisol organic carbon mineralization over progressive thawing LIU Hui-min et al. (1288)
- Spatial and temporal distribution and driving factors of carbon storage in Zhongtiao Mountain ecosystem in southern Shanxi Province..... HAN Yu et al. (1298)
- Changes of organic C and N stable isotope and their environmental implication during the past 130 years of Chen Lake..... ZHANG Ya et al. (1307)
- Effects of human disturbances on dynamic evolution of ecological vulnerability: A case study over Lanzhou-Xining urban agglomeration..... SHI Jing et al. (1317)
- Characterization for nitrogen metabolism of sediments in highland saline lake YANG Wen-huan et al. (1328)
- Impact of land use change on the spatiotemporal evolution of the regional thermal environment in the Beijing-Tianjin-Hebei urban agglomeration..... XU Hong-chao et al. (1340)
- Environmental characteristics and phytoplankton bloom mechanisms in the cold eddy of northern East China Sea in late spring ZHAO Yu-hang et al. (1349)
- The influence of the accumulation of submerged plant residues on the physicochemical properties of sediments -- a case study of Malayan cabbage..... XU Da et al. (1360)

Environmental Microbiology

- Effect of temperature and humidity on the growth of typical molds in buildings and its kinetics modeling..... LU Bing-jie et al. (1368)
- Cross-tolerance of *Nitrosomonas eutropha* CZ-4 to high-temperature and high salinity YANG Rui et al. (1378)
- Effect of cadmium-tolerant bacteria on *Lolium perenne* growth and its cadmium enrichment SONG Lan-ping et al. (1386)
- Dynamics of eARGs in activated sludge in response to starvation at different temperatures as revealed by metagenomics..... TANG Zhen-ping et al. (1397)

Environmental Toxicology and Health

- Rubber anti-aging agent 6PPD and its ozonation product 6-PPDQ: Environmental distribution and biological toxicity..... LI Jia-yao et al. (1407)
- Effect of chronic noise-exposure on liver lipid metabolism in high-fat diet mice..... XU Dan et al. (1422)
- Joint acute toxic impacts of 2,6-ditert-butyl-4-nitrophenol and Cd²⁺ on aquatic organisms and ecological risk assessment..... YUAN Yao et al. (1429)

Environmental Impact Assessment and Management

- The spatio-temporal variation and influencing factors of electricity-related carbon emissions in the Yangtze River Economic Belt from the region and industry perspectives..... GUO Yi et al. (1438)
- Green for labor: Environmental regulation and employment of heavy polluting enterprises—— Based on the green technology innovation in the whole production process QIN Bing-tao et al. (1449)
- Driving factors of agricultural carbon emission :From the perspective of interregional trade carbon emission transfer network..... XIN Meng et al. (1460)
- Research on environmental regulation, reputation appeal and performance of pro-environment behavior..... ZHAO Jia-jia et al. (1473)