PROCEEDINGS OF SPIE

Advanced Etch Technology for Nanopatterning VI

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Richard S. Wise
Editors

27 February – 1 March 2017
San Jose, California, United States

Cosponsored by
Lam Research Corporation (United States)

Published by
SPIE

Volume 10149

Proceedings of SPIE 0277-786X, V. 10149

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Advanced Etch Technology for Nanopatterning VI, edited by Sebastian U. Engelmann, Richard S. Wise,
Proc. of SPIE Vol. 10149, 1014901 · © 2017 SPIE · CCC code: 0277-786X/17/$18 · doi: 10.1117/12.2279253

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Please use the following format to cite material from these proceedings:
Author(s), "Title of Paper," in *Advanced Etch Technology for Nanopatterning VI*, edited by Sebastian U. Engelmann, Richard S. Wise, Proceedings of SPIE Vol. 10149 (SPIE, Bellingham, WA, 2017) Seven-digit Article CID Number.

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510607491
ISBN: 9781510607507 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445
SPIE.org

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Introduction

This proceedings volume contains accepted papers from the SPIE conference on Advanced Etch Technology for Nano-patterning VI (The SPIE Etch conference) held as part of the International Symposium on Advanced Lithography, held 26 February — 2 March 2017, in San Jose, California, United States. These proceedings papers cover the latest advances in the wide field of etch and nano-patterning technology and offer a glimpse at the state-of-the-art developments of this important field of semiconductor technology.

This year's SPIE Etch conference continued the fine tradition of having a wide international representation and attracted many researchers from related fields. For this year, our conference spanned three days, with the papers divided into eight sessions (listed below) which continued to garner tremendous interest among conference attendees:

Keynote Session
Patterning Techniques for Advanced Technology Nodes
Advanced Plasma Control
Patterning Challenges in Nanophotonic Structures
Patterning Materials and Etch: Joint Session with Conferences 10146 and 10149
Novel Plasma Patterning Techniques
Litho Etch Process Interaction: Joint Session with Conferences 10147 and 10149
Patterning Solutions for Emerging Products

The widely recognized challenges in extension of Moore's Law have driven the industry toward collaboration across process modules. This year, the Etch conference focused on strengthening this collaboration with two well-attended joint sessions on Patterning Materials and Etch with the Advances in Patterning Materials and Processes conference (volume 10146) and on Litho Etch interactions with the Optical Microlithography conference (volume 10147).

The keynote session of the Etch conference again drew very big crowds, where some of the most important fundamental issues faced in the world of nano-patterning and etch, as well as device fabrication in a post-classical scaling world, were discussed. First hints at new directions for patterning applications were presented at the nanophotonic patterning session, where patterning applications for optical devices and features were discussed. We hope that these proceedings proves valuable to the many patterning scientists and engineers working in the fast-moving semiconductor industry. We also hope that it serves as a useful reference for those who are interested in nanofabrication, micro- and

nano-fluidics, micro- and nano-photonics, Micro-Electro-Mechanical Systems (MEMS), BioMEMS, organic electronics, advanced packaging, and bio-chips.

We thank the authors, particularly the invited speakers, for their valuable contributions to the conference and proceedings volume. The SPIE Etch conference is highly regarded among the worldwide patterning community; which recognizes the high quality of our talks and proceedings papers. We also thank members of the organizing committee for their dedication and hard work to help maintain a high quality of this conference. We are also grateful to LAM Research Corporation (United States) for their generous financial support.

Finally, we extend our sincere thanks to the SPIE staff for their tireless efforts and their meticulous organizational skills in helping make this year's SPIE Etch conference a success and in assembling and publishing this proceedings volume.

Sebastian U. Engelmann
Richard S. Wise