Tel No:+97126654546 | FaxNo:+97126654182 | Email: training@cmc-me.com | www.cmc-me.com

AL034:
GC/MS Technology & Problem Solving

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Training Description:

The use of Gas Chromatography plays a key role in the modern industry, not only by supplying effective data of known quality, but also providing these data in real-time or near real-time. This course is offering everything the professional and novice need to know about running, maintaining, and interpreting the results from Gas Chromatography. Analytical Chemists, Technicians, and Scientists in allied disciplines will regard this training as the best in gas chromatography. In addition to serving as an invaluable update for the experienced practitioner, this course provides the beginner with solid understanding of gas chromatographic theory and basic techniques.

This course incorporates the most recent developments in the field of Gas Chromatography, including topics on optimization of separations and computer assistance; high speed or fast gas chromatography, mobile phase requirements.

This course intends comprehensively to highlight and discuss in details the components of the techniques, its use, troubleshooting, maintenance, calibration, interface with other techniques and some practical training to familiarize the theoretical information into practice.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Build extensive understanding and excellent skills in Gas Chromatography technology and associated techniques used
- ✓ Operate the gas chromatograph equipment in the safest and best practical way
- ✓ Build up the knowledge and skills on how to maintain gas chromatography
- ✓ Calibrate gas chromatography and produce and produce results with the highest precision and accuracy and reliable source
- ✓ Manage troubleshooting and identifying the source of the problem and the scientific method of eliminating the problem from reoccurring
- ✓ Develop new methods and procedures development for new tests and using it in research and development projects
- ✓ Identify Sample injection, learn the factors affecting injection band width, split/split less injectors, hot vaporizing injection, large volume injection, purge and trap sampling also headspace and purge and trap sampling
- ✓ Perform practical demonstration
- ✓ Identify mass spectroscopy detector
- ✓ Conduct validation of GC methods, installation qualification, operational qualification and performance qualifications
- ✓ Perform troubleshooting and applications

Training Designed for:

This course is intended for all Chemist, Lab Technicians, Chemical Engineers, Instrument Engineers and Lab Supervisors and Managers, Scientists, Analytical Chemist and all laboratory personnel involved in GC/MS.

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Training Program:

DAY ONE:

- ❖ Introduction
  - History, Definitions, Applications/Purpose
  - Requirements, Limitations, GC Components/Practical Theory and Practices
- ❖ Injection Systems
  - Syringe Types/Methods, Septa Sweep
  - Packed and Capillary, On-Column, Split/Splitless Injections
  - New Techniques and application, Solvent Effects
  - Background, Maintenance/Troubleshooting Strategies

DAY TWO:

- ❖ Columns Systems
  - Packed and Capillary
  - Performance Evaluation, how they are made
  - Liquid Phases/Selection/Temperature Limits
  - Adsorbents, Molecular Sieves
  - Isothermal/Temperature Programming
  - Compatibility, Practical Operating Tips
  - Installations of Columns, Troubleshooting, Gas Flow Adjustments
  - Liner Velocity thru Capillary Column
  - Operational Tips
  - Maintenance and Troubleshooting

DAY THREE:

- ❖ Detectors
  - Fundamentals of Detector Responses
  - Types of Detector
  - Detectors Used for Various Analysis
  - TCD, FID and MS maintenance
- ❖ Qualitative and Quantitative Analysis
  - Qualitative Analysis
  - Quantitative Analysis Methods

DAY FOUR:

- Maintenance and Calibration of Gas Chromatographic Instruments
- Site Visit/Practical Session
- Troubleshooting and their Solutions
- Interpretation of Test Results and Analysis

DAY FIVE:

- ❖ Gas Chromatography Methods and Processes Development
- ❖ Combination of Gas Chromatographic Techniques with Other Techniques
- ❖ Practical Workshop for Using Gas Chromatography
- ❖ Course Conclusion
- ❖ POST-ASSESSMENT and EVALUATION

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Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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