International Workshop on EUV Lithography 2017

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12 - 15 June 2017

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2017 International Workshop on EUV Lithography

(2017 EUVL Workshop)

CXRO, LBNL, Berkeley, CA, USA
June 12-15, 2017

Workshop Proceedings

Wednesday, June 14, 2017

8:00 AM Welcome and Introduction

Welcome to 2017 EUVL Workshop
Vivek Bakshi
EUV Litho, Inc., Austin, TX, USA

Introductions and Announcements (Intro-1) .....N/A
Patrick Naulleau, LBL

Session 1: Keynote – 1

Session Chair: Anthony Yen (ASML)

Obert R Wood II
GLOBALFOUNDRIES,400 Stone Break Road Extension, Malta, New York 12020, U.S.A.

Britt Turkot
Intel Corporation

Break (20 minutes)

Session 2: EUV Masks and Mask Metrology

Session Co-chairs: Jim Wiley (ASML) and Bryan Kasprowicz (Photronics)

Lunch 12:20 AM – 1:20 PM

Session 3: EUV Sources- I

Session Co-chairs: Akira Endo (HiLASE) and Oscar Versolato (ARCNL)

Break and Group Photograph 2:20 PM (30 Minutes)

Session 4: EUV Sources - II

Session Chair: Erik R. Hosler (GLOBALFOUNDRIES) and Hiroshi Kawata (KEK)

Session 5: Poster Session 5:30 7:00 PM

Session Chair: *Gregory Denbeaux (SUNPU Poly)*

Achromatic Talbot lithography with partially coherent EUV radiation (P62) 46
Sascha Brose[1], Jenny Tempeler[1], Hyun-su Kim[2,3], Serhiy Danylyuk[1], Peter Loosen[1], Larissa Juschkin[2,3]
[1] Chair for the Technology of Optical Systems, JARA-FIT, RWTH Aachen University, Germany
[2] Chair for the Experimental Physics of EUV, JARA-FIT, RWTH Aachen University, Germany
[3] Peter Grünberg Institute 9, JARA-FIT, Forschungszentrum Jülich GmbH, Germany

Spectroscopic EUV reflectometry for characterization of thin films and layered structures (P63) 47
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[2] Chair for the Technology of Optical Systems, JARA-FIT, RWTH Aachen University, Germany
[3] Peter Grünberg Institut 9, JARA-FIT, Forschungszentrum Jülich GmbH, Germany
[4] CNR - Istituto Officina Materiali, Trieste, Italy
[5] Dipartimento di Ingegneria dell'Informazione, Universita' degli Studi di Padova, Italy

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Oleksiy Maryasov[1,2], Christian Laubis[2], Mewael Sertsu[1,3], Frank Scholze[2], Larissa Juschkin[1,4]
[1] Chair for the Experimental Physics of EUV, JARA-FIT, RWTH Aachen University, Steinbachstr. 15, 52074 Aachen, Germany
[2] Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany
[3] Dipartimento di Ingegneria dell'Informazione, Universita' degli Studi di Padova, Italy
[4] Peter Grünberg Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany

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Roberto Fallica and Yasin Ekinci
Paul Scherrer Institute, 5232 Villigen PSI, Switzerland

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Takeo Watanabe and Tetsuo Harada
Center for EUVL, Laboratory of Advanced Science and Technology for Industry, University of Hyogo

EUV Light Source Development at Energetiq (P65) (Commercial Poster) .....N/A
Matthew Partlow, Energetiq

Laser Driven Light Sources (LDLS) from Energetiq (P66) (Commercial Poster) .....N/A
Matthew Partlow, Energetiq

Veeco's Technologies Enable High Growth Markets (P67) (Commercial Poster).....N/A
Sandeep Kohli, Veeco

End Day 1

Thursday, June 15, 2017

Welcome and Announcements (Intro-2)
Patrick Naulleau, LBL

Session 6: Keynote-2

Session Chair: Patrick Naulleau (LBL)

Break (20 Minutes)

Session 7: Optics and Contamination

Session Co-Chairs: Jan van Schoot (ASML) and Ladislav Pina (RITE

Lunch 12:00 PM (60 Minutes)

Steering Committee working lunch meeting (Closed meeting)

Session 8: Resist and Patterning -1

Session Co-Chairs: Greg McIntyre (IMEC) and Yoshi Hishiro (JSR)

Break 2:50 PM (20 Minutes)

Session 9: Resist and Patterning -2

Session Co-chairs: Greg Denbeaux (SUNY Poly) and Frank Ogletree (LBL)

Towards Real-Time Analysis of Morphologies using Scattering (P42) (Invited Paper) 36
Alex Hexemer
Lawrence Berkeley National Laboratory, Berkeley, California, United States, 94720

Extreme ultraviolet Induced Chemical Reactions in Photoresists and Model Systems (P44) (Invited Paper) 38
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[a] Advaced Research Center for Nanolithography, Science Park 110, 1098XG Amsterdam, The Netherlands
[b] Paul Scherrer Institute, 5232 Villigen PSI, Switzerland

Fundamentals of X-Ray Excitation and Relaxation in EUV Resists (P45) (Invited Paper) .....N/A
D. Frank Ogletree
Molecular Foundry, Materials Sciences Division, Lawrence Berkeley National Laboratory, 1 Cyclotron Road, Berkeley CA 94720 USA

Fundamental Aspects of Low Energy Electron Driven Chemistry (P48) (Invited Paper) 41
Dan Slaughter
Chemical Sciences Division, LBNL

EUVL Workshop Summary (P70) .....N/A
Vivek Bakshi
EUV Litho, Inc.

Depart for Dinner

6:00 -9:00 PM Dinner Cruise