EUVL
EXTREME ULTRAVIOLET LITHOGRAPHY

POSTER TITLE	AUTHOR(S)	COMPANY
An Analysis of EUV Technology Cost-of-Ownership	W. Trybula, P. Seidel	*ISMT*
Stand-Alone At-Wavelength Mask Inspection Microscope (MIM) for EUV Mask Defect Inspection Using a Laser Plasma Source	R.C.C. Perera	*EUV Technology*
High Speed EUV-Reflectometer with Compact Discharge EUV Source Designed for Mask-Blank Inspection	R. Lebert[1], L. Juschkin[1], M. Meisen[1], A. Nazareko[1], M.C. Schurmann[2], T. Misalla[2], L. Aschke[3], H. Sauerbrei[3], M.Schiffler[3], G. Ulm[4], R.M. Klein[4], F. Scholze[4]	*[1]AIXUV GmbH, [2]JENOPTIK Mikrotechnik GmbH, [3]Schott Lithotec AG, [4]Physikalisch-Technische Bundesanstalt*
Influence of Multilayer Stress Distribution on EUV Mask in-Place Distortion	A. Chiba, M. Sugawara, H. Yamanashi, I. Nishiyama	*ASET*
Printability Analysis of Attenuated Phase-Shifting Mask Considering Exposure Bandwidth	M. Sugawara, A. Chiba, H. Oizumi, H. Yamanashi, I. Nishiyama	*ASET*
Visible Light Scattering from Defects in EUV Mask Blanks: 3-D Modeling	M. Ito, I. Nishiyama, S. Okazaki	*ASET*
Development of a Mask-Scan EB Mask Writing System	M. Ogasawara, S. Nishimura, K. Akeno, S. Mitsui, M. Shimizu, H. Kusakabe, T. Tojo	*ASET*
Evaluation of Finished EUV Lithography Mask Using a Mirau Interferometric Microscope	H. Kinoshita[1], T. Haga[2], K. Hamamoto[1], S. Takada[1], N. Kazui[1], S. Kakunai[1], H. Tsubakino[1], T. Watanabe[1]	*[1]Himeji Institute, [2]NJT Telecommunications Energy Laboratories*

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POSTER TITLE	AUTHOR(S)	COMPANY
Correlation of Absorber Films Properties with Patterned Film Characteristics on Square Format EUV Lithography Masks	K. Racette, E. Fisch, C. Huang, M. Lawliss, C. Williams	*IBM Microelectronics*
Requirements for Fabricating Attenuated Phase Shift Masks for EUV Lithography	S.-I Han, S.D. Hector, G. Edwards, P.J.S. Mangat	*Motorola DigitalDNA™ Labs*
Improved Characteristics of ULE® Glass for Meeting EUV Lithography Needs	B. Ackerman, C. Heckle, K. Hrdina, J. Maxon, B. McLean, D. Navan, M. Wasilewski	*Corning, Inc.*
EUV Mask Blank Substrates	J. Teisson, D. Bardon, S. Chaillot	*SAGEM SA*
The European Mask Blank, Mask, & Metrology Program: EXTUMASK	J. Rau[1], A. Ehrmann[1], F.-M. Kamm[1], J. Mathuni[1], K. Vaas[1], A. Wolter[1], F. Letzkus[2], R. Springer[2], L. Aschke[3], H. Becker[3], G. Hess[3], S. Kirchner[3], T. Leutbecher[3], N. Olschewski[3], H. Sauerbrei[3], M. Schiffler[3], K. Walter[3], E. Quesnel[4], J. Hue[4], J.-Y Robic[4], C. Vannuffel[4], P. Schiavone[5]	*[1]Infineon Technologies AG, [2]Institut fur Mikroelektronik Stuttgart, [3]Schott Lithotec AG, [4]CEA/Leti, [5]CNRS/LTM*
Mo/Si Multilayers for EUV Lithography Masks by Ion Beam Sputter Deposition	T. Chasse[1], H. Neumann[1], W. Frank[1], F. Frost[1], D. Hirsch[1], A. Schindler[1], G. Wagner[2], M. Lorenz[2], B. Ocker[3], B. Rauschenbach[1]	*[1]Institute for Surface Modification, [2]Universitat Leipzig, [3]Singulus Technologies AG*
EUV Lithography Multilayer Stress Measurement Analysis	Z. Feng[1], A. Mikkelson[1], P. Reu[1], R. Engelstad[1], E. Lovell[1], K. Blaedel[2], A. Claudet[2]	*[1]University of Wisconsin, [2]Lawrence Livermore National Laboratory*

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POSTER TITLE	AUTHOR(S)	COMPANY
EUV Lithography Mask Flatness & Electrostatic Chucking Analysis	A. Mikkelson[1], R. Engelstad[1], E. Lovell[1], K. Blaedel[2], A. Claudet[2]	*[1]University of Wisconsin, [2]Lawrence Livermore National Laboratory*
Purification of Photolithography Purge Gases: Quantitative Analysis & Removal of Hydrocarbons & Sulfur Contaminants to Parts-per-Trillion Levels	A. Tram, J.J. Spiegelman, X. Jiang, D. Alvarez, Jr.	*AERONEX)*
Improvement of a Visible PDI System for Aspherical Mirror Measurement	K. Ota[1], M Ishii[1], T. Yamamoto[2], Y. Fukuda[2], H. Ichikawa[2], Y. Ouchi[2], K. Otaki[2], T. Gemma[2]	*[1]ASET, [2]Nikon Corporation*
Metrology for EUV Lithography at NIST	C. Tarrio, S. Grantham, R. Vest, T. Lucatorto	*NIST*
Evaluation of Ion Beam Sputtered Mo/Si Multilayers for EUV Lithography	H. Yamanashi, M. Sugawara, A. Chiba, H. Oizumi, I. Nishiyama	*ASET*
Compact In-Line Laser Plasma Reflectometer for the Measurement and Uniformity of EUV Lithography Mask Blank Multilayer Coatings	R. Perera, J. Underwood	*EUV Technology*
Capping Layers for EUV Lithography Optics	S. Bajt[1], M. Malinowski[2], J. Alameda[1], S. Baker[1], M. Clift[2], J. Harper[1], L. Klebanoff[2]	*[1]Lawrence Livermore National Laboratory, [2]Sandia National Laboratories*
Increasing the Radiation Intensity for EUV Lithography	M. Briac[1], P. Choi[2], V. Braic[1], S. Zakharov[2], C. Dumitrescu[2], G. Pavelescu[1], M. Balaceunu[1]	*[1]National Institute for Optoelectronics, Romania, [2]EPPRA sas*

POSTER TITLE	AUTHOR(S)	COMPANY
Influence of the Multilayers on EUV Projection Optics	Y. Sekine[1], A. Suzuki[1], M. Hasegawa[1], S. Takeuchi[1], C. Ouchi[1], O. Kakuchi[1], Y. Watanabe[1], T. Hasegawa[1], S. Hara[1], K. Murakami[2], J. Saito[2], K. Ota[2], H. Kondo[2], M. Ishii[2], J. Kawakami[2], T. Oshino[2], K. Sugisaki[2], Y. Zhu[2]	*[1]Canon, Inc., [2]Nikon Corporation*
Effects of Processing Parameters on Line Edge Roughness (LER)	B. Rice, H. Cao, J. Roberts, M. Chandhok	*Intel Corporation*
Screening of Basic Resist Materials and PAGs for EUV Lithography	W.-D. Domke[1], O. Kirch[1], K. Kragler[1], L. Lowack[1], U. Scheunemann[2]	*[1]Infineon Technologies, [2]BESSY GmbH*
Resist Process Issues at EUV Related to the Glass Transition changes Accompanying Film Thickness Reduction	I. Raptis[1], D. Niakoula[1], E. Tegou[1], P. Argitis[1], E. Gogolides[1], A.C. Cefalas[2], E. Sarantopoulou[2]	*[1]Institute of Microelectronics, Greece, [2]National Hellenic Research Foundation, Greece*
Intel EUV Resist Development	J. Roberts, H. Cao, E. Panning, R. Meagley, M. Chandhok, J. Dalin, B. Rice	*Intel Corporation*
Shot Noise & Process Window Study for Printing Small Contacts Using EUV Lithography	S.H. Lee, J. Bjorkholm, R. Bristol, M. Chandhok	*Intel Corporation*
Silicon Photodiode Sensors for EUV Lithography Applications	R. Korde[1], C. Prince[1], D. Jovanovic[1], J. Seely[2], E. Gullikson[3]	*[1]International Radiation Detectors, [2]Naval Research Laboratory, [3]Sandia National Laboratories*

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Compact Laboratory Sources: Calibration of EUV-2D Photoresist Simulation Parameters for Accurate Predictive Modeling	S. Robertson[1], P. Naulleau[2], D. O'Connell[3], K. McDonald[3], K. Goldberg[2], T. Delano[1], R. Brainard[1]	*[1]Shipley Company, [2]Lawrence Berkeley National Laboratory, [3]Sandia National Laboratories*
"In-Band"-EUV Open Frame-Exposure System Based on a Compact Discharge EUV-Source	L. Juschkin[1], R. Lebert[1], U. Bieberle[1], M. Meisen[1], A. Nazareko[1], K. Kragler[1], W.-D. Domke[2], K. Lowack[2]	*[1]AIXUV GmbH, [2]Infineon Technologies AG*
The "EUV-Lamp": A Compact Source for EUV Technology	R. Lebert, L. Juschkin, B. Jagle	*AIXUV GmbH*
"In-House Beamlines" for Development of EUV Lithography Technology	R. Lebert[1], L. Juschkin[1], A. Nazareko[1], M.C. Schurmann[2], T. Misalla[2], L. Aschke[3], K. Kragler[4]	*[1]AIXUV GmbH, [2]JENOPTIK Mikrotechnik GmbH, [3]Schott Lithotec AG, [4]Infineon Technologies AG*
Development of a Modular Laser-Plasma EUV Power Source for Micro-Lithography	B. Barthod[1], R. Bernard[1], E. Veran[1], J.M. Barbiche[2], E. Marquis[2], T. Ceccotti[3], D. Descamps[3], J.F. Hergott[3], S. Hulin[3], D. Normand[3], M. Schmidt[3], M. Segers[3], O. Sublemontier[3], P. Cormont[4], M. Neu[4], P.Y. Thro[4], J.M. Weulersse[4]	*[1]Alcatel Vacuum Technology France, [2] Thales Laser S.A., [3]Groupe d'Applications des Plasmas, [4]Laboratoire d'Applications des Lasers*
A High Repetition Rate Discharge EUV Source	P. Choi[1], A. Conti[1], C. Dumitrescu[1], M. Favre[2], E. Wyndham[2], A. Yuan[1], S. Zakharov[1]	*[1]EPPRA sas, [2]Pontificia Universidad Catolica de Chile*

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Performance Evaluation on Discharge EUV Sources Using 2-D Radiation MHD Simulation	S. Zakharov[1], P. Choi[1], V.G. Novikov[2], Y. Kroukovski[3]	*[1]EPPRA sas, [2]Keldysh Institute of Applied Mathmematics, Russia, [3]Institute of Mathematical Modeling Russia*
Laser Plasma Radiation Source Based on a Laser-Irradiated Gas Puff Target for EUV Lithography Technologies	H. Fiedorowicz, A. Bartnik, R. Jarocki, J. Kostecki, J. Mikolajczyk, R. Rakowski, M. Szczurek	*Institute of Optoelectronics, Military Univ. of Technology, Poland*
Overview: Tools for EUV Lithography-Source Characterization & Optimization	M.C. Schurmann[1], T. Missalla[1], K. Mann[2], S. Kranzusch[2], R.M. Klein[3], F. Scholze[3], G. Ulm[3], R. Lebert[4], L. Juschkin[4]	*[1]JENOPTIK Mikrotechnik GmbH, [2]Laser Laboratorium Gotteingen, [3]Physikalisch Technische Bundesanstalt, [4]AIXUV GmbH*
Physics of Mass-Limited Laser-Plasma Sources for EUV Lithography	M.C. Richardson[1], C. Keyser[1], C.-S. Koay[1], I.C.E. Turcu[2]	*[1]Univ. of Central Florida, [2]JMAR Research*
High Efficiency EUV Radiation Source Generated by Laser-Produced-Plasma	I.C.E. Turcu[1], H. Rieger[1], J.H. Morris[1], M.F. Powers[1], A. Stone[1], J.H. Carosella[1], M.C. Richardson[2], C. Keyser[2]	*[1]JMAR Research, [2]Univ. Of Central Florida*
EUV Radiation from Fast Capillary Xenon Discharges	S. Katsuki[1], Y. Teramoto[2], T. Namihira[1], H. Akiyama[1]	*[1]Kumamoto Univ., [2]USHIO*
High Power Lasers for Laser Produced Plasma (LPP) EUV Sources	S. Ellwi, A. Comley, M. Mason, D. Parsons-Karavassilis, I. Mercer, I. Henderson, M. Egan	*Powerlase Ltd.*

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Laser Heating of Nobel Gas Droplet Sprays: EUV Source Efficiency Considerations	H.M. Milchberg, J. Fan, S.J. McNaught, E. Parra	*Univ. of Maryland*
Compact Electron-Based EUV Source for Metrology	A. Egbert, B. Mader, B. Tkachenko, A. Ostendorf, B.N. Chichkov	*Laser Zentrum Hannover e.V.*
Recent Developments of CAPELLA, A Gas Discharge Source for EUV Lithography Approach	T. Gonthiez, E. Robert, O. Sarroukh, R. Viladrosa, C. Fleurier, J.M. Pouvesle, C. Cachoncinlle	*GREMI*
A Study of Cost-of-Ownership & Total System Balance in EUV Lithography	Y. Gomei	*Canon, Inc.*
BEL: Integration Progress	C. Vannuffel[1], J.-Y. Robic[1], C. Cachoncinlle[2], D. Bardon[3], R. Geyl[3], J.-F. Tanne[3], B. Vidal[4], S. Huelvan[5], R. Marmoret[5], T. Trublet[5]	*[1]CEA/LETI, [2] GREMI ,[3] SAGEM, [3]UDESAM, [4]CEA/DIF*