

2020 EUVL Supplier Showcase

September 14-15, 2020

Held Online

Workshop Proceedings

2020 EUVL Supplier Showcase

September 14 - 15, 2020

Held Online. Info at www.euvlitho.com



2020 EUVL Supplier Showcase

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ORGANIZED BY:

Vivek Bakshi (EUV Litho, Inc.), Chair
Jinho Ahn (EUV-IUCC, Hanyang University), Co-chair



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Organized by



Vivek Bakshi (EUV Litho, Inc.), Chair

Jinho Ahn (EUV-IUCC and Hanyang University), Co-Chair

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WORKSHOP PROCEEDINGS

2020 EUVL Supplier Showcase

September 14-15, 2020

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Day 1: Monday, September 14, 2020 ([Video Recording](#))

7:00 PM- 7:05 PM Welcome and Announcements

7:05 PM Session 1: US & Asia

[NIST at-wavelength EUVL metrology \(SS18\)](#)

C. Tarrio, R. E. Vest, R. F. Berg, T. B. Lucatorto
NIST, Gathersburg, MD, USA

[Preparing for the Next Generation of EUV Lithography at CXRO \(SS7\)](#)

Ryan Miyakawa
CXRO, Berkeley, CA, USA

[Advanced Tools & Infrastructures for R&D... \(SS9\)](#)

Kenneth E. Gonsalves^{a, #}
Indian Institute of Technology at Kamand
^a*School of Basic Sciences & ^bSchool of Computing & Electrical Engineering, ^cCenter for Design & Fabrication of Electronic Devices (C4DFED), IIT Mandi Himachal Pradesh 175075, India*
[#]*Davidson, NC USA*

[PAL-EUV infrastructure to support material evaluation \(SS4\)](#)

Sangsul Lee, Kanghyun Kim, Byeong-Gyu Park, Jangwoo Kim, Il-Hyung Lee, Jong-Won Lee, Geonhwa Kim, Jang-Hui Han, Ki Jeong Kim, Juho Hong, Hong-Gi Lee, Sei-Jin Kwon, Sangbong Lee
Pohang Accelerator Laboratory, POSTECH

[Role of EUV-IUCC \(Industry-University Collaboration Center\) \(SS5\)](#)

Jinho Ahn
EUV-IUCC & Hanyang University

8:20 PM Break (15 min.)

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An Overview of Ion Beam Technology for EUV Photomask (SS6)

Meng Lee, Katrina Rook

Veeco, 1 Terminal Drive, Plainview, New York 11803, USA

Energetiq EUV Light Sources (SS11)

Sam Gunnel

Energetiq

An Overview of EUVL Bandpass Capabilities at Luxel Corporation (SS21)

Travis Ayers

Luxel

Patterning and Process Resources and Requirements for Future MRAM (SS22)

Thomas Boone

Spin Memory

Multitrigger (MTR): An Irresistible Photoresist (SS24)

Warren Montgomery^{1,3}, Mark Shepherd¹, David Ure¹, Alex Robinson¹, Alexandra McClelland¹, Carmen Popescu¹, Alan Brown¹, Tom Lada¹, John Roth², and Ed Jackson²

¹Irresistible Materials Ltd., Langdon House, Swansea Waterfront, Swansea SA1 8QY, United Kingdom

²Nano-C, 33 Southwest Park, Westwood, MA 02090

LEGO like multi-function actinic tool for cost effective EUV production (SS1)

Byung Gook Kim and Dong Gun Lee

ESOL, Inc.

Development of EUV Blank mask and EUV Pellicle (SS3)

Gilwoo Kong

S&S Tech

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Day 2: Tuesday, September 15, 2020 ([Video Recording](#))

Held Online

8:00 AM Welcome and Announcements

Vivek Bakshi
EUV Litho, Inc.

8:05 AM Session 2: Europe

[Solutions for EUV Mask Making \(SS27\)](#)

Thomas Scherübl
Zeiss SMS

[Showcase of the Fundamental EUVL Research \(SS8\)](#)

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

[EUV Interference Lithography @ PSI: A platform for EUV resist testing \(SS15\)](#)

Yasin Ekinci
Paul Scherrer Institute, Switzerland

[Synchrotron-radiation based EUV Metrology at PTB \(SS16\)](#)

Michael Kolbe, Victor Soltwisch, Frank Scholze
Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany

[High Power EUV Sources, EUV Nanostructuring and Metrology Services \(SS17\)](#)

Serhiy Danylyuk, Jochen Vieker, Klaus Bergmann
*Fraunhofer Institute for Laser Technology - ILT Steinbachstr. 15, 52074 Aachen,
Germany*
Lukas Bahrenberg, Sophia Schröder, Sascha Brose
*RWTH Aachen University, Chair for Technology of Optical Systems Steinbachstr. 15,
52074 Aachen, Germany*

[TNO, R&D service provider for the EUV Semicon Industry \(SS19\)](#)

Norbert Koster
TNO

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[Transmission Grating Spectrometer for Broadband Spectroscopy of Sources \(SS20\)](#)

Muharrem Bayraktar

*Industrial Focus Group XUV Optics, MESA + Institute for Nanotechnology
University of Twente, The Netherlands*

10:05 AM Break (15 min.)

[Solutions for actinic EUV stand-alone metrology based on available building... \(SS10\)](#)

Andreas Biermanns-Föth, C. Pampfer, T. Missalla, C. Phiesel, C. Piel, R. Lebert
RI Research Instruments GmbH Friedrich-Ebert-Strasse 75 51429 Bergisch Gladbach, Germany

[Rigaku EUV optics and detector technology \(SS12\)](#)

Peter Oberta

Rigaku Innovative Technologies Europe s.r.o. Novodvorská 994, Praha 4, 142 21, Czech Republic

[XRnanotech – Nanostructured optics for EUV and X-ray applications \(SS13\)](#)

Florian Doering

XRnanotech

[TEUS – LPP EUV light source with high brightness and low debris \(SS14\)](#)

Slava Medvedev

ISAN

[Customized EUV optics made by optiXfab \(SS25\)](#)

Torsten Feigl,

optiXfab

[Advanced ML coating and high-quality cleaning Process Equipment for EUVL \(SS26\)](#)

Marcel Demmler

scia Systems

[Ultra Clean Contactless Vacuum Handling \(SS28\)](#)

Herbert Wituschek

Mafu Robotics, Rosenfeld, Germany

Workshop Adjourned