



The Abdus Salam  
International Centre for Theoretical Physics



**EMAS 2008**

**8th EMAS Regional Workshop on**

**ELECTRON PROBE MICROANALYSIS OF  
MATERIALS TODAY - PRACTICAL ASPECTS**

**including a session on synchrotron-based microanalysis**

*19 - 22 April 2008*

Adriatico Guesthouse

The Abdus Salam International Centre for Theoretical Physics  
Trieste, Italy

***ANNOUNCEMENT AND PRELIMINARY PROGRAMME***

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## 1. AIMS AND SCOPE

The EMAS Regional Workshops are a biennial event that are designed to provide postgraduate-level, and research worker in materials science and material engineering with basic knowledge of the capabilities and limitations of electron probe X-ray microanalysis. The workshops are arranged as low-budget meetings with lectures on practical and theoretical aspects of EPMA given by internationally recognised experts. The format and content of the meetings are tailored to the needs of the practical microanalyst routinely dealing with problems of specimen preparation, instrumental procedures, data collection and quantification, as well as those of research workers keen to obtain a deeper understanding of the physics underlying X-ray production, measurement and analysis.

The core topics of the 8th EMAS Regional Workshop are:

- Electron beam - specimen interactions
- X-ray spectroscopy
- Quantitative electron probe microanalysis
- Light element analysis
- Basic Monte Carlo simulation
- Analytical electron microscopy
- Sample preparation

Since the Abdus Salam International Centre for Theoretical Physics (ICTP) has an ongoing interest in synchrotron-based microbeam analysis, the Workshop will include two technical sessions dedicated to this subject. Topics covered in these sessions will include:

- The microanalytical possibilities of synchrotron-radiation
- Accelerator-based microscopy analysis
- Imaging with free electron lasers
- Synchrotron radiation  $\mu$ -tomography
- $\mu$ -X-ray spectroscopies (XANES, EXAFS)
- Synchrotron microanalysis of cometary particles
- The impact of new microscopies in cultural heritage studies
- Use of synchrotron-radiation microscopy in food research
- Spatially resolved XRF, XAFS and XRD investigations with micrometre-scale resolution pertaining to nuclear waste disposal issues

Past EMAS Regional Workshops were held in Finland (1994), Hungary (1996), Spain (1998), the Czech Republic (2000), Poland (2002), Slovenia (2004), and Germany (2006).

## 2. SCIENTIFIC PROGRAMME

The programme will consist of invited lectures delivered by renowned experts, and three poster sessions. Three round-table discussions will also be held during the workshop. The invited lectures and poster abstracts will be published in the Workshop Book of Abstracts. Selected papers of accepted poster contributions will be published in the journal *Microscopy & Microanalysis*, subject to the standard peer review procedure. The official language of the workshop will be English.

### Preliminary programme

#### *Saturday 19 April 2008*

17h00 Registration (at the Adriatico Guesthouse, ICTP)  
18h00 Welcome Reception (at the Adriatico Guesthouse, ICTP)

#### *Sunday 20 April 2008*

08h00 Registration  
09h00 **Welcome and Opening Addresses**  
Director Abdus Salam International Centre for Theoretical Physics  
President of EMAS

#### Session I

09h30 **Introduction to EPMA and SEM**, *Hans Dijkstra*, Thermo Fisher Scientific BV, Breda, The Netherlands  
10h30 Coffee  
11h00 **Sample preparation for EPMA**, *Silvia Richter*, RWTH, Gemeinschaftslabor für Elektronenmikroskopie (GfE), Aachen, Germany  
12h00 **Performance characteristics of WDS detectors**, *Michael B. Matthews*, AWE Plc., Aldermaston, UK  
13h00 Lunch

#### Session II

14h00 **Performance characteristics of EDS detectors**, *Michael B. Matthews*, AWE Plc., Aldermaston, UK  
15h00 **Light element analysis**, *Hans Dijkstra*, Thermo Fisher Scientific BV, Breda, The Netherlands  
16h00 Coffee / Poster Session I

- 17h00 Round Table Discussion:  
**EPMA - EDS/WDS - Light element analysis**  
*Moderator:* Romano Rinaldi, Università di Perugia, Dipartimento di Scienze della Terra, Perugia, Italy
- 18h00 End of first day

## ***Monday 21 April 2008***

### **Session III**

- 09h00 **Analysis of thin films using an electron probe microanalyser**, *Xavier Llovet*, University of Barcelona, Serveis Científico-Tècnics, Barcelona, Spain
- 10h00 **Introduction to TEM and X-ray microanalysis in the TEM**, *János Lábár*, Hungarian Academy of Sciences, Research Institute for Technical Physics & Materials Science, Budapest, Hungary
- 11h00 Coffee
- 11h30 **Basic electron energy loss spectroscopy (EELS) in the TEM**, *János Lábár*, Hungarian Academy of Sciences, Research Institute for Technical Physics & Materials Science, Budapest, Hungary
- 12h30 Workshop Photograph
- 12h45 Lunch
- 13h45 Round Table Discussion:  
**Thin film analysis - SEM - TEM - EELS**  
*Moderator:* Gabriele Tamborini, European Commission, JRC, Institute of Transuranium Elements, Karlsruhe, Germany
- 14h45 Coffee / Poster Session II

### **Session IV**

- 15h45 **Introduction to the microanalytical possibilities of synchrotron-radiation**, *Laszlo Vincze*, Ghent University, Department of Analytical Chemistry, Ghent, Belgium
- 16h30 **Synchrotron radiation microscopies**, *Claudio Tuniz*, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy
- 17h00 **Imaging with free electron lasers**, *Maya Kiskinova*, Sincrotrone Trieste SCpA, Basovizza-Trieste, Italy
- 17h30 **Synchrotron radiation  $\mu$ -tomography**, *Giuliana Tromba*, Sincrotrone Trieste SCpA, Basovizza-Trieste, Italy
- 18h00 Departure for visit to Trieste and conference dinner

## *Tuesday 22 April 2008*

### Session V

- 09h00  **$\mu$ -X-ray spectroscopies (XANES, EXAFS)**, *Francesco D'Acapito*,  
European Synchrotron Radiation Facility, Grenoble, France
- 09h30 **Elettra (Sincrotrone Trieste SCpA) microscopy programmes**, *Maya Kiskinova*, Sincrotrone Trieste SCpA, Basovizza-Trieste, Italy
- 10h00 **Synchrotron microanalysis of cometary particles**, *Laszlo Vincze*,  
Ghent University, Department of Analytical Chemistry, Ghent, Belgium
- 10h30 **The impact of new microscopies in cultural heritage studies**, *Claudio Tuniz*, Abdus Salam International Centre for Theoretical Physics,  
Trieste, Italy
- 11h00 Coffee / Poster Session III
- 11h30 **Use of synchrotron-radiation microscopy in food research**, *Franco Zanini*, Sincrotrone Trieste SCpA, Basovizza-Trieste, Italy
- 12h00 **Spatially resolved XRF, XAFS and XRD investigations with micrometre-scale resolution pertaining to nuclear waste disposal issues**, *Melissa A. Denecke*, Forschungszentrum Karlsruhe GmbH,  
Institut für Nukleare Entsorgung, Karlsruhe, Germany
- 12h30 Round Table Discussion:  
**Synchrotron-based microbeam analysis**  
*Moderator*: Giorgio Paolucci, Sincrotrone Trieste SCpA, Basovizza-Trieste, Italy
- 13h00 **Concluding Remarks**
- 13h10 Lunch / End of Workshop
- 14h00 Bus departure for visit to Sincrotrone Trieste

### *Optional Technical Visit Tuesday 22 April 2008*

Visit to selected laboratories of the Sincrotrone Trieste SCpA, 14.00 - 16.00 hrs. As capacity is limited, an early reservation is imperative. Personal data are required for security reasons, and applicants will be contacted by the Workshop Secretary well in advance.

### **Posters presentations**

All participants of the workshop are invited to make a poster presentation. Abstracts must be submitted electronically to the workshop secretariat at the address given below before 31 January 2008. The International Scientific Committee will review all submitted abstracts. Authors will be notified of the acceptance of their poster(s) by 28 February 2008.

## **Abstract format**

One camera-ready A4 page (3 cm all-round margins, no indents, 12-point font size, single line spacing) containing:

TITLE OF ABSTRACT

N. Ames, O.F. Authors

Affiliations

(free line)

Text of abstract without figures or tables.

Abstracts should be sent in Word or WordPerfect or Rich Text Format (RTF) by e-mail to the workshop secretariat with an accompanying electronic version of a passport-style photograph of the presenting author (in either tiff- or jpeg-format; 300 dpi resolution at a size of approx. 5 cm high by 4 cm wide). The photograph will be reproduced in the Book of Abstracts to assist other participants to contact the author during the Workshop.

## **3. REGISTRATION**

Participants are requested to complete and return the attached registration form to the Workshop Secretariat as soon as possible, preferably before 15 March 2008. Late registrations will be accepted only if hotel accommodation is still available.

### **EMAS grants and support for participants**

Some EMAS grants are available to undergraduate and Ph.D.-students and young scientists and technicians (< 30 years of age). Applicants need to be member of EMAS. Applications should be made to the Workshop Secretariat as soon as possible, and not later than 31 January 2008, enclosing a copy of their student ID, if applicable, and a letter of recommendation from their supervisor. Grant recipients are required to present a poster (the abstract should be included with the application). Included in the EMAS grant is a free registration and a maximum of 3 nights hotel accommodation in a shared twin room assigned by the workshop organisers. Grants recipients will have to submit a duly completed registration form by the deadline of March 15th.

The workshop organisers offer the possibility to a limited number of persons from Central and Eastern Europe (including countries of the former Soviet Union) to participate at the student registration rate (hotel accommodation cost is not included in this offer). Applications should be sent to the Workshop Secretariat as soon as possible, and not later than 31 January 2008. The abstract of the poster should be included with the application.

## Workshop registration fees

	<b>Early registration (before 15 March)</b>	<b>Late registration (after 15 March)</b>
EMAS member	€ 350	€ 400
Non-member	€ 400	€ 450
Student (ID required)	€ 100	€ 150
EMAS grant	free	
Accompanying person	€ 125	
1-day ticket	€ 150	

The registration fee for respectively EMAS members, non-members, students and EMAS Grant recipients, includes a copy of the Workshop Book of Abstracts (invited lectures and poster abstracts), coffee breaks and lunches during the workshop, welcome reception (Saturday 19 April) and the workshop dinner (Monday 21 April).

The accompanying person fee includes coffee breaks and lunches during the workshop, welcome reception (Saturday 19 April) and the workshop dinner (Monday 21 April).

The 1-day ticket only encompasses a copy of the workshop book of abstracts, the coffee breaks and the lunch on the day of attendance.

## Hotel accommodation

Hotel accommodation is available at the Adriatico Guesthouse of the Abdus Salam International Centre for Theoretical Physics (ICTP). A limited number of single rooms are available, assigned on a first-come-first serve basis, and twin rooms. The mentioned rates are per room and per night and include breakfast and taxes.

	<b>Room rate</b>
Single room	€ 40
Twin room for single use	€ 55
Twin room	€ 60

## **Payment**

Payment of the workshop registration fee and the total cost for the hotel accommodation (i.e. room rate x number of nights), should be made, without charges to the beneficiary, to the European Microbeam Analysis Society. Payment can be made by:

- bank transfer to **EMAS 2008**, IBAN account no. DE42 6639 1200 0049 2506 06, BIC/swift code GENODE61BTT at the Volksbank Bruchsal-Bretten eG (Silcherweg, 1, DE-75015 Bretten, Germany).
- bank cheque in Euro to the order of “The European Microbeam Analysis Society” or EMAS.
- credit card (Visa, Diners, American Express, Mastercard) by completing and signing the relevant part on the workshop registration form.

A copy of the cheque or bank transfer should be sent together with your registration form. Alternatively (e.g., in case of electronic registration), the original should be shown at the registration desk.

## **Cancellation policy**

A refund of the registration fee (less € 50 administration costs) will be granted only if notification of cancellation is given to the Workshop Secretariat before 1 April 2008. After this date no refund will be made. Refunds will be processed after the Workshop.

## **Personal data**

Personal information supplied to EMAS will be held on computer and may be used only for purposes connected with the activities of the European Microbeam Analysis Society.

## **Insurance**

The organisers cannot be held responsible for any personal accident or damage to the property of the participants.

## **4. LOCATION**

The Workshop will be held in the “Kastler Lecture Hall” of the Abdus Salam International Centre for Theoretical Physics (ICTP), Via Grignano 9, Miramare-Trieste (tel: +39-040-224.01.12; see also: [www.ictp.it](http://www.ictp.it)).

### **How to get to Trieste**

From the Ronchi dei Legionari Airport of Trieste, the local bus company (ATP) runs a regular service, bus no. 51, to the bus station near the Trieste central railway station (one-way fare is € 2.85; ticket to be bought from self-ticketing machine in the arrivals hall). This bus also has a stop near the ICTP (ask for ‘Centro di Fisica’) in Grignano-Miramare.

From the city centre of Trieste (Piazza Oberdan), with a stop at the central railway station, ICTP can be reached using bus no. 36, which has its terminus at the Adriatico Guesthouse. Bus tickets must be purchased before boarding the bus. These can be bought at the Adriatico Guesthouse, or at tobacconists (bearing a T-sign).

### **About the Abdus Salam International Centre for Theoretical Physics**

Founded in 1964 by Abdus Salam (Nobel Laureate), the Centre operates under a tripartite agreement among the Italian Government and two United Nations Agencies, UNESCO and IAEA. Its mission is to foster advanced studies and research, especially in developing countries. While the name of the Centre reflects its beginnings, its activities today encompass most areas of physical sciences including applications.

For more information  
check the latest activity reports on the ICTP website:  
<http://www.ictp.it/>

## **5. WEBSITE OF THE WORKSHOP**

<http://www.emas-web.net/>

## 6. KEY DATES

<b>31 January 2008:</b>	deadline for submission of abstracts for poster presentations
<b>31 January 2008:</b>	deadline for applications for grants and financial support
<b>28 February 2008:</b>	notification of acceptance of poster contributions
<b>28 February 2008:</b>	notification of decisions on grants and financial support
<b>15 March 2008:</b>	early registration deadline
<b>19-22 April 2008:</b>	EMAS 2008 Workshop, Trieste, Italy

### International Scientific Committee

Hans Dijkstra	The Netherlands
János Lábár (Chairman)	Hungary
Xavier Llovet	Spain
Michael B. Matthews	UK
Giorgio Paolucci	Italy
Romano Rinaldi	Italy
Silvia Richter	Germany
Gabriele Tamborini	EU
Claudio Tuniz	ICTP

### Local Organising Committee

Gabriele Tamborini (Co-chairman)	EU
Claudio Tuniz (Co-chairman)	ICTP
Romano Rinaldi	Italy
Christine Walther	EU

### Workshop Secretariat

Christine Walther  
European Commission, Joint Research Centre  
Institute for Transuranium Elements  
P.O. Box 2340, DE-76125 Karlsruhe, Germany  
tel: +49-7247-95.12.55  
fax: +49-7247-95.19.92.55  
e-mail: [christine.walther@ec.europa.eu](mailto:christine.walther@ec.europa.eu)