



# **12<sup>th</sup> EUROPEAN CONGRESS ON ELECTRON MICROSCOPY**

**July 9-14, 2000  
Brno, Czech Republic**



**SECOND CIRCULAR  
AND  
CALL FOR PAPERS**

<http://www.eurem2000.isibrno.cz>

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# Full information on EUREM 12, Brno 2000 is available at <http://www.eurem2000.isibrno.cz>

The congress secretariat:

**EUREM 2000,**  
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E-mail [eurem2000@isibrno.cz](mailto:eurem2000@isibrno.cz)

### Important deadlines:

|                      |             |      |
|----------------------|-------------|------|
| Submission of papers | February 15 | 2000 |
| Advance registration | February 15 | 2000 |
| Hotel reservation    | May 15      | 2000 |

### Opening hours of the registration desk

(in the lobby of the pavilion E in the Trade Fair Area):

|            |         |      |  |
|------------|---------|------|--|
| Sunday,    | July 9  | 2000 | } 9. <sup>00</sup> - 18. <sup>00</sup> |
| to         |         |      |  |
| Wednesday, | July 12 | 2000 | } 9. <sup>00</sup> - 12. <sup>00</sup> |
| Thursday,  | July 13 | 2000 |  |

## Photomicrograph Exhibition

The meeting will be held in the micrograph exhibition. The meeting will be judged and a prize will be awarded to each of three individuals whose micrographs are selected for recognition. This award will be made at a Congress event.

The exhibit is open to all forms of microscopic imaging. Submitted micrographs must be accompanied by a brief description, not only of their scientific content, but also of their technical aspects. If images have been digitally processed or altered, the digital processing should be described as well. Please read the following rules carefully:

The organization will provide a display case for outstanding micrographs displayed at the exhibition and fax numbers, and email address plus a description of 200 words or less for each entered micrograph (maximum of 3) to: Barbara Reine, Botany Dept. Box 351330, University of Washington, Seattle, WA 98195-1330, USA, Phone: (206)543-1955; Fax (206)543-3262; email: [reine@u.washington.edu](mailto:reine@u.washington.edu)

Entries must be submitted up to three micrographs. Entries must be 27.5 cm x 35.0 cm, may be mounted vertically or horizontally, and must be affixed to a stiff lightweight support, such as 10 mm foam board. Micrographs may either be flush mounted or have borders so long as the overall dimensions of the entry are 27.5 cm x 35.0 cm. Entries must be brought to the meeting and mounted on the display boards by the entrant or his/her delegate. Velcro will be provided. Entries must be mounted between **12:00 and 17:00 on Sunday, July 9<sup>th</sup>** and then removed between 12:00 and 15:00 on Thursday, July 13<sup>th</sup>. Micrographs remaining on the display boards after then will be discarded.

Entries must be received by **June 15, 2000**. Entries will be acknowledged promptly. Do not send micrographs, you must bring them or have them brought to the Meeting. Meeting Office staff will print your description(s) in standard form and prepare them to be mounted along with your micrograph(s) at the Meeting.

**Edited by** Petr Schauer, Iлона Müllerová and Luděk Frank.  
**Design and printed by** Reklamní atelier Kupka.

### Cover:

Scenery of the Brno Trade Fair Area from the South.



**Dear colleagues, ladies and gentlemen,**

Allow me to cordially invite you, on behalf of the Czechoslovak Society for Electron Microscopy and the Institute of Scientific Instruments ASCR, to participation in EUREM 12 in Brno. Nearly three years ago the representatives of European national societies for microscopy or electron microscopy voted about the venue of the next congress and the success of Brno in this competition was obviously a surprise to many. Perhaps some doubts were felt whether the period, available for a country behind the "iron curtain" for the recovery of its democracy, had been long enough to create conditions necessary to organise the congress properly. In between, significant steps forward on this way have been made and although many aspects of everyday life and services available should still and hopefully soon will be improved, I am inviting you with absolute confidence.

Although not too large in population and not bragging of too many historical glories, Brno can consider itself the city of electron microscopy. This year we could celebrate the 50th anniversary of the first Czechoslovak electron microscope, which was put into operation by a group of students of Brno Technical University. From that time, electron microscopy was continuously under development, as a scientific discipline and as a production activity, and both took place in Brno. The Institute of Scientific Instruments of the Academy of Sciences, formerly the Czechoslovak one and now that of the Czech Republic, has been dealing with the theory, methodology and instrumentation of electron microscopy for more than forty years. The majority of the Institute's history was connected with the name of Professor Armin Delong, the leading member of the group of young creators of the first microscope and for thirty years the Institute's Director. The Brno factory of Tesla was for decades the supplier of electron microscopes, which were sold all over the world. The most famous of these, a small table-top TEM Tesla BS 242, was awarded Gold Medal at EXPO in Brussels in 1956, and had cumulative sales of over one thousand.

One of crucial establishments of trade and industry in Brno is the Brno Fairs and Exhibitions company, settled on the Trade Fair Area (Výstaviště). The tradition of exhibitions in this area started as early as 1928 when the Jubilee Exhibition was organised there, to celebrate the 10th anniversary of the independent Czechoslovak Republic. The large pavilion, built for this purpose, is a huge airy concrete construction, designed with admirable invention, and has been famous since that time. You will enjoy this building during the congress welcome party. The Trade Fair Area now incorporates several tens of other modern pavilions and one of them will be the site of the congress. The extent of the space available in this single pavilion enables us not only to build a number of lecture rooms for symposia, tutorials and other events, to exhibit the posters during the full congress duration, but not surprisingly it will also offer ideal environment for the exhibition of instruments. Catering is available on site and in the immediate neighbourhood, two large hotels offer accommodation. Cheap accommodation in large College blocks is within a comfortable walking distance. You will find in Brno all what is needed for a compact congress enabling a participant to schedule his/her time at a highly economical level.

We are looking forward to meeting you in Brno at EUREM 12.

Luděk Frank  
President of EUREM 12



### **Ladies and Gentlemen,**

Please, let me welcome you on behalf of the City of Brno in which the 12<sup>th</sup> European Congress of Electron Microscopy EUREM 2000 is going to take place.

The City of Brno is proud of a long tradition in development, production and application in the electron microscopy field. In many countries all around the world, you can see Tesla microscopes that have been developed and produced here. Several companies in Brno are still in the business of developing and producing microscopes.

I hope that in addition to deciding to participate in the Congress, you will want to find out more about this city. I would like to mention a few interesting facts to you. With its 400.000 inhabitants, Brno is the second largest city in the Czech Republic. Sometimes, they say Brno is the city "on the way from Prague to Vienna". This saying has a deeper philosophical meaning to it. For example, there are a number of well-known people both in sciences and mathematics that worked in Brno, such as Gregor Mendel, the author of theory of heredity who is considered the founding father of genetics. Ernst Mach, physicist and philosopher of world-wide importance, was born here, and Kurt Gödel, a mathematician ranked by Time magazine among the top 100 scientists and thinkers of this century, lived in the City of Brno until the age of 18.

Similarly, many artists left their footprints in Brno. The architect Mies van der Rohe built Villa Tugendhat, a jewel of functionalism here. There is a museum there well worth seeing. From the point of view of architecture, Brno Exhibition Centre where the Congress takes place is very unique as well. Milan Kundera, a writer originally from Brno, now living in Paris, has become known world-wide. Brno is also proud of its tradition in music. For example, Wolfgang Amadeus Mozart, Gustav Mahler and, in particular, Leoš Janáček after whom the Brno Opera was named worked here.

At the beginning of the 20<sup>th</sup> century, the charming surroundings of the city made Sir Winston Churchill come to Brno. He spent his honeymoon here that, undoubtedly, contributed to his many years of marriage. This may be a thing to do for those participants of the Congress who are still single.

Brno offers a number of remarkable sights. I hope you will take advantage of this opportunity and will not only work but also enjoy yourselves.

Petr Duchoň  
Mayor of the City of Brno

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Organised by the Czechoslovak Society for Electron Microscopy under the auspices of the European Microscopy Society and the International Federation of Societies for Electron Microscopy and in co-operation with the Institute of Scientific Instruments AS CR under the Patronage of Professor Rudolf Zahradník, President of AS CR, and Dr Petr Duchoň, Mayor of the City of Brno.

# GENERAL INFORMATION

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## Scope of Congress

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The 12<sup>th</sup> European Congress on Electron Microscopy is intended to provide an overview of present achievements and expected future trends in electron microscopy and related fields. This is to include the instrumentation and methodology and all main application areas, particularly in life and material sciences. The Congress will also cover scanning probe microscopies and modern methods of optical microscopy including the near-field techniques.

## Scientific Programme

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The Congress will be organised into scientific symposia, grouped in families dedicated to Biological Sciences, Physical Sciences and Instrumentation and Methodology. Keynote lectures will be prepared on selected topics of broad interest and presented as plenary lectures with prominence in the programme timetable. Carefully selected chairpersons will conduct the symposia and, together with other leading scientists, give introductory overview lectures to them. These will be complemented with selected oral contributions and with posters exhibited throughout the congress duration. Among the special events, the EMS (European Microscopy Society) symposium can be found. The scientific programme will be complemented with tutorials and with open labs organised by manufacturers.

## Venue

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The Congress will take place in Brno, the second largest city in the Czech Republic. This traditional centre of development and production of Tesla electron microscopes and a large university centre with two large and four smaller universities has 400 thousand inhabitants. The summertime congress brings an opportunity to also visit the beautiful Moravian countryside and historical monuments. The Congress will

take place on the Trade-Fair Grounds with its multitude of large pavilions, including lecture halls and full catering. Two large hotels immediately adjacent to the main congress building, and a university dormitory within a comfortable walking distance, will easily house all participants.

## Proceedings

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The proceedings will be printed in three volumes. They will contain all papers (the keynote lectures, introductory lectures to symposia, oral contributions and posters) from all symposia on Biological Sciences, Physical Sciences, and Instrumentation and Methodology, respectively. Early registrants can choose two volumes of these three as the proceedings included in the registration fee. Alternatively, they can select one volume and a CD-ROM containing all papers. Late registrants will receive a combination of the printed volume(s) and CD-ROM according to availability. Additional copies of the CD-ROM version of the proceedings will be available at extra cost.

## Exhibition

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As usual at large electron-microscopy congresses, an extensive exhibition will be an important part. It will span such topics as the latest commercial electron microscopes and their accessories, related imaging and analytical techniques, computer and control techniques, devices and materials for image archiving and processing, and laboratory equipment, tools and materials for various kinds of specimen preparation. Software for electron optical computations and scientific literature will also be presented. The exhibition will be organised in one building together with the poster exhibition and the congress symposia. The professional background of the trade fair grounds will ensure a smooth course for the exhibition, including all associated scientific, technical, advertising and social events organised by exhibitors.

## Financial Support

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The general policy of the organisers is to make the Congress fee as low as possible. In particular, the fee for full-time undergraduate and graduate students is significantly decreased. Moreover, a limited number of bursaries will also be awarded to active young participants as decided by the Congress President. Applications for the bursaries should be sent in the form of a letter together with the manuscript of a contributed paper by **December 31, 1999**. The bursary will include free congress registration and free accommodation in the College Vinařská for six nights.

## Social Events, Tours

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Social events will include the Sunday evening welcome party, hosted by the organisers, which will be held in the historical pavilion A in the Trade-Fair Grounds. Furthermore, the participants will be invited to the "theatre evening" which will include a symphonic concert of classical music followed by a reception. Participants will also be offered the opportunity to book a broad range of half-day, full day and longer trips and excursions during and after the congress. The special offer of BVV Fair Travel, Ltd. can be found as a separate section of this brochure. The tours will be sold in a special booth "Tours" in the lobby of the pavilion E (the congress site) from Sunday, July 9, 2000 until they are fully booked. In order to secure your participation in a selected tour, we recommend that you use the **advance booking** form on page 26. For more-day tours and some most attractive shorter trips, utilising services that have to be reserved in advance, an advance **deposit** is essential. These tours are indicated on page 26. When you tick any of the tours requiring a deposit, the travel agency will contact you in due course.

## Programme for accompanying persons

We decided not to prepare any fix scheduled social programme for accompanying persons. Instead, we assume that they will broadly utilise the offer of tours and excursions. The fee required for the accompanying persons includes only the social events available for the congress participants, i.e. the welcome party in the pavilion A on Sunday evening, and the "theatre evening" on Wednesday. Accordingly, the fee for the accompanying persons has been established on a minimal level.

## Transportation

Brno is positioned on the busy railway route Berlin - Praha - Brno - Bratislava - Budapest, with direct trains to Vienna and a small international airport. Frequent bus service is available from Praha by motorway (2.5 hours).

Useful tips:

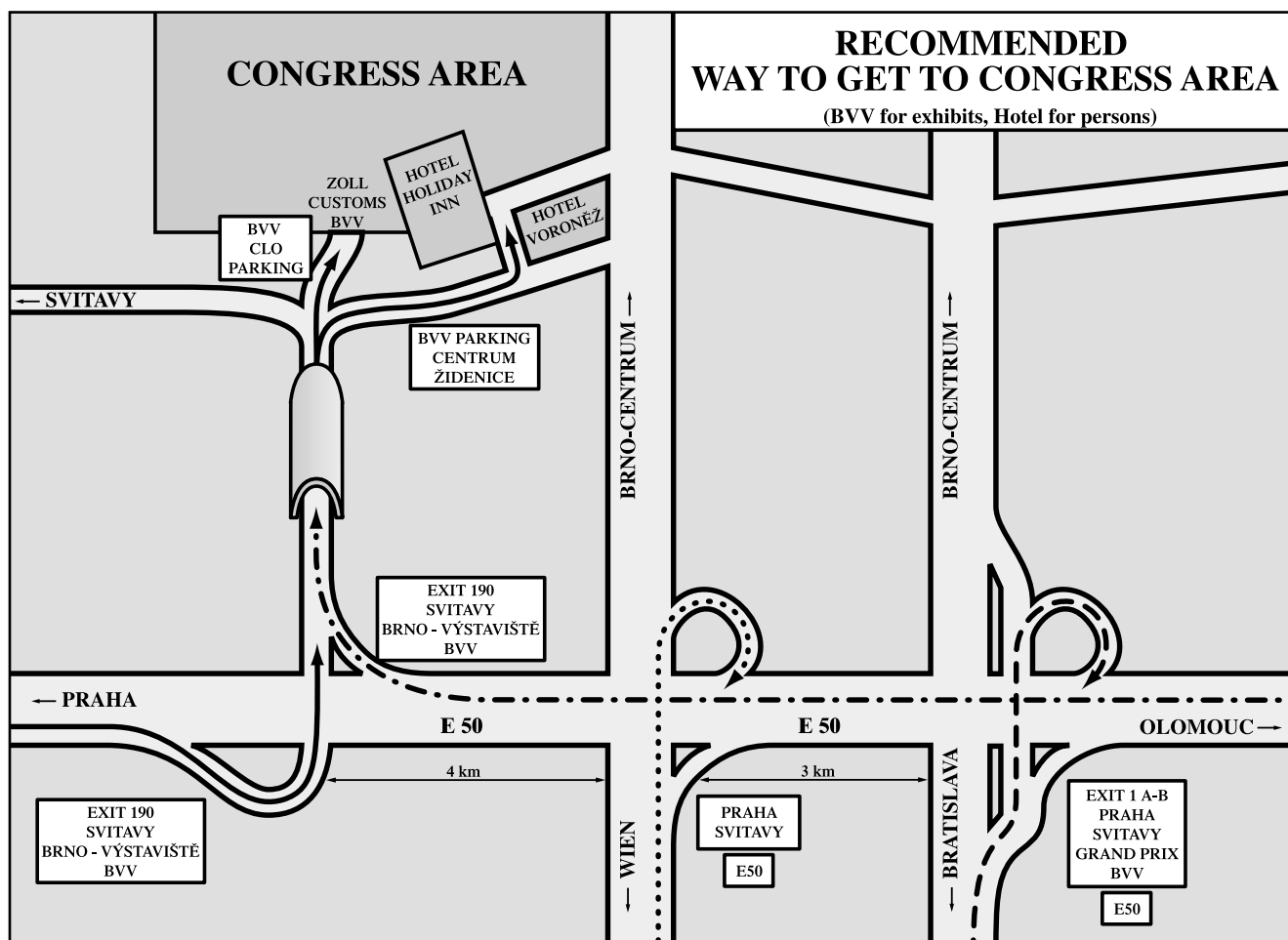
- From the international airport Praha-Ruzyně, bus transport will be organised on Saturday, July 8, and Sunday, July 9, directly to the congress site and adjacent hotels. The scheduled departures are:

|          |        |                   |                                     |
|----------|--------|-------------------|-------------------------------------|
| Saturday | July 8 | 15. <sup>00</sup> | 19. <sup>00</sup>                   |
| Sunday   | July 9 | 11. <sup>00</sup> | 13. <sup>00</sup> 15. <sup>00</sup> |

Seats in the scheduled buses will be reserved until 15 minutes before the departure for those making **advance bookings** with the form on page 26. Then the remaining places will be sold to

persons interested. In case the demand exceeds the capacity, advice will be available at the booth "EUREM 12" in the airport arrival hall or even extra buses will be provided.

- From the Brno Main railway station, you can reach the congress site by using the tram no.1 in the direction "Bystrc Ečerova". The frequencies are every 4 minutes in the rush hour, otherwise every 10 to 18 minutes between 5 a.m. to 10 p.m. and every hour during the night (when a taxi is recommended). The destination tram station name is "Výstaviště", the tickets are sold by the tram driver (change should be prepared, currently the cost is 10 CZK). Your taxi can take you directly to your hotel or College Vinařská or to pavilion E in the Trade Fair Area where the registration will take place.



# SCIENTIFIC PROGRAMME

This is a frozen sample of the EUREM 12 Scientific Programme to date of May 12, 1999.

The Programme keeps developing and is continuously updated at [www.eurem2000.isibrno.cz/progra.html](http://www.eurem2000.isibrno.cz/progra.html).

Explanation of symbols: CH – symposium chair, IL – introductory lecture, *name written in italics - not finally confirmed yet.*

## SYMPOSIA ON BIOLOGICAL SCIENCES

|   |   |   |   |
|---|---|---|---|
| <p><b>B1</b><br/><b>Nuclear import and export</b><br/>U. Aebi, Basel CH<br/>T.D. Allen, Manchester CH, IL<br/>D. Stoffler, Basel IL</p>   | <p><b>B2</b><br/><b>Membrane traffic</b><br/>M. Pavelka, Vienna CH<br/><i>J. Klumperman, Utrecht CH, IL</i><br/>A. Ellinger, Vienna IL</p>                  | <p><b>B3</b><br/><b>Progressive detection methods in light and electron microscopy</b><br/>F. Wachtler, Vienna CH</p>   | <p><b>B4</b><br/><b>Supermolecular complexes reconstruction and tomography</b><br/>W. Baumeister, Martinsried CH, IL<br/>M. van Heel, London CH, IL</p> |
| <p><b>B5</b><br/><b>Plant cell ultrastructure and signalling pathways</b><br/>M.C. Risueno, Madrid CH<br/>M. Čiamporová, Bratislava CH<br/>P.S. Testillano, Madrid IL<br/>C. Hawes, Oxford IL</p> | <p><b>B6</b><br/><b>Electron microscopy in molecular pathogenesis</b><br/>W. Mosgoeller, Vienna CH<br/>J. Slezák, Bratislava CH</p>                         | <p><b>B7</b><br/><b>Electron and confocal microscopies, correlation methods</b><br/>D. Hernandez-Verdun, Paris CH<br/>I. Raška, Prague CH<br/>M. Trendelenburg, Heidelberg IL<br/>H. Schwarz, Tübingen IL</p> | <p><b>B8</b><br/><b>Progress on biological sample preparation methods</b><br/>G.W. Griffiths, Heidelberg CH, IL<br/>M. Thiry, Liege CH, IL</p>          |
| <p><b>B9</b><br/><b>Structure and morphogenesis of viruses</b><br/>J.L. Carrascosa, Madrid CH<br/>S. Fuller, Heidelberg CH, IL<br/>A.C. Steven, Bethesda IL</p>                                   | <p><b>B10</b><br/><b>Cryo-preparation for EM and cryo-analysis</b><br/>J. Dubochet, Lausanne CH, IL<br/>H. Plattner, Konstanz CH, IL</p>                    | <p><b>B11</b><br/><b>EM microanalysis in biology</b><br/>G. Roomans, Uppsala CH, IL<br/>D. Neumann, Halle CH, IL</p>  | <p><b>B12</b><br/><b>Cytoskeleton structure and dynamic</b><br/>E. Dráberová, Prague CH<br/>K. Holmes, Heidelberg CH</p>                                |
| <p><b>B13</b><br/><b>Functional architecture of the cell nucleus</b><br/>P. Hozák, Prague CH<br/>C. G. Cremer, Heidelberg CH, IL<br/>A. Pompo, Oxford IL</p>                                      | <p><b>B14</b><br/><b>Neurobiology: cells and signal transfer</b><br/>A. Triller, Paris CH<br/>J. Maršala, Košice CH, IL<br/><i>J. Cartaud, Paris IL</i></p> | <p><b>B15</b><br/><b>Electron crystallography of protein crystals</b><br/>A. Brisson, Groningen CH<br/>P. Bullough, Sheffield CH</p>  | <p><b>B16</b><br/><b>Scanning probe microscopies in biology</b><br/>A. Engel, Basel CH<br/>H.E. Gaub, München CH</p>                                    |
| <p><b>B17</b><br/><b>Stereology and quantitative methods</b><br/>L. Kubínová, Prague CH, IL<br/>H.J.G. Gundersen, Aarhus CH, IL</p>   | <p><b>B18</b><br/><b>Achievements in multi-photon imaging</b><br/><i>S. W. Hell, Göttingen</i></p>  | <p><b>B19</b><br/><b>Biomaterials</b><br/>H.K. Koerten, Leiden CH, IL<br/>W. Dietz, Erfurt CH, IL</p>   |   |

## SYMPOSIA ON PHYSICAL SCIENCES

|   |  |   |  |
|---|--|---|--|
| <p><b>P1</b><br/><b>Metals and alloys</b><br/>H.P. Karnthaler, Vienna CH</p>                                      | <p><b>P2</b><br/><b>Intermetallics</b><br/>D. Caillard, Toulouse CH<br/>R. Gotthardt, Lausanne CH<br/>J.-L. Martin, Lausanne IL<br/>A. Couret, Toulouse IL</p> | <p><b>P3</b><br/><b>Ceramics and composites</b><br/>W. Sigle, Stuttgart CH, IL<br/><i>M. Morris, Neuchatel</i></p>          | <p><b>P4</b><br/><b>Magnetic materials</b><br/>J.N. Chapman, Glasgow CH, IL<br/>J. Zweck, Regensburg CH, IL</p>  |
| <p><b>P5</b><br/><b>Perovskites</b><br/>H.W. Zandbergen, Delft CH, IL<br/>M. Hervieu, Caen CH, IL</p>             | <p><b>P6</b><br/><b>C and C-like materials</b><br/>A. Loiseau, Châtillon CH<br/>J. L. Hutchison, Oxford CH</p>   | <p><b>P7</b><br/><b>Epitaxial structures</b><br/>P.G. Merli, Bologna CH, IL<br/>G. van Tendeloo, Antwerp CH</p>             | <p><b>P8</b><br/><b>Artificial nanostructures</b><br/><i>C.van Haesendonck, Leuven</i><br/><i>V.V. Aristov, Černogolovka</i></p>                           |
| <p><b>P9</b><br/><b>Catalysts, clusters, small particles</b><br/>J.O. Bovin, Lund CH<br/>C. Colliex, Paris CH</p> | <p><b>P10</b><br/><b>Interfaces and grain boundaries</b><br/>W. Mader, Bonn CH<br/>J. Thibault, Grenoble CH</p>  | <p><b>P11</b><br/><b>Amorphous materials and quasicrystals</b><br/>M. Vittori-Antisari, Roma CH<br/>C. Beeli, Zurich CH</p> | <p><b>P12</b><br/><b>Electron crystallography and CBED</b><br/>I.G. Voigt-Martin, Mainz CH, IL<br/>J.R. Fryer, Glasgow CH<br/>D.L. Dorset, New York IL</p> |



**P13**  
**In-situ electron microscopy**  
 U. Messerschmidt, Halle CH, IL  
 A. Aseev, Novosibirsk CH, IL

**P14**  
**Specimen preparation  
 in material sciences**  
 A.Czyrska-Filemonowicz, Kraków CH  
 P. Barna, Budapest CH  
 A. Barna, Budapest IL

**P15**  
**General materials  
 microscopy**  
 K.M. Knowles, Cambridge CH, IL  
 J. van Landuyt, Antwerp CH

**P16**  
**EM in geology,  
 archaeology, arts, and in  
 forensic applications**  
 S. Hansen, Lund CH  
 L. Robbiola, Paris CH  
 M. San Andrés, Madrid CH, IL

**P17**  
**Polymers and radiation  
 sensitive materials**  
 W. Geymayer, Graz CH  
 F. Lednický, Prague CH  
 D. C. Martin, Ann Arbor IL  
 G. H. Michler, Halle IL

## SYMPOSIA ON INSTRUMENTATION AND METHODOLOGY

**I1**  
**Wave and particle  
 properties of the electron**  
 H. Lichte, Dresden CH  
 M. Lenc, Brno CH

**I2**  
**Advances in electron optics**  
 B. Lencová, Brno CH  
 E. Munro, London CH, IL  
 D. Preikszas, Darmstadt, IL

**I3**  
**Quantitative electron  
 microscopy**  
 D. Van Dyck, Antwerp CH  
 F. Ernst, Stuttgart CH, IL  
 A. Thust, Jülich IL

**I4**  
**Correction of aberrations and  
 HR electron microscopes**  
 A. Delong, Brno CH  
 M. Haider, Heidelberg CH, IL  
 O.L. Krivanek, Seattle IL

**I5**  
**Low energy electron  
 microscopy**  
 G. Lilienkamp, Clausthal CH, IL  
 L. Frank, Brno CH  
 J. Zach, Heidelberg IL  
 I. Müllerová, Brno IL

**I6**  
**Low vacuum microscopy  
 and charging**  
 J. Cazaux, Reims CH, IL  
 R. Aurtata, Brno CH

**I7**  
**Modern light microscopy  
 techniques**  
 E.H.K. Stelzer, Heidelberg CH  
 P. Tománek, Brno CH

**I8**  
**Advances in probe  
 microscopies**  
 V. Cháb, Prague CH  
 E. Meyer, Basel CH  
 B. Stipe, Almaden, IL  
 G. McClelland, Almaden, IL

**I9**  
**Quantitative X-ray  
 spectroscopy in EM**  
 J. Wernisch, Vienna CH  
 J. L. Pouchou, Châtillon

**I10**  
**EELS and EFTEM**  
 F. Hofer, Graz CH  
 C. Humphreys, Cambridge CH, IL  
 H. Kohl, Münster IL

**I11**  
**Surface oriented  
 microanalytical techniques**  
 M.M. ElGomati, York CH, IL  
 G. Schönhense, Mainz CH, IL

**I12**  
**Image processing  
 and simulation**  
 J. M. Carazo, Madrid CH, IL  
 W.O. Saxton, Cambridge

**I13**  
**Computerised microscopy**  
 A.J. Koster, Utrecht CH  
 I. Daberkow, Münster CH

**I14**  
**Electron optical systems,  
 guns and lenses**  
 P. Kruit, Delft CH, IL  
 V. Kolářík, Brno CH

**I15**  
**Filters, analysers and  
 detectors**  
 B.Jouffrey,Chatenay-Malabry CH,IL  
 P. Schauer, Brno CH

**I16**  
**X-ray microscopy**  
 J. Baruchel, Grenoble CH

**I17**  
**EMS Symposium**  
 P. Hawkes, Toulouse CH  
 A. Howie, Cambridge CH  
 A. Maunsbach, Aargau IL  
 A. Donald, Cambridge IL  
 J. L. Carrascosa, Madrid IL

## KEYNOTE LECTURES

**L1**  
**Millenium of Electron Microscopy**  
 Peter W. Hawkes  
 CEMES-CNRS, B.P. 4347, F-31055 Toulouse  
 Cedex 4, France, hawkes@cemes.fr

The centenary of the electron has recently been celebrated, books have been published on electron microscopy by historians of science and numerous reminiscences have been recorded - the subject has reached maturity. At the same time, new ways of forming images at

resolutions far beyond that of the light microscope have emerged and the electron microscope is now one of a family of complementary instruments. We recall some of the key events in the development of electron instruments and electron image formation and evoke some of the star actors in that long saga. It is scientifically important that a congress such as EUREM should concentrate on the present and the future but it is culturally important that we should never lose sight of the past.

**L2**  
**TEM of nanostructured materials**  
 Gustaaf Van Tendeloo  
 EMAT, University of Antwerp (RUCA),  
 Groenenborgerlaan 171, B-2020 Antwerpen,  
 Belgium, gvt@ruca.ua.ac.be

Micro-technology has been replaced by nano-technology and the local structure of materials becomes increasingly important. A combination of conventional TEM, quantitative HREM, electron diffraction, EDX and EELS provides unique and

unchallenged information on the local structure of functional materials. These techniques are applied to study carbon nanotubes, (magnetic) nanoparticles, thin film superconducting or CMR oxides, substrate-film interfaces and nanostructured alloys.

### **L3 Prospects of quantitative high resolution electron microscopy**

**Dirk Van Dyck**  
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Belgium, [dvd@ruca.ua.ac.be](mailto:dvd@ruca.ua.ac.be)

With the resolution becoming sufficient to reveal individual atoms, HREM is now entering the stage where it can compete with X-ray methods to quantitatively determine atomic structures of materials without much prior knowledge, but with the advantage of being applicable to aperiodic objects such as crystal defects. In our view the future electron microscope will be characterised by a large versatility in experimental settings under computer control such as the illumination conditions (TEM-STEM), CBED, detecting conditions (diffraction, image, ptychography) and many other tunable parameters such as focus ( $g$ ), voltage, spherical aberration ( $C_s$ ), beam tilt, etc. Since modern detectors can detect single electrons, also the counting statistics is known. The only limiting factor in the experiment will be the total number of electrons that interact with the object during the experiment due to the limitations in the exposure time or in the object damage. However, instrumental potentialities will never be exploited fully if not guided by an experimental strategy. Here intuitive guidelines can be very deceptive. For instance an image made with the best electron microscope ( $C_s = 0$ ) at the best focus ( $g=0$ ) from the best object (phase object) would show no contrast at all. Hence, questions such as what is the best  $C_s$ , focus, object thickness, etc. can only be answered properly if done using a method of experiment design.

### **L4 High-performance electron microscopes of the future**

**Harald Rose**  
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Owing to the design of novel correctors, monochromators, imaging energy filters and other electron optical elements and due to the advancement

in technology and computer-aided alignment, the realization of high-performance analytical electron microscopes has become possible recently. As examples the designs of a sub-Å sub-eV medium-voltage TEM and of a mirror-corrected low-energy electron microscope will be outlined. Experimental results of the performance of the components of these instruments will be presented and remaining obstacles which have to be overcome will be discussed. It will be demonstrated that the correction of aberrations is possible with present technology and that its realization will lead to a quantum step in the performance of future electron optical instruments.

### **L5 Molecular interactions studied in living cells**

**Julian E. Beesley**  
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[jeb41302@glaxowellcome.co.uk](mailto:jeb41302@glaxowellcome.co.uk)

Detection of molecular interactions within cells is important in elucidating function. Microscopical techniques integrate localisation with detection of molecular interactions which can be combined with biochemical and physical measurements to relate cell structure to function. Contributions of confocal microscopy, electron microscopy and scanning probe microscopy to investigate molecular interactions in real time and localisation of these events to cell structure will be reviewed.

### **L6 Structural and chemical surface electron microscopy with slow electrons**

**Ernst Bauer**  
Department of Physics and Astronomy,  
Arizona State University, Tempe,  
AZ 95287-1504, U.S.A., [ernst.bauer@asu.edu](mailto:ernst.bauer@asu.edu)

In the decade which has passed since the Seattle conference surface imaging with slow electrons has made significant progress, mainly due to the increasing availability of very bright synchrotron radiation sources. This has made it possible to combine structural imaging with elastically backscattered slow electrons (LEEM) with spectroscopic imaging with characteristic photoelectrons (XPEEM) and has stimulated the development of improved instruments. Another force driving the progress in the field was the strong interest in thin ferromagnetic film systems, which simulated circular magnetic dichroism XPEEM and spin-polarized LEEM. The talk will briefly review these developments, illustrate the

present state of art by a number of recent studies and end with a short outlook in the future.

Ref.: Surface Review and Letters, December 1998 (LEEM Workshop Proceedings).

### **L7 Probe microscopies: complementary tools to EM**

**Andreas Engel**  
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Biozentrum, CH-4056 Basel, Switzerland,  
[aengel@ubaclu.unibas.ch](mailto:aengel@ubaclu.unibas.ch)

While NMR is the method of choice of study small soluble proteins at atomic scale in solution, X-ray crystallography has produced most protein structures known today. Among these 5000 proteins, only 12 membrane proteins are found. Electron crystallography allows membrane proteins reconstituted into 2D crystals in the presence of lipids to be analyzed. Thus, the native structure of a membrane protein can ultimately be obtained at atomic resolution. Direct observation of protein surfaces in buffer solution has become possible by the development of the atomic force microscope (AFM). The surface topography and chemical properties measured are complementary to the 3D density maps from electron microscopy. In addition, dynamic conformational changes and the flexibility of protein surfaces can be directly observed. In the future, scanning probe microscopes with multifunctional probes will be used to directly assess function related changes of proteins.

### **L8 Nanoscale Analysis**

**Joachim Mayer**  
Max-Planck-Institut für Metallforschung,  
Seestrass 92, D-70174 Stuttgart, Germany,  
[jmayer@mf.mpi-stuttgart.mpg.de](mailto:jmayer@mf.mpi-stuttgart.mpg.de)

The review will focus on the possibilities which energy loss spectroscopy offers for the analysis of the chemistry and bonding of structures on a nanometre scale. The required spatial resolution can be achieved by stepping a small probe across the specimen, or by employing energy filtering TEM. Both lines merge in the new generation of TEMs, which are equipped with a field emission gun (FEG) and an imaging energy filter. The bonding at interfaces can be analysed by comparing the near edge structures (ELNES) with the predictions of ab initio band structure calculations. An outlook will be given on the capabilities of future instruments which will be equipped with a monochromator and a high transmissivity energy filter.

## **TUTORIALS**

### **T1 TEM Specimen Preparation in the Physical Sciences**

**Ron Anderson, Lynnette D. Madsen\***  
IBM, Hopewell Jct., New York, USA,  
[anderron@us.ibm.com](mailto:anderron@us.ibm.com), \*Department of  
Physics, Linköping University, S-58183  
Linköping, Sweden, [lynma@ifm.liu.se](mailto:lynma@ifm.liu.se)

The tutorial will be divided into 3 parts:

- I. Deciding when and how to perform TEM specimen preparation including an overview of a range of preparation methods, initial preparation steps common to most specimens, and the control of artifacts.
- II. Detailed explanation of the following methods: mechanical methods for specimen preparation (such as the tripod polisher), ion milling, cleaving, focussed ion beam (FIB)

methods, and a suggested new protocol that combines mechanical polishing with FIB methods.

- III. How to set-up a minimal TEM preparation facility in either a university or industrial environment: maximizing preparation capability at minimum initial cost.

The tutorial will be useful to individuals interested in preparing TEM samples.

## T2 Quantitative EELS and EFTEM

Ferdinand Hofer

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f70Shofe@mbox.tu-graz.ac.at

This tutorial provides a description of the basic principles of electron energy-loss spectrometry and energy-filtering TEM. The following topics will be covered: spectrum processing, quantitative elemental analysis, edge fine structures (ELNES and EXELFS), energy-filtered imaging and elemental mapping. Typical application examples both from materials science and biological sciences will be used to highlight the possibilities and also the limitations of the technique.

## T3 Docking X-ray data into EM structures

Rasmus R. Schroeder

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EM studies of biological macromolecules reach mostly a level of only moderate resolution. This does neither allow an interpretation of the reconstructed density in terms of secondary structure elements nor an ab initio molecular model building. On the other hand, more and more macromolecular models of proteins and DNA or RNA are available from X-ray crystallography. Many of them are also studied individually or as part of larger complexes using the EM. One way to attempt a biological interpretation of such EM data is then to dock the known macromolecular models into the EM derived molecular envelope. The tutorial will discuss the quantitative reconstruction of the object density, interactive and algorithm-based model docking, and different examples of marker-based alignment of model and density. Especially the aspect of quantitative reconstruction will be reviewed for two reasons: the reconstructed density very often depends

- 1 - on the correction of the image contrast (CTF correction) and
- 2 - on missing projections in the collected data set (missing cone, missing wedge).

Such effects on the density have to be distinguished from real conformational differences of the object in the crystallographically derived model and the structure studied by EM. It will be shown how the simulation of projection images and reconstructed density from the known molecular model can help to differentiate between real conformational changes and simple reconstruction artefacts. Since this field is developing rapidly it is hoped that many up-to-date examples can be analysed in the tutorial. It is also planned that a full variety of software available for display and docking can be discussed and demonstrated.

## T4 Immunoelectron microscopy and labelling techniques

Julian E. Beesley

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Immunoelectron microscopy techniques are widely established due to the proven reliability and specificity of the antigen-antibody reaction, the commercial availability of many antibodies and gold probes and the many techniques which can be performed in a routine electron microscope laboratory. Techniques to investigate antigens in different localisations within the cell, multiple immunolabelling, quantification and a review of the latest technologies will be presented.

## T5 Quantitative high resolution EM and electron diffraction

Henny W. Zandbergen

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Recent technological improvements of high resolution electron microscopes (HREM) allow one to obtain a resolution of about 0.1 nm, which makes it possible to "see" the individual atomic columns (rows of atoms along the viewing direction (which may be 0.2 to 1 nm separated in the viewing direction)) in a relatively large number of directions. However, the potential power of the technique is still severely limited by remaining difficulties in the quantitative interpretation of the images. For instance, the use of computer simulation, to compare a model with the experimental images, requires much a priori knowledge which makes HREM dependent on other techniques. Recent developments of the processing of HREM images make it possible to retrieve the electron wavefunction (exit wave) at the exit plane of the specimen. Such methods have been suggested by Schiske, Kirkland, Saxton and worked out by Van Dyck and Lichte. Two methods are now in use: through-focus electron holography and off-axis electron holography. Off-axis electron holography uses the interference between an exit wave and a reference wave to determine phase and amplitude of the exit wave. Through-focus electron holography combines the information from a series of high resolution electron microscope images to calculate the exit wave.

Compared to HREM, electron diffraction has the disadvantage that local information is not readily available. However, the information goes much further in *g*-space. The point-to-point resolution of the intermediate voltage HREMs is 0.16 to 0.20 nm. Using exit wave reconstruction techniques, the information limit of about 0.11 nm is about the best one can obtain with a good electron microscope. Thus at best the information content of HREM images goes to 0.11 nm in real space ( $g=9 \text{ nm}^{-1}$  in diffraction space). The information in diffraction space is at least two times better, since reflections with *g*-values larger

than  $20 \text{ nm}^{-1}$  can be obtained with some crystal tilt. Since the various types of microscope aberrations do not influence electron diffraction, the recording of high resolution electron diffraction data can be performed with a less expensive microscope. Since one can make the electron beam as small as 1 nm, one can take diffraction data from areas as small as one wants. Thus for the study of single crystalline areas electron diffraction provides more accurate results than HREM, provided one can estimate the phases of the reflections.

The lecture will be focussed on quantitative data analysis in conventional HREM, through focus exit wave reconstruction and electron diffraction. Also combination of exit wave and diffraction analysis will be discussed. In particular the advantages and (less important) the disadvantages of dynamic diffraction will be considered.

## T6 Very low energy in a standard SEM

Iлона Müllerová, Luděk Frank

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The tutorial deals with methods of adaptation of a conventional SEM to the very low energy microscopy (Scanning LEEM). Main issues:

- Overview of behaviour of classical SEM contrasts in the low (<5 keV) and very low (<100 eV) energy range.
- Contrast mechanisms appearing inherently at very low energies.
- High resolution at very low energies, columns with variable beam energy, boosters and retarding field elements.
- SEM with the cathode lens, parameters and properties.
- Adaptation of a SEM to the SLEEM mode, technical solution, parameters.
- Examples of the SLEEM adaptations.
- Applications of the SLEEM mode at various vacuum conditions.

The tutorial will provide motivation and practical guidance to SEM users how to achieve the very low energy imaging in their instruments after a feasible adaptation is made.

## EUREM 12 PROGRAM SCHEDULE

| TIME                                  | SUNDAY<br>JULY 9, 2000 | MONDAY<br>JULY 10, 2000                        | TUESDAY<br>JULY 11, 2000 | WEDNESDAY<br>JULY 12, 2000 | THURSDAY<br>JULY 13, 2000 | FRIDAY<br>JULY 14, 2000 |
|---------------------------------------|------------------------|--|--------------------------|----------------------------|---------------------------|-------------------------|
| 8. <sup>30</sup> - 9. <sup>30</sup>   |                        | Opening ceremony                               | Keynote lecture          | Keynote lecture            | Keynote lecture           | Keynote lecture         |
| 9. <sup>30</sup> - 11. <sup>00</sup>  |                        | Lecture, lectures of the Ruska prize laureates | Symposia<br>Open Labs    | Symposia<br>Open Labs      | Symposia<br>Open Labs     | Symposia<br>Open Labs   |
| 11. <sup>00</sup> - 11. <sup>30</sup> |                        | Exhibition opening                             |                          |                            |                           |                         |
| 11. <sup>30</sup> - 12. <sup>00</sup> |                        |  |                          |                            |                           |                         |
| 12. <sup>00</sup> - 13. <sup>00</sup> |                        |  | Tutorial<br>Open Labs    | Tutorial<br>Open Labs      | Tutorial<br>Open Labs     |                         |
| 13. <sup>00</sup> - 13. <sup>30</sup> | Tutorial               | Tutorial<br>Open Labs                          |                          |                            |                           | Exhibition closing      |
| 13. <sup>30</sup> - 15. <sup>00</sup> |                        |  |                          |                            |                           | EMS Symposium           |
| 15. <sup>00</sup> - 16. <sup>00</sup> |                        | Keynote lecture                                | Keynote lecture          | Keynote lecture            | Keynote lecture           |                         |
| 16. <sup>00</sup> - 16. <sup>30</sup> | Tutorial               | Symposia<br>Open Labs                          | Symposia<br>Open Labs    | Symposia<br>Open Labs      | Symposia<br>Open Labs     | Closing ceremony        |
| 16. <sup>30</sup> - 18. <sup>00</sup> |                        |  |                          |                            |                           |                         |
| 18. <sup>00</sup> - 18. <sup>30</sup> |                        |  |                          |                            |                           |                         |
| 18. <sup>30</sup> - 19. <sup>30</sup> | Welcome party          | Posters  | Posters                  |                            | Posters                   |                         |
| 19. <sup>30</sup> - 20. <sup>00</sup> |                        | Social events                                  | Social events            | Evening in theatre         | Social events             |                         |
| 20. <sup>00</sup> -                   |                        |  |                          |                            |                           |                         |

## Instructions for authors formatted as a sample manuscript

Petr Schauer and Luděk Frank

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**Summary:** This section contains instructions for authors of papers. Intentionally, this section is written and formatted as a sample manuscript. All submitted papers must look like these four pages as regards the page layout, fonts, headings, subheadings, figure captions, references, etc. The page content has to fit to within the frame indicated which nevertheless should not appear on your originals. Please note that each paper should begin with a brief summary for bibliographical purposes. The summary should be indented 1.27 cm both sides.

### 1. Introduction

All papers must be written in English and have the same format as the title page. Four pages are reserved for the keynote lectures and invited introductory lectures in symposia. Two pages are available for the contributed papers, both oral ones and posters. The deadline for **reception** of all papers is **February 15, 2000**. Papers received after this date may be rejected for this reason. Reception of papers will be acknowledged promptly.

The paper should be a condensed version of the final presentation including all significant findings. The completed Paper Data Form on page 23 must be enclosed with each paper.

The proceedings will be reproduced as high quality books, preferably from electronic files. Nevertheless, it is obligatory to provide us with **two camera-ready originals**. Additionally, **three copies** of each paper must be submitted along with the original. Make sure the copies are of good quality since they -not the original- will be used for review and for assigning the paper to a symposium. Please do not submit colour prints. It is not necessary to provide original micrograph prints for the copies. Insert cardboard sheet(s) in the envelope to prevent bending. **Do not send papers by fax**. A faxed paper will not be acknowledged or accepted as a "reservation" for an original paper received after the deadline.

All papers will be reviewed by symposia chairpersons. Corresponding authors will be notified of acceptance by April 15, 2000. The presenting author will be responsible for presenting the paper at the congress. If unforeseen circumstances prevent his/her attendance, the EUREM secretariat has to be notified as soon as possible and arrangements have to be made for another author or colleague to present the paper.

Send papers (two originals and three good copies) along with the completed Paper Data Form to:  
EUREM 2000, Královopolská 147, CZ - 612 64 Brno, Czech Republic.

All information regarding the congress and its programme can be obtained from our Web site <http://www.eurem2000.isibrno.cz> or by e-mail at [eurem2000@isibrno.cz](mailto:eurem2000@isibrno.cz).

Overhead and 35-mm slide projectors will be supplied for all oral presentations. Any other required audio/visual equipment (video, data projector, etc.) must be indicated on the Paper Data Form or its availability cannot be guaranteed. Audio/visual equipment may be requested for poster presentations but cannot be guaranteed without previous notification. Please complete the Paper Data Form **carefully** (page 23).

### 2. Paper layout and typing

You may type on plain white paper (letter, A4, or any other standard size). The area of typing must not exceed the 25.2 cm height and 17.0 cm width. Leave a margin of 2.5 cm at the page head to place the running heading and final page numbers. Use a laser printer or ink-jet printer or an electric

252 mm

170 mm

typewriter with a carbon ribbon. Please do not use a cloth ribbon, and do not use a matrix dot printer. The recommended font is Times New Roman or Times according to the following sizes:

- (a) For the title: 16 pts.
- (b) For the main text (including headings): 12 pts.
- (c) For affiliations, footnotes, references, figures and tables: 10 pts.

The paper heading layout has to be made as shown above. If the title is too long to fit in one line, break at the ends of words rather than hyphenating. Leave approximately 2 cm between the title and the names and addresses of the authors. Type names in 12 pts and addresses in 10 pts indented 1.27 cm from the left-hand margin of the typing area. Leave one line space between the names and addresses.

Section and subsection headings should be numbered consecutively in Arabic numerals. The heading should be of the bold type and subheading of the bold italic type. Always start the heading and subheading flush left. Do not include references to the literature, illustrations or tables in headings and subheadings. Keep one blank line above the section heading or subheading. The use of headings and subheadings is optional.

The title page should be a text only page. An indentation of 1.27 cm for the first line is recommended. Type the main text on the full typing width. Use the single spacing unless subscripts and superscripts require the 1.5 spacing. The second page (and additional pages for keynote and introductory lectures) may contain the text, tables and figures. Tables (refer to: Table 1, Table 2, ...) should be typed as part of the text. Table headings should be placed above the table and centred on the page width. Figures can be provided as original drawings or photographic prints. Greyscale photographs must be glossy prints. Scanned images are allowed only if the paper is also submitted as an electronic file containing these images. Care must be taken to insert the figures in correct alignment with the text. Figure captions should be made as shown below. No part of a figure should go beyond the typing area.

The references should be indicated [1,2] and listed at the end of the text. The citation convention is as shown below.

When receiving a paper, we assume that the corresponding authors grant us the copyright to use the manuscripts for the book and CD-ROM in question.

### **3. Posters**

The papers will be assigned by the symposia chairpersons to either an oral or poster presentation, unless a poster preference is specified on the Paper Data Form, in which case that preference will be honoured. The corresponding authors will be notified of this assignment after the programme has been structured.

Each poster will be allocated a 859 mm high by 748 mm wide display area. The board will be covered by a cloth and will allow for use of pins.

Audiovisual equipment may be requested for poster presentations. Stereo projection will not be available.

NOTE: To guarantee equipment availability, authors must indicate their audiovisual requirements on Paper Data Form (see page 23).

### **4. Electronic submission and document formats**

Authors are strongly encouraged to make every effort to submit an electronic file of the document with embedded images. These electronic submissions are an essential step for CD-ROM development and will improve also the quality of printing. The target file format for all papers is Adobe's Portable Document Format (PDF), and all papers will be distributed on a CD-ROM in PDF together with PDF viewers for Windows and Macintosh. It is possible to translate from many document formats into PDF. In all cases, the highest flexibility in converting formats exists if you provide us with multiple document formats of your paper. For example, if you produce your files in Word, you could submit Word, RTF, and PostScript versions of the file.

Electronic files can be submitted in the following formats, listed in the order of preference.

- (1) PDF files: If you can create a PDF file by yourself, you are encouraged to do so. This minimises translation errors.
- (2) Rich Text Format: You can produce RTF files from many popular word processing formats, such as Microsoft Word, Word Perfect, AmiPro, and others.
- (3) Word Processor Files: Only Microsoft Word and Word Perfect files can be accepted.
- (4) PostScript: These submissions must be formatted to the A4 paper size. Authors must make sure that the submitted PostScript file prints correctly to a PostScript printer. For best results, authors should avoid the use of custom half tones and bitmap pattern fills. Use standard half tones and grey fills instead. QuarkXPress users should not use the "Smooth Graphics" option, as this will result in an inefficient postscript. Windows users who use True Type fonts should be sure to use Type 3 fonts, and select the "Use Printer Fonts for all TrueType fonts" option. These can be set through the "advanced options" dialog box of your PostScript printer control panel.
- (5) ASCII: If you are unable to submit your paper in any of the above formats, your paper will be scanned and stored as an image. In this case, an ASCII file of your text should be submitted to assure that your submission could be included in keyword searches.

#### ***4.1. Images, disc space and author assistance***

Authors will be permitted to publish up to 1 MB of data, which may be distributed between the paper and images in any fashion desired. Authors are free to choose the image size, resolution, image format, and compression method. The only constraint is that the total submission must fit in 1 MB. Authors are not penalised for submitting multiple formats. That is, if you submit Word and PostScript versions of your paper, the 1 MB ceiling applies to each paper, not to both combined. Assistance will be provided by the EUREM2000 author help. Send e-mail to [eurem2000-author.info@isibrno.cz](mailto:eurem2000-author.info@isibrno.cz). The subject of your message must indicate what information is asked. The requested information will be e-mailed to the address from which the request was made. Information available through the EUREM2000 Web site will be displayed at the <http://www.eurem2000.isibrno.cz/author.html>.



**Figure 1:** The scenery pictures the main buildings of EUREM 12. Hotels Holiday Inn, Voroněž and Voroněž 2 and College Vinařská will accommodate the participants, in the pavilion E the majority of the congress events will take place (the symposia and tutorials on the second floor; poster exhibition on the first floor and instrument exhibition and open labs on the ground floor). The opening ceremony will be organised in pavilion B, the welcome party in pavilion A.

#### **4.2. File delivery**

Electronic submissions may be sent to us through several channels. In all cases, you should collect all of the files in your submission into a single archive, with pkzip, rar, arj or tar. You may optionally compress tar archives with GNU zip (gzip) or compress. The name of your file must begin with the symposium number (i.e. the 1st choice you will fill in on the Paper Data Form), continued with your last name, and the extension of the file will correspond with the archive format you submit in. For example, if you select the B6 symposium, your last name is Schauer, and you choose to pkzip your submission, you would submit your file as B6Schauer.zip. Your archive should include the file "contact.txt," which contains your name, paper indication, and any contact information you are willing to provide, such as the e-mail address and phone number. It should also contain "paper.txt," which is an ASCII version of your paper and will be used if your document cannot be converted into PDF. Electronic files can be submitted in the following channels, listed in the order of preference.

- (1) Anonymous FTP: You may submit via anonymous FTP to the ftp.eurem2000.isibrno.cz. Be sure to give your e-mail address as your password so that we may contact you if we have any trouble. Submissions must be placed in the /incoming directory, and the filename must contain your paper indication (for example B6Schauer.zip). Be sure to switch into binary mode before transferring the files. Many FTP programs (for example Windows Commander or CuteFTP) automatically switch into binary mode and give your e-mail address as your password. Thus, the FTP submission is as easy as the file move or copy in a file manager.
- (2) E-mail: You can submit your paper via e-mail, but you must be careful to send only 7bit, encoded data. You may encode your binary data with MIME, uuencode, or BinHex. Many e-mail programs automatically MIME encode, or BinHex binary attachments, so you may want to use such a mailer. E-mail submissions should be sent to eurem2000-submissions@isibrno.cz, with your paper indication (for example B6Schauer.zip) as the subject header.
- (3) Postal service: Papers may be submitted (together with camera-ready originals and copies) on a 3.5" DOS or Macintosh floppy disk.

#### **5. Summary of the most important information**

The paper (two camera ready originals and three good copies) has to reach us not later than February 15, 2000. The originals will be used for production of both printed and CD-ROM proceedings in case the electronic file is not available or its processing fails. It is advantageous both for authors and organisers to submit the paper also as an electronic file, sent to us also on the same date. Papers will be reviewed by the symposia chairpersons and only a few of the best papers in a symposium will be selected for the oral presentation.

#### **References**

- [1] J. Smith, P. Novák, *Ultramicroscopy* **55** (1994) 458.
- [2] A. Brown: *Introduction to electron optics*. Springer, Berlin 1989, p. 303.
- [3] P. Jones, in: *Proc. 14<sup>th</sup> ICEM, Cancun 1998*, Vol. 1, 124.



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## ACCOMMODATION

The main congress building is the pavilion E of the Trade Fairs Area (see the cover page and Figure 1 in the Instructions for authors). Immediately adjacent to the pavilion are two large hotels, Holiday Inn and Voroněž 1 and 2. Approximately 800 m distant (see the photos) is the College Vinařská belonging to the Masaryk University.

The full capacity of these hotels and College was reserved for the congress participants and special prices were negotiated which are significantly lower than the counter prices. These **special prices are available only for accommodation ordered through EUREM 2000.**

For both hotels a **guaranteed booking** can be made upon receipt of the **deposit** covering the first night price. A hotel reservation form not accompanied by a deposit will lead to a provisional booking only which will retain some precedence but will give way to all guaranteed bookings. All bookings will be made on a first-come first-served basis.

(Prices in Czech crowns per room and night, breakfast included, X/Y = single use/ double use.)

### HOTEL HOLIDAY INN

(<http://www.holiday-inn-brno.cz>)

190 double rooms    1700 CZK/ 2500 CZK (standard)  
2000 CZK/ 2850 CZK (executive)

### HOTEL VORONĚŽ 2

110 double rooms    1245 CZK/ 1550 CZK

### HOTEL VORONĚŽ 1

(<http://www.voronez.cz>)

310 double rooms    1570 CZK/ 1824 CZK  
46 single rooms    1428 CZK

### THE COLLEGE VINAŘSKÁ

(Summer hotel of the Masaryk University)

535 double rooms    480 CZK/ 660 CZK

**ADVANCE BOOKING ON PAGE 25 IS STRONGLY RECOMMENDED!**  
Hotel Reservation Form accompanied with the deposit covering the first night price will secure your accommodation at a discount price!

## TOURS, TRIPS, EXCURSIONS

### Special offer of BVV Fair Travel, Ltd. for EUREM 12 participants

#### Price categories:

**A** minibus Ford Transit (6 seats)  
- price per person, valid if at least 4 persons take part

**C** bus MAN (50 seats)  
- price per person, valid if at least 35 persons take part

**B** minibus Mercedes (14 seats)  
- price per person, valid if at least 10 persons take part

**D** bus Karosa (43 seats)  
- price per person, valid if at least 35 persons take part

#### A01

**A walking tour of Brno  
- small circle through the centre  
of the town**

New Town Hall, the Capuchin Monastery, Zelný trh (the Cabbage Market), St. Jacob's Church, etc. The tour takes about 3 hours.

Price: 1800 CZK for a group regardless of the number of persons

Špilberk Castle, Petrov - St. Peter and Paul's Cathedral, the Old Town Hall, the

#### A01B

**Big circle: walking and bus**

Besides the previously mentioned sights you will see the Mendel Square with the brewery, Brno's exhibition grounds, Brno's dam, etc. The tour takes about

4 hours. Prices for the sight-seeing tour including transport (admission to the sights is not included): A 900 CZK, B 480 CZK, C 200 CZK, D 160 CZK

## A02 Moravian Karst

The trip takes about 4 – 5 hours. Program:

- a drive in an "eco" road train and a cableway cabin
- upper and lower bridge of Macocha abyss
- a visit to the Punkva Caves (walking and boat).



Prices include transport, charges in Moravian Karst, a foreign-language-speaking guide: A 1250 CZK, B 800 CZK, C 500 CZK, D 470 CZK. An extra fee for the dinner: 280 CZK per person.

ECONOMY CLASS: Prices include the transport from and back to Brno, charges in Moravian Karst, guide looking after organisational matters only: A 800 CZK, B 600 CZK.

## B01 Slavkov Castle (Austerlitz) and the Peace Monument (deposit requested)

The trip takes about 4 – 5 hours. Program:

- a visit to the hill Žuráň, from where Napoleon Bonaparte commanded the Battle of Three Emperors,
- Peace Monument,
- Slavkov Castle,
- visit to the Old Post (restaurant) – the seat of Napoleon during the Battle of Three Emperors – dinner.

Prices include the admission to the sights, transport and a foreign-language-speaking guide:

A 1065 CZK, B 670 CZK, C 380 CZK, D 330 CZK An extra fee for the dinner: 390 CZK per person.

ECONOMY CLASS: Prices include the admission to the sights, transport and guide



looking after organisational matters only: A 770 CZK, B 500 CZK.

## A03 Castle in Lednice with a large garden and park with minaret, Castle in Valtice

The trip takes about 5 – 6 hours. Prices include admission to the castles with foreign-language explanation, guide providing comments during travel, transport: A 1490 CZK, B 880 CZK,



C 540 CZK, D 510 CZK. An extra fee for the dinner: 280 CZK per person.

ECONOMY CLASS: Prices include admission to the castles with foreign-language explanation, guide looking after organisational matters only, transport: A 860 CZK, B 720 CZK.

## B02 A visit to the Knights Templars wine cellar in Čejkovice (deposit requested)

A large system of wine cellars, founded in the 13<sup>th</sup> century by the Knights Templars.

The trip takes about 5 hours. Program:

- small food is served after the arrival to the wine bar,
- commented visit to the wine cellars,
- dinner including a 0,7 l bottle of wine per person.

Prices: A 1800 CZK, B 1210 CZK, C 880 CZK, D 850 CZK An extra fee for a traditional music band: 1430 CZK per hour.

The ECONOMY CLASS price is not possible.



## A04 Pernštejn and Porta Coeli

The trip takes about 4 – 5 hours. Program: a visit to the Pernštejn Castle and "Porta Coeli" convent in Předklášteří u Tišnova. Prices include transport, admission to the sights, foreign-language-speaking guide: A 1460 CZK, B 725 CZK, C 390 CZK.

ECONOMY CLASS: Prices include transport, guide looking after organisational matters only, and admission to the sights: A 1000 CZK, B 640 CZK

## A05 Kunštát region

The trip takes about 5 – 6 hours. Program: a visit to the ceramic workshop in Kunštát, a possibility of purchasing ceramic products, a walking tour (10 km long) to the cave in Rudka (an artificial cave with many sculptures).

Prices include transport, admission, foreign-language-speaking guide: A 1530 CZK, B 880 CZK, C 400 CZK

## A06 Castle in Buchlovice, excursion to the ceramic workshop in Tupesy, Buchlov Castle

The trip takes about 6 hours. The castle in Buchlovice was built in the style of an Italian baroque villa. It is surrounded with



a large park. Tupesy is the most famous pottery village in south-eastern Moravia. The beginnings of pottery go back to the 9<sup>th</sup> century. The Buchlov Castle is one of the oldest castles in the Czech Republic. The legend About the Lime of Innocent and the myth About Black Lady are associated with this castle. Prices include transport, admission to the sights, foreign-language-speaking guide: A 1460 CZK, B 725 CZK, C 390 CZK. An extra fee for the dinner: 250 CZK per person.

**ECONOMY CLASS:** Prices include transport, guide looking after organisational matters only and admission to the sights: A 1000 CZK, B 640 CZK

**A07**  
**Castle in Strážnice, open-air museum in Strážnice**

The castle was built in the late Renaissance style. In the open-air museum the visitors can see how the common people lived in the 16<sup>th</sup> – 19<sup>th</sup> centuries in south-eastern Moravia. The trip takes about 5 hours.

Prices include transport, admission to the sights, foreign-language-speaking guide: A 1490 CZK, B 745 CZK, C 410 CZK

**ECONOMY CLASS:** Prices include transport, guide looking after organisational matters only, and admission to the sights. A 1050 CZK, B 660 CZK

**B03**  
**A three-day trip round eastern Moravia (deposit requested)**

**1st day:**

- departure from Brno to Olomouc, visit to the historical centre of the town, dinner,
- departure for Teplice nad Bečvou, spa



town, visit to the caves and the deepest Czech abyss,

- departure for Rožnov pod Radhoštěm, accommodation.

**2nd day:**

- a visit to the Rožnov open-air museum, dinner,
- departure for Vizovice, excursion to Jelínek distillery, the tasting of the traditional slivovitz (plum brandy),
- departure for the spa town Luhačovice, accommodation,
- in the evening a visit to the Moravian wine cellar, supper.



**3rd day:**

- in the morning departure for Kroměříž, sightseeing in the town and visit to the castle, dinner,
- departure for Brno in the afternoon.

Prices include transport by bus during the whole trip, 2 nights at hotels, foreign-language-speaking guide, 3 dinners, admission to the caves, museum, castle in Kroměříž, excursion in Jelínek distillery, supper in the wine cellar.

A minimum of 35 persons is required for this tour.

Prices: C 6640 CZK per person in 1/1 room, 6030 CZK per person in 1/2 room

D 6490 CZK per person in 1/1 room, 5880 CZK per person in 1/2 room



**A08**  
**A whole-day trip to Prague**

Prices include transport Brno-Prague -Brno,

foreign-language-speaking guide, sightseeing tour in Prague, dinner:

A 2640 CZK, B 1760 CZK, C 980 CZK, D 820 CZK

**B04**  
**More-day trips to Prague (deposit requested)**

Prices: sum of the whole-day trip to Prague + accommodation + extra program prices.

Accommodation in Prague - prices depend



on the location and category of the hotel

\*\*\* hotel outside the centre of the town: from 1900 CZK for 1/1 room + breakfast

\*\*\* hotel in the centre of the town: from 3300 CZK for 1/1 room + breakfast

\*\*\*\* hotel outside the centre of the town: from 4400 CZK for 1/1 room + breakfast

\*\*\*\* hotel in the centre of the town: from 5000 CZK for 1/1 room + breakfast

Prices for the extra programs (minimum of 4 persons is required):

- half-day sightseeing tour in Prague (various programs), transport and guide: 1500 CZK,
- cruise on Vltava: 500 CZK per person,
- Karlovy Vary and Lidice: 2300 CZK per person,
- Konopiště and Karlštejn castles: 2300 CZK per person.

**Advance booking on page 26 is strongly recommended! If you book for a tour for which a deposit is requested, the travel agency will contact you in due time.**  
**Tours B03 and B04 have to be booked by February 15, 2000.**



# ADVANCE REGISTRATION FORM

**12<sup>th</sup> EUROPEAN CONGRESS ON ELECTRON MICROSCOPY**  
**Brno, Czech Republic, July 9 – 14, 2000**

Use this form to register each registrant separately. The payment **MUST** be made by bank transfer as the net payment in **USD** with all charges covered by the sender. The payment should be directed to IPB a.s., Joštova 5, Brno, Czech Republic, account no. 130510703 (SWIFT code 130510703INBACZPP to IPB a.s., Senovážné nám. 32, 11403 Praha, Czech Republic, beneficiary: EUREM 2000, Královopolská 147, CZ - 612 64 Brno). **A copy of the payment order must be enclosed with the Form; do not send the payment separately. Do not send cash or checks.** The payment for more than one registrant can be combined in a single payment, but use a separate form for each registrant, including the accompanying person. Acknowledgements of advance registration will be sent promptly.

The payment date will be that of the payment order. The registration will be taken as valid and acknowledged after it is received at the congress account. Late payments with a date after **February 15, 2000** will have to respect the **increased rates** as shown below. A refund request will be honoured if received in writing but expenditures will be subtracted, which will amount to 90 USD for requests received before June 15, 2000 and to 140 USD after this date.

**Please fill in capital letters or TYPE this Registration Form and send it to:**  
**EUREM 2000, KRÁLOVOPOLSKÁ 147, CZ - 612 64 BRNO, CZECH REPUBLIC**

|   |              |                   |                |
|---|--------------|-------------------|----------------|
| Last Name: .....                                      |              | First Name: ..... |                |
| Title ( Professor, Dr., Student, etc., Mr/ Ms): ..... |              |                   |                |
| Institution: .....                                    |              |                   |                |
| Department: .....                                     |              |                   |                |
| Mailing Address: .....                                |              |                   |                |
| City: .....   | State: ..... | Zip Code: .....   | Country: ..... |
| Phone: (    ) .....                                   |              | Fax: (    ) ..... |                |
| e-mail: .....   |              |                   |                |

| Registration Fee (one choice only)  | Before February 15, 2000 | Later or on site  | USD                                       |
|---|--------------------------|-------------------|---|
| <input type="checkbox"/> Regular Fee <sup>1)</sup> , EMS member <sup>2)</sup> | 320 USD                  | 400 USD           | <input style="width: 50px;" type="text"/> |
| <input type="checkbox"/> Regular Fee, non-member                              | 350 USD                  | 430 USD           | <input style="width: 50px;" type="text"/> |
| <input type="checkbox"/> Student <sup>3)</sup> , EMS member                   | 160 USD                  | 210 USD           | <input style="width: 50px;" type="text"/> |
| <input type="checkbox"/> Student, non-member                                  | 180 USD                  | 240 USD           | <input style="width: 50px;" type="text"/> |
| <input type="checkbox"/> Accompanying person <sup>4)</sup>                    | 70 USD                   | 90 USD            | <input style="width: 50px;" type="text"/> |
| <b>Tutorials (see back)</b>   |                          |                   |   |
| Number of courses: <input style="width: 40px;" type="text"/>                  | 25 USD per course        | 35 USD per course | <input style="width: 50px;" type="text"/> |
| <b>TOTAL PAYMENT:</b>   |                          |                   | <input style="width: 50px;" type="text"/> |

<sup>1)</sup> Proceedings and social events are included

<sup>2)</sup> All members of national EM societies which are members of EMS

<sup>3)</sup> A copy of the official student I.D. has to be included

<sup>4)</sup> Includes the welcome party and the theatre evening

## Proceedings:

The Regular Fee includes the full choice of the Proceedings alternatives. Please tick two of the boxes:

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> <b>Volume I</b><br>(Biological sciences) | <input type="checkbox"/> <b>Volume II</b><br>(Physical sciences) | <input type="checkbox"/> <b>Volume III</b><br>(Instrumentation and Methodology) | <input type="checkbox"/> <b>CD-ROM</b><br>(complete Proceedings) |
|---|--|---|--|

The Student Fee includes the CD-ROM Proceedings.

## TUTORIALS

Please tick the Tutorials you want to participate in. The Tutorial Fee (see the front side) should be paid together with the congress fee. The tutorial booking will be made upon receipt of the payment. The advance booking is strongly recommended; only a few vacancies will be left for bookings upon arrival.

### THE TUTORIAL SUMMARIES ARE PRESENTED IN THE SCIENTIFIC PROGRAMME SECTION.

- T1 TEM Specimen Preparation in the Physical Sciences (Tuesday, July 11, 12.00-15.00)**  
Ron Anderson, Lynnette D. Madsen\*  
IBM, Hopewell Jct., New York, USA, anderron@us.ibm.com, \*Department of Physics, Linköping University, S-58183, Sweden, lynma@ifm.ln.se
- T2 Quantitative EELS and EFTEM (Sunday, July 9, 15.00-18.00)**  
Ferdinand Hofer  
Research Institute for Electron Microscopy, Technical University Graz, Steyrergasse 17, A-8010 Graz, Austria, f705hofe@mbx.tu-graz.ac.at
- T3 Docking X-ray data into EM structures (Wednesday, July 12, 12.00-15.00)**  
Rasmus R. Schroeder  
Max-Planck-Institute for Medical Research, Jahnstr. 29, D-69120 Heidelberg, Germany, Rasmus.Schroeder@mpimf-heidelberg.mpg.de
- T4 Immunoelectron microscopy and labelling techniques (Thursday, July 13, 12.00-15.00)**  
Julian E. Beesley  
Glaxo Wellcome R&D, Medicines Research Centre, Gunnels Wood Road, Stevenage SG1 2NY, U.K., jeb41302@glaxowellcome.co.uk.
- T5 Quantitative high resolution EM and electron diffraction (Monday, July 10, 12.00-15.00)**  
Henny W. Zandbergen  
National Centre for HREM, Delft University of Technology, Rotterdamseweg 137, 2628AL Delft, The Netherlands, h.w.zandbergen@stm.tudelft.nl
- T6 Very low energy in a standard SEM (Sunday, July 9, 12.00-15.00)**  
Ilona Müllerová, Luděk Frank  
Institute of Scientific Instruments AS CR, Královopolská 147, 61264 Brno, Czech Republic, ilona@isibrno.cz, ludek@isibrno.cz

## OPEN LABS

Please tick the Open Labs you want to participate in. This is the preliminary booking for the workshops organised by companies. The time and place of each Open Lab will be announced in advance at www.eurem2000.isibrno.cz and advertised in the congress building. The list of Open Labs is likely not complete yet.

- |  |  |
|--|--|
| <input type="checkbox"/> <b>High resolution TEM</b><br>(FEI/ Philips Electron Optics)                        | <input type="checkbox"/> <b>Automatic particle analysis</b><br>(LEO Electron Microscopy)                                   |
| <input type="checkbox"/> <b>TEM sample preparation with focused ion beams</b> (FEI/ Philips Electron Optics) | <input type="checkbox"/> <b>User interfaces</b><br>(Oxford Instruments, Microanalysis Group)                               |
| <input type="checkbox"/> <b>Novel applications of environmental SEM</b><br>(FEI/ Philips Electron Optics)    | <input type="checkbox"/> <b>Cryo-SEM</b><br>(Oxford Instruments, Research Instruments)                                     |
| <input type="checkbox"/> <b>Ultramicrotomy of industrial materials</b><br>(Diatome/ Leica)                   | <input type="checkbox"/> <b>TEM specimen preparation for materials science</b><br>(South Bay Technology)                   |
| <input type="checkbox"/> <b>PEEM/LEEM: Applications to materials and life sciences</b> (Focus)               | <input type="checkbox"/> <b>TEM sample preparation</b><br>(Technoorg Linda)  |
| <input type="checkbox"/> <b>Specimen preparation for TEM</b><br>(Gatan)                                      | <input type="checkbox"/> <b>Digital image processing and electron tomography</b><br>(Tietz Video&Image Processing Systems) |



# PAPER DATA FORM

**THIS COMPLETED FORM MUST ACCOMPANY ALL PAPERS**

**12<sup>th</sup> EUROPEAN CONGRESS ON ELECTRON MICROSCOPY**  
 Brno, Czech Republic, July 9 – 14, 2000

**Please complete this form and send it to:**  
**EUREM 2000, KRÁLOVOPOLSKÁ 147, CZ - 612 64 BRNO, CZECH REPUBLIC**

**Deadline for paper reception**  
**February 15, 2000**

All correspondence regarding this paper will be sent to the **Corresponding Author** specified bellow that might be different from the paper's **First Author**.

Three keywords for the Proceedings index: .....

**First Author** (if different from the Corresponding Author):

Last Name: ..... First Name: .....

**Presenting Author** (if different from the Corresponding Author):

Last Name: ..... First Name: .....

**Corresponding Author** ( to whom the acknowledgement and assignment of the paper will be sent):

.....

Last Name: ..... First Name: .....

Institution: .....

Department: .....

Mailing Address: .....

City: ..... State/Prov.: ..... Zip Code: ..... Country: .....

Phone: (    ) ..... Fax: (    ) .....

e-mail: .....

- For introductory lectures, specify the symposium number: .....
- For contributed papers, suggest two symposia for presentation:      **1st choice:** .....      **2nd choice:** .....
- I want to present the paper as the **poster only** (it is not to be taken into account for the selection of the oral presentations):       **Yes**       **No**
- Can we list the summary of your paper on the WWW?       **Yes**       **No**

### Requirements for audio-visual equipment

Overhead and 35 mm projectors will be provided for all oral presentations. Specify any additional requirement below. If you specify any additional equipment and your paper is assigned as a poster presentation (see page 14), the Organising Committee will contact you to confirm your request. The availability of equipment not specified below cannot be guaranteed.

- Video (VHS)**       **Data projector**

**Other:** .....







# ACCOMMODATION RESERVATION FORM

**12<sup>th</sup> EUROPEAN CONGRESS ON ELECTRON MICROSCOPY**  
Brno, Czech Republic, July 9 – 14, 2000

**Please complete this form and send it before May 15, 2000 to:**  
**EUREM 2000, KRÁLOVOPOLSKÁ 147, CZ - 612 64 BRNO, CZECH REPUBLIC**

or fax it to  
**++420 5 4151 4337**

- Telephone reservations WILL NOT BE accepted.
- If more than one room is required, this form may be photocopied.
- Reservation acknowledgements will be sent by mail, fax or e-mail (if a number is entered below).
- Hotel room reservation will be **guaranteed** only if the copy of the payment order, issued to the amount covering the first night price, is enclosed. Otherwise, the booking will be recorded on the first-come first-served basis but all deposit-accompanied bookings will prevail.

| NAME OF OCCUPANT:                                    |                     |                   |                |
|--|---------------------|-------------------|----------------|
| Last Name: .....                                     | First Name: .....   |                   |                |
| Title (Professor, Dr., Student, etc., Mr/ Ms): ..... |                     |                   |                |
| Institution: .....                                   |                     |                   |                |
| Department: .....                                    |                     |                   |                |
| Mailing Address: .....                               |                     |                   |                |
| City: .....  | State/ Prov.: ..... | Zip Code: .....   | Country: ..... |
| Phone: (    ) .....                                  |                     | Fax: (    ) ..... |                |
| e-mail: .....  |                     |                   |                |

| HOTEL PREFERENCE:   |  |
|---|--|
| <b>Holiday Inn, Voroněž 1, Voroněž 2</b>                                | 1st .....                              |
|   | 2nd .....                              |
| <input type="checkbox"/> <b>Single</b>                                  | <input type="checkbox"/> <b>Double</b> |
| <input type="checkbox"/> <b>No smoking room (when available)</b>        |  |
| Roommate: (If you choose a double room, please name the other occupant) |  |
| Name: .....   |  |
| <b>Date of arrival:</b>   | <b>Date of departure:</b>              |
| ..... / ..... / .....   | ..... / ..... / .....                  |

The payment **MUST** be made by bank transfer as the net payment with all charges covered by the sender. The amount in CZK (see page 18) is to be converted into USD according to current rate. The payment should be directed to IPB a.s., Joštova 5, Brno, Czech Republic, account no. 130510703 (SWIFT code 130510703INBACZPP to IPB a.s., Senovážné nám. 32, CZ - 11403 Praha, Czech Republic, beneficiary: EUREM 2000, Královopolská 147, CZ - 612 64 Brno). **A copy of the payment order has to be enclosed with the Form; do not send the payment separately. Do not send cash or checks.** The payment for more than one room can be combined in a single payment, but use a separate form for each room.

## TOURS, TRIPS, EXCURSIONS

**Please tick the tours you want to participate in. If you tick a tour for which a deposit is requested, the travel agency will contact you in due course. Details about the tours are given in a separate section (pages 18 to 20).**

|  |                         |        |
|--|-------------------------|--------|
| <input type="checkbox"/>                   | A01 morning/afternoon:  | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A01B morning/afternoon: | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A02                     | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A03                     | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A04 morning/afternoon:  | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A05                     | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A06                     | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A07 morning/afternoon:  | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | A08                     | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | B01 (deposit requested) | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | B02 (deposit requested) | date:  |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | B03 (deposit requested) | dates: |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |
| <input type="checkbox"/>                   | B04 (deposit requested) | dates: |
| <hr style="border-top: 1px dotted #000;"/> |                         |        |

NOTE: In order to be able to choose the time for your tour you should know the schedule of the Symposia. This information will be available at [www.eurem2000.isibrno.cz](http://www.eurem2000.isibrno.cz) sufficiently long before the deadline for this form.

**Tours B03 and B04 have to be booked by February 15, 2000.**

### BUS TRANSPORT FROM PRAHA-RUZYŇĚ INTERNATIONAL AIRPORT

From the Praha-Ruzyně international airport, the bus transport will be organised on Saturday, July 8, and Sunday, July 9, directly to the congress site and adjacent hotels. If you want to make use of this advantageous opportunity, please tick **only one** of the following scheduled departures:

|                  |  |  |  |
|------------------|--|--|--|
| Saturday, July 8 | <input type="checkbox"/> 15. <sup>00</sup> | <input type="checkbox"/> 19. <sup>00</sup> |  |
| Sunday, July 9   | <input type="checkbox"/> 11. <sup>00</sup> | <input type="checkbox"/> 13. <sup>00</sup> | <input type="checkbox"/> 15. <sup>00</sup> |

**IMPORTANT:** Seats in the scheduled buses will be reserved until 15 minutes before the departure for those who will use this advance booking. Then the remaining places will be sold to persons interested. In case the demand exceeds the capacity, advice will be available at the booth "EUREM 12" in the airport arrival hall or even extra buses will be provided.

# RELEASE

## YOUR POTENTIAL WITHOUT GETTING LOCKED IN

The *New* JSM-5500 PC SEM allows you the freedom to maximise your productivity whilst avoiding major cost commitments. As the latest addition to the PC based SEM 5000 Series of scanning electron microscopes from JEOL, this new arrival offers an unrivalled cost-benefit ratio, and features:

- Specimen chamber to take six inch diameter specimens
- Single button graphical user interface for high speed operation
- Manual knobset for multi tasking & fine control
- High performance, high throughput for maximum versatility
- Low maintenance



**Belgium: JEOL (Europe) BV**

Telephone: +32 (2)-720 05 60 Facsimile: +32 (2)-720 61 34  
E-mail: jeolbtl.sales@jeoleuro.com

**Great Britain: JEOL (UK) Ltd**

Telephone: +44 (0)1707-377117 Facsimile: +44 (0)1707-373254  
E-mail: uk.sales@jeoleuro.com

**France: JEOL (Europe) SA**

Telephone: +33 (0) 1-30 15 37 37 Facsimile: +33 (0) 1-30 15 37 17  
E-mail: sa.sales@jeoleuro.com

**Germany: JEOL (Germany) GmbH**

Telephone: +49 (0) 8165 77346 Facsimile: +49 (0) 8165 77512  
E-mail: de.sales@jeoleuro.com

**Netherlands: JEOL (Europe) BV**

Telephone: +32 20-6533088 Facsimile: +32 20-6531328  
E-mail: ams.sales@jeoleuro.com

**Italy: JEOL (Italia) SpA**

Telephone: +39 02-9041431 Facsimile: +39 02-90414343  
E-mail: jeol.spa@iol.it

**Sweden: JEOL (Skandinaviska) AB**

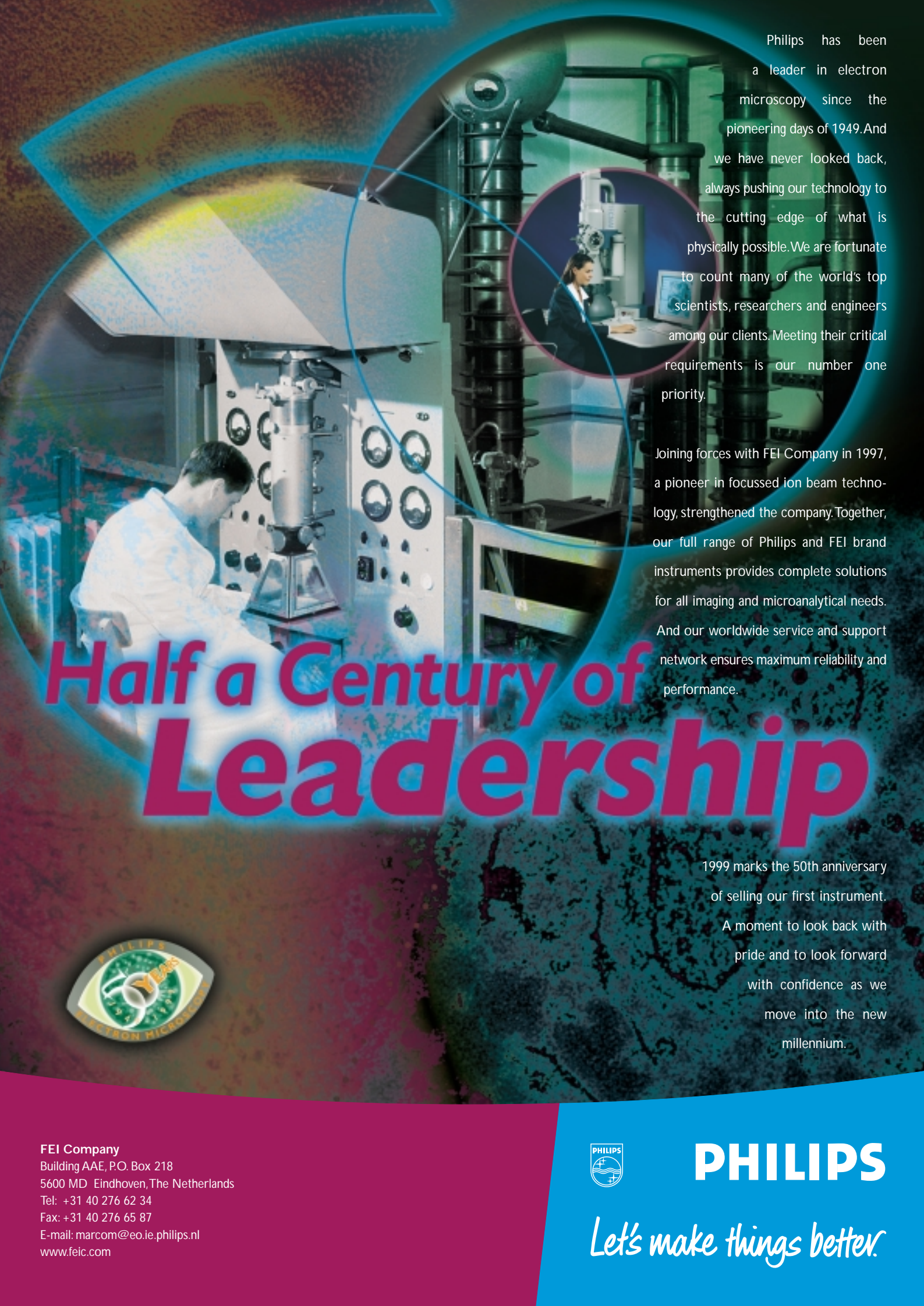
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