



# Application of Mass Spectrometry to Speciation Analysis in the Life Sciences

Programme and call for posters

Arranged by the Automation and Analytical Management Group  
Royal Society of Chemistry

**Thursday 20th September 2007**

**At the Society of Chemical Industry (S C I)  
Belgrave Square, London**

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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Thursday 20th September 2007  
at the SCI, Belgrave Square, London SW1X 8PS

## Introduction

Many common metals and other elements have long been recognised to have both beneficial and harmful effects on the environment and health. Clearly, this depends not only on their concentration but also on their chemical form and the toxicity of a wide range of such compounds is documented. It is also now well understood that more subtle, but extremely important, effects can arise from the presence of a wide variety of organo-metallic compounds (species) and complex bio-molecules containing metallic or semi-metallic elements. As a result, applications of speciation analysis have been growing steadily over the past 10 years. Initially, priority lay with environmental issues but in recent years there has been growing interest in the life sciences, particularly in nutritional, health and clinical applications.

A wide range of analytical techniques have been applied to problems in these areas but mass spectrometry has been by far the most extensive and successful. Early speciation applications were based on organic mass spectrometry coupled to gas or liquid chromatography but today use of ICP-MS with the same hyphenated separation techniques is also of major importance, including speciation analysis of phosphorus and sulphur compounds. In many cases the two approaches provide complementary information, particularly when dealing with new or unidentified species, and it has become increasingly common to bring both to bear on the same problem. The development of separation systems compatible with both mass spectrometry techniques has added to the value, and ease of use, of this approach. In many cases the species of interest are labile, necessitating the development of appropriate extraction and cleanup procedures as well as state of the art separation science and mass spectrometry.

The seminar aims to provide a broad coverage of some of the key life sciences applications currently under active investigation and to describe some of the wide range of mass spectrometry approaches that offer insight into them. Selenium speciation has been highlighted as a topic that is currently generating considerable interest in this field, particularly for the possibilities it may offer in cancer prevention and treatment. The programme has been balanced to provide an overview of both the life sciences applications and the current methodology together with research reports of the most recent and important advances in the field. The speakers are acknowledged leaders in their respective topics, both from the UK and overseas. A small exhibition and poster display will provide an opportunity during the day for networking and to hear about recent developments in instrumentation.

This important topic should be of direct concern to a wide range of researchers in the health, pharmaceutical, chemical and life sciences sectors, as well as academic groups and instrument suppliers. The meeting will also enable interested users, legislators, industrialists and other stakeholders to obtain a broad overview of current applications and recent advances in the field as well as to meet informally with key players.

# Programme

- 10.00 Registration and Coffee
- 10.30 Introduction and Welcome  
*Mike Sargent, LGC, Teddington, UK*
- 10.40 The Role of Selenium in Cancer Prevention and Treatment  
*Simon Joel, Institute of Cancer and the CR-UK Clinical Centre, London, UK*
- 11.10 Qualitative and Quantitative Approaches via ICP-MS for Problem-solving in Heteroatom-tagged Genomics and Proteomics  
*Maria Montes-Bayón, University of Oviedo, Oviedo, Spain*
- 11.40 Elemental Speciation - a Two Pronged Attack  
*Chris Harrington, University of Leicester, Leicester, UK*
- 12.10 Mass Spectrometry for Selenium Speciation Analysis in the Life Sciences  
*Heidi Goenaga-Infante, LGC, Teddington, UK*
- 12.45 Lunch and Exhibition
- 14.00 Selenium Species in Foods and Supplements  
*Margaret Rayman, Surrey University, Guildford, UK*
- 14.30 Importance of Speciation in Plant Physiology  
- Key Analytical Applications  
*Jorg Feldmann, University of Aberdeen, Aberdeen, UK*
- 15.00 Advances in ICP-MS Speciation Analysis  
*Steve Wilbur, Agilent Technologies, Santa Clara, CA, USA*
- 15.30 Elemental and Organic Mass Spectrometry as Complementary Techniques in Proteomics and Life Science  
*Shona McSheehy, Thermo Fisher Scientific, Bremen, Germany*
- 16.00 Close

*A small table top exhibition will be available during registration and lunch. There will also be a small poster display in the exhibition area for contributions from registered delegates and their colleagues. Please indicate on the registration form if you intend to bring a poster to the meeting.*

# 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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Delegate's Name & Title .....

Position .....

Organisation .....

Address .....

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

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

Email .....

Special Requirements .....

**Signature** .....

I will bring a poster to the meeting

**Registration Fee:** Non Members £170   
Members £120   
Student/Retired Person £ 85

### Payment:

(Please tick payment method)

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

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

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

Card Type: Visa  Mastercard  Maestro

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# How to Register

Early registration is requested due to limited number of delegate places and catering requirements. Please complete and return the registration form as soon as possible.

<b>Registration Fees:</b> Non Members	£170
Members	£120
Students/Retired Person	£ 85

The registration fee includes attendance at the meeting together with coffee, lunch and afternoon tea/coffee.

## Payment of registration fees:

- By Cheque or Money Order made payable to: **AAMG-RSC**
- By Credit Card (note that AMEX and DINERS cards are not accepted)
- By Bank Transfer (BACS)

## Venue

The Society of Chemical Industry (S C I),  
14/15 Belgrave Square, London SW1X 8PS  
[www.soci.org](http://www.soci.org)

Maps and details will be provided upon registration.

## 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.