

GMM

VDE/VDI-GESELLSCHAFT
MIKROELEKTRONIK,
MIKRO- UND FEINWERKTECHNIK



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PROGRAM AND INVITATION

**The 22nd European
Mask and Lithography
Conference
EMLC 2006**

- January 23 – 26, 2006
- Dresden, Germany
- Hilton Hotel

<http://www.vde.com/EMLC2006>

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in cooperation with:

BACUS / SEMI / SPIE / PMJ

AMD Saxony / AMTC / ASML / Infineon

KLA-Tencor / Photronics / Silicon Saxony

UBC Microelectronics



Welcome to EMLC 2006 in Dresden

The VDE/VDI-Society Microelectronics, Micro- and Precision Engineering (GMM) in cooperation with UBC Microelectronics, AMD Saxony, AMTC, ASML, BACUS, Infineon, KLA-Tencor, PMJ, Photonics, SEMI, SPIE, Silcon Saxony, UBC Microelectronics organize the

**22nd European Mask and Lithography Conference
EMLC
in Dresden, Germany
January 23-26, 2006**

This three-day conference is dedicated to the science, technology, engineering and application of mask technologies, of lithography technologies, and of associated technologies (like data processing, resist, metrology, inspection and application). This conference is an internationally recognized meeting in its 22nd year. It annually has brought together scientists, researchers, engineers and developers from research institutes and companies to present papers at the forefront of the technologies mentioned above. The conference gives an overview of the present status in mask and lithography technologies and their future strategies. It provides a place where mask makers, mask users and their tool suppliers find the opportunity of becoming acquainted with new development and results. The conference also gives experts the opportunity to meet with leading experts in fields of common interest.

Scope of the conference

The aim of this three-day conference - as in the past - is to bring together investigators and companies in the field of mask technology and associated techniques to find an opportunity to discuss recent progress and breakthroughs and future trends in these technologies.

Included in the three days of presentations (no parallel sessions) there will be a **Technical Exhibition** combined with the opportunity for the participant companies to give a short introduction of their technology.



Dr. Uwe Behringer, Conference Chair

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**Members of the International Steering
Committee of the EMLC
and
Members of the International Technical
Program Committee of the EMLC 2006(*)**

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

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

Mr. Abboud, Intel Corporation, Santa Clara, CA, USA
Mr. M. Archuletta, UNAXIS USA Inc., Saint Petersburg, USA
Dr. M. Arnz*, Carl Zeiss SMT AG, Oberkochen, Germany
Dr. A. Barberet, IBM Microelectronics, New York, USA
Dr. C. Blaesing-Bangert*, Leica-Microsystems, Wetzlar, Germany
Dr. W. Brünger, FhG-ISIT, Itzehoe, Germany
Mrs. U. Buttgereit, Schott Lithotec AG, Meiningen, Germany
Mr. P. Chen*, Taiwan Mask Corp., Hsinchu, TAIWAN
Prof. R. Engelstad*, University of Wisconsin, Madison, WI, USA
Prof. W. Fallmann, University of Vienna, Austria
Mr. D. Farrar, HOYA Corporation, London, UK
Mr. M. Fischer*, KLA Tencor GmbH, Puchheim, Germany
Mr. O. Fortagne, Leica Microsystems Lithography, Jena, Germany
Mr. C. Gale*, Applied Materials, Dresden, Germany
Mr. B. Grenon*, Grenon Consulting, Colchester, VT, USA
Mr. N. Hayashi*, Dai Nippon Printing Co. Ltd., Saitama, Japan
Dr. A.C. Hourd*, Compugraphics International Ltd., Scotland, UK
Mr. R. Jonckheere*, IMEC vzw., Leuven, Belgium
Dr. C.K. Kalus, SIGMA-C GmbH, Munich, Germany
Mr. K.R. Kimmel*, IBM Albany Nanotech Facility, Albany, USA
Mr. K. Knapp*, Schott Lithotec AG, Jena, Germany
Prof. A. Kostka, Technical University of Darmstadt, Germany
Mr. H. Kundert, SEMI EUROPE, Brussels, Belgium
Mr. H. Lehon*, KLA-Tencor Corporation, San Jose, CA USA
Dr. H. Loeschner, IMS Nanofabrication, Vienna, Austria
Mr. B. Naber*, Cadence Design Systems Inc., San Jose, CA, USA
Dr. C. Pierrat, AMTC, Dresden, Germany
Mr. E. Rausa*, UNAXIS USA Inc., Saint Petersburg, USA
Dr. C. Reita*, CEA-LETI, Grenoble, France
Dr. F. Reuther, micro resist technology GmbH, Berlin, Germany
Dr. C. Romeo*, ST-Microelectronics, Agrate Brianza, Italy
Mrs. A. Rosenbusch, Etec Systems, Inc., Hayward, CA, USA
Prof. H. Scheer*, University of Wuppertal 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
Mr. H.-S. Steuber, Infineon Technologies AG, Munich, Germany
Dr. R. Takke, Heraeus Quarzglas, Kleinostheim, Germany
Mr. K. Tasaki, KLA-Tencor Japan Ltd., Yokohama City, Japan
Mr. M. Tissier*, Toppan Photomasks S.A., Rousset, France

Dr. G. Unger*, Infineon, Munich, Germany
Mr. J.T. Weed*, SYNOPSIS, Inc., Mountain View, CA, USA
Mr. J. Whittey*, Leica-Microsystems, Manteca, CA, USA
Mr. J. Wiley, Brion Technologies, Santa Clara, CA, USA
Mr. H Wolf*, Photonics MZD GmbH, Dresden, Germany
Mr. N. Yoshioka*, Renesas Technology Corp., Tokyo, Japan
Mr. L. Zurbrick*, KLA-Tencor, San Jose, CA, USA

Organizer

VDE/VDI-Society Microelectronics, Micro- and Precision
Engineering (GMM), Dr. Ronald Schnabel
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E-Mail: gmm@vde.com

PROGRAM OVERVIEW

Monday, January 23, 2006

- 17:00 h Meeting Program Committee
- 18:00 h Set up for Technical exhibition
- 18:00 h Check in Registration
- 19:30 h
- 19:00 h Get Together Reception

Tuesday, January 24th, 2006

- 08:40 Welcome and short introduction**
Uwe Behringer, Conference Chair

Session 1 Plenary Session

*Chairs: Uwe Behringer,
UBC Microelectronics, Germany;
Chris Gale, Applied Materials,
Dresden, Germany*

- 08:50 Invited Welcome Speaker**
*F. Schmidt, National Secretary in the Saxon
State Ministry of Science and the Fine Arts*
- 09:10 The Nanoelectronic Challenge – CNT A New
Approach for Research and Manufacturing**
*Peter Kücher (Invited Keynote Speaker),
Fraunhofer Center Nanoelectronic Technology
CNT, Dresden, Germany*
- 09:40 Mask Costs, A New Look**
*Brian Grenon (Invited Speaker), Grenon
Consulting Inc., Colchester, VT, USA;
Scott Hector, Freescale Semiconductor Inc.,
Austin, TX, USA*
- 10:10 The Status of LEEPL: Can it be an alternative
solution?**
*Takao Utsumi (Invited Speaker), Nanolith LLC,
Sambancho, Chiyoda-ku, Tokyo, Japan*
- 10:40 Coffee break**

Session 2 Best distributions from PMJ 2005 and BACUS 2005

Chairs: Brian Grenon, Grenon Consulting, Colchester, VT, USA; Naoya Hayashi, DNP, Saitama, Japan

- 11:10 Evaluation of quartz dry etching profile for the PSM lithography performance (Best Paper PMJ 2005)**
Toru Komizo (Invited Speaker), Satoru Nemoto, Yosuke Kojima, Takashi Ohshima, Takashi Yoshii, Toshio Konishi, Kazuaki Chiba, Yasutaka Kikuchi, Masao Otaki, Yoshimitsu Okuda, Toppan Printing Co. Ltd, Nobidome, Miiza-shisaitama, Japan
- 11:40 Yield-driven multi-project reticle design and wafer dicing (Best Paper BACUS 2005)**
X. Xu (Invited Speaker), A.B. Kahng, University of California/San Diego; I. Mandoiu, University of Connecticut; A.Z. Zelikovsky, Georgia State University
- 12:10 Mask Industry Assessment 2005**
G. Shelden, Shelden Consulting, San Antonio, TX, USA; Scott Hector, Freescale Semiconductor; Patricia Mamillon, SEMATECH/IBM Corp.
- 12:30 Lunch break**

Session 3 EUV

Chairs: Larry Zurbrick, KLA-Tencor Corp., San Jose, CA, USA; Roxann Engelstad, University of Wisconsin, Madison, WI, USA

- 13:40 The first Full-field EUV Masks ready for printing**
Uwe Mickan, Rogier Groeneveld, Marcel Demarteau, ASML Netherlands B.V., Veldhoven, The Netherlands; Jan Hendrik Peters, Uwe Dersch, AMTC GmbH & Co. KG, Dresden, Germany; Günter Hess, Holger Seitz, Schott Lithotec AG, Meiningen, Germany

- 14:00** **Iso-sciatic point: novel approach to distinguish shadowing effects from scanner aberrations in extreme ultraviolet lithography**
L.H.A. Leunissen, R. Gronheid, IMEC vzw., Leuven, Belgium
- 14:20** **About the first Integrated EUV Mask Process at the Advanced Mask Technology Centre (AMTC) in Dresden**
U. Dersch, G. Antesberger, J. Baumann, F. Becker, R. Buettner, S. Burges, Ch. Chovino, R. Dittmann, O. Filolenko, S. Franz, K. Geidel, T. Heins, H. Herguth, M. Herrmann, J. Heumann, Ch. Holfeld, F. Lehmann, G. Lee, R. Liebe, P. Nesladek, J. H. Peters, F. Rawolle, J. Techel, J. Tibbe, Ch. Tonk, M. Waiblinger, M. Wullinger, A. Zimmermann, Advanced Mask Technology Center, Dresden, Germany
- 14:40** **Characterizing the Response of an EUV Reticle during Electrostatic Chucking**
R. Engelstad, M. Nataraju, A. Mikkelsen, V. Rameswamy, J. Sohn, E. Lovell, Computational Mechanics Center, University of Wisconsin-Madison, USA
- 15:00** **Coffee break**

Session 4 Technical Exhibition

*Chairs: Uwe Behringer,
 UBC Microelectronics,
 Ammerbuch, Germany*

- 15:20** **Exhibitors Presentations**
 until
17:30
- 18:00** **Organ Recital in the Frauenkirche**
- 19:00** **Dinner at the “Pulverturm” in Dresden**

Wednesday, January 25th , 2005

Session 5 Advanced Lithography and Simulation

*Chairs: Wilhelm Maurer, Infineon, Munich, Germany;
Michel Tissier, Toppan Photomasks, Rousset Cedex, France*

- 08:30 Printability study with polarization based AIMS™ to study mask polarization effects**
A. Zibold, U. Stroessner, W. Degel, K. Boehm, T. Scherübl, N. Rosenkranz, W.Harnisch, Carl Zeiss SMS GmbH, Jena, Germany; E. Poortinga, Carl Zeiss SMT Inc., Thornwood, NY, USA
- 08:50 Comparing polarization effects between traditional 6% versus high transmission**
N. Morgana, Photronics, France; M.Cangemi, Photronics, @ IMEC, Belgium; R.Cottle B.Kasprowicz, Photronics, USA
- 09:10 Rigorous Mask Modeling Beyond the Hopkins Approach**
J. Schermer, P. Evanschitzky, A. Erdmann, Fraunhofer-Institute of Integrated Systems and Device Technology, Erlangen, Germany
- 09:30 Consequences of Plasmonic Effects in Photomasks**
F.M. Schellenberg, K. Adam, Mentor Graphics, San Jose, CA, USA; J. Matteo, L. Hesselink, Stanford University, Stanford, CA, USA
- 09:50 Calibration of test masks used for lithography lens systems**
M. Arnz, Carl Zeiss SMT AG, Oberkochen, Germany; W. Häßler-Grohne, B. Bodermann, H. Bosse, PTB, Braunschweig, Germany
- 10:10 Coffee break**

Session 6 Metrology

Chairs: Jacques Waelpoel, ASML, Veldhoven, The Netherlands; Carola Blaesing-Bangert, Leica Microsystems GmbH, Wetzlar, Germany

10:40 Systematic investigation of CD metrology tool response to sidewall profile variation on a COG test mask

H. Bosse, F. Gans, R. Liebe, Th. Heins, J. Richter, AMTC, Dresden, Germany; W. Häßler-Grohne, C.G. Frase, B. Bodermann, S. Czerkas, K. Dirscherl, PTB, Braunschweig, Germany

11:00 A new life for a 10-year old MueTec2010 CD measurement system: the ultimate precision upgrade, with additional film thickness measurement capability

Gian Luca Cassol, Giovanni Bianucci, Shiaki Murai, DNP Photomask Europe Spa, Agrate Brianza, Italy; Gunther Falk, Gerd Scheuring, Stefan Doebereiner, Hans-Juergen Brueck, MueTec GmbH, Munich, Germany

11:20 Spot sensor Enabled Reticle Uniformity Measurements for 65nm CDU analysis with Scatterometry

Maurice Janssen, Koen van Ingen Schenau, Hans van der Laan, ASML, Veldhoven, The Netherlands

11:40 Sub-110 nm Linewidth Standards for Accuracy Calibration of CDSEM and CDAFM

Sanjay Shirke, Rene Blanquies, VLSI Standards, San Jose, CA, USA; Gian Lorusso, KLA-Tencor Corp. San Jose, CA, USA

Session 7 DFM & MDP

*Chairs: Jim Wiley, Brion Technologies,
Santa Clara, CA, USA;
Tracy Weed, Synopsys, Mountain
View, CA, USA*

- 12:00 Data Prep - The Bottleneck of Future Applications?**
J. Gramms, H. Eichhorn, M. Lempke, R. Jaritz, V. Neick, D. Beyer, U. Denker, Leica Microsystems Lithography GmbH, Jena, Germany; B. Bürger, U. Bätz, K. Kunze, Fraunhofer IPMS, Dresden, Germany; N. Belic, PDF Solutions GmbH, Munich, Germany
- 12:20 Mask Data Volume – Historical Perspective and Future Requirements?**
Chris Spence, Scott Goad, AMD; Uwe Griesinger, Juergen Preuninger, Infineon; Peter Buck, Richard Gladhill and Russell Cinque, Toppan Photomasks Inc.; Dierk Bolton, AMTC
- 12:40 Using Design Intent to Qualify and Control Lithography Manufacturing**
Jim Vasek, Bill Wilkinson, Dave Smith, Al Reich, Cesar Garza, Freescale Semiconductor, Austin, Texas; Jim Wiley, Joyce Zhao, Brion Technologies; Youval Nehmadi, Zamir Abraham, Applied Materials
- 13:00 ORC and LfD as First Steps towards DfM**
Reinhard Maerz, Kai Peter, Wilhelm Maurer, Infineon Technologies, Munich, Germany
- 13:20 Lunch break**

Session 8 Mask Making, Mask Repair and Mask Cleaning

*Chairs: Tom Coleman, Applied Materials Europe;
Hermann Wolf, Photonics, Dresden, Germany*

- 14:20 Progressive Mask Defects and its Relationship with Mask Clean and Environment**
Brian Grenon, Grenon Consulting, Inc., Colchester, VT, USA; Kaustuve Bhattacharyya, KLA-Tencor Corp., San Jose, CA, USA
- 14:40 Application of Sulfate Free Clean Processes for Next Generation Lithography**
*Christian Chovino, Toppan Photomask Assignee, New Technologies, Advanced Mask Technology Center (AMTC) GmbH & Co. KG, Dresden, Germany;
Stefan Helbig, Peter Haschke, Werner Saule, Peter Dreß, Advanced Process Division, STEAG HamaTech AG, Sternenfels, Germany*
- 15:00 Advanced processes for photomask damage-free cleaning and photoresist removal**
James S. Papanu, Roman Gouk, Han-Wen Chen, Pieter Boelen, Steven Verhaverbeke, Alexander Ko, Kent Child, Elias Martinez, Applied Materials, Cleans Product Group, Sunnyvale, CA, USA
- 15:20 The Performance of Positive and Negative CAR Mask Exposed by Leica 20 KeV Writing System**
Chen-Rui Tseng, Eng-Ann Gan, David Lee, Chun-Hung Wu, Shih-Bin Chen, Taiwan Mask Corporation, Hsinchu, Taiwan
- 15:40 Recent application results from the novel e-beam mask repair system MeRIT**
Ch. Ehrlich W. Degel, Carl Zeiss, Jena, Germany; K. Edinger, Th. Hofmann, NaWoTec GmbH, Rossdorf, Germany
- 16:00 Coffee break**

Session 9 Nano Imprint Lithography, NIL

*Chairs: Carlo Reita, CEA-LETI, Grenoble, France;
Hella Scheer, University of Wuppertal, Germany*

- 16:20 Nanoimprint Lithography - an Introduction -**
H.-C. Scheer, University of Wuppertal, Microstructure Engineering, Faculty for Electrical, Information and Media Engineering Wuppertal, Germany
- 16:40 Nanoimprint activity in Europe: from lab to industry**
Serge Tedesco, CEA-LETI, Grenoble, France
- 17:00 Nano Imprint Lithography Beyond Semiconductor**
R. Eichinger, EV Group, Schärding, Austria
- 17:20 Step and Flash Imprint Lithography Template Development**
Douglas J. Resnick, Ecron Thompson, Jeff Myron, Gerard Schmid, Molecular Imprints Inc., Austin, TX, USA
- 17:40 Impact of light polarisation on UV stabilisation of embossed patterns**
M. Wissen, N. Bogdanski, H.-C. Scheer, Microstructure Engineering, Dep. of Electrical Information and Media Engineering, University of Wuppertal, Germany
- 18:00 Patterning process development for NIL templates**
Shiho Sasaki, Yuuichi Yoshida, Tsuyoshi Amano, Kimio Itoh, Nobuhito Toyama, Hiroshi Mohri, Nayoa Hayashi, Dai Nippon Printing Co. Ltd., Saitama, Japan
- 18:20 Plasma deposited and evaporated thin resists for template fabrication**
Eric Lavallée, Jacques Beauvais, Bertrand Takam Mangoua, Dominique Drouin, Quantiscript Inc., Sherbrooke, QC, Canada

Session 10 Poster Reception

*Chair: John Whittey, Leica
Microsystems, Manteca, CA,
USA*

19:00 – 20:00

A Technique to determine a capability to detect adjacent defects during a die-to-database inspection of reticle patterns

*Syarhei Avakaw, Aliaksandr Korneliuk, Alena Tsitko,
Planar State Scientific and Production Concern for
Precision Machine Building, Design Office for Precision
Electronics Machine Building, Opto-Mechanical
Equipment, Minsk, Republic of Belarus*

Assist Feature Placement Analysis Using Focus Sensitivity Models

*Lawrence S. Melvin III, Benjamin D. Painter,
Levi D. Barnes, Synopsys, Inc., Hillsboro, OR, USA*

A novel method for the deposition of ultra-uniform resist film for mask making

*Juan Schneider, Gilles Picard, Mame-Fatou Seye, Maria-
Helena Perez, Nanometrix Inc., Montreal, P. Québec,
Canada*

Fast and Accurate Conversion of SEM Images to GDS File

*Donald Ronning, Don Ducharme, Lite Enterprises Inc.,
Pelham, NH, USA; Robert A. Selzer, B. Boerger,
Mengchun Yu, Bin Xing, JMAR Systems, South Burlington,
VT, USA; Michael J. Trybendis, MJT Consulting,
Ticonderoga, NY, USA*

A Comprehensive Reticle Handling and Storage Approach for Optimized Fab Yields

*Atsushi Nobe, Hase, Atsugi-Shi Kanagawa, Japan; Hideaki
Kawashima, Tokio, Japan*

Laser Mask Repair for Advanced Technologies

*Andrew Dinsdale, Tod Robinson, Jeff LeClaire, Ron Bozak,
David A. Lee, Roy White, RAVE LLC, Delray Beach, FL,
USA*

Materials and Performance of Multilayer Lithography Schemes for 193-nm High-NA and Immersion

Lithography

Ulrich Herleb, Marc Weimer, Dan Sullivan, Yubao Wang, Runhui Huang, Vandana Krishnamurthy, Anwei Qin, Sunil Pillalamari, James Claypool, Brewer Science, Derby, England

Challenges of the Photomask Supply Chain for 65 nm Technologies

Andreas Torsy, ALTIS Semiconductor, France; Ingo Hoellein, AMTC, Germany; Michel Tissier, TOPPAN Photomasks, France; Markus Bender, Olaf Filies, Carsten Fuelber, Infineon Technologies, Germany

High Resolution Holographic Lithography (Experimental results)

V.I. Rakhovsky, V.F. Bratsev, V.I. Ochkur, Yu.A. Tolmachev, EXACTNESS LLC, Moscow, Russia

UV Nanoimprint: From Template to Application

C. Moormann, A. Fuchs, M. Bender, U. Plachetka, L. Kock, H. Kurz, Advanced Microelectronic Center Aachen (AMICA), AMO GmbH, Aachen, Germany

CD and Profile Metrology of Embedded Phase shift masks using Scatterometry

Kyang man Lee, Malahat Tavassoli, Kiho Baik, Intel Corporation, Santa Clara, USA; Sanjay Yedur, Timbre Technologies, Santa Clara, USA; Dave Hetzer, Timbre Technologies, Dresden, Germany

Standardization of photomask orders: An automation perspective

Nikos Houssos, Evangelos Parchas, Stelios Stavroulakis, Emmanuel Voyiatzis, Photronics Hellas S.A., Lavrio, Greece; Andreas Torsy, Altis Semiconductor, Corbeil Essonnes, France; Olaf Filies, Infineon Technologies AG, Munich, Germany

20:00 Dinner at the Hilton Hotel

Thursday, January 26th , 2006

Session 11 Immersion Lithography 1

*Chairs: Rik Jonckheere, IMEC,
Leuven, Belgium;
Wilhelm Maurer, Infineon,
Munich, Germany*

- 08:30 Alternative Optical Materials for ArF Hyper NA Immersion Lithography**
*Lutz Parthier, Gunther Wehrhan, Konrad Knapp,
Schott Lithotec AG, Jena, Germany*
- 08:50 How Refractive Microoptics Enable Lossless Hyper-NA Illumination Systems for Immersion Lithography**
*L. Aschke, H. Ganser, M. Darscht, Y. Miklyaev,
D. Hauschild, LIMO-Lissotschenko Mikrooptik
GmbH, Dortmund, Germany*
- 09:10 A Correlation for Predicting Film Pulling Velocity in Immersion Lithography**
*S. Schuetter, T. Shedd, K. Doxtator, G. Nellis,
R. Engelstad, Computational Mechanics Center,
University of Wisconsin, Madison, USA;
C. Van Peski, SEMATECH, Austin, TX, USA;
A. Grenville, SEMATECH / Intel, Austin, TX,
USA*
- 09:30 Revisiting the mask magnification ratio: Lucky number four?**
*Michael Lercel, IBM/SEMATECH, Austin, TX,
USA*
- 09:50 Mask reduction factor considerations: a mask vendor perspective**
*Naoya Hayashi, Electronic Device Laboratory,
Dai Nippon Printing Co. Ltd., Saitama, Japan*
- 10:10 Coffee break**

Session 12 Immersion Lithography 2

*Chairs: Rik Jonckheere, IMEC; Leuven, Belgium;
Jacques Waelpoel, ASML, Veldhoven, The Netherlands*

- 10:40 Through-pitch and through-focus characterization of AAPSM for ArF immersion lithography**
Toshio Konishi, Yosuke Kojima, Toppan Printing Co., Ltd, Saitama, Japan, Vicky Philipsen, Leonardus H.A. Leunissen, Lieve Van Look, IMEC vzw., Leuven, Belgium
- 11:00 Manufacturability of AAPSM and CPL Mask Technologies using a Transparent Etch Stop Layer**
M.Cangemi, Photronics (@ IMEC, Belgium); N. Morgana, P. Sixt, Photronics, France; M. Lassiter, M.J. Cangemi, M. Smith, R. Cottle, B. Kasprowicz, P. Martin, Photronics, USA; V. Philipsen, J. Bekaert, L. Van Look, R. De Ruyter, P. Leunissen, R. Jonckheere, G. Vandenberghe, IMEC, Belgium
- 11:20 Analysis method to determine and characterize the mask mean-to-target and uniformity specification**
Sung-Woo Lee, Suk-Joo Lee, Sang-Gyun Woo Han-Ku Cho, Joo-Tae Moon, Process Development Team, Samsung Electronics, Yongin-City, Korea; Leonardus H.A. Leunissen, Vicky Philipsen, Rik Jonckheere, IMEC, Leuven, Belgium
- 11:40 Development of Mask substrate for 193 immersion**
N. Agata, T Satoh, K. Hino, T.Minematsu, S. Kikugawa and K. Ochiai, ASAHI Glass Co. Ltd., Tokyo, Japan
- 12:00 Mask polarization effects in 193nm immersion lithography**
Wen-Hao Cheng, Jeff Farnsworth, Intel Corporation, Santa Clara, CA, USA
- 12:20 Photomask Materials Solutions to Hyper-NA and Polarization Issues**
Matthew G Lassiter, Photronics, Inc. Allen, TX USA

- 12:40** **Closing remarks and Farewell**
Uwe Behringer, Conference Chair
- 12:50** **Lunch break**

CONFERENCE INFORMATION

CONFERENCE HOURS

Tuesday, January 24 th , 2006	8:40 h to 17:30 h
Wednesday, January 25 th , 2006	8:30 h to 20:00 h
Thursday, January 26 th , 2006	8:30 h to 12:50 h

REGISTRATION HOURS

Monday, January 23 rd , 2006	18:00 h to 19:30 h
Tuesday, January 24 th , 2006	08:00 h to 17:30 h
Wednesday, January 24 th , 2006	07:45 h to 18:00 h
Thursday, January 25 th , 2006	08:00 h to 12:00 h

TECHNICAL EXHIBITION

Parallel to the conference presentations on Tuesday and Wednesday there will be a technical exhibition. It will take place in the conference lobby, in front of the conference room. For details see the attached leaflet.

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

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TECHNICAL EXHIBITION TALKS

5 minutes presentations on Tuesday afternoon

ORGAN CONCERT: Tuesday, 18:00 h

DINNER: Tuesday, 19:00 h

Wednesday, 20:00 h

EXCURSION PROGRAM

Welcome to Dresden and surroundings! During the EMLC2006 an accompanying guests program will be offered to you for Tuesday, January 24 and Wednesday, January 25. If you are interested please book the offered tours in advance using the registration form. Bookings have to be done until January 16th, 2006 at the latest.

The excursions are organized by the help of SAXONIA Touristik International GmbH and will be accompanied by English-Speaking guides. For lunch we will arrange a stop at a nice restaurant with regional and international cuisine. The fee for the lunch is not included in the price of the excursion.

All excursions require a minimum of 15 participants and a maximum of 25 persons.

Please make your registration in good time. Bookings for excursions will be made on a "first come - first served" basis upon receipt of registration and payment.

The total amount shall be paid in advance or at the registration desk and has to be made in EUR.

Tuesday, January 24, 2006, 10:00h - 17:00 h

MEISSEN / Albrechtsburg and China manufactory

We will go by bus to Meissen along the river Elbe, visit the famous old city of Meissen including the castle Albrechtsburg and the cathedral built in 12 century. At our visit of the China manufactory you will watch how China porcellain is made and coloured by painters and can visit the museum of the famous Meissen China.

Price: 50 EURO/person (Lunch is not included)

At 19:00 h Photronics MZD GmbH, Dresden, is going to invite you for dinner at the "Pulverturm" in Dresden.

Wednesday, January 25, 10:00 h bis 17:00 h

STOLPEN / castle and art shop floor Langenwolmsdorf

By bus we will go to Stolpen and visit the nice old city including the big castle, where the countess Cosel has been lived for 49 years as a prisoner of August the Strong. On our way back we will stop at Langenwolmsdorf art shop floor. You will be surprized to get an overview of the German wood art manufacturing you never saw before.

Price: 40 EURO/person (Lunch is not included)

INFORMATION FOR AUTHORS

MANUSCRIPTS AND PROCEEDINGS

Manuscripts and a biography of the speaker should be send to the Program- and the Conference Chairpersons: Dr. Uwe Behringer: uwe.behringer.ubc@t-online.de
Mr. Jacques Waelpoel, ASML: jacques.waelpoel@asml.nl
as well as to the VDE/VDI-Society Microelectronics, Micro- and Precision Engineering (GMM) (gmm@vde.com) by **December 9th, 2005**. Since the manuscripts will be directly reproduced in the proceedings please send a pdf-file by e-mail. The manuscripts are limited to 12 pages (figures included). When writing respectively shaping your manuscript, please observe the guidelines of our "Information for Authors on Contributions to Conference Proceedings", which you will find at <http://www.vde.com> (navigating to „Events“ and then follow the button „Typing instructions“).

The conference proceedings will be published by the VDE/VDI Society Microelectronics, Micro- and Precision Engineering and will be delivered to the conference participants at the registration desk.

Please note that late submissions may not be considered in the conference proceedings.

GENERAL INFORMATION

EMLC 2006 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: ++49-69-6308-330
Fax: ++49-69-6312925
E-Mail: gmm@vde.com

During the conference:

Phone: ++49 171 4695118 or ++49 351 8642903

CONFERENCE FEES

	until Dec. 16 th , 2005	after Dec. 16 th , 2005
Non-Members	€ 580,00	€ 620,00
VDE,VDI,SEMI-Members*	€ 520,00	€ 560,00
Lecturer	€ 400,00	€ 440,00
Non-Member-Students**	€ 80,00	€ 100,00
Student Members**	€ 40,00	€ 60,00
Extra proceedings	€ 60,00	€ 60,00

* Participants applying for the membership fee must include a copy of their membership card to the registration form.

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

The conference fee includes admission to all sessions as well as to the daily coffee-breaks, one copy of the proceedings and a CD-ROM, lunch, organ recital and dinner on Tuesday, lunch and dinner on Wednesday, lunch on Thursday.

CONFERENCE REGISTRATION

To register für EMLC 2006 please fill in the registration form attached to this program and return to VDE Conference Services, Stresemannallee 15, 60596 Frankfurt, Gemany. To enjoy the "early-bird-discount", VDE Conference Services must receive the form before Dec. 16, 2005. Full payment or credit card information must accompany all registrations in order to be accepted. Completed forms may be sent by fax (++ 69 96 31 5213) surface mail 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 may be done online on the conference homepage www.vde.com/EMLC2006

PAYMENT TO THE VDE/VDI SOCIETY

Payment for registration, including bank charges and processing fees, must be made in Euro.

The conference fee has to be fully paid in advance. Confirmation of registration will be sent after full payment has been received at the VDE-Conference Services.

The following methods of payment are accepted:

- Cheque in EURO (€) payable to VDE and sent together with the registration form by mail.
- 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 is received at the VDE-Conference Services before Dec. 16, 2005, the registration fee will be fully refunded less a handling fee of EURO 60,00. After Dec. 16, 2005 no refund will be made. Proceedings and CD-ROM 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 and a CD-ROM. The proceedings will be handed on-site to all delegates attending the event.

Additional proceedings and CD-ROM are on sale during the conference (upon availability) at EURO 60,00

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.

HOTEL RESERVATION

A block of rooms has been reserved for EMLC 2006 participants at the Hilton Hotel Dresden.

The hotel room rate (special rate, including breakfast) is

98,00 EURO (single room),
118,00 EURO (double room)

per night. Accommodation is not included in the conference fee. Please contact the Hilton Hotel, for reservation.

Hilton Dresden, An der Frauenkirche 5, 01069 Dresden,
Germany, Phone: +49 (0)351/86420,
Fax: +49 (0)351/8642-725, <http://www.hilton.com/>

You should reserve your room by January 2nd, 2006 or our block of rooms may be released by the hotel for general sale. Please use the following code for booking: "EMLC Conference 2006".

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

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.

TRANSPORT

By Air

Dresden Airport

Distance from hotel: 10 km, Drive time: 20 min.

Directions: Follow signs to city centre. After passing the Elbe Bridge, turn right onto Terrassenufer. Follow Hilton signs.

Getting to and from the airport

Bus Service, typical minimum charge ist EURO 8,00

Limousine, typical minimum charge ist EURO 70,00

Taxi, typical minimum ist EURO 25,00

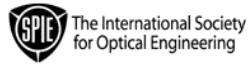
By train

from Frankfurt in 5 hours

from Berlin in 3 hours

Notes

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