

**FINAL ANNOUNCEMENT**

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European Microbeam  
Analysis Society

**IUMAS**

International Union of  
Microbeam Analysis Societies

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**EMAS 2017**

**15th  
EUROPEAN  
WORKSHOP**

**on**

**MODERN  
DEVELOPMENTS  
AND  
APPLICATIONS  
IN  
MICROBEAM  
ANALYSIS**

**IUMAS-7**

**7th  
MEETING**

**of the**

**INTERNATIONAL  
UNION  
OF  
MICROBEAM  
ANALYSIS  
SOCIETIES**

7 to 11 May 2017  
at the  
Konzilgebäude  
Konstanz, Germany

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Organised in collaboration with the  
Microprobe Division of the  
German Physical Society (DPG)

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## Scope of the workshop series

The primary aim of this combined EMAS Workshop / IUMAS Meeting is to assess the state of the art and reliability of microbeam analysis techniques. EMAS was founded in 1987 to meet the growing demands of microanalysis users and scientists across Europe for further education, communication and professional advice. IUMAS was founded in 1994 to promote world-wide cooperation in all aspects of microbeam analysis through the organisation of an international meeting on microbeam analysis every three or four years, and by participating in joint committees with other scientific organisations in matters relevant to microbeam analysis which are better discussed on a world scale.

The format of the meeting is aimed at maximising transfer of knowledge among the participants and at providing a comprehensive exhibition of the latest analytical equipment. The programme allows for adequate time and opportunities for participants to visit the technical exhibitions and hold discussions with the manufacturers.

The main topics of this, the 15th EMAS European Workshop, are: **Pushing the Limits - EPMA; Modelling; Detector Technologies; Surface Characterisation; Cathodoluminescence; Pushing the Limits - General.** Time will also be devoted to problem orientated applications in material science, geological science, environmental studies, astrophysics, microelectronics, forensics, cultural heritage and archaeology, nanomaterials, surfaces and interfaces, catalysts, sensors, ...

## Round-table discussions

Our *round-table discussions* are panel discussions taking place at the end of each session. These are one of the popular characteristics of an EMAS Workshop programme, stimulating the exchange of information and experience among the participants starting with, but not limited to, the subject of the preceding session. Brief presentations or contributions to the round-table discussions are encouraged (please contact the round-table session chair at the beginning of the Workshop). The discussion questionnaire on the on-line registration page is invaluable to the Chairs for preparing for these discussions and we encourage you to complete as much information as you can on these.

## Exhibition

Ample space, immediately adjacent to the lecture and poster areas, will be available for the exhibition of instruments, equipment, leaflets and books. Interested companies are invited to contact the Workshop Secretariat.

## Posters

Contributions are welcome on subjects within the scope of the workshop (see Scope). The abstracts will be refereed by the International Scientific Committee and will be published, together with the text of the invited lectures, in the *Book of Tutorials and Abstracts* of the workshop.

**There will be three *Oral Poster Sessions* in which selected authors will be given 5 minutes to present the highlights of their poster using two or three powerpoint slides. Those authors selected will be notified some weeks prior to the workshop.**

Authors have the opportunity to discuss their posters during three poster sessions. Posters will be on display during the whole Workshop. Size of the display area: 1.45 m high by 1.15 m wide.

An *EMAS Young Scientist Poster Award* will be given for the best poster by a young scientist (< 30 years of age). It encompasses a certificate and an invitation from AMAS - Australian Microbeam Analysis Society to present his/her work at a microbeam event in Australia (the Award will include a free conference registration and financial support from AMAS and EMAS for travel and living expenses). An *EMAS Workshop Poster Prize* will be given encompassing a certificate and a cash prize of € 500.

## Young scientists' session

Two sessions are dedicated to giving young scientists (post-graduates and scientists under 30) the opportunity to present their work in a talk lasting 15 minutes including time for discussion. There will be twelve such presentations selected from the submitted abstracts.

An *EMAS Young Scientist Award* will be given to the best contribution and presentation. It includes a certificate and an invitation from the Microanalysis Society of America (MAS) to present his/her work at the Microscopy and Microanalysis 2018 Meeting to be held in Baltimore, Maryland (the invitation will include a free conference registration and financial support from MAS and EMAS for travel and living expenses).

Young scientists wishing to be considered for this session should submit a written application to the Workshop Secretariat, reaching it before **15 November 2016**, and should be member of EMAS or an IUMAS-affiliated society. Applicants for an Early Career Scholarship are also eligible to apply.

## Abstracts

Abstracts to be presented during the workshop should fit **two A4 pages** using the Word-template available on the EMAS website ([www.microbeamanalysis.eu](http://www.microbeamanalysis.eu)). Detailed guidelines are mentioned on the template. Online submission details are given on the workshop webpage.

The abstract has to be submitted before **15 November 2016**. Authors will be notified of the acceptance of their poster by 15 January 2017.

## Publication

Authors of accepted contributions are encouraged to submit a manuscript for publication in a volume of the IOP - Institute of Physics Conference Series: Materials Science and Engineering, appearing some months after the Workshop. Note that there is no transfer of copyright upon publication; you are at liberty to publish a rewritten or extended version in another journal at a later date.

All submitted papers will be peer-reviewed. Owing to limitations imposed by the publisher, the editors will apply a stringent selection procedure based on quality, diversity, and adherence to the manuscript preparation rules. Manuscripts will have to be submitted in the format outlined by the publisher to the EMAS Workshop Secretary.

## Workshop language

The official language of the Workshop will be English.

## Key dates

- \* **1 November 2016** closing date for ECS applications to local IUMAS member society
- \* **15 November 2016** submission of abstracts
- \* **19 December 2016** ECS notification sent out
- \* **15 January 2017** notification of acceptance of contributions  
notification of Young Scientists Session allocations
- \* **15 March 2017** early registration deadline  
hotel accommodation deadline
- \* **07 May 2017** half-day short courses (morning and/or afternoon)  
start of the EMAS 2017 Workshop / IUMAS-7 Meeting
- \* **15 June 2017** submission of manuscripts for publication in the proceedings

## Early Career Scholarships and IUMAS travel support

The European Microbeam Analysis Society (EMAS), the International Union of Microbeam Analysis Societies (IUMAS), and the 8 IUMAS member societies<sup>1</sup> are providing significant financial support to allow and encourage promising early career scientists and technicians to attend the joint EMAS/IUMAS meeting in 2017.

### *Early Career Scholarships*

16 Early Career Scholarships (ECS) are being offered, with 2 being allocated to each member society. EMAS will provide free student registration and accommodation for all 16 awards<sup>2</sup>. In addition, each of the member societies will provide travel support of up to \$1,000 to their awardees.

### *IUMAS Travel Support*

Those awardees with travel costs higher than \$1,000 can apply for additional travel support from funds provided by IUMAS for this meeting.

### *Rules for Applications*

All applicants are required to submit an abstract for a poster contribution and a letter of support from their supervisor or line manager to their local IUMAS member society, with eligibility being based on the member society's local rules. Applicants wishing to apply for additional IUMAS Travel Support shall provide an estimate and justification of their travel costs.

All applicants shall also submit their abstracts using the workshop's on-line submission tool ([www.microbeamanalysis.eu/paper-submission](http://www.microbeamanalysis.eu/paper-submission)). The member society will confirm the eligibility of their applications. Each member society will choose their two best applications and pass these on to the EMAS 2017/IUMAS-7 International Scientific Committee (ISC). The final decision and notification of the awarded scholarships, and any additional IUMAS Travel Support, will be made by the EMAS Board.

Applicants can also apply separately for a Young Scientist Session (YSS) slot.

### *Key Dates*

- 1 November 2016 Closing date for ECS applications to local IUMAS member society
- 15 November 2016 Closing date for ECS applications to be passed to ISC  
Closing date for YSS applications
- 19 December 2016 ECS notification sent out

<sup>1</sup> IUMAS Member Societies: Australian Microbeam Analysis Society (AMAS), European Microbeam Analysis Society (EMAS), Korean Society of Microscopy (KMS), Japan Society for the Promotion of Science (JSPS), US Micro-Analysis Society (MAS), Microscopical Society of Canada (MSC), Standard Administration of People's Republic of China (SAPRC), Brazilian Society for Microscopy and Microanalysis (SBMM).

<sup>2</sup> Registration includes all coffee breaks and lunches during the Workshop, along with tickets for the Welcome Reception and Workshop Dinner. Accommodation will be for up to 5 nights in a shared twin room in a hotel assigned by the workshop organisers.

## Half-day short courses

For detailed course descriptions, see: [www.microbeamanalysis.eu](http://www.microbeamanalysis.eu).

All courses run concurrently, either morning or afternoon, and will be held at the Konzilgebäude or the Hotel Barbarossa in Konstanz, Germany. Each course is limited to 25 participants. The courses are open to non-workshop participants. Cost per course, covering course material and a refreshment break, is € 50.

### Sunday May 7th, 2017 morning

#### *Introduction to EBSD (François Brisset)*

A ½-day short course to introduce the physical and practical methods of electron backscatter diffraction (EBSD). The course is given as a series of short lectures. The course is aimed at students, technicians, engineers and researchers with either no or limited experience of EBSD although some familiarity with basic SEM techniques would be beneficial. The course will cover different aspects of EBSD including overview of EBSD and historical aspects, some basics of sample preparation, EBSD on non-conductive materials, and some clues for transmission EBSD work.

#### *Advanced EPMA, incl. CalcZAF (Paul K. Carpenter & Stuart L. Kearns)*

The aim of this ½-day short course is explore some of the more esoteric applications and limits of the EPMA technique. The freely available CalcZAF programme ([www.ProbeSoftware.com](http://www.ProbeSoftware.com)) provides a powerful platform for investigating and modelling EPMA calculations for a range of applications. Here we will introduce the utility and using a hands-on exercise will perform complex secondary fluorescence calculations for comparison with experimental data. Tutorials on low voltage microanalysis, light element investigation and trace element analysis will complete the course. Attendees should be familiar with the routine use and theory of EPMA. It would be advantageous for participants to download the CalcZAF and MC X-Ray ([www.memrg.com](http://www.memrg.com)) in advance of the course.

#### *Electron microscope maintenance (Richard Wührer)*

The care and correct maintenance of an SEM is the key aspect for a correctly operating instrument. This ½-day short course will cover many aspects of SEM maintenance. Some of the topics to be covered include: vacuum systems and their maintenance, cleaning of microscope parts such as apertures and Wehnelt assembly, basic monitoring of instrument, testing of instrument operation (resolution, magnification calibration), EDS maintenance and calibration, monitoring filament conditions (filament life improvement and setting), and sorting out imaging problems.

### *Monte Carlo simulation using PENEPMMA (Francesc Salvat & Xavier Llovet)*

The programme PENEPMMA aims at facilitating the application of the Monte Carlo method to the simulation of X-ray spectra obtained in EPMA measurements. PENEPMMA is well suited for the simulation of X-rays emitted from samples with complex geometries and/or under unconventional conditions; it can help to understand the limits of the technique and/or optimize the instrument parameters. PENEPMMA is based on the use of the general-purpose simulation package PENELOPE.

This ½-day short course is intended to provide practical instruction on the use of PENEPMMA. The course will introduce new users to the capabilities of the code and acquaint experienced users with new features. The course will be completely hands-on, and examples and applications will be used so that participants become familiar with the way the programme works and the outputs it produces. Participants are expected to bring their own laptop; they will be provided with a Windows or Linux executable version of the programme.

### **Sunday May 7th, 2017 afternoon**

#### *Advanced spectral imaging, mapping and phase mapping (Hans Dijkstra)*

In this ½-day short course, we will take a close look at EDS beyond regular X-ray spectroscopy. Modern techniques for analysing inhomogeneous specimens will be discussed and demonstrated. This course will consist of lectures on the fundamentals of the technique, practical recommendations on the acquisition and processing of large volumes of X-ray data, and discussions on the applicability of the technique to a wide variety of materials. Interested participants are encouraged to bring their own laptop to have spectral imaging software installed and experiment with processing several spectral imaging datasets themselves.

#### *Monte Carlo simulation (Philippe T. Pinard & Silvia Richter)*

In electron microscopy and its analytical methods the electron- and photon-matter interactions play a dominant role. The electrons and the atoms of a sample are the reactants, and the backscattered, transmitted, secondary electrons, the characteristic and Bremsstrahlung X-rays, the products. As only the products of these interactions can be measured, Monte Carlo simulations have been developed over the years to help microscopists understand, visualise and predict the results obtained from their measurements.

This ½-day short course aims to be as practical as possible, providing tutorials how modern and freely available Monte Carlo programmes can be used to address common microanalysis problems and situations. Taking advantage of their respective possibilities, different programmes will be demonstrated in the course, including Casino, NISTMonte, PENELOPE, Monaco, MC X-Ray and their different interfaces. Attendees are encouraged to bring a laptop.

## Sunday May 7th, 2017 afternoon (continued)

### *Introduction to atom probe (Thomas F. Kelly)*

Atom probe tomography will be reviewed for the beginner. A brief history of the technique will be given to set the stage for understanding the current state of the art being described in detail. The instrumentation used to record atom probe tomographs will be presented. The entire process from making specimens to collecting data to analysing data will be covered without assuming prior knowledge of the technique. There will be discussion of artefacts and errors that can occur in the technique. A question and answer period will be held at the end of the course for those who have project ideas and wish to discuss their approach.

## PROGRAMME

Sunday 7 May 2017

- 09.00 - 13.00 Short course: **Introduction to EBSD.**  
Short course: **Advanced EPMA, incl. calcZAF.**  
Short course: **Electron microscopy maintenance.**  
Short course: **Monte Carlo simulation using PENEPMA.**
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- 14.00 - 18.00 Short course: **Advanced spectral imaging, mapping and phase mapping.**  
Short course: **Monte Carlo simulation.**  
Short course: **Introduction to atom probe.**
- 
- 19.00 - 20.00 Registration
- 
- 20.00 - 22.00 Informal buffet reception hosted by the International Scientific Committee and the Local Organising Committee



# PROGRAMME

## Monday 8 May 2017

- 09.00 Welcome and opening address  
Michael B. MATTHEWS (President of EMAS)  
Ed VICENZI (President of IUMAS)  
Silvia RICHTER (Chair of the Local Organising Committee)
- 
- 09.15 **EDS microanalysis: pushing the limits.**  
*Dale E. NEWBURY* (National Institute of Standards and Technology, Surface and Microanalysis Science Division, Gaithersburg, MD, U.S.A.)
- 
- 10.00 **Trace element analysis by EPMA: current state and perspectives.**  
*Valentina BATANOVA* (University Joseph Fourier - Grenoble 1, Isterre - Institut des Sciences de la Terre, Grenoble, France)
- 
- 10.45 Refreshment break / Exhibition visit
- 
- 11.15 **Oral presentations of the contributed posters: I.**  
chairperson: *Fernanda GUIMARÃES* (Laboratório Nacional de Energia e Geologia, I.P., Laboratório Ciência e Tecnologia Mineral, S. Mamede de Infesta, Portugal)
- 
- 12.15 Presentation by the MAS-USA President: **to be defined.**  
*Masashi WATANABE* (Lehigh University, Department of Materials Science and Engineering, Bethlehem, PA, U.S.A.)
- 
- 12.45 Lunch break / Exhibition visit
- 
- 14.00 **Presentation of new equipment and software by the exhibiting companies.**  
chairpersons: *Ian HOLTON* (CAMECA / Acutance Scientific Ltd., Tunbridge Wells, Great Britain)  
*Xavier LLOVET* (University of Barcelona, Scientific and Technological Centers, Barcelona, Spain)
- 
- 16:00 Poster session I / Refreshment break
- 
- 16.30 **Application of soft X-ray analysis to mineral and material systems.**  
*Colin M. MACRAE* (C.S.I.R.O. Process Science and Engineering, Microbeam Laboratory, Clayton South, VIC, Australia)
- 
- 17.15 **FIB thin sample microanalysis with FEG-EPMA.**  
*Yugo KUBO* (Sumitomo Electric Industries, Ltd., Analysis Technology Research Centre, Osaka, Japan)
- 
- 18.00 Round-table discussion: \* **Pushing the limits - EPMA.**  
chairpersons: *Paul K. CARPENTER* (Washington University, Earth and Planetary Sciences, St. Louis, MI, U.S.A.)  
*Stuart L. KEARNS* (University of Bristol, School of Earth Sciences, Bristol, Great Britain)
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# PROGRAMME

**Tuesday 9 May 2017**

- 09.00            **Oral presentations of the contributed posters: II.**  
chairpersons: Hans DIJKSTRA (Thermo Fisher Scientific BV, Breda, The Netherlands)
- 
- 10.00            Poster session II / Refreshment break
- 
- 10.30            **Young scientists' session: I.**  
chairpersons: Ed VICENZI (Smithsonian Institution, Museum Conservation Institute, Suitland, MD, U.S.A.)  
Michael B. MATTHEWS (AWE Plc., Reading, Great Britain)
- 
- 12.00            Lunch break / Exhibition visit
- 
- 13.30            **Monte Carlo simulation and fundamental quantities.**  
*Francesc SALVAT* (University of Barcelona, Facultat de Física (ECM), Barcelona, Spain)
- 
- 14.15            **Modelling of X-ray emission in electron probe microanalysis based on deterministic transport equations.**  
*Manuel TORRILHON* (R.W.T.H. Aachen, Mathematics Division, Center for Computational Engineering Science, Aachen, Germany)
- 
- 15.00            Round-table discussion: \* **Modelling.**  
chairpersons: Zejun DING (University of Science and Technology of China, Department of Physics, Hefei, Anhui, P.R. China)  
Silvia RICHTER (R.W.T.H. Aachen, Central Facility for Electron Microscopy (GFE), Aachen, Germany)
- 
- 15.30            Refreshment break / Exhibition visit
- 
- 16.00            **Young scientists' session: II.**  
chairpersons: Ed VICENZI (Smithsonian Institution, Museum Conservation Institute, Suitland, MD, U.S.A.)  
Michael B. MATTHEWS (AWE Plc., Reading, Great Britain)
- 
- 17.30            **A detector revolution: direct silicon detectors for electron microscopy.**  
*Angus I. KIRKLAND* (University of Oxford, Department of Materials, Oxford, Great Britain)
- 
- 18.15            **Reflection zone plate wavelength-dispersive X-ray spectrometry.**  
*Alexei ERKO* (Helmholtz Zentrum Berlin, Institute Nanometre Optics and Technology, Berlin, Germany)
- 
- 19.00            Round-table discussion: \* **Detector technologies.**  
chairpersons: Richard WUHRER (Western Sydney University, Advanced Materials Characterisation Facility, Penrith, NSW, Australia)  
Enrico LANGER (Technical University of Dresden, Institute of Solid State Physics, Dresden, Germany)

# PROGRAMME

Wednesday 10 May 2017

09.00	<b>Oral presentations of the contributed posters: III.</b> chairperson: Philipp PÖML (European Commission, JRC, Institute for Transuranium Elements, Karlsruhe, Germany)
10.00	Poster session III / Refreshment break
10.30	<b>Nanoscale chemical mapping by combination of atomic force microscopy with IR and Raman spectroscopies.</b> <i>Samuel LESKO</i> (Bruker AXS SAS, Champs-sur-Marne, France)
11.15	<b>Electron transport properties of monolayer graphene measured from secondary electron microscopy according to the substrate variational method.</b> <i>Bo DA</i> (National Institute for Materials Science (NIMS), International Center for Young Scientists (ICYS), Tsukuba, Ibaraki, Japan)
12.00	Round-table discussion: * <b>Surface characterisation.</b> chairpersons: Yahachi SAITO (Nagoya University, Graduate School of Engineering, Department of Quantum Engineering, Nagoya, Japan) Giovanni VALDRÉ (University of Bologna, Dipto. Scienze Biologiche, Geologiche e Ambientali, Bologna, Italy)
12.30	Lunch break / Exhibition visit
14.00	EMAS Annual General Meeting
14.45	Presentation by AMAS President: <b>to be defined.</b> <i>Richard WUHRER</i> (University of Western Sydney, Advanced Materials Characterisation Facility, Penrith, NSW, Australia)
15.15	Refreshment break / Exhibition visit
15.45	<b>Correlating cathodoluminescence analysis with WDS and EBIC in the EPMA.</b> <i>Robert W. MARTIN</i> (University of Strathclyde, Physics Department, Nanoscience Division, Glasgow, Great Britain)
16.30	<b>Characterisation of semiconductor nanostructures using high resolution cathodoluminescence.</b> <i>Dominique DROUIN</i> (University of Sherbrooke, Faculté de Génie, Département de Génie Electrique et de Génie Informatique, Sherbrooke, QC, Canada)
17.15	Round-table discussion: * <b>Cathodoluminescence.</b> chairpersons: Young-Woon KIM (Seoul National University, Department of Materials Science and Engineering, Seoul, South Korea) François BRISSET (University of Paris-Sud, Institut de Chimie Moléculaire et des Matériaux d'Orsay, Orsay, France)
19.00	Departure for the workshop dinner at the Insel Mainau. Awards ceremony.

# PROGRAMME

Thursday 11 May 2017

- 09.00            **Advances in scanning transmission electron microscopy.**  
*Stephen J. PENNYCOOK* (National University of Singapore, Faculty of Engineering, Department of Materials Science & Engineering, Singapore)
- 
- 09.45            **Pushing the limits of electron energy loss spectroscopy: from phonons to core losses in real and momentum spaces.**  
*Quentin M. RAMASSE* (SuperSTEM Laboratory, Daresbury, Great Britain)
- 
- 10.30            Refreshment break
- 
- 11.00            **Understanding deformation with high angular resolution electron backscatter diffraction (HR-EBSD).**  
*Ben BRITTON* (Imperial College, Department of Materials, London, Great Britain)
- 
- 11.45            **Integration of EBSD, t-EBSD and atom probe microscopy.**  
*Steven REDDY* (Curtin University, Faculty of Science and Engineering, Western Australian School of Mines, Department of Applied Geology, Bentley, Perth, WA, Australia)
- 
- 12.30            Round-table discussion: \* **Pushing the limits - General.**  
chairpersons: Gianluigi BOTTON (McMaster University, Canadian Centre for Electron Microscopy, Hamilton, ON, Canada)  
Miran ČEH (Jožef Stefan Institute, Department for Nanostructured Materials & Centre for Electron Microscopy and Microanalysis, Ljubljana, Slovenia)
- 
- 13.15            Concluding remarks



## Registration fees

Online registration will be available as of early January 2017 at [www.microbeamanalysis.eu](http://www.microbeamanalysis.eu). Participants are encouraged to complete registration and arrange for payment, preferably before **15 March 2017** to qualify for early bird rates.

### The registration fee includes:

- **lunches (Mo. - We.) and all refreshment breaks;**
- the **welcome buffet** (Su.) and the **workshop dinner** (We.);
- a copy of the workshop's *Book of Tutorials and Abstracts* containing the detailed programme, the text of the invited lectures, and the abstracts of the poster presentations;
- a hard copy of the Workshop Proceedings (except with student registration, or equivalent).

	early rate until March 15	late rate as of March 16
<u>Workshop attendance</u>		
Current EMAS / IUMAS members	€ 500.00	€ 600.00
- Registration + 2-year EMAS membership	€ 570.00	€ 670.00
- Non-member registration only	€ 650.00	€ 750.00
- Student / EMAS member in retirement (without proceedings volume)	€ 250.00	
<u>Workshop dinner</u> (additional ticket) (for exhibitors, accompanying persons)		
	€ 50.00	
<u>Proceedings volume</u> (hard copy) (for students, exhibitors, accompanying persons)		
	€ 40.00	
<u>Short courses</u>		
a) Sunday 7 May 2017 morning		
- <i>Introduction to EBSD</i>	€ 50.00	
- <i>Advanced EPMA, incl. CalcZAF</i>	€ 50.00	
- <i>Electron microscopy maintenance</i>	€ 50.00	
- Monte Carlo simulation using PENEPMA	€ 50.00	
b) Sunday 7 May 2017 afternoon		
- <i>Advanced spectral imaging, mapping and phase mapping</i>	€ 50.00	
- <i>Monte Carlo simulation</i>	€ 50.00	
- <i>Introduction to atom probe</i>	€ 50.00	

## Payment

Payment of the registration fee should be preferentially made through the EMAS website ([www.microbeamanalysis.eu](http://www.microbeamanalysis.eu)) using the online PayPal system; no credit card information will be stored on the EMAS website; various payment options are available (e.g., credit cards) depending on your country. An invoice/receipt will be generated by the system.

Alternatively, if you prefer to pay by bank transfer or any other offline payment method, please choose the "pay offline" button and follow the instructions; this will generate your invoice, which includes bank transfer and contact details.

## Social programme

All participants and accompanying persons are invited to the welcome buffet on Sunday evening. This informal get-together is hosted by the International Scientific Committee and the Local Organising Committee.

The workshop dinner, on Wednesday evening, will be held at the Insel Mainau. The cost is included in the registration fee but is extra for accompanying persons.

## Cancellation

Refund of the registration fee (less € 50 administrative costs) will only be granted if notification of cancellation has reached the Workshop Secretariat before 15 April 2017. After this date, no refund will be made. Refunds will be processed after the Workshop.

## Insurance

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

## 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.

## Accommodation

A number of rooms in hotels in the neighbourhood of the workshop venue have been set aside. Since the number of rooms in each hotel is limited, bookings will be processed on a first-come-first-served basis. The hotel bill has to be settled directly with the hotel.

	Single rooms	Double room for single use
	# rooms at rate / night	# rooms at rate / night
Gästehaus Centro	3 at € 88.00	5 at € 106.00
Apartmenthotel ***	3 at € 89.00	7 at € 115.00
Hotel Graf Zeppelin	10 at € 90.00	
Hotel Constantia		10 at € 98.00
ABC Hotel		7 at € 99.00
IBIS Hotel ***		10 at € 99.00
Hotel Augustiner Tor		10 at € 110.00
Hotel Viva Sky	2 at € 110.00	3 at € 110.00
Hotel Halm ****		15 at € 132.00

All rates are per room and per night, incl. breakfast and taxes. Rates for double occupancy are available on the online booking form.

[Online bookings can be made through a dedicated webpage of the Tourist-Information Konstanz GmbH.](#) Accommodation requests are accepted at any time up to March 23rd, after which date availability cannot be guaranteed.

## The weather in Konstanz in May

Konstanz has a Mediterranean / land climate. Average high temperature in May is around 20 °C. It can rain but it can also be quite warm.



## How to get to the Workshop venue



### a) by air:

The [Bodensee airport Friedrichshafen](#) is the nearest local airport (25 km) with regular connections to Frankfurt, Istanbul, and Palma de Mallorca. A public transport bus runs from the airport to Konstanz and there is also an hourly fast [catamaran service](#) across the Bodensee.

To Frankfurt (345 km) and onward travel by train (see below).

To Stuttgart (170 km) and onward travel by train (see below).

To [Zürich airport](#) (Switzerland; 75 km) and onward travel by twice-hourly direct train (see below).

### b) by train:

There are [good rail connections](#) to Konstanz, for example:

from Hamburg, Berlin, Rhine/Ruhr via Frankfurt-Karlsruhe/Offenburg or Frankfurt-Stuttgart-Singen;

from Dresden via Nuremberg-Stuttgart-Singen;

from Vienna, Munich via Ulm-Friedrichshafen-Radolfzell or Lindau Friedrichshafen-Radolfzell;

from Milan, Geneva, Bern via Zurich-Schaffhausen-Singen or Zurich Weinfelden;

from Paris via Strasburg-Offenburg;

from Zürich regular train service to Konstanz.

Detailed information on rail, boat, or car access to Konstanz can also be found on the website of the [Tourist-Information Konstanz](#).

## Venue

Konzilgebäude  
Hafenstrasse 2  
78462 Konstanz, Germany

As pretty as a picture, Lake Constance (Bodensee) lies in a lovely landscape of hills and mountains between Germany, Switzerland, and Austria. The area is rich in history and important cultural monuments from every period.

In the most beautiful part of the lake, where it drains into the Rhine, there was an old Roman fort, which later became the mediaeval town of Konstanz. The central part of this town, directly adjoining the shore, still survives today.

The old episcopal town is dominated by the impressive structure of the "Münster" (Our Lady Cathedral). The oldest part, the crypt, dates back to the 9th century, with the main Romanesque building dating from the mid-11th century. Gothic side chapels and nave vaulting were added in the 15th century. The cathedral was the location of the ecclesiastical council, held in Konstanz from 1414 to 1418. Another important building is the "Konzilgebäude", erected in 1388, at the harbour side, as a granary and warehouse, later becoming the site of the linen trade fair. Nowadays it functions as a conference and exhibition centre.

Nearby is "Niederburg", the oldest part of town, with its crooked alleys, alcoves, colourful gables, and many wine taverns. Here can be found palatial mansions and houses of worthy well-to-do citizens.

And always there is the lake. If you walk through the town you will reach the harbour, the lakeside promenade and the "Seestrasse" with its panoramic views of the nearby Swiss Alps.

Local excursions can take you to the Isle of Mainau with its tropical plants and age-old trees. Another attractive place is Meersburg, across the lake, with its castle, palace, and cosy old town centre.

More information on Konstanz and its surroundings can be found on the website of the [Tourist-Information Konstanz](#) or on the website of [International Lake Constance Tourism GmbH](#).

## International Scientific Committee

Gianluigi Botton	<i>Canada</i>
François Brisset	<i>France</i>
Paul K. Carpenter	<i>U.S.A.</i>
Miran Čeh	<i>Slovenia</i>
Zejun Ding	<i>P. R. China</i>
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Enrico Langer	<i>Germany</i>
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Updated information on the workshop can be found at the EMAS 2017 / IUMAS-7 event page at the EMAS website: [www.microbeamanalysis.eu](http://www.microbeamanalysis.eu).