



HPLC Fundamentals

This one-day course introduces the fundamentally important concepts associated with HPLC analysis including hardware basics, modes of analysis, basic troubleshooting, column chemistry, principles of ionisation and more.

Suitable as a refresher for the more experienced chemist or as an invaluable introduction to the technique for those with limited experience, this course provides an invaluable insight into HPLC principles and practice.

Course Contents

Basics of the Chromatographic Process

- Main retention mechanisms in HPLC
- Distribution constant
- Retention theory
- Model of the chromatographic process

Sample Preparation Protocols

- Principles
- Matrix elimination
- Liquid and Solid Phase Extraction

Separation Mode / Retention Mechanisms

- Absorption (normal phase)
- Reverse phase
- Principles of ionisation (Ion Suppression Chromatography)
- Ion pairing
- Ion exchange

Quantitation

- Integration parameters
- System suitability testing

Injectors and Columns

- Sample introduction
- Rheodyne injectors / auto-samplers
- Silica as a solid support
- Column & packing geometry
- Efficiency - the van Deemter & Knox equations

Detectors

- Choosing the right detector
- Operating principles
- Optimisation
- Typical operating conditions
- UV (Diode Array) / RI / Fluorescence

Measuring & Optimising Chromatographic Parameters

- Efficiency
- Capacity factor
- Selectivity
- Resolution
- Interdependence via the resolution equation



Email our Training Team