

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
All Times are in US Central Time Zone (Austin, TX, USA). Netherlands is + 7 Hours and Korea / Japan are +14 Hours ahead. Version, May 17, 2020								
5:30 PM, Sunday, June 7, 2020, Austin, TX, USA (7:30 AM, Monday, June 8, Korea and Japan) EUVL Short Course								
<i>EUVL Short Course and EUVL Workshop require seprate regsitrations. Please visit www.euvlitho.com for information.</i>								
AV Test and Speaker Check-in						0:30	5:30 PM	6:00 PM
			Vivek Bakshi	EUV Litho Inc.	Lecture	1:30	6:00 PM	7:30 PM
						0:15	7:30 PM	7:45 PM
			Patrick Naulleau	CXRO	Lecture	1:30	7:45 PM	9:15 PM
						0:15	9:15 PM	9:30 PM
			Jinho Ahn	Hanyang University	Lecture	1:30	9:30 PM	11:00 PM
			Vivek Bakshi	EUV Litho Inc.	Summary and Q&A	0:30	11:00 PM	11:30 PM
Short Course Adjourned								

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
9:00 AM, Monday, June 8, 2020, Austin, TX, USA (4:00 PM, Monday, June 8, Netherlands)								
Session 1: CXRO Program Showcase								
<i>Please see Abstract Book on website for abstracts and co-author (s) information by paper #.</i>								
AV Test and Speaker Check-in						0:60	9:00 AM	10:00 AM
1	Intro	Showcase (CXRO)	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	10:00 AM	10:10 AM
1	P71	Showcase (CXRO)	Patrick Naulleau	LBL (CXRO)	Introductory Remarks and CXRO Overview	0:20	10:10 AM	10:30 AM
1	P72	Showcase (CXRO)	Markus Benk	LBL (CXRO)	A SHARP look at EUV masks from a different angle	0:20	10:30 AM	10:50 AM
1	P73	Showcase (CXRO)	Ryan Miyakawa	LBL (CXRO)	Approaches for EUV mask phase imaging	0:20	10:50 AM	11:10 AM
1	P74	Showcase (CXRO)	Stuart Sherwin	LBL (CXRO)	Probing multilayer, absorber, and 3D phase effects in EUV masks	0:20	11:10 AM	11:30 AM
1	P76	Showcase (CXRO)	Guillaume Freychet	LBL (CXRO)	Critical Dimension GISAXS: Application using soft, tender and hard x-rays	0:20	11:30 AM	11:50 AM
Break						0:20	11:50 AM	12:10 PM
1	P75	Showcase (CXRO)	Slavomir Nemsak	LBL (CXRO)	Depth Profiling with Standing Wave X-ray Spectroscopy	0:20	12:10 PM	12:30 PM
1	P77	Showcase (CXRO)	Miquel Salmeron	LBL (CXRO)	Advanced Characterization for nanoscale photoresist structure and spectroscopy	0:20	12:30 PM	12:50 PM
1	P78	Showcase (CXRO)	Jonathan Ma	LBL (CXRO)	EUV fundamental processes—from understanding to engineering	0:20	12:50 PM	1:10 PM
1	P79	Showcase (CXRO)	Cheng Wang	LBL (CXRO)	Contrast enhancement for soft materials with resonant soft x-ray scattering	0:20	1:10 PM	1:30 PM
1	P80	Showcase (CXRO)	Luke Long	LBL (CXRO)	Latent X-ray and AFM metrology of EUV photo resists	0:20	1:30 PM	1:50 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
8:30 AM, Tuesday, June 9, 2020, Austin, TX, USA (3:30 PM, Tuesday, June 9, Netherlands)								
Session 2: Keynote Presentations								
AV Test and Speaker Check-in						0:30	8:30 AM	9:00 AM
2			Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
2	P2	Keynote	Emily Gallagher	IMEC	EUV Lithography And The Materials That Propel It Forward	0:40	9:10 AM	9:50 AM
2	P3	Keynote	Nak Seong	ASML	EUV Lithography and its Enablement of Future Generations of Semiconductor Devices	0:40	9:50 AM	10:30 AM
Break						0:15	10:30 AM	10:45 AM
2	P1	Keynote	Tim Weidman	LAM	Lithographic Performance of the first Entirely Dry Process for EUV Lithography	0:40	10:45 AM	11:25 AM
2	P5	Keynote	Steven Carson	Intel	EUV Lithography: 0.33NA in HVM and preparation for future nodes	0:40	11:25 AM	12:05 PM
Break						0:15	12:05 PM	12:20 PM
2	P4	Keynote	Prabhat	LBL	Deep Learning for Science	0:40	12:20 PM	1:00 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
6:00 PM, Tuesday, June 9, 2020, Austin, TX, USA (8:00 AM, Wednesday, June 10, Korea and Japan)								
Session 3: EUV Mask, EUV Sources and "Speed Presentations"								
<i>AV Test and Speaker Check-in</i>						0:60	6:00 PM	7:00 PM
3			Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	7:00 PM	7:10 PM
3	P18	Mask	Tania Henry	Veeco	Effect of Annealing on Interfacial Quality of Ion Beam Sputtered Mo/Si Multilayers for EUV Mask Blanks (Invited)	0:20	7:10 PM	7:30 PM
3	P11	Mask	Vibhu Jindal	AMAT	Current Progress in a-PSM Mask Development (Tentative Title) (Invited)	0:20	7:30 PM	7:50 PM
3	P17	Mask	Zac Levinson	Synopsys	Compact modeling to predict and correct stochastic hotspots in EUVL (Invited)	0:20	7:50 PM	8:10 PM
3	P13	Mask	Jinho Ahn	Hanyang	Pathfinding the Novel Absorber Materials for High-NA EUV lithography (Invited)	0:20	8:10 PM	8:30 PM
3	P12	Mask	Dong Gun Lee	E-Sol	Actinic Tools using Coherent EUV Source for High Volume Manufacturing (Invited)	0:20	8:30 PM	8:50 PM
3	P16	Mask	Takeo Watanabe	Hyogo University	Reflectance Measurement of EUV Mask under OoB-Irradiation, and Hydrogen and Water Vapor Environments under the High Power EUV Irradiation (Invited)	0:20	8:50 PM	9:10 PM
Break						0:10	9:10 PM	9:20 PM
Speed Presentation Session								
3	P14	Mask	Yoon Jong Han	Hanyang University	Multi-stack Ni absorber EUV mask for high numerical aperture extreme ultraviolet lithography (Poster)	0:05	9:20 PM	9:25 PM
3	P15	Mask	Byungmin Yoo	Hanyang University	EUV pellicle defect review using EUV ptychography microscope (Poster)	0:05	9:25 PM	9:30 PM
3	P85	Mask	Stuart Sherwin	LBL (CXRO)	Probing Multilayer, Absorber, and 3D Phase Effects in EUV Masks	0:05	9:30 PM	9:35 PM
Break						0:10	9:35 PM	9:45 PM
3	P65	Source	Xiujie Deng	Tsinghua University	High-power EUV Light Source Based on Steady-state Microbunching Mechanism	0:20	9:45 PM	10:05 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
3	P63	Source	Hakaru Mizoguchi	Gigaphoton	Update of >300W High Power LPP-EUV Source Challenge for Semiconductor HVM (Invited)	0:20	10:05 PM	10:25 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
9:00 AM, Wednesday, June 10, 2020, Austin, TX, USA (4:00 PM, Wednesday, June 10, Netherlands)								
Session 4: EUV Optics, EUV Sources and "Speed Presentations"								
<i>AV Test and Speaker Check-in</i>						0:60	9:00 AM	10:00 AM
			Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	10:00 AM	10:10 AM
4	P21	Optics	Michael Busshardt	Carl Zeiss	What's new in EUV Lithography Optics at ZEISS? (Invited)	0:20	10:10 AM	10:30 AM
4	P22	Optics	Ken Johnson	KJ Innovation	EUV Lithography Design Concepts using Diffraction Optics (Invited)	0:20	10:30 AM	10:50 AM
4	P23	Optics	Charles Tarrio	NIST	EUV-induced carbon growth at contaminant pressures between 10E-10 mbar and 10E-6 mbar: Experiment and model	0:20	10:50 AM	11:10 AM
Break						0:10	11:10 AM	11:20 AM
Speed Presentation Session								
4	P19	Mask	Atoosa Dejkameh	PSI	Effect of beam-stop on the EUV Ptychography reconstruction (Poster)	0:05	11:20 AM	11:25 AM
4	P84	Resist	Luke Long	LBL (CXRO)	Latent X-ray and AFM Metrology of EUV Photo Resists	0:05	11:25 AM	11:30 AM
4	P86	Resist	Jonathan Ma	LBL (CXRO)	Understanding EUV Electron Driven Processes—a Progress Update	0:05	11:30 AM	11:35 AM
4	P87	Resist	Nikhil Tiwale	BNL	Intriguing Etch Resistance Evolution in Hybrid Resists Synthesized by Vapor Phase Infiltration	0:05	11:35 AM	11:40 AM
Break						0:10	11:40 AM	11:50 AM
4	P61	Source	Oscar Versolato	ARCNL	Tin plasma driven by a 2- μ m-wavelength laser (Invited)	0:20	11:50 AM	12:10 PM
4	P62	Source	Steve Horne	Energetiq	Physics of Energetiq Source (Tentative Title) (Invited)	0:20	12:10 PM	12:30 PM
4	P64	Source	Steve Langer	LLNL	Simulations of Laser-Driven EUV Sources – the Impact of Laser Wavelength (Invited)	0:20	12:30 PM	12:50 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
4	P66	Source	Brendan Reagan	LLNL	Efficient high power laser drivers for Next-generation High Power EUV sources	0:20	12:50 PM	1:10 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
6:30 PM, Wednesday, June 10, 2020, Austin, TX, USA (8:30 AM, Thursday, June 11, Korea and Japan)								
Session 5: EUV Resist								
<i>AV Test and Speaker Check-in</i>						0:30	6:30 PM	7:00 PM
5			Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	7:00 PM	7:10 PM
5	P48	Resist	Anna Lio	Intel	EUV Resists: What's the Road to High NA? (Invited)	0:20	7:10 PM	7:30 PM
5	P83	Resist	David Prendergast	LBL (Molecular Foundry)	Predicting Chemical Dynamics upon EUV Exposure to Optimize Lithography (Invited)	0:20	7:30 PM	7:50 PM
5	P44	Resist	Rudy J Wojtecki	IBM	Combining EUV Monolayer Resists with Area Selective Depositions (Invited)	0:20	7:50 PM	8:10 PM
5	P45	Resist	Kenneth Gonsalves	IIT Mandi	Prescreening of Resists for EUVL from N7 down to N3 by EBL AND HIM (Invited)	0:20	8:10 PM	8:30 PM
5	P51	Resist	Chang-Yong Nam	BNL	Organic-Inorganic Hybrid Nanocomposite Resists Towards EUVL (Invited)	0:20	8:30 PM	8:50 PM
Break						0:10	8:50 PM	9:00 PM
5	P47	Resist	Jin-Kyun Lee	Inha University	High Fluorinated Molecular Resists working under Electron-beam and Extreme UV Irradiation (Invited)	0:20	9:00 PM	9:20 PM
5	P50	Resist	Oleg Kostco	CXRO	Determination of effective attenuation length of slow secondary electrons in polymer films	0:20	9:20 PM	9:40 PM
5	P49	Resist	Seiji Nagahara	TEL	Flood Exposure Assisted Chemical Gradient Enhancement Technology (FACET) and Stochastic Aware Resist Formulation and Process Optimizer (SARF-Pro) for EUV Lithography (Invited)	0:20	9:40 PM	10:00 PM
5	P43	Resist	Takeo Watanabe	Hyogo University	Fundamental Research of EUV Resist to Resolve the Issues in EUV Lithography (Invited)	0:20	10:00 PM	10:20 PM

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8:30 AM, Thursday, June 11, 2020, Austin, TX, USA (4:00 PM, Thursday, June 11, Netherlands)								
Session 6: EUV Patterning and EUV Resist								
<i>AV Test and Speaker Check-in</i>						0:30	8:30 AM	9:00 AM
6			Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
6	P42	Patterning	Jan van Schoot	ASML	High-NA EUV Lithography Exposure Tool: Advantages and Program Progress (Invited)	0:20	9:10 AM	9:30 AM
6	P33	Patterning	Ekinci Yasin	PSI	Challenges for the Ultimate Resolution in Photolithography (Invited)	0:20	9:30 AM	9:50 AM
6	P32	Patterning	Jochen Vieker	Fraunhofer	Irradiation systems for accelerated testing of EUVL components	0:20	9:50 AM	10:10 AM
6	P31	Patterning	Chris Anderson	CXRO	Berkeley MET5 Update	0:20	10:10 AM	10:30 AM
Break						0:15	10:30 AM	10:45 AM
6	P41	Resist	Jara Garcia Santa Clara	ASML	Progress towards High-NA EUV photoresists (Invited)	0:20	10:45 AM	11:05 AM
6	P46	Resist	Alex Robinson	IM	High Opacity Multi-Trigger Resist (Invited)	0:20	11:05 AM	11:25 AM
			Vivek Bakshi	EUV Litho, Inc.	Announcements	0:10	11:25 AM	11:35 AM
Workshop Adjourned								