

CON-THE-010

CONFIRMATORY METHODS

MS part I: Ionisation

• Context

The analysis of residues and contaminants in food requires the use of specific and sensitive measurement methods. In this respect, mass spectrometry presents all the necessary qualities to ensure the detection, identification and quantification of organic molecules at trace level in complex biological matrices.

• General objective(s)

To give the trainees the keys to understanding the general principles of this spectrometric technique, with a particular emphasis on the history of mass spectrometry, the popularised principle of the technique and finally the various ionisation methods used in the field of chemical residues and contaminants.

• Main items

Mass spectrometry history / ionisation technique (EI, PCI, NCI, ESI, APCI...)

• Pedagogical objectives

- ✓ Name two ionisation methods suited to R&C in GC-MS
- ✓ Name two ionisation methods suited to R&C in LC-MS
- ✓ Describe the spatiotemporal phenomena observed in an electronic impact ionisation source
- ✓ Describe the spatiotemporal phenomena observed in an ESI interface
- ✓ Explain the strategy which leads to the selection of one ionisation technique rather than another according to the type of R&C involved.

• Pedagogical tools

- ✓ Slide show
- ✓ Word file support

• Duration

- ✓ 2 hours

• Pre-requisite

- ✓ Chemistry
- ✓ Physics