

# Photomask Japan 2021 Oral Presentations: Day 1

As of April 19, 2021

Date (JST UTC+9)	Session Time (JST UTC+9)	PDT UTC-7	CEST UTC+2	Session No.	Session Title	Program No.	Presentation Title	Name	Affiliation	Country
April 20, 2021	8:00-8:10	Apr.19 16:00- 17:30	Apr.20 1:00- 2:30	1	Opening					
	8:10-9:30				1-1 (Keynote)	Photomask Challenges for Data-Centric Computing in the 2020's	Klaus Schuegraf	Intel Corporation	United States	
					1-2 (Invited)	Edge Placement Error Metrology for Process Optimization and Monitoring	Yu Cao	Hermes Micro vision, Inc., an ASML company	United States	
					1-3	Advanced AFM nanomachining: high aspect repairs	Tod Evan Robinson	Bruker RMR	United States	
	9:30-9:50				Break					
	9:50-10:50	17:50- 18:50	2:50- 3:50	2	ML & MPC	2-1	Model Based Mask Process Correction for EUV Mask	Brian Dillon	Nippon Control System	Japan
						2-2	A Deep Learning Toolset to Mask Analysis with SEM Digital Twins	Ajay K Baranwal	Center for Deep Learning in Electronic Manufacturing, Inc.	United States
						2-3	Model-driven Rule-Based Mask Process Correction	Wai Yip Kwok	Synopsys, Inc.	United States
	10:50-11:10				Break					
	11:10-12:20	19:10- 20:20	4:10- 5:20	3	EUV from Asia 1	3-1 (Invited)	Fundamental Research Activities of EUV lithography at NewSUBARU Synchrotron Light Facility	Takeo Watanabe	University of Hyogo	Japan
						3-2	EUV attenuated phase shift mask: development and characterization of mask properties	Ikuya Fukasawa	HOYA Group LSI Division	Japan
						3-3	Phase Measurement Tool For EUV Phase-Shift Mask	Dong Gun Lee	ESOL (EUV Solution), Inc.	Republic of Korea
	12:20-13:50				Lunch Break					
	13:50-14:30	21:50- 22:30	6:50- 7:30	4	Lithography	4-1	Stereophonic Projection Exposure Using a Pair of Parabolic Mirrors	Toshiyuki Horiuchi	Tokyo Denki University	Japan
						4-2	Automatic Design of the Built-in Lens Mask for Three-Dimensional Photo Lithography	Tomoaki Osumi	Osaka Prefecture University	Japan
	14:30-14:50				Break					
	14:50-15:50	22:50- 23:50	7:50- 8:50	5	PSM, Etching & FPD	5-1	Study of high-transmission PSM for lithographic performance and defect control	Kazuaki Matsui	Toppan Printing CO., LTD.	Japan
						5-2	Optimization of Etching Condition for Self-Aligned Quadruple Patterning by Machine Learning	Hyakka Nakada	Hitachi, Ltd. R&D Group	Japan
						5-3	Proposal of New Style Defect Quality Assurance for Flat Panel Display Photomask	Kenichi Kanaya	HOYA Corporation	Japan
	15:50-16:10	Apr.20			Break					
16:10-18:00	0:10- 2:00	9:10- 11:00	6	EUV from Europe	6-1 (Invited)	High-NA EUV imaging: challenges, status and outlook	Jörg Zimmermann	Carl Zeiss SMT GmbH	Germany	
					6-2 (Invited)	High-NA EUVL Exposure Tool for EUV roadmap extension: Program Progress and Mask Interaction	Eelco van Setten	ASML Netherlands B.V.	Netherlands	
					6-3 (Invited)	CNT pellicles for EUV lithography: exposure, tunability and lifetime	Emily Gallagher	IMEC	United States	
					6-4	Compact EUV spectroscopy tool for optical characterization of novel photomask materials	Sascha Brose	RWTH Aachen University	Germany	

# Photomask Japan 2021 Oral Presentations: Day 2

As of April 19, 2021

Date (JST UTC+9)	Session Time (JST UTC+9)	PDT UTC-7	CEST UTC+2	Session No.	Session Title	Program No.	Presentation Title	Name	Affiliation	Country
April 21, 2021	8:00-9:40	Apr.20 16:00- 17:40	Apr.21 1:00- 2:40	7	Opening Session: Day 2	7-1 (Invited)	eBeam Initiative Surveys Report Upbeat Photomask Market Outlook	Aki Fujimura	D2S	United States
						7-2 (Invited)	EUV phase metrology at picometer scale	Stuart Sherwin	University of California, Berkeley	United States
						7-3	Ultra-low density, nanostructured free-standing films for EUV Pellicles	Dias Lima Marcio	Nano-Science and Technology Center, LINTEC OF AMERICA	United States
						7-4	Improving Yield Tool Uptime with In-Line Particle Sensor in Semiconductor Environment	Vidya Vijay	CyberOptics Corporation	United States
	9:40-10:00				Break					
	10:00-12:20	18:00- 20:20	3:00- 5:20	8	NIL	8-1 (Invited)	Nanoimprint Lithography: A Historical Perspective and a Look Towards the Future	Douglas Resnick	Canon Nanotechnologies, Inc.	United States
						8-2 (Invited)	High-Precision and High-throughput Wafer-level Nanoimprint Lithography and Mold Fabrication	Sung-won Youn	AIST	Japan
						8-3	Self-Aligned Double Patterning Process for sub-15nm Nanoimprint Template Fabrication	Yoshinori Kagawa	KIOXIA Corporation	Japan
						8-4	Fabrication of Novel Structure Template for Nano-Imprint Lithography	Koji Ichimura	Dai Nippon Printing Co., Ltd.	Japan
						8-5	NIL Integration using Computational Lithography and Peripheral Processes for Semiconductor Device Manufacturing	Tsuyoshi Arai	Canon Inc.	Japan
						8-6	Nanoimprint Performance Improvements for High Volumes Semiconductor Device Manufacturing	Ryo Tanaka	Canon Inc.	Japan
	12:20-13:50				Lunch Break					
	13:50-15:00	21:50- 23:00	6:50- 8:00	9	EUV from Asia 2	9-1 (Invited)	Mechanism of electron beam resists	Takahiro Kozawa	Osaka University	Japan
						9-2	Investigation of EUV Pellicle Mechanical Stress within EUV Pod	Ching-Te Kuo	National Sun Yat-sen University	Taiwan
						Withdrawn	Evaluation of new material based EUV pellicle for HVM	Min Wook Jung	S&S TECH Corporation	Republic of Korea
	15:00-15:20				Break					
	15:20-16:50	23:20- Apr.21 0:50	8:20- 9:50	10	Inspection	10-1 (Invited)	Actinic patterned mask defect inspection for EUV lithography	Hiroki Miyai	Lasertec Corporation	Japan
						10-2	High-brightness LDP source for EUVL mask inspection	Kazuya Aoki	USHIO INC.	Japan
						10-3	Study of High Throughput EUV Mask Pattern Inspection Technologies using Multi e-Beam Optics	Tadayuki Sugimori	NuFlare Technology, Inc.	Japan
						10-4	The Study of a Phase Difference Defect Inspection Technology	Tosyo Cho	LAZIN Co., Ltd.	Japan
	16:50-17:10				Break					
	17:10-18:50	1:10- 2:50	10:10- 11:50	11	Writing & CD Analysis	11-1	Multi-beam mask writer MBM-2000	Hiroshi Matsumoto	NuFlare Technology, Inc.	Japan
						11-2	A New Generation Cost-efficient Laser Mask Writer for Mature Semiconductor Nodes	Anders Svensson	Mycronic AB	Sweden
11-3						Software-based Optimization Methods for the Ultra Semiconductor Maskwriter	Matthias Wahl	Heidelberg Instruments Mikrotechnik GmbH	Germany	
11-4						Novel Method to find the Best Process Point in e-Beam Mask Making	Ulrich Hofmann	GenlSys GmbH	Germany	
11-5						Stability of CD off-target - analysis	Pavel Nesladek	AMTC Dresden	Germany	
18:50-19:00	2:50-3:00	11:50- 12:00		Closing						

# Photomask Japan 2021 Poster Presentations

As of April 19, 2021

Date (JST UTC+9)	Session Time (JST UTC+9)	PDT UTC-7	CEST UTC+2	Session No.	Session Title	Program No.	Presentation Title	Name	Affiliation	Country
<b>From April 20, 2021</b>					<b>Poster</b>	P-1	Ongoing Development of Ultrafast DUV Pulse Laser Repair for EUV Photomasks	Tod Evan Robinson	Bruker RMR	United States
						P-2	Vapor Phase Infiltration of Thin Films and Nanopatterns of Electron Beam and Nanoimprint Resists	Masaru Nakagawa	Tohoku University	Japan
						P-3	X-Ray-Reflectivity Analysis of Organic-Inorganic UV-Cured Resin Films Hybridized by Sequential Vapor Infiltration	Kohei Chiba	Tohoku University	Japan
						P-4	Spectra of high energy ions as debris in laser-produced plasma EUV source	Yuto Nakayama	Utsunomiya University	Japan
						P-5	Birefringence mapping of optical material by use of supercontinuum vector beams	Juri Ogawa	Utsunomiya University	Japan
						P-6	Efficient VIA Position Optimization for Yield Enhancement	Xiang Fang	Mentor, a Siemens Business	Taiwan
						P-7	Damage-Less Removal of Surface Contamination Using Atomic Hydrogen Generated on Heated Tungsten Mesh	Akira Heya	University of Hyogo	Japan
						P-8	Beyond EUV measurement at NewSUBARU synchrotron light facility	Takuto Fujii	University of Hyogo	Japan
						P-9	Measurement and Modeling of Resist Surface Potential Distribution in Electron Beam Lithography	Yoshinobu Kono	Osaka Institute of Technology	Japan
						P-10	Hydrogen Damage Evaluation of Mo/Si Multilayer using High-Power EUV Irradiation Tool	Tetsuo Harada	University of Hyogo	Japan
						P-11	Development of Grazing-Incidence Coherent EUV Scatterometry Microscope for Resist Pattern Observation	Naoya Kawakami	University of Hyogo	Japan
						P-12	The Application of Reticle Analyzer in DRAM Fab	Asei Chou	Changxin Memory Technologies, Inc.	China