



## GC Technical Training

**Module Name:** Intermediate GC

**Time Allocated:** 1.5 - 2 hours

**Intended Audience:** This talk assumes the attendee has at least the knowledge obtained from attending the GC Beginner Course

### Content Covers:

- Gas chromatography principles explained
- Simple chromatographic terms defined e.g. resolution, theoretical plates, average gas velocity, sample capacity, phase ratio, selectivity
- Carrier gas selection
- Average carrier gas velocity optimization
- Measuring carrier gas velocity
- Selection of capillary column length, diameter and film thickness
- Selection of capillary column phase polarity based on application

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

- Demonstrate (via simple flow diagram), a clear understanding of conventional GC theory from injection to detection.
- Includes a simple understanding of where and why different detectors are used, incl. FID, ECD and MS
- Interpret the main features of a chromatogram including phenomena such as tailing, fronting peaks, baseline noise, bleed, signal-to-noise ratios, detection limits, baseline resolution, co-elution
- Understand the effect of average carrier gas velocity on chromatographic resolution and optimize a separation based on this
- Predict the effect of varying parameters such as temperature, carrier flow rates, column ID, length and polarity on chromatographic performance
- Recommend inlet liners to suit specific applications
- Recommend the proper phase and film thickness for the application based on molecular weight and polarity of the analyte