

# ENVIRONMENTAL EXPOSURE AND HEALTH EFFECTS OF ARSENIC

## Speaker

**Prof. X. Chris Le**

University of Alberta, Edmonton, Canada

## Abstract

Arsenic is naturally occurring in the environment. More than 200 million people around the world are exposed to arsenic in drinking water at concentrations higher than the World Health Organization guideline level (10 mg/L). Chronic exposure to inorganic arsenic increases the risk of developing cancers (e.g., bladder, lung, and skin) and other non-cancerous effects (e.g., diabetes and heart diseases). Environmental prevalence, biochemical complexity, toxicological effects, regulatory priority, and treatment issues continue to challenge arsenic researchers. Dr. Le's research on arsenic focuses on developing analytical techniques to characterize arsenic species, assessing human exposure, studying arsenic biotransformation, and investigating molecular mechanisms responsible for arsenic health effects. Dr. Le will describe a few examples of recent research on the determination of arsenic species using chromatography and mass spectrometry, studies of arsenic metabolism, and development of biomarkers of exposure and susceptibility. This research is built on foundations of analytical and environmental chemistry and benefit from cross-disciplinary collaboration with engineering, epidemiology, molecular biology, public health, and toxicology.

## Biography

Dr. Le is Distinguished University Professor and Director of the Analytical and Environmental Toxicology Division at the University of Alberta (Canada). He is an elected Fellow of the Royal Society of Canada, Academy of Science.

Dr. Le received BSc in chemistry (1983) from Wuhan University, MSc (1986) from the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, and PhD in environmental chemistry (1993) from the University of British Columbia (Canada). He carried out postdoctoral research (1994-1995) in bioanalytical chemistry at the University of Alberta. He was recruited to the Faculty of Medicine in 1995, promoted to full professor in 2003, and awarded the Distinguished University Professor title in 2011.

Dr. Le teaches and conducts research in interdisciplinary areas of analytical chemistry and environmental health sciences. He has mentored more than 100 graduate students and postdoctoral fellows from the Departments of Chemistry, Laboratory Medicine and Pathology, and Public Health Sciences. He has established productive collaborations with more than 30 groups around the world. He has published more than 300 journal articles and holds 15 patents. His scholarly achievements have been recognized with numerous awards, such as the Environment Research and Development Award from the Chemical Institute of Canada for "distinguished contributions to research and development in the field of environmental chemistry", the W.A.E. McBryde Medal and the Maxxam Award from the Canadian Society for Chemistry for "distinguished contributions to the field of analytical chemistry", the E.W.R. Steacie Fellowship from the Natural Sciences and Engineering Research Council of Canada, and the Canada Research Chair in Bioanalytical Technology and Environmental Health from the Government of Canada. He also received the Martha Cook Piper Research Prize, the Excellence in Mentoring Award, and the University Cup from the University of Alberta. He is an honorary fellow of the Chinese Chemical Society.

Dr. Le currently serves as an Associate Editor for Analytical Chemistry (American Chemical Society) and Co-Editor-in-Chief for Journal of Environmental Sciences (Elsevier and Chinese Academy of Sciences). He previously served as Associate Editor for Environmental Health Perspectives and as an editorial board member for 10 other international journals on the topics of chemistry and environment.



**21 November 2025  
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**Room 3574 (Lift 27/28)  
Civil Engineering  
Conference Room**

## Enquiry:

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