#### Organizers

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

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#### In cooperation with:

UBC Microelectronics Dr. Uwe Behringer EMLC 2017 Conference Chair Auf den Beeten 5 Phone: +49-171-455-3196 72119 Ammerbuch, Fax: +49-7073-50216 Germany E-Mail: uwe.behringer.ubc@t-online.de

In the Dresden



Dresden at the river Elbe

Venue: Hilton Hotel

in Dresden

#### The EMLC 2017 International Program Committee

Conference Chairs	<i>Behringer Uwe</i> , UBC Microelectronics Ammerbuch, Germany <i>Finders, Jo,</i> ASML, Veldhoven, The Netherlands
Co-Conference Chairs	<i>Connolly, Brid,</i> Toppan Photomasks GmbH, Dresden, Germany <i>Gale, Chris,</i> Applied Materials, Dresden, Germany <i>Hayashi, Naoya,</i> DNP, Saitama, Japan
Program Chairs	Stolberg, Ines, Vistec Electron Beam, Jena, Germany Erdmann, Andreas, Fraunhofer IISB, Erlangen, Germany Pozo, José, European Photonics Industry Consortium, Brussels, Belgium
Co-Program Chairs	<i>Seltmann, Rolf,</i> Globalfoundries, Dresden, Germany <i>Sarlette, Daniel,</i> Infineon, Dresden, Germany

#### Other Members

Blaesing, Carola, Carl Zeiss SMT GmbH, Jena, Germany Chen, Parkson, Taiwan Mask Corporation, Hsinchu, Taiwan Ehrmann, Albrecht, Carl Zeiss SMT GmbH, Oberkochen, Germany *Farrar, Dave,* Hoya Corporation, London, UK Jonckheere, Rik, IMEC vzw, Leuven, Belgium Lauche, Barbara, Photronics MZD GmbH, Dresden, Germany Le Gratiet, Bertrand, STMicroelectronics, Crolles, France Lee, Carlos, European Photonics Industry Consortium, Brussels, Belgium Levinson, Harry, Globalfoundries, Santa Clara, CA, USA Loeschner, Hans, IMS Nanofabrication AG, Vienna, Austria Muehlberger, Michael, Profactor GmbH, Steyr-Gleink, Austria Peters, Jan Hendrik, Carl Zeiss SMT GmbH, Jena, Germany Progler, Chris, Photronics Inc., San José, CA, USA Resnick, Douglas J., CNT-Canon, USA Roeth, Klaus-Dieter, KLA-Tencor MIE, Weilburg, Germany Scheruebl, Thomas, Carl Zeiss SMT GmbH, Jena, Germany Schnabel, Ronald, VDE/VDI-GMM, Frankfurt am Main, Germany Schulze, Steffen, Mentor Graphics Corp., Wilsonville, OR, USA Tschinkl, Martin, AMTC, Dresden, Germany Waelpoel, Jacques, ASML, Veldhoven, The Netherlands Wiley, Jim, ASML US Inc., Santa Clara, CA, USA Willson, Grant, University of Texas, Austin, TX, USA Wolf, Hermann, Photronics MZD GmbH, Dresden, Germany Wurm, Stefan, ATICE LLC, Albany, NY, USA Zurbrick, Larry, Agilent Technologies, Santa Clara, CA, USA

**Cover picture: Courtesy of Toppan Photomasks** 

GMM VDE/VDI-SOCIETY MICROELECTRONICS, MICROSYSTEMS AND PRECISION ENGINEERING



The 33<sup>rd</sup> European Mask and Lithography Conference EMLC 2017

VDE

June 27 – 28, 2017 Hilton Hotel Dresden, Germany



VD

www.EMLC2017.com



The VDE/VDI-Society Microelectronics, Microsystems and Precision Engineering (GMM) and UBC Microelectronics in cooperation with BACUS, PMJ, SEMI-Europe, and SPIE, are pleased to announce the

33<sup>rd</sup> European Mask and Lithography Conference,

# **EMLC 2017**

### at the Hilton Hotel in Dresden, Germany June 27 - June 28, 2017

The focus of this 2 day conference is state-of-the-art of mask technology and lithography, such as mask manufacturing, mask business, lithography and mask applications, emerging mask & lithography technologies, and mask & lithography equipment.

This conference has annually brought together scientists, researchers, engineers and developers from around the world to present papers at the forefront of research, manufacturing and application. It provides a place where both specialists from industry and advanced research as well as equipment and software providers become acquainted with new developments and results.

#### **Conference Schedule**

The conference will be opened with a Keynote Session on Tuesday, June 27, 2017, at 09:00 AM and close on Wednesday, June 28, 2017, at 6:30 PM.

#### **Technical Exhibition**

On Tuesday and Wednesday (June 27<sup>th</sup> and 28<sup>th</sup> 2017) there will be a technical exhibition with booth space for about 30 exhibitors. Presentation tables and pin boards will be available. To be part of this Technical Exhibition, please return the **enclosed registration form** to the Conference Exhibition Organization as soon as possible, since exhibition space is limited.

#### **Exhibition Organization**

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#### **Abstract Information**

Abstract quality will be the basis for selection of conference presentations. The abstracts will be assessed for:

- Originality of work
- Specific results reported
- Potential impact and interest to the attendees.

Therefore, we highly recommend that your abstract contains enough detail to clearly describe the content of your presentation. We recommend an abstract length of **two pages** (including figures, diagrams, formatted text) as Wordand PDF.

Commercial papers, papers with no new research / development content, and papers where significant information is missing will not be accepted.

All accepted abstracts will be printed, bound and handed out to the participants of the conference.

In order to submit your abstract, please open the web site

#### www.EMLC2017.com

#### Deadline for Abstracts: Friday, March 31<sup>st</sup> 2017

#### By submitting an abstract you agree to

- present your work in person at the conference
- and to submit a manuscript and / or your presentation materials in time

Authors will be notified of the acceptance of their submissions by **April 30<sup>th</sup> 2017**; further manuscript format and layout instructions will be provided at that time.

#### Please notice, we plan to have oral and poster presentations.

#### Deadline for submission your manuscripts to SPIE: June 27<sup>th</sup> 2017, at the first day of the conference.

All manuscripts will be subjected to a critical peer review before they are accepted for publication.

Please note that late submissions may not be published.

## Manuscripts (proceedings) will be published in the SPIE Digital Library.

Presentation Materials, submitted until June  $30^{th}$  2017, will be published at the EMLC2017.com website, protected by a pin code.

For further information concerning the submission procedure, please visit our homepage **www.emlc2017.com** 

#### **Conference Topics**

#### Mask Manufacturing and Mask Business

- Mask Data Preparation
- Pattern Generation: Writing, Etch, etc.
- Photomask Processes & Materials
- Metrology Tools & Technologies
- Defect Inspection & Repair
- Cleaning & Haze
- Pellicles & Mask Boxes
- Mask Process Yield & Cycle Time
- Photomasks for RET & OPC; PSM
- Mask Business and Management
- Mask Cost and Mask Development Strategy
- Future Mask Demand

#### Lithography Systems and Processes

- Optical Resolution Enhancements including OPC, Freeform Illumination, Source-Mask-optimization (SMO) and Inverse Lithography Technology (ILT)
- Material-and Process driven Resolution Enhancements including Multiple Patterning and Chemical Shrinking
- Immersion Lithography including Defectivity
- Lithography Process Control
- Lithography and Etch Simulation including rigorous physical/chemical Models and Compact Models

#### **Emerging Mask and Lithography Technologies**

- EUV-Lithography including Masks, Materials Processes and Infrastructure
- Directed Self-Assembly (DSA) including high chi Materials, Defectivity control, and new Processes
- Direct Write / Maskless Technologies including Multi-Beam Technologies
- Nano-Imprint Lithography (NIL), Soft Lithography, and Microprinting

#### Emerging Applications: NEW!!!

- Non-IC Applications including Si-Photonics, flat Panel Displays and MEMS
- Lithographic Systems for non-IC Applications, including Laser Direct Write, Interference Lithography, and Mask Aligners