Program

The 26th European Mask and Lithography Conference
EMLC 2010

January 18 – 20, 2010
Minatec Conference Center
Grenoble, France

www.EMLC2010.com
Welcome to the EMLC 2010 in Grenoble

26th European Mask and Lithography Conference, EMLC2010
being held on
January 18th to 20th 2010
at the Minatec Conference Center, Grenoble, France

Welcome to the 26th European Mask and Lithography Conference, EMLC2010, being held on January 18th to 20th 2010, at the MINATEC Conference Center in Grenoble, France.

For the second time in its 26 years’ history the EMLC will take place in Grenoble, France. The VDE/GMM and the EMLC Organizing Committee were again invited to come to Grenoble, France.

The conference has annually brought together scientists, researchers, engineers and technologists from research institutes and companies from around the world to present papers at the forefront of mask lithography and mask technology.

The three-day conference is dedicated to the science, technology, engineering and application of mask and lithography technologies and associated processes, giving an overview of the present status in mask and lithography technologies and the future strategy where mask producers and users have the opportunity of becoming acquainted with new developments and results. This year’s sessions include: “EUV” “Metrology”, “Data Prep., Simulation & RET”, “Resist, Repair & Cleaning”, “Application”, “ML2” as well as “NIL”.

Each year we plan to focus on one lithography and mask technology. This year we have selected two: EUV and ML2.

As Welcome Speakers we are pleased to announce that Geneviève Fioraso, the Deputy Mayor in charge of Economic Development, Grenoble, France will provide opening comments.

Our first keynote speaker is Dr. Gérard Matheron, Site Director of STMicroelectronics Advanced Manufacturing Centre in Crolles, France. His presentation is entitled “Silicon Ecosystems in Europe: the Key to Competitiveness”.

Our second keynote speaker is Dr. Udo Nothelfer, Vice President and General Manager Fab 1 GLOBALFOUNDRIES, Dresden, Germany. His presentation is entitled “The Semiconductor Foundry Transition and its Impact to the Mask Industry”.

Parallel to the Conference Presentations, a Technical Exhibition will take place on Tuesday and Wednesday where companies (mask suppliers, material suppliers and equipment suppliers) will exhibit their companies and products.

Conference Chair: Dr. U. Behringer (*), UBC Microelectronics, Ammerbuch, Germany

Co-Conference Chairs: Mr. B. Grenon (*), Grenon Consulting, Colchester, VT, USA;
Mr. N. Hayashi (*), DNP, Saitama, Japan

Program Chairs: Dr. W. Maurer (*), Infineon Technologies, AG, Munich, Germany
J. Waelpoel (*), ASML, Veldhoven, The Netherlands

Co-Program Chair: Mr. W. Montgomery (*), SEMATECH, Albany, NY, USA
Members of the International Steering Committee, the International Program Committee(*) and the Local Committee of the EMLC 2010

Conference Chair: Dr. U. Behringer (*), UBC Microelectronics, Ammerbuch, Germany

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J. Waelpoen (*), ASML, Veldhoven, The Netherlands

Co-Program Chair: Dr. W. Montgomery (*), SEMATECH, Albany, NY, USA

Dr. M. Arnz, Carl Zeiss SMT AG, Oberkochen, Germany (*)
Dr. C. Blaesing, Carl Zeiss SMS GmbH, Jena, Germany
Mr. P. Chen, Taiwan Mask Corp., Hsinchu, Taiwan (*)
Dr. C. Constantine, Oerlikon USA Inc., St. Petersburg, FL, USA (*)
Prof. R. Engelstad, University of Wisconsin, Madison, WI, USA (*)
Mr. B.G. Eynon, Molecular Imprints, Austin, TX, USA (*)
Mr. C. Gale, Applied Materials, Dresden, Germany (*)
Mr. B. Grenon, Grenon Consulting, Inc., Colchester, VT, USA (*)
Mr. N. Hayashi, Dai Nippon Printing Co. Ltd., Saitama, Japan (*)
Mr. R. Jonckheere, IMEC, Leuven, Belgium (*)
Ms. B. Lauche, Photronics MZD GmbH, Dresden, Germany
Dr. H. Loeschner, IMS Nanofabrication AG, Vienna, Austria (*)
Dr. W. Montgomery, SEMATECH, Albany, NY, USA
Mrs. V. Peguignat, AEPI, Grenoble, France
Dr. Ch. Pierrat, Cadence Design Systems Inc., San Jose, USA (*)
Mr. E. Rausa, Oerlikon USA Inc., Saint Petersburg, FL, USA (*)
Dr. C. Reita, CEA/Léti, Grenoble, France
Mr. D. J. Resnick, Molecular Imprints, Austin, TX, USA (*)
Dr. F. Reuther, micro resist technology GmbH, Berlin, Germany
Dr. C. Romeo, Numonyx, Agrate Brianza, Italy (*)
Mr. K. Ronse, IMEC, Leuven, Belgium
Prof. H. Scheer, University of Wuppertal, Germany (*)
Dr. R. Schnabel, VDE/VDI-GMM, Frankfurt, Germany (*)
Mr. M. Staples, GLOBALFOUNDRIES, Dresden, Germany
Mrs. I. Stolberg, Vistec Electron Beam GmbH, Jena, Germany (*)
Dr. S. Tedesco, CEA/Léti, Grenoble, France (*)
Dr. M. Tissier, Toppan Photomasks S.A., Roussset, France (*)
Mr. J.T. Weed, SYNOPSYS Inc., Mountain View, CA, USA
Mr. J. Whittey, KLA-Tencor, Oakdale, CA, USA (*)
Mr. H. Wolf, Photronics MZD GmbH, Dresden, Germany (*)
Mr. S. Wurm, SEMATECH, Albany, NY, USA (*)
Mr. L. Zurbrick, Agilent Technologies, Santa Clara, CA, USA (*)

Organizers

VDE/VDI-Society Microelectronics, Micro- and Precision Engineering (GMM), Dr. Ronald Schnabel
Stresemannallee 15, D-60596 Frankfurt am Main
Phone: +49-(0)69-6308-330, Fax: +49-(0)69-6308-9828
e-Mail: gmm@vde.com

UBC Microelectronics, Dr. Uwe Behringer
Auf den Beeten 5, D-72119 Ammerbuch
Phone: +49-(0)171-455-3196, Fax: +49-(0)7073-50216
e-Mail: uwe.behringer.ubc@t-online.de

Cover picture:
Courtesy of Toppan Photomasks
### Schedule of the Presentations

**Monday, January 18th, 2010**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:30</td>
<td>Check in / Registration</td>
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<tr>
<td>13:30</td>
<td>Welcome and Introduction</td>
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<tr>
<td></td>
<td><em>U. Behringer, UBC Microelectronics, Ammerbuch, Germany, Conference Chair</em></td>
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<tr>
<td>13:45</td>
<td>Invited Welcome Speaker</td>
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<td><em>G. Fioraso, Deputy Mayor in charge of Economical Development, Grenoble, France</em></td>
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#### Session 1 - Plenary Session I

- **Session Chairs:**
  - W. Maurer, Infineon Technologies AG, Munich, Germany; U. Behringer, UBC Microelectronics, Ammerbuch, Germany

#### Keynote 1: Invited
- **Silicon Ecosystems in Europe: the Key to Competitiveness**
  - G. Matheron, Site Manager, Crolles France; STMicroelectronics, Grenoble, France

#### Mask Industry Assessment Trend Analysis: 2010 (invited)
- G. Hughes, H. Yun*
  - SEMATECH, Albany, USA; *Intel Assignee

#### Coffee Break

**Tuesday, January 19th, 2010**

#### Session 3 – EUV 1

- **Session Chairs:**
  - N. Hayashi, DNP, Saitama, Japan;
  - S. Wurm, SEMATECH, Albany, NY, USA

#### Progress and Challenges in EUV (invited)
- C. Krautschik, Intel Corp. Santa Clara, CA, USA

#### Impact of Mask Absorber on EUV Imaging Performance
- E. van Setten, C. W. Man, R. Murillo, S. Lok, K. van Ingen Schenau, K. Feenstra, H. Meiling, C. Wagner, ASML Netherlands B.V., Veldhoven, The Netherlands

#### Overview of IP Error Compensation Techniques for EUVL
- P. Vukkadala, D. Patil, R. L. Engelstad, University of Wisconsin-Madison, UW Computational Mechanics Center, Madison, WI, USA
10:10  Contributions to EUV Mask Metrology Infrastructure  
A. Farahzadi, M. Benk, R. Lebert, AIXUV GmbH, Aachen, Germany  
L. Juschkin, S. Herbert, A. Maryasov, RWTH Aachen University, Germany

10:30  Coffee Break

Session 4 – ML2 1

Session Chairs:
S. Tedesco, CEA/Léti, Grenoble, France  
H. Löschner, IMS Nanofabrication AG, Vienna, Austria

11:00  Readiness of Multiple E-Beam Maskless Lithography  

11:20  Multi Shaped Beam Data Prep  
U. Weidenmüller, H.-J. Doering, D. Melzer, Vistec Electron Beam GmbH, Jena, Germany

11:40  Complexity of Data Preparation and Proximity Effects Corrections in ebeam Maskless Lithography  
1) CEA/Léti, Grenoble, France  
2) Fraunhofer Center Nano-Elektronische Technologien, Dresden, Germany  
3) MAPPER Lithography B.V., Delft, The Netherlands  
4) IMS Nanofabrication, Wien, Austria  
5) IMS Chips, Stuttgart, Germany  
6) Synopsys GmbH, Munich, Germany  
7) STMicroelectronics, Crolles, France

12:00  Checkerboard Pattern for PSF Parameter Determination of Electron Scattering in E-Beam Lithography  

12:20  Lunch

Session 5 – Metrology

Session Chairs:
E. Rausa, Plasma-Therm LLC, St. Petersburg, Fl, USA; H. Bosse, Physikalisch-Technische Bundesanstalt, Braunschweig, Germany

13:30  Update on Next Generation Registration Metrology Tool for DPT Tetciles  
K.-D. Roeth, J. Bender, G. Schlueter, F. Laske, D. Adam, KLA Tencor MIE GmbH, Weilburg, Germany

13:50  CD Forecasting in Resist by means of Scatterometry  
J. Richter, Advanced Mask Technology Center GmbH & Co KG, Dresden, Germany

14:10  A 193nm Microscope for CD Metrology for the 32nm Node and beyond  
B. Bodermann, Z. Li, F. Pilarski, D. Bergmann Physikalisch-Technische Bundesanstalt, Braunschweig, Germany

Session 6 – Data-Prep., Simulation & RET 1

Session Chair:
J. Whittey, KLA-Tencor, Oakdale, CA, USA

14:30  Deployment of OASIS in the Semiconductor Industry – Status, Dependencies and Outlook  
J. Davis, S. Schulze, S. Fu, Mentor Graphics Corporation, Wilsonville, OR, USA
14:50 Rigorous EMF Simulation of Absorber Shape Variations and their Impact on the Lithographic Process
Z. Rahimi\textsuperscript{1), A. Erdmann\textsuperscript{2), C. Pflaum\textsuperscript{3) and P. Evanschitzky\textsuperscript{4)\textsuperscript{1), 2), 4) Fraunhofer Institute of Integrated Systems and Device Technology Erlangen Germany;\textsuperscript{1) Graduate School in Advanced Optical Technologies (SAOT), Erlangen, Germany;\textsuperscript{3) Department of Computer Science, Erlangen-Nuremberg University, Germany

15:10 Efficient Simulation of three dimensional EUV Masks for rigorous Source Mask Optimization and Mask Induced Imaging Artifact Analysis
P. Evanschitzky, T. Fühner, F. Shao, A. Erdmann, Fraunhofer Institute of Integrated Systems and Device Technology, Erlangen, Germany

15:30 Coffee Break

Session 7 – Data-Prep., Simulation & RET 2
Session Chair:
W. Maurer, Infineon Technologies AG, Munich, Germany

16:00 Proximity Effect Correction Sensitivity Analysis
A. Zepka, Synopsis Inc., Mountain View, CA, USA; R. Zimmermann, Synopsys GmbH, Aschheim/Dornach, Germany

16:20 Modified Dose Correction Strategy for better Pattern Contrast
R. Galler\textsuperscript{a), D. Melzer\textsuperscript{a), M. Boettcher\textsuperscript{a), M. Krueger\textsuperscript{a), M. Suelzle\textsuperscript{a), C. Wagner\textsuperscript{a)\textsuperscript{a) EQUicon Software GmbH Jena, Germany,\textsuperscript{b) Vistec Electron Beam GmbH Jena, Germany

Session 8 – Resist, Repair & Cleaning
Session Chair:
W. Montgomery, SEMATECH, Albany, NY, USA

16:40 193nm Resist Deprotection Study from Outgassing Measurements by TD-GCMS
R. Tiron\textsuperscript{a), H. Fontaine\textsuperscript{a), S. Cetre\textsuperscript{a), D. Perret\textsuperscript{a), J. W. Thackeray\textsuperscript{b)\textsuperscript{a) CEA/Léti, Grenoble, France;\textsuperscript{b) Dow Electronic Materials, Grenoble, France;\textsuperscript{b) Dow Electronic Materials, Marlborough, USA

17:00 Increasing Mask Yield through Repair Yield Enhancement Utilizing the MeRiT
A. Garetto\textsuperscript{1), J. Oster\textsuperscript{2), M. Waiblinger\textsuperscript{2), K. Edinger\textsuperscript{2)\textsuperscript{1) Carl Zeiss SMT Inc., Peabody, MA, USA;\textsuperscript{2) NaWoTec GmbH, Roßdorf, Germany;\textsuperscript{2) Carl Zeiss SMS GmbH, Jena, Germany

17:20 Study of the Molecular Contaminants Deposition on Cr, MoSi and SiO2 Surfaces Representative of Photomasks Layers
H. Fontaine, S. Cetre, G. Demenet, F. Piallat, CEA/Léti, Grenoble, France

17:40 Mask Cleaning Process Evaluation and Modeling
P. Nesladek, Advanced Mask Technology Center, Dresden, Germany; S. Osborne, Sigmameltec Ltd, Asao-ku Kawasaki, Japan

19:00 Departure from the NOVOTEL for dinner at Château Sassenage
Meeting-point: Lobby of the Novotel at 18:50

19:30 Banquet at Château Sassenage
Wednesday, January 20th, 2010

Session 9 – Application
Session Chair:
M. Tissier, Toppan Photomasks, Rousset, France

09:00 Mask Lithography for Display Manufacturing (invited)
T. Sandstrom, P. Ekberg, Micronic Laser Systems, Sweden

09:30 Deep-UV KrF Lithography for the Fabrication of Bragg Gratings on SOI Rib Waveguides
1) Innovations for High Performance Microelectronics IHP, Frankfurt/Oder, Germany;
2) Technische Universität Berlin, Germany

09:50 Mask Phase and Transmission Variations Effects on Wafer critical Dimensions for Nodes 65nm and 45nm
F. Dufaye1), S. Gough1), F. Sundermann1), V. Farys1), H. Miyashita1), L. Sartell1), F. Perissinotti1), U. Buttgereit2), S. Perlitz2), R. Birkner2)
1) STMicroelectronics, Crolles, France;
2) Dai Nippon Photomasks Europe, Agrate Brianza, Italy;
3) Carl Zeiss SMS GmbH, Jena, Germany

Session 10 – EUV 2
Session Chair:
R. Engelstad, University of Wisconsin, Madison, WI, USA

10:00 Defects Inspection with an EUV Microscope
S. Herbert, A. Maryasov, L. Juschkin, Rheinisch-Westfälische Technische Hochschule Aachen and JARA – Fundamentals of Future Information Technology, Aachen; Germany; R. Lebert, AIXUV GmbH, Aachen, Germany; K. Bergmann, Fraunhofer Institute for Laser Technology, Aachen, Germany

10:50 E-Beam induced EUV Photomask Repair – a perfect Match
M. Waiblingera), K. Kornilovb), T. Hofmannb), K. Edingerb)
a) Carl Zeiss SMS GmbH, Jena, Germany
b) NaWoTec GmbH, Rossdorf, Germany

11:10 Coffee Break

Session 11 – ML2 2
Session Chair:
I. Stolberg, Vistec Electron Beam GmbH, Jena, Germany

11:40 Projection mask-less Lithography and Nanopatterning with Electron and Ion Multi-Beams
C. Klein, E. Platzgummer, H. Löschner, IMS Nanofabrication AG, Vienna, Austria

12:00 MAPPER: high-throughput Maskless lithography

12:20 Low Voltage Resist Process developed for MAPPER tool first Exposures
D. Rioa), C. Constanciasa), J. van Nieuwstadtb), J. Vijverberga), L. Siegerta), S. Derrougha), B. Icarda), L. Paina)
a) CEA/Léti, Grenoble, France
b) MAPPER Lithography B.V., Delft, The Netherlands

12:40 Lunch
Session 12 – NIL

Session Chairs:
H. Scheer, University Wuppertal, Germany
S. Tedesco, CEA/Léti, Grenoble, France

13:50 Masters for Substrate Conformal Imprint Lithography (SCIL) generated by Charged Particle Nanopatterning (CHARPAN) Techniques (invited)
F. van Delft, R. van de Laar, M. Verschuuren, Philips Research, Eindhoven, The Netherlands;
E. Platzgummer, H. Löschner, IMS Nanofabrication AG, Vienna, Austria

14:20 Laser Direct Write at /130 for Templates Used in Nanoimprint Lithography
E. Pavel, E. Rotiu, L. Ionescu, C. Mazilu,
G. Iacobescu
a) Storex Technologies, Bucharest, Romania
b) National Glass Institute, Bucharest, Romania
c) University of Craiova, Romania

14:40 Positive or negative Tone Resist for a T-NIL / UVL Hybrid Technique
S. Möllenbeck, N. Bogdanski, A. Mayer,
M. Wissen, H.-C. Scheer, University of Wuppertal, Germany

15:00 Antisticking Layers on Antireflective Chromium for Hybrid (CNP) Nanoimprint Moulds
R. Kirchner, B. Adolph, R. Landgraf,
W.-J. Fischer
a) Dresden University of Technology, Germany
b) Fraunhofer-Institute for Photonic Microsystems, Dresden, Germany

15:20 Simulation Study on Bubble Trapping into Templates in UV Nanoimprint Lithography
Y. Nagaoka, H. Hiroshima, Y. Hiraia
a) Physics and Electronics Engineering, Osaka.
   Prefecture University, Sakai, Japan
b) National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan
c) CREST-JST, Kawaguchi, Saitama, Japan

15:40 Farewell

16:15 Departure of bus for Guided Clean Room Tour at Crolles (ST Microelectronics)

16:30 Guided Clean Room Tour at CEA/Léti, on site

19:00 End of the Conference

15:50 Coffee Break
CONFERENCE INFORMATION

CONFERENCE HOURS

Monday, January 18th, 2010  13:30 to 18:00
Tuesday, January 19th, 2010  09:00 to 18:00
Wednesday, January 20th, 2010  09:00 to 19:00

REGISTRATION HOURS

Monday, January 18th, 2010  12:30 to 17:00
Tuesday, January 19th, 2010  08:00 to 17:30
Wednesday, January 20th, 2010  08:00 to 15:00

TECHNICAL EXHIBITION

Parallel to the conference presentations on Tuesday and Wednesday we offer you to take part in a technical exhibition. There is space for about 20 exhibitors. Presentation tables and pin boards will be available.

If you intend to participate in the technical exhibition as an exhibitor, please contact the chairperson as soon as possible as the exhibition area is limited (please use the enclosed registration form).

UBC Microelectronics, Dr. Uwe Behringer
Auf den Beeten 5, 72119 Ammerbuch, Germany
Phone: +49 (0)171-4553196, Fax: +49 (0)7073-50216
e-Mail: uwe.behringer.ubc@t-online.de

INFORMATION FOR AUTHORS

YOUR PRESENTATION AND CV

The most convenient way for you and the organizers is to provide your slides in the form of MS-Powerpoint format (ppt) on a USB-stick. As early as possible, but latest during the break before your session, you should download and test them on the presentation computer. Your Session Chair will surely be glad to assist you. You may also use your own laptop computer, but experience has shown to do better not.

Please send in - if not yet done - your short CV to the Conference Chairs and to your Session Chair, so that he may introduce you appropriately to the audience.

MANUSCRIPTS AND PROCEEDINGS

Manuscripts should be sent as soon as possible (deadline: January 5th 2010) to the Program- and the Conference Chairpersons:
Dr. Uwe Behringer: uwe.behringer.ubc@t-online.de
Dr. Wilhelm Maurer: wilhelm.maurer@infineon.com
Mr. Jacques Waelpoel: jacques.waelpoel@asml.nl

Since the manuscripts will be directly reproduced in the proceedings, please send them as a pdf-file by e-mail. The manuscripts should cover between 6 and 12 pages (figures included). Please, follow the formatting guidelines provided in the sample manuscript under:
www.emlc2010.com

Again, your last chance of delivering the manuscript will be the first day of the conference, Monday, January 18, 2010. Unless manuscripts are delivered until the first day of the conference, they will not be published in the combined SPIE/VDE volume and will not be a part of the SPIE Digital Library.

Each attendee of the conference will receive one copy of the proceedings as a CD which will be sent after the event.

BEST PAPER AWARD

All conference attendees will elect the best paper of the EMLC 2010. Manuscripts we have not received until the first day of the conference can not be elected for best paper.
Clean-Room Tours on January 20th 2010:

**LETI Clean-Room Tour**

3 groups of 12 persons each:

Group 1: Meet at 16:15, tour from 16:30 to 17:30
Group 2: Meet at 16:45, tour from 17:00 to 18:00
Group 3: Meet at 17:15, tour from 17:30 to 18:30

(overflow)

**Crolles Clean-Room Tour**

3 groups of 12 persons each:

Bus leaves at 16:15 in front of the MINATECH conference center
Tour at Crolles from 17:00 → 18:00
Bus will be back at the Novotel Hotel at 19:00

Please sign up for one tour only!

Participants should provide the following two weeks in advance:

- Name
- Date of birth
- Place of birth
- Nationality
- Passport Information

If you are interested in participating in one of the tours, would you please sign up at www.emlc2010.com or return the registration form via fax, number +49 (0)69-6308-9828.

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**Conference Dinner and Banquet**

Meeting-point for the conference dinner on Tuesday, January 19th, 2010, is the lobby of the Novotel Hotel, 7, place Robert Schuman, 3800 Grenoble where we meet at 06:50 pm. The bus to the Château Sassenage, Allée du Château, 38360 Sassenage, will leave at 07:00 pm. Opening of the banquet will probably be around 07:30 pm.

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**GENERAL INFORMATION**

**EMLC 2010 SECRETARIAT**

For detailed information, please contact:

VDE/VDI-Society Microelectronics, Micro- and Precision Engineering (GMM), Dr. Ronald Schnabel
Stresemannallee 15, D-60596 Frankfurt am Main
phone: +49 (0)69-6308-330
fax: +49 (0)69-6308-9828
e-Mail: gmm@vde.com

During the conference:
Tel: +49 171 4695 118

**CONFERENCE FEES**

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<tr>
<th></th>
<th>until Dec. 18th, 2009</th>
<th>after Dec. 18th, 2009</th>
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<tbody>
<tr>
<td>Non-Members</td>
<td>€ 650.00</td>
<td>€ 750.00</td>
</tr>
<tr>
<td>VDE,VDI Members*</td>
<td>€ 620.00</td>
<td>€ 710.00</td>
</tr>
<tr>
<td>Lecturer</td>
<td>€ 620.00</td>
<td>€ 710.00</td>
</tr>
<tr>
<td>Non-Member-Students**</td>
<td>€ 80.00</td>
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<tr>
<td>Student Members**</td>
<td>€ 40.00</td>
<td>€ 60.00</td>
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<tr>
<td>additional ticket dinner</td>
<td>€ 90.00</td>
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* Participants claiming for the membership fee must attach a copy of their membership card to the registration form.

** A photocopy of the student card must be attached.

The conference fee includes admission to all sessions as well as to the daily coffee-breaks, one copy of the CD-ROM-proceedings, lunches and one ticket for the conference dinner at château Sassenage.

**CONFERENCE REGISTRATION**

To register for EMLC 2010, please fill in the registration form attached to this program and return it to VDE Conference Services, Stresemannallee 15, 60596 Frankfurt, Germany. To benefit from the “early-bird-discount”, VDE Conference Services must receive the form before Dec. 18, 2009. Full payment or credit card information must accompany all registrations in order to be accepted. Completed forms may be sent by fax (+49 (0)69 96 31 52 13) or e-mail (vde-conferences@vde.com). A confirmation of the registration will be sent upon receipt of full payment.
ONLINE REGISTRATION
Registrations for the conference and payment by credit card may be done online. Please, see the conference homepage www.EMLC2010.com

PAYMENT OF CONFERENCE FEE
Payment for registration, including bank charges and processing fees, must be made in Euro.
The conference fee has to be fully paid in advance. Your registration can only be confirmed if VDE-Conference Services has recorded receipt of your full payment. The following methods of payment are accepted:
- Payment by credit card authorisation as per registration form. The 16 digit card number, expiry date, security No. (last 3 digits on rear side of credit card) and holder’s name must be indicated on the registration form. Signature of the card holder is mandatory.
- Cash payment on-site in EURO (£)

CANCELLATION
In case of cancellation, provided that written notice has been given to VDE-Conference Services before Dec. 18, 2009, the registration fee will be fully refunded less a handling fee of EURO 60.00. After Dec. 18, 2009, no refund will be made. Proceedings and CD-ROM-proceedings will then be sent to the registrant after the conference.

PROCEEDINGS
All papers accepted for presentation at the conference will be published with the proceedings CD-ROM. The proceedings will be sent after the conference to all delegates attending the event.

CONFERENCE VENUE
Minatec Conference Center, Parvis Louis Néel, F-38054 Grenoble Cedex 9, France.

TRANSPORT
In case you arrive by plane:
For the conference attendees coming from overseas we recommend to fly to Paris:
  From Airport Paris take the railway TGV. Some trains start directly from the airport to Grenoble railway station. As others leave from Paris, “Gare de Lyon”, you then would first have to take the RER subway at the Paris airport to “Gare de Lyon” station in order to catch the TGV to Grenoble.
- 1 hour drive by car, Taxi costs: approx. 140.00 €, Tel +33 (0)687 97 4790
- Airport shuttle bus SATOBUS www.satobus.com (every hour from 7.30 h to 21.30 h direction Grenoble, every hour from 5.00 h to 20.00 h direction Lyon-St. Exupéry) Tel + 33 (0)4 72 68 72 17

If you take the train:
- High Speed Train (TGV) Grenoble-Paris 3 hours 7 trains every day (other TGV from Lille, Nantes,...)
- Grenoble Gare SNCF -: Tel : + 33 (0)8 92 35 35 35 (registration) - www.sncf.fr
Arriving at the railroad station in Grenoble:

For the Novotel, the hotel Europole and the City Suites, please use the opposite exit at the railroad station. You will reach a big square. The Novotel is on your left; the hotel Europole 100 meter straight ahead and the City Suites 100 meter to the right.

For Hotel Tulip Angleterre Hotel, please use a taxi or take the tram, direction downtown. Get out of the tram at the stop at Victor Hugo station. The hotel faces the big square.

HOTEL RESERVATION

In the below mentioned hotels rooms have been blocked for different periods of time:

**Hotel Novotel,**
7, place Robert Schuman, F-3800 Grenoble

Contact: Isabelle Foriel
phone: 0033 (0)476 70 8484
fax: 0033 (0)476 70 2493
www.novotel.com

Room rate:
Sunday to Thursday 135.00 €
Friday/ Saturday 95.00 €
Breakfast 14.50 €

40 rooms have been blocked until December 15, 2009.
Comments: Close to the railroad station and the MINATEC Conference Center (walking distance).

**Hotel Europole,**
29, Rue Pierre-Sémard, F-3800 Grenoble

Contact:
phone: 0033 (0)476 49 5152
fax: 0033 (0)476 21 9900
www.hoteleuropole.com
resa@hoteleuropole.com

Room rate: 99.00 €
Breakfast: 12.50 €

15-20 rooms have been blocked until December 15, 2009.
Comments: Close to the railroad station and the MINATEC Conference Center (walking distance).

**City suites,**
25, Avenue Doyen Louis Weil, F-3800 Grenoble

Contact:
phone: 0033 (0)476 69 6060
fax: 0033 (0)476 69 6069
www.grenoble@citysuites.fr

Room rate: 130.00 €

15 apartments type T2 (one bedroom, living room with fully equipped kitchen) have been blocked. Ideal for EMLC attendees who would like to travel to Grenoble with their partners.
Comments: Close to the railroad station and the MINATEC Conference Center (walking distance).

**Tulip Inn Hotel d’Angleterre,**
5, place Victor Hugo, F-3800 Grenoble

Contact:
phone: 0033 (0)476 87 3721
Reservations@hotel-angleterre-grenoble.com
www.hotel-angleterre-grenoble.com

Room rate (breakfast included):
Sunday to Thursday – single room: 109.00 €
Sunday to Thursday – double room: 129.00 €
Friday / Saturday – single room: 99.00 €

Rooms have been blocked until December 21, 2009.
Comments: In the center of Grenoble. Very nicely located. Close to shopping area. 10 minutes by streetcar to the MINATEC Conference Center.

**Hotel Suisse et Bordeaux,**
6, Place de la Gare, F-3800 Grenoble

Contact:
phone: 0033 (0)476 47 5587
fax: 0033 (0)476 46 2387
www.hotel-sb-grenoble.com
info@hotel-sb-grenoble.fr

20 – 30 rooms have been blocked until December 15, 2009.

Room rate:
Single room: 53.00 €
Double room: 68.00 €

Comments: Close to the railroad station and the MINATEC Conference Center (walking distance).
Roomrate:
Concerning the room rates, please contact the hotel.

Comments: Close to the railroad station and the MINATEC Conference Center (walking distance).

Please, keep in mind that accommodation is NOT included in the conference fee.

As to the room reservations, please contact the hotels directly or have a look at our homepage under www.emlic2010.com

Please, be sure that you make your reservations in time, as the rooms will only be blocked for a certain period of time and after expiry of that date the rooms might be released by the hotel for general reservations. Please use the following code for booking: “EMLC 2010”.

All payments related to accommodation have to be made in the hotel before departure.

INSURANCE
The organisers may not be held responsible for any injury to participants or damage, theft and loss of personal belongings.

PASSPORT AND VISA REQUIREMENTS
Foreign visitors entering Germany have to present a valid Identity Card or Passport. Delegates who need a visa should contact the German consular offices or embassies in their home countries. Please note that neither the VDE-Conference Services nor the VDE/VDI-Society Microelectronics, Micro- and Precision Engineering (GMM) or the supporting bodies are able to extend any "Invitation" for application of visa.

SKIING AT THE WEEKEND
As you might have heard, Grenoble is famous of its alpine scenery, predestinated for planning a short skiing-trip. Next to Grenoble’s central station (Gare SNCF) you can find the bus station (Gare Routière) where you have the possibility of buying a ticket for a trip to the mountain regions.

The tourist office of Grenoble recommends to take the bus to one of the attracting skiing resorts, namely “Lans en Vercors” or “Chamrousse” where you can even rent ski equipment.

Grenoble, Gare Routière → Villart de Lans, Bus number 5100

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Villart de Lans → Grenoble, Gare Routière

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Grenoble, Gare Routière → Chamrousse Roche Beranger, Bus number 6010

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Chamrousse, Roche Beranger → Grenoble, Gare
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For more information, please have a look at the tourist information center of Grenoble, under www.grenoble-isere-tourisme.com or as to the bus schedule under www.transisere.fr

CITY MAP
COOPERATING PARTNERS OF THE EMLC 2010