



ISSN 1001-6929
CN 11-1827 / X
CODEN HKYAEZ

环境科学研究

Research of Environmental Sciences

第34卷 第1期 (Vol.34 No.1) 2021 January 1月

2021 1

**科技支撑 集中攻关 精准施策
打赢蓝天保卫战**

——“庆祝中国共产党成立 100 周年”大气专刊

中华人民共和国生态环境部
中国环境科学研究院

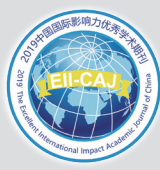
主管
主办





☆ 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 34 卷 第 1 期 2021 年 1 月

大气环境综合观测与污染成因

京津冀及周边地区采暖季 PM_{2.5} 化学组分变化特征
..... 刀 诤, 吉东生, 张 显, 唐桂刚, 刘 宇, 王莉莉, 程麟钧, 王跃思 (1)

京津冀及周边地区大气污染综合立体观测网支撑作用
..... 程麟钧, 唐桂刚, 刘 宇, 宫正宇, 吉东生, 王跃思 (11)

基于综合立体观测网的京津冀地区污染过程分析..... 孙婷婷, 项 衍,
罗宇涵, 张天舒, 司福祺, 吕立慧, 窦 科, 周海金, 杨东上, 杨太平, 刘文清, 刘建国, 赵志新 (20)

天地一体化遥感监测大气污染技术进展.....赵 冉, 胡启后, 孙中平, 吴 跃, 邢成志, 刘浩然, 刘 诚 (28)

基于烟雾箱模拟的己烯醇与 O₃ 气相反应的动力学研究
..... 王 振, 陈梅芳, 佟胜睿, 陈 怡, 李伟然, 张欣然, 葛茂发 (41)

德州、北京重污染过程 PM_{2.5} 中 PAHs 污染特征及来源分析
..... 李 晓, 范瀚允, 吴兴贺, 徐 楠, 郭 松, 胡 敏 (54)

石家庄近地层风场辐合与重污染关系研究..... 李二杰, 张 智, 祁 妙, 赵玉广 (63)

六类餐饮源排放 PM_{2.5} 化学成分谱..... 李林璇, 程 渊, 杜 鑫, 戴启立, 吴建会, 毕晓辉, 冯银厂 (71)

驻马店市区采暖季 PM_{2.5} 时间和空间来源解析研究
..... 刁刘丽, 李 森, 刘保双, 李亚菲, 张 晴, 高 翔, 毕晓辉, 张裕芬, 冯银厂 (79)

2018 年冬季淄博市一次沙尘天气颗粒物污染特征研究
..... 吴丽萍, 李丽明, 张向炎, 王信梧, 马银红, 耿春梅, 徐 勃 (92)

大气污染源排放与管控

典型地方炼化企业 VOCs 排放特征及其对二次污染生成的贡献..... 吕大器, 陆思华, 谭 鑫, 邵 敏 (103)

基于含 VOCs 原辅材料和产污环节实测的印刷行业 VOCs 排放特征分析
..... 王敏燕, 姚 震, 聂 磊, 吕举男, 刘文文 (114)

- 超低排放下燃煤电厂氨排放特征…………… 钟洪玲, 陈 鸥, 王洪亮, 曹莉莉, 梁 超, 刘国栋, 罗志刚 (124)
- 唐山市柴油车远程监控综合管控平台的开发及应用
…………… 田 苗, 王军方, 黄健畅, 马 帅, 吉 喆, 王宏丽, 宋国华, 丁 焰 (132)
- 北京市 2017 年典型日机动车动态排放特征研究
…………… 王燕军, 何巍楠, 宋国华, 唐祎骅, 李 刚, 张诗海, 张鹤丰 (141)
- 我国大气氨的排放特征、减排技术与政策建议…………… 刘学军, 沙志鹏, 宋 宇, 董红敏,
潘月鹏, 高志岭, 李玉娥, 马 林, 董文旭, 胡春胜, 王文林, 王 悦, 耿 红, 郑云昊, 顾梦娜 (149)

大气污染防治决策支撑

- 大气污染防治综合决策支持技术平台典型城市应用研究
…………… 孙新丽, 杜世勇, 王书肖, 朱 云, 韩道汶, 许宏宇, 邢 佳, 龙世程, 袁颖枝, 马 乔 (158)
- 京津冀及周边地区“2+26”城市空气质量特征及其影响因素
…………… 李 慧, 王淑兰, 张文杰, 王 涵, 王 涵, 王少博, 李海生 (172)
- 基于监测及 Kriging 方法的京津冀地区大气污染物暴露分布研究
…………… 王占山, 李志刚, 钱 岩, 李晓倩, 郭 辰, 薛凯兵, 王孜晔, 朱晓晶, 魏永杰 (185)
- 京津冀及周边地区优先控制有毒有害大气污染物名录研究
…………… 张丽丽, 朱晓晶, 于 洋, 牛文凤, 郑玉婷, 张 杨, 林 军 (194)
- 大气环境科学综合数据采集共享平台建设及应用研究
…………… 孙彩萍, 王 维, 何立环, 马广文, 罗向林, 但汉平, 张顺辉 (202)

大气污染对人群的健康影响

- 2013—2018 年北京市大气 PM_{2.5} 持续高暴露对居民因病入院的急性影响
…………… 陈 晨, 仲 宇, 刘园园, 路 凤, 郭默宁, 方建龙, 李湉湉, 施小明 (213)
- 京津冀及周边地区“十四五”及中长期 PM_{2.5} 污染控制目标的健康效益预估研究
…………… 王 情, 朱欢欢, 杜 鹏, 赵 靓, 李湉湉 (220)
- 济南市大气颗粒物短期暴露对老年人群血清淀粉样蛋白 P 组分影响的定群研究
…………… 王 琮, 方建龙, 刘园园, 周敬文, 孔凡玲, 邓富昌, 符元证, 董皓冉, 施小明 (229)
- HEPA 空气净化器对学校室内颗粒物的净化效果研究
…………… 阳晓燕, 温 勃, 孔 建, 阮鸿洁, 王 秦, 徐东群 (235)

信息

- 序言 (暗 1) 《环境科学研究》第五届编委会名单 (封二) 国家大气污染防治攻关联合中心简介 (封三)

Contents

Vol.34 No.1 January 2021

MONITORING AND POLLUTION ANALYSIS OF ATMOSPHERIC ENVIRONMENT

- Characteristics of Chemical Composition of $PM_{2.5}$ in Beijing-Tianjin-Hebei and Its Surrounding Areas During the Heating Period
 DAO Xu, JI Dongsheng, ZHANG Xian, TANG Guigang, LIU Yu, WANG Lili, CHENG Linjun, WANG Yuesi (1)
- Supporting Role of the Comprehensive Observation Network of Air Pollution in Beijing-Tianjin-Hebei and Its Surrounding Areas CHENG Linjun, TANG Guigang, LIU Yu, GONG Zhengyu, JI Dongsheng, WANG Yuesi (11)
- Pollution Process in Beijing-Tianjin-Hebei and Its Surrounding Areas Based on Comprehensive Stereoscopic Observation Network.....SUN Tingting, XIANG Yan, LUO Yuhuan, ZHANG Tianshu, SI Fuqi, LÜ Lihui, DOU Ke, ZHOU Haijin, YANG Dongshang, YANG Taiping, LIU Wenqing, LIU Jianguo, ZHAO Zhixin (20)
- Review of Space and Ground Integrated Remote Sensing for Air Pollutants
 ZHAO Ran, HU Qihou, SUN Zhongping, WU Yue, XING Chengzhi, LIU Haoran, LIU Cheng (28)
- Kinetic Study of O_3 and Hexen-Ols Reaction Base on Smog Chamber
 WANG Zhen, CHEN Meifang, TONG Shengrui, CHEN Yi, LI Weiran, ZHANG Xinran, GE Maofa (41)
- Characteristics and Sources of PAHs in $PM_{2.5}$ during Winter Heavy Pollution Episodes in Dezhou and Beijing
 LI Xiao, FAN Hanyun, WU Xinghe, XU Nan, GUO Song, HU Min (54)
- Relationship between Near Ground Wind Convergence and Heavy Pollution in Shijiazhuang
 LI Erjie, ZHANG Zhi, QI Miao, ZHAO Yuguang (63)
- Chemical Compositions of $PM_{2.5}$ Emitted from Six Types of Chinese Cooking
 LI Linxuan, CHENG Yuan, DU Xin, DAI Qili, WU Jianhui, BI Xiaohui, FENG Yinchang (71)
- Temporal and Spatial Source Apportionment during the Heating Period in Zhumadian..... DIAO Liuli, LI Sen, LIU Baoshuang, LI Yafei, ZHANG Qing, GAO Xiang, BI Xiaohui, ZHANG Yufen, FENG Yinchang (79)
- Characteristics of Atmospheric Particulate Matters during Winter Sandstorm Period in 2018 in Zibo City
 WU Liping, LI Liming, ZHANG Xiangyan, WANG Xinwu, MA Yinhong, GENG Chunmei, XU Bo (92)

AIR POLLUTION SOURCES AND CONTROL

- Emission Characteristics of VOCs from Typical Local Refineries and Associated Contributions to Secondary Pollution
 LÜ Daqi, LU Sihua, TAN Xin, SHAO Min (103)
- Volatile Organic Compounds (VOCs) Emission Characteristics in Printing Industry Based on Actual Measurement of VOCs Raw Materials and Pollution Process..... WANG Minyan, YAO Zhen, NIE Lei, LÜ Junan, LIU Wenwen (114)
- Characteristics of Ammonia Emission in Flue Gas from Ultra-Low Emission Coal-Fired Power Plants
 ZHONG Hongling, CHEN Ou, WANG Hongliang, CAO Lili, LIANG Chao, LIU Guodong, LUO Zhigang (124)
- Development and Application of Integrated Management and Control Platform for Remote Monitoring of Diesel Vehicles
 ... TIAN Miao, WANG Junfang, HUANG Jianchang, MA Shuai, JI Zhe, WANG Hongli, SONG Guohua, DING Yan (132)

Vehicular Dynamic Emission Characteristics of Typical Days in Beijing in 2017

..... WANG Yanjun, HE Weinan, SONG Guohua, TANG Yisu, LI Gang, ZHANG Shihai, ZHANG Hefeng (141)

China's Atmospheric Ammonia Emission Characteristics, Mitigation Options and Policy Recommendations

..... LIU Xuejun, SHA Zhipeng, SONG Yu, DONG Hongmin, PAN Yuepeng, GAO Zhiling, LI Yu'e, MA Lin, DONG Wenxu, HU Chunsheng, WANG Wenlin, WANG Yue, GENG Hong, ZHENG Yunhao, GU Mengna (149)

AIR POLLUTION CONTROL DECISION SUPPORT

Application and Research of Decision Support Technology Platform for Air Pollution Prevention and Control in Typical Polluted City.....

SUN Xinli, DU Shiyong, WANG Shuxiao, ZHU Yun, HAN Daowen, XU Hongyu, XING Jia, LONG Shicheng, YUAN Yingzhi, MA Qiao (158)

Characteristics and Influencing Factors of Urban Air Quality in Beijing-Tianjin-Hebei and Its Surrounding Areas ('2+26' Cities)

..... LI Hui, WANG Shulan, ZHANG Wenjie, WANG Han, WANG Han, WANG Shaobo, LI Haisheng (172)

Exposure Distribution of Air Pollutants in Beijing-Tianjin-Hebei Region Based on Monitoring and Kriging Method

..... WANG Zhanshan, LI Zhigang, QIAN Yan, LI Xiaoqian, GUO Chen, XUE Kaibing, WANG Ziye, ZHU Xiaojing, WEI Yongjie (185)

Priority Control of Hazardous Air Pollutants in Beijing-Tianjin-Hebei and Its Surrounding Areas

..... ZHANG Lili, ZHU Xiaojing, YU Yang, NIU Wenfeng, ZHENG Yuting, ZHANG Yang, LIN Jun (194)

Construction and Application of Comprehensive Data Collection and Sharing Platform for Atmospheric Environmental Science

..... SUN Caiping, WANG Wei, HE Lihuan, MA Guangwen, LUO Xianglin, DAN Hanping, ZHANG Shunhui (202)

IMPACTS OF AIR POLLUTION ON HUMAN HEALTH

Impact of Persistent High Ambient Fine Particulate Matters Exposures on Hospitalization in Beijing from 2013 to 2018

..... CHEN Chen, ZHONG Yu, LIU Yuanyuan, LU Feng, GUO Moning, FANG Jianlong, LI Tiantian, SHI Xiaoming (213)

Health Benefit of '14th Five-Year' and Medium & Long-Term PM_{2.5} Control Targets in Beijing-Tianjin-Hebei and Its Surrounding Areas.....

WANG Qing, ZHU Huanhuan, DU Peng, ZHAO Liang, LI Tiantian (220)

Panel Study on Effects of Short-Term Exposure of Particulate Matters on Human Serum Amyloid P Component

..... WANG Qiong, FANG Jianlong, LIU Yuanyuan, ZHOU Jingwen, KONG Fanling, DENG Fuchang, FU Yuanzheng, DONG Haoran, SHI Xiaoming (229)

Purification Effect of HEPA Air Purifier on School Indoor Particulate Matter

..... YANG Xiaoyan, WEN Bo, KONG Jian, RUAN Hongjie, WANG Qin, XU Dongqun (235)

