



## AIMS Specialist Training Process Analytical Instrumentation – Theory & Practice

Course Name: Analyzer Level 1  
Duration: 2 weeks

### 1. Process Analytics

- 1.1 Elements, Molecules, Solid Liquid Gas Mixtures
- 1.2 Plant Chemistry – Molecules and Ions - Colloids
- 1.3 Concepts of pH- Acids and Alkalies
- 1.4 Multiphase concepts, Dissolution & Diffusion – Humidity
- 1.5 Oxidation Reduction, Stoichiometry, Heat of Reaction
- 1.6 Electrochemistry
- 1.7 Emission & Absorption Spectra and Scattering
- 1.8 Adsorption, Elution and Chromatography
- 1.9 Emerging Technologies- Raman Scattering, Mass Spectrometry, Ultrasonics
- 1.10 Leak and Trace Detection Technologies –Ultrasonic, Electrochemical & Radiation

### 2. Analytical Instrumentation

- 2.1 Hydrocarbon and toxic Gas detection
- 2.2 Humidity detection
- 2.3 Feed gas Instrumentation
- 2.4 Sulfur Plant Instrumentation
- 2.5 Air & water Pollution Monitoring- CEMS
- 2.6 SWAS- pH, ORP, Conductivity
- 2.7 Nucleonic Detection





# Analytical Instrumentation & Maintenance Systems

## 3. Analytical System Integration-Including Workshop Sessions

- 3.1 Process Sampling
- 3.2 Sampling Components
- 3.3 Cabinets and Shelters
- 3.4 Field interfacing
- 3.5 Misc. Analytical instruments

## 4. Analytical Calibration and Configuration-Including Workshop Sessions

- 4.1 Gas Mixtures Purity, traceability and Hazards standards – Lab methods
- 4.2 Gas Detector Calibration
- 4.3 Ultrasonic Gas Leak Calibration
- 4.4 Configuration and Calibration of different process Analyzers

