#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
All Times are local time in Berkeley, CA, USA (PDT)								
On June 2, 2024 Short Courses is on-line only. June 3 Short Course is in a Hybrid format. From June 4-6, 2024 workshop is in-person only.								
Version: June 5, 2024 . For questions or comments please contact info@euvlitho.com								
Short Course								
8:30 AM, Sunday, June 2, 2024, Berkeley, CA (Course is held online Only)								
All Times are for Berkeley, CA, USA. Please estimate times for your own time zones. It is a live event.								
***Short Course:* EUV and Soft X-Ray Sources**								
Instructors: Gerry O'Sullivan, Marcelo Ackermann, Henry Kapteyn and Bjorn Hegelich								
EUVL Short Courses and EUVL Workshop require separate registrations. Please visit www.euvlitho.com for information.								
					AV Test and Speaker Check-in	0:15	8:30 AM	8:45 AM
			Gerry O'Sullivan	UCD	Physics of EUV and Short Wavelength Sources with Focus on Atomic Physics	1:30	8:45 AM	10:15 AM
					Break	0:15	10:15 AM	10:30 AM
			Marcelo Ackerman	UC Berkeley	EUV Multilayers	1:30	10:30 AM	12:00 PM
					Lunch Break	0:30	12:00 PM	12:30 PM
			Henry C. Kapteyn	Univ of Colorado and K&M Labs	Fundamentals and Applications of Coherent High Harmonic EUV Sources	1:30	12:30 PM	2:00 PM
					Break	0:15	2:00 PM	2:15 PM
			Bjorn Manuel Hegelich	UT Austin and Tau Systems	Laser-driven accelerators and coherent EUV and X-ray Sources	1:30	2:15 PM	3:45 PM
Short Course Adjourned								

<table>
<tr><th>#</th><th>Paper #</th><th>Area</th><th>Presenter</th><th>Company</th><th>Title</th><th>Duration</th><th>Start</th><th>Finish</th></tr>
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<tr><td colspan="9"><i>Short Course</i></td></tr>
<tr><td colspan="9">8:30 AM, Monday, June 3, 2024, Berkeley, CA (Course is held in hybrid mode. All instructors will be in-person at LBNL, BLDG 66 - Rm 316)</td></tr>
<tr><td colspan="9"><i>Short Course:</i> EUV Lithography</td></tr>
<tr><td colspan="9"><i>Instructors: Vivek Bakshi (EUV Litho, Inc.), Patrick Naulleau (CXRO), Sangsul Lee (Postiche University), and Jan van Shoot (ASML)</i></td></tr>
<tr><td colspan="9"><i>EUVL Short Courses and EUVL Workshop require separate registrations.</i> <i>Please visit www.euvlitho.com for information.</i></td></tr>
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<tr><td></td><td></td><td></td><td></td><td></td><td><i>Breakfast, AV Test and Speaker Check-in</i></td><td>0:15</td><td>8:30 AM</td><td>8:45 AM</td></tr>
<tr><td></td><td></td><td></td><td>Vivek Bakshi</td><td>EUV Litho Inc.</td><td>Introduction to EUVL and EUV Sources</td><td>1:30</td><td>8:45 AM</td><td>10:15 AM</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Break</td><td>0:15</td><td>10:15 AM</td><td>10:30 AM</td></tr>
<tr><td></td><td></td><td></td><td>Sangsul Lee</td><td>POSTECH and PAL</td><td>EUVL Masks</td><td>1:30</td><td>10:30 AM</td><td>12:00 PM</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Lunch Break</td><td>1:00</td><td>12:00 PM</td><td>1:00 PM</td></tr>
<tr><td></td><td></td><td></td><td>Patrick Naulleau</td><td>EUV Tech</td><td>EUVL Patterning and Resist</td><td>1:30</td><td>1:00 PM</td><td>2:30 PM</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Break</td><td>0:15</td><td>2:30 PM</td><td>2:45 PM</td></tr>
<tr><td></td><td></td><td></td><td>Jan van Schoot</td><td>ASML</td><td>High NA EUVL</td><td>1:30</td><td>2:45 PM</td><td>4:15 PM</td></tr>
<tr><td colspan="9">Short Course Adjourned</td></tr>
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#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
2024 EUVL Workshop and Supplier Showcase								
Please see Abstract Book on website www.euvlitho.com for abstracts and co-author(s) information by paper #.								
9:30 AM, Tuesday, June 4, 2024, LBNL, CA (Workshop held in-person only, Building 66, Room 317)								
Sessions 1 - 2: LBNL and Supplier Program Showcase								
Session 1: LBNL Program Showcase; Session Chair: Ricardo Ruiz (LBNL) and Bruno La Fontaine (LBNL)								
					AV Test, Speaker Check-in, Breakfast, Coffee and Registration	1:00	9:30 AM	10:30 AM
		Introduction	Vivek Bakshi / Patrick Naulleau	EUV Litho / EUV Tech	Welcome and Announcements	0:10	10:30 AM	10:40 AM
1	P7	Keynote	John Shalf	LBNL	Computing Beyond Moore’s Law	0:30	10:40 AM	11:10 AM
2	P106	LBL Showcase	Ricardo Ruiz	LBNL	A Holistic Approach to Patterning Science at Berkeley Lab	0:15	11:10 AM	11:25 AM
2	P102	LBL Showcase	Maurice Garcia-Sciveres	LBNL	Nanoscale Photon Sensing	0:15	11:25 AM	11:40 AM
2	P105	LBL Showcase	Paul Ashby	LBNL	Spatially Resolved EUV Resist Dissolution	0:15	11:40 AM	11:55 AM
2	P103	LBL Showcase	Cheng Wang	LBNL	Characterization of Chemical/structural Information of Latent Image via Critical-dimension Resonant Soft X-ray Scattering	0:15	11:55 AM	12:10 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
2	P107	LBL Showcase	Archana Raja	LBNL	Multimodal characterization of electrons and excitons in 2D materials and their heterostructures	0:15	12:10 PM	12:25 PM
					Lunch	1:05	12:25 PM	1:30 PM
Session32: Supplier Program Showcase; Session Chair: Take Watanabe (University of Hyogo)								
3	P81	Supplier Showcase -1	Richard Ciesielski	PTB	Synchrotron-based EUV metrology at PTB	0:15	1:30 PM	1:45 PM
3	P85	Supplier Showcase -1	Jacqueline van Veldhoven	TNO	TNO EUV Materials Research for EUV Infrastructure	0:15	1:45 PM	2:00 PM
3	P88	Supplier Showcase -1	Bruno La Fontaine	LBNL	EUVL Capabilities at CXRO	0:15	2:00 PM	2:15 PM
					Coffee Break	0:20	2:15 PM	2:35 PM
Session 4: Supplier Showcase -2; Session Co-Chairs: Meng Lee (Veeco) and Matt Hettermann (EUV Tech)								
4	P86	Supplier Showcase -2	Meng Lee	Veeco	Veeco Ion Beam Deposition Advancement and Diamond Like Carbon as Novel Material for EUV Mask Blanks (Invited)	0:15	2:35 PM	2:50 PM
4	P87	Supplier Showcase -2	JeongHo Yeo	AMAT	Yield Relevant Patterning Control For Next Generation Device Technology	0:15	2:50 PM	3:05 PM
4	P83	Supplier Showcase -2	Henry Chou	Energetiq	Preparing the Availability of EUV Light Sources for High Volume Manufacturing (Invited)	0:15	3:05 PM	3:20 PM
4	P82	Supplier Showcase -2	Matt Hettermann	EUV Tech	Applications of EUV Metrology Tools	0:15	3:20 PM	3:35 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
4	P84	Supplier Showcase -2	Sung Park	Molecular Vista	Nanoscale Chemical Analysis of EUV Resists (Invited)	0:15	3:35 PM	3:50 PM
					Coffee Break	0:15	3:50 PM	4:05 PM
			All		**CXRO Facility Tour**	1:00	4:05 PM	5:05 PM
Workshop Adjourned for the Day								

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
8:30 AM, Wednesday, June 5, 2024, LBNL, Berkeley, CA (Workshop held in-person only, Bldg 66 -317)								
Session 5: Keynote Presentations								
Session 6 -8: Source -1 & Resist and Patterning-1; Session 9: Poster Session and Reception (Session 9 in Buliding 91)								
Session 5: Keynote - 1; Session Chair: Patrick Naulleau (EUV Tech)								
					Breakfast	0:30	8:00 AM	8:30 AM
					AV Test, Speaker Check-in and Registration	0:30	8:30 AM	9:00 AM
		Introduction	Dimitrios Argyriou	LBNL	Welcome to LBNL	0:10	9:00 AM	9:10 AM
		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:10 AM	9:20 AM
5	P4	Keynote	Steven Carson	Intel	High-NA EUV: An Update on Introduction	0:30	9:20 AM	9:50 AM
5	P5	Keynote	Steve Snyder	Micron	Full Lifetime EUV Cost vs Performance for DRAM	0:30	9:50 AM	10:20 AM
5	P1	Keynote	In-Yong Kang	Samsung	New development of EUV materials and MI solutions for High NA mask	0:30	10:20 AM	10:50 AM
					Coffee Break	0:20	10:50 AM	11:10 AM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 6: EUV Sources -1, Session Co-Chairs: Henry Kapteyn (K&M Lab) and Dong Gun Lee (E-Sol)								
6	P32	Source -1	David Reisman	Energetiq	Modeling a Discharge-Produced Plasma (DPP) EUV Source (Invited)	0:15	11:10 AM	11:25 AM
6	P37	Source -1	Henry Kapteyn	K&M Labs	Nanoscale Coherent Imaging and Functional Characterization using Tabletop-Scale Coherent EUV Sources (Invited)	0:15	11:25 AM	11:40 AM
6	P40	Source -1	Robert Reidel	Class 5 Photonics GmbH	EUV and Soft-X-Ray Photonic Integrated Circuits (XPICs) - Overview and First Results at 13.5 nm	0:15	11:40 AM	11:55 AM
6	P31	Source -1	Dong Gun Lee	E-Sol	Development Of High-Brightness Xe LPP Source And Its Applications (Invited)	0:15	11:55 AM	12:10 PM
					Lunch	1:05	12:10 PM	1:15 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 7: Resist and Patterning- 1; Session Co-Chairs: Anuja De Silva (LAM) and Alex Robinson (IM)								
7	P51	Resist and Patterning -1	Anuja De Silva	LAM	Dry Resist Patterning Readiness Towards High NA EUV Lithography (Invited)	0:15	1:15 PM	1:30 PM
7	P53	Resist and Patterning -1	Congque Dinh	TEL	Advanced Processes for High-NA EUV Lithography (Invited)	0:15	1:30 PM	1:45 PM
7	P55	Resist and Patterning -1	Alex Robinson	IM	Multi-Trigger Resist Patterning towards High–NA EUV Lithography (Invited)	0:15	1:45 PM	2:00 PM
7	P56	Resist and Patterning -1	Myung-Gil Kim	Sungkyunkwan University	Enhancement of Photosensitivity and Stability of Sn-12 EUV Resist by Integrating Photoactive Nitrate Anion	0:15	2:00 PM	2:15 PM
7	P57	Resist and Patterning -1	Michael Tsapatsis	John Hopkins University	EUV Lithography Using Zeolitic Imidazolate Frameworks	0:15	2:15 PM	2:30 PM
7	P59	Resist and Patterning -1	Chang-Yong Nam	Brookhaven National Lab	DOE Accelerate Initiative Project for Accelerating Next-Generation EUV Photoresist Development (Invited)	0:15	2:30 PM	2:45 PM
7	P58	Resist and Patterning -1	Ji-Hoo Seok	Hanyang University	Hybrid Multilayer EUV Dry Resist for 1.5 nm Technology Node	0:15	2:45 PM	3:00 PM
					Coffee Break	0:20	3:00 PM	3:20 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 8: Resist and Patterning - 2; Session Co-Chairs: Oleg Kostko (LBNL) and Ryan Miyakawa (LBNL)								
8	P60	Resist and Patterning -2	Chenyun Yuan	Cornell	Sequence Control in Polypeptoid Photoresists and Its Effects on Patterning Performance (Invited)	0:15	3:20 PM	3:35 PM
8	P67	Resist and Patterning -2	Nishiki Fujimaki	Fuji Film	EUV CAR-NTD with New Developer for Chemical Stochastic Defect Reduction	0:15	3:35 PM	3:50 PM
8	P52	Resist and Patterning -2	Oleg Kostko	CXRO	Probing Chemical Transformations in EUV Resists	0:15	3:50 PM	4:05 PM
8	P54	Resist and Patterning -2	Iason Giannopoulos	PSI	EUV Interference Lithography towards the Ultimate Resolution of Photon-based Nanopatterning (Invited)	0:15	4:05 PM	4:20 PM
8	P62	Resist and Patterning -2	Hyun-Dam Jeong	Chonnam National University	Non-Alkyl Tin Oxo Cluster of CNU-TOC-01(4C-C) as Inorganic Resist for EUV Lithography	0:15	4:20 PM	4:35 PM
8	P69	Resist and Patterning -2	Umesh Balaso Apugade	Kyung Hee University	Evaluation of C-beam Generated EUV Lightning Source using Mirror and Filter Technique	0:15	4:35 PM	4:50 PM
8	P13	Resist and Patterning -2	Ryan Miyakawa	CXRO	Performance of the Berkeley MET Using a Stand-Alone Plasma Source	0:15	4:50 PM	5:05 PM
					Break / Move to Poster Session Location	0:40	5:05 PM	5:45 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 9: Poster Session and Reception, Session Chair: Vivek Bakshi								
					Poster Session and Reception	**1:30**	**5:45 PM**	**7:15 PM**
9	P20	Poster Session	Seungho Lee	Hanyang University	Study of Enhancing Etching Performance of Pt-based Absorber Material for EUV Mask			
9	P21	Poster Session	Seungchan Moon	Hanyang University	Experimental Investigation of the Mask Diffraction Obstructed by the Critical-sized Sn Particles on EUV Pellicle			
9	P39	Poster Session	Kosuke Saito	Energetiq	Energetiq Source Update: Spherically Shaped Source for High NA Metrology			
9	P41	Poster Session	Iksu Kim	Kyung Hee University	Enhanced EUV Lighting with Focusing Electrode Adapted C-beam Irradiation Technique			
9	P42	Poster Session	Wooram Kim	KRISS	Testing Platform of Extreme-ultraviolet (EUV) Materials and Optical Components			
9	P61	Poster Session	Jiyoung Bang	Chonnam National University	Tetrahydroxy-tetramethyl-cyclotetrasiloxane as an Inorganic EUV Resist: Exploring Cross-Linking Mechanisms and Lithography Performance			
9	P63	Poster Session	Hyeok Yun	Chonnam National University	The Investigation of the Effect of Electron Beam and Extreme Ultraviolet Irradiation on Dibenzyltin Diacetate Thin Film Using Local Analysis and Quantum Chemical Calculations			
9	P64	Poster Session	Wonchul Kee	Chonnam National University	Synthesis and Characterization of Novel Two-in-One Type Siloxane Molecule Photoresist for EUV Lithography			

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
9	P65	Poster Session	Bernhard Lüttgenau	CXRO	Enabling High-throughput Characterization of Outgassing and Total Electron Yield for Model EUV Resist Materials			
9	P66	Poster Session	Honggu Im	CXRO	Investigating Influence of Electron Affinity on Electron Emission in EUV Photoresists			
9	P68	Poster Session	Ji-Hoo Seok	Hanyang University	Dry Development Process for Vertically Tailored Hybrid Multilayer EUV Photoresist			
9	P91	Poster Session	Alessandro Ruocco	FS Dynamics	Plasma Modelling at FS Dynamics			
9	P92	Poster Session	Samuel Gleason	Inprentus, Inc.	Blazed, Variable-line-space Reflection Gratings for 13.5-nm Optics Fabricated at Inprentus			
Workshop Adjourned for the Day								

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
8:30 AM, Thursday, June 6, 2024, LBNL, Berkeley, CA (Workshop held in-person only, Building 66 - 316)								
Session 10: Keynote -2 ; Session 11: EUV Sources-2								
Session 12-13: Mask / Optics / Metrology								
Session 10: Keynote; Session Chair: Harry Levinson (HJL Lithography)								
					Breakfast	0:30	8:30 AM	9:00 AM
		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
10	P3	Keynote	Jan van Schoot	ASML	The Next Step in Moore’s Law: High NA EUV Imaging and Overlay Performance	0:30	9:10 AM	9:40 AM
10	P2	Keynote	Marcelo Ackermann	UTewnte	Pushing for record reflectivities for short wavelength multilayers – EUV and beyond	0:30	9:40 AM	10:10 AM
10	P6	Keynote	Takeo Watanabe	University of Hyogo	Current Status and Technical Issues of the EUVL and Prospect for the Next Generation EUVL	0:30	10:10 AM	10:40 AM
					Coffee Break	0:20	10:40 AM	11:00 AM
Session 11: EUV Sources -2 ; Session Chairs: Felicie Albert (LLNL) and Jeroen van Tilborg (LBNL)								
11	P34	Source -2	Felicie Albert	LLNL	Laser-plasma Acceleration: Next Generation X-ray Light Sources for Industrial Applications (Invited)	0:15	11:00 AM	11:15 AM
11	P33	Source -2	Jeroen van Tilborg	LBNL	Compact Radiation Sources from Laser-Plasma Accelerators at LBNL's BELLA Center (Invited)	0:15	11:15 AM	11:30 AM
11	P36	Source -2	Steve Milton	Tau Systems	Commercializing Laser-Wakefield Accelerator Systems and Their Applications (Invited)	0:15	11:30 AM	11:45 AM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
11	P35	Source -2	Zbynek Hubka	LLNL	Tm:YLF lasers for driving EUV Sources (Invited)	0:15	11:45 AM	12:00 PM
11	P43	Source -2	Dinh Nguyen	Xlight	High-average-power ERL FEL for EUV Lithography (Invited)	0:15	12:00 PM	12:15 PM
11	P38	Source -2	Zhilong Pan	Tsinghua University	The Recent Process on Steady-State Microbunching EUV Light Source Project	0:15	12:15 PM	12:30 PM
					Lunch and Workshop Steering Committee Meeting (Closed)	1:30	12:30 PM	2:00 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 12: EUV Mask / Optics /Metrology - 1; Session Chairs: Katrina Rook (Veeco) and Michael Lam (Synopsys)								
12	P22	Mask /Optics/Metrology	Martin Kaumanns	Carl Zeiss	Status and Outlook of EUV optics at ZEISS (Invited)	0:15	2:00 PM	2:15 PM
12	P24	Mask /Optics/Metrology	Richard Ciesielski, Samira Naghdi	PTB	Thickness-dependent optical constants of silicon thin films within the EUV spectrum: insights and implications for EUVL systems	0:15	2:15 PM	2:30 PM
12	P15	Mask /Optics/Metrology	Katrina Rook	Veeco	Ion Beam Deposition over Larger Form-Factor EUV Mask Blanks (Invited)	0:15	2:30 PM	2:45 PM
12	P19	Mask /Optics/Metrology	Hiroki Deguchi	DNP	Efforts in the Development of EUV Masks within the Context of a Merchant Mask Shop	0:15	2:45 PM	3:00 PM
12	P23	Mask /Optics/Metrology	Michael Lam	Synopsys	Computational Lithography Solutions for High NA EUV with Mask Stitching (Invited)	0:15	3:00 PM	3:15 PM
					Coffee Break	0:20	3:15 PM	3:35 PM

#	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
Session 13: EUV Mask / Optics /Metrology - 2; Session Chairs: Marcus Benk (LBNL) and Sangsul Lee (POSTECH)								
13	P11	Mask /Optics/Metrology	Stuart Sherwin	EUV Tech	EUV Tech n/k Tool	0:15	3:35 PM	3:50 PM
13	P12	Mask /Optics/Metrology	Luke Long	EUV Tech	Effects of EUV Multilayer Roughness in High NA EUV Lithography	0:15	3:50 PM	4:05 PM
13	P14	Mask /Optics/Metrology	Marcus Benk	CXRO	Mask-side Hyper-NA imaging on the SHARP EUV mask microscope	0:15	4:05 PM	4:20 PM
13	P18	Mask /Optics/Metrology	Sangsul Lee	POSTECH	Integrating Actinic EUV Research with Advanced Analytical Technologies (Invited)	0:15	4:20 PM	4:35 PM
			Harry Levinson	**SPIE**	**JM3**	**0:05**	**4:35 PM**	**4:40 PM**
			Vivek Bakshi	**EUV Litho, Inc.**	**Announcements**	**0:10**	**4:35 PM**	**4:45 PM**
Workshop Adjourned. Leave for Off-Site Workshop Dinner								