

# GMM

VDE/VDI-GESELLSCHAFT  
MIKROELEKTRONIK, MIKROSYSTEM-  
UND FEINWERKTECHNIK



## Program

# The 29<sup>th</sup> European Mask and Lithography Conference EMLC 2013

June 25 – 27, 2013

Hilton Hotel

Dresden, Germany



[www.EMLC2013.com](http://www.EMLC2013.com)

VDI

VDE

## Welcome to the EMLC 2013 in Dresden

**29<sup>th</sup> European Mask and Lithography Conference EMLC 2013**  
being held from  
**Tuesday June 25<sup>th</sup> (1:00 pm) to Thursday 27<sup>th</sup> (1:00 pm) 2013**  
at the Hilton Hotel, Dresden, Germany

On behalf of VDE/VDI-GMM, the Sponsors, and the Organizing Committee, we would like to welcome you to the 29<sup>th</sup> European Mask and Lithography Conference, EMLC2013 at the Hilton Hotel in the City of Dresden, Germany.

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

The 2½ day conference (**Tuesday 1:00 pm to Thursday 2:00 pm**) 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 Tooling & Further Lithography Options", "Optical Lithography & APC", "Mask Materials" "E-beam Lithography", "Metrology & Inspection", "Resolution Enhancement & DFM.

As Welcome Speaker we are pleased to announce Dr. G. Teepe, from GLOBAL-FOUNDRIES Inc., Dresden.

Our first keynote speaker is Dr. H. Morimoto from Toppan Printing Co. Japan. His presentation is entitled "Photomask Technology Progress to meet with Electronics Product Requirements".

Our second keynote speaker is Dr. H.J. Levinson from GLOBALFOUNDRIES. His presentation is entitled "The Lithographer's Dilemma: Shrinking without Breaking the Bank".

As a tradition we invited the Best Paper of PMJ 2013 and the Best Poster from BACUS2012 to present their papers at the EMLC2013.



## Panel Session

On Wednesday afternoon we will organize a Panel Session: "EUVL – what else?". The panelists are: H. Morimoto from Toppan; H.J. Levinson from GLOBALFOUNDRIES;

F. Goodwin from SEMATECH; N. Hayashi, from DNP; J. Finders from ASML; J.H. Peters from Carl Zeiss, SMS; S. Wurm from SEMATECH will act as Session Chair and Moderator.

## Technical Exhibition

Parallel to the Conference Presentations, a **Technical Exhibition** will take place on Tuesday afternoon (1:00 PM), whole Wednesday and Thursday morning (1:00 PM) where companies (mask suppliers, material suppliers and equipment suppliers) will exhibit their companies and products. Right now the exhibitor companies are: Vistec E-Beam; Photonics; Entegris; Nuflare; PI; Pozzetta; Carl Zeiss; JEOL; S3Alliance; Sistem; ibss Group and EQUIcon will inform about their products and support.

To foster the exchange between the conference attendees and the exhibitors, the exhibition area will also be the place for all coffee and lunch breaks.

## Welcome Reception and Conference Dinner Banquet

On Tuesday evening we will organize a Get Together Welcome Reception at the Piano Bar in the Hilton Hotel.

On Wednesday evening the EMLC2013 Conference Banquet Dinner will take place on board of the **"Paddle Steamer Leipzig"** cruising on the Elbe River.

So, please enjoy the Technical Sessions of the EMLC2013 as well as the Technical Exhibition, but also allow yourself to visit Dresden, one of the most beautiful cities in Europe.

Conference Chair

*Dr. Uwe Behringer*

UBC Microelectronics, Ammerbuch, Germany



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Cover picture:  
Courtesy of Toppan Photomasks

## The EMLC 2013 International Program Committee

### Conference Chair

Uwe Behringer, UBC Microelectronics, Ammerbuch,  
Germany

### Co-Conference Chairs

Naoya Hayashi, Dai Nippon Printing Co. Ltd., Saitama,  
Japan

Brid Connolly, Toppan Photomasks GmbH, Dresden,  
Germany

### Program Chair

Wilhelm Maurer, Infineon Technologies AG, Munich

### Co-Program Chairs

Rolf Seltmann, GLOBALFOUNDRIES Dresden, Germany  
Jo Finders, ASML, Veldhoven, The Netherlands

### Other Members

Michael Arnz, Carl Zeiss SMT AG, Oberkochen, Germany  
Emanuele Baracchi, ST Microelectronics, Agrate Brianza, Italy  
Carola Blaesing, Carl Zeiss SMS GmbH, Jena, Germany  
Parkson Chen, Taiwan Mask Corp., Hsinchu, Taiwan  
Roxann Engelstad, University of Wisconsin, Madison, WI, USA  
Greg Hughes, SEMATECH, Albany, NY, USA  
Rik Jonckheere, IMEC vzw, Leuven, Belgium  
Barbara Lauche, Photonics MZD GmbH, Dresden, Germany  
Hans Löschner, IMS Nanofabrication AG, Vienna, Austria  
Chris Progler, Photonics Inc., San José, CA, USA  
Emmanuel Rausa, Plasma-Therm USA, St. Petersburg, FL, USA  
Douglas J. Resnick, Molecular Imprints, Austin, TX, USA  
Klaus-Dieter Röth, KLA-Tencor MIE, Weilburg, Germany  
Carmelo Romeo, Numonyx, Agrate Brianza, Italy  
Hella Scheer, University of Wuppertal, Germany  
Thomas Scherübl, Carl Zeiss SMS GmbH, Jena, Germany  
Ronald Schnabel, VDE/VDI-GMM, Frankfurt am Main, Germany  
Steffen Schulze, Mentor Graphics Corp., Wilsonville, OR, USA  
Marc Staples, GLOBALFOUNDRIES, Dresden, Germany  
Ines Stolberg, Vistec Electron Beam GmbH, Jena, Germany

(Continue next page)

## Other Members (Continuation)

Serge Tedesco, CEA-LETI, Grenoble, France  
Michel Tissier, Toppan Photomasks S.A., Rousset, France  
Jacques Waelpoel, ASML, Veldhoven, The Netherlands  
Guido Wenz, Wenz Consulting, Weil im Schoenbuch, Germany  
John Whitley, KLA-Tencor, San José, USA  
Hermann Wolf, Photonics MZD GmbH, Dresden, Germany  
Stefan Wurm, SEMATECH, Albany, NY, USA  
Larry Zurbrick, Agilent Technologies, Santa Clara, CA, USA

## Organizers

VDE/VDI-Society Microelectronics, Microsystems and  
Precision Engineering (GMM),  
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Stresemannallee 15,  
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Fax: ++49-(0)69-6308-9828  
e-Mail: gmm@vde.com

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

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## Program Overview

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### ■ Tuesday, June 25<sup>th</sup>, 2013

#### 13:00 Welcome and Introduction

*U. Behringer, UBC Microelectronics, Ammerbuch, Germany, Conference Chair*  
*W. Maurer, Infineon Technologies AG, Munich, Conference Program Chair*

#### 13:15 Invited Welcome Speaker from Dresden

*G. Teepe, GLOBALFOUNDRIES, Dresden, Germany*

### Session 1 – Plenary Session I

#### *Session Chairs:*

*W. Maurer, Infineon Technologies AG, Munich, Germany;*  
*R. Seltmann, GLOBALFOUNDRIES, Dresden, Germany*

#### 14:00 Keynote 1

**Photomask technology progress to meet with electronics product requirements**  
*H. Morimoto, Toppan Printing Co. Japan*

#### 14:45 Best Paper of PMJ (Invited)

**The Capability of High Magnification Review Function for EUV Actinic Blank Inspection Tool**  
*H. Miyai, Lasertec Corporation, Japan*

#### 15:15 Coffee Break

## Session 2 – Plenary Session II

*Session Chairs:*

*B. Connolly, Toppan Photomasks GmbH, Dresden, Germany  
N. Hayashi, Dai Nippon Printing, Saitama, Japan*

### 15:45 Keynote 2

**The lithographer's dilemma: Shrinking without breaking the bank**

*H.J. Levinson, GLOBALFOUNDRIES Inc.,  
Sunnyvale, CA, USA*

### 16:30 Best Poster BACUS 2012 (invited)

**Radiation induced interactions on the surface of EUV masks**

*A. Rastegar, H. Kurtuldu, D. Balachandran, SEMA-TECH, Albany, NY, USA*

### 17:00 Consequent use of IT tools as a driver for cost reduction and quality improvements (invited)

*S. Hein, R. Rapp, Robert Bosch, Reutlingen, Germany*

### 17:30 Announcements regarding BACUS, September 2013, and PMJ, April 2014

### 18:30 Get Together

*Hilton Piano Bar*

## Wednesday, June 26<sup>th</sup>, 2013

## Session 3 – EUV Tooling & Further Lithography Options

*Session Chairs:*

*J.H. Peters, Carl Zeiss SMS, Jena, Germany;  
H. Morimoto, Toppan Printing Co., Japan*

### 09:00 Challenges and progress in NGL mask making (invited)

*N. Hayashi, Dai Nippon Printing, Saitama, Japan*

### 09:30 NXE: 3300B imaging applications at 22nm and beyond

*E. Van Setten, G. Schiffelers, ASML Netherlands BV, Veldhoven, The Netherlands*

### 09:50 Thermal Probe Nanolithography: closed-loop, high-speed, high-resolution, 3D

*F. Holzner<sup>a,b,c</sup>, P. Paul<sup>a,b,d</sup>, M. Despont<sup>b</sup>,  
J. Hedrick<sup>e</sup>, L.L. Cheong<sup>b,f</sup>, A. Knoll<sup>b</sup>, U. Dürig<sup>b</sup>  
<sup>a</sup> SwissLitho AG, Zurich, Switzerland  
<sup>b</sup> IBM Research, Zurich, Switzerland  
<sup>c</sup> ETH Zurich, Zurich, Switzerland  
<sup>d</sup> inspire AG, Zurich, Switzerland  
<sup>e</sup> IBM Research, Almaden, San José, CA USA  
<sup>f</sup> MIT, Cambridge, MA, USA*

### 10:10 Compact model for directed self-assembly pattern prediction

*C. Yim, Samsung Electronics, Republic of Korea*

### 10:30 Coffee Break

## Session 4 – Optical Lithography & APC

*Session Chairs:*

*B. Grenon, Grenon Consulting Inc., Colchester, VT, USA;  
U. Behringer, UBC Microelectronics, Ammerbuch, Germany*

- 11:00 Spray coating technology for coating topographically challenged MEMS structures**  
*A. Peic, EV Group, St. Florian, Austria*
- 11:20 Scanner grid recipe creation improvement for tighter overlay specifications**  
*E.P. Cotte, GLOBALFOUNDRIES, Dresden, Germany*
- 11:40 Challenges in process marginality for advanced technology nodes and tackling its contributors**  
*A.N. Samy, R. Schiwon, R. Selmann, F. Kahlenberg, GLOBALFOUNDRIES, Dresden, Germany*
- 12:00 Intrafield CDU improvement by using advanced Mask Inspection Data**  
*T. Hertzsch, R. Schiwon, P. Jaschinsky, R. Selmann, GLOBALFOUNDRIES, Dresden, Germany;  
S. Meusemann, C. Utzny, Advanced Mask Technology Center Dresden, Germany*
- 12:20 Lunch Break**

## Session 5 – Mask Materials

*Session Chairs:*

*D. Farrar, Hoya Corporation, London, United Kingdom;  
M. Arnz, Carl Zeiss, SMT AG, Oberkochen, Germany*

- 13:50 Experimental approach to EUV imaging enhancement by mask absorber height optimization**  
*N. Davydova<sup>1</sup>, R. De Kruif<sup>1</sup>, H. Rolff<sup>2</sup>, B. Connolly<sup>3</sup>, A. Lammers<sup>1</sup>, D. Oorschot<sup>1</sup>*  
<sup>1</sup> ASML Netherlands B.V., Eindhoven, The Netherlands  
<sup>2</sup> Advanced Mask Technology Center, Dresden, Germany  
<sup>3</sup> Toppan Photomasks Inc., Dresden, Germany
- 14:10 Actinic characterization and modeling of the EUV mask stack**  
*V. Philipsen<sup>1</sup>, E. Hendrickx<sup>1</sup>, R. Jonckheere<sup>1</sup>, N. Davydova<sup>2</sup>, T. Fliervoet<sup>2</sup>, J.T. Neumann<sup>3</sup>*  
<sup>1</sup> IMEC vzw, Leuven, Belgium  
<sup>2</sup> ASML Netherlands B.V., Eindhoven, The Netherlands  
<sup>3</sup> Carl Zeiss SMT AG, Oberkochen, Germany
- 14:30 Recent advances in SEMATECH's Mask Blank Development Program, the remaining technical challenges, and future outlook**  
*F. Goodwin, P. Kearney, A.J. Kadaksham, S. Wurm, SEMATECH, Albany, NY, USA*



## Session 6 – E-beam Lithography

Session Chairs:

*I. Stolberg, Vistec Electron Beam GmbH, Jena, Germany;  
N. Hayashi, Dai Nippon Printing Co. Ltd., Saitama, Japan*

### 14:50 Electron multi-beam technology for mask and wafer writing (invited)

*E. Platzgummer, IMS Nanofabrication AG, Vienna, Austria*

### 15:20 Chemical semi amplified positive-E-Beam resist (CSAR 62) for highest resolution

*M. Schirmer<sup>1</sup>, B. Büttner<sup>2</sup>, F. Syrowatka<sup>2</sup>,  
G. Schmidt<sup>2</sup>, T. Köpnick<sup>3</sup>, C. Kaiser<sup>1</sup>*

<sup>1</sup> Allresist GmbH, Strausberg, Germany

<sup>2</sup> Martin-Luther-Universität Halle-Wittenberg, Germany

<sup>3</sup> Institut für Dünnschichttechnologie und Mikrosensorik, Teltow, Germany

### 15:40 Coffee Break

### 16:10 Simulation of dose variation and charging due to fogging in electron beam lithography

*S. Babin, S. Borisov, E. Patjukova, Abeam Technologies Inc., Castro Valley, CA, USA*

### 16:30 Extreme long range process effects characterization and compensation

*T. Figueiro<sup>1,2</sup>, C. Browning<sup>1</sup>, M.J. Thornton<sup>1,3</sup>,  
C. Vannufel<sup>3</sup>, K-H. Choid<sup>4</sup>, C. Hohle<sup>4</sup>,  
P. Schiavone<sup>1</sup>*

<sup>1</sup> Aselta Nanographics, Grenoble, France

<sup>2</sup> CNRS/UJF-Grenoble/ CEA LTM, Grenoble, France

<sup>3</sup> CEA LETI, Grenoble, France

<sup>4</sup> Fraunhofer Center Nanoelectronic Technologies IPMS-CNZ, Dresden, Germany

### 16:50 Evaluation of ultra-low-k characteristics and transistor performance after high-energy electron irradiation

*K. Steidel<sup>1</sup>, K.-H. Choi<sup>1</sup>, M. Freitag<sup>2</sup>, M. Gutsch<sup>1</sup>,  
C. Hohle<sup>1</sup>, R. Seidel<sup>2</sup>, X. Thrun<sup>1</sup>, T. Werner<sup>2</sup>*

<sup>1</sup> Fraunhofer Center Nanoelectronic Technologies (IPMS-CNT), Dresden, Germany

<sup>2</sup> GLOBALFOUNDRIES Dresden, Germany

## Session 7 – Panel Session

Session Chair:

*S. Wurm, SEMATECH Albany, NY, USA*

### 17:10 Panel Discussion:

#### “EUVL – What Else?”

*F. Goodwin, SEMATECH North, Albany, NY, USA;*

*H. Morimoto, Toppan Printing Co., Japan;*

*N. Hayashi, Dai Nippon Printing Co. Ltd., Saitama, Japan;*

*H.J. Levinson, GLOBALFOUNDRIES Inc., Sunnyvale, CA, USA;*

*J. Finders, ASML, Veldhoven, The Netherlands;*

*J.H. Peters, Carl Zeiss-SMS, Jena, Germany;*

### 19:10 Meet at the Hilton Lobby at 19:10 to go to the Conference Dinner, Cruise on the Elbe River

### 19:30 Conference Dinner on board of the paddle steamer “Leipzig”

*sponsored by the City of Dresden*

### 23:00 End of Conference Dinner

## ■ Thursday, June 27<sup>th</sup>, 2013

### Session 8 – Metrology & Inspection

#### Session Chairs:

J. Finders, ASML, Veldhoven, The Netherlands;  
K.-D. Röth, KLA-Tencor MIE, Weilburg, Germany

#### 09:00 Sources and tools for actinic EUV Metrology

R. Lebert, T. Missalla, C. Phiesel, A. Farahzadi,  
U. Wiesemann, W. Diete, Bruker ASC GmbH, Cologne,  
Germany; S. Herbert, S. Danylyuk, RWTH Aachen  
University, Germany; K. Bergmann, Fraunhofer  
Institute for Laser Technology, Aachen, Germany

#### 09:20 Status of the AIMS™ EUV development project

A. Garetto, J.H. Peters, Carl Zeiss SMS GmbH,  
Jena, Germany; D. Hellweg, M. Weiss, Carl Zeiss  
SMT AG, Oberkochen, Germany

#### 09:40 Changing technology requirements of mask metrology

K.D. Röth, M. Wagner, F. Laske, KLA Tencor MIE  
GmbH, Weilburg, Germany

#### 10:00 Utilization of AIMS™ Bossung plots to predict Qz height deviations from nominal

A. Garetto<sup>1</sup>, D. Uzzel<sup>2</sup>, K. Magnusson<sup>1</sup>,  
J. Morgan<sup>2</sup>, G. Tabbone<sup>1</sup>  
<sup>1</sup> Carl Zeiss SMS GmbH, Jena, Germany  
<sup>2</sup> Photronics Inc., Boise, ID, USA

#### 10:20 Application of Müller-Matrix spectroscopic ellipsometry to determine line edge roughness on photomasks

A. Heinrich<sup>1</sup>, I. Dimstorfer<sup>1</sup>, J. Bischoff<sup>2</sup>,  
U. Richter<sup>3</sup>, H. Ketelson<sup>3</sup>, T. Mikolajick<sup>1</sup>  
<sup>1</sup> NaMLab gGmbH, Dresden, Germany  
<sup>2</sup> Osires Optical Engineering and Software, Ilmenau,  
Germany  
<sup>3</sup> SENTECH Instruments GmbH, Berlin, Germany

#### 10:40 Coffee Break

### Session 9 – Resolution Enhancement & DfM

#### Session Chairs:

W. Maurer, Infineon Technologies AG, Munich, Germany;  
J. Finders, ASML, Veldhoven, The Netherlands

#### 11:10 Looking for simple engineering solutions in DFM patents (invited)

A. Balasinski, Cypress Semiconductor Corporation,  
San Diego, CA, USA

#### 11:40 Imaging challenges in 20nm logic node: hot-spots performance in Metal1 layer

V. Timoshkov, ASML, Veldhoven, The Netherlands

#### 12:00 Improving inspectability of Sub-2x nm node Masks with Complex SRAF

I.-Y. Kang, G. Yoon, J. Lee, D.P. Chung, B.-G. Kim,  
C. Jeon, SAMSUNG Electronics Co. Ltd, Republic  
of Korea; G. Inderhees, T. Hutchinson, W. Cho,  
J.U. Hur, KLA-Tencor Corporation, USA

#### 12:20 Model-based SRAF Solutions for advanced technology nodes

S. Jayaram, J. Word, P.J. Lacour, A. Tritchkov,  
Mentor Graphics Corporation, USA

#### 12:40 Farewell

#### 12:50 End of EMLC 2013

#### 13:00 Farewell Lunch



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## Conference Information

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### Conference Hours

Tuesday, June 25 <sup>th</sup> , 2013	01:00 pm to 06:00 pm
Wednesday, June 26 <sup>th</sup> , 2013	09:00 am to 06:00 pm
Thursday, June 27 <sup>th</sup> , 2013	09:00 am to 01:00 pm

### Registration Hours

Tuesday, June 25 <sup>th</sup> , 2013	11:30 am to 05:00 pm
Wednesday, June 26 <sup>th</sup> , 2013	08:00 am to 05:00 pm
Thursday, June 27 <sup>th</sup> , 2013	08:00 am to 11:00 am

### Technical Exhibition

Parallel to the conference presentations on Tuesday, Wednesday and Thursday we offer you to take part in a technical exhibition.

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.

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

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## Information for Authors

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### 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

The official deadline for manuscripts is June 14<sup>th</sup>, 2013.

All manuscripts will be subject to a critical peer review before they are accepted for publication in the SPIE Digital Library.

**Please note:** Late submissions may not be published.

Information on the format of the manuscripts and further details is also provided at the conference web site: [www.emlc2013.com](http://www.emlc2013.com)

The conference manuscripts will be published by SPIE

Manuscripts which are not delivered until the first day of the conference, Tuesday, June 25<sup>th</sup>, 2013, 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 2013. Manuscripts not received until the first day of the conference can not be elected for Best Paper.

The Best Paper will be invited to present at PMJ2014 in Yokohama, Japan, in April 2014 and at BACUS in Monterey, CA, USA in September 2013.

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## General Information

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### EMLC 2013 Office

For detailed information please contact:

VDE/VDI-Society Microelectronics, Microsystems and  
Precision Engineering (GMM)

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Fax: ++49 (0)69-6308-9828

e-Mail: gmm@vde.com

During the conference:

Phone: ++49 (0)171 4695 118

### Conference Fees

	until June 3 <sup>rd</sup> , 2013	after June 3 <sup>rd</sup> , 2013
Non-Members	€ 600.00	€ 750.00
VDE, VDI Members*	€ 560.00	€ 730.00
Lecturer	€ 550.00	€ 700.00
Non-Member-Students**	€ 150.00	€ 250.00
Student Members**	€ 100.00	€ 150.00

\* 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, lunches and conference banquet dinner as well as one copy of the CD-ROM-proceedings.

### Conference Registration

To register for EMLC 2013, 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 June 03, 2013. 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 6308 144) 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. More detailed information, please see on the conference's homepage which is [www.EMLC2013.com](http://www.EMLC2013.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 May 27, 2013, the registration fee will be fully refunded less a handling fee of EURO 80.00. After June 3, 2013, 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 on a SPIE CD-ROM. The proceedings will be sent after the conference to all delegates who attended the event. All Manuscripts will also be published in the SPIE Digital Library.

### Conference Venue

Hilton Dresden

An der Frauenkirche 5

01069 Dresden, Germany

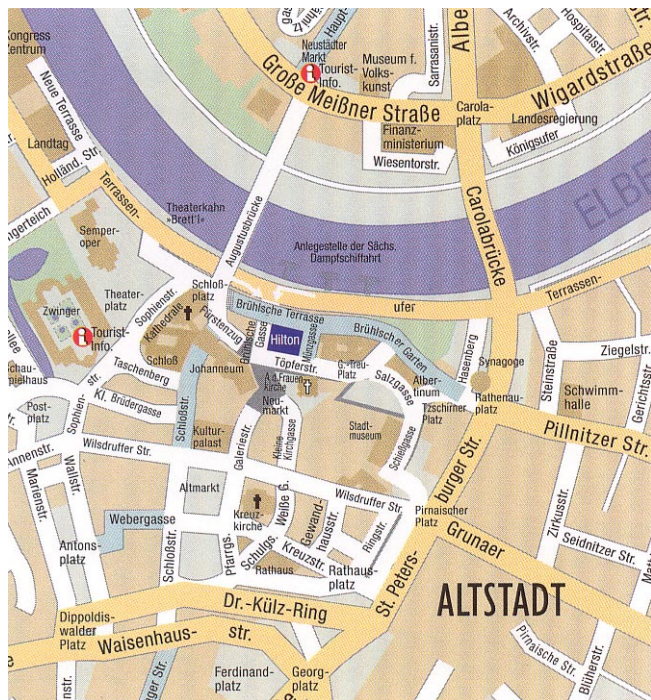
Phone: ++49 (0)351/86420,

Fax: ++49 (0)351/8642-725

<http://www.hilton.com/>

Hilton Dresden, located in the heart of the old town, next to the Frauenkirche, is situated on Bruehl's Terrace.

The Semper Opera House and the world-renowned "Zwinger" are within walking distance. The piers of the world's largest and oldest paddle steamer fleet are next to the hotel.



## Transport

### By Air

#### *Dresden Airport*

From Dresden Klotzsche Airport, follow signs to city centre. After passing the Elbe Bridge, turn right onto Terrassenufer. From here, follow signs to the Hilton Dresden hotel. The 5-mile journey normally takes about 20 minutes from the airport to the hotel forecourt.

Getting to and from Dresden airport:

Bus Service, typical minimum charge is EURO 8,00

Limousine, typical minimum charge is EURO 70,00

Taxi, typical minimum is EURO 25,00

### By train

from Frankfurt in 5 hours

from Berlin in 3 hours

### By car

From the A14/A4 (coming from Chemnitz/Leipzig), take exit 78 towards Dresden Altstadt. Follow the B6 signs in direction of Zentrum. At the Bremer/Hamburger Strasse junction, turn left into Bremer Strasse. Drive along the Elbe riverbank until you see signs for the Hilton Dresden hotel on your right. The 4-mile journey normally takes around 10 minutes from exit 78 to the hotel forecourt.

### Parking

The hotel car park has got 136 spaces. Parking costs EURO 21.00 per day. There is a valet service at no extra charge. Please book your parking space when booking your room at the hotel.

### Hotel Reservation

A block of rooms has been reserved for the EMLC 2013 participants at the Hilton Hotel Dresden.

The special hotel room rates are:

Twin Hilton Guest Room	rates from 134.00 EUR
Double Hilton Executive	rates from 134.00 EUR

per night, including breakfast.

Accommodation is NOT included in the conference fee.

For reservation please contact the Hilton Hotel or go to the conference website: [www.emlc2013.com](http://www.emlc2013.com)

Hilton Dresden

An der Frauenkirche 5

01069 Dresden, Germany

Phone: ++49 (0)351/86420,

Fax: ++49 (0)351/8642-725

e-Mail: [info.dresden@hilton.com](mailto:info.dresden@hilton.com)

<http://www.hilton.com/>

**You should reserve your rooms by June 03, 2013, as after that date our rooms blocked at a group rate might be released by the hotel for general reservations. Please use the following code for booking: "EMLC 2013".**

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

## Internet Access

The Hilton Hotel provides an Internet access in the room at € 15,- per 24 hours (per day). There is also a business center where you can use the hotel equipment for free.

## Banquet Dinner

**June 26, 07:30 pm – 11:00 pm**

Meeting-point for the banquet dinner will be the lobby of the Hilton Hotel, Dresden, at 07:10 pm.



We will have the EMLC2013 banquet dinner on board of the paddle steamer "Leipzig", cruising on the Elbe River.

The dinner is sponsored by the City of Dresden.

## 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, Microsystems- and Precision Engineering (GMM) or the supporting bodies are able to extend any "Invitation" for application of visa.

## About Dresden

The Elbe and the charming landscape between Saxon Switzerland and Meissen determine the nature in which the city on the Elbe river is embedded. The climate is equally beneficial for the development of the arts and for viniculture. The inhabitants are known for their own special charm, Saxon hospitality is proverbial.

At the same time Dresden is a modern city with the flair of the former Saxon residence – simply a place with life style. Many million guests visit Dresden every year.

More information you can find at: <http://www.dresden.de>

## Notizen

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