KNOW WHAT YOU VAPE: METAL ANALYSIS OF CANNABIS LIQUIDS

Zuzana Gajdosechova

National Research Council Canada, Metrology, 1200 Montreal Rd., Ottawa, ON, K1A 0R6, Canada

Vaping cannabis liquids is a convenient consumption method but carries health risks. An increasing number of reports advocate for expansion of regulated metals in cannabis vape liquids beyond As, Cd, Hg, and Pb to reflect the possibility of consumers' exposure to the large number of metal contaminants found in these products. However, the metal analysis in cannabis vape liquids is challenged by poor precision and reproducibility.

In this lecture, I will begin by presenting and comparing the measured total metal mass fractions in both legally purchased and illegal cannabis vape liquids, and evaluating how these values align with legislated maximum limits. I will then explore potential reasons for the poor measurement precision observed, which prompted further investigation using unconventional instrumentation to detect metal particles. Following this, I will introduce the concept of single particle ICP-MS analysis and its data treatment methods, while presenting the results of particle measurements in both the vape liquids and the aerosols they produced. Finally, I will discuss the quality of vape cartridge components and their role in the contamination of cannabis vape liquids.