



GC - MS Technical Training

Module Name: GC-MS – Hardware

Time Allocated: 1.5 - 2 hours

Intended Audience: This module assumes a basic knowledge of gas chromatography but assumes no prior knowledge of GC-MS.

Content Covers:

- Animation of the inner workings of a benchtop GC-MS
- Ionization theory, various forms of ionization especially EI and CI
- Various Mass separation Techniques including ion trap, quadrupole and TOF
- Explanation of the mass separation and how this translates to Full Scan Mode and Selected Ion Monitoring (SIM) mode
- Detection – electron multiplier, theory and operation
- Autotune and manual tuning

At the completion of this seminar, attendees should be able to:

- Understand the basics of mass spectral acquisition
- Understand the relationship between the end of the column and the EI source
- Describe the various components of a MS and the function of each
- Identify the individual components of a ion source and the importance of the cleaning procedure
- Set acquisition conditions such as mass range and appreciate the effect on the chromatogram
- Know when to use full scan and SIM modes
- Know how to extend the life of the electron multiplier and how to clean the EM
- Understand resolution versus sensitivity
- Understand the effect of EMV on sensitivity (gain) and electron multiplier life