

Peking University Bioaerosol Laboratory Bulletin (PKU-BLB) Volume 6, Issue 2

August
2018

Congratulations to Jing Li and Yunhao Zheng (now all Drs) for their PhD graduations and the achievements and best future ahead!! And two ES&T papers and one Nano Letters Paper!

Jing Li and
Yunhao
Zheng
Obtained their
PhD !
Congrats!



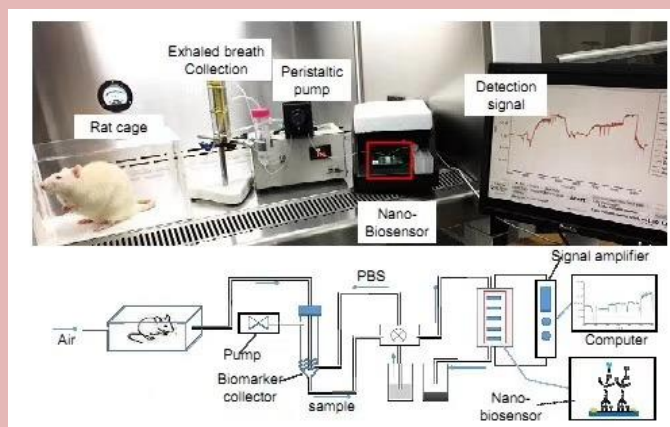
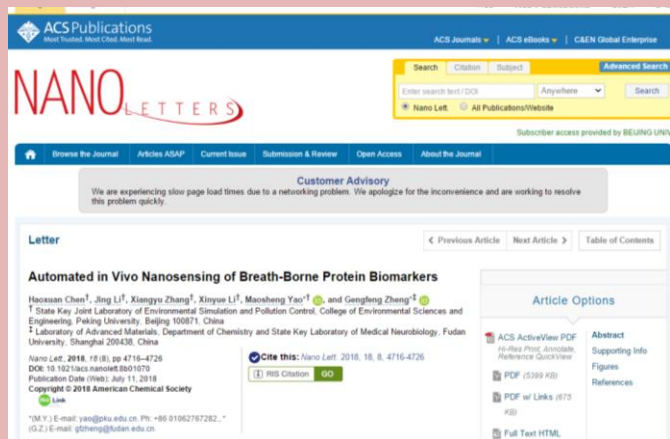
北京大学生物气溶
胶实验室

Dr. Yao was invited to be a discussion leader at a Gordon Research Conference held in Maine, US!

Beijing, China

Scientific Publications

1. Our work "Automated in Vivo Nanosensing of Breath-Borne Protein Biomarkers" by Chen et al 2017 was published in Nano Letters, congrats! Featured by China Daily!



DOI:

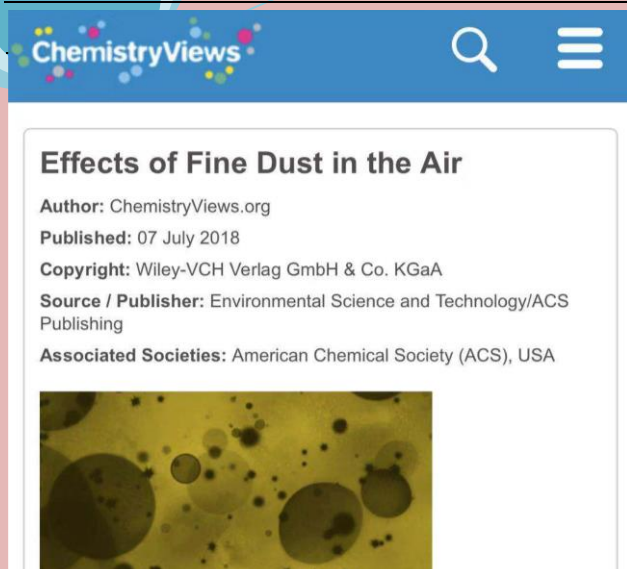
<https://pubs.acs.org/doi/abs/10.1021/acs.nanolett.8b01070>

2. Our work "Size-Resolved Endotoxin and Oxidative Potential of Ambient Particles in Beijing and Zürich" was published in ES&T and featured by many academic news media such as ChemistryViews!



我国实现颗粒物毒性活体生物标志物无创在线监测





DOI:

<https://pubs.acs.org/doi/abs/10.1021/acs.est.8b01167>

3. Our work “Global Survey of Antibiotic Resistance Genes in Air” was published in ES&T and featured by many academic news media such as “ACS embargoed press release”



<https://pubs.acs.org/doi/10.1021/acs.est.8b02204>

FOR IMMEDIATE RELEASE | June 20, 2018

The hidden hazards of antibiotic resistance genes in air

“Global Survey of Antibiotic Resistance Genes in Air”
Environmental Science & Technology

People are often notified about poor air quality by weather apps, and this happens frequently in urban areas, where levels of outdoor pollution containing particulates and soot are high. But now scientists are reporting in ACS' *Environmental Science & Technology* that there is another type of air contaminant that they say isn't receiving enough attention: antibiotic-resistance genes.

According to the U.S. Centers for Disease Control and



PUBLIC RELEASE: 25-JUL-2018

The hidden hazards of antibiotic resistance genes in air

AMERICAN CHEMICAL SOCIETY



People are often notified about poor air quality by weather apps, and this happens frequently in urban areas, where levels of outdoor pollution containing particulates and soot are high. But now scientists are reporting in ACS' *Environmental Science & Technology* that there is another type of air contaminant that they say isn't receiving enough attention: antibiotic-resistance genes.

4. Our invention about "Yeast-based PM Toxicity Sensor-SLEPTor" was issued a patent.



Academic Conferences

1. Dr. Yao was invited to give a presentation at Aerosol Technology 2018 in Bilbao and also to chair a bioaerosol session..

Aerosol Technology 2018

MONDAY, June 18, 2018

Time	Topic	Chair/Presenter
15:00-16:40	Sala de Juntas	First Floor, Room P1115
Chairs:	Maosheng Yao and Arantza Eiguren	
Monday Afternoon 3	MA3. Bioaerosols	
15:00-15:20	Detection of Living Animal's Exhaled Breath biomarker (dLABer) system	H. Chen, X. Zhang, X. Li, J. Li and M. Yao
15:20-15:40	Bioaerosol samplers for personal and distributed exposure assessment	G. Mainelis, T.T. Han, N. Thomas, J. Therkorn and J. Scheinbeim
15:40-16:00	Airborne microorganisms at anaerobic digestion site	S. Bayle, J. Rocher and A. Cadière
16:00-16:20	Simple and rapid quantification of biological air pollutants with ATP bioluminescence assay using a cotton swab	H.R. Kim, J.-W. Park, K.-Y. Yoon, J.H. Byun and J. Hwang
16:20-16:40	Lipopolysaccharide-mediated PM2.5 dose-dependent inflammatory effects	F. Shen, F. Liu, X. Zhang, J. Li, K. Ziegler, T. Zhang, T. Zhu, M. Shiraiwa, H. Tong, M. Yao, U. Pöschl and K. Lucas

2. Dr. Yao was invited to give a presentation at The HK Polytech Univ and Chinese University of HK

DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

Real-time Particulate Matter Toxicity Analysis using SLEPTor and dLABer

Professor Maosheng Yao
College of Environmental Sciences and Engineering, Peking University, Beijing

Seminar Abstract
Currently, measurements such as biomarker analysis in toxicology studies are most offline and negatively impacted by the method sensitivity. First, this talk will start with the discussion about biological contents including ARGs as well as particulate matter toxicity on a global scale. Then, I will discuss the single living yeast cell-based real-time PM toxicity analysis system named as SLEPTor, one of member technologies of our BIOSTAND® that have been developed in our laboratory. Following this, I will describe a new system called dLABer that integrates living animals, breath sampling, microfluidics, and biosensor for real-time tracking the breath-borne biomarkers. Blood-borne biomarker analysis and video recording suggested that the dLABer system can be used to real-time monitor breath-borne biomarkers with an ultra-sensitivity. Here, we used rats and PM exposure for validating the dLABer, and in the future the system can be also used to detect the biomarkers from humans in various scenarios, e.g., taking medications and bedside disease monitoring.

Biography
Dr. Maosheng Yao is a FULL Professor with Tenure of College of Environmental Sciences and Engineering, Peking University. Dr. Yao received his PhD in Environmental Science in 2006 from Rutgers University, and thereafter performed postdoctoral studies at Yale University. Dr. Yao's research interests are in the field of air pollution and health effects with a focus on bioaerosols. His work is recognized by Asian Young Aerosol Scientist Award, the Marian Smoluchowski from GAEF and the Kenneth T. Whitby from AAAR. Dr. Yao won a Second Prize of "P.R. China State Technological Invention Award", and the 44th Geneva International Exhibition Special Gold Award. In 2017, Dr. Yao was awarded the "The NSF of China Distinguished Young Scholar Fund". Dr. Yao has published 60+ peer-reviewed first/corresponding author journal articles including Angew. Chem. Int. Ed., Nano Lett and ES&T, and received 6 patents. Dr. Yao's bioaerosol research developments have been actively commercialized as PKU BioSTAND® system.

*** ALL INTERESTED ARE WELCOME ***
For enquiry, please contact Professor X.D. Li: 2766-6041, Email: cexdli@polyu.edu.hk

3. Dr. Yao was invited to be a discussion leader at Gordon Research Conference held in Maine, US





Microbiology of the Built Environment
Gordon Research Conference
July 15-20, 2018
University of New England, Biddeford, ME
Chair: Jordan Peccia
Vice Chair: Jessica Green



Find a Conference



Viruses in Buildings

Discussion Leader: **Maosheng Yao** (Peking University, China)

7:30 pm - 7:40 pm

Introduction by Discussion Leader

7:40 pm - 8:10 pm

Linsey Marr (Virginia Tech, USA)

"Building Characteristics Influence Human Exposure to Respiratory Viruses"

8:10 pm - 8:25 pm

Discussion

8:25 pm - 8:55 pm

Jeffrey Shaman (Columbia University, USA)

"Absolute Humidity Modulates Influenza Transmission"

8:55 pm - 9:10 pm



2. Our team has signed a collaboration agreement with Prof. Jiancheng Qi's team.



3. [Dr. Yao hosted Prof Benzhong Tang's talk at Peking University.](#)



Other Selected Scientific Activities

1. Dr. Yao signed a collaboration agreement with Prof Nanshan Zhong's team in Guangzhou.



College of Environmental Sciences and Engineering
Peking University

北京大学环境模拟与污染控制国家重点联合实验室学术报告会

Seminar of State Key Joint Laboratory of Environmental Simulation and
Pollution Control (Peking University)

世界一流学者报告会

Applications of AIEgens in Environmental Science

时间: 15:00-16:00PM, 6月1号 地点: 北大环境大楼 B121

报告人: 唐本忠 教授

中国科学院院士

香港科技大学

报告主持: 要茂盛 教授
yao@pku.edu.cn



唐本忠, 中国科学院院士, 中国国家自然科学一等奖得主, 香港科技大学张鉴泉理学教授、化学系与生物医学工程系讲座教授, 华南理工大学-香港科技大学联合研究院院长。1982年于华南理工大学获学士学位, 1985年、1988年先后获日本京都大学硕士、博士学位; 曾在多伦多大学从事博士后研究工作。1994年加入香港科技大学, 2009年增选为中国科学院院士, 2013年入选英国皇家化学会Fellow。作为AIE概念的提出者和研究的引领者, 唐本忠教授累计发表学术论文约1000篇, 引用60000余次, h-指数为123, 并于2014-2017年连续入选化学和材料双领域高被引用科学家。同时, 唐本忠教授先后获得多项荣誉及奖励, 如国家自然科学一等奖 (2017, 第一完成人)、何梁何利科学与技术进步奖 (2017)、第27届夸瑞兹国际科学奖 (2014)、美国化学会高分子学术报告奖 (2012)、国家自然科学二等奖 (2007, 第四完成人)、裴槎高级研究成就奖 (2007)、中国化学会高分子基础研究王葆仁奖 (2007) 和爱思唯尔出版社冯新德聚合物奖 (2007) 等。

4. Dr. Yao was invited to give a talk at Changsha Polytech Institute in Changsha, Hunan.

5. We have developed a handheld rapid microbial aerosol detection system.



“化学生物前论坛”会议议程

地点: 图书馆报告厅

时 间	报告人	报告题目	主持人
5.23 14:00-22:00		会议注册	
7:30-8:30		开幕式	杨荣华
8:30-9:00		合影	
9:00-9:20		茶 歇	
9:20-9:50	赵宇亮	无机纳米材料的生物学性质与分析方法	田 禾
9:50-10:20	郭子建	金属化学生物学	田 禾
10:20-10:40		茶 歇	
10:40-11:00	刘冬生	基于框架诱导组装的模块化纳米载体体系	陈晓青/谢青季
11:00-11:20	刘志洪	上转换荧光分析	陈晓青/谢青季
11:20-11:40	汪乐余	高性能纳米探针: 设计、构筑与分析应用	陈晓青/谢青季
11:40-12:00	袁荃	无背景纳米生物分析方法研究	陈晓青/谢青季
12:00-14:30		午 餐	
14:30-15:00	田 禾	光调控功能超分子体系	郭子建
15:00-15:30	毛成德	In Vivo Production of Designed RNA Nanostructures	郭子建
15:30-15:50	张 凡	近红外光学活体多重成像分析	曹 忠
15:50-16:10	要茂盛	Detection of Living System Biomarker Using BioSTAND	曹 忠
16:10-16:30		茶 歇	
16:30-16:50	刘珏文	核酸-纳米材料表面研究	刘冬生
16:50-17:10	樊春海	基于框架核酸的界面调控与生物分析应用	刘冬生
17:10-17:40	杨秀荣	基于双偏振干涉方法的生物分子相互作用研究	毛成德
17:40-17:50		闭幕式	程云辉
18:00-20:00		晚 餐	
7:00-9:00		早 餐	
5.25 9:00-11:00		参观学院实验室, 离会	曹 忠



Dr. Yao met Meny from Yale at

PKU

Student News

1. Congrats to graduate students Jing LI and Yunhao Zheng for obtaining PhD ! Best wishes to them!



PhD celebration dinner! Jing Li and Yunhao Zheng did the treat!



Dr. Yao's daughter in Inner Mongolia plateau!



Our next issue is expected to be in December 2018 & 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.