

BOOKING FORM Please complete all sections of the booking form

Book by phone: 01494 563377, fax: 01494 564990 or via www.thamesrestek.co.uk

Venues HPLC & Capillary GC Seminars

Ref.No	Course	Venue	Date	Price Ex. VAT	No. of Seats
GC1009	GC	Ramada, London Hyde Park	9.03.10	£125.00	_____
LC1010	LC	Ramada, London Hyde Park	10.03.10	£125.00	_____
GC1011	GC	Best Western Guide Post Hotel, Bradford	16.03.10	£125.00	_____
LC1012	LC	Best Western Guide Post Hotel, Bradford	17.03.10	£125.00	_____
GC1013	GC	Edinburgh Carlton Hotel, Edinburgh	23.03.10	£125.00	_____
LC1014	LC	Edinburgh Carlton Hotel, Edinburgh	24.03.10	£125.00	_____

Please reserve _____ place(s)

Course Location: _____

Date: _____

Please invoice my company using
Purchase Order No: _____

alternatively: Enclose cheque for £146.88 (£125.00 + VAT) per person with booking form made payable to Thames Restek UK Ltd.

Name: _____

Department: _____

Organisation: _____

Address: _____

Postcode: _____

Tel No: _____ Fax No: _____



Enrol 4 or more people and get a 20% discount
Can you afford not to be there?

THAMES RESTEK UK Ltd.
Units 8-16, Ministry Wharf, Wycombe Road,
Saunderton, Buckinghamshire HP14 4HW
Tel: 01494 563377 Fax: 01494 564990
Email: maggie@thamesrestek.co.uk
www.thamesrestek.co.uk

CHROMATOGRAPHY TRAINING SEMINARS 2010



Comprehensive Capillary G.C. and H.P.L.C. training seminars held at a location near you.

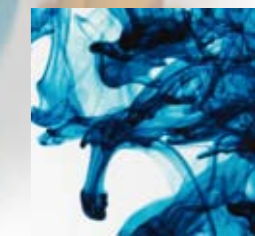
ONLY £125.00 PER DELEGATE

Early applications are advisable as these courses are extremely popular.

Venues: London, Leeds/Bradford & Edinburgh.

Full booking details inside. University Accredited

tel: 01494 563377 ■ fax: 01494 564990 ■ email: sales@thamesrestek.co.uk ■ www.thamesrestek.co.uk



1 INTRODUCTION TO HPLC THEORY

- Terminology
- Relevant equations and how they relate to optimisation
 - Calculating efficiency
 - Measurement of asymmetry
 - The Resolution Equation
 - * Efficiency
 - * Retention
 - * Selectivity
 - Band Broadening
 - Resolution

2 MODE OF SEPARATION

- Description of the major modes of HPLC
 - Size Exclusion
 - Normal Phase
 - Reverse Phase
 - Reverse Phase Ion-Pair
 - Ion Exchange
- Choosing the correct mode
 - Criteria and Examples
- Solvent Selection
 - Practical Concerns (cost, purity, absorption, characteristics, etc.)
 - Solvent Strength
 - Buffers

3 COLUMN SELECTION

- Discussion of the variations in bonded phases
 - Silica Characteristics
 - * Surface Chemistry
 - * Particle Size Distribution
 - * Pore Size Distribution
 - Bonded Phase Variations
 - Deactivation Techniques
- Optimising resolution, analysis time and sensitivity with column geometry
 - Column length
 - Column i.d.
 - Particle Size

4 METHOD DEVELOPMENT

- Understanding the variables
 - Method Ruggedness
 - Resolution
- Choosing a Mobile Phase
 - Solvent Strength
 - pH & pKa
 - Gradients
- Equipment Considerations
 - Injection
 - Detection
 - Efficiency Loss

5 TROUBLESHOOTING & MAINTENANCE

- Equipment problems
 - Signal & Sensitivity
 - Erratic Baseline
 - Pressure Problems
- Column Problems
 - Peak Shape & Symmetry
 - Broad Peaks
 - Ghost Peaks
 - Resolution
 - Reproducibility
- Sample Related Problems
- Maintenance
 - Records
 - Validation
 - Replacement Parts

1 CAPILLARY THEORY & TERMINOLOGY

- Basics of chromatography
- Chromatographic retention
- Separation efficiency
- Selectivity
- Commonly used equations and terms
- Column materials

2 INLET SYSTEMS & INJECTION TECHNIQUES

- Pneumatic principles of operations
- Sample flow paths
- Injection modes; pros and cons
- Optimising injection modes
- Sleeve function and design
- Purge & trap
- Sampling valves
- Head space

3 DETECTION SYSTEMS

- Selection
- Sensitivity
- Terminology
- Destructive
- Non Destructive
- Different Types MS, FID, ECD, FPD, TCD, PID, ELCD, NPD etc

4 COLUMN SELECTION

- Column characteristics
- Column ID effects on resolution and capacity
- How to select the proper film thickness
- How column length affects resolution and analysis times
- Stationary phase polarity and how to select the proper phase
- Column materials
- High temperature analysis
- Confirmational analysis

5 COLUMN INSTALLATION OPERATION

- Carrier gas choice
- Instrument preparation
- Trouble-free installation
- Leak checking and flow setting
- Column conditioning
- Stand-by operation

6 TROUBLESHOOTING & MAINTENANCE

- Key points in system maintenance
- How to determine instrument from column problems
- Preventing column contamination
- Column rinsing and rejuvenation techniques
- Monitoring system integrity
- Sources and solutions for common problems

- GC Seminar GC1009 - Tuesday 9th March 2010
Ramada, London Hyde Park
- LC Seminar LC1010 - Wednesday 10th March 2010
Ramada, London Hyde Park
- GC Seminar GC1011 - Tuesday 16th March 2010
Best Western Guide Post Hotel, Bradford
- LC Seminar LC1012 - Wednesday 17th March 2010
Best Western Guide Post Hotel, Bradford
- GC Seminar GC1013 - Tuesday 23rd March 2010
Edinburgh Carlton Hotel, Edinburgh
- LC Seminar LC1014 - Wednesday 24th March 2010
Edinburgh Carlton Hotel, Edinburgh



The courses run from 09.30 to 16.30 (approx.)
and include all course material, lunch and refreshments.

Enrol 4 or more people and get a 20% discount

Book by: Phone on 01494 563377 • Fax form to 01494 564990 • Email: maggie@thamesrestek.co.uk • Book on-line at www.thamesrestek.co.uk