

UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY
DEPARTMENT of
CIVIL AND ENVIRONMENTAL ENGINEERING

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**" Application of real-time mass spectrometric
techniques in the analyses of air pollution and
human breath "**

by

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Date: 26/02/2016 (FRIDAY)

Time: 4:00PM – 5:00PM

Venue: E11 – 1006

Abstract

In this talk, two real-time mass spectrometry-based technologies, single aerosol particle mass spectrometry (SPAMS) and secondary electrospray ionization mass spectrometry (SESI-MS), will be briefly introduced. Their applications in atmospheric particulate matter (PM) and breath analysis, including those in atmospheric chemistry and medical diagnosis studies will be discussed respectively. For SPAMS, the topic mainly focuses on the results of source apportionment recently obtained in China, while studies on secondary organic aerosol formation mechanism, optical properties, and hygroscopicity etc., will also be discussed. Regarding SESI-MS, examples of capturing pharmacokinetics via direct mouse breath analysis and characterization of volatile organic compounds (VOCs) released from breast cancer cells are demonstrated. In addition, the latest results on human breath analysis by using SESI-UHRMS will also be presented.

Biography

Dr. Xue Li is now an Associate Professor at the Institute of Atmospheric Environmental Safety and Pollution Control, Jinan University, Guangzhou. She received her PhD degree in Environmental Science from Tsinghua University in 2010, and later spent two years as a postdoc in Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland, studying ambient pressure mass spectrometry and its medical applications. She moved back to China in 2014 and started her research team in Jinan University. Her present research interests include the real-time mass spectrometry-based breath analysis and its translation to environmental health and medical diagnosis applications. She has published more than 20 scientific papers and holds 6 patents on mass spectrometry. She was the recipient of the Youth Science and Technology Award by the Chinese Society for Environmental Sciences in 2012. She is also one of the core members of the mass spectrometric development team (supported by the Ministry of Science and Technology) at Jinan University for innovation in mass spectrometric instrumentation/application in environmental and medical applications.

ALL ARE WELCOME!