TRAINING PROGRAM

Atomic Absorption Spectroscopy

Introduction:

The absorption of radiation by a sample of atomic particles, created by vaporizing the sample, represents a relatively simple spectral situation that has great practical value for elemental identification and concentration determination. The technique known as atomic absorption spectroscopy is of particular analytical importance for the determination of metals due to its sensitivity and potential for selectivity by virtue of the narrow atomic absorption lines.

Who Should Attend?

The course is of interest for any person working in any analytical laboratory. Laboratory staff, Chemists, supervisors and technicians.

Methodology:

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration.

Course Objectives:

The quality of analysis depend more on the quality of the operator than that of the instrument, so this course will help laboratory staff to understand meaning of spectroscopy, and to be apple to make elemental analysis with high sensitivity by spectroscopy

Course Outline:

- Introduction to the various aspects of managing a laboratory
- Laboratory facilities
- Personnel management
- Self and time management
- Introduction
- Analytical Chemistry and Chemical Analysis
- Classical Methods
- Instrumental Methods
- Spectroscopic Methods of Analysis
- Historical and review
- Basic Principals
- Electromagnetic Spectrum
- Theory of Spectroscopy
    - ❖ Absorption
    - ❖ Emission
    - ❖ Fluorescence
    - ❖ Phosphorescence
- Type of Spectroscopy Analysis
- Molecular Spectroscopy analysis
- Atomic Spectroscopy analysis

Atomic Absorption Spectroscopy (AAS)

- The Effect of Temperature on Absorption
- Atomization: Flames, Furnaces
- The Linewidth
- Hollow-Cathode Lamps
- Detection Limits
- Interference
- Method of Analysis
- Sampling , Preparation and Treatment
- Problem and troubleshot
- Routine Maintenance
- Data analysis
- Comparing Spectroscopic Techniques
- Spectroscopic Advantages and Disadvantages
- Safety requirement
- Practical Application
    - ❖ Petroleum Analysis
    - ❖ Water Analysis
    - ❖ Solid Waste Analysis
    - ❖ Environmental Analysis