Peking University Bioaerosol Laboratory Bulletin (PKU-BLB)
Volume 8, Issue 1

April 2020

In response to COVID-19 outbreak, our newly developed Air-nCoV-Watch system was rapidly dispatched to Wuhan for SARS-CoV-2 monitoring!

2020 年 2 月 25 号北京大学 ACW 系统通过专车发往武汉

Our laboratory has developed a rat based toxic air sensing system named as Rats Sniff Off Toxic Air (*RST*air) System which is able to real-time alert the changes in air toxicity. It was selected as an ES&T supplementary Cover.

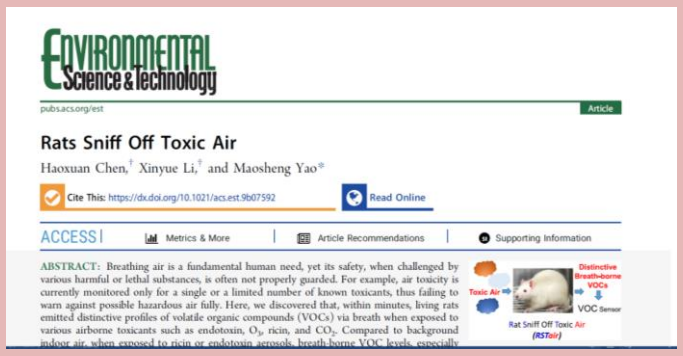
北京大学生物气溶胶实验室

Beijing, China

Chen et al., *Environ. Sci. Technol*. 2020, 54, 6, 3437–3446

Scientific Publications

1. Our work about rea;-time-alert toxic air using newly developed system named as RSTair by Chen et al 2020 was published in *Environ Sci Technol*, and was selected as supplementary cover.



2. Our work "On airborne transmission and control of SARS-CoV-2" by Yao et al 2020 was published in Science of the Total Environment.

Research Awards

1. Dr. Yao's project titled as "Onsite Onsite Rapid Detection of New Corona Virus Aerosol" (Grant #: 22040101) was approved on March 24 for an award of 3 millions RMB.

Other Selected Scientific Activities

1. Dr. Yao applied the session of Beijing Forum with the symposium name "Airborne Transmission of Infectious Diseases and Control" on Jan 10, 2020.

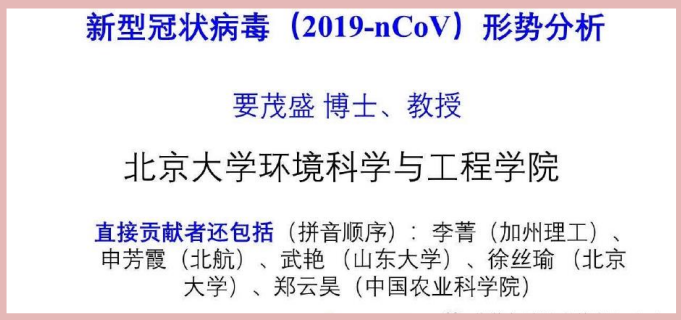

北京论坛（2020）分论坛承办申请表

申请单位名称： 环境科学与工程学院			
拟办分论坛负责人： 要茂盛		拟办分论坛学术秘书： 徐丝瑜	
电话：01062767282	手机：18610095983	电话：01062767282	手机：13717750919
电子邮件：yao@pku.edu.cn		电子邮件：xusiyu@pku.edu.cn	
总主题	文明的和谐与共同繁荣 The Harmony of Civilizations and Prosperity for All		
拟办分论坛主题	中文	传染病的空气传播与控制	
	英文	Airborne Transmission of Infectious Disease and Control	

2. Dr. Yao gave a report of working plan during the annual meeting of Indoor Environment and Health Branch Chinese Society for Environmental Sciences. In his talk, he mentioned biological contamination risk needs to be paid particular attention.

Group photo of participants

3. Dr. Yao prepared a report for new coronavirus transmission and developing trend on Jan 21, 2020.


新型冠状病毒（2019-nCoV）形势分析

要茂盛 博士、教授

北京大学环境科学与工程学院

直接贡献者还包括（拼音顺序）：李菁（加州理工）、申芳霞（北航）、武艳（山东大学）、徐丝瑜（北京大学）、郑云昊（中国农业科学院）

4. Dr. Yao organized a webinar for discussing the COVID-19 pandemic, and a total of 66 experts participated.

2020 年 1 月 27 日，北京大学环境学院要茂盛教授倡议和组织 66 名不同行业的专家学者利用腾讯网络会议平台（ID：252 431 587），参加了新冠病毒疫情研讨会。新闻网址：https://cese.pku.edu.cn/xwzx/110938.htm

新型冠状病（2019-nCoV）研讨会

主题：新型冠状病疫情形势与防控研讨
时间：2020年1月27（周一）上午10-12
地点：https://meeting.tencent.com/s/5XJsxvd

会议日程（暂定）

时间	报告人	报告题目	主持
10：00-10：05	要茂盛（北京大学）	新型冠状病疫视频会议开幕	

5. Dr. Yao along with other colleagues developed a protocol for re-use of secondhand mask through microwave irradiation by a household unit.

2020 年 1 月 25 日，北大要茂盛教授团队通过微信号推送了题为"利用家用微波再生口罩等防护品建议稿"的报告。当时举国上下面临口罩短缺的问题。阅读量为 8000 多。报告链接为：https://mp.weixin.qq.com/s/LiiKJbvhFRt4H3FkW_eFcg

6. Dr. Yao developed a mathematical model for predicting the development trend of COVID-19 pandemic. The model has successfully predicted the trends for China and other Asian countries during the earlier outbreaks.

7. Dr. Yao developed a report on the impact from environmental factors such as altitude, ozone, humidity and temperature on the COVID-19 transmission.

2020 年 2 月 9 号，要茂盛教授通过微信公众号推送了题为"海拔高度与环境因素对新冠病毒疫情的影响"，微信链接为：https://mp.weixin.qq.com/s/rR0PDHzui54rlXR4LFsQzg

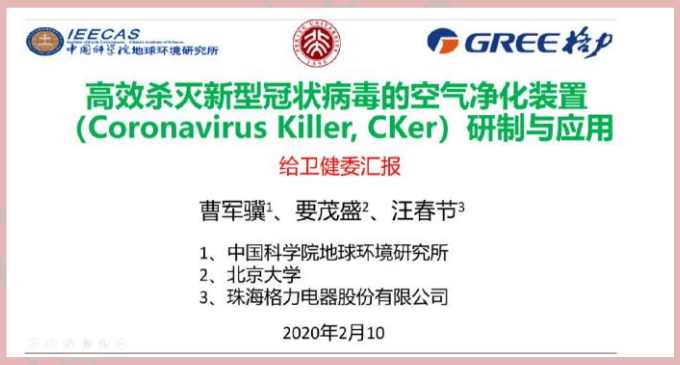
海拔高度及环境因素对新冠病毒疫情的影响

要茂盛 博士、教授

北京大学环境科学与工程学院

8. Dr. Yao was interviewed by Global Times on aerosol transmission of COVID-19 on Jan 10, 2020.

9. Dr. Yao was invited to a give report about the control of aerosol transmission of COVID-19 on behalf of the team by National Health Commission.



10. Dr. Yao has set up a temporary lab in his home for evaluating protocols of monitoring and controlling aerosol transmission of COVID-19.

2020 年 2 月 10 号，北大要茂盛教授在家里建立了临时实验室，研究测试了微波再生口罩的可能性，棉花作为呼吸防护的效率，同时也研究了通过抽烟模拟呼吸排放颗粒的强度与距离。

A temporary lab in Dr. Yao's home

11. Dr. Yao was interviewed on aerosol transmission of COVID-19 by Xinhua Group and China Science Magazine.

10. 2020 年 2 月 10 号，要茂盛接受新华社、《中国科学报》等采访，针对气溶胶传播新冠病毒的条件和影响因素做了较为全面科普，为科学防疫做出了积极贡献。


科普：病毒会通过气溶胶传播感染人吗

2020-02-10 16:25:13 来源：新华网

新华社北京2月10日电（记者彭茜）中国国家卫生健康委员会日前发布的《新型冠状病毒感染的肺炎诊疗方案（试行第五版）》中，对于病毒传播途径的描述，除"经呼吸道飞沫和接触传播是主要的传播途径"外，新补充了"气溶胶和消化道等传播途径尚待明确"。

此前，已有多篇国际期刊论文研究了其他呼吸道病毒的气溶胶传播情况。那么，什么是气溶胶？什么情况下病毒会通过气溶胶传播并感染健康人？公众如何防护？北京大学环境科学与工程学院生物气溶胶实验室负责人要茂盛教授近日接受新华社记者专访，解答了相关问题。

问：什么是气溶胶？什么情况下气溶胶会传播病毒？

要茂盛：气溶胶指在空气中悬浮的颗粒物，颗粒直径一般小于100微米（0.1毫米），我们熟悉的PM2.5就是一种气溶胶。病毒气溶胶是生物气溶胶的一种，生物气溶胶指悬浮在空气中的病毒、细菌、真菌、花粉以及其他来自生物的副产物等。飞沫其实也是

12. Dr. Yao along with his colleagues from Jiangsu CDC and Chayang CDC of Haidian District launched aerosol and breath-borne SARS-CoV-2 monitoring work in Wuhan and Beijing simultaneously.

SARS-CoV-2 monitoring in Wuhan hospitals

SARS-CoV-2 monitoring in Beijing hospitals

13. Dr. Yao along with other colleagues launched a special issue with ES&T, a prestigious environmental journal, on the environmental transmission of COVID-19.

13. 2020 年 3 月 18 号，北大要茂盛教授和其他几位老师一起作为可做编辑在 Environmental Science and Technology 发起了题为"Environmental Transmission and Control of COVID-19"的新冠疫情专刊。专刊链接：https://axial.acs.org/2020/03/16/environmental-transmission-and-control-of-covid-19-est-special-issue-call-for-papers/?from=singlemessage&isappinstalled=0

14. Dr. Yao was invited to participate in a webinar organized by the WHO for discussing the COVID-19 transmission routes. And Dr. Yao was also invited to give a webinar presentation regarding aerosol transmission of COVID-19 by ISIAQ to about 200 experts around the world.

2020 年 4 月份

15. 2020 年 4 月 5 号，要茂盛受邀参加世界卫生组织（WHO）组织的网络视频会议研讨新冠病毒的传播模式。

16. 2020 年 4 月 6 号，要茂盛受邀，参加"新形势下新冠病毒环境传播与风险防范科技论坛"，并做题为"气溶胶与呼出气中新冠病毒的监测"的报告。

17. 2020 年 4 月 7 号，北大要茂盛教授受 International Society of Indoor Air Quality and Climate 的邀请向来自世界 200 多位专家学者以"Aerosol and Breath Transmission of SARS-Cov-2 Virus"为题，分享了抗击疫情的进展。http://www.viethconsulting.com/Calendar/moreinfo.php?eventid=57000

15. Dr. Yao along with other colleagues launched a special issue with Science of the Total Environments on environmental transmission of COVID-19.

16. Dr. Yao's work using ACW in monitoring SARS-CoV-2 in Wuhan hospitals was featured by Peking University.

Our next issue is expected to be in August 2020 & we look forward to exciting news from our group. For other information, please visit our laboratory web site: www.yaopkulab.com. All contents contained in this document are copyrighted and explained by PKU Bioaerosol Laboratory.