Industrial Air Pollution Monitoring

Monday 24 – Wednesday 26 February 2020

100% of 2019 respondents said that they would recommend this course to their colleagues
Industrial Air Pollution Monitoring
Monday 24 – Wednesday 26 February 2020

Background
If you are involved in industrial air pollution monitoring, in whatever capacity, you’ll know that it is a complex and challenging topic with:
- a technically difficult measurement process with many pitfalls for the unwary
- a steady flow of new directives from Europe
- an evolving management and legislative context
- a continually expanding range of documentation from different sources.

Course aims
During the three day short course you will gain a broad overview of the whole subject. The course will be suitable for you if you need an introduction to the field or wish to update your knowledge. You will also have the opportunity to meet providers of equipment and services.

For stack testers requiring personal certification under the Environment Agency’s MCERTS scheme the sessions on day one are particularly relevant to MCERTS level 2 (team leaders) and day two is particularly relevant to MCERTS Technical Endorsements 1 (parties), 2 (trace species) and 3 (manual methods for gases). Sessions on day three are particularly relevant to MCERTS Technical Endorsement 4 (instrumental methods for gases).

Course content and structure
Depending on your training needs, you can either choose to attend the full three days or individual day/s which are relevant to you. During day one we will focus on general management issues, including legislation, compliance with authorisation conditions, quality assurance and control. You will hear perspectives from all sides – regulators, industrial emitters and contract source testing organisations. On days two and three we will focus on measurement and analytical techniques. We will cover gaseous and particulate emissions and discuss both extractive sampling and in situ methods.

Course director ends with a workshop on calculation methods which is relevant to everyone involved in emissions monitoring.

Presentations will include coverage of:
- the MCERTS scheme for operators and for personnel
- Quality assurance and instrument performance
- Operator and test house monitoring
- The latest on important EN standards
- Principles of the common instrumental techniques
- Gas sampling and sample conditioning
- Calibration
- Particle sampling – manual and instrumental
- Methods for volatile organics
- Methods for trace species such as dioxins and heavy metals
- Uncertainty estimation

A full course programme including detailed lecture descriptions can be viewed on the course webpage at: http://eps.leeds.ac.uk/short-courses

Intended audience: This course is relevant for all those with an interest in industrial air pollution monitoring and will be particularly useful for:
- Environmental managers
- Environmental consultants
- Environment Agency and SEPA officers
- Control and instrumentation specialists
- Contract testing engineers
- Works chemists or engineers with responsibility for emissions
- Operators of plant subject to EPR authorisation

What our past delegates have said:
"A great overview of the requirements for emission monitoring of air pollutants to meet the legal obligations set out in the permit" Drax Power Ltd

"Good introduction and grounding for industrial air pollution control, as a new starter in this field" Veolia

"I attended this course knowing the importance of CEMS but having had the advantage of having other people “take care” of it. Suddenly I found I was responsible and needed to get up to speed. This course went a long way to help me achieve this!" Viridor

"Excellent introduction to industrial air pollution monitoring, good balance of regulatory and technical requirements" Natural Resources Wales

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
Practicability 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 Standing, Environment Agency
The MCERTS scheme – what it covers and how it operates.
Personnel certification for manual emissions monitoring.
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) – the importance of risk assessment
Stewart Davies, Viridor
16.10 The monitoring of ERU emissions
Stewart Davies, Viridor
Monitoring activities at a chemical manufacturing site
Jonathan Clark, Syngenta
Practicability 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
Practicability of particle sampling according to BS EN 13284 Part 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.

Tuesday 25 February 2020 continued
Instrument Performance
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
Instrumental Methods of Particle and Gas Analysis (I)
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
Calibration and Data Acquisition
09.00 Calibration of gaseous emission measuring systems
Dr Brian Myoe, Servomex Group Ltd
Calibration of continuous emissions monitoring systems; accuracy, reproducibility and leak testing from a practical point of view; single and multipoint calculation; calibration gases and the use of gas blenders and dilutors.
Gas Analysis Instrumentation
09.45 Design of sampling systems for emissions monitoring
Dr Femi Akinrinola, Environment Agency
Personnel certification for manual emissions monitoring and will be particularly useful for:
09.00 Welcome and introduction
Dr Hu Li, School of Chemical and Process Engineering, 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 for 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
Dr Paul Morgan, SICK
16.00 Converting emissions to reference conditions
Dr Hu Li, School of Chemical and Process Engineering, 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
Further information

Venue
The venue for the course will be Weetwood Hall Conference Centre and Hotel which offers first-class hotel facilities, a business centre and ample parking facilities.

Weetwood Hall Hotel is ideally situated 15 minutes north of the centre of Leeds in wooded grounds at the junction of the Otley Road and the outer ring road. It is just 15 minutes from Leeds Bradford International Airport and a short distance from the A1, M1, M606, M621 and M62 motorways.

Further details can be found at www.weetwood.co.uk

Course fees
The following course fees include the cost of tuition, course materials, lunches and light refreshments for the days of attendance.

Full three days £940
Any two days £715
Any one day £415

Delegates are responsible for their own evening meals except on Monday 24 February when the course dinner is included.

Accommodation
If you require accommodation, and wish to stay at the course venue Weetwood Hall Hotel, please contact Emma Barker E: reservations@weetwood.co.uk / T: 0113 230 6000 quoting ‘CPD’ and the ‘Industrial Air Pollution Monitoring’ course.

The below rates are for a superior double room and include VAT:
- Sunday evening, bed and breakfast £84
- Monday – Tuesday evening, bed and breakfast £88

Please book your accommodation at least two weeks before the course commences to guarantee rates and availability. A list of alternative hotels is available on request. Delegates are responsible for their own evening meals except on Monday 24 February when the course dinner is included.

How to book
Booking for this course should be completed through our secure Online Store. To complete your booking please follow the instructions below:

1. Log on to our Online Store at: https://store.leeds.ac.uk
2. Select Conferences and Events in the left-hand navigation bar.
3. Select CPD Faculty of Engineering and Physical Sciences.
4. Select the course or event for which you wish to register and click on ‘Book’.
5. If you are a new user, please follow the instructions to register. If you already have an account log in as instructed.
6. Complete the application process as directed by the booking system.

You will receive an automatic confirmation email within 24 hours of your booking. Our privacy notice tells you what to expect us to do with your personal information when you make contact with us or use one of our services: https://eps.leeds.ac.uk/privacy

Course dinner
The course dinner will be held at a Leeds city centre restaurant and is included in the course fee. This will take place on Monday evening and transport from and to Weetwood Hall Hotel is provided. The dress code is smart casual. If you would like to attend please indicate when booking.

Accessibility
Potential delegates who have any special requirements should contact the course coordinator as soon as possible.

For online booking queries and for all other enquiries please contact:
Jenna King
CPD, Conference & Events Coordinator
CPD, Conference & Events Unit
Faculty of Engineering and Physical Sciences
School of Chemical and Process Engineering
Room 3.11
University of Leeds
Leeds, LS2 9JT, UK
T: +44 (0) 113 343 5746
E: cpd@engineering.leeds.ac.uk
W: http://eps.leeds.ac.uk/short-courses
@LeedsUniCPD
@LeedsUniCPD
CPD, Conference and Events Unit, University of Leeds

Terms and conditions for booking
Payment should be made at the time of booking unless you have provided a purchase order document to pay via invoice. Our standard terms of payment are 30 days from our invoice date and for bookings made within 30 days of the course start date payment must be made prior to attendance. Attendance can be refused if payment has not been received.

The course programme may have to be re-scheduled or the speakers changed for reasons outside our control. The University of Leeds reserves the right to cancel or postpone the course, in which case fees will be refunded in full. In the event of cancellation, the University will not be held liable for delegates travel or accommodation expenses.

Substitutions may be made at any time. Attendance can be refused if payment has not been received.

If you have opted in to receive details of future CPD courses from us you can unsubscribe at any time by emailing us at cpd@engineering.leeds.ac.uk and your details will be removed from our database.