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Editors

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Foreword

On behalf of VDE/VDI-GMM, the EMLC2018 sponsors, and the EMLC2018 organizing committee, we welcome you to the proceedings from the 34th European Mask and Lithography Conference, EMLC2018, at the MINATEC Conference Centre in Grenoble, France.

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 two-and-a-half-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 were: Wafer Lithography (193i and EUV), Mask Patterning, Metrology, and Process, Non-IC Applications, Plasmonics, and Photonics, Nano-Imprint Lithography and DSA, Mask2Wafer and Wafer2Wafer Metrology, and Using Big Data/Deep Learning.

Marie-José Salat, representative of Grenoble-Alpes Métropole, was welcome speaker.

Tutorials

Paul van Adrichem from ASML Netherlands B.V. (Netherlands) gave a "Review of OPC / RET / SMO." This first tutorial provided an overview of advanced optical proximity correction, resolution enhancement technology, as well as source-mask-optimization.

Aviram Tam from Applied Materials PDC (Israel) gave the second tutorial on the "Inspection Challenges in the EUV Area." This tutorial covered the use cases for blank inspection, pattern inspection, outgoing inspection, and the possible solution for DUV mask inspection, e-Beam MI, actinic blank inspection, on-wafer qualification, and how those evolve in each of the different scenarios for pellicle (no pellicle/detachable/13.5nm only/193nm friendly).

The first keynote speaker was Olivier Noblanc from ST Microelectronics (France). His talk was titled, "Technology for Optical Sensors."

The second keynote speaker was Laurent Pain from CEA-LETI (France). His presentation was on "The Battle Field of Lithography."

The third keynote speaker was Frédéric Boeuf from ST Microelectonics (France). He presented the newest technologies on "Silicon Photonics."

As every year, we invited the authors of the Best Poster of BACUS (SPIE Photomask Technology) 2017 and the Best Paper from PMJ (Photomask Japan) 2018 to present their papers.

Technical Exhibition

Parallel to the conference presentations, a technical exhibition took place on Tuesday and Wednesday where companies (mask suppliers, material suppliers, and equipment suppliers) exhibited their companies and products. To foster the exchange between the conference attendees and the exhibitors, the exhibition area was also the place for all coffee and lunch breaks.

We hope that you enjoyed the tutorials and technical sessions of the EMLC2018 as well as the technical exhibition, but also allowed yourself take in the beautiful city of Grenoble.

Uwe F.W. Behringer
EMLC2018 Conference Chair

Sponsors and Cooperating Partners

The 34th European Mask and Lithography Conference, EMLC 2018, would like to express its sincere appreciation to all the sponsors and coopering partners below for their support.