MONDAY 24 FEBRUARY 2020
MANAGEMENT OF EMISSIONS MONITORING

09:00  Registration and coffee
09:30  Welcome and Introduction
The Regulatory Framework
09:45  Emissions monitoring under the Environmental Permitting Regulations (EPR)
Femi Akinrinola, Environment Agency
Emissions monitoring of industries regulated under EPR
10:30  Management of contract emissions testing
Simon Medhurst, Smedstack Environmental
Practicalities of establishing an emissions monitoring programme by a testing house; from site survey to reporting.

11:15  The Environment Agency’s Monitoring Certification Scheme
Rupert Standring, Environment Agency
12:10  Lunch

Safety Management
13:10  Safety management for emission monitoring – The importance of risk assessment
Simon Medhurst, Smedstack Environmental

Operator Monitoring
13:55  The quality assurance of Continuous Emissions Monitoring Systems to EN14181
David Graham, Uniper Technologies
14:40  Power industry regulation and emissions monitoring
David Graham, Uniper Technologies
15:10  Tea
15:25  The Operator Monitoring Assessment Scheme (OMA)
Timothy Williams, Environment Agency
16:10  The monitoring of ERF emissions
Stewart Davies, Viridor
16:55  Monitoring activities at a chemical manufacturing site
Jonathan Clark, Syngenta
Practice and practicalities
17:40  End of day one
19.00  Course dinner

TUESDAY 25 FEBRUARY 2020
MANUAL AND INSTRUMENTAL METHODS FOR PARTICLES AND GASES

08:45  Registration and coffee
Manual sampling for particles and gases
09:00  Measurement of particulate emissions by extractive sampling
Simon Medhurst, Smedstack Environmental
Principles of particle sampling according to BS EN 13284 Pt 1 and BS ISO 9096, 2003.
09:45  Stack flow rate measurement to EN ISO 16911
David Graham, Uniper Technologies Ltd
10:15  Odour sampling and analysis
Louise Warren, Odournet
11:00  Coffee
11:15  Sampling and analysis of trace species
Mark Elliott, Element Materials Technology
Methods for sampling of dioxins, PAH and trace metals, including mercury.
12:00  Periodic sampling methods for gases
Simon Medhurst, Smedstack Environmental
Sampling and analysis methods for common pollutants including SO2, NOx, HCl, HF etc. and a review of available standards.
12:45  Lunch
13:45 Gas analysis - organics
Mark Elliott, Element Materials Technology
Methods for sampling and analysis of volatile organics. Continuous monitors employing flame ionization or infra-red detectors. Batch sampling and off-line analysis.

14:15 Understanding instrument performance standards
Richard Harvey, National Physical Laboratory (NPL)
Explanation of definitions of linearity, limit of detection, reproducibility etc. Understanding the jargon helps you to choose the right instrument for your situation and to assess performance against EN standards for monitoring instruments.

15:00 Tea

15:15 Continuous particulate monitoring technologies
Jamie Jeffs, ENVEA
A review of current technologies available for monitoring particulates from stationary sources, including opacity, dynamic transmission, tribo-electric, back and forward scatter.

16:00 Calculations of uncertainties in stack monitoring
Rod Robinson, National Physical Laboratory (NPL)
An introduction to the estimation of measurement uncertainty for both manual and instrumental monitoring techniques. Challenging but important!

16:45 End of day two

WEDNESDAY 26 FEBRUARY 2020
INSTRUMENTAL METHODS OF PARTICLE AND GAS ANALYSIS (II)

08:45 Registration and coffee

09:00 Calibration of gaseous emission measuring systems
Dr Brian Moyle, Servomex Group Ltd
Calibration of continuous emissions monitoring systems; accuracy, reproducibility and leak testing from a practical point of view; single and multipoint calibration; calibration gases and the use of gas blenders and diluters.

09:45 Design of sampling systems for emissions monitoring
Dr Brian Moyle, Servomex Group Ltd
Gas sampling and sample conditioning systems. Filtration. Control of temperature, pressure and humidity in sampling systems. Appropriate systems for different pollutants.

10:30 Coffee

10:45 Optical analysers for extractive gas analysis systems
Dr Hu Li, University of Leeds
The design and principles of optical-based gas analysers and sampling systems. IR and UV absorption; chemiluminescence.

11:30 Stack monitoring instrument – PG350
Lee Swanson, Horiba
Practical use of the PG350 including sample conditioning and NOx converter efficacy in the NOx analyser

12:15 Lunch

13:15 Design and application of FTIR to monitoring pollutants
Dr Andrew Dixon, Gasmet Technologies UK
Using a portable FTIR analyser for quality testing under the new EN14181 standard

14:15 Data Acquisition and Reporting - Principles and Practice
Dr Martin Lloyd, Farside Technology Research

15:00 Tea

15:15 Selection of analytical techniques - a case study
Paul Morgan, SICK

16:00 Converting emissions to reference conditions
Dr Hu Li, University of Leeds
Units; wet and dry gas bases, standard conditions of temperature, pressure and oxygen. Familiar to many, new to a few – absolutely essential to everyone!

16:45 End of day three and course