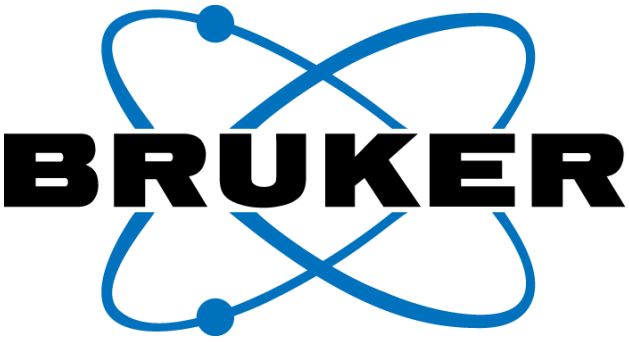
September 8, 2022 (13:30–14:15)



VENDOR SEMINAR:

Application of Trapped Ion Mobility Mass Spectrometry for Food Research

Migration screening of raw and food contact materials using Intuvo GC MS

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Analysis of complex samples such as food is becoming more challenging as the trend develops from targeted to untargeted workflows. Untargeted workflows are the best way to rapidly identify multiple compounds from a specific group e.g., dioxins or PFAS molecules, plus they are a very useful starting point for food authentication studies. Untargeted workflows are more challenging because the more 'features' (compound spectra) that can be determined, the greater the number of spectral points exist for comparison purposes (authenticity studies) or ensuring all compounds of a specific group can be identified.

Ion mobility in combination with high resolution mass spectrometry is a powerful tool in aiding these studies. A fourth analytical dimension, Trapped Ion Mobility Spectrometry (TIMS) enables the above to be readily achieved. Several studies have been performed on a timsTOF Pro (Bruker Daltonics) linked to an UHPLC or GC. TIMS data rapidly provides an additional and important I.D. criterion namely cross collisional section values and has been found to be highly valuable in compound identification, separation and quantitation of isomers plus clean-up of chromatograms and spectra.

The benefits of using TIMS will be described in detail and illustrated with examples of pesticide analysis from onion QuChERS extracts, PFAS analysis, dioxin and POPs analysis by GC-APCI TIMS MS and food authenticity studies.