

# Measuring Air Pollutants by Diffusive Sampling and Other Low Cost Monitoring Techniques



## Measuring Air Pollutants by Diffusive Sampling and Other Low Cost Monitoring Techniques

**International Conference  
with Posters and Exhibition**

### CONFERENCE PROGRAMME

The Conference is being organised by the Automation and Analytical Management Group (AAMG) of the Royal Society of Chemistry, UK

*Co-Sponsored by*

European Commission, Joint Research Centre (JRC), Ispra, Italy  
National Physical Laboratory (NPL), UK

National Institute for Public Health and the Environment (RIVM), Netherlands  
Flemish Institute for Technological Research (VITO), Belgium.

**Tuesday 15th, Wednesday 16th  
and Thursday 17th September 2009**

**At the Krakow City House  
KRAKOW, POLAND**

Email: [conference@aamg-rsc.org](mailto:conference@aamg-rsc.org)

Web site: [www.aamg-rsc.org](http://www.aamg-rsc.org)

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Krakow City House, Krakow, Poland

### Introduction

Since the successful conferences on Diffusive Sampling in Luxembourg in 1986 and in Montpellier in 2001, the role of the technique in the assessment of air pollution has changed dramatically. With the development of the EU Air Quality Directive, the Daughter Directives and the recent Directive on 'Ambient Air Quality and Cleaner Air for Europe', the importance of the diffusive sampling has been further recognised and widely implemented. Although formerly mostly used in the workplace, the technique is now accepted for ambient air and indoor air monitoring and personal exposure assessment. In later years, the monitoring has been enhanced by other low cost methods, including sensors and miniature instrumentation.

It is now considered appropriate to organise a third conference to present the state of the art and newest developments in the field. This Krakow Conference offers a good opportunity to bring together scientists, air quality managers and manufacturers, to exchange experiences and thoughts about the new applications.

### Programme

#### Day 1, Tuesday 15th September 2009

09:00 Registration and coffee

09:30 Welcome and opening remarks

#### Session 1 Introduction and Overview

**Chairman, Peter Woods**, *National Physical Laboratory (NPL), Teddington, UK*

10:00 (PL1) History of Diffusive Sampling

*Jan Kristensson, Chemik Lab AG, Norrtälje Sweden*

10:30 (PL2) Regulatory Background to Diffusive Monitoring

*Andrej Kobe, Annette Borowiak, European Commission, Joint Research Centre (JRC), Ispra, Italy*

11:00 (PL3) Validation and QA/QC of Monitoring Methods

*Theo Hafkenscheid, National Institute for Public Health and the Environment (RIVM), Netherlands*

11:30 (PL4) Regulatory Aspects in Workplace and Indoor Air

*Eddy Goelen, Flemish Institute for Technological Research (Vito), Belgium*

12:00 Lunch

**13:00 - 14:00 Poster Session A, with presenters in attendance**

#### Session 2 Diffusive Sampling

**Chairman, Jan Kristensson**, *Chemik Lab AG, Norrtälje Sweden*

14:00 (PL5) Principles of Diffusive Monitoring

*Martin Ferm, IVL, Gothenburg, Sweden*

14:30 (O1) Evaluation of Radiello Diffusive Sampler Indicated for Thermal Desorption for Measuring VOCs in Ambient Air

*Eva Gallego, Laboratori del Centre de Medi Ambient. Universitat Politècnica de Catalunya, Barcelona, Spain*

- 15:00 (O2) Development of a Method for Measuring Soil Vapour Intrusion to Indoor Air by Diffusive Sampling  
*Paolo Sacco, Fondazione Salvatore Maugeri, Padova, Italy*
- 15:30 Tea, coffee
- 16:00 (O3) Determination of Uptake Rates of VOC Passive Sampler for the Canadian National Residential Indoor Air Survey  
*Jiping Zhu, Exposure and Biomonitoring Division, Health Canada, Ottawa, Canada*
- 16:30 (O4) Outcome of the UK Working Group on Harmonisation of NO<sub>2</sub> Diffusion Tube Methodology  
*Jaume Targa, AEA Technology, Harwell, UK*
- 17:00 (O5) Assessment of NH<sub>3</sub> in a French Industrial Area with Passive Samplers and an Automated Chemiluminescence Analyser  
*Anne Fromage-Mariette, AIR Languedoc-Roussillon, Montpellier, France*
- 17:30 Cheese and wine reception

## **Day 2, Wednesday 16th September 2009**

### **Session 3 Recent Developments in Instruments and Techniques**

**Chairman, Ulrich Pfeffer, LANUV NRW, Essen, Germany**

- 09:00 (PL6) Recent Developments in Instrumentation and Techniques  
*Robert Gehrig, EMPA, Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, Switzerland*
- 09:30 (O6) Practical Applications of Diffusive Monitoring with other Complimentary Techniques in the Workplace Environment  
*Geoffrey Wilcox, Hull Research & Technology Centre, BP Chemicals Ltd, Hull, UK*
- 10:00 (O7) Passive Formaldehyde Measurements in Simulated and Real Atmosphere for Indoor Air Monitoring  
*Laura Chiappini, INERIS (Institut National de l'Environnement Industriel et des Risques), Verneuil-en-Halatte, France*
- 10:30 Coffee
- 11:00 (O8) The Development of Low Flow Pump Tubes and their Potential as a Tool for Simplifying the Validation of Axial Diffusive Tubes  
*Nicola Watson, Markes International, Llantrisant, UK*
- 11:30 (O9) Effect of Exposure Time and Analyte Concentrations on the Uptake Rate of a Polydimethylsiloxane Based Permeation Passive Air Sampler.  
*Suresh Seethapathy, University of Waterloo, Ontario, Canada*
- 12:00 Lunch

**13:00 - 14:00 Poster Session B, with presenters in attendance**

### **Session 4 Validation, Applications and Methodology**

**Chairman, Annette Borowiak, European Commission, Joint Research Centre (JRC), Ispra, Italy**

- 14:00 (PL7) Validation, why?  
*Pascual Ballesta, European Commission, Joint Research Centre (JRC), Ispra, Italy*

- 14:30 (O10) Determination of Diffusive Uptake Rates for a Range of VOCs Using Tube Type Samplers  
*Veronica Brown, BRE, Watford, UK*
- 15:00 (O11) VOC in an Urban and Industrial Harbour on the French North Sea Coast During Two Contrasted Meteorological Situations  
*Joelle Roukos, Ecole des Mines de Douai, Douai, France.*
- 15:30 Tea, coffee
- 16:00 (O12) Validation of Diffusive and Pumped Samplers Using a Controlled Atmosphere Test Facility  
*Nicholas Martin, National Physical Laboratory (NPL), Teddington, UK*
- 16:30 (O13) Long-term Validation and Robustness of Uptake Rates of Diffusive Samplers for NO<sub>2</sub> and Benzene  
*Ulrich Pfeffer, LANUV NRW, Essen, Germany*
- 17:00 (O14) Measuring Ammonia with Diffusive Samplers – Influence of Nearby Sources and Sinks and Evaluation of Representative Measuring Sites  
*Lotti Thöni, FUB – Research Group for Environmental Monitoring, Rapperswil, Switzerland*
- 17:30 Close of Session

### **Day 3, Thursday 17th September 2009**

#### **Session 5 Sensors and New Techniques**

**Chairman Eddy Goelen**, *Flemish Institute for Technological Research (Vito), Belgium*

- 09:00 (PL8) Sensors and New Techniques  
*Christopher Walton, Cranfield Health, Cranfield University, Bedford, UK*
- 09:30 (O15) Evaluation of Micro-sensors to Monitor Ozone in Ambient Air  
*Michel Gerboles, Joint Research Centre, Ispra VA, Italy*
- 10:00 (O16) Evaluation of a Miniaturized Diffusive Sampler for True Breathing-zone Sampling and Thermal Desorption GC Analysis  
*Jan-Olof Levin, Umeå University, Umeå, Sweden*
- 10:30 (O17) Evaluation of Active and Passive Dust Deposition Techniques  
*Natacha Claeys, Flemish Government, Brussels, Belgium*
- 11:00 Coffee
- 11:30 (O18) Passive Sampling Technique Sigma-2, Operational Application and Validation of Automated Optical Single-particle Analysis in the Size Range from 2.5 – 80 µm  
*Volker Dietze, Deutscher Wetterdienst, Freiburg, Germany*
- 12:00 (O19) The EWO Dosimeter, an Early Warning Device for the Protection of Cultural Heritage Objects in Museums, Historic Buildings and Archives  
*Susana López-Aparicio, Norwegian Institute for Air Research, Kjeller, Norway.*
- 12:30 (O20) New Sampling Method Coupling SPME and FLEC® Emission Cell for Identification of VOC's Emitted from Building Materials  
*Valérie Desauziers, Ecole des Mines d'Alès, Pau, France.*
- 13:00 Lunch
- 14:30 Close of Conference

# REGISTRATION FORM

Please complete this form after referring to the Registration Information and return by Post  
Or Fax to:

**AAMG-RSC, PO Box 174, Manchester, M24 4XZ, UK**  
**Fax No: +44 (0) 161 610 3939**

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Tuesday 15th, Wednesday 16th and Thursday 17th September 2009  
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Delegate's Name & Title .....

Position .....

Organisation .....

Address .....

..... Post Code .....

Telephone No ..... Fax No .....

Email .....

Special Requirements .....

**Signature** .....

**Registration Fees** £250.00 (pounds sterling)

**Payment:** Payment by credit card preferred, Please tick payment method

Credit/Debit Card  Please Complete Details Below

Please Send an Invoice  Purchase Order No: .....

By Cheque  Please make cheques payable to: **AAMG-RSC**

**Credit Card Details: (Please note that AMEX or DINERS cards cannot be accepted)**

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Cardholder Name .....

Statement Address .....

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Contact Tel No. (Not Mobile) .....

**Signature of Cardholder** ..... **Date** .....

# How to Register

Early registration is requested due to space and catering requirements.  
Please complete and return the registration form as soon as possible.

## **Registration Fees: £ 250.00** (pounds sterling)

The registration fee includes attendance at the conference together with coffee, lunch, afternoon tea/coffee and attendance at the wine and cheese reception.

Note that the AAMG-RSC is not registered for VAT.

## **Payment of registration fees:**

- Credit Card, preferred payment method (note that AMEX or DINERS cards cannot be accepted)
- Bank Transfer (BACS)
- Cheque or Money Order made payable to: **AAMG-RSC**

## **Venue**

Krakow City House  
Urząd Miasta Krakowa  
Pl. Wszystkich Świętych 3/4  
31-004 Kraków

Maps and further details will be provided upon registration.

## **Hotel Information**

Conference website with hotel rates and reservation form with online payment details:  
> <http://www.krakowconvention.com/konferencja.html>

## **Registration Contact**

Conference Secretary, AAMG-RSC, P O Box 174, Manchester M24 4XZ, UK  
Email: [conference@aamg-rsc.org](mailto:conference@aamg-rsc.org) Fax: +44 (0) 161 610 3939

## **AAMG Treasurer (contact for banking information)**

Dr R Narayanaswamy, AAMG-RSC, P O Box 174, Manchester. M24 4XZ, UK  
Tel +44 (0) 161 306 4891 Fax +44 (0) 161 610 3939

## **Notes**

1. Fees are not normally refundable but are transferable. If for any reason the organisers should cancel the conference then fees will be refunded.
2. The registration fee includes attendance at the meeting together with coffee, lunch and afternoon tea/coffee, as appropriate.
3. The organisers reserve the right to alter the programme.

*Data Protection Act.* The information on this form will be retained (1) for the purpose of administering this meeting, in particular for producing a list of participants for distribution at the meeting, and (2) in order that information on future meetings can be sent to you.

Please write to the meeting contact (see above ) if you object.