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# 2013 Optics+ Photonics

**Exhibition Guide**

**Moving Technology to Market**<sup>™</sup>

**Exhibition**  
27–29 August 2013

**Conference and Courses**  
25–29 August 2013

San Diego Convention Center, San Diego, California, USA





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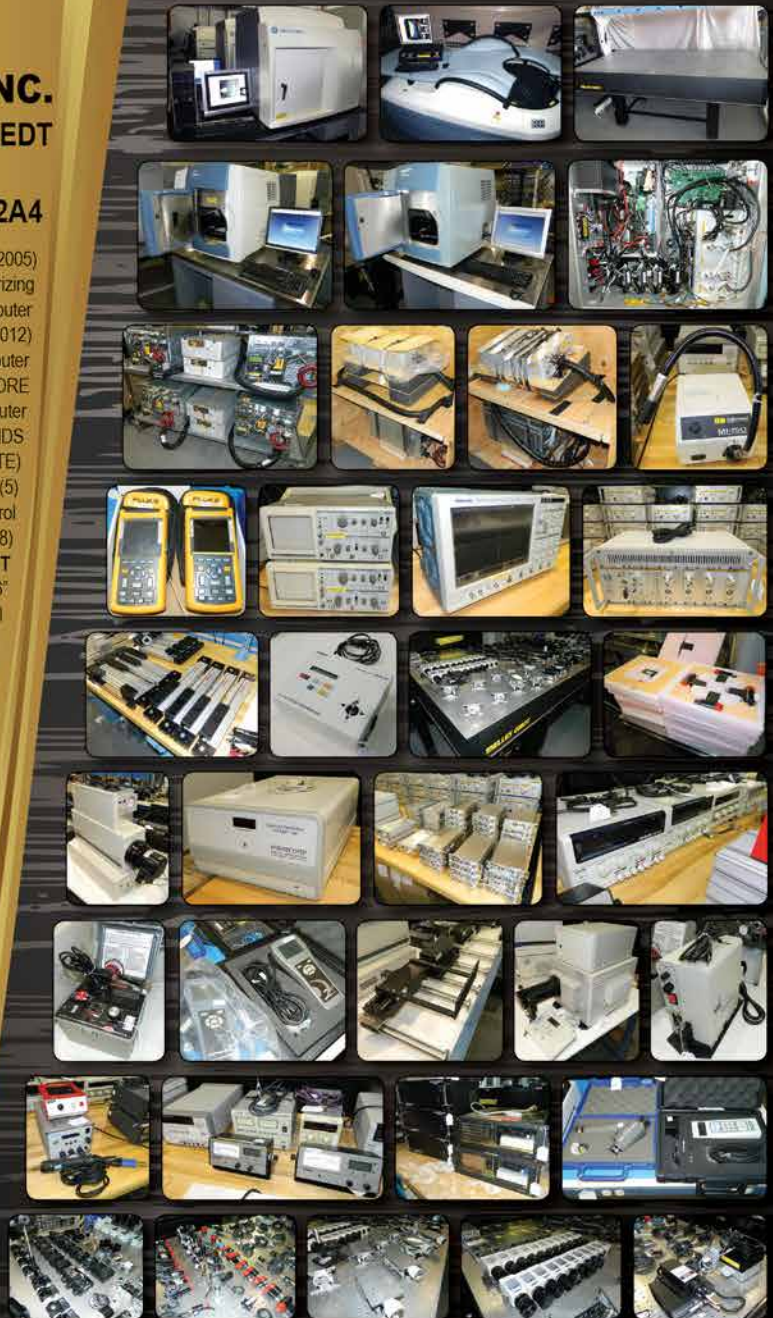
# PUBLIC AUCTION

**MASSIVE OFFERING OF PHOTONICS  
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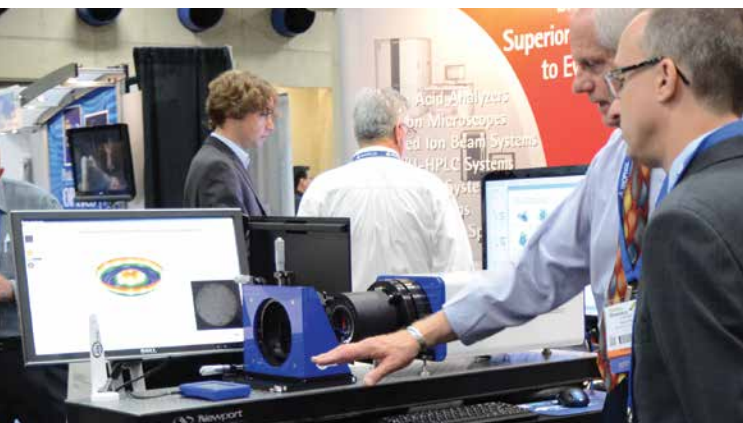
**FEATURING:** (2) **SOFTSCAN** (BRAND NEW 2007 IN THE CRATE & 2005) complete optical molecular imaging devices for the diagnosis and characterizing of breast cancer and for monitoring treatment progresses complete with computer systems (NEW COST EXCEEDING 1.2M EACH!); (2) **ART** (BRAND NEW 2012) OPTIX MX3 non-invasive 3D optical molecular imaging systems with computer system (NEW COST EXCEEDING 300K EACH!); (6) **GE** (2005) EXPLORE OPTIX non-invasive 3D optical molecular imaging systems with computer system (EACH SYSTEM REPLACES FOR HUNDREDS OF THOUSANDS OF DOLLARS); (2) **SPECTRA-PHYSICS** (2001 and NEW IN THE CRATE) MAI-TAI laser with control system (200K+ REPLACEMENT COST EACH!); (5) **SPECTRA-PHYSICS** (2001 and LOW HOURS) MAI-TAI laser with control system (200K+ REPLACEMENT COST EACH!); **MELLES - GRIOT** (2008) 49.25" X 120" portable anti-vibration optical set up table; **MELLES - GRIOT** 49.25" X 96" anti-vibration optical set up table; (2) **MELLES - GRIOT** 36" X 72" anti-vibration optical set up tables; **TEKTRONICS** DP07254 digital phosphor oscilloscope; **TEKTRONIX** TLA5204 digital logic analyzer; **TEKTRONIX** TEKSCOPE THS720 STD auto ranging 100 Mhz scope/dmm; **GOLDSTAR** LG OS-9020A 20 Mhz oscilloscope; (50+) digital dc regulated lab power supplies and drives; **RES INSTRUMENTS** E201LSA03A digital laser spectrum analyzer; **PACE** MBT350 thermo drive soldering system; **EDMUND** MI-150, high intensity optic illuminator; (25+) **PICOQUANT GmbH** (2003) PDL-800B pulsed diode laser systems; (10+) **PICOQUANT GmbH** (Oct-2008) PDL-808-MC-RC multi channel pico second diode laser systems; **PSS-NICOMP** 380 digital sub micron particle size sizing system; (12) **HAMAMATSU** C5680-34S universal streak camera systems; (30+) 2 axes powered precision stages and controllers; **SPECTRA PHYSICS** 409-08 picosecond auto correlator; **FLUKE** 123 industrial 20 Mhz scope meter; (10+) **THORLABS** CL-200 fiber inspection scopes; **UNIPHASE** 1508-0 helium neon gas laser; (10+) **ROBO CYLINDER** RCS-SA5-A-20-M-400-M intelligent servo drive actuators; **METLER TOLEDO** digital balance scales; **CRYSTA LASER** CL-2000 diode pumped green Crysta Laser; **REVCO** scientific 5 compartment sub-zero fridge; **FISHER** 282A isotemp vacuum oven; (15+) **PICOQUANT GmbH** (2004) LDH-P-C-440 laser diodes; (20+) **RAINBOW** BL58D CCTV high resolution digital 1/3" B/W CCD cameras; (30+) **HAMAMATSU** (NEW AS 2011) H7422P-50 photo sensor modules; (3) **SLT** (2007) 500 mW lab laser; (5) **STERLING INSTRUMENTS** electromagnetic clutches; (50+) **PICOQUANT** pulsed diode lasers; (10+) **BECKER & HICKL** 4 channel TCSPC router for PMT photon counters; sealed linear encoders, HUGE QUANTITY OF FIBER OPTICS CABLES & ACCESSORIES, MASSIVE OFFERING OF HIGH END ELECTRICAL COMPONENTS & MICRO-CHIP BOARDS AND PROCESSORS, anti-static laboratory workbenches, wood butcher block work benches, tool room equipment featuring lathes, mills, sanders & MUCH MORE!!



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# 2013 Optics+ Photonics

Optical components, devices,  
and materials.

## Exhibition Guide

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### EXHIBITION HOURS

*San Diego Convention Center, Exhibition Hall A, B1*

Tuesday 27 August, 10:00 am to 5:00 pm

Wednesday 28 August, 10:00 am to 5:00 pm

Thursday 29 August, 10:00 am to 2:00 pm

**SPIE  
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Conferences and Courses: 25–29 August 2013

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SPIE Optics+Photonics

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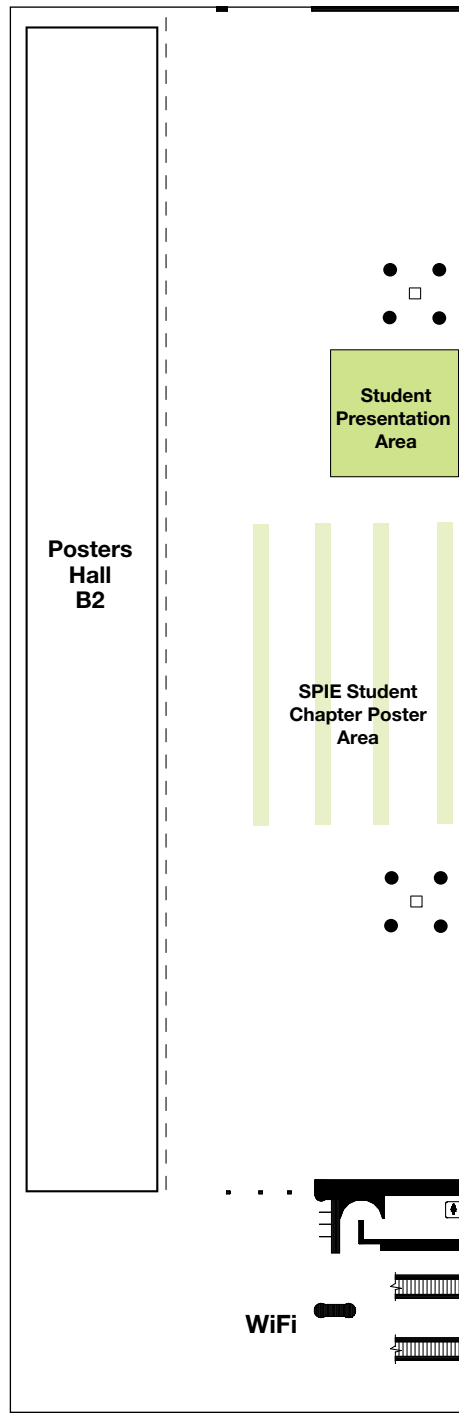
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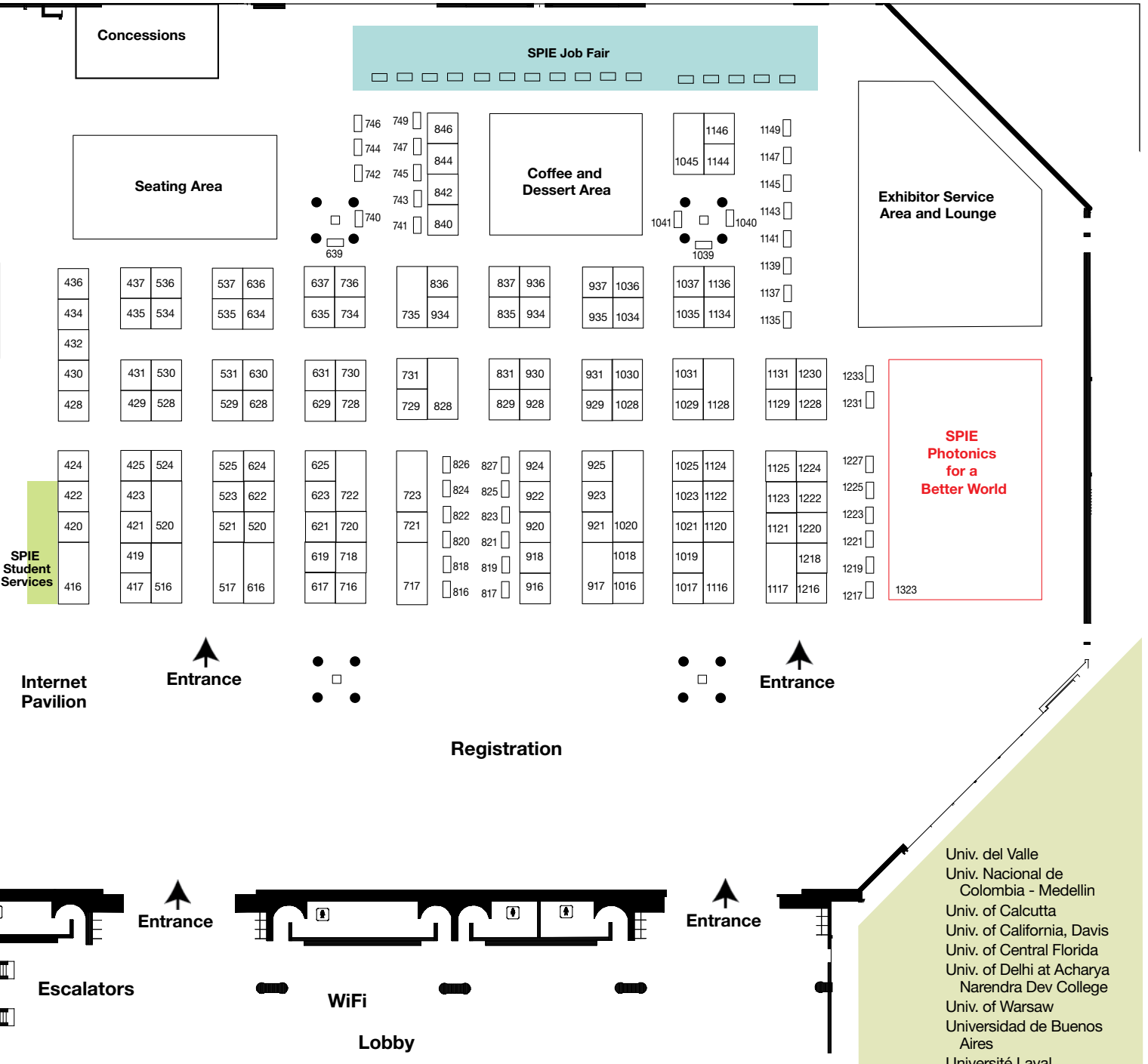
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# Exhibition Guide



## EXHIBITION HOURS

Tuesday 27 August, 10:00 am to 5:00 pm

Wednesday 28 August, 10:00 am to 5:00 pm

Thursday 29 August, 10:00 am to 2:00 pm



## How to use this guide

SPIE Optics + Photonics exhibitors are listed in alphabetical order with details about products or services each is exhibiting. Companies are additionally cross-indexed by technology areas in the Product Category Index on pages 42–45, to allow you to quickly shop for products for your engineering and business needs.

Booth numbers are provided in the Exhibition Guide, and may be cross-referenced with the map on pages 4–5. The address of each exhibitor is also listed, making this Exhibition Guide an excellent reference tool.



## 4D Technology Corp.

**SPIE** Corporate Member

3280 E Hemisphere Loop Ste 146, Tucson, AZ, 85706-5024  
United States

+1 520 294 5600; fax +1 520 294 5601

info@4dtechnology.com; www.4dtechnology.com

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168 Old Gate Ln, Milford, CT, 06460 United States

+1 203 540 9990; fax +1 203 301 0059

sales@abet-technologies.com; www.abet-technologies.com

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## AccuCoat Inc.

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+1 515 964 5741

micromolding@accu-mold.com; www.accu-mold.com

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## #716 ACS Publications

1155 16th St NW, Washington, DC, 20036 United States

+1 202 872 4600; fax +1 202 872 6005

a\_walker@acs.org; pubs.acs.org

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## ADIT Electron Tubes

300 Crane St, Sweetwater, TX, 79556 United States

+1 325 235 1418; fax +1 325 235 2872

paul@electrontubes.com; www.electrontubes.com

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## AdlOptica GmbH

**SPIE** Corporate Member

Rudower Chaussee 29, Berlin, 12489 Germany

+49 (030) 56 59 08 880; fax +49 (030) 56 59 08 881

info@adloptica.com; www.adloptica.com

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## Aerotech Inc.

**SPIE** Corporate Member

101 Zeta Dr, Pittsburgh, PA, 15238-2811 United States

+1 412 963 7470; fax +1 412 963 7459

sales@aerotech.com; www.aerotech.com

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## ALIO Industries

#921

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11919 I-70 Frontage Road North, Unit 119, Wheat Ridge, CO, 80033 United States  
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## Andover Corp.

#831

SPIE Corporate Member

4 Commercial Dr, Salem, NH, 03079 United States  
+1 603 893 6888; fax +1 603 893 6508  
info@andovercorp.com; www.andovercorp.com

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Contact: Rob Pursel, Sr. Optical Coating Engineer, rpursel@andovercorp.com; Phil Clark, Technical Sales, pclark@andovercorp.com.

## Applied Surface Technologies

#1139

SPIE Corporate Member

15 Hawthorne Dr, New Providence, NJ, 07974 United States  
+1 908 464 6675  
co2clean@co2clean.com; www.co2clean.com

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## ASE Optics, LLC

#1147

850 John St, West Henrietta, NY, 14586 United States  
+1 585 303 1574; fax +1 585 624 8083  
sales@aseoptics.com

## ASML Optics

#929

77 Danbury Road, Wilton, CT, 06897 United States  
+1 203 761 4549; fax +1 203 761 4095

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## attocube systems Inc.

#1124

SPIE Corporate Member

1918 Martin Luther King Jr Way, Berkeley, CA, 94704 United States  
+1 510 649 9245  
info@attocube.com; www.attocube.com

attocube is a worldwide supplier for ultra-precision nanopositioner and multi-axes interferometric sensors. With the introduction of the ECS series, attocube offers highest precision piezodrive technology with extremely rugged yet cost efficient design. attocube's patented fiber interferometer technology is being used in various applications such as extreme environmental positioning or micromachining.

## Avantes, Inc.

#826

SPIE Corporate Member

9769 W 119th Dr, Broomfield, CO, 80021 United States  
+1 303 410 8668; fax +1 303 410 8669  
infousa@avantes.com; www.avantes.com

### Featured Product: AvaSpec-Micro. The smallest spectrometer on the market! Quality and power in a tiny package!

Avantes is a leader in field of fiber optic spectroscopy offering a range of spectrometers, light sources, and fiber optics to support measurements in the range from 190-2500 nm. With an installed base of over 20,000 systems throughout the world and 19 years of experience in fiber optic spectroscopy, Avantes is equipped to meet the challenges presented by applications facing our customers. Contact: Greg Neece, President, gregn@avantes.com; Adri Larsen, Sales & Marketing Coordinator, larsena@avantes.com



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Photonik as well as BioPhotonik are leading German language magazines for Optical Technologies.

Photonik international issues are English specials of the German-language magazines Photonik and BioPhotonik. Approximately 20 selected technical articles from the previous German issues, translated into English, provide a broad overview of current knowledge in Optical Technologies worldwide.

[www.photonik-international.com](http://www.photonik-international.com)



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# Exhibition Guide

## B&W Tek, Inc.

SPIE Corporate Member

19 Shea Way, Newark, DE, 19713 United States  
+1 855 MY BWTEK; fax +1 302 368 7830  
sales@bwtek.com; www.bwtek.com

**Featured Product: The Exemplar® Plus is a smart spectrometer featuring high sensitivity and dynamic range.**

B&W Tek is an advanced instrumentation company producing optical spectroscopy, laser instrumentation and laboratory, portable and handheld Raman systems. B&W Tek provides solutions for the pharmaceutical, biomedical, physical, chemical, and research communities. Our commitment to innovating solutions has made B&W Tek a leader in Raman spectroscopy solutions worldwide. With a strong vertical integration capability, B&W Tek also provides custom product development, design and manufacturing. Contact: Sam Panariello, Application Sales Specialist, samp@bwtek.com; Parag Borgaonkar, Application Sales Specialist, sales@bwtek.com

#937

## Breault Research Organization, Inc. #635

SPIE Corporate Member

6400 E Grant Rd Ste 350, Tucson, AZ, 85715-3823 United States  
+1 525 721 0500; fax +1 520 721 9630  
info@breault.com; www.breault.com

**Featured Product: APEX 2013 and ASAP 2013 - The world's most advanced optical software and SolidWorks optics add-in.**

BRO is an optical engineering firm offering engineering services and optical software, including the APEX, ASAP, and ReflectorCAD optical software products that help engineers turn creative visions into working prototypes. BRO's own engineers work on beyond-state-of-the-art projects for enterprise companies, research institutions, and top government labs. In over three decades of innovation, BRO has contributed to engineering projects for thousands of clients. BRO is ISO 9001:2008 certified. Contact: Michael Stevenson, VP of Marketing, mstevenson@breault.com; Robert Shroder, Director of Sales, rshroder@breault.com

## Beijing Tian-Long Tungsten & Molybdenum Co., Ltd. #1031

Tongzhou District, Beijing, Beijing, 101117 China  
+ 86 10 69590276; fax +86 10 69590277  
tlwm@tlwm.cn; www.tlwm.cn

**Featured Product: Tungsten Copper, Molybdenum Copper, Cu/Mo/Cu(CMC), Cu/MoCu/Cu(CPC), Tugsten, Molybdenum**

Founded in 1993, Beijing Tian-Long Tungsten & Molybdenum Co., Ltd. (TLWM) has been manufacturing tungsten copper, molybdenum copper, CMC, CPC which are widely used as heat sinks in electronic packaging. With a personnel of more than 560 people and over 56,000 square meters of manufacturing space, TLWM is a recognized leader in the tungsten and molybdenum deep processing industry in China. Proud to be an ISO 9001:2008 and ISO 14001:2004 certified company, TLWM is your wise choice. Contact: David Su, VP, david@tlwm.cn; Liqun Yu, liqunyudr@gmail.com

PROMOTIONAL PARTNER

## Cambridge University Press #1219

The Edinburgh Building, Shaftesbury Road, Cambridge, CB2 8RU  
United Kingdom  
journals@cambridge.org; www.journals.cambridge.org

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## Carl Hanser Verlag #639

Kolbergerstr 22, Muenchen, 81679 Germany  
+49 89 99830 0; fax +49 89 98480 9  
info@hanser.de; www.hanser.de

**Featured Product: Magazine Laser+Photonics**

The journal Laser+Photonik predominantly targets developers of optical, optoelectronic and laser systems as well as decision makers of equipment purchases in the target markets of photonics, telecommunications, laser-based production technology, medical technology, machine and device engineering and in the automotive industry.

## Boulder Nonlinear Systems, Inc. #636

SPIE Corporate Member

450 Courtney Way, Lafayette, CO, 80026 United States  
+1 866 466 0506; fax +1 3030 604 0066  
www.bnnonlinear.com

**Featured Product: 3D Optical Trapping System - The CUBE - based on LCoS Spatial Light Modulator**

Boulder Nonlinear Systems, Inc. (BNS) specializes in beam control solutions for both laser-based and imaging systems. Company R&D strengths are leveraged into OEM and standard products targeted for defense, biomedical, microscopy, optical computing/storage, and telecommunications applications. NEW PRODUCTS – Liquid Crystal Gratings, Polarization Independent SLM, and The CUBE (portable optical trapping system). Other products include: Spatial Light Modulators, Optical Shutters and Rotators. Contact: Kelly Gregorak, Director, Sales & Marketing, kelly@bnnonlinear.com

## Cascade Optical #536

SPIE Corporate Member

1225 E Hunter Ave, Santa Ana, CA, 92705 United States  
714-543-9777; fax 714-543-4394  
sales@c-optical.com; www.c-optical.com

Cascade Optical Corporation is nationally and internationally recognized supplier of high quality optical components and optical coatings. We specialize in Ion Assisted PVD coatings. Cascade has been providing superior optical products for commercial, medical, military, telecom and aerospace applications for 30 years. Cascade Optical also provides optical fabrication services.



## CeramOptec Industries, Inc.

#424

SPIE Corporate Member

515 Shaker Rd, East Longmeadow, MA, 01028-3126 United States  
+1 413 525 0600; fax +1 413 525 1112  
salesengineering@ceramoptec.com; www.ceramoptec.com

**Featured Product: Optical fiber, fiber bundles, assemblies and spectroscopic fiber accessories.**

CeramOptec Industries Inc a world leader in specialty silica optical fiber production including non-circular core fibers, bundles, assemblies/vacuum products. All silica fibers 190nm to 2500 operation with NA's from 0.12 - 0.53. Hard polymer clad, plastic clad fibers, Silver halide fibers for MIR. Custom engineered solutions with competitive prices. Contact: Kevin Bakhshpour, V.P. of Sales and Marketing, kevin.bakhshpour@ceramoptec.com; Cheryl Provost, Industrial Sales Engineer, cheryl.provost@ceramoptec.com

## Chroma Technology Corp.

#924

SPIE Corporate Member

10 Imtec Ln, Bellows Falls, VT, 05101 United States  
+1 800 824 7662; fax +1 802 428 2525  
sales@chroma.com; www.chroma.com

**Featured Product: Precision optical filters and coatings**

Chroma is an employee-owned company specializing in the design and manufacture of precision optical filters and coatings from 220-2600nm for myriad applications. We provide application engineering support and short cycle times, and are as comfortable designing and manufacturing custom filters as we are our catalog items. Contact: Mark Kfoury, OEM Sales Engineer, mkfoury@chroma.com; Christopher Conca, OEM Sales Engineer, cconca@chroma.com

## College of Optical Sciences, University of Arizona

#422

SPIE Corporate Member

1630 E University Blvd, 94 Meinel Bldg Optical Sciences Ctr, Tucson, AZ, 85721-0095 United States  
+1 520 626 6737  
academicprograms@arizona.edu; www.optics.arizona.edu

The University of Arizona College of Optical Sciences educates students in all aspects of the study and application of light, performing internationally recognized research in optical engineering, quantum optics, applied optics and photonics, and image science. The College of Optical Sciences is the world's premier optical institute, with award-winning faculty members, a diverse student body, challenging courses, pioneering research programs and close relationships with the optics industry. Contact: Carl Maes, Associate Dean of Academic Programs, cmaes@optics.arizona.edu; Kaye Rowan, Director of Development, College of Optical Scienc, Rowan@optics.arizona.edu

## CoorsTek Technical Ceramics

#1216

555 NE 53rd Ave, Hillsboro, OR, 97124-6471 United States  
+1 503 693 2159; fax +1 503 648 1501  
optical@coorstek.com; www.coorstek.com

**Featured Product: Direct Sintered Silicon Carbide Optical substrates**

CoorsTek is the world's largest advanced ceramics company with over 40 facilities worldwide. CoorsTek is the largest supplier of direct-sintered silicon carbide optics in North America with up to 1.7 meter class-space or ground telescope optics size capability. We offer advanced forming, sintering, grinding, lapping & precision metrology to make lightweight mirror substrates and optical structures. Ceramic components are well suited for high precision applications. Contact: Janet Kolen, Account Manager, jkolen@coorstek.com; Dennis Cavanaugh, General Manager, dcavanaugh@coorstek.com

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## CRC Press - Taylor & Francis

#1025

6000 Broken Sound Pkwy NW Ste 300, Taylor and Francis Group LLC, Boca Raton, FL, 33487-2713 United States  
+1 561 994 0555; fax +1 561 361 6018  
orders@crcpress.com; www.crcpress.com

CRC Press - Taylor & Francis is a premier publisher in optical sciences and engineering textbooks, professional manuals, reference works, journals, and electronic databases. Please visit our booth to review our new and bestselling publications including Handbook of Silicon Photonics, Handbook of Optical Design, Ultra-Realistic Imaging and Mathematical Optics. Receive a 15%-25% discount and pick up complimentary copies of our journals. Contact: Luna Han, Sr. Publishing Editor, luna.han@tfinforma.com; Ashley Gasque, Acquisitions Editor, Optical Sciences, ashley.gasque@taylorandfrancis.com

## Daco Instrument Co.

#1137

45 Woodmont Rd, Milford, CT, 06460 United States  
+1 203 874 2515; fax +1 203 878 6655  
www.dacoinstruments.com

## Davidson Optronics Inc.

#1020

SPIE Corporate Member

2223 W San Bernardino Rd, West Covina, CA, 91790-1008 United States  
+1 626 962 5181; fax +1 626 962 5188  
sales@davidsonoptronics.com; www.davidsonoptronics.com

## Deposition Sciences, Inc.

#1041

SPIE Corporate Member

3300 Coffey Lane, Santa Rosa, CA, 95403 United States  
+1 707 573 6758; fax +1 707 573 6748  
solutions@depSci.com; www.depSci.com

Since 1985, Deposition Sciences, Inc. (DSI) has produced the most durable optical thin film filter coatings in the industry. DSI's coating capability ranges from the ultraviolet (UV), through the visible, to near-infrared, midwave-infrared (MWIR), and out to the long-wave infrared (LWIR) region. DSI's technology is based on its proprietary MicroDyn® reactive sputtering deposition process that enables superior, multilayer thin film coatings for precision optics and other thin film technologies. Contact: Tatiana Atkinson, Inside Sales Manager, atkinson@depSci.com

# Exhibition Guide

## Diamond USA Inc.

#721

SPIE Corporate Member

27 Industrial Ave, Chelmsford, MA, 01824 United States  
+1 978 256 6544  
dhardy@diausa.com; www.diausa.com

**Featured Product: High performance actively aligned ferrule designed into custom and standard fiber terminations.**

Diamond has repeatedly set the standard for high performance fiber termination. Our active core alignment process allows us to terminated PM, small core, and other specialty fibers with highly repeatable ER, IL, and RL specifications. Diamond offers a variety of solutions designed for Medical, Aerospace, Military, Research and OEM applications. Please visit with us to learn more about our high power, IP65/ETO sterilizable, harsh environment, vacuum feed through and custom termination solutions. Contact: David Hardy, National Sales Manager, dhardy@diausa.com

## Diverse Optics Inc.

#720

SPIE Corporate Member

10310 Regis Ct, Rancho Cucamonga, CA, 91730 United States  
+1 909 593 9330; fax +1 909 596 1452  
info@diverseoptics.com; www.diverseoptics.com

Diverse Optics manufactures custom precision polymer optic components and assemblies. Core processes include injection molding, single point diamond turning (SPDT), opto-mechanical design, metrology, assembly, bonding, and thin-film coating. Transform your optical system from expensive, heavy, and complicated to commercially viable, light weight, and wonderfully simple. Contact: Erik Fleming, Pres/CEO, erik.fleming@diverseoptic.com; Letty De La Cruz, Sales Engineer, letty.delacruz@diverseoptics.com

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## Edmund Optics

#516

SPIE Corporate Member

101 E Gloucester Pike, Barrington, NJ, 08007 United States  
+1 856 547 3488; fax +1 856 573 6272  
sales@edmundoptics.com; www.edmundoptics.com

Edmund Optics (EO) is a leading producer of optics, imaging, and photonics technology. Supporting the R&D, electronics, semiconductor, pharmaceutical, biomedical, and military markets around the globe; EO products are used in a variety of applications from DNA sequencing to high-speed factory automation. EO's state of the art manufacturing capabilities combined with its global distribution network has earned it the position of the world's largest supplier of off-the-shelf optical components. Contact: Anthony Artigliere, Dir. of Sales Americas, sales@edmundoptics.com; Kirsten Bjork-Jones, Dir. of Global Marketing Communications, sales@edmundoptics.com

### PROMOTIONAL PARTNER

## Electro Optics Magazine

#1233

Europa Science, 9 Clifton Court, Cambridge, CB1 7BN United Kingdom  
+44 (0)1223 211170; fax +44 (0)1223 213385  
sales.electro@europascience.com; www.electrooptics.com

**Featured Product: Europe's leading photonics magazine is now available worldwide in digital format**

Electro Optics magazine, published by Europa Science, is Europe's leading magazine for the photonics industry, covering business, technology and applications. Essential reading for engineers and entrepreneurs alike, it covers business trends, new technologies and the latest applications in photonics. Independently written by our experienced in-house staff, the in-depth features offer insights and informed comment on all aspects of the photonics industry. www.electrooptics.com/subscribe Contact: Warren Clark, Publishing Director, warren.clark@europascience.com; Jon Hunt, Advertising Sales Manager, jon.hunt@europascience.com

## Energetiq Technology, Inc.

#1037

SPIE Corporate Member

7 Constitution Way, Woburn, MA, 01801 United States  
+1 781 939 0763; fax +1 781 939 0769  
info@energetiq.com

Energetiq Technology is the world's leading developer and manufacturer of ultra-bright broadband light sources for a wide variety of advanced applications in life and materials sciences, semiconductor manufacturing, and R&D. Energetiq's Laser-Driven Light Sources(LDLS™) are based on a revolutionary technology that generates high brightness across the spectrum, with high reliability and long life. Energetiq will be introducing the EQ-99 Manager, a smart controller for the LDLS line. Contact: Peter Dwyer, Director of Global Sales, pdwyer@energetiq.com

## Engineering Synthesis Design, Inc.

#936

SPIE Corporate Member

150 N Tucson Blvd, Tucson, AZ, 85716 United States  
+1 520 296 3068; fax +1 520 296 2897  
sales@esdimetrology.com; www.engsynthesis.com

**Featured Product: Dimetior Series Fizeau Interferometer**

ESDI is a globally recognized leader in providing innovative surface & wavefront metrology solutions for astronomical, aerospace, bio-medical, optical fabrication, data storage & production metrology applications. ESDI products include Fizeau, Shearing, sub-Nyquist and "Real Time" vibration insensitive Interferometers; the world-renowned IntelliWave™ software; Interferometer Accessories & Upgrades; and Custom Metrology Solutions. Contact: Jack Schumann, jack.s@esdimetrology.com

## Entegris

#1128

SPIE Corporate Member

300 Old Greenwood Rd, Decatur, TX, 76234-3068 United States  
+1 940 627 2121  
erin\_adkins@entegris.com; www.entegris.com

**Featured Product: SUPERSiC® silicon carbide mirrors and optical components for laser, sensor, surveillance & astronomy**

SUPERSiC® silicon carbide mirrors and optical components for laser, sensor, surveillance & astronomy applications. The flexibility of SUPERSiC allows for the efficient manufacture of lightweight, complex geometries and structures. Components can then be finished with a polishable CVD SiC coating or clad with silicon for diamond turning. Silicon Carbide is the material of choice for advanced optical applications; including Beryllium replacement & high heat flux scenarios. Contact: Hugo Vargas, Optics Specialist, hugo\_vargas@entegris.com; Erin Adkins, Global Mktg Comm Mgr, erin\_adkins@entegris.com

## Epner Technology, Inc.

#816

SPIE Corporate Member

78 Kingsland Ave, Brooklyn, NY, 11222-5603 United States  
+1 718 782 5948; fax +1 718 963 2930  
info@epner.com; www.epner.com

**Featured Product: Laser Gold®; Laser Black®**

A Hi-Tech Specialty Plating Company with a comprehensive array of electroplating, coating and optical fabrication technologies - NIST infrared standard, proprietary Laser Gold® and "light swallowing" Laser Black® processes; electroformed cold shields, custom-designed light waveguides, laser pump cavity reflectors and thermal barrier foil - serving laser, optics and photonics, semiconductor, automobile, medical, aerospace and military markets. Contact: David Epner, President & CEO, david@epner.com; Paul Brancato, Vice President & GM, paul@epner.com

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## Eulitha AG

#744

Industriestrasse Althau 1, Wuerenlingen, 5303 Switzerland  
+41 56 310 4279; fax +41 56 310 4153  
info@eulitha.com; www.eulitha.com

**Featured Product: Large area 1D and 2D photonic nanostructures and gratings with linear, hexagonal or square lattices**

Eulitha is a pioneer in the development of new nano-lithography technologies for production of high-quality nanostructures for application in photonics, semiconductors and other fields. Eulitha introduced its revolutionary PHABLE technology in 2010 for low-cost fabrication of photonic nanostructures over large areas. PHABLE is expected to enable production of LEDs, LCD displays and photovoltaic devices with higher performance, better energy efficiency and lower cost. Contact: Harun Solak, CEO, harun.solak@eulitha.com; Li Wang, Senior scientist, li.wang@eulitha.com

## Evatec

#743

150 Dow St, Manchester, NH, 03105 United States  
+1 603 669 9656; fax +1 603 606 7043  
infona@evatecnet.com; www.evatecnet.com

### PROMOTIONAL PARTNER

## Federal Laboratory Consortium for Technology Transfer

#1220

c/o Total Technology Inc, 950 North Kings Highway, Suite 105, Cherry Hill, NJ, 08034 United States  
+1 856 667 7727; fax +1 856 667 8009  
FLCMSO@federallabs.org; www.federallabs.org

**Featured Product: The FLC highlights collaboration of government-developed technology with the private sector.**

The Federal Laboratory Consortium (FLC) is the only nationwide network of federal laboratories providing a forum to develop strategies & opportunities for linking laboratory technologies and expertise with the private sector. The FLC was organized in 1974 and formally chartered by the Congress in 1986 to promote and strengthen technology transfer nationwide. Today, more than 280 federal laboratories, research centers, and their parent departments & agencies are FLC members. Contact: Thomas Brown, Program Manager, tbrown@totaltechnologyinc.net

## Fianium, Inc.

#846

**SPIE** Corporate Member

858 W Park St, Eugene, OR, 97401 United States  
+1 541 343 6767; fax +1 541 343 1838  
sales@fianium.com; www.fianium.com

Fianium manufactures the most extensive range of optical supercontinuum lasers, operating across 400-2400 nm spectral range and delivering up to 8W of power in a collimated laser beam. These unique laser sources enable multiple applications in BioSciences and imaging instruments. Other high power and high energy, picosecond and femtosecond fiber lasers enable applications in Metrology and Materials Processing. Contact: Ted Naugler, US Sales Manager, sales@fianium.com; Ross Hodder, European Sales Manager, info@fianium.com

## Fiber Optic Solution Sdn Bhd

#1140

**SPIE** Corporate Member

Jalan Indah 23, 8B 2nd Fl, Taman Cheras Indah Kuala Lumpur, 56100 Malaysia  
+60 126 848 842  
general@thundergroup.net; www.thundergroup.net

## Flexible Optical B.V.

#821

**SPIE** Corporate Member

Polakweg 10-11, Rijswijk, 2288 GG Netherlands  
+31 70 262 9420; fax +31 70 710 1400  
oko@xs4all.nl; www.okotech.com

## Fotofab

#928

**SPIE** Corporate Member

3758 W. Belmont Ave., Chicago, IL, 60618 United States  
+1 773 463 6211; fax +1 773 463 3387  
sales@fotofab.com; www.fotofab.com

## Gentec Electro-Optics

#1143

**SPIE** Corporate Member

445 Saint-Jean-Baptiste Ste 160, Quebec, QC, G2E 5N7 Canada  
+1 418 651 8003; fax +1 418 651 1174  
info@gentec-eo.com; www.gentec-eo.com

**Featured Product: Beamage 3.0 is the first USB 3.0 camera designed for Beam Profiling. Includes complete software.**

Gentec-EO has 40 years of experience in the laser measurement field. Product line includes a complete range of laser power & energy meters, photo detectors, OEM detectors, beam diagnostics and diffractive optics. With the recent addition of Spectrum Detector products, the range now includes THz detectors, ultra-fast pyro detectors that measure pulse-to-pulse energy up to 200 kHz, position sensing systems, ultra-sensitive fJ optical detectors, very sensitive and broadband radiometers and more. Contact: Don Dooley, General Manager, ddooley@gentec-eo.com; Burt Mooney, Sales Development Manager, bmooney@gentec-eo.com

## GPD Optoelectronics Corp

#822

**SPIE** Corporate Member

7 Manor Parkway, Salem, NH, 03079 United States  
+1 603 894 6865; fax +1 603 894 6866  
sales@gpd-ir.com; www.gpd-ir.com

**Featured Product: InGaAs/InGaAs Two-Color Sensor for Ratio Pyrometry**

GPD Optoelectronics Corp is a global OEM supplier of Ge and InGaAs photodiodes operating in the 0.8 to 2.6  $\mu\text{m}$  spectrum. Our Ge and InGaAs photodiodes are utilized in commercial analytical instrumentation, telecommunications, aerospace and defense applications. These products are available with multi-stage thermoelectric cooling, fiberoptic pigtails/connectors, active receptacles, ceramic submounts, and custom mechanical housings. GPD offers 'rapid prototyping' services for your application. Contact: Dan LaPointe, Sales, dlapointe@gpd-ir.com; George Gasparian, Sales, ggasparian@gpd-ir.com

## Gulf Photonics, Inc.

#819

**SPIE** Corporate Member

448 Commerce Blvd, Oldsmar, FL, 34677 United States  
+1 813 855 6618; fax +1 813 855 6627  
mnewel@gulffiberoptics.com; www.gulffiberoptics.com

**Featured Product: Fiber Optic Probes, Bundles and Assemblies for UV/VIS/NIR applications**

Gulf Photonics is a manufacturer of high quality fiber optic assemblies, probes, patch cables and bundles. We work with a wide variety of fibers from the Deep UV to NIR, and our engineering team is ready to help design custom assemblies and bundles for specialized applications. Gulf maintains an edge in providing high reliability terminations for applications operating in the Deep UV range. Contact: Brice Barrett, VP Business Development, bbarrett@gulffiberoptics.com

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# Exhibition Guide

## Hamamatsu Corporation

#517

SPIE Corporate Member

360 Foothill Rd, Bridgewater, NJ, 08807-2932 United States  
+1 908 231 0960; fax +1 908 231 1539  
usa@hamamatsu.com; www.hamamatsu.com

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. These devices include photomultiplier tubes, photodiodes, CCDs, cameras, and light sources. Hamamatsu also manufactures optical components. Hamamatsu products are used throughout the world in scientific, industrial, and commercial applications.

## Heidelberg Instruments Inc.

#837

SPIE Corporate Member

2807 Oregon Ct Ste E2, Torrance, CA, 90503-2635 United States  
+1 310 212 5071; fax +1 310 212 5254  
info@himt.de; www.himt.de

**Featured Product: The MicroPG501 Tabletop Maskless Aligner System. Micro scale patterning for research and Development**

Heidelberg Instruments Mikrotechnik GmbH is the market leader in Direct Write Lithography Systems with an installation base over 500 systems in 40 countries and global offices in Asia, America and Europe. Heidelberg Instruments offers equipment for research and development labs as well as the industrial production environment. Customer applications include MEMS, Integrated Optics, Micro Fluids, Lab-on-a-Chip devices and Photomask fabrication. Contact: Niels Wijnaendts van Resandt, Director Sales & Marketing, nie@himt.us

## Hellma USA, Inc.

#735

SPIE Corporate Member

80 Skyline Drive, Plainview, NY, 11803 United States  
+1 516 939 0888; fax +1 516 939 0555  
info@hellmausa.com; www.hellmausa.com

**Featured Product: Zeiss CGS CCD Spectrometer module**

Manufacturer of Hellma Optics, Photometer Cells, Fiber Optic Immersion Probes, Photometric Calibration Standards, Quartz Microplates. Cylindrical/Flat Optics, Beam Splitters and Mirrors for Laser and other applications. Supplier of Heraeus Light Sources including D2, HCL, PID, Spectral Line; Zeiss MMS/MCS/PGS/CGS. Miniature Spectrometer modules covering 190-2200nm in combination; Custom designs of all products. New: High-quality CaF<sub>2</sub> crystals grown from purest (synthetic) raw material. Contact: Evan Friedmann, Technical Sales, evan@hellmausa.com; Dan Fields, dfields@hellmausa.com

## Heraeus Quartz America LLC

#529

SPIE Corporate Member

100 Heraeus Blvd, Buford, GA, 30518-3456 United States  
+1 678 714 4350; fax +1 678 714 4355  
sales.hqs.optics.us@heraeus.com; optics.heraeus-quarzglas.com

**Featured Product: Spectrosil synthetic fused silica for deep UV applications and high power NIR lasers.**

Heraeus is a leader in the manufacturing of high purity quartz materials and components, and produces various types of high purity fused silica for use in semiconductor manufacturing, telecommunications, optical, chemical, lamps and a variety of other advanced applications. Contact: David Gritz, Director of Sales Optics, david.gritz@heraeus.com; Robert Sawyer, Account Manager Optics, robert.sawyer@heraeus.com

## Hinds Instruments

#520

SPIE Corporate Member

7245 NW Evergreen Pkwy, Hillsboro, OR, 97124 United States  
+1 503 690 2000; fax +1 503 690 3000  
sales@hindsinstruments.com; www.hindsinstruments.com

Hinds Instruments is the polarization metrology specialist for applications including stress birefringence, MOKE, Stokes and Mueller Matrix polarimetry, fluorescence polarization, Faraday rotation, interferometry, and others. Hinds products include Exicor® birefringence measurement and hysteresis loop tracer systems, imaging systems, Mueller matrix polarimeters, and a complete line of polarization components including photoelastic modulators, optical choppers, detectors, and lock-in amplifiers. Contact: Connie Wimmer, Technical Sales, sales@hindsinstruments.com; Linda Hirschy, Applications Scientist, sales@hindsinstruments.com

## Hitachi High Technologies America, Inc

#625

SPIE Corporate Member

1375 N. 28th Ave., Dallas, TX, 75261 United States  
+1 800 548 9001; fax +1 301 990 0472  
Sales-LS@hitachi-hta.com; www.hitachi-hta.com

**Featured Product: U4100 UV-Visible-NIR Spectrophotometer**

Hitachi High Technologies America, Inc., a global leader serving the needs of analytical labs, provides a wide array of scientific instrumentation, including Variable Pressure/UHR Field Emission Scanning Electron Microscopes, Biological and Analytical Transmission Electron Microscopes, Focused Ion/Electron Beam Systems, Table Top Microscopes, Ion Milling sample preparation equipment, fluorescence and UV-Vis spectrophotometers. Contact: Luis Moreno, sales-ls@hitachi-hta.com

## Hofstadter Analytical Services, LLC

#1223

SPIE Corporate Member

10 N Norton Ave Ste 120, Tucson, AZ, 85719 United States  
+1 520 747 3282; fax +1 520 622 1124  
www.hofstadteranalytical.com

## Horiba Instruments Incorporated

#1145

SPIE Corporate Member

3880 Park Ave, OEM Spectroscopy Div, Edison, NJ, 08820 United States  
+1 732 494 8660  
www.horiba.com/scientific/contact-us; www.horiba.com/scientific

## IBC Engineered Materials Corp.

#436

55 Jonspin Rd, Wilmington, MA, 01887-1020 United States  
+1 978 284 8900

**Featured Product: High-precision, lightweight/high-modulus investment castings for structural and optical application**

IBC Engineered Materials Corp. uses a lost-wax process to provide high-precision investment castings of beryllium and aluminum for structural and optical applications where lightweight, high-modulus and thermal conductivity are critical operational requirements. Because Engineered Materials provides near-net-shape castings, there is no wasted raw materials and the associated machining costs are minimized. EMC operates from a state-of-the-art investment casting facility located in Wilmington, MA. Contact: David Hinds, Manager, Aerospace & Defense Sales, dhinds@ibcadvancedalloys.com; Chris Huskamp, Technical Business Development, chuskamp@ibcadvancedalloys.com



## IDEX Optics & Photonics

#840

**SPIE** Corporate Member

200 Dorado Place SE, Albuquerque, NM, 87123 United States  
+1 505 296 9541; fax +1 505 298 9908  
www.idexcorp.com

### Featured Product: Optical systems, lasers and laser systems

Melles Griot, a unit of IDEX Optics & Photonics, designs and manufactures Optical Systems, Optomechanical Shutters, Lasers, and Laser-based light engines. By working seamlessly with the customer from start to finish, we deliver high-value engineered solutions for Analytical Instrumentation, Bio-Instrumentation, Defense and Semiconductor Equipment applications. Melles Griot provides the perfect balance of performance, reliability, and manufacturability for OEM applications worldwide.

## Infinite Optics Inc.

#922

**SPIE** Corporate Member

1712-F Newport Circle, Santa Ana, CA, 92705 United States  
+1 714 557 2299; fax +1 714 557 2170  
info@infiniteoptics.com; www.infiniteoptics.com

Specializing in designing and depositing thin-film coatings ranging from 193nm's to 20 microns including: AR, NIR, FLIR, SWIR, Visible and UV filters, hot and cold mirrors, beamsplitters and reflective coatings. Supporting many industries by fabricating and coating optics required for production. Services include special applications, development, production and quality control. We polish flats up to 10-in. and coat substrates up to 32-in. We are DDTC registered and ITAR compliant. Contact: Stan King, sales, stan@infiniteoptics.com; Geza Keller, sales, geza@infiniteoptics.com

## Inrad Optics

#834

**SPIE** Corporate Member

181 Legrand Ave, Northvale, NJ, 07647 United States  
+1 201 767 1910; fax +1 201 767 9644  
sales@inradoptics.com; www.inradoptics.com

Inrad Optics manufactures optics for applications from sensing to imaging. Our turn key production facilities offer crystal growth for non-linear optics, precision polishing for custom optics, diamond turning for aspheric mirrors, optical contacting for opto-mechanical assemblies, and thin film coating for multi-spectral imaging. Stop by to learn more about our new High Density Plasma Assist Coating Technology. Contact: George Murray, VP Sales & Marketing, gmurray@inradoptics.com; Jeff Brunner, Sales Manger, Eastern US, jbrunner@inradoptics.com

## Instrument Technology Research Center

#934

20 R&D Rd VI, Hsinchu Science Based Industrial Park, Hsinchu, 0076 Taiwan  
+1 886 3 577 9911; fax +1 886 3 578 9343  
www.itrc.org.tw

### Featured Product: Advanced optical, mechanical and electrical instruments

Founded in 1974, Instrument Technology Research Center (ITRC) has been known as a pioneer in vacuum and optics technologies and is now dedicated to the development of frontier instrument technology platform for fulfilling goals of national technology policy and needs of industrial economic development. With a sophisticated service platform for advanced instrument applications, ITRC aims to bridge the academia and industry, providing innovative engineering prototyping and customization. Contact: Emily Wu, Project Manager, emily@itrc.narl.org.tw; Carol Wu, Engineering Assistant, szuying@itrc.narl.org.tw

## PROMOTIONAL PARTNER

## IOP Publishing

#824

Temple Circus, Temple Way, Bristol, BS1 6HG United Kingdom  
+44 (0)1179 2974 81; fax +44 (0)1179 2943 18  
custserv@iop.org; www.ioppublishing.org/

IOP Publishing is a global scientific publisher, which provides publications through which leading-edge scientific research is distributed worldwide. IOP Publishing provides a range of journals, magazines, websites, and services which enable researchers and research organizations to reach the widest possible audience for their research. We combine the culture of a learned society with global reach and highly efficient and effective publishing systems and processes. Contact: Fiona Walker, Exhibition Manager, fiona.walker@iop.org; Christopher Thomas, Group Advertising Manager, christopher.thomas@iop.org

## Isuzu Glass, Inc.

#419

**SPIE** Corporate Member

23505 Crenshaw Blvd. Suite 130, Torrance, CA, 90505 United States  
+1 310 517 1866; fax +1 310 517 1869  
sales@isuzuglas.com; www.isuzuglass.com

### Featured Product: Color Glass Filters and Molded Optics. Lighting Passport- Spectrum measuring by Bluetooth!

Isuzu Glass is a manufacturer of optical filter glasses and molded optics. In our corporate history of over 100 years we have dedicated our efforts to the glass material both in melting new types of filter glass and in manufacturing glass components by developing unique technologies in steps ahead of competitors. Contact: Sean Wilson, Sales, sean@isuzuglass.com; Hiro Yokoi, Vice President, hiro@isuzuglass.com

## J.A. Woollam Co., Inc.

#420

645 M St Ste 102, Lincoln, NE, 68508 United States  
+1 402 477 7501  
sales@jawoollam.com; www.jawoollam.com

### Featured Product: Spectroscopic Ellipsometers

J.A. Woollam Company offers a wide range of spectroscopic ellipsometers for nondestructive materials characterization, including thin film thickness (single and multilayer), optical constants, composition, growth/etch rates, and more. Instruments available for research and manufacturing metrology covering spectral ranges from vacuum ultra-violet to far infrared. Offering table-top, in-line, and in-situ models.

## JENOPTIK Optical Systems

#828

**SPIE** Corporate Member

16490 Innovation Drive, Jupiter, FL, 33478 United States  
+1 561 881 7400; fax +1 561 881 1947  
sales@jenoptik-inc.com; www.jenoptik-inc.com

JENOPTIK Optical Systems delivers a unique range of custom optical solutions ranging from precision assemblies to waferscale microoptics and in materials ranging from glasses, to crystals and polymers. Competencies include optical test, optical polishing, diamond turning and lithographic etching of materials for applications covering DUV to LWIR. We combine design and engineering with high volume manufacture at US and Global manufacturing sites in Germany and Israel. Contact: Ray Malcom, VP Sales & Marketing, ray.malcom@jenoptik-inc.com; Beth McDonald, Inside Sales Representative, beth.mcdonald@jenoptik-inc.com

# Exhibition Guide

## Kaufman & Robinson

#747

1330 Blue Spruce Dr, Ft Collins, CO, 80524 United States  
+1 970 495 0187; fax +1 970 484 9350  
www.ionsources.com

## KETEK GmbH

#931

Hofer Str. 3, München, 81737 Germany  
+49 89 6734 37 70; fax +49 89 6734 67 77  
info@ketek.net; www.ketek.net

### Featured Product: Silicon Photomultipliers (SiPM) for optical spectroscopy and ultralow level light detection.

KETEK is a leading manufacturer of Silicon Photomultipliers (SiPM), presenting a broad portfolio of SiPM modules with areas from 1 mm<sup>2</sup> to 36 mm<sup>2</sup> and best in class photon detection efficiency (PDE) for blue light (420nm), applicable from UV to NIR. Additionally KETEK offers tailor-made array solutions e.g. for PET. The wide range of sensor characteristics, geometries and packages covers the requirements of manifold applications like medical imaging, optical spectroscopy or biosciences. Contact: Werner Hartinger, Manager Sales & Marketing SiPM, werner.hartinger@ketek.net; Juergen Knobloch, Director Sales & Marketing, juergen.knobloch@ketek.net

## L-3 Communications Corp, Tinsley

#534

**SPIE** Corporate Member  
4040 Lakeside Dr, Richmond, CA, 94806-1936 United States  
+1 510 222 8110; fax +1 510 223 4534  
sales@asphere.com; www.asphere.com

Manufacturer of custom precision optical components, assemblies and sub-systems. Fabricates complex aspheric surfaces for reflective and refractive systems from 50mm to 1.5 meters in size and a wide variety of materials, including glass, Be, Al and SiC. Founded in 1926 and also known in the industry as the "Asphere Company", Tinsley has many years of experience fabricating precision optics in such areas as Space and Astronomy, Laser Fusion, Surveillance and Tactical applications. Contact: Clay Sylvester, Director of Contracts, clay.sylvester@L-3com.com; Keith Carrigan, Product Manager, Defense & Space, keith.carrigan@L-3com.com

## Lake Shore Cryotronics

#623

**SPIE** Corporate Member  
575 McCorkle Blvd, Westerville, OH, 43082 United States  
+1 614 891 2244; fax +1 614 818 1600  
sales@lakeshore.com; www.lakeshore.com

### Featured Product: Our new THz characterization system explores properties of materials for tomorrow's technologies.

Supporting advanced research since 1968, Lake Shore (www.lakeshore.com) is a leading innovator in measurement and control solutions for materials characterization under extreme temperatures and magnetic fields. Products include cryogenic temperature sensors and instruments, magnetic test and measurement systems, probe stations, and materials characterizations systems that explore electronic and magnetic properties of next generation materials. Lake Shore serves researchers internationally. Contact: Rob Ellis, VP Strategic Planning, rob.ellis@lakeshore.com; Brad Dodrill, VP Sales, brad.dodrill@lakeshore.com

## Lambda Research Corporation

#1028

**SPIE** Corporate Member  
25 Porter Rd, Littleton, MA, 01460-1434 United States  
+1 978 486 0766; fax +1 978 486 0755  
sales@lambdare.com; www.lambdare.com

### Featured Product: TracePro® Illumination Design, Analysis and Optimization Software

TracePro streamlines the prototype to manufacturing process for illumination systems with a CAD interface, 3D optimization, extensive model library, and interoperability with popular CAD systems. Combined with the OSLO lens design & optimization system, Lambda Research Corporation encapsulates decades of optical engineering experience into a comprehensive design environment. Backed with training, support, and a full line of light measurement systems, TracePro accelerates your time to market. Contact: Michael Gauvin, VP Sales & Marketing, mgauvin@lambdare.com; Andrew Knight, Sales Manager, sales@lambdare.com

### PROMOTIONAL PARTNER

## Laser Focus World

#616

**SPIE** Corporate Member  
PennWell Corp, 98 Spit Brook Rd, LL7, Nashua, NH, 03062 United States  
+1 603 891 0123; fax +1 603 891 9498  
www.laserfocusworld.com

### Featured Product: Laser Focus World

Published since 1965, Laser Focus World is a global resource for engineers, researchers, scientists and technical professionals providing comprehensive coverage of optoelectronics and photonics technologies, applications, and markets. Laser Focus World reports on and analyzes the latest developments and significant trends in both technology and business in the worldwide optoelectronics and photonics industry. Contact: Jeff Nichols, National Sales Manager, jeffn@pennwell.com

## Laser Quantum Inc

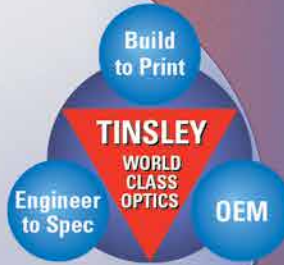
#430

**SPIE** Corporate Member  
2033 Gateway Pl Ste 500, San Jose, CA, 95110-3712 United States  
+1 408 467 3885; fax +1 408 467 3886  
sales@laserquantum.com; www.laserquantum.com

### Featured Product: The gecco is a highly compact, self-starting 84MHz ultrafast laser with integrated pump source.

Laser Quantum are a world-class manufacturer of high quality solid-state and ultrafast laser sources. Our products are known for their reliability, compactness, performance-excellence and long operational lifetime. You will find our products in laboratories and integrated in systems and machines worldwide. Our lasers with their patented technology, are found in many applications ranging from attosecond physics to forensics and genomics. Visit www.laserquantum.com for more information. Contact: Daniel Jones, Sales & Service Engineer, sales@laserquantum.com; Barney Mitchell, VP Sales & Marketing, bmitchell@laserquantum.com

# Tinsley



## High-Performance Optics For Defense & Security. Prototype to Production...

EUV FUV DUV VIS NIR MWIR LWIR

### Mission-Critical Optics

#### Recon & Acquisition/Targeting

- ▲ Snap-Together Technologies
- ▲ Seekers

#### Mirrors & Lenses

- ▲ Visible Quality Metal Optics
- ▲ Free Form Diamond Turning
- ▲ Automated Polishing
- ▲ Off-Axis & Aspheric
- ▲ Flats & Windows
- ▲ Metals & Glass
- ▲ SiC, Ceramics & Crystals

#### Assembly, Integration & Test

- ▲ Directed Energy
- ▲ Collimators
- ▲ Inspection

#### Complete Analysis & Design

Rapid prototyping of loose components and subassemblies. Whether it is metal, ceramic or glass, our Solutions perform in your most difficult environments.



Integrated Optical Systems  
Tinsley

Tel: 510.222.8110  
www.asphere.com  
sales@asphere.com



## Your Optical Solutions Delivered Every Time



# Exhibition Guide

## LEONI Fiber Optics, Inc.

#1125

SPIE Corporate Member

209 Bulifants Blvd., Williamsburg, VA, 23188 United States  
+1 757 258 4805; fax +1 757 258 4694  
contact@leonifo.com; www.leonifo.com

Integrated global manufacturer of fiber optic preforms, fiber optics, cables, assemblies, components, devices, class II medical probes, switches (MM and SM), planar light light channels (PLC) . and Fiber Bragg Grating sensors. Concept to product, prototype to OEM, for all laser, sensor, spectroscopic test, validation, datacom, systems, or device level interconnects, from Factory Automation, Petrochem, Pharmaceutical to Wind and Solar, with manufacturing sites in the USA, Germany and China. Contact: Lisa Young, Industrial Sales Manager, contact@leonifo.com

## Luxel Corporation

#736

SPIE Corporate Member

60 Saltspring Dr, PO Box 1879, Friday Harbor, WA, 98250 United States  
+1 360 378 4137; fax +1 360 378 4266  
luxel@luxel.com; www.luxel.com

Luxel is the world's leading producer of ultra-thin freestanding filters used for soft x-rays and extreme ultraviolet light. Luxel products, including space flight filters, pressure windows, and imaging sensor protectors, are assembled in Class 5 cleanrooms. Filters are fabricated from over 70 different materials, as thin as 30 nanometers. We offer extensive technical support including: modeling, CAD design, and measurement. Lead times can be as short as 1 week. Contact us at www.luxel.com. Contact: Travis Ayers, President, travis.ayers@luxel.com; Bruce Lairson, Chief Scientist, bruce.lairson@luxel.com

## Mad City Labs, Inc.

#530

SPIE Corporate Member

2524 Todd Drive, Madison, WI, 53713 United States  
+1 608 298 0855  
sales@madcitylabs.com; www.madcitylabs.com

Mad City Labs designs and manufactures high precision, piezo based nanopositioning devices for research and industry. Our products offer innovative flexure guided designs, piezomotors, proprietary low drift PicoQ® sensor technology and closed loop control. System attributes include picometer precision, high speeds, real time position sensing. Suitable for inspection, metrology, microscopy, imaging and beam steering applications. Custom/OEM specialists. Contact: Technical Sales, sales@madcitylabs.com; European Sales, sales@madcitylabs.eu

## Meadowlark Optics, Inc.

#1217

SPIE Corporate Member

PO Box 1000, Frederick, CO, 80530 United States  
+1 303 833 4333; fax +1 303 833 4335  
sales@meadowlark.com; www.meadowlark.com

**Featured Product: Liquid Crystal devices and systems as well as other polarization solutions. UV to MIR metrology.**

Providing Polarization Solutions for over 30 years, Meadowlark Optics is your source for Liquid Crystal devices, Polarizers and Waveplates. We also provides cost-effective solutions by customizing our standard products to meet your needs, from the UV to the MIR, and developing unique solutions. We routinely measure our waveplates to an accuracy of 1/350-wave with greater precision if required. Please contact our Sales team with your requirements - sales@meadowlark.com or (303) 833-4333. Contact: Dan Rodda, Program Manager, drodda@meadowlark.com; Chris Toomey, Sales Engineer, ctoomey@meadowlark.com

## Micro Laser Systems, Inc.

#521

SPIE Corporate Member

12841 Western Ave. Suite H, Garden Grove, CA, 92841 United States  
+1 714 898 6001; fax +1 714 897 0979  
sales@microlaser.com; www.microlaser.com

**Featured Product: New Green and Blue diode lasers with circular beam and wavelength combined lasers will be displayed.**

Manufacturer of high performance diode laser and optical systems. New low cost diffraction limited diode lasers at 405nm, 450nm and 520nm will be presented for microscopy applications. Combined wavelengths in the visible region are also presented. Lasers are available in free space and fiber coupled versions. Additional optics can be integrated into the laser for a compact assembly. New RGB Fiber Collimator and High Performance Fiber Collimators for fiber lasers will be shown. Contact: Norma Adachi, Marketing Dir., sales@microlaser.com

## Mildex, Inc.

#524

SPIE Corporate Member

1388 Crittenden Rd, Rochester, NY, 14623-2308 United States  
+1 585 473 6540; fax +1 585 475 1971  
mildex@eznet.net; www.mildex.com

**Featured Product: Trioptics OptiCentric, able to measure lens centering errors and Super-Spherotronic-HR spherometer**

Available for demonstration are: 1) Trioptics OptiCentric, PC-controlled workstation for measurement of lens centering errors and assembly of optical systems. It can be optionally equipped for further measurements of EFL, BFL, FFL, Radius and MTF. Systems are available for all sizes of lenses in VIS or IR. 2) Trioptics Super-Spherotronic-HR Automatic Spherometer features encoder resolution 0.001mm and measurements which are traceable to NIST-USA. 3) Wells Research OS-400-40 MTF bench. Contact: Harvey Miller, President, mildex@eznet.net

## Mindrum Precision

#1021

SPIE Corporate Member

10,000 4th Street, Rancho Cucamonga, CA, 91730 United States  
+1 909 989 1728; fax +1 909 987 3709  
sales@mindrum.com; www.mindrum.com

Custom machining and polishing of ultra-precision components and assemblies. Complex shaping ability with simultaneous 5-axis CNC milling, CNC turning and CNC surface grinding. Plano, spherical and cylindrical polishing ability with spindle, continuous and double-side lappers and polishers. We work mainly with hard materials such as glass, quartz, sapphire and ceramics but also work with conventional materials such as aluminum, steel and titanium. Other capabilities include glassblowing, acid et Contact: Linda Kondris, Technical Sales, linda@mindrum.com; Adam Pohl, VP Engineering, adam@mindrum.com

## Minus K Technology Inc.

#525

SPIE Corporate Member

460 Hindry Ave Ste C, Inglewood, CA, 90301 United States  
+1 310 348 9656; fax +1 310 348 9638  
sales@minusk.com; www.minusk.com

**Featured Product: New compact high capacity CM-1 low-frequency negative-stiffness isolator, uses no air or electricity**

Manufacturer of vibration isolation systems for AFMs, SPMs, SEMs, metrology, micro-hardness testers, lasers and optics. They are low-cost, passive, vacuum adaptable and require no air or electricity. Products: table-top platforms, workstations, floor platforms and custom systems. Guaranteed 1/2 Hz natural frequencies make them effective against low-frequency building vibrations. Isolation is typically 10 to 100 times better than air tables and even better than the higher-priced active systems. Contact: Erik Runge, Director of Engineering, erik@minusk.com

## ML Optic

#749

SPIE Corporate Member

398 Pugang St, Jiangning Development Zone, Nanjing Jiangsu, 211100 China  
+ 86 25 844 36288; fax + 86 25 844 33188  
www.mloptic.com

## MOXTEK, Inc.

#723

SPIE Corporate Member

452 W. 1260 N., Orem, UT, 84057 United States  
+1 801 225 0930; fax +1 801 221 1121  
info@moxtek.com; www.moxtek.com

**Featured Product: Moxtek Proflux® UVD260 and UVD240 analyzers improve UV-Vis NIR Spectrophotometer performance**

Moxtek is a global leader in the design, development, and manufacture of inorganic wire grid optical polarizers, and is a leading manufacturer of miniature x-ray sources, detectors, and windows. From consumer electronics to scientific instrumentation, Moxtek is an enabler of product excellence in a wide range of technologies including: advanced optical systems, hazardous substances screening, recycling, and mining technologies. Each year Moxtek products enable many new scientific discoveries. Contact: Will Abraham, Sales Rep, wabraham@moxtek.com

## Mpnics Co. Ltd.

#734

302 Business incubation Center,, 108 Cheomdan venture-ro, Buk-gu, Kwangju, 500-470 Korea, Republic of  
+82 62 973 9520  
raisys@me.com; www.mpnics.com

**Featured Product: Laser coupler, micro lens array, aspheric cylindrical, bare metal capl lens, laser mirror/window, IR**

MPNICS Co., Ltd. is the leader of optics and photonics solution to provide services to customers with specialized optic technologies related industrial and medical laser, optical communications, measurement and testing of optical products. MPNICS provide the user-defined optical assembly including the all engineering design support through the optic design manufacturing and assembly of aspheric glass lens, high power anti-reflection coating, fiber align technology. Contact: Jesse Chao, Sales, jesse.chao@ymail.com; Sang Do Kang, CEO, raisys@me.com

## National Reconnaissance Office

#421

14675 Lee Road, Chantilly, VA, 20151 United States  
+1 703 808 2769; fax +1 703 808 2646  
dii@nro.mil; clii.westfields.net

**Featured Product: R & D Funding - The National Reconnaissance Office's Director's Innovation Initiative (DII)Program**

An R & D Funding Program - The National Reconnaissance Office's Director's Innovation Initiative invests in advanced technologies, fosters innovation, and provides seed funding to push the boundaries of technology to dramatically improve our overhead reconnaissance capabilities. It presents an opportunity for developers not traditionally associated with the NRO to participate in building the National Reconnaissance Office of the 21st Century. Contact: Mike Naumann, Program Manager, dii@nro.mil; Bill Harter, Program Support, dii@nro.mil

**PROMOTIONAL PARTNER**

## Nature Publishing Group

#746

75 Varick Street, 9th Floor, New York, NY, 10013-1917 United States  
+1 212 726 9200; fax +1 212 689 9711  
institutions@us.nature.com; www.nature.com

**Featured Product: Our physical sciences portfolio includes Nature Photonics.**

Nature Publishing Group (NPG) brings you leading scientific and medical research. Our portfolio combines the continued excellence of Nature, its associated research and review journals, and over 50 leading academic and society journals in the life, physical and clinical sciences. Our physical sciences portfolio includes specific titles in photonics, materials, nanotechnology, physics and chemistry. Visit the NPG stand 746 to pick up your free sample copies.

## Navitar

#1227

SPIE Corporate Member

200 Commerce Dr, Rochester, NY, 14623 United States  
+1 585 359 4000; fax +1 585 359 4999  
info@navitar.com; www.navitar.com

**Featured Product: Navitar will feature new telecentric lenses, custom microscopy solutions and custom objectives.**

Navitar designs, develops, and manufactures precision optical solutions used in a wide variety of industries including Biomedical & Life Sciences, Defense & Security, Industrial Imaging and Projection. Applications include machine vision, automation, assembly, imaging, testing, measuring, metrology, biometrics, telecommunications, photonics R&D, non-contact measurement, simulation, and much more. Contact: Craig Fitzgerald, VP New Product & Business Dev, c\_fitzgerald@navitar.com; Charles Rafoth, VP Domestic Sales, crafoth@navitar.com

## New Focus, A Brand of Newport Corporation

#1117

3635 Peterson Way, Santa Clara, CA, 95054 United States  
+1 408 980 4300; fax +1 408 980 5537  
contact@newfocus.com; www.newfocus.com/

# Exhibition Guide

## Newport Corporation

#1117

**SPIE** Corporate Member

1791 Deere Ave, Irvine, CA, 92606 United States  
+1 949 863 3144; fax +1 949 253 1680  
sales@newport.com; www.newport.com

Newport, the world's largest photonics company provides innovative solutions and industry leading product brands to multiple markets including the photonics and photovoltaic industries. Our combined broad product portfolio which includes: Corion®,

ILX Lightwave™, New Focus™, Ophir, Oriol® Instruments, Richardson Gratings™, and Spectra-Physics® Lasers enables us to better partner with our customers to provide complete photonic solutions to make, manage and measure light. Contact: Darron Young, Sr. Director, Sales North America, darron.young@newport.com

## Newport Thin Film Laboratory, Inc

#531

**SPIE** Corporate Member

13824 Magnolia Avenue, Chino, CA, 91710 United States  
+1 909 591 0276  
sales@newportlab.com; www.newportlab.com

### Featured Product: UV-IR Coatings

NTFL has been proving quality coatings worldwide for 35+ years, helping customers overcome engineering hurdles by designing and manufacturing coatings for commercial, aerospace, military, UV curing, germicidal, semiconductor, medical technology and scientific applications. Newport Thin Film Laboratory is a fully equipped coating facility specializing in the design and manufacture of vacuum deposited optical thin films. Contact: Ever Mata, Sales Manager, emata@newportlab.com; P. Scott Powers, PhD, Head Engineer, pspowers@newportlab.com

## NiPro Optics, Inc

#742

7 Marconi, Irvine, CA, 92618 United States  
+1 949-215-1151  
sales@niprooptics.com; www.niprooptics.com

### Featured Product: Diamond Turned Mirrors

NiPro Optics provides a full spectrum of precision manufacturing options to meet the demanding needs of your optical project. Located in Orange County, our Optical Diamond Turning Center manufactures to sub-micron tolerances for critical applications, and our vacuum deposition capabilities include protected gold, silver, and aluminum as well as several proprietary dielectric coatings. We also specialize in electroformed nickel components replicated from diamond turned tools. Contact: Robin Reed, General Manager, rob@niprooptics.com; Tom Gross, President, tom@niprooptics.com

## NKT Photonics Inc.

#835

1400 Campus Drive West, Morganville, NJ, 07751 United States  
+1 732 520 5366; fax +1 732 414 4094  
www.nktphotonics.com

### Featured Product: SuperK Supercontinuum sources, Koheras single frequency lasers, Crystal Fibre

NKT Photonics the leading company within Koheras ultra precise fiber lasers, SuperK Supercontinuum White Light Lasers and photonic Crystal Fibre. We focus on commercial optical solutions that simplify the value chain and bring enhancement for the end-customer. Our vision is to continuously increase the functionality embedded in the fiber and provide robust, simplified system architectures for our customers. Further information about NKT Photonics is available at www.nktphotonics.com. Contact: Hui Imam, Sales Manager, hui@nktphotonics.com; Brad Sohnlein, Sales Engineer, brs@nktphotonics.com

## Noren Products, Inc.

#922

**SPIE** Corporate Member

1010 O'Brien Drive, Menlo Park, CA, 94025 United States  
+1 650 322 9500  
tradeshow@norenproducts.com; www.norenproducts.com

## Norland Products Inc.

#620

**SPIE** Corporate Member

2540 US Highway 130, Ste 100, Cranbury, NJ, 08512 United States  
+1 609 395 1966; fax +1 609 395 9006  
tnorland@norlandproducts.com; www.norlandproducts.com

### Featured Product: Optical adhesive NOA 86 which can survive 85C/85% and low refractive index adhesives down to 1.315.

Manufacturer of high quality optical and electronic UV and heat curing adhesives. These one component, solventless adhesives cure quickly when exposed to UV light and are designed for precision bonding applications. Our Optical adhesives are designed for bonding components where low strain, optical clarity or low outgassing are required in military, aerospace, fiber optics and commercial optics applications. Norland Products also sells a selection of UV curing light sources. Contact: Timothy Norland, General Manager, tnorland@norlandproducts.com

## nPoint Inc.

#619

**SPIE** Corporate Member

3030 Laura Lane Suite 100, Middleton, WI, 53562 United States  
+1 608 824 1770  
info@npoint.com; www.npoint.com

nPoint designs and manufactures nanopositioning tools for OEM and research applications. Products include piezo actuated flexure stages and digital control electronics. Nanopositioner systems provide closed-loop translation in the X, XY, XYZ and tip/tilt. Enables high-speed, high-resolution, sub-nanometer precision for Optics, Semiconductor, Defense, Aerospace and Bio industries. Contact: Katerina Moloni, VP of Product Development, sales@npoint.com

## Ocean Optics, Inc.

#428

**SPIE** Corporate Member

830 Douglas Ave, Dunedin, FL, 34698-4942 United States  
+1 727 733 2447; fax +1 727 733 3962  
info@oceanoptics.com; www.oceanoptics.com

## Officina Stellare SRL

#1224

Via Marco Corner 2, Thiene, VI, 36016 Italy  
+ 39 044 5192 2219; fax +39 044 5192 2009  
info@officinastellare.com; www.officinastellare.com

### Featured Product: Sealed Tracking lenses. Aerospace/Astronomical telescopes. Fast visible/IR imager. Direct Energy.

Officina Stellare is specialized in the design and manufacturing of instrumentation for professional applications: astronomical observatories, airborne astronomical research, SSA, Aerospace and Defence, Astroimaging, CCD imaging cameras. Headquarters are in Thiene (Italy) whit R&D, manufacturing, assembly and quality control. The Optical Design and Manufacturing Unit is based in Occhiobello (Italy) whit the design/ manufacturing of optics up to 80cm. Customers include Cerro Tololo, Mit, Nasa. Contact: Gino Bucciol, Sales Manager, gino.bucciol@officinastellare.com



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the business of photonics  
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# Exhibition Guide

## Ohara Corporation

#617

23141 Arroyo Vista Pkwy, Suite 200, Rancho Santa Margarita, CA, 92688 United States

+1 949 858 5700; fax +1 949 858 5455

sales@oharacorp.com; www.oharacorp.com

Manufacturer of precision optical glasses available as strip/slab, cut/molded blanks, high homogeneity blanks, fine gobs and polished ball lenses, near UV transmitting i-Line glasses, glass ceramic substrates, CaF<sub>2</sub>, UV & IR materials, Quartz, Fused Silica (standard and excimer grade). Ohara ClearCeram-Z ultralow expansion glass with excellent CTE uniformity. Supplier of double side polished substrates (excellent flatness/low surface roughness). Contact: Brion Hoffman, President, brionhoffman@oharacorp.com; Chris Ghio, Director of Sales, chrisghio@oharacorp.com

## Open Photonics Inc.

#1222

220 North Rosalind Ave, 1st Floor, Orlando, FL, 32801 United States

+1 407 900 5259

info@open-photonics.com; www.open-photonics.com

**Featured Product: OPI was formed specifically to accelerate the commercialization of photonics R&D and technologies**

Open Photonics is an open innovation company intended to accelerate the commercialization of photonics technologies. We do this by facilitating unprecedented collaboration between companies with market channels and inventors with ideas that they want to see commercialized. Our approach to R&D and product development is extremely cost effective and accelerates time to market by linking our customers' infrastructure and market channels with the best minds and partners in the industry. Contact: Jason Eichenholz, CEO, info@open-photonics.com; Scott Faris, COO, info@open-photonics.com

## Ophir-Spiricon, A Newport Corporation Brand

#1117

3050 N 300 W, Logan, UT, 84341 United States

+1 435 753 3729; fax +1 435 753 5231

sales@us.ophiropt.com; www.ophiropt.com/laser-measurement

## Optical Perspectives Group, LLC

#1030

7011 E Calle Tolosa, Tucson, AZ, 85750-2532 United States

+1 520 529 2950

reparks@optiper.com; www.optiper.com

**Featured Product: MicroFinish Topographer (MFT) for on-machine roughness measurement and non-contact profiling**

Optical Perspectives Group, LLC is a consulting firm specializing in the hardware aspects of optical assembly, testing and alignment. In support of these functions, OPG markets three products; the Point Source Microscope (PSM) used for the alignment of optics and optical systems, the MicroFinish Topographer (MFT) for measuring surface finish and the CaliBall, an artifact used for calibrating interferometer transmission spheres using the random ball test. Contact: Robert Parks, President, reparks@optiper.com

## Optical Support, Inc.

#818

**SPIE** Corporate Member

1671 S. Research Loop, Suite 133, Tucson, AZ, 85710 United States

+1 520 546 0642

sgarcia@opticalsupport.biz; www.opticalsupport.biz

Optical Support provides complete optomechanical design and prototyping services. Starting with a design concept, system requirements or an optical prescription, we provide complete optomechanical system design, assembly, alignment and testing. We are facilitated with a fully operational CNC machine shop. Our clean optical assembly workstations use test and alignment equipment for visible and NIR applications. Save your team time and money to manage other efforts. Contact: Michael Savard, President, msavard@opticalsupportinc.com; Skip Savard, ssavard@opticalsupportinc.com

## Optics Technology, Inc.

#1122

**SPIE** Corporate Member

3800 Monroe Ave Ste 6, Pittsford, NY, 14534 United States

+1 585 586 0950; fax +1 585 248 2371

info@opticstechnology.com; www.opticstechnology.com

**PROMOTIONAL PARTNER**

## optics.org

#1045

2 Alexandra Gate, Cardiff, CF24 2SA United Kingdom

+44 29 2089 4747; fax +44 29 2089 4750

sales@optics.org; www.optics.org

Optics.org is the longest-running online resource targeted toward OEMs and system integrators in the core growth markets for photonics applications, and is your gateway to thousands of potential new customers looking to buy your products and services. From LEDs to industrial lasers and from sensing to microscopy, optics.org covers all the latest company, product and business news as well as in-depth articles on product application and market analysis. Contact: Robert Fisher, Head of Sales and Marketing, rob.fisher@optics.org; Sara Liebert, Sales, Career Center Coordinator, saral@spie.org

## Optiforms

#1018

**SPIE** Corporate Member

42310 Winchester Rd, Temecula, CA, 92590-4810 United States

+1 951 296 1300; fax +1 951 296 1178

info@optiforms.com; www.optiforms.com

**Featured Product: Electroformed Optical Reflector**

Optiforms, Incorporated is a components manufacturer that was established in 1984. We offer customers electroformed products and optical coatings. Our mission is to provide the best products and services possible for customers seeking the highest levels of performance and quality. With over 27 years of experience, we have created a large selection of standard products and have the ability to produce your custom substrate requirements. Contact: Sales@optiforms.com

## Optikos Corporation

#637

**SPIE** Corporate Member

107 Audubon Rd, Bldg 3, Wakefield, MA, 01880 United States

+1 617 354 7557; fax +1 617 354 5946

info@marketing.com; www.optikos.com

Optikos Corporation is the world's largest manufacturer of equipment for the measurement of optical image quality. For nearly 30 years, Optikos has been a recognized leader in the fields of optical and electro-optical testing; we offer complete solutions for both optical system qualification and system level tests on imagers ranging from the ultraviolet to the far infrared. Contact: Roger Kirschner, Sales and Marketing Director, rkirschner@optikos.com

# My Photonics Media TO-DO LIST

Booth #416

## Play Light Masters



Are you good at guessing company logos?

Current on industry news and events?

Can you tell Snell's law of refraction from Abbe's law?

Do you know a confocal microscopy image from one acquired by epifluorescence?



Are you the next Light Master? There's only one way to find out! Play Light Masters at the Photonics Media booth, #416, at Optics & Photonics. You could take your place at the top of the Photonics Trivia Pantheon AND be entered into a random drawing for a Google Nexus 7 tablet!

Drawing will be held at 1 p.m. on Thursday, 8/29/13.

## Scan Badge, Enter to Win

Have your badge scanned when you're at the Photonics Media booth, and you are entered to win a \$100 gift card from Amazon. Drawings will be held at 3 p.m. on Tuesday, 8/27/13, and Wednesday, 8/28/13, and at 1 p.m. on Thursday, 8/29/13.



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# Exhibition Guide

## Optimax Systems

**SPIE** Corporate Member

6367 Dean Parkway, Ontario, NY, 14519 United States  
+1 585 265 1020; fax +1 585 265 1033  
sales@optimaxsi.com; www.optimaxsi.com

Optimax is set up to manufacture, test and deliver with the speed and performance your program requires. Our reliability has allowed us to become America's largest optics prototype manufacturer. We've invested in the technology and research that will enable your next program, but remain the people who are committed to small volume, high quality and quick delivery of your prototype optic needs. Contact: Mark Palvino, Vice President of Sales, sales@optimaxsi.com; Joe Pinto, Sales Manager, sales@optimaxsi.com

#1017

## Oriel Instruments, A Brand of Newport Corp

#1117

150 Long Beach Blvd, Stratford, CT, 06615-7148 United States  
+1 203 377 8282; fax +1 203 378 2457  
contact@oriel.com; www.newport.com/oriel/

## Osela Inc.

#1019

**SPIE** Corporate Member

1860 32nd Avenue, Lachine, QC, H8T 3J7 Canada  
+1 514 631 2227; fax +1 514 631 2462  
info@oselainc.com; www.oselainc.com

## OptiPro Systems

**SPIE** Corporate Member

6368 Dean Parkway, Ontario, NY, 14519 United States  
+1 585 265 0160  
sales@optipro.com; www.optipro.com

#918

## PerkinElmer

#930

940 Winter Street, Waltham, MA, 02451 United States  
+1 203 925 4602  
CustomerCareUS@perkinelmer.com; www.perkinelmer.com

**Featured Product: PRO 80 UFF: Fast and accurate UltraForm Finishing of planos, spheres & aspheres up to 80mm.**

World leader in providing CNC optical fabrication equipment for up to 5-axis grinding, polishing, and metrology of spheres, aspheres and conformed optics. Products include 5-axis optical generators, high speed spherical polishers, UltraForm Finishing (UFF) machines, and both contact and non-contact metrology solutions to help companies prosper in the precision optics industry. OptiPro controls all phases of production of our optics manufacturing equipment at our modern facility in Ontario, NY. Contact: Mike Bechtold, President, mike@optipro.com; David Mohring, Director of Technical Sales, dmohring@optipro.com

**METER BOARD SPONSOR**

## Photon Engineering LLC

#417

**SPIE** Corporate Member

440 S Williams Blvd #106, Tucson, AZ, 85711 United States  
+1 520 733 9557; fax +1 520 733 9609  
info@photonengr.com; www.photonengr.com

**Featured Product: FRED Optical Engineering Software**

Photon Engineering, LLC is a consulting and software development firm based in Tucson, Arizona. Photon Engineering develops and markets FRED, the premier proven software to solve today's challenging optical engineering problems. Users working within FRED's 3D virtual prototyping CAD environment can model and analyze virtually any optomechanical system containing arbitrary coherent, incoherent, and partially coherent sources. Engineering consulting and short courses are offered worldwide. Contact: Donata Pfisterer, Sales, donatap@photonengr.com

## Optofluidics, Inc.

#1129

**SPIE** Corporate Member

3711 Market Street, 8th Floor, Philadelphia, PA, 19104 United States  
+1 215 966 6252  
thompson@optofluid.com

## OptoSigma Corp.

#528

**SPIE** Corporate Member

3210 S Croddy Way, Santa Ana, CA, 92704 United States  
+1 949 851 5881  
sales@optosigma.com; www.optosigma.com

**Featured Product: Optics, Lens Assemblies, Objectives, Optical Coatings, Opto-Mechanics, Manual & Motorized Stages**

Global Manufacturer of Optics, Opto-Mechanics and application systems for Medical, Semiconductor, telecommunications, security/Defense, Research, R&D. Standard products available through our catalog and company website for fast delivery. Custom/OEM manufacturing for low or high volume, build to print, JIT, Kanban. Manufacturing facilities located in Japan, China and the USA. All factories company owned and operated. High focus on quality, service and on time delivery. Contact: Dan Denison, Regional Sales Manager, dan@optosigma.com; Steve McNamee, VP & General Manager, steve@optosigma.com

## Photon etc

#730

**SPIE** Corporate Member

5795 Avenue De Gaspé, Montreal, QC, H2S 2X3 Canada  
+1 514 385 9555; fax +1 514 279 5493  
info@photonetc.com; www.photonetc.com

**Featured Product: PL and Raman Hyperspectral Imaging (IMA & RIMA), Tunable Laser Sources and Filters, Infrared Cameras**

From solar cells to live cells, our fast and integrated hyperspectral imaging systems provide researchers with access to the latest innovations in optical and photonic instrumentation. Spectrally resolved PL, EL and Raman imaging offer considerable advantages such as absolute calibration of intensity, micrometer scale resolution, and excitation/detection on a surface. Inspired by the scientific creativity found in Montreal and Quebec, we promote open and collaborative innovation and excellence. Contact: Bernard-Alexandre Gaulin, Marketing & Sales Director, bagaulin@photonetc.com; Francesca Mangiarini, Application Scientist, fmangiarini@photonetc.com

## Photonic Cleaning Technologies, LLC #925

SPIE Corporate Member

1895 Short Lane, Platteville, WI, 53818 United States  
+1 608 574 7814

davidg@photoniccleaning.com; www.photoniccleaning.com

**Featured Product: First Contact Polymer™. Available in Colorless and Red and each in Spray and Non-Spray Formulas**

Manufacturer of First Contact Polymers™ - "THE Cleaning and Protection System." Apply liquid polymer solutions to surfaces and peel the resulting dried film leaving the surface nearly atomically clean. Independent XPS/ESCA and Laser Damage Threshold testing shows no residue down to the molecular level! Safe with high power laser optics. Remove Dust & Fingerprints. Reduce Solvent Waste. Non-Toxic Inert Polymer and solvents. Clean Nanostructures, Gratings & Masks! Protect and clean microscope Contact: David Giesen, Technical Sales and Manufacturing Manager, davidg@photoniccleaning.com; James Hamilton, Chairman and CTO, hamiltonj@photoniccleaning.com

COFFEE BREAK SPONSOR AND PROMOTIONAL PARTNER

## Photonics Media #416

SPIE Corporate Member

100 West Street, 2nd Floor, Pittsfield, MA, 01201 United States  
+1 413 499 0514; fax +1 413 442 3180

photonics@laurin.com; www.photonics.com

**Featured Product: Light Masters Tirvia Game**

Test your knowledge of the photonics industry when you play our Light Masters trivia game. Try to answer as many questions correctly in a 90 seconds to earn bragging rights to the top score in one of four versions of the game. Everyone who plays is entered to win a prize. Stop by booth 416 to play! Contact: Karen Newman, Group Publisher, editorial@photonics.com; Ken Tyburski, Director of Sales, advertising@photonics.com

PROMOTIONAL PARTNER

## Photonics Online #923

2591 Wexford-Bayne Rd Ste 305, Bldg II, Sewickley, PA, 15143-8676 United States

+1 724 940 7555; fax +1 724 940 7707

info@photonicsonline.com; www.photonicsonline.com

**Featured Product: Electronic Military & Defense Annual Resource, 3rd Edition**

Photonics Online -- Where the Future of Photonics is Found -- is the leading online community and industry resource for optics and photonics professionals. On the Web since 1997, Photonics Online serves the needs of design engineers, scientists, R&D, and business executives by providing engaging original content, breaking research, industry news/views, product updates, and technical articles. Industries served include military/defense, medical imaging, industrial applications, and many others. Contact: Geoffrey Tecza, Director of Sales & Acting Publisher, gtecza@photonicsonline.com; Nathan Miller, Account Executive, nmiller@photonicsonline.com

EXHIBITOR LOUNGE SPONSOR AND PROMOTIONAL PARTNER

## Physics Today #1225

One Physics Ellipse, College Park, MD, 20740-3843 United States

+1 301 209 3005; fax +1 301 209 0842

jbebee@aip.org; www.aip.org

**Featured Product: Pick up a free copy of Physics Today to see the science that will shape future technologies.**

Tomorrow's optical innovations start with the researchers at government, industrial and university labs who read Physics Today. 52% of Physics Today readers list their primary job as research. In fact, Physics Today reaches more researchers than Photonics Spectra, Laser Focus World, and NASA Tech Briefs combined. Physics Today is the foremost physics magazine in the world, delivered to more than 360,000 readers via print, digital editions, the web, e-mail alerts, and RSS feeds. Contact: Randy Nanna, Publisher, Rnanna@aip.org; Jeff Bebee, Marketing Director, Magazines, jbebee@aip.org

## PI (Physik Instrumente) L.P. #1016

SPIE Corporate Member

16 Albert St, Auburn, MA, 01501-1304 United States

+1 508 832 3456; fax +1 508 832 0506

info@pi-usa.us; www.pi-usa.us

ISO 9001, global leader in nanopositioning, Hexapods, ultra-precision motion control & piezo stage positioning systems for OEM & research. Piezo Stages; Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Fast Steering Mirrors/Active Optics; Long-Life Multilayer Actuators; Ceramic Linear Motors, Piezo Drivers & Digital Controllers; Micropositioning Actuators, Stages & Motion Controllers; MicroMotion Robots for Automated 3D to 6D Photonics Alignment Contact: Sales Department, info@pi-usa.us

## Piezosystem Jena #827

SPIE Corporate Member

2B Rosenfeld Dr., Hopedale, MA, 01747 United States

+1 508 634 6688

usa@piezोजना.com

**Featured Product: Tritor 102 - 3D piezo positioning system with a 40mm clear central hole and sub-nm resolution**

manufacturer of piezo stages, scanners, piezo flexure systems and fast linear actuating solutions for z-axis, xy and 3D motion with nanometer accuracy. Products from piezosystem jena offer our customers the means with which to move elements such as optics, probes, or small tools within a range of a few microns with an accuracy of less than one nanometer.

SIOS high speed interferometers in North America offer single, double and triple beam DMIs with 50 picometer resolution Contact: Jim Litynski, President, jim@piezोजना.com

# Exhibition Guide

## PIXELTEQ

SPIE Corporate Member

16080 Table Mountain Parkway, Golden, CO, 80403 United States

+1 303 273 9700; fax +1 303 273 2995

info@oceanthinfilms.com; www.oceanthinfilms.com

**Featured Product: PIXELTEC MultiSpectral Imaging & Sensing SPECTROCAM MultiSpectral Camera | UV, Visible, NIR – SW**

PIXELTEC™ micro-patterned coating technology supports custom snapshot multispectral sensors and imagers for a wide range of applications using CCD, CMOS, and photodiodes – enabling more compact, robust, and cost-effective devices. SPECTROCAM™ is a fully configurable multispectral imaging camera platform covering UV, visible, and NIR-SWIR wavelengths. Using a targeted spectral approach, SpectroCam produces video-rate visual data customized to fit your application. By Ocean Thin Films Contact: Randel Mercer, VP Business Development, Randel.Mercer@oceanthinfilms.com; Phil Buchsbaum, President, Phil.Buchsbaum@oceanthinfilms.com

## #731 Precision Glass & Optics

### #1036

SPIE Corporate Member

3600 W Moore Ave, Santa Ana, CA, 92704 United States  
+1 714 540 0126; fax +1 714 540 1482

info@pgo.com; www.pgo.com

**Featured Product: Turnkey optics solutions include precision cutting/scribing on thin flat substrates up to 24" x 24"**

PG&O offers complete turnkey optics solutions for laser, biomedical, military, imaging, digital cinema, solar markets, and more. We provide precision and commercial components, thin film coatings, and complete fabrication services. With our extensive in-house glass materials and coated substrates inventory, we offer unparalleled fast service with a 48-hour turnaround on a wide variety of optical components, including mirrors, prisms, windows, microsheets, corner cubes, and retro-reflectors. Contact: Thad Sanchez, Sales Manager, thad@pgo.com

## Plasma Process Group

### #1121

7330 Greendale Rd, Windsor, CO, 80550 United States

+1 970 663 6988; fax +1 970 669 2312

info@plasmaprocessgroup.com; www.plasmaprocessgroup.com

## Polymer Assembly Technology, Inc. #741

104 T.W. Alexander Dr., Bldg 7, Research Triangle Park, Durham, NC, 27711-0001 United States

+1 919 314 5520; fax +1 919 314 5521

www.polymerassemblytech.com

## Polymicro Technologies, A Subsidiary of Molex

### #629

SPIE Corporate Member

18019 N 25th Ave, Phoenix, AZ, 85023-1200 United States

+1 602 375 4100; fax +1 602 375 4110

polymicrosales@molex.com; www.polymicro.com

Polymicro Technologies is a leader in developing and manufacturing specialty optical fiber including deep-UV fibers, hollow silica waveguides for CO2 lasers, FBPI optical fiber for panoramic spectroscopy and sensor analysis, quality high power assemblies and hundreds of standard and custom products. A subsidiary of global electronics provider Molex, Polymicro offers multiple draw towers, expert assembly operations, dedicated test equipment and laser processing technologies. Contact: polymicrosales@molex.com

## Precision Asphere, Inc. #1121

### #1121

SPIE Corporate Member

48860 Milmont Drive, #105-C, Fremont, CA, 94538 United States

+1 510 668 1508

info@precisionasphere.com; www.precisionasphere.com

**Featured Product: Stand-Alone Off-Axis-General Aspheres (incl. OAP), Free-Form optics made of Glasses, Si, and SiC.**

PRECISION ASPHERE, INC is a US company specialized in manufacturing of super high precision custom aspheres. Working with glasses, silicon, and silicon carbide, we fabricate on- and off-axis aspheric surfaces to less than 1/30 waves PV@633nm, with minimal slope and mid-spatial frequency error. Possessing unique computer controlled polishing technology and over 18 years' experience of aspheres manufacturing, PRECISION ASPHERE offers you the highest PERFORMANCE-to-COST ratio in the industry. Contact: John Kong, jkong@precisionasphere.com

## Precision Optical

### #634

SPIE Corporate Member

320 Kalmus Dr, Costa Mesa, CA, 92626 United States

+1 949 631 6800; fax +1 949 642 7501

sales@precisionoptical.com; www.precisionoptical.com

## Primetech USA

### #1120

25600 Rye Canyon Rd Ste 105, Valencia, CA, 91355 United States

+1 661 775 0419

purchase@ridex-integral.com; www.ridex-integral.com

**Featured Product: We offer extensive lines of Machine Vision, Industrial, CCTV, Board Cameras, as well as OEM solution**

PRIMETECH USA are experts in digital imaging solutions & offers custom industrial camera services that are designed to your specifications and requirements. With our wide range of high performance, high quality industrial cameras as well as our custom OEM imaging solutions, we are confident will be a perfect match for any of your imaging application requirements. Please feel free to contact us with any of your camera or Contact: Sales , info@pte-america.com

## Radiant Zemax, LLC

### #717

SPIE Corporate Member

22908 NE Alder Crest Drive, Ste 100, Redmond, WA, 98053 United States

+1 425 844 0152; fax +1 425 844 0153

zemaxsales@radiantzemax.com; www.radiantzemax.com

**Featured Product: Zemax 13 Release 2 Optical and Illumination Design Software**

Trusted around the globe for the design of optical and illumination systems, Zemax 13 Release 2 delivers industry-leading analysis, optimization, and tolerancing capabilities, comprehensive material catalogs, source model libraries, example files, and powerful programming and interface tools. Seamless CAD integration, Stock Lens Matching Tool and more breakthrough features streamline workflow and shorten time to innovation. Zemax is backed by 24-hour, worldwide support every business day. Contact: Cort Stinnett, Product Manager, cort.stinnett@radiantzemax.com; Mark Nicholson, Vice President Zemax Group, mark.nicholson@radiantzemax.com



## Raytheon ELCAN Optical Technologies

#1134

SPIE Corporate Member

450 Leitz Rd, Midland, ON, L4R 5B8 Canada  
+1 705 526 5401; fax +1 705 526 5831  
info@elcan.com; www.elcan.com

**Featured Product: Internal structure of bokeh image in camera lenses with aspheric surfaces - paper # 8841-24**

Raytheon ELCAN Optical Technologies specializes in the design and manufacture of technologically sophisticated and superior quality opto-electronic systems and subassemblies that meet strict military and commercial specifications. Raytheon ELCAN offers superior design and engineering capabilities, proprietary production technologies and fully integrated manufacturing capabilities to provide custom, turn-key solutions. Contact: Deborah Ratushniak, BD & Marketing, dratushniak@ELCAN.com; Viktor Syvokin, Optical Designer, vsyvokin@ELCAN.com

## RMI Infrared LLC (Rocky Mountain Instrument Co.)

#1231

SPIE Corporate Member

106 Laser Dr, #1, Lafayette, CO, 80026 United States  
\_1 303 664 5000; fax +1 303 664 5001  
sales@rmico.com; rmico.com

**Featured Product: Zinc Selenide (ZnSe) Material, Custom Optics, Standard Optics and Laser Marking Systems**

With our expanding international network, RMI can satisfy virtually any custom short-run or large volume production requirement. Our worldwide technical staff is both knowledgeable and responsive to your exact needs, before and after delivery. At RMI, our commitment is to consistently provide our customers with the highest quality electro-optical systems, optics, coatings and assemblies, manufactured to your exact specifications, delivered on time at a competitive price. Contact: Heath Kirin, sales@rmico.com; Matt Williams, sales@rmiinfrared.com

## RPMC Lasers, Inc.

#1123

SPIE Corporate Member

203 Joseph St, O'Fallon, MO, 63366-2614 United States  
+1 636 272 7227; fax +1 636 272 3909  
rpmc@rpmclasers.com; www.rpmclasers.com

RPMC offers high quality laser diode products from technology leading manufacturers in wavelengths from 375nm – 2.3um. We have a full range of products from single emitters to high power fiber coupled packages. We also offer laser diode accessories including diode drivers, TEC controllers and heatsinks. Lamp, DPSS & fiber lasers from 193nm – 6um, from nJ to 300J & CW, nanosecond, picosecond outputs. Custom lasers also. Contact: Chuck Ratermann, President, Info@rpmclasers.com; Dean Micke, Vice President, Info@rpmclasers.com

## Sandia National Labs.

#935

1515 Eubank SE, Albuquerque, NM, 87123-1071 United States  
+1 800 417 2634  
www.sandia.gov/mste

**Featured Product: Research and Development**

Sandia National Laboratories Microsystems Center develops microsystems and their constituent components including electronic devices, MEMS, optoelectronics and photonic integrated circuits, sensors and sensor systems. The center is also a DMEA accredited Category 1A trusted supplier for both ASIC design and foundry services. Sandia is a multiprogram laboratory operated by Lockheed Martin Company. Contact: Carol Sumpter, Technical Marketing Staff, cwsumpt@sandia.gov

## Schrödinger

#630

101 SW Main St Ste 1300, Portland, OR, 97204 United States  
+1 503 299 1150; fax +1 503 299 4532  
www.schrodinger.com

**Featured Product: Materials Science Suite**

Founded in 1990, Schrödinger is widely recognized as a scientific and technological leader in developing state-of-the-art chemical simulation software. Schrödinger makes significant investments in R&D, which has led to major advances in the field of computational chemistry. The company is actively developing state-of-the-art simulation tools for materials research as well as enterprise software that can be deployed throughout an entire research organization. Contact: Mathew D. Halls, Director, Materials Science, mat.halls@schrodinger.com; Tim Keefe, Director, Materials Science Sales, tim.keefe@schrodinger.com

## Sierra Precision Optics

#820

12830 Earhart Ave, Auburn, CA, 95602-9027 United States  
+1 530 885 6979; fax +1 530 885 1032  
sales@sierraoptics.com; www.sierraoptics.com

Plano optics, Filters, Panels, Windows, Mirrors, Beam Splitters, Wedges & Prisms, Spherical & Cylindrical Lenses, Specialties: Cylindrical optics, Excimer laser Optics, UV/VIS/NIR Resonator optics, Flow Tubes & Custom shaped optics, 1/20th wave metal polishing of Invar & stainless steel. Materials, optical glasses UV, Visible, Near IR such as Fused Silica, Optical Glass BK7, Pyrex, SF grade, Filter Glass, Samarium, Quartz, CaF2, MgF2, Zerodur, Yag, Silicon, ZnSe, ZnS, & Ge. Contact: Jim Stimpson, V. P. Sales & Marketing, jstimpson@sierraoptics.com; Steve Bennion, Engineering Manager, sbennion@sierraoptics.com

## Siskiyou Corporation

#728

SPIE Corporate Member

110 SW Booth Street, Grants Pass, OR, 97526 United States  
+1 541 479 8697; fax +1 541 479 3314  
reception@siskiyou.com; www.siskiyou.com

Siskiyou Corporation manufactures motion control devices with manual and computer interfaced controllers, translation stages, mirror mounts, lens positioners, adjustment screws, construction hardware, fiber grippers, and other opto-mechanical components for use in research and manufacturing. Siskiyou Corporation will also custom tailor devices to fit your needs. Contact: Mark Mittelstaedt, Western Regional Sales Manager, mmittelstaedt@siskiyou.com

# Exhibition Guide

## PROMOTIONAL PARTNER

### Society of Vacuum Coaters (SVC) #1135

71 Pinon Hill Pl. NE, Albuquerque, NM, 87122 United States  
+1 505 856 7188; fax +1 505 856 6716  
svcinfo@svc.org; www.svc.org

**Featured Product: SVC Digital Library: featuring manuscripts published in the Annual Technical Conference Proceedings**

SVC's mission is to promote technical excellence by providing a global forum to inform, educate, and engage the members, the technical community, and the public on all aspects of vacuum coating, surface engineering and related technologies. SVC offers a variety of resources for the vacuum coating professional: a comprehensive education program (on-line & on-site), publications (print & digital), and an annual technical conference with the largest exhibit dedicated to vacuum coating technologies. Contact: Vivienne H. Mattox, Executive Director, vivienmattox@svc.org

### Space Technologies Srl #1141

Viale Combattenti A. d'Europa 9/G, Rovigo, RO, 45100 Italy  
+39 0425 471055; fax +39 0425 471095  
massimiliano.tordi@spacetechologies.it; www.spacetechologies.it

**Featured Product: Optical design and integration of optical systems.**

Space Technologies S.r.l. designs and delivers optical systems for the aerospace industry and research organizations. We support our customers in the design and integration of optical ground support equipments and the preliminary assessment of space-based optical systems, with special attention to environmental stability, environmental compatibility, stray-light rejection. Our main customers are large aerospace companies (Thales Alenia Space, Selex ES among others) and research institutes (INAF) Contact: Massimiliano Tordi, General Manager, massimiliano.tordi@spacetechologies.it

### Spectral Instruments Inc. #1034

420 N. Bonita Ave., Tucson, AZ, 85745 United States  
+1 520 884 8821; fax +1 520 884 8803  
cdslaughter@specinst.com; www.specinst.com

**Featured Product: Series 1110: A Deeply Cooled 16-port 100+ Megapixel High Performance Camera For Low Light Imaging.**

Spectral Instruments specializes in cooled CCD cameras for demanding low-light applications. Custom and OEM cameras employing a variety of sensors are a staple. Spectral Instruments has a new line of Rad-Hard CMOS cameras for use in direct high-energy imaging applications. We provide the finest high sensitivity 16-bit CCD cameras that current technology can offer including high speed cameras with multi-port CCDs. High-performance large format and multi-sensor mosaic cameras are also available. Contact: Kevin Toerne, Systems Specialist, ktoerne@specinst.com; Charles Slaughter, Systems Specialist, cdslaughter@specinst.com

### Spectrogon US, Inc. #817

115 Route 46 West, Building A-2, Mountain Lakes, NJ, 07046 United States  
+1 973 331 1191; fax +1 973 331 1373  
sales.us@spectrogon.com; www.spectrogon.com

**Featured Product: Optical Filters, Coatings, Components, Diffraction Gratings**

SPECTROGON specializes in the design & manufacture of optical filters, thin film coatings and components, for analytical, medical, and scientific instruments. Spectrogon is the world leader in the manufacture and design of Holographic Diffractions Gratings for ultrafast laser Compression/Stretch applications; Plane and Curvature gratings for tuning and spectroscopic instruments. Spectrogon offers a huge inventory of UV, visible, and infrared stock filters on our website: www.spectrogon.com Contact: Steve Finn, Sales Manager, sales.us@spectrogon.com; Kelly Koerber, Sales Adm., sales.us@spectrogon.com

## PROMOTIONAL PARTNER

### Spectroscopy Magazine #1039

485F US Highway 1 South, Iselin, NJ, 08830 United States  
+1 732 596 0276; fax +1 732 647 1235  
ayoung@advanstar.com; www.spectroscopyonline.com

**Featured Product: Spectroscopy Magazine**

Spectroscopy's mission is to enhance productivity, efficiency, and the overall value of spectroscopic instruments and methods as a practical analytical technology across a variety of fields. Scientists, technicians, and laboratory managers gain proficiency and competitive advantage for the real-world issues they face through unbiased, peer-reviewed technical articles, trusted troubleshooting advice, and best-practice application solutions. Contact: Ed Fantuzzi, Publisher, efantuzzi@advanstar.com; Stephanie Shaffer, Eastern Sales Manager, sshaffer@advanstar.com

### SPIE Career Center #1045

1000 20th St., Bellingham, WA, 98225-6705 United States  
+1 360 685 5600; fax +1 360 824 6014  
jobsales@spie.org; www.spiecareercenter.org

The SPIE Career Center is the leading recruitment resource for companies and professionals in the optics and photonics community. Whether you're looking for a new job or searching for top candidates, our resources will help you find the perfect match for your needs. Job seekers can post their resumes, search our online job board and access additional resources for career advancement. Employers can advertise jobs online, access the SPIE searchable resume database and exhibit in SPIE Job Fairs. Contact: Sara Liebert, Sales, Career Center Coordinator, saral@spie.org; Allison Romanyshyn, Digital Library Subscriber Manager, allisonr@spie.org

### Stanford Research Systems #729

1290-D Reamwood Ave, Sunnyvale, CA, 94089 United States  
+1 408 744 9040; fax +1 408 744 9049  
info@thinkSRS.com; www.thinkSRS.com

Stanford Research Systems manufactures a full line of scientific and engineering instruments, including lock-in amplifiers, optical choppers, digital delay/pulse generators, photon counters, preamplifiers, high voltage power supplies, boxcar, Rubidium frequency standards, distribution amplifiers, laser diode controllers, optical shutter systems, programmable temperature controllers, small instrument modules, function generators, RF signal generators, residual gas analyzer, and many more. Contact: Janie Du, Sr, Sales & Marketing Engineer, janied@thinkSRS.com; David Ames, Sales Manager, davea@thinkSRS.com

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# Exhibition Guide

## StellarNet, Inc.

SPIE Corporate Member

14390 Carlson Cir, Tampa, FL, 33626 United States  
+1 813 855 8687; fax +1 813 855 0394  
contactus@stellarnet.us; www.stellarnet.us

**Featured Product: Low cost & modular Raman spectrometers, lasers, probes, & FREE Runtime Spectral ID Software**

StellarNet, Inc. is a global provider of low cost miniature spectrometers and spectroscopy software for product analysis, research, education, and OEM. We offer complete systems and accessories including integrating spheres, light sources, optical fibers, and probes. Applications include LED/Laser/Display characterization, UV & solar spectral analysis, thin-film thickness & optical metrology, colorimetry, NIR Analysis with Runtime Chemometrics, fluorescence, LIBS, and low cost portable Raman. Contact: Jason Pierce, Business Director, Jpierce@StellarNet.us; Debra Persell, Office Manager, Dpersell@StellarNet.us

#628

## Syntec Optics

SPIE Corporate Member

7100 Junction Rd, Pavilion, NY, 14525 United States  
+1 585 768 2513; fax +1 585 464 8043  
sales@syntecoptics.com; www.syntecoptics.com

#523

## TAG Optics, Inc.

SPIE Corporate Member

PO Box 1572, Princeton, NJ, 08542 United States  
+1 609 356 2142  
info@tagoptics.com; www.tagoptics.com

#425

## Taylor Hobson, A div of AMETEK

#1136

1725 Western Dr, West Chicago, IL, 60185 United States  
+1 630 621 3099; fax +1 630 231 1739  
cindy.drews@ametek.com; www.taylor-hobson.com

**Featured Product: CCI-HD Non-contact 3D Surface & Thin Film Measurement System**

Taylor Hobson is a leading worldwide supplier of ultra-high precision surface measurement and optical alignment instruments. Products include non-contact and contact based metrology for measuring surface form, finish, and mid-frequency waviness of aspherics, asphero-diffractives, micro-lenses, thin films, camera arrays, and other high precision optical components and precision manufactured parts. Contact: Jeff Brown, Regional Applications & Sales, Jeff.Brown@ametek.com; Erik Stover, Optics Business Development, Erik.Stover@ametek.com

## Surface Optics Corporation

#1218

11555 Rancho Bernardo Rd, San Diego, CA, 92127 United States  
+1 858 675 7404; fax +1 858 675 2028  
soc@surfaceoptics.com; www.surfaceoptics.com

**Featured Product: Reflectometers: 410-Solar, ET100, SOC-100 HDR, SOC-210 BDR, SOC-410, Hyperspectral cameras: SOC-710VP**

Surface Optics Corporation manufactures hyperspectral cameras and reflectometers for characterizing optical properties of materials. Contact: Martin Szczesniak, Applications Manager, martinsz@surfaceoptics.com; Michael Zemlan, Sales Engineer, mike.zemlan@surfaceoptics.com

## Sutter Instrument Co.

#631

SPIE Corporate Member

One Digital Dr, Novato, CA, 94949 United States  
+1 415 883 0128; fax +1 415 883 0572  
info@sutter.com; www.sutter.com

**Featured Product: SOM - Simple Moving Microscope optimized for IN VIVO and IN VITRO experiments in one set-up.**

Manufacturer of precision electromechanical devices for scientific research and industrial OEM for 40 years. Imaging products include the TLED high-output LED transmitted light source and the SOM simple microscope as well as optical filterwheels, tunable filter changers; xenon and plasma light sources with integrated wavelength selection capabilities, and our stepper-motor controlled SmartShutter. The P-2000 CO<sub>2</sub> laser-based micropipette puller remains the premier NSOM fiber tip puller of choice. Contact: Jack Belgum, Ph.D., Sr. VP, R&D, jack@sutter.com; Chris Ballard, Product Manager, chris@sutter.com

## TDK-Lambda Americas

#1029

405 Essex Rd, Neptune, NJ, 07753 United States  
+1 732 922 9300; fax +1 732 922 1441  
sales@us.tdk-lambda.com; www.us.tdk-lambda.com/hp

**Featured Product: Genesys(TM) Programmable AC/DC Supply 2400W in 1U. Breakthrough power density and common interface.**

Genesys, AC/DC power supplies provide high power density, low ripple and complete user-friendly interfaces, excellent performance and flexibility. Now with industry leading power density of 2400W in 1U which includes Auxiliary Outputs of 15VDC and 5VDC at 0.2A for simplified system control configuration. The only complete family with identical features and interfaces. Platforms include 750W, 1500W, 2.4kW, 3.3/5kW and 10/15kW Output. Outputs available range up to 600V and 1,000A Contact: Bonnie West, Inside Sales Manager, bonnie.west@us.tdk-lambda.com

## Synopsys, Inc.

#1116

SPIE Corporate Member

700 East Middlefield Road, Mountain View, CA, 94043 United States  
+1 650 584 5000; fax +1 650 584 4249  
optics@synopsys.com; www.optics@synopsys.com

Synopsys' Optical Solutions Group is one of the world's leading developers of optical and photonics design and analysis software, with CODE V® for imaging design, LightTools® for illumination design, and the RSoft products for photonic and network design. The group is also an independent supplier of optical systems design services, with more than 4,800 completed projects in imaging, illumination, and optical systems engineering. Contact: Stuart David, Senior Manager, Worldwide Sales, optics@synopsys.com

## tec5USA, Inc.

#735

SPIE Corporate Member

80 Skyline Dr, Plainview, NY, 11803-2518 United States  
+1 516 635 2000; fax +1 516 939 0555  
info@tec5usa.com; www.tec5usa.com

tec5USA offers high quality products for optical spectroscopy from complete systems to the individual components. All products are designed for reproducibility, low maintenance, and fast acquisition. Fiber-optic accessories include light guides and probes for a multitude of measurements. Software support ranges from programming tools to applications (incl. chemometrics). Customizations possible. Contact: Stacy Carrier, Product Manger, Stacey.Carrier@tec5usa.com

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## Teledyne Judson Technologies

#916

SPIE Corporate Member

221 Commerce Drive, Montgomeryville, PA, 18936 United States  
+1 215 368 6900; fax +1 215 362 6107  
1information@judsonstechnologies.com; www.teledynejudson.com

Teledyne Judson Technologies is the recognized leader of infrared photodetectors and accessories for spectroscopy, instrumentation, medical and space applications. Specializing in Ge, InGaAs, InAs, PbS, PbSe, InSb, and HgCdTe, our products encompass single and multi-element designs with integrated detector/dewar/cooler (IDCA) assemblies. TJT also provides InGaAs, InSb, and MCT two-dimensional focal plane arrays integrated to dewars and coolers. Contact: Mark Sediva, Sales Engineer, msediva@teledynejudson.com; Jim Dell, Standard Products Technical Sales & Marketing Mgr., jdell@teledynejudson.com

### PROMOTIONAL PARTNER

## The Optronics Co., Ltd.

#740

5-5 Shin Ogawamachi, Shinjuku-ku, Tokyo, 162-0814 Japan  
+81 3 3269 3550; fax +81 3 5229 7253  
intl@optronics.co.jp; www.optronics.jp

### Featured Product: OPTICS & PHOTONICS International Exhibition

The OPTICS & PHOTONICS International Exhibition is held annually in Japan with the OPTICS & PHOTONICS International Congress and focuses on optics and laser technologies involving both science and industry. Co-locating the Congress and the Exhibition brings together innovators from around the world to find future applications for the most advanced optics and lasers. Join us at this premier event—visit our booth #740 for more information. Contact: Sakae Shibasaki, s\_shiba@optronics.co.jp

## Thermo Scientific - CIDTEC

#836

SPIE Corporate Member

101 Commerce Blvd, Liverpool, NY, 13088-4507 United States  
+1 315 451 9410; fax +1 315 451 9421  
sales.cidtec@thermo.com; www.thermoscientific.com/cidtec

### Featured Product: Radiation Hardened Color cameras, Extreme Dynamic Range scientific grade cameras

Thermo Scientific - CIDTEC manufactures high performance UV-NIR sensitive cameras for demanding scientific imaging applications, radiation environments, and unique machine vision inspection applications.

Cameras include extremely wide dynamic range (XDR) for the SpectraCAM line of scientific cameras offering unparalleled linear dynamic range, as well as the MegaRAD and ColorRAD series of cameras for high radiation environments. Deep UV and X-Ray coating deposition services are also available. Contact: Tony Chapman, Sales and Marketing Director, tony.chapman@thermofisher.com; Michael Pilon, General Manager, michael.pilon@thermofisher.com

## Thorlabs Inc.

#622

SPIE Corporate Member

56 Sparta Ave, Newton, NJ, 07860-2402 United States  
+1 973 300 3000; fax +1 973 300 3600  
www.thorlabs.com

### Featured Product: Thorlabs' Optical Tweezers is a complete system with two traps, each of which can be time shared.

Thorlabs, a vertically integrated photonics products manufacturer, was founded in 1989 to serve the laser and electro-optics research market. As new innovations came to market, Thorlabs extended its core competencies. The organization's manufacturing capabilities include semiconductor fabrication of Fabry-Perot and DFB lasers, fiber draw towers, and advanced thin film deposition.

### LANYARD SPONSOR

## TRIOPTICS GmbH

#1020

SPIE Corporate Member

Hafenstr 35-39, Wedel, 22880 Germany  
+49 4103 18006 0; fax +49 4103 180062 0  
info@trioptics.com; www.trioptics.com

### Featured Product: TRIOPTICS GmbH is the leading manufacturer of optical test equipment for industrial use

From its inception, TRIOPTICS has focused on the research and development of highly accurate and PC controlled optical test instruments for industrial and scientific use. This vision for the development of innovative solutions across many fields of optical testing has allowed TRIOPTICS to achieve a prominent presence in the international market and become the world leader in MTF testing. TRIOPTICS is represented by its own subsidiaries in France, Japan, China, Taiwan and USA.

## TwinStar Optics, Coatings & Crystals, Inc.

#432

SPIE Corporate Member

6741 Commerce Ave, Port Richey, FL, 34685 United States  
+1 727 847 2300; fax +1 727 847 2304  
sales@starstar.com; twinstaroptics.com

## UC Irvine Extension

#1221

110 Theory Ste 250, Irvine, CA, 92617 United States  
+1 949 824 5414  
unex-services@uci.edu; www.unex.uci.edu

### Featured Product: Optical Engineering and Optical Instrument Design Certificate Programs

UC Irvine Extension is the continuing education unit of the University of California, Irvine. We offer certificate programs in over 60 areas including Optics. We currently have two Optics programs: Optical Engineering and Optical Instrument Design. Both programs address the growing demand for skilled professionals who can conceptualize, design, and manufacture optical components and systems. Contact: Jennifer Spitzer, Program Planner, jspitzer@uci.edu



## UTC Aerospace Systems (Sensors Unlimited Products)

#722

SPIE Corporate Member

3490 Rte 1, Princeton, NJ, 08540 United States  
+1 609 520 0610; fax +1 609 520 0638  
sui\_info@utas.utc.com; www.sensorsinc.com

**Featured Product: Sensors Unlimited High-Resolution, Mil-Rugged, Snapshot InGaAs SWIR Camera - Global Shutter Function**

UTC Aerospace Systems offers a complete line of Sensors Unlimited shortwave infrared (SWIR) imaging and detection cameras for airborne surveillance, military, and defense applications. With the ability to image through rain, fog, mist, haze, and dust, our InGaAs SWIR cameras provide considerable advantages over visible or thermal cameras. Other applications include biomedical, machine vision, solar cell inspection, and scientific applications. Contact: Don Panca, Account Manager, donald.panca@utas.utc.com; Bob Jones, Director, Sales, robert.jones@utas.utc.com

## VG Scienta Inc.

#423

235 Main St, Pleasanton, CA, 94566 United States  
+1 925 989 5044  
www.vgscienta.com

**Featured Product: OFT Edge Series cluster R&D Deposition Tool VacuTran Membrane Transmission Measurement System**

VG Scienta Limited is an established company with 50 years experience in supplying high quality vacuum based systems to scientists undertaking pioneering research in numerous fields. Since 2003, VG Scienta have been working closely with the research community in supplying and developing organic and metals deposition systems, of which the OFT Edge Series are the latest highly flexible tools for research, offering SMD, PVD, CVD, ALD plus analytical modules for research and pre production. Contact: Nick Samiotes, USA Sales Manager, nick.samiotes@vgscienta.com; Geoff Cox, Eastern Regional Manager, geoff.cox@vgscienta.com

## Vincent Associates

#825

803 Linden Ave, Rochester, NY, 14625 United States  
+1 585 385 5930; fax +1 585 385 6004  
vincentassociates@uniblitz.com; www.uniblitz.com

Vincent Associates is the manufacturer of UNIBLITZ electronically programmed shutters & shutter drive systems, with standard devices (including the LS, VS and the CS series of high reliability shutter systems), the XRS (for X-ray use) series, the NS (Bi-stable & uni-stable configurable) series, the DSS (Design scalable shutters) series, & the new TS (Flag shutter alternative) series. Standard aperture sizes range from 2mm - 90mm with many types of microscope and video mounting systems offered. Contact: Adam Lamb, VP Manufacturing, alamb@uniblitz.com; Stephen Pasquarella, Senior VP, spsq@uniblitz.com

## VST America, Inc.

#1035

2101 S. Arlington Heights Rd, Arlington Heights, IL, 60005 United States  
+1 847 952 3800; fax +1 847 952 3839  
wakakoy@vstamerica.com; www.vstamerica.com

## Wasatch Photonics

#429

SPIE Corporate Member

1305 N 1000 W Ste 120, Logan, UT, 84321-6802 United States  
+1 435 752 4301; fax +1 435 752 4306  
info@wasatchphotonics.com; www.wasatchphotonics.com

**Featured Product: VPHG & Pulse Compression Gratings, Raman, NIR, VIS & OCT spectrometers**

**Featured Product: Pulse Compression and VPHG Gratings, World's Fastest Raman Spectrometer!**

Wasatch Photonics: Manufactures high quality, high efficient volume phase gratings. At our Systems Division in Durham North Carolina, we use these unique gratings to design and manufacture high resolution spectroscopy systems and devices. We produce state of the Raman systems, spectrometers, Optical Coherence Tomography spectrometers and systems and hyperspectral imaging devices. Stock, custom and OEM Contact: Cindy Gong, Director of Business Development, cgong@wasatchphotonics.com

## Wordingham Technologies

#523

SPIE Corporate Member

580 Fisher Station Dr, Victor, NY, 14564-9734 United States  
+1 585 924 2294; fax +1 585 924 7660  
sales@wordingham.com; www.wordingham.com

**Featured Product: Laser, imaging, and machine vision components as well as bioinstruments/Optomechanics**

Wordingham Technologies, an ITAR registered company, provides precision machined components that are critical to function and finished aesthetics. We've consistently delivered the quality our customers demand for 32 years and work with many of the best-in-class companies in optics, photonics and precision instrumentation. Located near Rochester, NY, one of the top areas in the world for optics innovation, our emphasis on custom design-for-manufacturability and innovative machining techniques. Contact: JR Wood, New Business Development Manager, jrwood@wordingham.com

## Xenics NV

#624

SPIE Corporate Member

Ambachtenlaan 44, Leuven, 3001 Belgium  
+32 16 38 9900; fax +32 16 38 9901  
marketing@xenics.com; www.xenics.com/

Xenics is a pioneer of path-breaking infrared technology. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality. The company offers a complete portfolio of line-scan and 2-D area-scan products for the VisNIR, SWIR, MWIR and LWIR ranges. A vertically integrated manufacturer with advanced production facilities and in-house know-how on detector, systems and software development, Xenics delivers imaging solutions as well as optimized custom designs. Contact: sales@xenics.com

## Xonox Technology GmbH

#1131

SPIE Corporate Member

Schmalheck 6, Hüttenberg, 35625 Germany  
+ 49 6441 2104920; fax + 49 6441 2104921  
info@xonox-tec.com; www.xonox-tec.com

# Exhibition Guide

## Z & Z Optoelectronics Tech. Co., Ltd. #920

SPIE Corporate Member

No 3 Keyuan South Road, Chengdu Sichuan, Sichuan, 610041  
China

+86 28 8513 9768; fax +86 28 8525 5889  
sales@zzoptic.com; www.zzoptic.com

**Featured Product: Infrared and laser optics of window, mirror, wafer, substrate, wedge, spherical lens, etc.**

Z&Z have built up a leading level in China in super polishing field. Our ultra precision optics achieve roughness  $\leq 0.1\text{nm}$  with different materials like fused silica, Zerodur, Silicon. Our super polish optics are widely used in high end applications like ultra fast laser, ultra UV system and so on.

Z&Z also specializes in high precision infrared and laser optics. Infrared and laser optics with different materials, like fused silica, Borofloat, BK7, other glass, Ge, Si, ZnS, ZnSe, etc. Contact: Cynthia Qi, General Manager Assistance, sales@zzoptic.com

## Zygo Corporation

#917

SPIE Corporate Member

Laurel Brook Road, Middlefield, CT, 06455 United States  
+1 860 347 8506; fax +1 860 347 3968

inquire@zygo.com; www.zygo.com

ZYGO provides a wide range of inspection, surface analysis, and precision displacement measurement solutions, as well as precision optics, optical design, and opto-mechanical assembly. Our precision noncontact measuring instruments and systems enable manufacturers to increase operating efficiencies and product yields by identifying and collecting quantitative data on product defects during and after the manufacturing process. ZYGO will be exhibiting their newest lines of interferometers. Contact: Don Battistoni, Director of Sales & Support, dbattistoni@zygo.com; marc Tricard, Director Business Development, mtricard@zygo.com

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[www.redbullstratos.com](http://www.redbullstratos.com)

## Photonics for the Betterment of the Global Community

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[www.laserclassroom.com](http://www.laserclassroom.com)



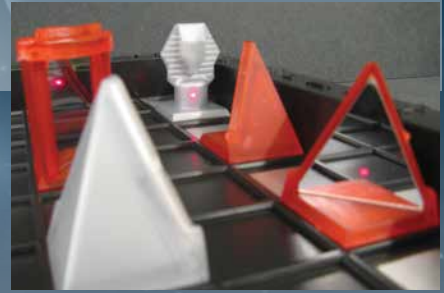
## Photonics for Fun

### Khet laser game

(set up for 16 games)

Khet is a laser game that combines lasers with classic strategy. The ultimate goal is to illuminate your opponent's pharaoh while shielding yours from harm!

[www.innoventiontoys.com](http://www.innoventiontoys.com)



### Spectrograph competition

A Spectrograph is an instrument used to measure properties of light over a specific portion of the electromagnetic spectrum by separating an incoming wave into a frequency spectrum. See what the competition is all about.

[www.coe.montana.edu](http://www.coe.montana.edu)



## Photonics for our Future



### National Photonics Initiative updates

SPIE and four other photonics and optics societies have launched a National Photonics Initiative (NPI), a collaborative alliance among industry, academia and government.

[www.spie.org/npi](http://www.spie.org/npi)



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2015

### International Year Of Light 2015

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[www.spie.org/iyl](http://www.spie.org/iyl)

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# Student Chapter Exhibits

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## Air Force Institute of Technology

2950 Hobson Way, Wright Patterson AFB, OH, 45433-7765, USA  
937-255-6565x6155; mark.spencer@afit.edu

## Aston Institute of Photonic Technologies

Aston Street, Aston triangle, Birmingham, B4 7ET, United Kingdom  
abangam@aston.ac.uk

## Bauman Moscow State Technical Univ.

2-nd Baumanskaya, 5, Moscow, 105005, Russia  
fokina.irina@bk.ru; hoster.bmstu.ru/~bmstu\_chapter/

## Beijing Univ. of Posts and Telecommunications

Haidian District No.10 Xitucheng Road, Beijing, Beijing, 100876, China, 8.61581E+12  
ch89118@sina.com

## Capital Normal Univ.

Western Third Ring North Road 105, Beijing, 100048, China  
spie\_cnu@163.com

## Charles Univ. in Prague

Ke Karlovu 5, Prague, 121 16, Czech Republic  
miroslavkorinek@gmail.com

## Chulalongkorn Univ.

254 Phya Thai Rd Bangkok, 10330, Thailand  
6622186422x121  
ise@eng.chula.ac.th; www.chula.ac.th/

## CIOP-UNLP

Cno. Parque Centenario e/ 505 y 508 Gonnet. C.C. 3 (1897) Gonnet, La Plata, Buenos Aires, 1897, Argentina  
+54 221 484-0280  
dgulich@ciop.unlp.edu.ar; www.ciop-unlp.blogspot.com.ar/

## CITEDI-IPN

Ave. del Parque 1310, Mesa de Otay Tijuana, Baja California 22510, Mexico  
+52 (664) 6231344  
vhdiacz@citedi.mx; www.citedi.mx

## Cochin Univ. of Science and Technology

Thrikkakkara, Cochin, Kerala, 682022, India  
+91-484-2577404 Extn 33  
cusatspie@gmail.com; physics.cusat.ac.in/spie/spie.htm

## Columbia Univ.

1300 seeley W. Mudd 500 W. 120th St, New York, New York, 10027, USA  
2128543109  
cache@ee.columbia.edu

## COUP

Clle 11 D N° 7 B 11 Apto 405 Edificio Stefania, Pamplona Norte de Santander, 543050, Colombia  
coupluz@gmail.com

## Delhi Technological Univ.

SBTF-4, Science Block, Delhi Technological Univ. Delhi, Delhi, 110042, India  
011 27871017  
tsinghdph@gmail.com; www.spiedcechapter.dce.edu

## Gdansk Univ. of Technology

G. Narutowicza 11/12, Gdansk, 80-233, Poland  
mackrasz@pg.gda.pl

## Ghent Univ.

Technologiepark - Building 914-A? 9052 Gent-Zwijnaarde, BELGIUM, Ghent, 9000, Belgium  
Sandeep.Kalathimekkad@UGent.be

## ICFO - The Institute of Photonics Sciences

ICFO – The Institute of Photonic Sciences, Av. Carl Friedrich Gauss, 3Castelldefels (Barcelona), 8860, Spain  
935534037  
esteban.bermudez@icfo.es; www.epsiyoungminds.org/section/barcelona/index.php?topic=home

## Imperial College London Optical Society

Department of Physics, Prince Consort Rd, London SW7 2BW, United Kingdom  
4420 7594 7781  
r.woodward12@imperial.ac.uk

## Indian Institute of Space Science & Technology

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9.14713E+11  
sharma21.richa@gmail.com; www.iist.ac.in



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laptev.denis@mail.ru

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## Université Laval

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spie.fimee@gmail.com

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tahmed@nd.edu

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karolina.stankeviciute@ff.vu.lt; www.spie.ff.vu.lt

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rdovgaliuk@yandex.ru

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Entegris  
IDEX Optics & Photonics  
Instrument Technology Research  
Center  
Lambda Research Corporation  
LEONI Fiber Optics, Inc.  
Minus K Technology Inc.  
Navitar  
Open Photonics Inc.  
Optical Perspectives Group, LLC  
Optical Support, Inc.  
Optikos Corporation  
OptoSigma Corp.  
Photon Engineering LLC  
Photonics Media

Precision Glass & Optics  
Raytheon ELCAN Optical  
Technologies  
RMI (Rocky Mountain Instrument  
Co.)  
Space Technologies Srl  
Zygo Corporation

## Optical Fabrication Equipment

Accumold  
Applied Surface Technologies  
Mildex, Inc.  
Optical Support, Inc.  
Optikos Corporation  
OptiPro Systems

## Optics Manufacturing

4D Technology Corp.  
Aerotech Inc.  
ASML Optics  
Breault Research Organization, Inc.  
CoorsTek Technical Ceramics  
Deposition Sciences, Inc.  
Diverse Optics Inc.  
Electro Optics Magazine  
Energetiq Technology, Inc.  
Heraeus Quartz America LLC  
IDEX Optics & Photonics  
Infinite Optics Inc.  
Instrument Technology Research  
Center  
Isuzu Glass, Inc.  
L-3 Communications Corp, Tinsley  
LEONI Fiber Optics, Inc.  
Luxel Corporation  
Meadowlark Optics, Inc.  
Mindrum Precision  
Navitar  
Newport Thin Film Laboratory, Inc  
Optical Perspectives Group, LLC  
OptiPro Systems  
PIXELTEQ  
Precision Glass & Optics  
Raytheon ELCAN Optical  
Technologies  
RMI (Rocky Mountain Instrument  
Co.)  
Space Technologies Srl  
Syntec Optics  
Zygo Corporation

## Optomechanical Components, Devices

Aerotech Inc.  
Andover Corp.  
ASML Optics  
CoorsTek Technical Ceramics  
Instrument Technology Research  
Center  
Mindrum Precision  
nPoint Inc.  
Piezosystem Jena  
Sutter Instrument Co.

## Positioning Equipment, Motion Control and Accessories

Aerotech Inc.  
attocube systems Inc.  
Mad City Labs, Inc.  
nPoint Inc.  
Piezosystem Jena  
Sutter Instrument Co.

## Publishers, Associations, Clusters, Societies

Electro Optics Magazine  
IOP Publishing  
Laser Focus World  
Nature Publishing Group  
optics.org  
Photonics Media  
Photonics Online  
Society of Vacuum Coaters (SVC)  
Spectroscopy Magazine  
SPIE Career Center

## Semiconductor Manufacturing

Aerotech Inc.  
ASML Optics  
Beijing Tian-Long Tungsten &  
Molybdenum Co., Ltd.  
Epnor Technology, Inc.  
Eulitha AG  
Minus K Technology Inc.  
Schrödinger

## Software

4D Technology Corp.  
B&W Tek, Inc.  
Breault Research Organization, Inc.  
Federal Laboratory Consortium for  
Technology Transfer  
Lambda Research Corporation  
Photon Engineering LLC  
Schrödinger

## Solar & Alternative Energy

Abet Technologies, Inc.  
AdlOptica GmbH  
Beijing Tian-Long Tungsten &  
Molybdenum Co., Ltd.  
CoorsTek Technical Ceramics  
Epnor Technology, Inc.  
Federal Laboratory Consortium for  
Technology Transfer  
J.A. Woollam Co., Inc.  
Laser Quantum Inc  
LEONI Fiber Optics, Inc.  
Luxel Corporation  
Schrödinger  
Surface Optics Corporation  
UTC Aerospace Systems (Sensors  
Unlimited Products)



## Solar and Alternative Energy Technology

Abet Technologies, Inc.  
Beijing Tian-Long Tungsten & Molybdenum Co., Ltd.  
Federal Laboratory Consortium for Technology Transfer  
LEONI Fiber Optics, Inc.  
Luxel Corporation  
Surface Optics Corporation

## Spectroscopy Devices and Equipment

B&W Tek, Inc.  
Gulf Photonics, Inc.  
Hellma USA, Inc.  
KETEK GmbH  
Lambda Research Corporation  
Laser Quantum Inc  
Open Photonics Inc.  
Surface Optics Corporation  
tec5USA, Inc.  
UTC Aerospace Systems (Sensors Unlimited Products)

## Structural and Infrastructure Sensing

Diamond USA Inc.  
Isuzu Glass, Inc.

## Test and Measurement, Metrology

4D Technology Corp.  
ADIT Electron Tubes  
ALIO Industries  
Andover Corp.  
Applied Surface Technologies  
ASML Optics  
attocube systems Inc.  
B&W Tek, Inc.  
Breault Research Organization, Inc.  
Engineering Synthesis Design, Inc.  
Federal Laboratory Consortium for Technology Transfer  
Instrument Technology Research Center  
Isuzu Glass, Inc.  
J.A. Woollam Co., Inc.  
Lambda Research Corporation  
Mildex, Inc.  
Minus K Technology Inc.  
Ohara Corporation  
Optical Perspectives Group, LLC  
Optikos Corporation  
OptiPro Systems  
Piezosystem Jena  
Stanford Research Systems  
tec5USA, Inc.  
TRIOPTICS GmbH  
UTC Aerospace Systems (Sensors Unlimited Products)  
Zygo Corporation

## Vacuum, Cooling, Gas Handling Equipment

attocube systems Inc.  
J.A. Woollam Co., Inc.  
Luxel Corporation  
Mad City Labs, Inc.  
Minus K Technology Inc.  
Society of Vacuum Coaters (SVC)  
Stanford Research Systems

## Vehicle Sensing and Control

Raytheon ELCAN Optical Technologies

# SPIE Courses



## Relevant training—Proven instructors

The education you need to stay competitive in today's job market

- Take advantage of direct instruction from some of the biggest names in research and industry—learn from recognized experts
- Relevant courses on essential optical engineering topics and current research & development areas, including nanotechnology, image processing, illumination, remote sensing, and more
- 41 courses and workshops for 2013
- Earn CEUs to fulfill ongoing professional education requirements

### Money-back Guarantee

We are confident that once you experience an SPIE course for yourself you will look to us for your future education needs. However, if for any reason you are dissatisfied, we will gladly refund your money. We just ask that you tell us what you did not like; suggestions for improvement are always welcome.



### Continuing Education Units

SPIE has been approved as an authorized provider of CEUs by IACET, The International Association for Continuing Education and Training (Provider #1002091). In obtaining this approval, SPIE has demonstrated that it complies with the ANSI/IACET Standards which are widely recognized as standards of good practice.

**SPIE reserves the right to cancel a course due to insufficient advance registration.**

[www.spie.org/education](http://www.spie.org/education)







# Course Daily Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	
<b>Remote Sensing</b>					
<p>SC194 <b>Multispectral and Hyperspectral Image Sensors</b> (<i>Lomheim</i>) 1:30 pm to 5:30 pm, \$460 / \$515</p>	<p>SC835 <b>Infrared Systems - Technology &amp; Design</b> (<i>Daniels</i>) 8:30 am to 5:30 pm, \$1,230 / \$1,485</p>		<p>SC916 <b>Digital Camera and Sensor Evaluation Using Photon Transfer</b> (<i>Janesick</i>) 8:30 am to 5:30 pm, \$655 / \$770</p>		
	<p>SC156 <b>Basic Optics for Engineers</b> (<i>Boreman</i>) 8:30 am to 5:30 pm, \$645 / \$760</p>	<p>SC180 <b>Imaging Polarimetry</b> (<i>Dereniak, Miles, Sabatke</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>			
	<p>SC206 <b>Polarized Light: What Your College Instructor Forgot to Tell You</b> (<i>Fisher</i>) 8:30 am to 5:30 pm, \$600 / \$715</p>	<p>SC504 <b>Introduction to CCD and CMOS Imaging Sensors and Applications</b> (<i>Janesick</i>) 8:30 am to 5:30 pm, \$740 / \$855</p>			
		<p>SC915 <b>Radiometry Revealed</b> (<i>Shaw</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>			
		<p>SC567 <b>Introduction to Optical Remote Sensing Systems</b> (<i>Shaw</i>) 1:30 pm to 5:30 pm, \$375 / \$430</p>			
		<p>SC792 <b>Polarization in Optical Design</b> (<i>Chipman</i>) 1:30 pm to 5:30 pm, \$375 / \$430</p>			
<b>Astronomical Optics and Instrumentation</b>					
<p>SC194 <b>Multispectral and Hyperspectral Image Sensors</b> (<i>Lomheim</i>) 1:30 pm to 5:30 pm, \$460 / \$515</p>	<p>SC835 <b>Infrared Systems - Technology &amp; Design</b> (<i>Daniels</i>) 8:30 am to 5:30 pm, \$1,230 / \$1,485</p>		<p>SC796 <b>Allowable Stresses in Glass and Engineering Ceramics</b> (<i>Pepi</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>		
	<p>SC135 <b>Adaptive Optics</b> (<i>Tyson</i>) 8:30 am to 5:30 pm, \$695 / \$810</p>	<p>SC1078 <b>Advanced Composite Materials for Astronomical Telescopes and Optomechanical Instruments</b> (<i>Zweber</i>) 8:30 am to 5:30 pm, \$600 / \$715</p>		<p>SC916 <b>Digital Camera and Sensor Evaluation Using Photon Transfer</b> (<i>Janesick</i>) 8:30 am to 5:30 pm, \$655 / \$770</p>	
	<p>SC206 <b>Polarized Light: What Your College Instructor Forgot to Tell You</b> (<i>Fisher</i>) 8:30 am to 5:30 pm, \$600 / \$715</p>	<p>SC180 <b>Imaging Polarimetry</b> (<i>Dereniak, Miles, Sabatke</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>		<p>SC213 <b>Introduction to Interferometric Optical Testing</b> (<i>Wyant</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>	
	<p>SC321 <b>Thin Film Optical Coatings</b> (<i>Macleod</i>) 8:30 am to 5:30 pm, \$600 / \$715</p>	<p>SC504 <b>Introduction to CCD and CMOS Imaging Sensors and Applications</b> (<i>Janesick</i>) 8:30 am to 5:30 pm, \$740 / \$855</p>		<p>SC1003 <b>Optical Scatter Metrology for Industry</b> (<i>Stover</i>) 8:30 am to 12:30 pm, \$445 / \$500</p>	
	<p>SC1114 <b>The Proper Care of Optics: Cleaning, Handling, Storage and Shipping</b> (<i>Schalck</i>) 1:30 pm to 5:30 pm, \$420 / \$475</p>	<p>SC1019 <b>Mounting of Optical Components</b> (<i>Kasunic</i>) 8:30 am to 5:30 pm, \$685 / \$800</p>			
		<p>SC211 <b>Practical Interferometry and Fringe Analysis</b> (<i>Creath</i>) 8:30 am to 5:30 pm, \$600 / \$715</p>			
		<p>SC915 <b>Radiometry Revealed</b> (<i>Shaw</i>) 8:30 am to 12:30 pm, \$375 / \$430</p>			
		<p>SC567 <b>Introduction to Optical Remote Sensing Systems</b> (<i>Shaw</i>) 1:30 pm to 5:30 pm, \$375 / \$430</p>			
		<p>SC792 <b>Polarization in Optical Design</b> (<i>Chipman</i>) 1:30 pm to 5:30 pm, \$375 / \$430</p>			

Legend for Education Products:

Price = SPIE Member / Non-Member

SC000 = Course Number

WS000 = Workshop Number

# Course Daily Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday
<b>Metrology</b>				
	SC1113 <b>Fundamentals and Applications of Spectroscopic Ellipsometry</b> (Synowicki, Tiwald) 8:30 am to 5:30 pm, \$600 / \$715	SC211 <b>Practical Interferometry and Fringe Analysis</b> (Creath) 8:30 am to 5:30 pm, \$600 / \$715	SC1003 <b>Optical Scatter Metrology for Industry</b> (Stover) 8:30 am to 12:30 pm, \$445 / \$500	
		SC213 <b>Introduction to Interferometric Optical Testing</b> (Wyant) 8:30 am to 12:30 pm, \$410 / \$465	SC492 <b>Predicting, Modeling, and Interpreting Light Scattered by Surfaces</b> (Germer) 1:30 pm to 5:30 pm, \$375 / \$430	
<b>Detectors and Imaging Devices</b>				
SC194 <b>Multispectral and Hyperspectral Image Sensors</b> (Lomheim) 1:30 pm to 5:30 pm, \$460 / \$515		Tue SC504 <b>Introduction to CCD and CMOS Imaging Sensors and Applications</b> (Janesick) 8:30 am to 5:30 pm, \$740 / \$855	SC916 <b>Digital Camera and Sensor Evaluation Using Photon Transfer</b> (Janesick) 8:30 am to 5:30 pm, \$655 / \$770	
		SC915 <b>Radiometry Revealed</b> (Shaw) 8:30 am to 12:30 pm, \$375 / \$430		
		SC567 <b>Introduction to Optical Remote Sensing Systems</b> (Shaw) 1:30 pm to 5:30 pm, \$375 / \$430		
<b>NanoScience</b>				
	SC1113 <b>Fundamentals and Applications of Spectroscopic Ellipsometry</b> (Synowicki, Tiwald) 8:30 am to 5:30 pm, \$600 / \$715			SC727 <b>Nanoplasmonics</b> (Stockman) 8:30 am to 5:30 pm, \$525 / \$640
	SC1082 <b>Nanophotonics and Metaphotonics</b> (Prasad) 8:30 am to 12:30 pm, \$375 / \$430			
<b>NanoEngineering</b>				
	SC1082 <b>Nanophotonics and Metaphotonics</b> (Prasad) 8:30 am to 12:30 pm, \$375 / \$430		SC1003 <b>Optical Scatter Metrology for Industry</b> (Stover) 8:30 am to 12:30 pm, \$445 / \$500	
<b>Illumination Engineering</b>				
	SC011 <b>Design of Efficient Illumination Systems</b> (Cassarly) 1:30 pm to 5:30 pm, \$375 / \$430	SC388 <b>Non-Imaging Optics</b> (Winston) 8:30 am to 12:30 pm, \$375 / \$430		
		SC915 <b>Radiometry Revealed</b> (Shaw) 8:30 am to 12:30 pm, \$375 / \$430		

# What's happening here?

Daily event news, photos and video  
at [www.spie.org/OPnews](http://www.spie.org/OPnews)



 [Facebook.com/SPIE.org](https://www.facebook.com/SPIE.org)

 #OpticsPhotonics  
@SPIEevents  
@SPIEtweets

 [PublicRelations@SPIE.org](mailto:PublicRelations@SPIE.org)



## ADVANCE YOUR TECHNICAL CAREER

[www.SPIECareerCenter.org](http://www.SPIECareerCenter.org)

**SPIE  
Career  
Center**

### Stay informed

- See what engineering and technical jobs are available by using our exclusive job search tools

### Gain exposure

- Post your CV/resume online for employers to see—it's free!

### Build your network

- Attend our Job Fairs and enroll in SPIE educational courses

### Go above and beyond

- Set up job alerts, access career-related articles and more



Contact Sara Liebert: +1 360 685 5600, [info@spiecareercenter.org](mailto:info@spiecareercenter.org)





# Course Daily Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday
<b>X-Ray, Gamma-Ray, and Particle Technologies</b>				
	SC321 <b>Thin Film Optical Coatings</b> ( <i>Macleod</i> ) 8:30 am to 5:30 pm, \$600 / \$715	SC211 <b>Practical Interferometry and Fringe Analysis</b> ( <i>Creath</i> ) 8:30 am to 5:30 pm, \$600 / \$715	SC213 <b>Introduction to Interferometric Optical Testing</b> ( <i>Wyant</i> ) 8:30 am to 12:30 pm, \$375 / \$430 SC1003 <b>Optical Scatter Metrology for Industry</b> ( <i>Stover</i> ) 8:30 am to 12:30 pm, \$445 / \$500 SC492 <b>Predicting, Modeling, and Interpreting Light Scattered by Surfaces</b> ( <i>Germer</i> ) 1:30 pm to 5:30 pm, \$375 / \$430	
<b>Signal, Image, and Data Processing</b>				
			SC916 <b>Digital Camera and Sensor Evaluation Using Photon Transfer</b> ( <i>Janesick</i> ) 8:30 am to 5:30 pm, \$655 / \$770	
<b>Atmospheric and Space Optical Systems</b>				
	SC135 <b>Adaptive Optics</b> ( <i>Tyson</i> ) 8:30 am to 5:30 pm, \$695 / \$810 SC1114 <b>The Proper Care of Optics: Cleaning, Handling, Storage and Shipping</b> ( <i>Schalck</i> ) 1:30 pm to 5:30 pm, \$420 / \$475	SC915 <b>Radiometry Revealed</b> ( <i>Shaw</i> ) 8:30 am to 12:30 pm, \$375 / \$430 SC567 <b>Introduction to Optical Remote Sensing Systems</b> ( <i>Shaw</i> ) 1:30 pm to 5:30 pm, \$375 / \$430	SC916 <b>Digital Camera and Sensor Evaluation Using Photon Transfer</b> ( <i>Janesick</i> ) 8:30 am to 5:30 pm, \$655 / \$770	
<b>Solar Energy + Technology</b>				
	SC1113 <b>Fundamentals and Applications of Spectroscopic Ellipsometry</b> ( <i>Synowicki, Tiwald</i> ) 8:30 am to 5:30 pm, \$600 / \$715 SC321 <b>Thin Film Optical Coatings</b> ( <i>Macleod</i> ) 8:30 am to 5:30 pm, \$600 / \$715	SC388 <b>Non-Imaging Optics</b> ( <i>Winston</i> ) 8:30 am to 12:30 pm, \$375 / \$430 SC915 <b>Radiometry Revealed</b> ( <i>Shaw</i> ) 8:30 am to 12:30 pm, \$375 / \$430	SC1003 <b>Optical Scatter Metrology for Industry</b> ( <i>Stover</i> ) 8:30 am to 12:30 pm, \$445 / \$500 SC492 <b>Predicting, Modeling, and Interpreting Light Scattered by Surfaces</b> ( <i>Germer</i> ) 1:30 pm to 5:30 pm, \$375 / \$430	
<b>Professional Development</b>				
WS1058 <b>Critical Skills for Compelling Research Proposals</b> ( <i>Diehl</i> ) 1:30 pm to 5:30 pm, \$125 / \$175	WS897 <b>Effective Technical Presentations</b> ( <i>Doumont</i> ) 8:30 am to 12:30 pm, \$125 / \$175 WS908 <b>Effective Scientific Papers</b> ( <i>Doumont</i> ) 1:30 pm to 5:30 pm, \$125 / \$175	WS1059 <b>Resumes to Interviews: Strategies for a Successful Job Search</b> ( <i>Lawson, Krinsky</i> ) 8:30 am to 12:30 pm, \$125 / \$175		
<b>Workshops for Optics Educators</b>				
WS1115 <b>Learning How Light Works: Reflection</b> ( <i>Magnani</i> ) 3:00 pm to 5:00 pm, \$10 / \$12	WS1116 <b>Bringing STEM to Light with the LASER Blox Outreach Kit</b> ( <i>DeHarpporte</i> ) 8:30 am to 12:30 pm, \$50 / \$100 WS1081 <b>KHET in the Classroom - Teaching Optics Principles using The Laser Game: KHET 2.0</b> ( <i>Larson</i> ) 1:30 pm to 5:30 pm, \$50 / \$75			

Take a course, attend a workshop, discover solutions with SPIE professional development.

See Course descriptions onsite and register at the Registration Desk!

# Professional Development Events

## Professional Skills Workshop

San Diego Marriott Marquis and Marina, Carlsbad/Cardiff & Balboa  
Sunday 25 August . . . . . 9:00 am to 12:30 pm  
Open to all Students and Early Career Professionals.

9:00 to 10:15 am:

### Career Choices Panel Discussion

This moderated panel discussion with student program alumni will focus on critical career choices, finding jobs, and maintaining work life balance.

Cardiff Room

10:30 to 11:20 am:

### Starting and Running Your Own Company: an entrepreneurial case study of KHET, The Laser Game

Michael Larson, Innovention Toys

11:30 to 12:20 pm:

### Industry Insider: Building a Successful Career in Optics

James Fisher, Newport Corp.

Balboa Room

10:30 to 11:20 am:

### Working Effectively Through your PhD

Jean-luc Doumont, Principiae

11:30 am to 12:20 pm:

### Freedom of Science: the case of Omid Kokabee

Ellen Hutchinson, University of Texas, Austin

Balboa Room

1:30 to 4:30 pm:

### How to Persuade Others

Jean-luc Doumont, Principiae

Being able to persuade others is an essential skill for a successful career: we must convince employers to hire us, persuade our boss to let us start a project, or get our coworkers to help us out for a given job. This workshop shows how to use personal/organizational power, how to deploy tactics, and how to harness social influences so we get other people to accede more easily to our requests.

Cardiff Room

2:00 to 4:00 pm:

### One on One Resume Review

Shoresh Shafei, Univ. of Washington

Bring your resume for a tune up before your job hunting begins. By appointment.

## Career Advancement through SPIE Involvement

Exhibition Hall, Student Presentation Area

Tuesday 27 August. . . . . 1:00 to 2:00 pm

Get plugged in to the SPIE community. SPIE has volunteer opportunities at all levels of the organization. Come to this informal session to learn what opportunities best match your interests and career plans.

Panel Discussion:

### Getting Hired in 2013 and Beyond

Exhibition Hall, Student Presentation Area

Tuesday 27 August. . . . . 2:00 to 3:00 pm

Join us for a panel discussion on careers in optics and photonics outside the academic world. Learn about getting hired at tech-based companies and non-academic jobs directly from human resource professionals in the optics and photonics sector.

## Basic Optics for Non-Optics Personnel

WS609

Introductory, CEU .30 \$100 / \$150 USD, Tuesday 1:30 to 4:00 pm

This course will provide the technical manager, sales engineering, marketing staff, or other non-optics personnel with a basic, non-mathematical introduction to the terms, specifications, and concepts used in optical technology to facilitate effective communication with optics professionals on a functional level. Topics to be covered include basic concepts such as imaging, interference, diffraction, polarization and aberrations, definitions relating to color and optical quality, and an overview of the basic measures of optical performance such as MTF and wavefront error. The material will be presented with a minimal amount of math, rather emphasizing working concepts, definitions, rules of thumb, and visual interpretation of specifications. Specific applications will include defining basic imaging needs such as magnification, depth-of-field, and MTF as well as the definitions of radiometric terms.

### LEARNING OUTCOMES

This course will enable you to:

- read optical system descriptions and papers
- ask the right questions about optical component performance
- describe basic optical specifications for lenses, filters, and other components
- assess differences in types of filters, mirrors and beam directing optics
- know how optics is used in our everyday lives

### INTENDED AUDIENCE

This course is intended for the non-optical professional who needs to understand basic optics and interface with optics professionals.

### INSTRUCTOR

Kevin Harding has been active in the optics industry for over 30 years, and has taught machine vision and optical methods for over 25 years in over 70 workshops and tutorials, including engineering workshops on machine vision, metrology, NDT, and interferometry used by vendors and system houses to train their own engineers. He has been recognized for his leadership in optics and machine vision by the Society of Manufacturing Engineers, Automated Imaging Association, and Engineering Society of Detroit. Kevin is a Fellow of SPIE and was the 2008 President of the Society.

This course is also available in online format.

## Critical Skills for Compelling Research Proposals

WS1058

Introductory, CEU .35 \$75 / \$125 USD, Sunday 1:30 to 5:30 pm

Research costs money. The good news is that there are thousands of avenues of financial support. The bad news is that hundreds of thousands of proposals are competing for those funds. This class will teach you to craft high-quality proposals that stand out from the masses. We will focus on five fundamental skills that will bolster the substance, structure, and appearance of your proposals. Adhering to these practices will dramatically increase your odds of winning funding for your research.

### LEARNING OUTCOMES

This course will enable you to:

- identify funding opportunities that align with your research goals
- develop solid research plans and believable budgets
- communicate your research to a general audience
- write in a clear, concise, and compelling manner
- format your proposal for visual appeal

# Professional Development Events

## INTENDED AUDIENCE

This course is intended for all scientists and engineers seeking to improve the quality of their research proposals.

## INSTRUCTOR

**Damon Diehl** is Assistant Professor and Coordinator for the Optical Systems Technology program at Monroe Community College in Rochester, NY and also the founder and owner of Diehl Research Grant Services. He has a Ph.D. in optical engineering from the University of Rochester Institute of Optics and a B.A. in physics from the University of Chicago. His class is based on fifteen years of academic and industrial research experience.

This course is free to SPIE Student Members, but you must register to attend.

## Resumes to Interviews: Strategies for a Successful Job Search

WS1059

**Introductory, CEU .35 \$75 / \$125 USD, Tuesday 8:30 am to 12:30 pm**

This course reviews effective strategies and techniques for a successful job search such as: compiling resumes, writing cover letters, and interviewing tips. The primary goal of the course is to provide creative and proven techniques for new college graduates and professionals to plan and conduct their job search and secure a job.

Creative and comprehensive job search techniques will be discussed as well as actual resume and interviewing examples and tips. Anyone who is getting ready to enter the work force who wants to answer questions such as, "when and how do I start my job search?" "what kind of cover letter and resume gets noticed?" or "how do I sell myself in an interview?" will benefit from taking this course.

## LEARNING OUTCOMES

This course will enable you to:

- start and create your job search plan
- create an online networking presence
- build and write effective cover letters and resumes that get noticed
- avoid common resume and cover letter mistakes
- interview with confidence

## INTENDED AUDIENCE

Graduate students, new graduates, engineers and technicians who wish to learn more about creating a job search plan, writing an effective cover letter and resume that gets you noticed, and techniques for successful interviews.

## INSTRUCTORS

**Paige Lawson** has been in professional recruiting for more than 20 years. She has extensive experience with both in-house corporate environments as well as outside agency/consulting environments. Paige is currently the Executive Recruiter for Exotic Electro Optics in Murrieta, CA, and a member of the local networking group Professionals in Human Resources (PHIRA).

**Suzanne Krinsky** has been in human resources and corporate recruiting for more than 15 years. She has extensive experience with both in-house corporate environments as well as outside agency/consulting environments. Suzanne is currently the Human Resource Director for Daylight Solutions in San Diego, and also a long-time Board member for the Biotech Human Resource Development Coalition (BEDC) and Human Resource Roundtable member.

This course is free to SPIE Student Members, but you must register to attend.

## Effective Technical Presentations

WS897

**Introductory, CEU .35 \$75 / \$125 USD, Monday 8:30 am to 12:30 pm**

Oral presentation skills are a key to success for researchers. This course proposes a five-step methodology that will take you from scratch to an effective technical presentation. It also offers tips on how to manage the nervousness associated with speaking in public.

## LEARNING OUTCOMES

This course will enable you to:

- plan your presentation efficiently
- organize your material into an effective structure
- create slides that get the message across
- deliver your presentation effectively, both verbally and nonverbally
- handle even the most difficult questions

## INTENDED AUDIENCE

This material is intended for anyone who must prepare and deliver oral presentations. Both novice and experienced speakers can expect to learn much from it.

## INSTRUCTOR

**Jean-luc Doumont** runs lectures, workshops, and training programs in oral, written, and graphical communication for engineers, scientists, and managers worldwide. He is an engineer from the University of Louvain and a doctor in applied physics from Stanford University. This course is based on his popular lecture on oral presentations at over 15 top-ranked engineering schools (MIT, Stanford U, UC Berkeley, Caltech, Harvard, etc.).

This course is free to SPIE Student Members, but you must register to attend.

## Effective Scientific Papers

WS908

**Introductory, CEU .35 \$75 / \$125 USD, Monday 1:30 to 5:30 pm**

Strong writing skills are a key to success for researchers. This course proposes a methodology that will take you from scratch to an effective scientific or technical document—a question of structure, not style. The approach is applicable across languages and for a wide range of document types beyond scientific papers, too.

## LEARNING OUTCOMES

This course will enable you to:

- plan your document efficiently
- create an effective abstract, introduction, and conclusion
- organize your material into an accessible structure
- construct paragraphs that get the message across
- write sentences that are easy to read

## INTENDED AUDIENCE

This material is intended for anyone who must write or edit technical documents in general and scientific papers in particular. Both novice and experienced writers can expect to learn much from it.

## INSTRUCTOR

**Jean-luc Doumont** runs lectures, workshops, and training programs in oral, written, and graphical communication for engineers, scientists, and managers worldwide. He is an engineer from the University of Louvain and a doctor in applied physics from Stanford University. This course is based on his lectures and workshops on scientific and technical writing at universities and research centers around the world (MIT, Shell, Johnson & Johnson, etc.).

This course is free to SPIE Student Members, but you must register to attend.



# General Information

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## Registration

### Exhibition Hours

*Convention Center, Exhibition Hall A*

Tuesday 27 August . . . . . 10:00 am to 5:00 pm  
Wednesday 28 August . . . . . 10:00 am to 5:00 pm  
Thursday 29 August . . . . . 10:00 am to 2:00 pm

### Onsite Registration and Badge Pick-Up

*Convention Center, Hall A*

Saturday 24 August . . . . . 6:00 pm to 8:00 pm  
Sunday 25 August . . . . . 7:00 am to 5:00 pm  
Monday 26 August . . . . . 7:15 am to 5:00 pm  
Tuesday 27 August . . . . . 7:30 am to 5:00 pm  
Wednesday 28 August . . . . . 7:30 am to 5:00 pm  
Thursday 29 August . . . . . 7:45 am to 4:00 pm

### Course and Workshop Registration

Courses and workshops are priced separately. Course-only registration includes your selected course(s), course notes, coffee breaks, and admittance to the exhibition. Course prices include applicable taxes. Onsite, please go to Course Materials after you pick up your badge.

Multiple facilities may be used for courses; allow yourself enough time to register, pick up your materials and possibly walk to a nearby facility before your course begins.

### SPIE Cashier

*Hall A, Registration Area: Open during registration hours.*

### Registration Payments

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

### Receipts and Certificate of Attendance

Preregistered attendees who did not receive a receipt or attendees who need a Certificate of Attendance may obtain those from the SPIE Cashier at Badge Corrections and Receipts.

### Badge Corrections

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

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## Food and Beverage Services

### Coffee Breaks

Sunday and Monday – Upper Level Lobby and Mezzanine Level

Tuesday and Wednesday – Exhibition Hall A

Thursday 10:00 to 11:00 am – Exhibition Hall A

Thursday 3:00 to 4:00 pm – Upper Level Lobby and Mezzanine Level

Complimentary coffee will be served twice daily, at 10:00 am and 3:00 pm. Check individual conference listings for exact times.

### Food and Refreshments for Purchase

*Food Outlets – Exhibition Halls*

Tuesday through Thursday . . . . . 11:00 am to 2:00 pm

*Upper Level Lobby Service Carts*

Sunday through Thursday . . . . . 9:00 am to 3:00 pm

Hot and cold snacks, hot entrees, deli sandwiches, salads, and pastries are available for purchase. Cash and credit cards accepted.

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## Onsite Services

### Internet Access

*Internet Stations, Convention Center, Hall B1*

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

### WiFi

B1 Lobby and Upper Level Lobbies

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

### SPIE Conference App

On your Smart Phone (iPhone, Android)

Search and browse the program, special events, participants, exhibitors, courses, and more. Free Conference Apps available for iPhone and Android smart phones.

### SPIE Bookstore

*Convention Center, Hall A*

The SPIE Bookstore is your source for the latest SPIE Press Books, Proceedings, and Education and Professional Development materials. Become an SPIE Member, explore the Digital Library, take home a free SPIE poster, or buy a souvenir (ties, t-shirts, educational toys, and more).

### SPIE Education Services

*Convention Center, Hall A*

Browse course offerings and the other education services available: SPIE courses, videos, and CDs, as well as customized in-company courses.

### SPIE Press Room

*Convention Center, Hall A*

Open during Registration hours

For Registered Press only. The Press Room provides meeting space, refreshments, access to exhibitor press releases, and Internet connections. Press are urged to register before the meeting by emailing name, contact information, and name of publication to [media@spie.org](mailto:media@spie.org).

## SPIE Job Fair—Special 2-Day Event

*Exhibition Hall*

Tuesday 27 August . . . . . 10:00 am to 5:00 pm  
Wednesday 28 August . . . . . 10:00 am to 5:00 pm

For more information see page 2.

## SPIE Luggage and Coat Check

*Convention Center – Hall A Lobby*

Sunday/Monday . . . . . 7:15 am to 6:00 pm  
Tuesday/Wednesday . . . . . 7:30 am to 6:00 pm  
Thursday . . . . . 7:45 am to 6:00 pm  
Complimentary luggage, package, and coat storage are available.  
Please note hours; no late pickup available.

## Business Center

*FedEx Kinko's, Convention Center, Hall A*

Monday through Thursday  
Services include photocopying, faxing, printing services, and shipping.  
Office supplies are also available. Phone 619-525-5477.

## Policies

### Underage Persons on Exhibition Floor Policy

For safety and insurance reasons, no one under the age of 16 will be allowed in the exhibition area during move-in and move-out. During open exhibition hours, only children over the age of 12 accompanied by an adult will be allowed in the exhibition area.

### Unauthorized Solicitation Policy

Unauthorized solicitation in the Exhibition Hall is prohibited. Any non-exhibiting manufacturer or supplier observed to be distributing information or soliciting business in the aisles, or in another company's booth, will be asked to leave immediately.

### Unsecured Items Policy

Personal belongings should not be left unattended in meeting rooms or public areas. Unattended items are subject to removal by security. SPIE is not responsible for items left unattended.

### Misconduct Policy

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