



Real-time Particulate Matter Toxicity Analysis using SLEPTor and dLABer

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Venue: Room ZS970,

The Hong Kong

Polytechnic University



Seminar Abstract

Currently, measurements such as biomarker analysis in toxicology studies are most offline and negatively impacted by the method sensitivity. First, this seminar 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

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

*** ALL INTERESTED ARE WELCOME ***

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