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Bruno M. La Fontaine
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Contents

Part One

xvii	<i>Symposium Committees</i>
xix	<i>Conference Committee</i>
xxiii	<i>Introduction</i>

SESSION 1 KEYNOTES: EUV

- 7271 02 **EUVL system: moving towards production (Keynote Paper)** [7271-01]
H. Meiling, N. Buzing, ASML Netherlands B.V. (Netherlands); K. Cummings, N. Harned, ASML (United States); B. Hultermans, R. de Jonge, ASML Netherlands B.V. (Netherlands); B. Kessels, ASML (United States); P. Kürz, Carl Zeiss SMT AG (Germany); S. Lok, ASML Netherlands B.V. (Netherlands); M. Lowisch, Carl Zeiss SMT AG (Germany); J. Mallman, ASML Netherlands B.V. (United States); B. Pierson, ASML (United States); C. Wagner, A. van Dijk, E. van Setten, ASML Netherlands B.V. (Netherlands); J. Zimmerman, ASML (United States)
- 7271 03 **LPP source system development for HVM (Keynote Paper)**[7271-02]
D. C. Brandt, I. V. Fomenkov, A. I. Ershov, W. N. Partlo, D. W. Myers, N. R. Böwering, N. R. Farrar, G. O. Vaschenko, O. V. Khodykin, A. N. Bykanov, J. R. Hoffman, C. P. Chrobak, S. N. Srivastava, I. Ahmad, C. Rajyaguru, D. J. Golich, D. A. Vidusek, S. De Dea, R. R. Hou, Cymer, Inc. (United States)
- 7271 04 **Integration of EUV lithography in the fabrication of 22-nm node devices (Keynote Paper)** [7271-03]
O. Wood, Advanced Micro Devices, Inc. (United States); C.-S. Koay, K. Petrillo, IBM Corp. (United States); H. Mizuno, Toshiba America Electronic Components, Inc. (United States); S. Raghunathan, Advanced Micro Devices, Inc. (United States); J. Arnold, D. Horak, M. Burkhardt, G. McIntyre, IBM Corp. (United States); Y. Deng, B. La Fontaine, U. Okoroanyanwu, Advanced Micro Devices, Inc. (United States); A. Tchikoulaeva, AMD Saxony LLC & Co. KG (Germany); T. Wallow, Advanced Micro Devices, Inc. (United States); J. H.-C. Chen, M. Colburn, S. S.-C. Fan, B. S. Haran, Y. Yin, IBM Corp. (United States)

SESSION 2 KEYNOTES: ALTERNATIVE LITHO TECHNOLOGIES

- 7271 06 **On the integration of memristors with CMOS using nanoimprint lithography (Keynote Paper)** [7271-05]
Q. Xia, Hewlett-Packard Labs. (United States); W. M. Tong, Hewlett-Packard Labs. (United States) and Hewlett Packard Co. (United States); W. Wu, J. J. Yang, X. Li, W. Robinett, Hewlett-Packard Labs. (United States); T. Cardinali, M. Cumbie, J. E. Ellenson, Hewlett-Packard Co. (United States); P. Kuekes, R. S. Williams, Hewlett-Packard Labs. (United States)
- 7271 07 **REBL nanowriter: Reflective Electron Beam Lithography (Keynote Paper)** [7271-06]
P. Petric, C. Bevis, A. Brodie, A. Carroll, A. Cheung, L. Grella, M. McCord, H. Percy, K. Standiford, M. Zywno, KLA-Tencor Corp. (United States)

SESSION 3 EUV SOURCE

- 7271 08 **Laser-produced plasma source development for EUV lithography** [7271-07]
A. Endo, H. Komori, Y. Ueno, K. M. Nowak, Y. Takayuki, Y. Tatsuya, T. Suganuma, T. Asayama, H. Someya, H. Hoshino, M. Nakano, M. Moriya, T. Nishisaka, T. Abe, A. Sumitani, H. Nagano, Y. Sasaki, S. Nagai, Y. Watanabe, G. Soumagne, T. Ishihara, O. Wakabayashi, K. Kakizaki, H. Mizoguchi, EUVA (Japan)
- 7271 09 **Xenon DPP source technologies for EUVL exposure tools** [7271-08]
M. Yoshioka, D. Bolshukhin, XTREME technologies GmbH (Germany); M. Corthout, Philips Extreme UV GmbH (Germany); G. H. Derra, Philips Research (Germany); S. Götz, XTREME technologies GmbH (Germany); J. Jonkers, Philips Extreme UV GmbH (Germany); J. Kleinschmidt, R. Müller, M. C. Schürmann, G. Schriever, XTREME technologies GmbH (Germany); R. Snijders, P. Zink, Philips Extreme UV GmbH (Germany)
- 7271 0C **Design and fabrication considerations of EUVL collectors for HVM** [7271-11]
G. Bianucci, G. L. Cassol, J. Kools, M. Prea, G. Salmaso, G. Valsecchi, F. E. Zocchi, Media Lario Technologies (Italy); D. Bolshukhin, M. Schürmann, G. Schriever, XTREME technologies GmbH (Germany); A. Mader, P. Zink, Philips Extreme UV GmbH (Germany)

SESSION 4 EUV MASK

- 7271 0D **Characteristics and issues of an EUVL mask applying phase-shifting thinner absorber for device fabrication** [7271-12]
H.-S. Seo, D.-G. Lee, B.-S. Ahn, H. Han, S. Huh, I.-Y. Kang, H. Kim, D. Kim, S.-S. Kim, H.-K. Cho, SAMSUNG Electronics Co., Ltd. (Korea, Republic of)
- 7271 0F **Nanopit smoothing by cleaning** [7271-14]
A. Rastegar, S. Eichenlaub, A. J. Kadaksham, M. House, SEMATECH, Inc. (United States)
- 7271 0G **Compensation of overlay errors due to mask bending and non-flatness for EUV masks** [7271-15]
M. Chandhok, S. Goyal, S. Carson, S.-J. Park, G. Zhang, Intel Corp. (United States); A. M. Myers, M. L. Leeson, Intel Corp. (Belgium); M. Kamna, F. C. Martinez, Intel Corp. (United States); A. R. Stivers, Consultant (United States); G. F. Lorusso, J. Hermans, E. Hendrickx, IMEC (Belgium); S. Govindjee, G. Brandstetter, Univ. of California, Berkeley (United States); T. Laursen, Duke Univ. (United States)
- 7271 0H **Analysis of Coulomb and Johnsen-Rahbek electrostatic chuck performance in the presence of particles for EUV lithography** [7271-17]
M. R. Sogard, Nikon Research Corp. of America (United States); A. R. Mikkelsen, V. Ramaswamy, R. L. Engelstad, Univ. of Wisconsin, Madison (United States)
- 7271 0I **Protection efficiency of a standard compliant EUV reticle handling solution** [7271-18]
L. He, SEMATECH, Inc. (United States) and Intel Corp. (United States); J. Lystad, Entegris, Inc. (United States); S. Wurm, K. Orvek, J. Sohn, SEMATECH, Inc. (United States); A. Ma, Intel Corp. (United States); P. Kearney, SEMATECH, Inc. (United States); S. Kolbow, D. Halbmaier, Entegris, Inc. (United States)

SESSION 5 EBDW

- 7271 0K **Cell projection use in maskless lithography for 45nm and 32nm logic nodes** [7271-20]
S. Manakli, STMicroelectronics (France) and CEA-LETI, Minatec (France); H. Komami, M. Takizawa, ADVANTEST (Japan); T. Mitsuhashi, D2S, Inc. (Japan); L. Pain, CEA-LETI, Minatec (France)
- 7271 0L **Optimal character-size exploration for increasing throughput of MCC lithographic systems** [7271-21]
M. Sugihara, Toyohashi Univ. of Technology (Japan)

SESSION 6 MULTIBEAM AND TOOLS PATTERNING

- 7271 0N **PML2: the maskless multibeam solution for the 22nm node and beyond (Invited Paper)** [7271-23]
C. Klein, E. Platzgummer, J. Klikovits, W. Piller, H. Loeschner, IMS Nanofabrication AG (Austria); T. Bejdak, P. Dolezel, V. Kolarik, DELONG INSTRUMENTS (Czech Republic); W. Klingler, F. Letzkus, J. Butschke, M. Irmscher, Institut für Mikroelektronik Stuttgart (Germany); M. Witt, W. Pilz, Fraunhofer-Institut für Siliziumtechnologie (Germany); P. Jaschinsky, Fraunhofer-Ctr. Nanoelectronic Technology (Germany); F. Thrum, C. Hohle, J. Kretz, Qimonda Dresden GmbH & Co. OHG (Germany); J. T. Nogatch, A. Zepka, Synopsys, Inc. (United States)
- 7271 0O **MAPPER: high-throughput maskless lithography** [7271-24]
M. J. Wieland, G. de Boer, G. F. ten Berge, R. Jager, T. van de Peut, J. J. M. Peijster, E. Slot, S. W. H. K. Steenbrink, T. F. Teepe, A. H. V. van Veen, B. J. Kampherbeek, MAPPER Lithography B. V. (Netherlands)
- 7271 0Q **Coulomb blur advantage of a multi-shaped beam lithography approach** [7271-26]
M. Slodowski, H.-J. Doering, T. Elster, I. A. Stolberg, Vistec Electron Beam GmbH (Germany)
- 7271 0R **Development of resist process for 5-KV multi-beam technology** [7271-27]
B. Icard, D. Rio, CEA-LETI, Minatec (France); P. Veltman, B. Kampherbeek, MAPPER Lithography B.V. (Netherlands); C. Constancias, L. Pain, CEA-LETI, Minatec (France)

SESSION 7 EUV PRINTING

- 7271 0T **Stability and imaging of the ASML EUV alpha demo tool** [7271-29]
J. V. Hermans, B. Baudemprez, G. Lorusso, E. Hendrickx, IMEC (Belgium); A. van Dijk, ASML Netherlands B.V. (Netherlands); R. Jonckheere, A.-M. Goethals, IMEC (Belgium)
- 7271 0U **Flare evaluation of ASML alpha demo tool** [7271-30]
H. Mizuno, Toshiba America Electronic Components, Inc. (United States); G. McIntyre, C. Koay, M. Burkhardt, IBM Corp. (United States); B. La Fontaine, O. Wood, Advanced Micro Devices, Inc. (United States)

- 7271 0W **The SEMATECH Berkeley microfield exposure tool: learning at the 22-nm node and beyond** [7271-32]
P. P. Naulleau, Lawrence Berkeley National Lab. (United States); C. N. Anderson, Univ. of California, Berkeley (United States); L.-M. Baclea-an, P. Denham, S. George, K. A. Goldberg, Lawrence Berkeley National Lab. (United States); M. Goldstein, SEMATECH, Inc. (United States); B. Hoef, Lawrence Berkeley National Lab. (United States); R. Hudyma, Hyperion (United States); G. Jones, Lawrence Berkeley National Lab. (United States); C. Koh, SEMATECH, Inc. (United States); B. La Fontaine, Advanced Micro Devices, Inc. (United States); B. McClinton, R. Miyakawa, Lawrence Berkeley National Lab. (United States); W. Montgomery, SEMATECH, Inc. (United States); J. Roller, Lawrence Berkeley National Lab. (United States); T. Wallow, Advanced Micro Devices, Inc. (United States); S. Wurm, SEMATECH, Inc. (United States)
- 7271 0X **Out-of-band exposure characterization with the SEMATECH Berkeley 0.3-NA microfield exposure tool** [7271-33]
S. A. George, P. P. Naulleau, S. Rekawa, E. Gullikson, C. D. Kemp, Lawrence Berkeley National Lab. (United States)
- 7271 0Y **Estimation of cost comparison of lithography technologies at the 22-nm half-pitch node** [7271-34]
A. Wüest, SEMATECH, Inc. (United States); A. J. Hazelton, Nikon Corp. (Japan); G. Hughes, SEMATECH, Inc. (United States)

SESSION 8 EUV LIFETIME

- 7271 10 **Carbon film growth on model electron-irradiated MLM cap layer: interaction of benzene and MMA vapor with TiO₂ surface** [7271-36]
B. V. Yakshinskiy, S. Zalkind, R. A. Bartynski, Rutgers Univ. (United States); R. Caudillo, Intel Corp. (United States); T. E. Madey, Rutgers Univ. (United States)
- 7271 12 **Tracking down sources of carbon contamination in EUVL exposure tools** [7271-38]
C. Tarrio, R. E. Vest, T. B. Lucatorto, National Institute of Standards and Technology (United States); R. Caudillo, Intel Corp. (United States)
- 7271 13 **Measuring the EUV-induced contamination rates of TiO₂-capped multilayer optics by anticipated production-environment hydrocarbons** [7271-39]
S. B. Hill, National Institute of Standards and Technology (United States); N. S. Faradzhev, Rutgers Univ. (United States); C. S. Tarrio, T. B. Lucatorto, National Institute of Standards and Technology (United States); R. A. Bartynski, B. V. Yakshinskiy, T. E. Madey, Rutgers Univ. (United States)

SESSION 9 EUV APPLICATIONS

- 7271 14 **The application of EUV lithography for 40nm node DRAM device and beyond** [7271-40]
J. Park, C. Koh, D. Goo, I. Kim, C. Park, J. Lee, J. Park, J. Yeo, S.-W. Choi, C. Park, SAMSUNG Electronics Co., Ltd. (Korea, Republic of)

- 7271 15 **Comparative study of DRAM cell patterning between ArF immersion and EUV lithography** [7271-41]
T.-S. Eom, S. Park, J.-T. Park, C.-M. Lim, S. Koo, Y.-S. Hyun, H. Kim, B.-H. Nam, C.-R. Kim, S.-C. Moon, N.-J. Kwak, S. Park, Hynix Semiconductor Inc. (Korea, Republic of)
- 7271 16 **Demonstration of full-field patterning of 32 nm test chips using EUVL** [7271-42]
G. Vandentop, M. Chandhok, E. S. Putna, T. R. Younkin, J. S. Clarke, S. Carson, Intel Corp. (United States); A. Myers, M. Leeson, Intel Corp. (Belgium); G. Zhang, T. Liang, Intel Corp. (United States); T. Murachi, Intel Corp. (Japan)
- 7271 17 **EUVL reticle defectivity evaluation** [7271-43]
A. Tchikoulaeva, AMD Saxony LLC & Co. KG (Germany); U. Okoroanyanwu, O. Wood, B. La Fontaine, Advanced Micro Devices, Inc. (United States); C. Holfeld, Advanced Mask Technology Ctr. (Germany); S. Kini, KLA-Tencor Corp. (United States); M. Peikert, KLA Tencor GmbH (Germany) C. Boye, C. Koay, K. Petrillo, IBM Corp. (United States); H. Mizuno, Toshiba America Electronic Components, Inc. (United States)
- 7271 18 **Recent progress of EUV full-field exposure tool in Selete** [7271-44]
K. Tawarayama, H. Aoyama, S. Magoshi, Y. Tanaka, S. Shirai, H. Tanaka, Semiconductor Leading Edge Technologies, Inc. (Japan)

SESSION 10 EUV OPC

- 7271 19 **Exposure tool settings and OPC strategies for EUV lithography at the 16-nm node** [7271-45]
Y. Deng, J. Kye, B. La Fontaine, T. Wallow, O. Wood, H. Levinson, GLOBALFOUNDRIES Inc. (United States); A. Fumar-Pici, H. Mizuno, Toshiba America Electronic Components, Inc. (United States); C. Koay, G. McIntyre, IBM Corp. (United States)
- 7271 1A **Requirements and results of a full-field EUV OPC flow** [7271-46]
S. Jang, L. Zavyalova, B. Ward, K. Lucas, Synopsys, Inc. (United States)
- 7271 1B **Imaging budgets for EUV optics: ready for 22-nm node and beyond** [7271-47]
M. Bienert, A. Göhnemeier, O. Natt, M. Lowisch, P. Gräupner, T. Heil, R. Garreis, Carl Zeiss SMT AG (Germany); K. van Ingen Schenau, ASML Netherlands B.V. (Netherlands); S. Hansen, ASML (United States)
- 7271 1C **Modeling and experiments of non-telecentric thick mask effects for EUV lithography** [7271-48]
G. McIntyre, C. Koay, M. Burkhardt, IBM Corp. (United States); H. Mizuno, Toshiba America, Inc. (United States); O. Wood, Advanced Micro Devices, Inc. (United States)
- 7271 1E **Mask diffraction analysis and optimization for EUV masks** [7271-144]
A. Erdmann, P. Evanschitzky, T. Fühner, Fraunhofer Institute of Integrated Systems and Device Technology (Germany)
- 7271 1F **Comparison of fast 3D simulation and actinic inspection for EUV masks with buried defects** [7271-50]
C. H. Clifford, S. Wiraatmadja, T. T. Chan, A. R. Neureuther, Univ. of California, Berkeley (United States); K. A. Goldberg, I. Mochi, Lawrence Berkeley National Lab. (United States); T. Liang, Intel Corp. (United States)

- 7271 1G **EUV-patterning characterization using a 3D mask simulation and field EUV scanner** [7271-51]
J.-T. Park, Y.-S. Hyun, C.-M. Lim, T.-S. Eom, S. Koo, S. Park, S.-K. Kim, K.-D. Ban, H.-J. Yang, C.-I. Oh, B.-H. Nam, C.-R. Kim, H. Kim, S.-C. Moon, S. Park, Hynix Semiconductor Inc. (Korea, Republic of)

SESSION 11 MASKLESS

- 7271 1H **Full-chip characterization of compression algorithms for direct-write maskless lithography systems (Invited Paper)** [7271-52]
A. Zakhor, V. Dai, G. Cramer, Univ. of California, Berkeley (United States)
- 7271 1I **Scalable (24-140 Gbps) optical data link well adapted for future maskless lithography applications** [7271-53]
A. Paraskevopoulos, S.-H. Voss, M. Talmi, G. Walf, Fraunhofer-Institut for Telecommunications, Heinrich-Hertz-Institut (Germany)

SESSION 12 NANOIMPRINT I

- 7271 1L **Step and flash imprint lithography for manufacturing patterned media (Invited Paper)** [7271-56]
C. Brooks, G. M. Schmid, M. Miller, S. Johnson, N. Khusnatdinov, D. LaBrake, D. J. Resnick, S. V. Sreenivasan, Molecular Imprints, Inc. (United States)
- 7271 1M **UV-NIL template making and imprint evaluation** [7271-94]
S. Sasaki, T. Hiraka, J. Mizuochi, Y. Nakanishi, S. Yusa, Y. Morikawa, H. Mohri, N. Hayashi, Dai Nippon Printing Co., Ltd. (Japan)
- 7271 1O **Soft stamp UV-nanoimprint lithography for fabrication of laser diodes** [7271-58]
J. Viheriälä, M.-R. Viljanen, J. Kontio, T. Leinonen, J. Tommila, M. Dumitrescu, T. Niemi, M. Pessa, Tampere Univ. of Technology (Finland)

SESSION 13 NANOIMPRINT II

- 7271 1Q **SEMATECH's nanolmprint program: a key enabler for nanoimprint introduction** [7271-60]
L. C. Litt, SEMATECH, Inc. (United States) and Advanced Micro Devices, Inc. (United States); M. Malloy, SEMATECH, Inc. (United States)
- 7271 1S **Direct laser write (DLW) as a versatile tool in manufacturing templates for imprint lithography on flexible substrates** [7271-62]
M. G. Ivan, J.-B. Vaney, TNO Science and Industry (Netherlands); D. Verhaart, Singulus Mastering B.V. (Netherlands); E. R. Meinders, TNO Science and Industry (Netherlands)
- 7271 1U **Evaluation of the CD-SEM Vistec LWM90xx for line-width measurement of nanoimprint templates** [7271-64]
M. Pritschow, J. Butschke, M. Irmscher, Institut für Mikroelektronik Stuttgart (Germany); L. Parisoli, KLA-Tencor Corp. (Germany); T. Oba, T. Iwai, T. Nakamura, Advantest Corp. (Japan)

- 7271 1V **Physical properties of thin nanoimprint polymer films measured by photo-acoustic metrology** [7271-65]
T. Kehoe, Univ. Autònoma de Barcelona (Spain) and Univ. College Cork (Ireland); J. Bryner, ETH Zürich (Switzerland); V. Reboud, Univ. Autònoma de Barcelona (Spain); J. Vollmann, ETH Zürich (USA); C. M. Sotomayor Torres, Univ. Autònoma de Barcelona (Spain) and Institute for Research and Advanced Studies (Spain)
- 7271 1W **High-resolution defect inspection of step-and-flash imprint lithography for 32-nm half-pitch patterning** [7271-66]
K. Selinidis, E. Thompson, I. McMackin, S. Sreenivasan, D. J. Resnick, Molecular Imprints, Inc. (United States)

SESSION 14 EUV TOOLS

- 7271 1X **Nikon EUVL development progress update** [7271-67]
T. Miura, K. Murakami, H. Kawai, Y. Kohama, K. Morita, K. Hada, Y. Ohkubo, Nikon Corp. (Japan)
- 7271 1Y **Development status of Canon's full-field EUVL tool** [7271-68]
T. Hasegawa, S. Uzawa, T. Honda, Y. Higaki, A. Miyake, H. Morishima, Canon Inc. (Japan)
- 7271 1Z **Development progress of optics for EUVL at Nikon** [7271-69]
K. Murakami, T. Oshino, H. Kondo, M. Shiraishi, H. Chiba, H. Komatsuda, K. Nomura, J. Nishikawa, Nikon Corp. (Japan)
- 7271 20 **Process liability evaluation for EUVL** [7271-74]
H. Aoyama, K. Tawarayama, Y. Tanaka, D. Kawamura, Y. Arisawa, T. Uno, T. Kamo, T. Tanaka, T. Itani, H. Tanaka, Semiconductor Leading Edge Technologies, Inc. (Japan); Y. Nakajima, R. Inanami, K. Takai, K. Murano, T. Koshiba, K. Hashimoto, Toshiba Corp. Semiconductor Co. (Japan); I. Mori, Semiconductor Leading Edge Technologies, Inc. (Japan)
- 7271 21 **Characterization of a 0.25NA full-field EUV exposure tool** [7271-70]
O. Kritsun, B. La Fontaine, GLOBALFOUNDRIES Inc. (United States); Y. Hao, J. Li, Nanometrics Inc. (United States); O. Wood, S. Raghunathan, GLOBALFOUNDRIES Inc. (United States); T. Brunner, C.-S. Koay, IBM Corp. (United States); H. Mizuno, Toshiba America Electronics Components (United States)
- 7271 22 **Development of actinic full-field EUV mask blank inspection tool at MIRAI-Selete** [7271-71]
T. Terasawa, T. Yamane, T. Tanaka, T. Iwasaki, O. Suga, Semiconductor Leading Edge Technologies, Inc. (Japan); T. Tomie, National Institute of Advanced Industrial Science and Technology (Japan)
- 7271 23 **Improving the performance of the actinic inspection tool with an optimized alignment procedure** [7271-72]
I. Mochi, K. A. Goldberg, P. Naulleau, Lawrence Berkeley National Lab. (United States); S. Huh, SEMATECH, Inc. (United States)

Part Two

SESSION 15 EUV RESIST

- 7271 24 **Assessment of EUV resist readiness for 32-nm hp manufacturing and extendibility study of EUV ADT using state-of-the-art resist** [7271-73]
C. Koh, L. Ren, J. Georger, F. Goodwin, S. Wurm, SEMATECH, Inc. (United States); B. Pierson, ASML US, Inc. (United States); J. Park, SAMSUNG Electronics Co., Ltd. (Korea, Republic of); T. Wallow, Advanced Micro Devices, Inc. (United States); T. R. Younkin, Intel Corp. (United States); P. Naulleau, Lawrence Berkeley National Lab. (United States)
- 7271 26 **EUV resist outgassing: scaling to HVM intensity** [7271-76]
A. O. Antohe, C. Mbanaso, Y.-J. Fan, L. Yankulin, R. Garg, P. Thomas, G. Denbeaux, Univ. at Albany (United States); E. C. Piscani, A. F. Wuest, SEMATECH, Inc. (United States)

SESSION 16 NANOIMPRINT MATERIALS

- 7271 28 **In situ measurement of annealing-induced line shape evolution in nanoimprinted polymers using scatterometry** [7271-79]
H. J. Patrick, National Institute of Standards and Technology (United States) and KT Consulting, Inc. (United States); T. A. Germer, National Institute of Standards and Technology (United States); Y. Ding, Univ. of Colorado, Boulder (United States); H. W. Ro, L. J. Richter, C. L. Soles, National Institute of Standards and Technology (United States)
- 7271 29 **Characterization of vinyl ether UV-cure nanoimprint resist** [7271-80]
T. Furukawa, JSR Micro, Inc. (United States); F. A. Houle, D. L. Casher, D. C. Miller, IBM Almaden Research Ctr. (United States)
- 7271 2A **A study of filling process for UV nanoimprint lithography using a fluid simulation** [7271-81]
I. Yoneda, Semiconductor Co. Toshiba Corp. (Japan); Y. Nakagawa, Toshiba Corp. (Japan); S. Mikami, H. Tokue, T. Ota, T. Koshiba, M. Ito, K. Hashimoto, T. Nakasugi, T. Higashiki, Semiconductor Co., Toshiba Corp. (Japan)

SESSION 17 DIRECTED SELF ASSEMBLY

- 7271 2D **Lithographically directed materials assembly** [7271-84]
R. P. Kingsborough, R. B. Goodman, K. Krohn, T. H. Fedynyshyn, MIT Lincoln Lab. (United States)

NANOIMPRINT: POSTER SESSION

- 7271 2H **Automated imprint mask cleaning for step-and-flash imprint lithography** [7271-88]
S. Singh, S. Chen, HamaTech APE Inc. (United States); K. Selinidis, B. Fletcher, I. McMackin, E. Thompson, D. J. Resnick, Molecular Imprints, Inc. (United States); P. Dress, HamaTech APE GmbH & Co. KG (Germany); U. Dietze, HamaTech APE Inc. (United States)

- 7271 2I **Optimization of droplets for UV-NIL using coarse-grain simulation of resist flow** [7271-89]
V. Sirotkin, A. Svintsov, S. Zaitsev, Institute of Microelectronics Technology (Russian Federation)
- 7271 2J **Industrial applications demanding low and high resolution features realized by soft UV-NIL and hot embossing** [7271-90]
R. Miller, EVGroup Inc. (United States); T. Glinsner, G. Kreindl, P. Lindner, M. Wimplinger, EV Group Inc. (Austria)

E-BEAM AND MASKLESS: POSTER SESSION

- 7271 2M **Fabrication of metrology test structures for future technology nodes using high-resolution variable-shaped e-beam direct write** [7271-95]
L. Szikszai, P. Jaschinsky, K. Keil, M. Hauptmann, Fraunhofer Ctr. Nanoelectronic Technologies (Germany); M. Mört, U. Seifert, C. Hohle, K.-H. Choi, F. Thrum, J. Kretz, Qimonda Dresden GmbH & Co. OHG (Germany); V. Ferreras Paz, Univ. of Stuttgart (Germany); A. den Boef, ASML Netherlands B.V. (Netherlands)
- 7271 2N **Sub-30-nm resolution parallel EB lithography based on a planar type Si nanowire array ballistic electron source** [7271-96]
A. Kojima, Crestec Corp. (Japan) and Tokyo Univ. of Agriculture and Technology (Japan); H. Ohyi, Crestec Corp. (Japan); N. Koshida, Tokyo Univ. of Agriculture and Technology (Japan)
- 7271 2O **Optimization of BSE-detector for e-beam direct write lithography** [7271-97]
H. Alves, P. Hahmann, M. Slodowski, Vistec Electron Beam GmbH (Germany); C. G. Frase, D. Gnieser, K.-P. Johnsen, H. Bosse, Physikalisch-Technische Bundesanstalt (Germany)
- 7271 2P **3D ion multibeam processing with the CHARPAN PMLP tool and with the single ion-beam FIB tool optimized with the IonRevSim software** [7271-98]
S. Zaitsev, A. Svintsov, Institute of Microelectronics Technology and High Purity Materials (Russian Federation); C. Ebn, S. Eder-Kapl, H. Loeschner, E. Platzgummer, IMS Nanofabrication AG (Austria); G. Lalev, S. Dimov, V. Velkova, Cardiff Univ. (United Kingdom); B. Basnar, Vienna Univ. of Technology (Austria)
- 7271 2R **Monitor and self-diagnostic technology for mask e-beam writing system** [7271-100]
N. Samoto, H. Manabe, O. Wakimoto, S. Iida, H. Hoshi, M. Yamabe, Association of Super-Advanced Electronics Technologies (Japan)
- 7271 2S **Proximity effect correction for 20nm dimension patterning** [7271-101]
D. Tsunoda, M. Shoji, M. Tatsugawa, H. Tsunoe, Y. Iino, Nippon Control System Corp. (Japan); P. Jedrasik, Chalmers Univ. of Technology (Sweden)

NOVEL TECHNOLOGIES: POSTER SESSION

- 7271 2T **Fabrication of sub-10-nm pattern using diblock copolymer** [7271-102]
N. Kihara, K. Takizawa, H. Hieda, Toshiba Corp. (Japan)

- 7271 2U **Interference assisted lithography for patterning of 1D gridded design** [7271-103]
R. T. Greenway, Petersen Advanced Lithography, Inc. (United States); R. Hendel, Applied Materials, Inc. (United States); K. Jeong, A. B. Kahng, Univ. of California, San Diego (United States); J. S. Petersen, Petersen Advanced Lithography, Inc. (United States); Z. Rao, Applied Materials, Inc. (United States); M. C. Smayling, Tela Innovations, Inc. (United States)

EUV SOURCE: POSTER SESSION

- 7271 2W **Kinetic simulation of debris from an LPP EUV source** [7271-105]
B. Rollinger, A. Giovannini, D. Bleiner, N. Chokani, R. S. Abhari, ETH Zürich (Switzerland)
- 7271 2X **High-performance next-generation EUV lithography light source** [7271-106]
P. Choi, NANO-UV SAS (France) and EPPRA SAS (France); S. V. Zakharov, EPPRA SAS (France) and RRC Kurchatov Institute (Russian Federation); R. Aliaga-Rossel, NANO-UV SAS (France); O. Benali, EPPRA SAS (France); G. Duffy, NANO-UV SAS (France); O. Sarroukh, EPPRA SAS (France); E. Wyndham, Pontificia Univ. Catolica de Chile (Chile); V. S. Zakharov, EPPRA SAS (France), RRC Kurchatov Institute (Russian Federation), and Keldysh Institute of Applied Mathematics (Russian Federation)
- 7271 2Y **Grid spectral purity filters for suppression of infrared radiation in laser-produced plasma EUV sources** [7271-108]
W. A. Soer, M. J. J. Jak, Philips Research (Netherlands); A. M. Yakunin, ASML (Netherlands); M. M. J. W. van Herpen, Philips Research (Netherlands); V. Y. Banine, ASML (Netherlands)
- 7271 2Z **Ablation depth in planar Sn targets during the interaction with a Nd:YAG laser for extreme ultraviolet lithography** [7271-109]
R. A. Burdt, S. Yuspeh, K. L. Sequoia, M. S. Tillack, Y. Tao, F. Najmabadi, Ctr. for Energy Research (United States)
- 7271 30 **Atomic processes in the LPP and LA-DPP EUV sources** [7271-110]
A. Sasaki, Japan Atomic Energy Agency (Japan); K. Nishihara, A. Sunahara, H. Furukawa, Osaka Univ. (Japan); T. Nishikawa, Okayama Univ. (Japan); F. Koike, Kitasato Univ. (Japan)
- 7271 31 **Remote plasma cleaning of Sn from an EUV collector mirror** [7271-112]
H. Shin, R. Raju, D. N. Ruzic, Univ. of Illinois at Urbana-Champaign (United States)
- 7271 32 **Debris characteristics and mitigation of a laser plasma tin-contained liquid jet/droplet targets** [7271-113]
M. Kaku, S. Touge, M. Katto, S. Kubodera, Univ. of Miyazaki (Japan)
- 7271 33 **Evaluation at the intermediate focus for EUV light source** [7271-114]
T. Suganuma, G. Soumagne, M. Moriya, T. Abe, A. Sumitani, A. Endo, EUVA (Japan)
- 7271 35 **Performance evaluation of source collector module for extreme ultraviolet small-field exposure tool** [7271-116]
S. Magoshi, S. Shirai, H. Mori, K. Tawarayama, Y. Tanaka, H. Tanaka, Semiconductor Leading Edge Technologies, Inc. (Japan)

- 7271 36 **Effects of the ratio of sphere size to laser focal spot on the dominant in-band EUV emitting region** [7271-117]
S. Yuspeh, K. L. Sequoia, Y. Tao, M. S. Tillack, R. A. Burdt, F. Najmabadi, Univ. of California, San Diego (United States) and Ctr. for Energy Research (United States)
- 7271 37 **Measurement of particle flux at the intermediate focus of a DPP source** [7271-118]
J. Sporre, R. Raju, D. N. Ruzic, V. Surla, Univ. of Illinois at Urbana-Champaign (United States); F. Goodwin, SEMATECH, Inc. (United States)
- 7271 38 **Laser-produced plasma light source for EUVL** [7271-119]
I. V. Fomenkov, D. C. Brandt, A. N. Bykanov, A. I. Ershov, W. N. Partlo, D. W. Myers, N. R. Böwering, N. R. Farrar, G. O. Vaschenko, O. V. Khodykin, J. R. Hoffman, C. P. Chrobak, S. N. Srivastava, D. J. Golich, D. A. Vidusek, S. De Dea, R. R. Hou, Cymer, Inc. (United States)
- 7271 39 **Dependence of laser parameter on conversion efficiency in high-repetition-rate laser-ablation-discharge EUV source** [7271-120]
Y. Teramoto, T. Yokoyama, H. Mizokoshi, H. Sato, K. Hotta, EUVA (Japan)
- 7271 3A **Development of a high-pulse-rate EUV source** [7271-121]
S. F. Horne, F. M. Niell, M. J. Partlow, M. M. Besen, D. K. Smith, P. A. Blackborow, D. Gustafson, Energetiq Technology, Inc. (United States)
- 7271 3B **Optical element for full spectral purity from IR-generated EUV light sources** [7271-159]
A. J. R. van den Boogaard, E. Louis, FOM Institute for Plasma Physics Rijnhuizen (Netherlands); F. A. van Goor, Univ. Twente (Netherlands); F. Bijkerk, FOM Institute for Plasma Physics Rijnhuizen (Netherlands) and Univ. of Twente (Netherlands)

EUV MASK: POSTER SESSION

- 7271 3C **Removal of contaminants by plasma assisted cleaning by metastable atom neutralization (PACMAN)** [7271-122]
W. M. Lytle, D. S. Szybalski, C. E. Das, R. Raju, D. N. Ruzic, Univ. of Illinois at Urbana-Champaign (United States)
- 7271 3D **Precise evaluation of zero-CTE temperature of EUVL-grade TiO₂-SiO₂ ultra-low-expansion glass using the line-focus-beam ultrasonic material characterization system** [7271-123]
J. Kushibiki, M. Arakawa, Tohoku Univ. (Japan)
- 7271 3F **Inspection 13.2-nm table-top full-field microscope** [7271-125]
F. Brizuela, Y. Wang, C. A. Brewer, F. Pedaci, Colorado State Univ., Fort Collins (United States); W. Chao, E. H. Anderson, Y. Liu, K. A. Goldberg, P. P. Naulleau, Lawrence Berkeley National Lab. (United States); P. W. Wachulak, M. C. Marconi, Colorado State Univ., Fort Collins (United States); D. T. Attwood, Lawrence Berkeley National Lab. (United States); J. J. Rocca, C. S. Menoni, Colorado State Univ., Fort Collins (United States)
- 7271 3G **Experimental study of particle-free mask handling** [7271-126]
M. Amemiya, K. Ota, T. Taguchi, O. Suga, Semiconductor Leading Edge Technologies, Inc. (Japan)

- 7271 3H **The performance of an actinic full-field EUVL mask blank inspection system** [7271-127]
T. Yamane, T. Iwasaki, T. Tanaka, T. Terasawa, O. Suga, Semiconductor Leading Edge Technologies, Inc. (Japan); T. Tomie, National Institute of Advanced Industrial Science and Technology (Japan)
- 7271 3I **Defect printability of thin absorber mask in EUV lithography** [7271-128]
T. Kamo, H. Aoyama, Y. Arisawa, T. Tanaka, O. Suga, Semiconductor Leading Edge Technologies, Inc. (Japan)
- 7271 3J **Mask defect verification using actinic inspection and defect mitigation technology** [7271-129]
S. Huh, P. Kearney, S. Wurm, F. Goodwin, SEMATECH, Inc. (United States); K. Goldberg, I. Mochi, E. Gullikson, Lawrence Berkeley National Lab. (United States)
- 7271 3K **Analysis of a relation between the spatial frequency of electrostatic chuck and induced mask inplane distortion (IPD)** [7271-130]
T. Yamamoto, The Univ. of Tokyo (Japan); K. Ota, N. Nishimura, Semiconductor Leading Edge Technologies, Inc. (Japan); S. Warisawa, S. Ishihara, The Univ. of Tokyo (Japan)
- 7271 3L **Characterization of electrostatic chucks for extreme ultraviolet lithography** [7271-131]
T. C. Mulholland, J. R. Zeuske, P. Vukkadala, R. L. Engelstad, Univ. of Wisconsin, Madison (United States)
- 7271 3M **Experimental evaluation of particulate contamination on backside of EUV reticle** [7271-132]
K. Ota, T. Taguchi, M. Amemiya, N. Nishimura, O. Suga, Semiconductor Leading Edge Technologies, Inc. (Japan)
- 7271 3N **Collecting EUV mask images through focus by wavelength tuning** [7271-155]
K. A. Goldberg, I. Mochi, Lawrence Berkeley National Lab. (United States); S. Huh, SEMATECH Inc. (United States)

EUV PERFORMANCE: POSTER SESSION

- 7271 3O **Extreme ultraviolet holographic lithography with a table-top laser** [7271-133]
A. Isoyan, F. Jiang, Y.-C. Cheng, Univ. of Wisconsin, Madison (United States); P. Wachulak, L. Urbanski, J. Rocca, C. Menoni, M. Marconi, Colorado State Univ. (United States); F. Cerrina, Univ. of Wisconsin, Madison (United States)
- 7271 3P **Analysis of carbon deposition on multilayer mirrors by using two different beamlines** [7271-134]
T. Nakayama, A. Miyake, H. Takase, S. Terashima, T. Sudo, Y. Watanabe, Y. Fukuda, Canon Inc. (Japan)
- 7271 3Q **Assumptions and trade-offs of extreme ultraviolet optics contamination modeling** [7271-135]
V. Jindal, SEMATECH, Inc. (United States); R. Garg, G. Denbeaux, Univ. at Albany (United States); A. Wüest, SEMATECH, Inc. (United States)
- 7271 3R **Durability of capped multilayer mirrors for high volume manufacturing extreme ultraviolet lithography tool** [7271-136]
S. Matsunari, Y. Kakutani, T. Aoki, S. Kawata, K. Murakami, Nikon Corp. (Japan)

- 7271 3S **Fabrication of half-pitch 32-45-nm SRAM patterns with EUVL** [7271-137]
Y. Tanaka, H. Aoyama, S. Magoshi, K. Tawarayama, S. Shirai, H. Tanaka, Semiconductor Leading Edge Technologies, Inc. (Japan)
- 7271 3U **Carbon contamination of extreme ultraviolet (EUV) masks and its effect on imaging** [7271-139]
Y.-J. Fan, L. Yankulin, A. Antohe, R. Garg, P. Thomas, C. Mbanaso, Univ. at Albany (United States); A. Wüest, F. Goodwin, S. Huh, SEMATECH, Inc. (United States); P. Naulleau, K. Goldberg, I. Mochi, Lawrence Berkeley National Lab. (United States); G. Denbeaux, Univ. at Albany (United States)
- 7271 3V **Improved contrast and reflectivity of multilayer reflective optics for wavelengths beyond the extreme UV** [7271-156]
T. Tsarfaty, E. Zoethout, E. Louis, R. van de Kruijs, A. Yakshin, FOM Institute for Plasma Physics Rijnhuizen (Netherlands); S. Müllender, Carl Zeiss SMT AG (Germany); F. Bijkerk, FOM Institute for Plasma Physics Rijnhuizen (Netherlands) and Univ. of Twente (Netherlands)

EUV METROLOGY: POSTER SESSION

- 7271 3X **EUVL dosimetry at NIST** [7271-140]
C. Tarrio, S. Grantham, M. Cangemi, R. E. Vest, T. B. Lucatorto, National Institute of Standards and Technology (United States); N. Harned, ASML (United States)
- 7271 3Y **High-accuracy EUV reflectometry at large optical components and oblique incidence** [7271-141]
C. Laubis, F. Scholze, C. Buchholz, A. Fischer, S. Hesse, A. Kampe, J. Puls, C. Stadelhoff, G. Ulm, Physikalisch-Technische Bundesanstalt (Germany)
- 7271 40 **Ellipsometric and surface acoustic wave sensing of carbon contamination on EUV optics** [7271-157]
J. Chen, E. Louis, FOM Institute for Plasma Physics Rijnhuizen (Netherlands); F. Bijkerk, C. J. Lee, FOM Institute for Plasma Physics Rijnhuizen (Netherlands) and Univ. Twente (Netherlands); H. Wormeester, Univ. Twente (Netherlands); R. Kunze, H. Schmidt, Leibniz Institute for Solid State and Materials Research (Germany); D. Schneider, Fraunhofer Institute for Material and Beam Technology (Germany); R. Moors, W. van Schaik, M. Lubomska, ASML B.V. (Netherlands)

EUV OPC: POSTER SESSION

- 7271 41 **Analysis of EUVL mask effects under partially coherent illumination** [7271-145]
V. Domnenko, Synopsys, Inc. (Russian Federation); T. Schmoeller, T. Klimpel, Synopsys GmbH (Germany)
- 7271 42 **Assessment of full-chip level EUV optical correction for sub-40nm memory device** [7271-146]
J. Lee, I. Kim, D. Goo, J. Park, C. Park, J. Park, J. Yeo, S. Choi, W. Han, SAMSUNG Electronics Co., Ltd. (Korea, Republic of)

- 7271 43 **Incident angle change caused by different off-axis illumination in extreme ultraviolet lithography** [7271-147]
E.-J. Kim, J.-H. You, Hanyang Univ. (Korea, Republic of); S.-S. Kim, H.-K. Cho, SAMSUNG Electronics Co., Ltd. (Korea, Republic of); I. An, H.-K. Oh, Hanyang Univ. (Korea, Republic of)
- 7271 44 **Evaluation of shadowing and flare effect for EUV tool** [7271-149]
J. Moon, C.-K. Kim, B.-S. Nam, B.-H. Nam, Y.-S. Hyun, S.-K. Kim, C.-M. Lim, Y.-D. Kim, M.-S. Kim, Y.-K. Choi, C.-R. Kim, D. Yim, Hynix Semiconductor Inc. (Korea, Republic of)
- 7271 45 **Flare compensation for EUVL** [7271-150]
Y. Arisawa, H. Aoyama, T. Uno, T. Tanaka, I. Mori, Semiconductor Leading Edge Technologies, Inc. (Japan)

EUV RESIST: POSTER SESSION

- 7271 46 **Measurement and analysis of EUV photoresist related outgassing and contamination** [7271-152]
I. Pollentier, IMEC (Belgium); G. Aksenov, Katholieke Univ. Leuven (Belgium); A.-M. Goethals, R. Gronheid, R. Jonckheere, IMEC (Belgium); M. Leeson, Intel Corp. (United States)
- 7271 47 **RLS tradeoff vs. quantum yield of high PAG EUV resists** [7271-153]
C. Higgins, A. Antohe, G. Denbeaux, S. Kruger, Univ. at Albany (United States); J. Georger, SEMATECH, Inc. (United States); R. Brainard, Univ. at Albany (United States)
- 7271 48 **Investigation of EUV-process sensitivities for wafer-track processing** [7271-154]
N. Bradon, H. Weichert, Tokyo Electron Europe Ltd. (United Kingdom); K. Nafus, S. Hatakeyama, J. Kitano, H. Kosugi, K. Yoshihara, Tokyo Electron Kyushu Ltd. (Japan); M. Goethals, J. Hermans, IMEC (Belgium)

Author Index

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Kazuaki Suzuki, Nikon Corporation (Japan)

William M. Tong, Hewlett-Packard Laboratory (United States)

Kevin T. Turner, University of Wisconsin, Madison (United States)

Session Chairs

- 1 Keynotes: EUV
 Bruno M. La Fontaine, Advanced Micro Devices, Inc. (United States)
 Frank M. Schellenberg, Mentor Graphics Corporation (United States)
- 2 Keynotes: Alternative Litho Technologies
 Frank M. Schellenberg, Mentor Graphics Corporation (United States)
 Daniel J. C. Herr, Semiconductor Research Corporation (United States)
- 3 EUV Source
 Francis Goodwin, SEMATECH Inc. (United States)
 Bruno M. La Fontaine, Advanced Micro Devices, Inc. (United States)
- 4 EUV Mask
 Kurt R. Kimmel, Advanced Mask Technology Center (Germany)
- 5 EBDW
 Christof Klein, IMS Nanofabrication AG (Austria)
 Cynthia Hanson, Space and Naval Warfare Systems Command (United States)
- 6 Multibeam and Tools Patterning
 Timothy R. Groves, CNSE, SUNY, University at Albany (United States)
 Laurent Pain, CEA, LETI (France)
- 7 EUV Printing
 Shinji Okazaki, Hitachi, Ltd. (Japan)
 Hans Meiling, ASML Netherlands B.V. (Netherlands)
- 8 EUV Lifetime
 Andrea F. Wüest, SEMATECH Inc. (United States)
 Kazuaki Suzuki, Nikon Corporation (Japan)
- 9 EUV Applications
 Obert Wood II, Advanced Micro Devices, Inc. (United States)
- 10 EUV OPC
 Patrick P. Naulleau, Lawrence Berkeley National Laboratory (United States)
- 11 Maskless
 Tatsuhiko Higashiki, Toshiba Corporation (Japan)
 Frank M. Schellenberg, Mentor Graphics Corporation (United States)

- 12 Nanoimprint I
Douglas J. Resnick, Molecular Imprints, Inc. (United States)
Lloyd C. Litt, Advanced Micro Devices, Inc. (United States)
- 13 Nanoimprint II
Benjamin G. Eynon, Jr., Molecular Imprints, Inc. (United States)
William M. Tong, Hewlett-Packard Laboratory (United States)
- 14 EUV Tools
Shinji Okazaki, Hitachi, Ltd. (Japan)
David T. Attwood, Jr., Lawrence Berkley National Laboratory (United States) and University of California, Berkeley (United States)
- 15 EUV Resist
Patrick P. Naulleau, Lawrence Berkeley National Laboratory (United States)
Thomas I. Wallow, Advanced Micro Devices, Inc. (United States)
- 16 Nanoimprint Materials
Frances A. Houle, IBM Almaden Research Center (United States)
Elizabeth A. Dobisz, Hitachi Global Storage Technologies, Inc. (United States)
- 17 Directed Self Assembly
Kevin T. Turner, University of Wisconsin, Madison (United States)
Steven L. Prins, Texas Instruments Inc.

Introduction

Welcome to the 2009 conference on Alternative Lithographic Technologies. I am very pleased to have been chair of this conference, and in this volume you will find papers describing some very exciting developments in several fields.

In previous years, this conference has gone by the name of "Emerging Lithographic Technologies." However, that is something of a misnomer; rarely has a technology "emerged" from this conference into mainstream CMOS patterning. This year, we have changed the name to better reflect the true nature of the conference, that of Alternative Lithography methods such as nanoimprint and EUV, as well as patterning for Alternative Technologies such as disk drives and photonics. We hope to provide a forum for both of these technology areas as the conference grows and evolves.

2009 was not the best year for the economy. With great uncertainty in world markets, and fabs running at half capacity, there is no doubt that times are troubled. In spite of that, I was very pleased to see that most of the conference sessions had their usual attendance, and some even increased over previous years. This shows a willingness to still pursue research, creativity, and innovation to address manufacturing problems, and gives great hope for the future of these promising technologies.

The most promising developments seen here were in the EUV Lithography community. Nearly 100 papers on EUV were presented, and tremendous progress has been made in all mission-critical areas (source power, optics contamination, resist efficacy). It remains to be seen, however, whether all aspects of the technology will come together to be reliable enough to provide a cost-effective solution for future technology nodes.

Outstanding work was also presented in nanoimprint and parallel e-beam technology. Nanoimprint has proven to be viable for creating patterned media for disk drives, and is on its way to production. And initial demonstrations for CMOS manufacturing have been explored both in the US and in Japan. In the meantime, recent progress from several suppliers of multiple-e-beam tools in the US, Europe and Japan show that this technology is taking the steps needed to demonstrate the capabilities needed for printing large areas.

And finally, we also have a set of papers on self-assembly materials, which spontaneously form patterns on the nano-scale, requiring patterning only on a larger, micro-scale to "direct" the formation of these smaller features.

I am very impressed by the strength and diversity of the work presented here; I hope you are as well. Of course, this would not be possible without the help of my

Cochair, Bruno La Fontaine of AMD, the conference Program Committee, and of course, the SPIE staff. I thank them especially for their contributions in making this conference a success.

Frank M. Schellenberg