

**Eurachem Education and
Training workshop**

***Metrology in
Chemistry***

***Introductory training course with
practical examples***

**Classical Athens Imperial Hotel,
Karaiskaki Square
Athens
19 - 20 May 2008**



Metrology in Chemistry

Metrology in Chemistry is an expanding subject which focuses on how to obtain valid analytical results. The quality of materials and products is important to trade. Regrettably a number of examples of very costly analytical mistakes have been identified. Hence quality issues are considered to be of the highest importance because of the challenges resulting from increased legislation and regulation.

Although a lot of effort has been made concerning training in metrology in chemistry there is still a lack of knowledge of metrology among research staff, laboratory practitioners, laboratory managers and legal experts. This creates many problems in routine work because the persons involved are not familiar with issues such as traceability, validation of methods, measurement uncertainty etc.

The aim of the workshop is to introduce quality issues on Metrology in Chemistry through practical examples. This will give participants an opportunity to discuss and exchange skills and knowledge, share experience and materials on metrological issues. The practical examples will be the appropriate tools to achieve this scope.

Who should attend?

The workshop is aimed at a range of analysts, from postgraduates to laboratory managers. It will be of particular interest to those who develop methods, or apply existing methods, and need to evaluate the uncertainty associated with their results and demonstrate comparability with results produced elsewhere. Quality managers may also find the workshop helpful as the content addresses the technical requirements of International Standards. Knowledge of basic statistics is required.

Scientific committee

Elizabeth Prichard (chair), Wolfhard Wegscheider, Alex Williams, Constantinos Efstathiou, Michael Koupparis, George Miliadis and Evangelos Bakeas

Lecturers and tutors

Vicki Barwick, Stephen Ellison, Marina Patriarca, Kyriacos Tsimillis, Wolfhard Wegscheider, Alex Williams, Rudiger Kaus, Evangelos Bakeas, George Miliadis, Anna Stefanidou, Eugenia Lampi and Ioannis Sitaras

Local organizing committee

Evangelos Bakeas and Anna Stefanidou (chairs), John Spiliopoulos, Stavroula Batistatou, Gabriel Koutilellis, Dionisios Christodouleas, Kate Tsimpogianni

Workshop location

Classical Athens Imperial Hotel, Karaiskaki Sq., Athens, Greece (www.classicalhotels.com)

Workshop secretariat

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Day 1: May 19 2008

Chairpersons: Prof. W.Wegscheider,
Prof. K. Efstathiou

- 9:00** Registration and coffee
- 9:30** Welcome and introduction to the workshop
Prof. S. Kalogiannis (AGC)
Dr G. Passalidis (NMI)
Introduction to Eurachem activities and the role of the Education and Training Working Group Dr R. Kaus and Prof W Wegscheider
- 10:15** **Overview of quality management**
Introduction to the International Standards used in laboratories, (Dr K. Tsimilis)
- 10:45** **Vocabulary of terminology in metrology**
(Prof. W.Wegscheider)
- 11:45** **Method validation** (Dr V. Barwick)
- Principles of validation
- Performance parameters and how they are estimated
- Validation versus verification
- 13:00** *Lunch*
- 14:15** **Validation workshop (*)**
- Develop a validation protocol and plan the experiments to evaluate the method performance parameters
- 16:30** *Coffee break*
- 16:45** **Measurement uncertainty (Part 1)**
- Basic rules of measurement uncertainty (Dr S. Ellison)
- 17:30** **Metrology in Chemistry in Greece**
Presentation of the National Chemical Metrology Laboratory (Dr E. Lampi)
- 17:45** *Close*

Day 2: May 20 2008

Chairpersons: Dr A. Williams, Dr E. Bakeas

- 9:00** *Coffee*
- 9:15** **Measurement uncertainty (Part 2)** (Dr S. Ellison)
- Other approaches for evaluating uncertainty
- Use of precision and bias data and the results from collaborative studies
- 10:00** **Uncertainty workshop (*)**
- Establish an uncertainty budget and estimate uncertainty from validation data
- 12:15** **Achieving traceability in chemical measurements** (Dr A. Williams)
- What is required
- Practical approach to achieving traceability
- 13:00** *Lunch*
- 14:15** **Traceability workshop (*)**
- Establish the traceability requirements for a given method
- 16:00** **Different requirements of Standards used in different sectors** (Dr K. Tsimillis)
- Certification, accreditation and compliance
- Subtle differences
- 17:00** *Close of meeting*

Registration information

The registration fee is 200 € before 1st May 2008.

An increased fee (250 €) will be applied for registrations after the 1st of May.

Fee includes lecture notes, lunches, and coffee/tea breaks.

To register, please complete the separate registration form and send it to the secretariat with your payment details.

All fees must be paid in advance of the workshop.

You are advised to register early, as places are limited.

Delegates are requested to bring a scientific calculator or laptop to the workshop

(*)Tutors: Dr V. Barwick, Dr S. Ellison, Dr E. Bakeas, Dr E. Lampi, Dr G. Miliadis, I. Sitaras, Prof W. Wegscheider, Dr A. Williams, Dr M Patriaca, Dr R Kaus, Dr K Tsimillis

