

☆ 中文核心期刊

☆ 中国科技核心期刊 (CSTPCD)

☆ 《国家哲学社会科学学术期刊数据库》(NSSD) 收录

★ 国际检索: Scopus、CSA: NS、AJ、CABI、ZR、JST、IC、EBSCOhost 等

☆ 中国科学引文数据库 (CSCD) 收录

☆ RCCSE 中国核心学术期刊

目次

第 35 卷 第 3 期 2022 年 3 月

PM_{2.5}与臭氧协同控制专题

我国大气污染协同防控理论框架初探	姜华, 高健, 李红, 储王辉, 柴发合 (601)
PM _{2.5} 与臭氧污染形成机制及协同防控思路	张涵, 姜华, 高健, 李红 (611)
基于观测的模型 (OBM) 的发展历程及其在我国大气化学研究中的应用与展望	张英南, 薛丽坤, 陈天舒, 申恒青, 李红, 王文兴 (621)
美国人为源 VOCs 管控经验及其对我国的启示	曹娟, 母振海, 鲍捷萌, 储王辉, 毕方, 纪元元, 高健, 柴发合, 李红 (633)
我国中东部地区 2015—2020 年夏半年 PM _{2.5} 和臭氧复合污染气象特征分析	花丛, 江琪, 迟茜元, 刘超 (650)
2015—2020 年湖北省 PM _{2.5} 和臭氧复合污染特征演变分析	陈楠, 陈立, 王莉莉, 祝波, 操文祥, 许可, 丁青青, 兰博, 张周祥, 魏莱, 施艾琳, 王珂 (659)
不同季节天津市 PM _{2.5} 与 O ₃ 潜在源区及传输路径分析	王琰玮, 王媛, 张增凯, 张蓝心, 单梅 (673)
保定市 PM _{2.5} 和臭氧污染特征分析	李欢欢, 张凯, 牛璨, 罗宇骞, 王涛, 支敏康, 张迎仲, 玄兆坤 (683)
云浮市 2018—2020 年颗粒物和臭氧污染特征及污染案例研究	江家坤, 马莹, 黄学良, 叶代启 (691)
“城市双修”试点对 PM _{2.5} 和臭氧协同控制的效果评估: 以三亚市为例	刘政, 蒋金荷, 叶希娴 (699)
基于质子转移反应飞行时间质谱走航分析的鲁南某城市初夏大气 VOCs 污染特征及对二次污染生成的贡献分析	陈立, 郑明明, 曹黎黎, 田一平, 王珂, 陈楠 (707)

大气环境

基于卫星和地面观测的中国典型城市群对流层内臭氧时空变化特征	郭云飞, 包云轩, 刘端阳 (719)
-------------------------------	---------------------

山西省城市地区近年来环境空气臭氧污染特征及来源解析………焦 娅，罗锦洪，杨锦锦，王 娜，谢卧龙（731）

水环境

市政排水管网水力水质条件对底泥微生物组多样性的影响

………丁国平，陈 浩，朱 弈，孙晓楠，刘 辉，马长文，叶建锋（740）

功能化材料 Zr@AC 对水中难降解农药阿特拉津的去除特征

………刘勇攀，张衿潇，蒋燕虹，何慧军，刘 杰，吴 婷，程 燕（750）

微藻生物强化对藻-菌颗粒污泥的形成影响及污染物去除研究………肖亚兵，张雪纯，季 斌，樊 杰，郭绍东（761）

碳基材料负载纳米零价铁去除六价铬的研究进展………刘美丽，牛其建，俞洋洋，成 亮（768）

全氟辛烷磺酸的紫外光降解及降解机理………许杰尧，江 敏，吴 昊，吴 迪，吴思雅（780）

响应面法优化重金属絮凝剂 MAMPAM 除 Cu(II) 的絮凝条件………杨丽娟，王 刚，张 航，蒋煜峰，杨 凯（789）

生态环境

不同收割时间下人工湿地芦苇根系分泌物的组成和特征………王俊力，刘福兴，付子轼，乔红霞，陈桂发（796）

基于景观聚类的南昌市主城区城乡梯度识别及其生态系统服务响应

………蔡振饶，方朝阳，何清华，颜吉林，高 丹，刘志勇（806）

土壤与固废

微塑料加速老化及分离过程的实验研究

………曾祥英，王姝歆，程 军，王 林，张建强，何 杨，黄 雯，唐亚鑫（818）

米曲霉发酵厨余垃圾制备富酶产物的研究

………贾 璇，郭 萌，冶荣霞，李 辉，李雪琪，刘晓佩，李鸣晓，戴 眇（828）

环境污染与健康

城市道路沉积物中重金属生态风险的优化评价

………朱 龙，陈友媛，苑公静，张翔宇，江晓倩，杨新如，王秀海（836）

信息

《环境科学研究》第六届编委会名单（封二）

“减污降碳协同增效”专刊征稿启事（封三）



Contents



Vol.35 No.3 March 2022

Collaborative Control of Fine Particulate Matter and Ground-Level Ozone

Preliminary Research on Theoretical Framework of Cooperative Control of Air Pollution in China

..... JIANG Hua, GAO Jian, LI Hong, CHU Wanghui, CHAI Fahe (601)

Formation Mechanism and Management Strategy of Cooperative Control of PM_{2.5} and O₃

..... ZHANG Han, JIANG Hua, GAO Jian, LI Hong (611)

Development History of Observation-Based Model (OBM) and Its Application and Prospect in Atmospheric Chemistry

Studies in China ZHANG Yingnan, XUE Likun, CHEN Tianshu, SHEN Hengqing, LI Hong, WANG Wenxing (621)

Processes and Experience of Anthropogenic VOCs Management and Control in the USA and Enlightenment to China

..... CAO Juan, WU Zhenhai, BAO Jiemeng, CHU Wanghui, BI Fang, JI Yuanyuan, GAO Jian, CHAI Fahe, LI Hong (633)

Meteorological Characteristics of PM_{2.5}-O₃ Air Combined Pollution in Central and Eastern China in the Summer Half

Years of 2015-2020 HUA Cong, JIANG Qi, CHI Xiyuan, LIU Chao (650)

Characteristic and Trend Analysis of PM_{2.5} and Ozone in Air Compound Pollution in Hubei Province During 2015-2020

..... CHEN Nan, CHEN Li, WANG Lili,

ZHU Bo, CAO Wenxiang, XU Ke, DING Qingqing, LAN Bo, ZHANG Zhouxiang, WEI Lai, SHI Ailin, WANG Ke (659)

Analysis of Potential Source Areas and Transport Pathways of PM_{2.5} and O₃ in Tianjin by Season

..... WANG Yanwei, WANG Yuan, ZHANG Zengkai, ZHANG Lanxin, SHAN Mei (673)

PM_{2.5} and O₃ Pollution Characteristics in Baoding City LI Huanhuan,

ZHANG Kai, NIU Can, LUO Yuqian, WANG Tao, ZHI Minkang, ZHANG Yingzhong, XUAN Zhaokun (683)

Pollution Characteristics and a Pollution Case of Particulate Matter and O₃ in Yunfu City from 2018 to 2020

..... JIANG Jiakun, MA Ying, HUANG Xueliang, YE Daiqi (691)

Effect of Urban Double Restoration Pilot Project for Coordinated Control of PM_{2.5} and O₃ Pollution: A Case Study of

Sanya, China LIU Zheng, JIANG Jinhe, YE Xixian (699)

Characteristics of Atmospheric Volatile Organic Compounds and Its Contribution to Secondary Pollution in Early Summer

in a City in Southern Shandong Province Based on a Cruise Monitoring Campaign with PTR-ToF-MS

..... CHEN Li, ZHENG Mingming, CAO Lili, TIAN Yiping, WANG Ke, CHEN Nan (707)

Atmospheric Environment

Spatial-Temporal Variations of Tropospheric Ozone over Typical Urban Agglomerations in China Based on Satellite and

Surface Observations GUO Yunfei, BAO Yunxuan, LIU Duanyang (719)

Pollution Characteristics and Source Apportionment of Ground-Level Ozone in Shanxi Urban Region in Recent Years

..... JIAO Jiao, LUO Jinhong, YANG Jinjin, WANG Na, XIE Wolong (731)

Water Environment

Effect of Hydraulic and Water Quality Conditions on Sediment Microbiota Diversity in Municipal Drainage Network

..... DING Guoping, CHEN Hao, ZHU Yi, SUN Xiaonan, LIU Hui, MA Changwen, YE Jianfeng (740)

Removal Characteristics of Refractory Pesticide Atrazine from Water by Functionalized Material Zr@AC

..... LIU Yongpan, ZHANG Jinxiao, JIANG Yanhong, HE Huijun, LIU Jie, WU Ting, CHENG Yan (750)

Effect of Microalgae Bio-Augmentation on Formation of Microalgal-Bacterial Granular Sludge and the Pollutants Removal

..... XIAO Yabing, ZHANG Xuechun, JI Bin, FAN Jie, GUO Shaodong (761)

Progress in Removal of Hexavalent Chromium by Carbon-Based Materials Loaded with Nano Zero-Valent Iron

..... LIU Meili, NIU Qijian, YU Yangyang, CHENG Liang (768)

Ultraviolet Light Degradation of Perfluorooctane Sulphonate and Degradation Mechanism

..... XU Jieyao, JIANG Min, WU Hao, WU Di, WU Siya (780)

Response Surface Methodology to Optimize Flocculation Conditions of Heavy Metal Flocculant MAMPAM for Removing

Cu(II) YANG Lijuan, WANG Gang, ZHANG Hang, JIANG Yufeng, YANG Kai (789)

Ecological Environment

Composition and Characteristics of Reed (*Phragmites australis*) Root Exudates in Constructed Wetlands at Different

Harvest Time WANG Junli, LIU Fuxing, FU Zishi, QIAO Hongxia, CHEN Guifa (796)

Urban-Rural Gradient Identification and Ecosystem Service Response in Main Urban Area of Nanchang Based on

Landscape Clustering CAI Zhenrao, FANG Chaoyang, HE Qinghua, YAN Jilin, GAO Dan, LIU Zhiyong (806)

Soil and Solid Waste

Laboratory Accelerated Aging and Separation Process of Microplastics ZENG Xiangying,

WANG Shuxin, CHENG Jun, WANG Lin, ZHANG Jianqiang, HE Yang, HUANG Wen, TANG Yaxin (818)

Preparation of Enzyme-Rich Products from Kitchen Waste by *Aspergillus oryzae* Fermentation

..... JIA Xuan, GUO Meng, YE Rongxia, LI Hui, LI Xueqi, LIU Xiaopei, LI Mingxiao, DAI Xin (828)

Environmental Pollution and Health

Optimal Evaluation of Ecological Risk of Heavy Metals in Urban Road Sediments ZHU Long,

CHEN Youyuan, YUAN Gongjing, ZHANG Xiangyu, JIANG Xiaoqian, YANG Xinru, WANG Xiuhai (836)

