

# PROCEEDINGS OF SPIE

## ***28th European Mask and Lithography Conference***

**Uwe F.W. Behringer  
Wilhelm Maurer**  
*Editors*

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## Foreword

Welcome to the proceedings volume from the 28th European Mask and Lithography conference, EMLC2012, which was held 17–18 January 2012 at the Hilton Hotel in Dresden, Germany. On behalf of VDE/VDI-GMM, the sponsors, and the organizing committee, we are pleased to present to you these papers presented at EMLC2012.

Every year this conference brings 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 two-day conference is dedicated to the science, technology, engineering, and application of mask and lithography technologies and associated processes, giving an overview of the present status in mask and lithography technologies and the future strategy where mask producers and users have the opportunity of becoming acquainted with new developments and results. This year's sessions included: EUV Lithography and Masks Application, Mask Optimization, Lithography Optimization, Lithography for MEMS, Mask Materials, Mask Data Preparation, Emerging Lithography, Mask Handling, Cleaning, and Haze, and EUV Mask Defect Management. For post-deadline submissions there was the "Last Minute Session" at the end of the conference.

We are pleased to report that Martin Esser, President Silicon Saxony, Dresden, provided the opening comments. Our first keynote speaker was Dr. Burn Lin from TSMC, Taiwan. His presentation was entitled "Nanometer-level semiconductor for micrometer-level MEMS." Our second keynote speaker was Dr. Paul Chipman, Vice President, Global Strategy, Toppan Photomasks Inc., of Austin, TX, USA.

An annual fixture has been SEMATECH's Trend Analysis of their Mask industry Assessment, presented this year by David Chan from SEMATECH, Albany, New York, USA.

The Best Paper of EMLC2012 was "Correcting image placement errors by using registration control (RegC) technology in the photomask periphery," by Avi Cohen, et al, from Carl Zeiss SMS, Israel.

Parallel to the Conference Presentations, a Technical Exhibition took place on Tuesday and Wednesday where companies (mask suppliers, material suppliers, and equipment suppliers) showed off their companies and products. In order to foster the exchange between the conference attendees and the exhibitors, the exhibition area also served as the place for all coffee and lunch breaks.

We hope that you enjoyed the Technical Sessions of the EMLC2012 as well as the Technical Exhibition, but also that you allowed yourself to visit Dresden, one of the most beautiful cities in Europe!

Please mark your calendar: EMLC2013 will move from January to June. So the next conference, EMLC2013, will be 25–27 June 2013 at the same location, the Hilton Hotel in Dresden, Germany.

**Uwe F.W. Behringer**

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