SPIE. PHOTOMASK TECHNOLOGY



PHOTOMASK TECHNOLOGY EXHIBITION GUIDE

WWW.SPIE.ORG/PM

Exhibition: 29–30 September 2015 Conferences: 29 September–1 October 2015 Monterey Conference Center and Monterey Marriott Monterey, California, USA



Tuesday 29 September 10:00 am to 4:00 pm

Wednesday 30 September 10:00 am to 4:00 pm



The SPIE Photomask Technology Exhibition, the mask-making industry's premier event.

WALK THE FLOOR TO MEET KEY SUPPLIERS.

SPIE. PHOTOMASK TECHNOLOGY

Exhibition: 29–30 September 2015 Conferences: 29 September–1 October 2015 Monterey Conference Center and Monterey Marriott Monterey, California, USA

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ABOUT SPIE

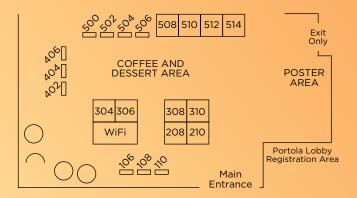
SPIE is the international society for optics and photonics, a not-for-profit organization founded in 1955 to advance light-based technologies. The Society serves nearly 250,000 constituents from approximately 150 countries, offering conferences, continuing education, books, journals, and a digital library in support of interdisciplinary information exchange, professional growth, and patent precedent. SPIE provided over \$4 million in support of education and outreach programs in 2014.

For more information, visit www.SPIE.org



The mask-making industry's premier exhibition.

SERRA I BALLROOM



Tuesday 29 September10:00 am to 4:00 pmWednesday 30 September10:00 am to 4:00 pm

COME TO THE EXHIBITION TO MEET KEY SUPPLIERS.

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Carl Zeiss Promenade 10, Jena, 07745 Germany +49 3641 64 2563; fax +49 3641 64 2938 info.smt@zeiss.com; www.zeiss.com/mask-solutions

Featured Product: ZEISS PROVE HR, ZEISS MeRiT neXT, ZEISS CDC, ZEISS RegC, ZEISS AIMS EUV

The Semiconductor Metrology Systems strategic business unit specializes in a key component in semiconductor production: lithographic photomasks. With its core competencies in light and electron optics and unique femtosecond laser technology, SMS offers products to assess mask defects, repair critical defects and verify the results of the repair, and dedicated metrology solutions for photomasks. The instruments are used by all leading mask manufacturers and wafer fabs around the world. Contact: Jim Polcyn, Sr Director Sales & Operations, Jim.Polcyn@zeiss. com; Leila Hammad, Manager Marketing & Communications, leila. hammad@zeiss.com

General Sponsor

CyberOptics Corp.

5900 Golden Hills Dr, Minneapolis, MN, 55416 USA +1 763 542 5827; fax +1 763 542 5100 info@cyberoptics.com; www.cyberoptics.com

Featured Product: ReticleSense Auto Multi Sensor; AMSR

When you need the world's most efficient and effective measurement devices for semiconductor tool set-up and maintenance processes, count on CyberOptics, the global market leader in wireless semiconductor measurement devices for chamber gapping, leveling, wafer handoff teaching, vibration and airborne particle measurement that enable improvements in fab yields and equipment uptime. Contact: Allyn Jackson, Account Manager/Field Applications Engineer, ajackson@cyberoptics.com

#404

#510

Fortrend Engineering Corp

3080 Oakmead Village Drive, Santa Clara, CA, 95051 USA +1 408 734 9311; fax +1 408 734 4299 sales@fortrend.com; www.fortrend.com

Featured Product: Reticle and EUV Mask handling Automation

Fortrend offers a number of unique solutions to OEM and end users to improve the productivity and yield during the manufacture and use of Photomask and EUV reticles. Fortrend has developed and improved a number of SMIF load ports, shipping box openers, robotic handling solutions with improved cleanliness and ease of operation to meet the high demands of the industry with the emerging EUV and smaller bandwidth requirements of the next generation Masks and Reticles. Contact: Richard Morgan, VP of Operations, rmorgan@Fortrend.com; Finnegan Huang, Engineering Manager, sales@Fortrend.com

Hitachi High-Tech Science Corp.

24-14 Nishi Shimbashi 1 Chome, Beam Technology Sales & Marketing Section, Minato-Ku, Tokyo, 105-0003 Japan + 81 3 6280 0065; fax + 81 3 3504 5189 hhs-info.fy@hitachi-hightech.com; www.hitachi-hightech.com/global/about/corporate/group/hhs

Featured Product: Gas Field Ion Source Mask Repair System GR1000/3000 Series

Hitachi High-Tech Science Corporation is a Hitachi High-Tech group manufacturer of analysis/measurement equipments. In the areas of surface analysis, element/property analysis and spectroscopic/ separation analysis, we offer cutting edge products and highquality solutions globally to our forefront customers.

#110

#402

Ibss Group, Inc.

SPIE Orporate

111 Anza Blvd. Ste. 110, Burligame, CA, 94010 USA +1 650 513 1488; fax +1 650 513 1884 admin@ibssgroup.com; www.ibssgroup.com

Featured Product: GV10x DS Asher & Mobile Cubic DS Asher effective in & ex situ hydrocarbon contamination removal

Develops and produces GV10x downstream plasma cleaner models and related products used successfully in EM and Synchrotron labs around the world. The GV10x Downstream Asher reduces carbon & hydrocarbon contamination 10 to 20x more effectively than traditional methods at vacuum pressure safe for TMP operation. The new MCDS Asher is a portable downstream plasma center for ex-situ specimen cleaning and in-situ e-beam chamber cleaning. admin@ibssgroup.com 650-513-1488 Contact: Vicent Carlino, President, vince.carlino@ibssgroup.com

INKO Industrial Corp.

#502

#504

695 Vaqueros Ave, Sunnyvale, CA, 94085-3524 USA +1 408 830 1041; fax +1 408 830 1058 sales@pellicle-inko.com; www.pellicle-inko.com

Featured Product: pellicle

INKO, a U.S. based company, manufactures a complete line of pellicles for applications ranging from ASIC production, high volume memory production. From broadband to I/G line to 248nm/193nm DUV lithography, we have the right pellicles for your needs. Contact: Joe Mac, Customer Service manager, joemac@pellicle-inko.com; Feng Ye, QA manager, ye@pellicle-inko.com

General Sponsor

Micro Lithography, Inc.

#512

#406

1257 Elko Dr, Sunnyvale, CA, 94089-2211 USA +1 408 747 1769; fax +1 408 747 1978 www.mliusa.com

Featured Product: Pellicles and Mounting Tool

MLI is featuring pellicles formulated to yield high rates of transmission and long lifetimes for UV exposure. Our complete line of pellicle films ranges from broadband, g-/i-line to DUV (KrF-248nm and ArF-193nm). MLI's DUV pellicles have the lowest outgassing materials available in the market today. Contact: Kevin Duong, Customer Service Manager, kevin.duong@mliusa.com; Diana Tjin, Sales Administrative Manager, diana.tjin@mliusa.com

Mitsui Chemicals America, Inc.

2099 Gateway PI Ste 300, San Jose, CA, 95110-1017 USA +1 408 487 2891; fax +1 408 453 0684

info@mitsuichem.com; www.mitsuichemicals.com

Since 1986, Mitsui has been the industry leader in providing pellicles to the semiconductor industry. Mitsui's ISO 9001 certified full automated plant produces Mitsui Pellicle, which transmits more than 99% of exposed light with excellent uniformity and longevity. Mitsui Pellicle, manufactured by rigorous selection of all materials and with 28 years accumulated expertise of non-dust structure, contributes to maximum production yields by eliminating pellicle related particle generations. Contact: Yurie Mizuno, Assistant Manager Business Development, y.mizuno@mitsuichem.com

General Sponsor

MSP Corporation

#500

5910 Rice Creek Pkwy Ste 300, Shoreview, MN, 55126 USA +1 651 287 8100; fax +1 651 287 8140 sales@mspcorp.com; www.mspcorp.com

Featured Product: Nanoparticles and Calibration Standards for Si wafers, Film wafers, photomasks, and other substrates

MSP Corporation is an aerosol instrument and equipment company creating products for scientific research and industrial applications. We are known world-wide for our expertise in micro- and nanoparticles and their creative use in research and manufacturing. Our products are designed for aerosol research, pharmaceutical inhaler testing, surface scanning inspection and ALD/CVD deposition in semiconductor device fabrication, contamination control, and life science applications. Contact: Todd Wondrasch, Sales Manager, twondrasch@mspcorp.com; William Dick, Semiconductor Metrology Product Manager, wdick@mspcorp.com

Nippon Control System Corp.

#514

1046 W Taylor St Suite 102, US Branch, San Jose, CA, 95126 USA +1 408 737 0338; fax +1 408 737 0329 ncs-patacon@nippon-control-system.co.jp; www.nippon-control-system.co.jp

Featured Product: NDE-MS offers total solutions to mask manufacture. It covers from post-opc through pre-mask writing.

Nippon Control System Corp has been providing fracturing tool to the industry over 20 years. As a successor of the famous PATACON, we have offered NDE Mask Manufacturable Suite (NDE-MS) which includes all applications required by mask manufactures from postopc through pre-mask writing. The applications are NDE-Fracture, MRC, Select, Pattern-match, SCRD, PEC, MPC, and Viewer. Contact: Shu Ohara, Director, oohara@nippon-control-system.co.jp

Stairway Strip Sponsor

Plasma-Therm LLC

#208

#310

Corporate Member

10050 16th St N, Saint Petersburg, FL, 33716-4219 USA +1 727 577 4999; fax +1 727 577 7035 sales@plasmatherm.com; www.plasmatherm.com

Featured Product: Plasma-Therm Mask Etcher®

Plasma-Therm* is a leading provider of advanced plasma processing equipment. Plasma-Therm systems perform critical process steps in the fabrication of integrated circuits, micromechanical devices, solar power cells, lighting, and components of products from computers and home electronics to military systems and satellites. The company's Mask Etcher* series for photomask production has exceeded technology roadmap milestones for more than 15 years. Contact: Yannick Pilloux, yannick.pilloux@ plasmatherm.com; sales@plasmatherm.com

Pozzetta, Inc.

3121 S Platte River Dr, Englewood, CO, 80110-2139 USA +1 303 783 3172; fax +1 303 374 7342 customerservice@pozzetta.com; www.pozzetta.com

Featured Product: Photomask Boxes, Reticle Pods, Reticle Storage, Wafer Carriers

Companies around the world trust Pozzetta to create secure environments for the handling, storage, and transport of photomasks, reticles, and wafers. Pozzetta will protect your valuable products from particles, ESD damage, outgassed components, and high costs. In order to meet the requirements of next-generation lithography Pozzetta photomask compacts are designed to reduce particles, prevent ESD, and reduce outgassing. By preventing random defects Pozzetta will increase yields and reduce costs Contact: Artemis Vasiliades, Account Executive, artemis@pozzetta.com; Scott Reese, Account Executive, scott. reese@pozzetta.com

Coffee Break Sponsor

RAVE LLC

#304

430 S Congress Ave Ste 7, Delray Beach, FL, 33445 USA +1 561 330 0411; fax +1 561 330 0647 sales@ravenano.com; www.ravenano.com

Featured Product: Merlin®G 15nm Mask Repair; fp650plus™ Femto-pulse Laser Mask Repair; Rhazer® Haze Removal System

RAVE is a technology driven company with a long history of unique technical contributions to the Photomask Industry. RAVE's exceptionally talented team is well known for the development and on-time delivery of innovative, cost-saving process solutions. RAVE is now delivering the new Gen 5 - Merlin®G 15nm mask repair nanomachine and the revolutionary Rhazer® haze removal system. RAVE's fp650™ femto-pulse laser tool continues to be the fastest, most efficient 32nm production mask repair system. Contact: Roy White, Executive Director of Business Development, Roy.White@ ravenano.com; Michael Archuletta, Director of Marketing, Michael. Archuletta@ravenano.com

Banner, Meter Board, and Memory Stick Sponsor

S&S TECH

#306

9 Horim-Dong Dalseo-Gu, Blank Mask R&D Ctr, Daegu, 704-240 Korea, Republic of +82 53 589 1600; fax +82 53 585 7170 dkchang@snstech.co.kr; www.snstech.co.kr/english

Featured Product: Design and Manufacture of Blank Masks for Semiconductor and Flat Panel Display

S&S Tech is a leading supplier in the Blank Mask market for both Semiconductor and Flat Panel Display business segments. Through dedicated services and high quality products, we have been recognized worldwide by major players in the semiconductor industry such as Samsung. With dedicated and highly qualified staff supported by extensive R&D investments, S&S Tech is striving forward to become the pioneer in future mask technology. Contact: Dong Keun Chang, Sales & Marketing Director, dkchang@snstech. co.kr; Dong Youn Lee, Sales & Marketing Staff, dylee@snstech.co.kr

Wi-Fi Sponsor

Shin-Etsu MicroSi

10028 S 51st St, Phoenix, AZ, 85044-5203 USA +1 480 893 8898; fax +1 480 893 3687 info@microsi.com; www.microsi.com

Shin-Etsu MicroSi, Inc. together with our parent company Shin-Etsu Chemical Co. Ltd., are one of the highest ranked chemical and semiconductor companies who develop quality semiconductor material for the technology sector. We are world-class leadership in the development and manufacture of specialty semiconductor material such as thermal conductive grease, synthetic quartz, and semiconductor silicon for the semiconductor industry. Contact: Edwin Nichols, Marketing Manager, enichols@microsi.com; info@ microsi.com

Promotional Partner

Solid State Technology

1786 18th St, San Francisco, CA, 94107 USA +1 415 255 0390; fax +1 415 255 9214 info@extensionmedia.com; electroiq.com

Featured Product: Solid State Technology Magazine

Solid State Technology reaches the largest, most qualified community of decision makers for semiconductor and electronics manufacturing through the magazine, email newsletters, website, webcasts and The ConFab Conference & Networking event. Topics include Advanced Packaging, MEMS, LEDs and Displays as well as current trends in the industry. Visit us here www.solid-state.com. Contact: Kerry Hoffman, Sales Manager, info@extensionmedia.com

#210

#506



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We hope that the International Year of Light will increase global awareness of the central role of light in human activities and that the brightest young minds continue to be attracted to careers in this field.

For more information on how you and your organization can participate, visit **www.spie.org/IYL**



INTERNATIONAL YEAR OF LIGHT 2015



Conference Bag Sponsor

Synopsys, Inc.

#308

SPIE Orporate

690 E Middlefield Rd, Mountain View, CA, 94043 USA +1 650 584 5000; fax +1 650 584 4102 info@synopsys.com; www.synopsys.com

Featured Product: CATS[®] converts design data into data for photomask lithography, inspection and metrology.

Synopsys is the Silicon to Software[™] partner for innovative companies developing the electronic products and software applications we rely on every day. Synopsys has a long history of being a global leader in electronic design automation and semiconductor IP, and is also a leader in software quality and security. Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com. Contact: Anjaneya Thakar, Product Marketing Manager, thakar@ synopsys.com

XYALIS SPIE^{Corporate}

BP 1510, Grenoble Cedex 01, 38025 France +33 476 706 475; fax +33 476 282 849 info@xyalis.com; www.xyalis.com

Featured Product: WISC (Web Interface for Shuttle Contributors) streamlines MPW automation across contributing teams

XYALIS offers advanced solutions for Mask Data Preparation (MDP) and Design For Manufacturing (DFM) that shorten time to manufacturing, increase yield, and remove errors during mask and wafer production. A proven integrated MDP solution automates frame generation, MPW design, maskset creation, and Mask Order Form management. A dummy fill engine for the most advanced processes combines power and accuracy of model-based approaches with simplicity and performance of rule-based tools Contact: Sylvie Hurat, US Area Manager and Sales Representative, sylvie@xyalis.com

#508

reticle labs

www. reticlelabs.com

At Reticle Labs we recognize that every fab has unique needs. We started our business developing custom software for the world's leading mask and wafer fabrication plants, and have focused on delivering extraordinary value for their investment in our products & services. If you are looking for an engineering focused company minus the overhead (you know the kind that wears suits and hands out company swag), come talk to us.

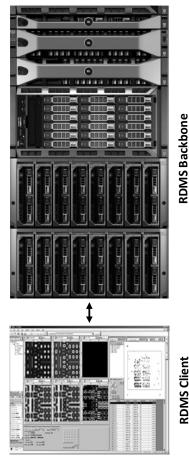
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RDMS Client

PRODUCT INDEX

INDUSTRIAL SENSING AND MEASUREMENT

Fortrend Engineering Corp

LASERS AND SYSTEMS RAVE LLC

LITHOGRAPHIC EQUIPMENT

Carl Zeiss SMT GmbH Fortrend Engineering Corp INKO Industrial Corp. MSP Corporation RAVE LLC Shin-Etsu MicroSi

MACHINE VISION, FACTORY AUTOMATION

Fortrend Engineering Corp

MATERIALS, ABRASIVES, CHEMICALS

Shin-Etsu MicroSi

MICROSCOPES

RAVE LLC

MISC CONSUMABLES AND EQUIPMENT

Fortrend Engineering Corp MSP Corporation RAVE LLC

NANOTECHNOLOGY PRODUCTS

MSP Corporation

OPTICAL COMPONENTS -FILTERS, MIRRORS, OTHER

Shin-Etsu MicroSi

20

OPTICAL DESIGN AND ENGINEERING

Fortrend Engineering Corp

OPTOMECHANICAL COMPONENTS, DEVICES

Fortrend Engineering Corp

POSITIONING EQUIPMENT, MOTION CONTROL AND ACCESSORIES

Fortrend Engineering Corp

SEMICONDUCTOR MANUFACTURING

Carl Zeiss SMT GmbH CyberOptics Corp. MSP Corporation RAVE LLC Shin-Etsu MicroSi Synopsys, Inc.

SOFTWARE

Nippon Control System Corp. Synopsys, Inc.

SOLAR & ALTERNATIVE ENERGY

Fortrend Engineering Corp

TEST AND MEASUREMENT, METROLOGY

Carl Zeiss SMT GmbH CyberOptics Corp. MSP Corporation

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GENERAL INFORMATION

Registration

Exhibition Registration

Exhibition-Only visitor registration is complimentary.

SPIE Cashier

Registration Area, Open during registration hours

If you are paying by cash or check as part of your onsite registration, wish to add a special event requiring payment, or have questions regarding your registration, visit the SPIE Cashier.

Badge Corrections

Badge corrections can be made by the SPIE Cashier. Please have your badge removed from the badge holder and marked with your changes before approaching the counter.

Internet Access

Steinbeck Lobby - Internet Stations



Complimentary wired Internet access is available; attendees can hook up their laptops or use provided workstations.

WiFi

WiFi available in the Monterey Conference Center

SPONSORED BY: Shin EtsuMicroSi

Complimentary wireless access is available; instructions will be posted onsite.

Business Center

Monterey Marriott

Attendees may use their hotel room key at the Monterey Marriott to access the onsite Business Center, which offers use of the free online computers. Copy and fax machines are available at the front desk. Copies are free for the first 20 copies, 10 cents per page after. The fax machine is \$1 per page for domestic usage and \$3 per page for international usage.

Urgent Message Line

An urgent message line is available during registration hours: 831.646.5312

Lost and Found

SPIE Cashier

Registration Hours

Found items will be kept at SPIE Cashier until the close of Registration each day and then turned over to Inact Protective Services, 831.763.2594. At the end of the meeting, all found items will be turned over to Monterey Conference Center, 831.646.3770.

Desserts

Complimentary tickets for dessert snacks are included in conference attendee and exhibitor registration packets, and served in the exhibition hall during the afternoon coffee break.

Coffee Breaks

SPONSORED BY:





Complimentary coffee will be served Tuesday through Thursday in the following locations.

Tuesday 29 September	10:30 am and 3:20 pm Serra Grand Ballroom – Exhibition Hall
Wednesday 30 September	
Thursday 1 October	

GENERAL INFORMATION

Offsite Services

FedEx Kinkos is located at 799 Lighthouse Ave., Suite A, Monterey, Calif., 93940, Phone 831.373.2298. It is located 1.3 miles from the Monterey Marriott. Go north on Calle Principal, left onto Del Monte Avenue, right onto Pacific St., right onto ramp to merge onto Lighthouse Avenue.

Child Care Services

The Monterey Marriott suggests the following childcare service companies:

Parents Time Out. Phone: 831.375.9269 VIP

Babysitting Solutions Inc. (in-room hotel babysitting services). Phone: 800.838.2787

SPIE does not imply endorsement or recommendation for these services. Information provided as "information only" for your further analysis and decision. Other services may be available.

Car Rental



Hertz Car Rental has been selected as the official car rental agency for SPIE Photomask Technology. To reserve a car, identify yourself as a conference attendee using the Hertz Meeting

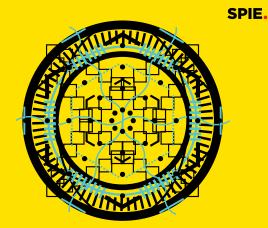
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SPIE. PHOTOMASK TECHNOLOGY

PHOTOMASK TECHNOLOGY.

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Conferences: 12–14 September 2016 Exhibition: 13–14 September 2016 San Jose, California, USA