

# GMM

VDE/VDI-GESELLSCHAFT  
MIKROELEKTRONIK,  
MIKRO- UND FEINWERKTECHNIK



## Program

# The European Mask and Lithography Conference EMLC 2009

January 12 – 15, 2009  
Hilton Hotel  
Dresden, Germany



[www.EMLC2009.com](http://www.EMLC2009.com)

VDI

VDE

# Welcome to the EMLC 2009 in Dresden

**25<sup>th</sup> European Mask and Lithography Conference,  
EMLC2009  
being held on  
January 12<sup>th</sup> to 15<sup>th</sup> 2009  
at the Hilton Hotel, Dresden, Germany.**

On behalf of VDE/GMM, the Sponsors, and the Organizing Committee, we would like to welcome you to the 25<sup>th</sup> European Mask and Lithography Conference, EMLC2009 at the Hilton Hotel in the city of Dresden. 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 technical conference is scheduled from Tuesday through Thursday and is dedicated to the science, technology, engineering and application of mask and lithography technologies and associated processes. Presenting an overview of the current status in mask and lithography technologies and of future strategies, this is the place where mask producers and users are made acquainted with newest developments and results.

On Monday evening we welcome you to an informal

**Get Together at the Hilton Hotel at 19:00.**

On Tuesday and Wednesday, our traditional **Technical Exhibition** will take place. To foster the exchange between the conference attendees and the exhibitors, this will also be the place for all of our coffee and lunch breaks.

So, please enjoy the technical sessions of the EMLC2009 as well as the technical exhibition, but also allow yourself to visit Dresden, one of the most beautiful cities in Europe!

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

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## **Members of the International Steering Committee of the EMLC and Members of the International Program Committee of the EMLC 2009(\*)**

- 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
- Mr. F. Abboud, Intel Corp., Santa Clara, CA, USA  
Dr. M. Arnz, Carl Zeiss SMT AG, Oberkochen, Germany (\*)  
Mr. E. Baracchi, ST Microelectronics, Agrate Brianza, Italy  
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. D. Farrar, HOYA Corporation, LONDON, UK  
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 (\*)  
Dr. C.K. Kalus, Synopsys GmbH, Aschheim, Germany (\*)  
Mr. K.R. Kimmel, AMTC, Dresden, Germany(\*)  
Ms. B. Lauche, Photronics MZD GmbH, Dresden, Germany  
Dr. H. Loeschner, IMS Nanofabrication AG, Vienna, Austria (\*)  
Mr. B. Naber, Cadence Design Systems Inc., San Jose, USA (\*)  
Dr. Ch. Pierrat, Cadence Design Systems Inc., San Jose, USA (\*)  
Mr. E. Rausa, Oerlikon USA Inc., Saint Petersburg, FL, USA (\*)  
Dr. C. Reita, CEA-LETI, Grenoble, France  
Mr. D. J. Resnick, Molecular Imprints, Austin, TX, USA (\*)  
Dr. F. Reuther, micro resist technology GmbH, Berlin, Germany  
Dr. C. Romeo, ST-Microelectronics, Agrate Brianza, Italy (\*)  
Mr. K. Ronse, IMEC, Leuven, Belgium  
Prof. H. Scheer, University of Wuppertal, Germany (\*)  
Mr. Gerd Scheuring, Mue Tec GmbH, Munich, Germany  
Dr. R. Schnabel, VDE/VDI-GMM, Frankfurt, Germany (\*)  
Mr. M. Staples, AMD Saxony LLC & Co. KG, Dresden, Germany  
Mrs. I. Stolberg, Vistec Electron Beam GmbH, Jena, Germany (\*)  
Dr. S. Tedesco, CEA-LETI, Grenoble, France (\*)  
Mr. M. Tissier, Toppan Photomasks S.A., Rousset, France (\*)  
Mr. G. Unger, Qimonda GmbH & Co. OHG, Dresden, Germany (\*)  
Mr. J.T. Weed, SYNOPSIS, Inc., Mountain View, CA, USA  
Mr. J. Whittey, Vistec Semiconductor Systems, Oakdale, 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  
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Auf den Beeten 5, D-72119 Ammerbuch  
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**Cover picture:**  
Courtesy of Toppan Photomasks

## Program Overview

### Monday, January 12<sup>th</sup>, 2009

- 16:00** Set-up for the Technical exhibition
- 17:00** EMLC Steering and Program Committee Meeting  
on invitation only
- 18:00 - 19:30** Check in / Registration
- 19:00** Get Together Reception

### Tuesday, January 13<sup>th</sup>, 2009

- 09:15** **Welcome and Introduction**  
*U. Behringer, UBC Microelectronics, Ammerbuch, Germany, Conference Chair*
- 09:25** **Invited Welcome Speaker**  
*D. Hilbert, Mayor of Economic Affairs of the City of Dresden*

### Plenary Session I

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

- 09:55** **Keynote 1:**  
**Lithography Development and Research for the  $\leq 22\text{nm}$  Half-Pitch**  
*S. Wurm, SEMATECH, Albany, NY, USA*
- 10:25** **Mask Industry Assessment Trend Analysis (invited)**  
*G. Hughes, Sematech, Albany, NY, USA*  
*H. Yun, Sematech, Albany, NY, USA*
- 10:50** **Coffee Break**

## Plenary Session II

*Session Chairs:*

*W. Maurer, Infineon Technologies AG,  
Munich, Germany;*

*J. Waelpoel, ASML, Veldhoven, The  
Netherlands*

- 11:20      Keynote 2:  
Mask Salvage in the Age of Capital  
Contraction**  
*K. Kimmel, AMTC, Dresden, Germany*
- 11:50      Best Paper from PMJ 2008  
Effects of Mask Absorber Thickness on  
Printability in EUV Lithography with High  
Resolution Resist (invited)**  
*T. Kamo, H. Aoyama, T. Tanaka and O. Suga  
MIRAI - Semiconductor Leading Edge  
Technologies, Inc., Japan*
- 12:20      Best Poster of BACUS 2008 (invited)  
Deflection Unit for Multi-Beam Mask Masking**  
*F. Letzkus, J. Butschke, M. Irmscher, M. Jurisch,  
W. Klingler, IMS Chips, Stuttgart, Germany;  
E. Platzgummer, Ch. Klein, H. Loeschner,  
R. Springer, IMS Nanofabrication AG, Vienna,  
Austria*
- 12:50      Lunch Break**

## Session 3      **Mask Business & Application**

*Session Chairs:*

*H. Wolf, Photronics, Dresden, Germany;*

*M. Tissier, Toppan Photomask, Rousset,  
France*

- 14:10      Do Masks really matter? (invited)**  
*C. Progler, M. Graham, Photronics Inc.,  
Brookfield, USA.*
- 14:40      SEMATECH Mask Program**  
*H. Yun, SEMATECH; Albany, NY, USA*

**15:00 Mask parameter variation in the context of the overall variation budget of an advanced logic wafer FAB (invited)**  
*R. Seltmann, A. Parge, J. Busch, T. Hertzsch, A. Pooch, AMD FAB36 LLC & Co.KG, Dresden, Germany*

**15:30 Coffee Break**

## **Session 4 Simulation & Double Patterning**

*Session Chairs:*

*M. Arnz, Carl Zeiss, SMT AG, Oberkochen, Germany;*

*W. Maurer, Infineon Technologies, Munich, Germany*

**16:00 Extended Abbe approach for fast and accurate lithography imaging simulations**  
*P. Evanschitzky, T. Fühner, A. Erdmann, Fraunhofer Institute Integrated Systems and Device Technology (Fraunhofer IISB), Erlangen, Germany*

**16:20 Decomposition Algorithm for Double Patterning of Contacts and Via Layers**  
*A. El-Gamal, M. Al-Imam, Mentor Graphics Cairo, Egypt*

**16:40 Mask contribution on CD & OVL errors budgets for Double patterning lithography**  
*I. Servin<sup>a</sup>, C. Lapeyre<sup>a</sup>, S. Barnola<sup>a</sup>, B. Connolly<sup>b</sup>, R. Ploss<sup>b</sup>, K. Nakagawa<sup>c</sup>, P. Buck<sup>c</sup>, M. McCallum<sup>d</sup>*  
*<sup>a</sup>CEA-Leti Minatec, Grenoble, France*  
*<sup>b</sup>Toppan Photomasks Inc., Dresden, Germany*  
*<sup>c</sup>Toppan Photomasks Inc. Gresham, Oregon, USA*  
*<sup>d</sup>Nikon Corporation, Livingston, Scotland*

## **Session 5      Mask Cleaning / Haze**

*Session Chairs:*

*B. Grenon, Grenon Consulting,  
Colchester, VT, USA; N. Hayashi, DNP,  
Saitama, Japan*

### **17:00      A new method and process based on vacuum technology for photomask decontamination**

*J.M.Foray<sup>1</sup>, S.HadjRabah<sup>1</sup>, J.Palissou<sup>1</sup>,  
M.Davenet<sup>1</sup>, A.Favre<sup>1</sup>, P.Sergent<sup>2</sup>, R.Schroeder<sup>2</sup>,  
M.Tissier<sup>2</sup>, V.Baudiquez<sup>3</sup>, P.Nesladek<sup>3</sup>,  
S.Gopalakrishnan<sup>3</sup>, I.Hollein<sup>3</sup> F.Dufaye<sup>4</sup>,  
S.Gough<sup>4</sup>*

*<sup>1</sup>Alcatel Vacuum Technology, Annecy, France;*

*<sup>2</sup>Toppan, Photomasks S.A., Rousset, France*

*<sup>3</sup>AMTC, Dresden, Germany*

### **17:20      Particle transport and reattachment on a mask surface**

*P. Nesladek<sup>a</sup>, S. Osborne<sup>b</sup>,*

*<sup>a</sup>Advanced Mask Technologies Center, Dresden,  
Germany*

*<sup>b</sup>Sigmameltec Ltd, Shimoasao, Asao-ku  
Japan*

### **17:40      Contamination control for ArF photo masks**

*J. S. Gordon<sup>a</sup>, M. Silova<sup>b</sup>, B.Connolly<sup>a</sup>,*

*J. Huijbregtse<sup>b</sup>, N. Maxim<sup>b</sup>, L. Frisa<sup>a</sup>,*

*C. Chovino<sup>a</sup>, C. Weins<sup>a</sup>*

*<sup>a</sup>Toppan Photomasks, Inc., Round Rock, Texas,  
USA*

*<sup>b</sup>ASML Netherlands B.V., Veldhoven, The  
Netherlands*

### **18:00      End of presentation**

### **18:50      Meet at the Hilton Lobby for Departure to the Salon Ship “August der Starke” for Banquet Dinner. Cruise on the Elbe River.**

### **19:00      Departure from the Hilton**

### **19:30      River Cruise starts**

### **22:45      River Cruise ends**

# Wednesday, January 14<sup>th</sup>, 2009

## Session 6 EUV 1

*Session Chairs:*

*B. Eynon, Molecular Imprints Inc.*

*Austin, TX, USA*

*R. Engelstad, University of Wisconsin,  
Madison, WI, USA*

- 09:20**     **Lithography light source challenges for  
*Double Patterning and EUVL (invited)***  
*N. Farrar, Cymer Inc., San Diego, CA, USA*
- 09:50**     **The task of EUV-reflectometry for HVM of  
EUV-masks: first steps**  
*A. Farahzadi, AIXUV GmbH, Aachen, Germany*
- 10:10**     **EUV and DUV scatterometry for CD and edge  
profile metrology on EUV masks**  
*B. Bodermann, Physikalisch-Technische  
Bundesanstalt (PTB), Braunschweig, Germany*
- 10:30**     **EUV imaging performance - moving  
towards production**  
*E. van Setten, ASML Netherlands B.V.,  
Veldhoven, The Netherlands*
- 10:50**     **Coffee Break**

## Session 7 NIL

*Session Chairs:*

*D. Resnick, Molecular Imprints Inc. Austin,  
TX, USA; H. Scheer, University of*

*Wuppertal, Germany*

- 11:30**     **Resolution capability of EBM-6000 and  
EBM-7000 for Nano-imprint template**  
*S. Yoshitake, NuFlare Technology Inc., Japan*
- 11:50**     **Electron Beam inspection methods for  
imprint lithography at 32 nm**  
*K. Selinidis, Molecular Imprints Inc., USA*

- 12:10 UV NIL template making and imprint evaluation**  
*S. Sasaki, Dai Nippon Printing Co. Ltd., Japan*
- 12:30 Residual-free imprint for sensor definition**  
*A. Mayer, University of Wuppertal, Germany*
- 12:50 Lunch break**

## **Session 8 Metrology**

*Session Chairs:*

*J. Whittey, Vistec Semiconductor Systems, Oakdale, CA, USA;*

*C. Blaesing, Carl Zeiss SMS GmbH, Jena, Germany*

- 14:20 Monte-Carlo Simulations of Image Analysis for flexible and highresolution Registration Metrology**  
*M. Arnz, Carl Zeiss AMT AG, Oberkochen, Germany*
- 14:40 SEM image contrast modeling for mask and wafer metrology**  
*C.G. Frase, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany*
- 15:00 Registration metrology on double patterning reticles**  
*K.-H. Schmidt<sup>\*a</sup>, K.-D. Röth<sup>a</sup>,  
F. Laske<sup>a</sup>, J. Bender<sup>a</sup>,  
D. Adam<sup>a</sup>, O. Ache<sup>a</sup>*  
*<sup>a</sup>Vistec Semiconductor Systems GmbH, Weilburg, Germany*
- 15:20 Reduced Pellicle Impact on Overlay using High Order Intrafield Grid Corrections**  
*R. de Kruif, ASML Netherlands B.V., Veldhoven, The Netherlands*
- 15:40 Coffee Break**

## **Session 9      ML2**

*Session Chairs:*

*I. Stolberg, Vistec Electron Beam GmbH, Jena, Germany; S. Tedesco, CEA/Leti, Grenoble, France*

- 16:20      High Resolution Cell Projection**  
*U. Weidenmüller, Vistec Electron Beam GmbH, Jena, Germany*
- 16:40      Mapper: High Throughput Maskless Lithography**  
*B. J. Kampherbeek, MAPPER Lithography B.V., Delft, The Netherlands*
- 17:00      New writing strategy in electron beam direct write lithography to improve critical dense lines patterning for sub-45nm nodes**  
*L. Martin, CEA-LETI, MINATEC, Grenoble, France*
- 17:20      A solution to Meet New Challenges on EBDW Data Prep**  
*R. Galler, D. Melzer, J. Nowotny, K. Kroenert, M. Krueger, M. Suelzle, B. Papenfuss, C. Wagner, EQUIcon Software GmbH, Jena, Germany; U. Baetz, B. Buerger, FhG IPMS Dresden, Germany; J. Gramss, M. Lemke, Vistec Electron Beam GmbH, Jena, Germany*
- 18:00      Poster Reception**
- Session Chairs:*  
*C. Gale, Applied Materials, Dresden, Germany; W. Montgomery (\*), SEMATECH, Albany, NY, USA*
- Innovative processes investigation for photomask pod conditioning and drying**  
*J.M Foray, Alcatel Vacuum Technology, Annecy, France*
- High speed (>100 Gbps) key components for a scalable optical data link, to be implemented in future maskless lithography applications**  
*A. Paraskevopoulos, Fraunhofer Institut für Nachrichtentechnik - Heinrich Hertz Institut (HHI) Berlin, Germany*

**Molecular dynamics study on mold fracture by nano scale defects in nanoimprint lithography**

*K. Tada, Osaka Prefecture University, Japan*

**Advanced proximity matching with Pattern Matcher**

*A. Serebryakov, ASML Netherlands B.V., Veldhoven, The Netherlands*

**Mounting Methodologies to Measure EUV Reticle Nonflatness**

*R. Engelstad, University of Wisconsin - Madison, WI, USA*

**CDP - Application to focus drilling**

*S. Geisler, IHP GmbH, Frankfurt/ Oder, Germany*

**MeRiT® repair verification using in-die phase metrology Phame®**

*U. Buttgerit, Carl Zeiss SMS GmbH, Jena, Germany*

**Design Verification for sub 70 nm DRAM nodes via Metal Fixing using E-Beam Direct Write**

*K. Keil<sup>a</sup> \*, P. Jaschinsky<sup>a</sup>, C. Hohle<sup>b</sup>, K.-H. Choi<sup>b</sup>, R. Schneider<sup>c</sup>, M. Tesaro<sup>b</sup>, F. Thrum<sup>b</sup>, R. Zimmermann<sup>b</sup> and J. Kretz<sup>b</sup>*

*<sup>a</sup>Fraunhofer Center for Nanoelectronic Technologies (CNT)*

*<sup>b</sup>Qimonda Dresden GmbH & Co. OHG, Dresden, Germany*

*<sup>c</sup>Qimonda AG, Neubiberg, Germany*

**Focus on DFM Photomask Input for EDA Workflow**

*E. Beisser, Xyalis, Grenoble, France*

**Focus on High Quality and Availability of Photomasks in Advanced Lithography Environments**

*M. Davenet et. al, AVTF, France*

**Focus on Development of Innovative Flow and Metrology for Photomasks Qualification**

*P. Chini, Atmel, France*

**19:30**

**Dinner at the Hilton**

# Thursday, January 15<sup>th</sup>, 2009

## Session 10: Insp. & Pattern Generation

*Session Chairs:*

*G. Unger, Qimonda, Dresden, Germany*

*E. Rausa, Oerlikon, Saint Petersburg, FL, USA*

- 09:20**     **Improving yield and cycle time at the inspection process by means of a new defects disposition technique**  
*E. Villa, DNP Photomask Europe, Agrate Brianza, Milano, Italy*
- 09:40**     **Nuisance Event Reduction Using Sensitivity Control Layers (SCL) for Advanced Photomask Inspection**  
*S. Hedges, Photronics nanoFab North America, Boise ID, USA*
- 10:00**     **Increasing inspection equipment productivity by utilizing Factory Automation SW on TeraScan 5XX systems**  
*T. Jakubski, AMTC, Dresden, Germany*
- 10:20**     **Error-budget paradigms and laser mask pattern generator evolution**  
*C. Hamaker, Applied Materials, Hillsboro, OR, USA*
- 10:40**     **Coffee Break**

## Session 11    EUV 2

*Session Chairs:*

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

*H. Yun, SEMATECH, Albany, USA*

- 11:10**     **Defect Mitigation and Reduction in EUVL Mask Blanks**  
*R. Randive, SEMATECH, Albany, USA*
- 11:30**     **EUV Actinic Defect Inspection and Defect Printability at sub-32 nm Half-pitch**  
*S. Huh, SEMATECH, Albany, USA*

- 11:50 An Overview of Electrostatic Chucking for EUV Lithography**  
*R. Engelstad, University of Wisconsin – Madison, WI, USA*
- 12:10 Sub-30nm defect removal on EUV substrates**  
*A. Rastegar, SEMATECH, Albany, NY, USA*
- 12:30 Farewell**
- 12:40 End of Conference**
- 12:40 Farewell Lunch**

## **Company Visits on Thursday January 15<sup>th</sup> 2009**

- 14:10 Bus leaves for AMD or Qimonda from the Hilton Hotel**

### **at AMD:**

- company presentation
- Dr. Rolf Stephan, Senior Manager  
 Process Integration:  
**“45nm and 32nm High Performance CMOS Technologies at AMD”**
- AMD campus tour (e.g. Material Lab)

**max. number of participants: 25**

**duration: 3 – 3,5 h**

(~ 1h presentation / ~ 2h campus tour)

start time: 14:30 at AMD

end time: 17:30

Bus will be back at the Hilton around 18:00

### **at Qimonda:**

- company presentation
- Thomas Zell, Senior Principal Engineer  
 Lithography  
**“Qimonda Lithography & Mask Highlights”**
- window tour

**max. number of participants: 20**

**duration: 2,0 h**

(45' presentation incl. questions / 45' line tour)

start time: 14:30 at Qimonda

end: time: 16:30

Bus will be back at the Hilton around 17:00

## CONFERENCE INFORMATION

### CONFERENCE HOURS

Tuesday, January 13 <sup>th</sup> , 2009	9:00 h to 18:10 h
Wednesday, January 14 <sup>th</sup> , 2009	9:20 h to 19:00 h
Thursday, January 15 <sup>th</sup> , 2009	9:00 h to 13:00 h

### REGISTRATION HOURS

Monday, January 12 <sup>th</sup> , 2009	18:00 h to 19:30 h
Tuesday, January 13 <sup>th</sup> , 2009	08:00 h to 17:30 h
Wednesday, January 14 <sup>th</sup> , 2009	08:00 h to 17:00 h
Thursday, January 15 <sup>th</sup> , 2009	08:00 h to 12:00 h

### 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 25 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).

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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 13<sup>th</sup> 2009)** 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@asm1.nl.

Since the manuscripts will be directly reproduced in the proceedings, please send them as a pdf-file by e-mail. The manuscripts should be between 6 and 12 pages (figures included). Please follow the formatting and further guidelines provided in the sample manuscript under: [www.emlc2009.com](http://www.emlc2009.com)

Again, your last chance of delivering the manuscript will be the first day of the conference, Tuesday, January 13, 2009. **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 BEST POSTER AWARD

All conference attendees will elect the best paper and the best poster of the EMLC 2009. Manuscripts not received until the first day of the conference can not be elected for best paper resp. best poster.

## **POSTER SESSION**

Poster size shall not exceed 120 cm (48") in width and 150cm (59") in height. The international paper format A0 fits perfectly. Please use text and figures of appropriate size (recommended text size >30 points) to make your poster readable from at least 1m / 1 yard distance. The use of color and extensive graphics is particularly encouraged. Alone a print-out of the manuscript does not serve the purpose of a poster presentation.

Please mount your poster on the provided stands as soon as Tuesday morning and do not dis-mount it before Thursday noon. This will enable the conference participants to view the posters before and after the poster session (Wednesday late afternoon) and will grant you a good deal of feedback to your work. The conference organisation will provide appropriate mounting material.

For further questions, please do not hesitate to contact the Poster Session Chairs: [Chris\\_Gale@amat.com](mailto:Chris_Gale@amat.com) and [Uwe.Behringer.ubc@t-online.de](mailto:Uwe.Behringer.ubc@t-online.de)

## **EXCURSION TO AMD or QIMONDA**

AMD, Qimonda and EMLC2009 have organized an informational tour of their Fabs in Dresden. A bus will leave the Dresden Hilton at 2:10 pm on Thursday, January 15<sup>th</sup> 2009.

Please sign in for these surely exceptional tours at the EMLC2009 Website or use the attached registration form. We ask for your understanding that the number of participants has to be limited and that participation will be on a first-come first-served basis.

## **SPOUSE PROGRAM**

We would like to offer a city walk tour with an excellent city guide. To sign up, please stop at the registration desk. (Minimum persons 5).

## GENERAL INFORMATION

### EMLC 2009 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

	until Dec. 19 <sup>th</sup> , 2008	after Dec. 19 <sup>th</sup> , 2008
Non-Members	€ 700.00	€ 750.00
VDE,VDI Members*	€ 660.00	€ 710.00
Lecturer	€ 660.00	€ 710.00
Non-Member-Students**	€ 80.00	€ 100.00
Student Members**	€ 40.00	€ 60.00
Additional ticket for river cruise	€ 90.00	€ 90.00

\* 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, one copy of the CD-ROM-proceedings, lunches, dinners and one ticket for the river cruise.

### CONFERENCE REGISTRATION

To register for EMLC 2009, 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. 19, 2008. 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 5213) 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.EMLC2009.com](http://www.EMLC2009.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. 19, 2008, the registration fee will be fully refunded less a handling fee of EURO 60.00. After Dec. 19, 2008, no refund will be made. Proceedings and CD-ROM-proceedings will then be sent to the registrant after the conference.

## **PROCEEDINGS**

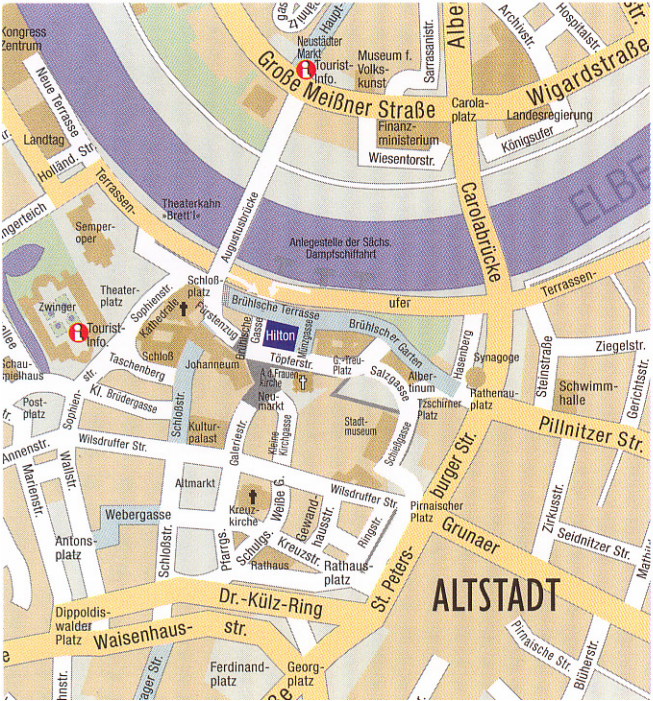
All papers accepted for presentation at the conference will be published with the proceedings CD-ROM. The proceedings will be sent after the conference to all delegates attending the event.

## **CONFERENCE VENUE**

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 150 spaces. Parking costs EURO 19.00 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 2009 participants at the Hilton Hotel Dresden.

The special hotel room rates are:

SINGLE HILTON GUEST ROOM	rates from 119.00 EUR
TWIN HILTON GUEST ROOM	rates from 119.00 EUR
QUEEN HILTON GUEST ROOM	rates from 119.00 EUR
TWIN HILTON DELUXE ROOM	rates from 144.00 EUR
TWIN HILTON EXECUTIVE	rates from 174.00 EUR

**per night, including breakfast.**

**Additional person 25.00. EURO per night.**

**Accommodation is NOT included in the conference fee.**

For reservation please contact the Hilton Hotel or go to the conference website: [www.emlc2009.com](http://www.emlc2009.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 December 19<sup>th</sup>, 2008, 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 2009".**

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

## **INTERNET ACCESS**

The Hilton Hotel provides an Internet access at € 17,- per 24 hours (per day). You might also buy Internet access cards at a price of € 10,- for 60 minutes. In this case the clock will stop as soon as you terminate the Internet access. You can use this Internet access at any place of the Hilton hotel and, according to our information, in most Hilton Hotels world wide.

## **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.

## **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>

COOPERATING PARTNERS OF THE EMLC 2009

