



Distinguished Lecture Series

Advanced Mass Spectrometry in Biomarker Discovery for Emerging Contaminants



4 June 2021 (Friday)

2:00-3:00 p.m. GMT+8 (Hong Kong Time)



Online via Zoom

(Meeting ID: 964 3065 0933)



ABSTRACT

Humans are daily exposed to a large number of (new) chemicals from the environment, food, and consumer products. While for many known chemicals, there is substantial knowledge regarding the appropriate human biomarkers of exposure for biomonitoring purposes, there are still many knowledge gaps for emerging contaminants. Several approaches based on high-resolution mass spectrometry have been recently proposed for the identification of biomarkers of exposure relevant for the human exposure to emerging contaminants. Since contaminants are metabolized to some degree in the human body, the identification goes beyond the parent compounds and extends to their metabolites. Furthermore, the presence of endogenous compounds in higher concentrations can in some cases lead to false positives.

To include a range of metabolites in the suspect screening of emerging contaminants, the biotransformation of the involved chemicals needs to be investigated. This is usually done using appropriate software and modelling approaches or through in vitro metabolism procedures with liver microsomes, S9 fractions, or hepatocytes, followed by detection and identification of the metabolites by LC-HRMS. The identification of relevant metabolites of emerging contaminants and their addition to the suspect screening improves very much the success in the process of biomarker discovery for emerging contaminants in human samples.

Professor Adrian Covaci

Professor of Analytical and Environmental Toxicology
University of Antwerp, Belgium

Professor Adrian Covaci is a Professor of Analytical and Environmental Toxicology at the University of Antwerp, Belgium. He is the current director of the Toxicological Center in the Department of Pharmaceutical Sciences.

He has co-authored more than 600 articles in peer-reviewed journals and has an H-index of 89.

His papers have been cited more than 23,000 times which has earned him the title of Highly Cited Researcher (2015, 2016, 2017, 2018, 2019, and 2020).

Since 2011, he is the Belgian representative in the Division of Chemistry in the Environment of the European Association for Chemical and Molecular Science (EuCheMS).

He is also co-Editor-in-Chief for *Environment International* (IF2019: 7.60) and an Associate Editor for *Science of the Total Environment* (IF2019: 5.60).