

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
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All Times are in US Central Daylight Time Zone (Austin, TX, USA). Belgium / Netherlands is + 7 Hours and Korea / Japan are +14 Hours ahead.
Version: June 4, 2021. For questions or comments please contact info@euvlitho.com

Short Course

5:30 PM, Saturday, June 5, 2021, Austin, TX, USA (7:30 AM, **Sunday, June 6, Korea and Japan)**

Short Course: Advanced Photon Sources and Applications in Nanoscale Imaging

Instructor: David Attwood, University of California, Berkeley

EUVL Short Course and EUVL Workshop require separate registrations. Please visit www.euvlitho.com for information.

					AV Test and Speaker Check-in	0:30	5:30 PM	6:00 PM
			David Attwood	UC Berkeley	Lecture	1:30	6:00 PM	7:30 PM
					Break	0:20	7:30 PM	7:50 PM
			David Attwood	UC Berkeley	Lecture	1:30	7:50 PM	9:20 PM
					Break	0:20	9:20 PM	9:40 PM
			David Attwood	UC Berkeley	Lecture	1:30	9:40 PM	11:10 PM

Short Course

5:30 PM, Sunday, June 6, 2021, Austin, TX, USA (7:30 AM, **Monday, June 7, Korea and Japan)**

Short Course: EUV Lithography

Instructors: Vivek Bakshi, Patrick Naulleau, Jinho Ahn

EUVL Short Course and EUVL Workshop require separate registrations. Please visit www.euvlitho.com for information.

					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
					Break	0:15	7:30 PM	7:45 PM
			Patrick Naulleau	CXRO	Lecture	1:30	7:45 PM	9:15 PM
					Break	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
8:30 AM, Monday, June 7, 2021, Austin, TX, USA (3:30 PM, Monday, June 8, Belgium / Netherlands)								
Session 1: IMEC 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						0:30	8:30 AM	9:00 AM
Session 1: IMEC Program Showcase, Session Co-Chairs: Kurt Ronse (IMEC) and Vivek Bakshi (EUV Litho)								
1		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
1	P71	Showcase (IMEC)	Kurt Ronse	IMEC	IMEC Introduction and Overview	0:25	9:10 AM	9:35 AM
1	P72	Showcase (IMEC)	Denis Marcon	IMEC	Development and Manufacturing of Customized Device with Imec's Technology	0:25	9:35 AM	10:00 AM
1	P73	Showcase (IMEC)	John Petersen	IMEC	Tour of imec's AttoLab	0:25	10:00 AM	10:25 AM
1	P74	Showcase (IMEC)	Chris van Hoof	IMEC	One Planet : Nanoelectronics and Digital Technology for Food and Health	0:25	10:25 AM	10:50 AM
Break						0:20	10:50 AM	11:10 AM
1	P77	Showcase (IMEC)	Liesbet Lagae	IMEC	Imec envisions Smart Health	0:25	11:10 AM	11:35 AM
1	P75	Showcase (IMEC)	Pawel Malinowski	IMEC	Disruptive Pixel Technologies Enabling Affordable, High Quality Infrared Imaging	0:25	11:35 AM	12:00 PM
1	P76	Showcase (IMEC)	Jef Poortmans	IMEC	NanoTechnology and the Energy Transition	0:25	12:00 PM	12:25 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
8:30 AM, Tuesday, June 8, 2021, Austin, TX, USA (3:30 PM, Tuesday, June 8, Belgium / Netherlands)								
Session 2: Keynote Presentations and EUV Mask -1								
AV Test and Speaker Check-in						0:30	8:30 AM	9:00 AM
Session 2A: Keynote -1, Session Chair: Kurt Ronse (IMEC)								
2		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
2					Quantum Computing--A Brief History and Current Status	0:30	9:10 AM	9:40 AM
	P1	Keynote -1	John Gillaspay	NSF /NIST	EUV Ecosystem Expansion into DRAM Manufacturing	0:30	9:40 AM	10:10 AM
2	P2	Keynote -1	Stephen Snyder	Micron	High-NA EUV Progress and Outlook	0:30	10:10 AM	10:40 AM
2	P3	Keynote -1	Jan van Schoot	ASML	Break	0:20	10:40 AM	11:00 AM
Session 2B: Mask -1, Session Co-Chairs: Vicky Philipsen (IMEC) and Katrina Rook (VEECO)								
2					EUV masks: Prospects and Challenges (Invited)	0:15	11:00 AM	11:15 AM
	P11	Mask -1	Vicky Philipsen	IMEC	Comparison of Deposition Techniques for Mo/Si Multilayers for EUV Mask Blanks (Invited)	0:15	11:15 AM	11:30 AM
2	P12	Mask -1	Antonio Checco	Veeco	Correction and verification with compact EUV stochastic models	0:15	11:30 AM	11:45 AM
2	P13	Mask -1	Yunqiang Zhang	Synopsys				

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
6:00 PM, Tuesday, June 8, 2021, Austin, TX, USA (8:00 AM, Wednesday, June 9, Korea and Japan)								
Session 3: Keynote, EUV Mask -2 and EUV Resist and Patterning -1								
<i>AV Test and Speaker Check-in</i>						0:30	6:00 PM	6:30 PM
3		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	6:30 PM	6:40 PM
Session 3A: Keynote -2, Session Chair: Jinho Ahn (Hanyang)								
3	P4	Keynote -2	Changmoon Lim	S K Hynix	Potential of EUV for High-volume Manufacturing of DRAM	0:30	6:40 PM	7:10 PM
3	P5	Keynote -2	Steven Carson	Intel	EUV Lithography in Volume Manufacturing and Future Extensions	0:30	7:10 PM	7:40 PM
Break						0:20	7:40 PM	8:00 PM
Session 3B: Keynote -2, Session Co-Chairs: Jinho Ahn (Hanyang) and Takeo Watanabe (Hyogo)								
3	P14	Mask -2	Jinho Ahn	Hanyang	Materials Perspectives for EUV Pellicle Solutions (Invited)	0:15	8:00 PM	8:15 PM
3	P15	Mask -2	Dong Gun Lee	E-Sol	Development of Advanced Blank Defect Avoidance Technique Using Actinic Review System (Invited)	0:15	8:15 PM	8:30 PM
3	P21	Resist and Patterning -1	Chang-Yong Nam	Brookhaven National Lab	Synthesis of Organic-Inorganic Hybrid EUV Resists by Atomic Layer Deposition (Invited)	0:15	8:30 PM	8:45 PM
3	P22	Resist and Patterning -1	Slavomir Nemsak	LBL	Investigations of Photoresists using Synchrotron Light Sources (Invited)	0:15	8:45 PM	9:00 PM
3	P23	Resist and Patterning -1	Jonathan Ma	CXRO	Exploring Backbone Ionization in EUV Resists Using Computational Chemistry	0:15	9:00 PM	9:15 PM
3	P24	Resist and Patterning -1	Takeo Watanabe	University of Hyogo	EUV Resist Development Program at NewSUBARU (Invited)	0:15	9:15 PM	9:30 PM
3	P39	Resist and Patterning -1	Satinder Sharma	IIT Mandi	Investigation of Stochastic Effects on EUV Ready Indium Based Metal-Organic Cluster Resist	0:15	9:30 PM	9:45 PM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
9:00 AM, Wednesday, June 9, 2021, Austin, TX, USA (4:00 PM, Wednesday, June 9, Belgium / Netherlands)								
Session 4: EUV Resist and Patterning -2 and Speed Presentations								
					<i>AV Test and Speaker Check-in</i>	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
Session 4A: Resist and Patterning -2, Session Co-Chairs: Yasin Ekinici (PSI) and Anna Lio (Intel)								
4					A Stochastic Resist Model Based Comparison of 0.33NA and 0.55NA Lithography	0:15	9:10 AM	9:25 AM
	P25	Resist and Patterning -2	Ruben Maas	ASML				
4					A Decade of Progress in EUV Resists (Invited)	0:15	9:25 AM	9:40 AM
	P26	Resist and Patterning -2	Yasin Ekinici	PSI				
4					EUV Lithography using Multi-Trigger Resist (Invited)	0:15	9:40 AM	9:55 AM
	P27	Resist and Patterning -2	Alex Robinson	IM				
4					Exploration of Thin Films for High NA EUV Lithography	0:15	9:55 AM	10:10 AM
	P28	Resist and Patterning -2	Joren Severi	IMEC				
4					Experimental Characterization of Model Polymers (Invited)	0:15	10:10 AM	10:25 AM
	P29	Resist and Patterning -2	Oleg Kostko	CXRO				
4					Recent progress in a dry deposited and Dry Developed EUV Photoresist System (Invited)	0:15	10:25 AM	10:40 AM
	P30	Resist and Patterning -2	Nader Shamma	LAM				
4					EUV Resists: Pushing the Limits (Invited)	0:15	10:40 AM	10:55 AM
	P31	Resist and Patterning -2	Anna Lio	Intel				
Break						0:20	10:55 AM	11:15 AM
Speed Presentations Session								
Session 4B: Resist and Patterning -2, Session Chair: Vivek Bakshi (EUV Litho)								
4					Resist Screening with EUV Interference Lithography: from Omelet lithography to State-of-the-art Performance Resists	0:05	11:15 AM	11:20 AM
	P32	P1 - Resist and Patterning	Timothee Allenet	PSI				
4					Combined Atomic Absorption /Optical Emission Spectroscopy for In-Situ Control of EUVL and X-Ray Optics Manufacturing	0:05	11:20 AM	11:25 AM
	P41	P1 - Resist and Patterning	George Atanasoff	Accustrata				

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
4					Large area Nanopatterning and Industrial Resist Testing with an in-lab EUV Dual Beamline	0:05	11:25 AM	11:30 AM
	P33	P1 - Resist and Patterning	Bernhard Lüttgenau	RWTH				
4					Material-specific analysis of multi-layers with XUV Coherence Tomography	0:05	11:30 AM	11:35 AM
	P40	P1 - Resist and Patterning	Silvio Fuchs	Indigo Optics				
4					High-speed AFM for Full-strength, Spatially-resolved, In-situ Dissolution Rate Monitoring	0:05	11:35 AM	11:40 AM
	P36	P1 - Resist and Patterning	Luke Long	UC Berkeley				
4					Evaluation Results of the Rapid Probe Microscope, RPM, to Address EUV mask 3D Metrology Requirements	0:05	11:40 AM	11:45 AM
	P16	P1 - Mask	Matthew Tedaldi	Infinitesima				
4					Measuring In-pattern EUV Phase Deviations with Linearized Scatterometry	0:05	11:45 AM	11:50 AM
	P17	P1 - Mask	Stuart Sherwin	CXRO				
4					EUV Phase-Sensitive Imaging Reflectometer	0:05	11:50 AM	11:55 AM
	P18	P1 - Mask	Yuka Esashi	JILA				

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
6:30 PM, Wednesday, June 9, 2021, Austin, TX, USA (8:30 AM, Thursday, June 10, Korea and Japan)								
Session 5: EUV Sources -1 and Speed Presentations								
<i>AV Test and Speaker Check-in</i>						0:30	6:00 PM	6:30 PM
5		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	6:30 PM	6:40 PM
Session 5A: Source -1, Session Co-Chairs: Hakaru Mizoguchi (Gigaphoton) and Vivek Bakshi (EUV Litho)								
5					Update of >300W High Power LPP-EUV Source Challenge for Semiconductor HVM (Invited)	0:15	6:40 PM	6:55 PM
5	P42	Source -1	Hakaru Mizoguchi	Gigaphoton	Improvement of the Modeling of Atomic Processes in Plasmas for the Study of EUV Source based on a Data Driven Approach	0:15	6:55 PM	7:10 PM
5	P43	Source -1	Akira Sasaki	QST	Progress of Tsinghua SSMB EUV Light Source Development	0:15	7:10 PM	7:25 PM
5	P44	Source -1	Xiujie Deng	Tsinghua University		0:15	7:10 PM	7:25 PM
Break						0:20	7:25 PM	7:45 PM
Speed Presentations Session								
Session 5B: Resist and Patterning -2 and Mask, Session Chair: Vivek Bakshi (EUV Litho)								
5					Vapor-phase Infiltration for High-sensitivity Hybrid Nanolithography Resists Synthesis	0:05	7:45 PM	7:50 PM
5	P34	P2- Resist and Patterning	Nikhil Tiwale	BNL Univ. Texas	Introduced E-beam Resists Using Vapor-Phase Infiltration	0:05	7:50 PM	7:55 PM
5	P35	P2 - Resist and Patterning	Su Min Hwang	Dallas	EUV Mask Imaging Performance Enhancement through Aerial Image Optimization	0:05	7:55 PM	8:00 PM
5	P19	P2 - Mask	Deuk Gyu Kim	Hanyang University	Study on the degradation of EUV transmittance for EUV pellicle during exposure process	0:05	8:00 PM	8:05 PM
5	P20	P2- Mask	ChangSoo Kim	Hanyang University	Progress in Metal-Organic Cluster Resists Towards the Deployment of Second Generation EUV lithography	0:05	8:05 PM	8:10 PM
5	P38	P2 - Resist and Patterning	Satinder Sharma	IIT Mandi				

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
5					Cyclotrimeric Organotin Based Single-Component Resist for Patterning at Single-Nanometer Regime Using Electron-Beam Lithography	0:05	8:10 PM	8:15 PM
	P37	P2 - Resist and Patterning	Subrata Ghosh	IIT Mandi				

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
8:30 AM, Thursday, June 10, 2021, Austin, TX, USA (4:00 PM, Thursday, June 10, Netherlands)								
Session 6: EUV Sources -2 and High NA EUVL								
<i>AV Test and Speaker Check-in</i>						0:30	8:30 AM	9:00 AM
6		Introduction	Vivek Bakshi	EUV Litho, Inc.	Welcome and Announcements	0:10	9:00 AM	9:10 AM
Session 6A: Source -2, Session Co-Chairs: Oscar Versolato (ARCNL) and Vivek Bakshi (EUV Litho)								
6					Towards Solid-state-laser-driven plasma Sources of EUV light: An update on ARCNL's Source Research Program (Invited)	0:15	9:10 AM	9:25 AM
6	P45	Source - 2	Oscar Versolato	ARCNL	Control of the Pressure-impulse Distribution in Laser-induced Tin Droplet Deformation for Extreme-ultraviolet Nanolithography	0:15	9:25 AM	9:40 AM
6	P46	Source - 2	Javier H Rueda	ARCNL	Optimizing the Performance of the EQ-10 Electroless Z-Pinch™ EUV Light Source	0:15	9:40 AM	9:55 AM
6	P47	Source - 2	Wolfram Neff	Energetiq	(Invited)	0:15	9:55 AM	10:10 AM
6	P48	Source - 2	Rod Loewen	Lyncean	Compact Storage Ring FEL: a kW-scale EUV Lithography Source	0:15	9:55 AM	10:10 AM
Break						0:20	10:10 AM	10:30 AM
Session 6B: High NA EUVL, Session Co-Chairs: Patrick Naulleau (CXRO) and Jara SantaClara (ASML)								
6	P51	High NA EUVL	Jara SantaClara	ASML	Progress and Outlook Towards High-NA EUV Lithography (Invited)	0:15	10:30 AM	10:45 AM
6	P52	High NA EUVL	Lars Wischmeier	Carl Zeiss	High NA EUV Optics: a Big Step in Lithographic Resolution (Invited)	0:15	10:45 AM	11:00 AM
6	P53	High NA EUVL	Amrit Narasimhan	Inpria	Progress in Metal Oxide Photoresists for High NA EUV Lithography (Invited)	0:15	11:00 AM	11:15 AM
6	P54	High NA EUVL	Patrick Naulleau	CXRO	High NA EUV Research at Lawrence Berkeley National Laboratory (Invited)	0:15	11:15 AM	11:30 AM

Session #	Paper #	Area	Presenter	Company	Title	Duration	Start	Finish
			Vivek Bakshi	EUV Litho, Inc.	Announcements	0:10	11:30 AM	11:40 AM
Workshop Adjourned								