

# 2020 Source Workshop

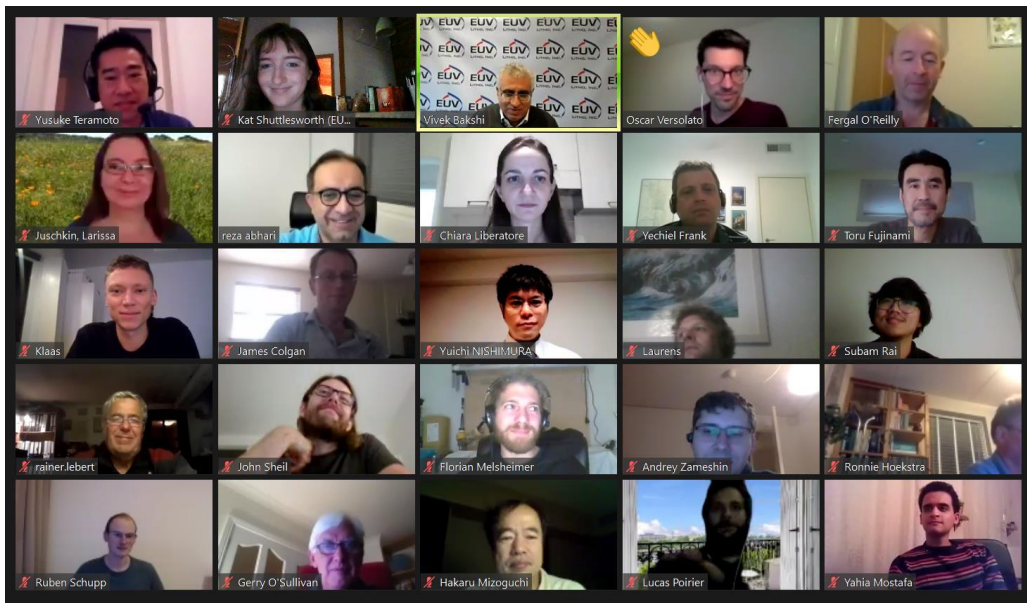
October 31-November 5, 2020  
*Held Online*

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## Workshop Proceedings



# 2020 Source Workshop



*Screenshot of 2020 Source Workshop Zoom Meeting*

# 2020 Source Workshop Sponsors



## Organized by



**Vivek Bakshi (EUV Litho, Inc.), Chair**

**Reza Abhari (ETHZ), Co-Chair**

## 2020 Source Workshop

### WORKSHOP PROCEEDINGS

## 2020 Source Workshop

October 31- November 5, 2020

*Held Online*

### Day 1: Monday November 2, 2020

**8:00 – 8:05 AM Welcome and Announcements**

#### **8:05 AM Session 1: PSI EUVL Program Showcase**

*Session Chairs: Yasin Ekinci (PSI) and Vivek Bakshi (EUV Litho, Inc.)*

#### **[An Overview of PSI and its Electron Accelerator based Light Sources and the Semiconductor industry \(S61\)](#)**

Gabriel Aeppli  
*PSI*

#### **[Imaging of Integrated Circuits using 3D X-ray Ptychography \(S62\)](#)**

Mirko Holler  
*PSI*

#### **[EUV Mask Inspection with the RESCAN APMI Tool: Effects of the Illumination NA \(S63\)](#)**

R. Nebling, H.-S. Kim, A. Dejkameh, T. Shen, Y. Ekinci and I. Mochi  
*Paul Scherrer Institute, Villigen, Switzerland*

#### **[Toward High Resolution and Efficient Reconstruction for EUV Actinic Mask Review \(S64\)](#)**

H. Kim<sup>1</sup>, U. Locans<sup>1</sup>, A. Dejkameh<sup>1,2</sup>, R. Nebling<sup>1,2</sup>, T. Shen<sup>1,2</sup>, D. Kazazis<sup>1</sup>, Y. Ekinci<sup>1</sup> and I. Mochi<sup>1</sup>

<sup>1</sup>*Paul Scherrer Institute, Switzerland*

<sup>2</sup>*Eidgenössische Technische Hochschule (ETH), Switzerland*

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### **Allenet Image Blur Measurement using EUV Interference Lithography for the Characterization of Resist and Exposure Tool Performances (S65)**

T. Allenet<sup>a</sup>, J. G. Santaclara<sup>b</sup>, G. Rispens<sup>b</sup>, B. Geh<sup>c,d</sup>, Y. Ekinici<sup>a</sup>

<sup>a</sup> Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, 5232 Villigen-PSI, Switzerland

<sup>b</sup> ASML, De Run 6501, 5504 DR Veldhoven, The Netherlands

<sup>c</sup> Carl Zeiss SMT, Rudolf-Eber-Straße 2, 73447 Oberkochen, Germany

<sup>d</sup> ASML TDC, 399 W. Trimble Road, San Jose, CA 95131, USA

### **Chemical Amplified Backbone Breaking Polymers: Designing New Resists for EUV Lithography (S66)**

Theodoros Manouras, Dimitris Kazazis, Yasin Ekinici  
Paul Scherrer Institute

### **9:40 AM Break (20 min.)**

### **Preliminary Design Considerations for an Electron Storage Ring with Application to EUV Mask Inspection (S67)**

T. Garvey, A. Streun, Y. Ekinici  
Paul Scherrer Institut

### **Soft X-Ray ARPES at Swiss Light Source: Electronic Structure of Device Materials (S68)**

Vladimir N. Strocov  
Swiss Light Source, Paul Scherrer Institute, Switzerland

### **Soft x-ray Photoelectron Spectroscopy for Device Physics at the PEARL Beamline (S69)**

Matthias Muntwieler  
PSI

### **A PSI Spin-Off for EUV and X-ray Optics (S70)**

Florian Döring  
Paul Scherrer Institut, 5232 Villigen-PSI, Switzerland

### **AAT The Venture of Accelerating PSI's Accelerator Technologies for the Industry (S71)**

Jens Rehanek  
Advanced Accelerator Technologies AG

### **Displacement Talbot Lithography: A New Technology for Printing Periodic Nanostructures over Large Areas (S72)**

Harun H. Solak  
Eulitha AG, 5416 Kirchdorf, Switzerland

## 2020 Source Workshop

### Day 2: Tuesday, November 3, 2020

#### 8:00 AM Announcements

Vivek Bakshi  
*EUV Litho, Inc.*

#### 9:55 AM Session 2: Code Comparison

*Session Chairs: John Sheil (ARCNL) and Howard Scott (LLNL)*

#### [Code Comparison Problem Description \(S91\)](#)

John Sheil  
ARCNL

#### [Radiation Hydrodynamic Simulation Code STAR2D \(Invited\) \(S92\)](#)

Atsushi Sunahara<sup>1</sup>, Katsunobu Nishihara<sup>2</sup> and Akira Sasaki<sup>3</sup>

<sup>1</sup> Center for materials under extreme environment (CMUXE), Purdue University, USA

<sup>2</sup> Institute of Laser Engineering, Osaka University. JAPAN

<sup>3</sup> Kansai Photon Science Institute, National Institute for Quantum and Radiological Science and Technology, JAPAN

#### [JATOM Code for Calculation of Atomic Processes in Sn Plasmas \(S93\)](#)

Akira Sasaki<sup>1</sup>, Katsunobu Nishihara<sup>2</sup>, and Sunahara Atsushi<sup>2,3</sup>

<sup>1</sup> Kansai Photon Science Institute, National Institutes for Quantum and Radiological Science and Technology, 8-1 Umemidai, Kizugawa-shi, Kyoto, 619-0215 Japan,

<sup>2</sup> Institute for Laser Engineering, Osaka University

<sup>3</sup> CMUXE, Purdue University

#### [LLNL Code Comparison Submissions \(Invited\) \(S94\)](#)

Howard Scott  
LLNL

#### 9:20 AM Break (20 Min.)

#### [Modeling Laser Energy Deposition with the RALEF Code \(Invited\) \(S95\)](#)

Mikhail M. Basko  
*Keldysh Institute of Applied Mathematics (KIAM), Moscow, Russia*

#### [THERMOS Toolkit: Software Package for Radiative Properties Calculations of LTE and Non-LTE Plasmas \(Invited\) \(S96\)](#)

Vichev I.Yu., Solomyannaya A.D., Grushin A.S., Kim D.A.

*Keldysh Institute of Applied Mathematics, Miusskaya sq., 4, Moscow, Russia*

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### **Radiation Physics Models for High Energy Density Plasmas, Typical Applications for EUV Lithography (Invited) (S97)**

I.E. Golovkin

*Prism Computational Sciences, Inc. Madison, WI*

### **Atomic Kinetics Modelling of Sn Plasmas using ATOMIC (Invited) (S98)**

J. Sheil<sup>1</sup>, O. O. Versolato<sup>1</sup>, A. J. Neukirch<sup>2</sup>, J. Colgan<sup>2</sup>

<sup>1</sup>*Advanced Research Center for Nanolithography, Science Park 106, 1098 XG Amsterdam, The Netherlands*

<sup>4</sup>*Los Alamos National Laboratory, Los Alamos, NM 87545, USA*

### **Non-LTE Atomic Physics in Laser Plasma Simulations (S99)**

Hilik Frank

*LLNL*

### **Code Comparison Comparison - Problem 1 (S100A)**

John Sheil

*ARCNL*

### **Code Comparison Comparison - Problem 2 (S100B)**

Howard Scott

*LLNL*

**12:00 PM Discussion (20 min)**

## 2020 Source Workshop

### Day 3: Wednesday, November 4, 2020

#### 8:00 AM Announcements

#### 8:05 AM Session 3: Keynote

*Session Chair: Reza Abhari (ETHZ)*

#### [Update of >300W High Power LPP-EUV Source Challenge for Semiconductor HVM \(S1\)](#)

*Hakaru Mizoguchi, Hiroaki Nakarai, Tamotsu Abe, Hiroshi Tanaka, Yukio Watanabe, Tsukasa Hori, Yutaka Shiraishi, Tatsuya Yanagida, Georg Soumagne, Tsuyoshi Yamada and Takashi Saitou*

*Gigaphoton Inc. Hiratsuka facility: 3-25-1 Shinomiya Hiratsuka Kanagawa, 254-8567, JAPAN*

#### [Source Performance Metrics for EUV Mask Inspection \(S2\)](#)

*Larissa Juschkin, Dan Wack, and James Westphal*

*KLA Corporation, One Technology Drive, Milpitas, 95035 CA, USA*

#### [Evolving Source Demands and Requirements for EUV Lithography in Manufacturing \(S3\)](#)

*Steve Carson*

*Intel Corporation*

#### 10:05 AM Break (20 Minutes)

#### Session 4: Lasers

*Session Chairs: Peter Kraus (ARCNL) and Martin Smrz (HiLASE)*

#### [Ultrafast Extreme-ultraviolet Emission from Solids \(Invited\) \(S11\)](#)

*Peter Kraus*

*ARCNL, Science Park 106, 1098 XG Amsterdam, The Netherlands*

#### [Industrial kW-class Picosecond Thin-disk Lasers for EUV Light Sources \(Invited\) \(S12\)](#)

*M. Smrž, J. Mužík, M. Chyla, S. S. Nagisetty, P. Sikocinski, O. Novák, and T. Mocek  
HiLASE Centre, Institute of Physics CAS,  
Za Radnicí 828, 252 41 Dolní Břežany, Czechia*



**Ultrafast Thin-Disk Amplifiers (Invited) (S13)**

Thomas Metzger  
TRUMPF Scientific Lasers GmbH & Co. KG,  
Feringastr. 10a, 85774 Unterföhring, Germany

**11:25 AM Break (20 Minutes)**

**11:45 AM Session 5: Metrology and Applications**

Session Chairs: Fergal O'Reilly (UCD) and Yusuke Teramoto (Ushio)

**A Laboratory Soft X-ray Microscope (Invited) (S14)**

F. O'Reilly<sup>1,2</sup>, W. Fyans<sup>2</sup>, A. Boland<sup>2</sup>, A. Manzoni<sup>2</sup>, D. Rogers<sup>2</sup>, J. Howard<sup>1,2</sup>, D. Skoko<sup>2</sup>, M. Donnellan<sup>1,2</sup>, J. Costello<sup>2</sup>, D. Hickey<sup>2</sup>, I. Tobin<sup>2</sup>, T. McEnroe<sup>2</sup>, K. Fahy<sup>2</sup>, P. Sheridan<sup>2</sup>  
<sup>1</sup>School of Physics, University College Dublin  
<sup>2</sup>SiriusXT Ltd

**In-lab EUV Dual Beamline for Industrial and Scientific Applications (S15)**

Sascha Brose<sup>a,b</sup>, Bernhard Lüttgenau<sup>a,b</sup>, Serhiy Danylyuk<sup>c</sup>, Jochen Vieker<sup>c</sup>, Klaus Bergmann<sup>c</sup>, Jochen Stollenwerk<sup>a,b,c</sup>, Peter Loosen<sup>a,b,c</sup>  
<sup>a</sup>RWTH Aachen University, Chair for Technology of Optical Systems, Aachen, 52074, Germany  
<sup>b</sup>JARA – Fundamentals of Future Information Technology, Jülich, 52428, Germany  
<sup>c</sup>Fraunhofer Institute for Laser Technology, Aachen, 52074, Germany

**Light Source Development for Mask and Wafer Inspection HVM tools (S21)**

Marco Weber and Reza Abhari  
ETHZ

**High-brightness LDP source for actinic patterned mask inspection (Invited) (S23)**

Yusuke Teramoto<sup>1</sup>, Bárbara Santos<sup>1</sup>, Guido Mertens<sup>1</sup>, Margarete Kops<sup>1</sup>, Ralf Kops<sup>1</sup>, Wilko van Nunspeet<sup>1</sup>, Marcel Schneider<sup>1</sup>, Klaus Bergmann<sup>2</sup>, Yoshihiko Sato<sup>3</sup>  
<sup>1</sup>BLV Licht- und Vakuumtechnik GmbH,  
Steinbachstrasse 15, 52074 Aachen, Germany  
<sup>2</sup>Fraunhofer ILT, Steinbachstrasse 15, 52074 Aachen, Germany  
<sup>3</sup>Ushio Inc., 1-6-5 Marunouchi, Chiyoda-ku, Tokyo 100-8150, Japan

**Day 4: Thursday, November 5, 2020**

**8:00 AM Announcements**

**8:05 AM Session 6: Speed Presentations**

*Session Chair: Vivek Bakshi (EUV Litho)*

**Energy Spectra of Suprathermal Gadolinium Ions for Beyond Extreme-ultraviolet Source (S31)**

*Hiromu Kawasaki,<sup>1</sup> Kyoya Anraku,<sup>1</sup> Yuto Nakayama,<sup>1</sup> Gerry O'Sullivan,<sup>2</sup> Atsushi Sunahara,<sup>3</sup> and Takeshi Higashiguchi<sup>1</sup>*

*<sup>1</sup>Department of Electrical and Electronic Engineering, Faculty of Engineering, Utsunomiya University, 7-1-2, Yoto, Utsunomiya, Tochigi 321-8585, Japan <sup>2</sup>School of Physics, University College Dublin, Belfield, Dublin 4, Ireland <sup>3</sup>Center for Materials Under Extreme Environment (CMUXE), School of Nuclear Engineering, Purdue University, West Lafayette, Indiana 47907, USA*

**Development of Yb:YAG Thin-disk Regenerative Amplifier for Compact Plasma EUV Sources (S32) [First Place]**

*Misaki Shoji,<sup>1</sup> Ryo Kageyama,<sup>1</sup> Juri Ogawa,<sup>1</sup> Gerry O'Sullivan,<sup>2</sup> Atsushi Sunahara,<sup>3</sup> Kazuyuki Sakaue,<sup>4</sup> Martin Smrz,<sup>5</sup> Tomas Mocek,<sup>5</sup> Taisuke Miura,<sup>5</sup> and Takeshi Higashiguchi<sup>1</sup>*

*<sup>1</sup>Department of Electrical and Electronic Engineering, Faculty of Engineering, Utsunomiya University, 7-1-2, Yoto, Utsunomiya, Tochigi 321-8585, Japan <sup>2</sup>School of Physics, University College Dublin, Belfield, Dublin 4, Ireland <sup>3</sup>Center for Materials Under Extreme Environment (CMUXE), School of Nuclear Engineering, Purdue University, West Lafayette, Indiana 47907, USA <sup>4</sup>Photon Science Center, The University of Tokyo, 7-3-1 Hongo, Bunkyo, Tokyo 113- 8656, Japan <sup>5</sup>HiLASE Centre, Institute of Physics of the Czech Academy of Sciences, Za radnicí 828, 252 41, Dolní Břežany, Czech Republic*

**Stimulated Emission Depletion Phenomenon in Luminescence of Scintillator Excited by Soft xray toward High-resolution Water-window Microscope (S33)**

Takeshi Higashiguchi,<sup>1</sup> Toshitaka Wakayama,<sup>2</sup> Misaki Shoji<sup>1</sup>, and Takeo Ejima<sup>3</sup>

<sup>1</sup>*Department of Electrical and Electronic Engineering, Faculty of Engineering, Utsunomiya University, 7-1-2, Yoto, Utsunomiya, Tochigi 321-8585, Japan* <sup>2</sup>*School of Clinical Engineering, Saitama Medical University, 1397-1 Yamane, Hidaka, Saitama, 350-1241, Japan*

<sup>3</sup>*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, 2-1-1 Katahira, Aoba-Ku, Sendai, 980-8577, Japan*

**High-energy Features in the Ion energy Distribution from Laser-produced Tin Plasmas (S34) [Second Place Tie]**

Lucas Poirier<sup>1</sup>, Diko Hemminga<sup>1</sup>, John Sheil<sup>1</sup>, Adam Lassise<sup>1</sup>, Ronnie Hoekstra<sup>1,2</sup>, Wim Ubachs<sup>1,3</sup>, Oscar Versolato<sup>1,3</sup>

<sup>1</sup>*Advanced Research Center for Nanolithography (ARCNL), Science Park 106, 1098 XG Amsterdam, the Netherlands*

<sup>2</sup>*Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, the Netherlands*

<sup>3</sup>*LaserLaB, Department of Physics and Astronomy, Vrije Universiteit, De Boelelaan 1081,1081 HV Amsterdam, the Netherlands*

**Interactions of Sn ions at Energies and in Charge States Relevant to the Mitigation of Sn Ions coming from EUV Sources (S35) [Second Place Tie]**

S Rai<sup>1,2</sup>, K I Bijlsma<sup>1,2</sup>, S. Koeleman<sup>1</sup>, W van Tellingén<sup>1</sup>, B Schoonbeek<sup>1</sup>, O O Versolato<sup>2,3</sup>, R Hoekstra<sup>1,2</sup>

<sup>1</sup>*Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands*

<sup>2</sup>*Advanced Research Centre for Nanolithography, Science Park 110, 1098 XG Amsterdam, The Netherlands*

<sup>3</sup>*Department of Physics and Astronomy, and LaserLaB, Vrije Universiteit, De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands*

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### 8:30 AM Session 7: HVM EUV Sources -1

Session Chairs: Kentaro Tomita (Kyushu University) and Takeshi Higashiguchi (Utsunomiya University)

#### **Development Progress of the CO<sub>2</sub> Laser and Shooting Control System for the High Power LPP-EUV Light Source (S41)**

Yuichi Nishimura, Yoshifumi Ueno, Takashi Suganuma, Yoshiaki Kurosawa, Takayuki Yabu, Georg Soumagne, Shinji Nagai, Tatsuya Yanagida, Yutaka Shiraishi, Kenichi Miyao, Hideyuki Hayashi, Yukio Watanabe, Tamotsu Abe, Hiroaki Nakarai and Hakaru Mizoguchi

*Gigaphoton Inc. Hiratsuka Facility*

*3-25-1 Shinomiya Hiratsuka Kanagawa, 254-8555, JAPAN*

#### **Recent Diagnostics Results of EUV Source and EUV Induced Plasmas (Invited) (S42)**

Kentaro Tomita<sup>1</sup> and Kiichiro Uchino<sup>2</sup>

<sup>1</sup> *Division of Quantum Science and Engineering, Graduate School of Engineering, Hokkaido University, Kita 13, Nishi 8, Kita-ku, Sapporo, Hokkaido 060-8628, JAPAN*

<sup>2</sup> *Interdisciplinary Graduate School of Engineering and Sciences, Kyushu University, 6-1, Kasugakoen, Kasuga, Fukuoka 816-8580, JAPAN*

#### **Feature of Highly-charged Suprathermal Ions from Laser-produced Plasma EUV sources (Invited) (S43)**

Takeshi Higashiguchi

*Department of Electrical and Electronic Engineering, Faculty of Engineering, Utsunomiya University, 7-1-2 Yoto, Utsunomiya, Tochigi 321-8585, Japan*

#### **The Morphology of Liquid Tin Sheet Targets (S48)**

B. Liu,<sup>1, 2</sup> R. Meijer,<sup>1, 2</sup> J. Hernandez-Rueda,<sup>1</sup> D. Kurilovich,<sup>3</sup> Z. Mazzotta,<sup>1</sup> S. Witte,<sup>1, 2</sup> and O. O.Versolato<sup>1, 2</sup>

<sup>1</sup> *Advanced Research Center for Nanolithography (ARCNL), Science Park 2- LaserLab, Vrije Universiteit Amsterdam*

<sup>3</sup> *ASML, Veldhoven*

### Session 8: EUVL Extension Blue-X

Session Chairs: Ladislav Pina (Rigaku) and James Colgan (LANL)

#### **Present Status of cERL-FEL as a Proof of Concept on the EUV-FEL High-power Light Source for Future Lithography (Invited) (S51)**

Ryukou Kato, Hiroshi Sakai, Kimichika Tsuchiya, Yasunori Tanimoto, Yosuke Honda, Tsukasa Miyajima, Miho Shimada, Norio Nakamura, and Hiroshi Kawata  
*High Energy Accelerator Research Organization (KEK)*

**High-power EUV Light Source Based on Steadystate Microbunching Mechanism (S52)**

Xiujie Deng

*The SSMB Collaboration*

**7nm and below: A Study for Undulators as an EUV Source (S53)**

Thomas Grandsaert<sup>1</sup>, Hamed Tarawneh<sup>2</sup>, Sverker Werin<sup>1</sup>,  
Andrey Shavorskiy<sup>2</sup>

<sup>1</sup>*Lund University, Sweden*

<sup>2</sup>*MAX IV Institute, Lund, Sweden*

**Characterization of Tin Plasma Driven by Highenergy, 2- $\mu$ m-wavelength Light (S54)**

Lars Behnke<sup>1</sup>, Ruben Schupp<sup>1</sup>, Adam Lassise<sup>1</sup>, Zoi Bouza<sup>1</sup>, John Sheil<sup>1</sup>, Muharrem Bayraktar<sup>3</sup>, Ronnie Hoekstra<sup>1,4</sup>, Wim Ubachs<sup>1,2</sup>, Oscar Versolato<sup>1,2</sup>

<sup>1</sup>*Advanced Research Center for Nanolithography (ARCNL), Science Park 106, 1098 XG Amsterdam, The Netherlands*

<sup>2</sup>*Department of Physics and Astronomy, LaserLaB, Vrije Universiteit Amsterdam, De Boelelaan 1081, 1081 HV Amsterdam, The Netherlands*

<sup>3</sup>*Industrial Focus Group XUV Optics, MESA+ Institute for Nanotechnology, University of Twente, Drienerlolaan 5, 7522 NB Enschede, The Netherlands*

<sup>4</sup>*Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands*

**Angular and Spectral Bandwidth of XUV Multilayers Near Spacer Material Absorption Edges (S55)**

A. A. Zameshin, A.E. Yakshin, F. Bijkerk

*University of Twente*

**EUVL Extension - Blue-X: An Update (S56)**

Vivek Bakshi

*EUV Litho, Inc.*

**Session 9: HVM EUV Sources -X**

**Availability of EUVL Sources on NXE: 3400C scanners and developments in power scaling beyond 500W (S44)**

Michael Purvis

ASML

## 2020 Source Workshop

### **Physics aspects of Solid-state-laser-driven Plasma Sources of EUV light: ARCNL's Source Research program (Invited) (S45)**

Oscar Versolato  
ARCNL

### **Interactions of Tin Ions in and around LPP-EUV Sources (Invited) (S46)**

Ronnie Hoekstra<sup>1,2</sup>, Lars Behnke<sup>1</sup>, Klaas Bijlsma<sup>1,2</sup>, Zoi Bouza<sup>1</sup>, Diko Hemminga<sup>1,3</sup>, Harry Jonkman<sup>2</sup>, Sybren Koeleman<sup>2</sup>, Adam Lasisse<sup>1</sup>, Lucas Poirier<sup>1</sup>, Subam Rai<sup>1,2</sup>, Joris Scheers<sup>1,3</sup>, Ruben Schupp<sup>1,3</sup>, John Sheil<sup>1</sup>, Wouter van Tellingen<sup>2</sup>, Francesco Torretti<sup>1,3</sup>, Wim Ubachs<sup>1,3</sup>, Oscar Versolato<sup>1</sup>

<sup>1</sup>Advanced Research Center for Nanolithography (ARCNL), Amsterdam, the Netherlands

<sup>2</sup>Zernike Institute for Advanced Materials, University of Groningen, Groningen, the Netherlands

<sup>3</sup>Department of Physics and Astronomy and LaserLaB, Vrije Universiteit, Amsterdam, the Netherlands

### **The Opacity of Sn at Conditions Relevant to CO<sub>2</sub> Laser-produced Plasmas (S47)**

J. Colgan<sup>1</sup>, A. J. Neukirch<sup>1</sup>, J. Sheil<sup>2</sup> and O. O. Versolato<sup>2</sup>

<sup>1</sup>Los Alamos National Laboratory, Los Alamos, NM 87545, USA

<sup>2</sup>Advanced Research Center for Nanolithography, Science Park 106, 1098 XG Amsterdam, The Netherlands

### **The EUV-Lamp: Compact EUV source for Actinic EUV Metrology in Laboratory and Industry (Invited) (S22)**

Rainer Lebert, Christoph Phiesel, Thomas Missalla, Andreas Biermanns-Föth  
RI Research Instruments GmbH,  
Friedrich-Ebert Strasse 75, 51429 Bergisch Gladbach

### **Compact rotating-disc LPP source for metrology and laboratory applications (S24)**

Yusuke Teramoto  
Ushio

**Workshop Adjourned**

