

SPIE Optifab

Exhibition: 12–14 May 2009

Conference: 11–14 May 2009

Courses: 11–13 May 2009

Rochester Riverside Convention Center
Rochester, New York, USA

Exhibition Guide



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Daylight Solutions	Broadly tunable, CW Mode-hop-free laser system
Sensor Electronic Technology, Inc.	Deep UV Light Sources
Luxtera	Blazar
Princetel	FP180 Hand Polisher
JPK Instruments AG	JPK NanoTracker
Solyndra	Solar photovoltaic (PV) system



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SPIE Optifab

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Conference Dates: 11-14 May 2009
Rochester Riverside Convention Center
Rochester, New York, USA

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2009 Exhibition Chairs



James M. Sydor,
Sydor Optics, Inc. (USA)



Richard A. Nasca,
Corning Tropel Corp.
(USA)

Promotional Partners

Laser Focus World
Optics and Laser Europe
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Photonics Media

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**The American Precision
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SPIE Connecting minds.
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General Information

SPIE Onsite Services



Rochester Riverside Convention Center

123 East Main St, Rochester, NY 14604-1619
Tel : (585) 232-7200, Fax: (585) 232-1510, www.rrocc.com

Registration Hours

*Rochester Riverside Convention Center Registration
Convention Center Galleria*

Monday–Tuesday7:30 am to 5:00 pm
Wednesday7:30 am to 5:30 pm
Thursday7:30 am to 3:00 pm

Exhibition Hours

*Rochester Riverside Convention Center
Empire Hall*

Tuesday10:00 am to 5:00 pm
Wednesday10:00 am to 5:30 pm
Networking Reception and Poster Viewing4:30 to 5:30 pm
Thursday10:00 am to 3:00 pm

Networking Reception and Poster Viewing

*Rochester Riverside Convention Center
Empire Hall*

Wednesday4:30 to 5:30 pm
All attendees are invited to relax, socialize, and enjoy refreshments. Conference posters will be on display. Poster authors will be present for discussion from 4:30 to 5:30 pm.

Poster authors may set up their posters on Wednesday from 10:00 am to 4:00 pm. Poster authors should check in at SPIE Registration before displaying their posters.

Message Center

Rochester Riverside Convention Center, Near Registration

Messages will be taken during registration hours Monday through Thursday by calling +1 585 770-2360.

WiFi

Complimentary Internet Wireless Access

Sponsored by:



Complimentary wireless access to the Internet for all attendees is available in the Empire Lounge.

Coffee Breaks at the Convention Center

Complimentary coffee will be served in the Exhibition Hall, Tuesday through Thursday each day at approximately 10:00 am and 3:00 pm.

Tuesday Sponsored by: Wednesday Sponsored by:



Policies

Audio, Video, Digital Recording Policy

In the Meeting Rooms and Poster Sessions: For copyright reasons, recordings of any kind are strictly prohibited without prior written consent of the presenter in any conference session, course or of posters presented. Each presenter being taped must file a signed written consent form. Individuals not complying with this policy will be asked to leave a given session and asked to surrender their film or recording media. Consent forms are available at the SPIE Audiovisual Desk.

In the Exhibition Hall: For security and courtesy reasons, photographing or videotaping individual booths and displays in the exhibition hall is allowed ONLY with explicit permission from on-site company representatives. Individuals not complying with this policy will be asked to surrender their film and to leave the exhibition hall.

Underage Persons on Exhibition Floor

For safety and insurance reasons, no persons 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

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

Unsecured Items

Personal belongings such as briefcases, backpacks, coats, book bags, etc. should not be left unattended in meeting rooms or public areas. These items will be subject to removal by security upon discovery.

Daily Event Schedule

Monday	Tuesday	Wednesday	Thursday
Technical Conference (Kumler, Pfaff, Sydor, Nasca)			
SC350 Optical Manufacturing Overview (Novak) 8:30 am to 5:30 pm, \$500 / \$595	SC015 Structural Adhesives for Optical Bonding (Daly) 8:30 am to 12:30 pm, \$305 / \$355	SC720 Cost-Conscious Tolerancing of Optical Systems (Youngworth) 8:30 am to 12:30 pm, \$305 / \$355	See SPIE Cashier to register for the Technical Conference or a course.
SC013 Precision Mounting of Optical Components (Yoder, Jr.) 8:30 am to 5:30 pm, \$585 / \$680	SC700 Understanding Scratch and Dig Specifications (Aikens) 8:30 am to 12:30 pm, \$355 / \$405	SC863 Understanding ISO-10110: The Optics Drawing Standard (Aikens) 8:30 am to 5:30 pm, \$675 / \$770	
SC212 Modern Optical Testing (Wyant) 1:30 to 5:30 pm, \$315 / \$385	SC848 Fundamentals of Single Point Diamond Turning (Schaefer) 1:30 to 5:30 pm, \$305 / \$355	SC552 Aspheric Optics: Design, Fabrication, and Test (Fischer) 1:30 to 5:30 pm, \$390 / \$440	
	SC220 Optical Alignment Mechanisms (Guyer) 1:30 to 5:30 pm, \$305 / \$355		
Exhibition			
10:00 am to 5:00 pm		10:00 am to 5:30 pm	10:00 am to 3:00 pm
		Commercial Presentations— Exhibition Hall, 1:00 to 5:30 pm	
Exhibitor Product Demonstrations, 10:30 to 5:00 pm			
		Networking Reception and Poster Viewing, Empire Hall, 4:30 to 5:30 pm	



New York Industry Association

www.newyorkphotonics.org

Promoting New York State's photonics, optics, and imaging industry through cluster-based initiatives. Programs and services to help New York State companies increase visibility, grow sales, reduce costs, and attract the best talent. Group promotions, networking, information transfer, discount purchasing, government liaison, and workforce development. Host of NYS Pavilions at major trade shows.

New York State Pavilion Participants at Optifab 2009:

AccuCoat, Inc.
Booth #511

Advanced Glass Industries
Booth #502

CDGM Glass Company USA
Booth #407

Dynasil Corp./EMF Corp.
Booth #401

JENOPTIK Polymer Systems, Inc.
Booth #409

JML Optical Industries Inc.
Booth #1322

Metrology Concepts LLC
Booth #1326

New York Photonics Industry Association
Booth #507

Optics Technology, Inc.
Booth #500

Optimax Systems, Inc.
Booth #508

Photon Gear, Inc.
Booth #1324

Reflexite Optical Solutions Business
Booth #1318

Rochester Precision Optics LLC
Booth #505

Spectrum Thin Films Corp.
Booth #506

Swift Glass Co.
Booth #503

Sydor Optics, Inc.
Booth #501

Syntec Optics
Booth #510

University of Rochester, The Institute of Optics
Booth #509

Welch Allyn Lighting Products
Booth #1003

Wordingham Technologies
Booth #504

Exhibitor Product Demonstrations

Exhibition Hall, Commercial Presentation Area



TIME	Tuesday	Wednesday	Thursday
10:30 AM	<p>Demo taking place in Booth 414</p> <p>5-Axis Flexible Fabrication Center David Mohring, OptiPro Systems</p> <p>CNC eSX machine generates and shapes spherical, aspheric and conformational optical surfaces. Cost effective platform: twin liquid cooled 24,000 rpm ceramic bearing tool spindles with tool/work probes.</p>	<p>Demo taking place in Booth 515</p> <p>SPM 140 Spherical/Aspheric Grinding Christian Leonhardt, Satisloh North America Inc.</p> <p>The SPM 140 will be demonstrated, including the Versatile 360° tool swivel head with multiple functions, Unique 2/4-tool spindle technology, and a simulation of our aspheric grinding capabilities.</p>	<p>Demo taking place in Booth 515</p> <p>SPM/SPS Micro Line Michael Wagner, Satisloh North America Inc.</p> <p>A brief demonstration of Satisloh's Micro Line SPM/SPS 30 grinding and polishing machines.</p>
11:30 AM	<p>Wavefront Measurement of Miniature Aspheric Lenses Dr. Iris Erichsen, Trioptics GmbH</p> <p>The latest developments in fast wafer testing with WaveMaster PRO Wafer will be presented. The instrument offers real time wave front analysis of aspherical optics on wafers in production.</p>	<p>3D Production Metrology for Aspheric Optics Mark Middleton, Taylor Hobson</p> <p>Taylor Hobson introduces a new 3D instrument for the precision measurement of high NA aspheres. A new 'factory-floor' interface provides 'single-click' operation, ideal for the production environment.</p>	<p>Demo taking place in Booth 414</p> <p>5-Axis Non-Contact Metrology For Complex Shapes Scott DeFisher, OptiPro Systems</p> <p>Demonstrating a 5-axis, air bearing, non-contact metrology system for measuring simple and complex geometries.</p>
12:30 PM	<p>The PSM - A Multi-Function Optical Test Instrument Robert Parks, Optical Perspectives Group, LLC</p> <p>PSM applications include alignment, star testing, imaging, autocollimation, lens properties, window distortion, non-contact profiling, radius measurement, mid-spatial frequency scattering, radiometry.</p>	<p>1:00 – 5:30 PM Commercial Presentations <i>Session Chair:</i> Walter C. Czajkowski, Edmund Optics Inc. <i>See pg 5 for Presentation Schedule</i></p>	<p>Wavefront Measurement of Miniature Aspheric Lenses Dr. Iris Erichsen, Trioptics GmbH</p> <p>The latest developments in fast wafer testing with WaveMaster PRO Wafer will be presented. The instrument offers real time wave front analysis of aspherical optics on wafers in production.</p>
1:30 PM	<p>Demo taking place in Booth 215</p> <p>Aspheric Stitching Interferometer – A Metrology Powerhouse Andrew Kulawiec, QED Technologies</p> <p>QED's ASI measures steep aspheres with 1000 waves of departure, without dedicated null lenses.</p>		<p>SCHOTT News on Optical Materials Peter Hartman, SCHOTT North America, Inc.</p> <p>Present state and outlook on optical glass type development, low Tg glasses, special quality grades like enhanced transmission, catalog changes, fluorescence, RoHS and REACH, internet web site, standardization status, digital projection glass types, Zerodur latest information and data on CTE homogeneity, lightweighting and strength.</p>
2:30 PM	<p>Demo taking place in Booth 515</p> <p>On Machine Metrology Fabian Schwalb, Satisloh North America Inc.</p> <p>The introduction of "On Machine Metrology" to Satisloh's Grinding and Polishing process for the measuring of form deviations on substrates while still mounted in the machine.</p>		

TIME	Tuesday	Wednesday
3:30 PM	<p>Demo taking place in Booth 414</p> <p>UltraForm Finishing Scott Bambrick, OptiPro Systems</p> <p>UltraForm Finishing is a process for rapidly finishing and figure correcting spherical and aspherical optical components.</p>	<p>1:00 – 5:30 PM</p> <p>Commercial Presentations <i>Session Chair: Walter C. Czajkowski, Edmund Optics Inc.</i></p> <p><i>See below for Presentation Schedule</i></p>
4:30 PM	<p>Reduce Spoilage, Hands-Free Safe Handling of Optics Steve Bohuczky, Opto-Alignment Technology, Inc.</p> <p>Integrate multiple handling processes on one hands-free bench-top inspection spindle; Delrin™ Vacuum cups from 1.0 - 70.0mm; Cleanroom compatible; Use lint-free Opto-Wipes™.</p>	
5:30 PM		

Commercial Presentations

Exhibition Hall, Commercial Presentation Area

**Hear the latest commercial developments in optical fabrication—
All attendees welcome**

Wednesday · 1:00 to 5:30 pm

Session Chair: Walter C. Czajkowski, Edmund Optics Inc.

1:00 pm: **Large quartz crystals for radiation-hard optical applications**, Vladimir Klipov, Sawyer Technical Materials, LLC (USA) [TD06-100]

1:15 pm: **Wavefront measurement of miniature aspheric lenses: a fast and accurate inspection technology**, Iris Erichsen, Trioptics GmbH (Germany); Marie Cherrier, Trioptics France (France); Aiko Ruprecht, Trioptics GmbH (Germany) [TD06-101]

1:30 pm: **Advanced optical filters for laser applications**, Turan Erdogan, Semrock Inc. (USA) [TD06-40]

1:45 pm: **Low-coherence surface metrology using a multiple-beam optical probe**, Damon W. Diehl, Christopher J. Ditchman, Christopher T. Cotton, ASE Optics, Inc. (USA) [TD06-103]

2:00 pm: **Recent advances in lightweight glass mirrors**, James T. Mooney, ITT Corp. [TD06-116]

2:15 pm: **Human resources: what you don't know can cost you**, Jack Roche, Universal Photonics Inc. (USA) [TD06-105]

2:30 pm: **Advances in the production of high precision aspheres**, Michael Sander, Satisloh GmbH (Germany); Lori B. Heller, Satisloh North America Inc. (USA) [TD06-106]

2:45 pm: **Manufacturing of freeform optics at Jenoptik**, Uwe P. Birnbaum, Tobias Moeller, JENOPTIK Laser, Optik, Systeme GmbH (Germany) [TD06-107]

3:00 pm: **Infrared materials from SCHOTT**, Ed Hart, SCHOTT North America, Inc. (USA) [TD06-108]

Coffee Break 3:15 to 3:30 pm

3:30 pm: **Optical glass program of Schott news and outlook**, Peter Hartmann, SCHOTT AG (Germany) [TD06-109]

3:45 pm: **Dynamic Fizeau interferometers**, Brian Medower, Bradley T. Kimbrough, 4D Technology Corp. (USA) . . . [TD06-110]

4:00 pm: **Fairfield crystal technology: manufacturer of high quality optical crystals and components from deep UV to far IR**, Andrew G. Timmerman, Fairfield Crystal Technology, LLC (USA) [TD06-111]

4:15 pm: **Extended range transmission spheres**, Cody B. Kreisler, Kreisler Optics, Ltd. (USA) [TD06-112]

4:30 pm: **Diversified ultra precision for 2009**, Jeffrey Perra, Moore Nanotechnology Systems, LLC (USA) [TD06-113]

4:45 pm: **New processing technologies for spheres and aspheres**, Matthias Pfaff, OptoTech Optikmaschinen GmbH (Germany) [TD06-114]

5:00 pm: **Software assisted scratch inspection**, David M. Aikens, Savvy Optics Corp. (USA); Ari Siletz, CCDMETRIX (USA) [TD06-102]

5:15 pm: **Innovative surface measurement solutions for asphere, deep parabolic, ogive, and conformal geometries**, Scott DeFisher, Scott Bambrick, Michael J. Bechtold, David E. Mohring, OptiPro Systems (USA) [TD06-115]



SPIE

Optifab



Exhibition Hours

Rochester Riverside Convention Center · Empire Hall

Tuesday 12 May 10:00 am to 5:00 pm
 Wednesday 13 May 10:00 am to 5:30 pm
 Networking Reception and
 Poster Viewing 4:30 to 5:30 pm
 Thursday 14 May 10:00 am to 3:00 pm

How to use this directory

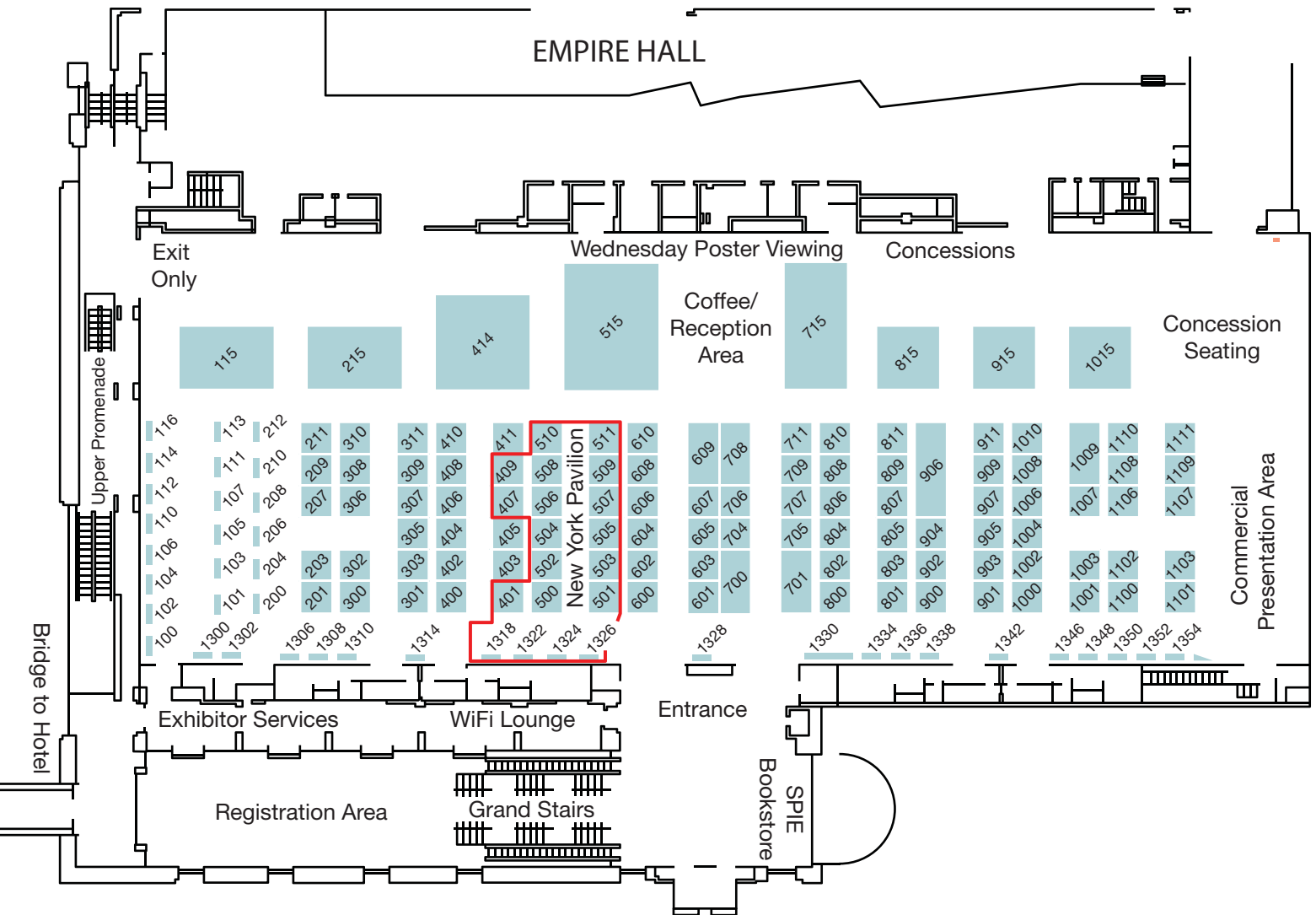
Exhibitors are listed in alphabetical order with details about products or services they are exhibiting. Companies are additionally cross-indexed by technology areas in the Product Index on pages 30–31, to allow you to quickly shop for products for your engineering and business needs.

Booth numbers are provided in the Exhibitor Directory and may be cross-referenced with the map above.

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Don't miss out:

- Wednesday Commercial Presentations in the Exhibition Hall
- See real-time Equipment Demonstrations in the Exhibition Hall
- Expand your resume and take a course—10 courses to choose from
- Win an iPod on Thursday (must be present to win)



Exhibitor Listing

4D Technology Corp.

#601

SPIE Corporate Member **APOMA**

3280 E Hemisphere Loop Ste 146, Tucson, AZ, 85706
520/294-5600; fax 520/294-5601
sales@4dtechnology.com; www.4dtechnology.com

New Product: FizCam 3000 dynamic, on-axis interferometer for long stand-off measurement of mirrors & other optics.

4D designs and manufactures dynamic laser interferometers for non-contact metrology of optical quality surfaces, even in the presence of vibration and turbulence. 4D systems offer high spatial resolution acquisition of phase data in as little as 1us. 4D combines expertise in metrology, optical/mechanical design, software and manufacturing to develop and commercialize innovative products for applications in space and terrestrial astronomy, optics and data storage. Contact: Chip Ragan, Director of North American Sales, chip.ragan@4dtechnology.com; Steven Martinek, Director of Worldwide Sales, steve.martinek@4dtechnology.com.

AccuCoat, Inc.

#511

APOMA

111 Humboldt St, Rochester, NY, 14609
585/288-2330; fax 585/288-2331
alan@accucoatinc.com; www.accucoatinc.com

AccuCoat Inc. is a supplier of thin film coatings on plastic, metal, glass and a variety of other components. Producing a wide variety of antireflective, beamsplitter, hot & cold mirror, filter and metallic coatings as well as custom coatings to meet your dynamic applications. Experienced in handling prototype thru OEM volumes. Coatings available from the UV to the IR on sizes up to 24". Over 60 years combined engineering experience can provide custom designed solutions. Contact: Alan Parsons, Sales Manager, alan@accucoatinc.com.

Advanced Glass Industries

#502

APOMA

1335 Emerson St, Rochester, NY, 14606
585/458-8040; fax 585/458-8087
agj@advancedglass.net; www.advancedglass.net

Manufacturer of molded and precision machined glass products. Services include precision custom molding, annealing, slumping, sawing, grinding, CNC machining, generating, edging, cutting, and machining. Products include optical and filter glass, Fused Quartz, fused Silica, and industrial glass. Prototype to production quantities. North America distributor of GFE's high index coating materials. Contact: Henry Louis, Sales Manager, hank@advancedglass.net; Alicia Gionta, Sales, agionta@advancedglass.net.

Ametek Precitech, Inc.

#609

SPIE Corporate Member

44 Blackbrook Rd, Keene, NH, 03431
603/357-2511; fax 603/358-6174
thoppock@precitech.com; www.precitech.com

New Product: PGI Blu - A high precision 3D metrology instrument for steep-sided aspheric optics.

Taylor Hobson is an ultra-precision technology company operating at the highest levels of accuracy. We provide contact and non-contact measurement solutions to the most demanding applications on a global basis. We are continually evolving our products to meet the ever-increasing demands of today's industries. Taylor Hobson products are widely used in the development and production of next generation technologies, particularly in semiconductor, hard disk and precision optics. Contact: Rick Parnoff, Regional Sales Manager, Rick.Parnoff@ametech.com; Mark Middleton, Business Development Manager, Mark.Middleton@ametech.com.

Angstrom Precision Optics

#101

SPIE Corporate Member **APOMA**

190 Bennington Dr, Rochester, NY, 14616
585/663-7230; fax 585/663-7236
info@apoptics.com; www.apoptics.com

New Product: APO is pleased to announce our new plano germanium and silicon window products.

Manufacturer precision plano elements. Windows, wedges, filters, mirrors and post fabrication of coated optics for UV, VIS and IR applications. Capabilities include CP, DS and O.D. polishing to <0.5 arc sec wedge, <10-5 SD and $\lambda/20$ wave flatness. CNC dicing services. Materials include optical glass, fused quartz / silica, filter glass, silicon, germanium, Borofloat and float glass. APO provides quality optics with our expedited 2-3 day delivery. Contact: Ron Schulmerich, President, info@apoptics.com.

Apollo Optical Systems Inc.

#1010

SPIE Corporate Member

330 Clay Rd, Rochester, NY, 14623
585/272-6170; fax 585/272-6177

Manufacturer of custom precision optical components specializing in Single Point Diamond Turning and injection molded polymer optics in prototype and production volumes. In-house capabilities include SPDT, extensive metrology, injection molding, optical/mechanical design and engineering. AOS specializes in design and manufacturing of diffractive and refractive optics. Contact: Daniel McGarry, President, McGarry@ApolloOptical.com; Claude Tribastone, President, Manufacturing, Tribastone@ApolloOptical.com.

Applied Image, Inc.

#909

SPIE Corporate Member

1653 E Main St, Rochester, NY, 14609
585/482-0300; fax 585/288-5989
info@appliedimage.com; www.appliedimage.com

"Your Single Source Photonics Solution Provider" dedicated to innovative OPTO-IMAGING Products & Services. Providing custom and "off the shelf" linear scales, test targets, reticles, encoders, image analysis standards, sinusoidal arrays, photo masks, ronchi rulings & other imaged components on various substrate materials for today's complex photonics needs. Now offering Imatest software with Applied targets for analyzing image quality. APPLIED IMAGE, where image concepts become reality. Contact: Paul Anderson, Vice-President, panderson@appliedimage.com; Luke Hobson, Business Manager, Lhobson@appliedimage.com.

Applied Surface Technologies

#1314

SPIE Corporate Member

15 Hawthorne Dr, New Providence, NJ, 07974
908/464-6675; fax 908/464-7475
co2clean@co2clean.com; www.co2clean.com

We will demonstrate the CO₂ Snow Jet — a simple surface cleaning process that can remove particles of all sizes (down to 0.03 microns) and also organic residues. Bring samples for a demonstration. The CO₂ snow cleaning process works well for many wafers, ceramics, metals, substrates, optics, analytical samples (AFM), diamond turned optics and many other applications. The Snow Jet process is nondestructive and residue-free. See www.co2clean.com. Contact: Robert Sherman, President, roberts@co2clean.com.

Ariel Optics, Inc.

#204

SPIE Corporate Member

261 David Pkwy, Ontario, NY, 14519
585/265-4820; fax 585/265-1052
sales@arieloptycs.com; www.arieloptycs.com

Ariel Optics specializes in the manufacture of ultra precision plano optical components. Products include mirrors, windows, prisms, beamsplitters, wedges, light pipes, precision flats, penta-prisms, etc. We are regularly manufacturing components for R&D, military/defense, aerospace, medical, and commercial applications. We specialize in cost effective prototypes to mid-level production quantities. Feel free to contact us anytime for a quotation. Contact: Joshua Gebhard, Sales Associate, sales@arieloptycs.com; Frederick Koch, President, frederick@arieloptycs.com.

AudioDev USA, Inc.

#807

5126 Clareton Dr Ste 100, Agoura Hills, CA, 91301
818/540-3100; fax 818/540-3107
sales-us@audiodev.com; www.audiodev.com

New Product: Unique non-contact tester for coated curved surfaces.

AudioDev specializes in complete solutions for quality assurance and increased productivity in optical media manufacturing and industries that employ thin film coatings. Our customer base covers all sectors of the optical media industry, as well as manufacturers of flat panel displays, precision glass, solar cells and other industrial applications where thin layers need to be checked for quality with respect to color determination, measuring thickness and density. Contact: Eric Dilts, President, eric.dilts@audiodev.com; Hormoz Benjamin, hormoz.benjamin@audiodev.com.

Australian Centre for Precision Optics.

CSIRO

#1328

Bradfield Road, Lindfield, Sydney, NSW, Australia, 2070
61 2 9413 7620; fax 61 2 9413 7200
khuen.wong@csiro.au; www.acpo.csiro.au

New Product: High numerical aperture, ultra-high precision spherical mirrors.

Specialists in design, fabrication and certification of ultra-high precision optical systems and components. Custom optics created in most common materials. Products include: super-polished flats (100th wave p/v, roughness <1Å rms, <500 mm dia.); precision spheres (<40 nm asphericity); ultra-high precision assemblies; low-loss dielectric coatings; wide aperture, tuneable Fabry-Perot etalon filters; precision metrology (surface figure to 100th wave, micro-roughness <1Å rms). Contact: Dr. Bob Oreb, bob.oreb@csiro.au; Ms. Katie Green, katie.green@csiro.au.

CDGM Glass Company USA

#407

3495 Winton Pl Bldg D Ste 2, Rochester, NY, 14623
585/427-8730; fax 585/427-9184
sales@cdgmglass.com; www.cdgmglass.com

Chardon Tool

#1108

115 Parker Ct, Chardon, OH, 44024
440/286-6440
info@chardontool.com; www.chardontool.com

Manufacturer of single-crystal diamond and CBN ultraprecision cutting tools, including low-waviness tools for industrial, military and medical applications. Standard and custom tools produce spherical, aspheric, diffractive and plano optics, and microlens arrays. Tool designs for turning, facing, contouring, flycutting, micromilling and boring. Relapping and remanufacturing services available. Contact: Hugh McAllister, Sales Engineer, hmcallister@chardontool.com; Mike Hunter, VP of Business Development, mhunter@chardontool.com.

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Coastal Optical Systems

#411

SPIE Corporate Member **APOMA**

16490 Innovation Dr, Jupiter, FL, 33478-6428
561/881-7400; fax 561/881-1947
sales@coastalopt.com; www.coastalopt.com

Coastal Optical Systems, part of JENOPTIK Optical Systems division, specializes in rapid design and manufacture of custom precision lens assemblies for aerospace and defense, biomedical, machine vision, astronomical research, and 3-D entertainment markets. Design, optical fabrication, assembly, system alignment and optical testing are performed in-house in Jupiter, Florida. Coastal is a Florida corporation and meets ITAR regulations. Contact: Ray Malcom, VP, Sales & Marketing, ray.malcom@coastalopt.com.

Contour Fine Tooling

#709

143 Jaffrey Rd, Marlborough, NH, 03455
603/876-4908; fax 603/876-4911
jeff@contour-diamonds.us; www.contour-diamonds.com

Contour Fine Tooling supplies single crystal diamond tools for manufacturing I/R, transmissive and reflective optics for Aero-Space/Defense and Consumer industries in addition to Ultra-precision mechanical components. Diamond tools for 2-axis, Freeform and Fast Tool Servo technologies supplied with edge waviness down to 50 nm P-V and < 3 micron tip radius. Contour tools achieve part-cutting results that can be measured in Angstrom Ra value for surface finish and Nanometer form accuracy. Contact: Dennis Keating, VP Sales and Marketing, dennis@contour-diamonds.us; Jeff Tomlin, VP and General Manager, jeff@contour-diamonds.us.

Coresix Precision Glass, Inc.

#907

1737 Endeavor Dr, Williamsburg, VA, 23185
757/888-1361; fax 757/888-1366
ralston@coresix.com; www.coresix.com

Full Function Glass Fabrication Company. Contact: Al Ralston, Director of Sales, ralston@coresix.com.



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#915

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1 Riverfront Plz, Corning, NY, 14831
607/974-9000; fax 607/974-8177
dayjl@corning.com; www.corning.com

Corning is a world leader in delivering advanced optical solutions to commercial and industrial markets. Corning Specialty Materials provides glass, glass ceramics, fluoride crystal materials, optical components, and imaging systems to manufacturers in display, telecommunications, semiconductor, astronomy, aerospace and defense, and vision care. From optical design to final assembly and test, Corning increases the value to its customers by optimizing the end product and reducing cycle times. Contact: Dave Young, Marketing Communications, youngdj@corning.com.



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See full course listing, p. 3.

CTM

#1338

151 Industrial Dr, Frankfurt, NY, 13340
315/894-4377; fax 315/894-6168
john@ctm-corp.com; www.ctm-corp.com

CUNY Center for Advanced Technology

#1300

CUNY CAT CCNY T606, 138th Street and Convent Ave, New York, NY, 10031
212/650-7443
alan@cunycat.org; www.cunyphotonics.com

The New York State Center for Advanced Technology in Photonics Applications at the City University of New York develops and disseminates photonics technology in order to promote NYS economic development in the industrial sectors. Supported by the New York State Foundation for Science, Technology and Innovation (NYSTAR), industry, and the University, the CAT has facilities and equipment at many of its 23 campuses and includes faculty across the University's science and engineering departments. Contact: Alan Doctor, Deputy Director for Business Development, alan@cunycat.org; Nerupa Singh, Administrator, nsingh@ccny.cuny.edu.

DAC International, Inc.

#904

6390 Rose Ln, Carpinteria, CA, 93013
805/684-8307; fax 805/566-2196
info@dac-intl.com; www.dac-intl.com

Davidson Optronics, Inc.

#704

SPIE Corporate Member

2223 W San Bernardino Rd, West Covina, CA, 91790
626/962-5181; fax 626/962-5188
sales@davidsonoptronics.com; www.davidsonoptronics.com

DCM Tech, Inc.

#803

4455 Theurer Blvd, Winona, MN, 55987
507/452-4043; fax 507/452-7970
mikeanderson@dcm-tech.com; www.dcm-tech.com

New Product: Rotary Surface Grinder for flat grinding crystal materials - Model IG 180 SD.

DCM Tech is a US manufacturing company which primarily designs and manufactures a line of Industrial Rotary Surface Grinders. Contact: Mike Anderson, mikeanderson@dcm-tech.com.

Delta Optics Technologies Pte Ltd.

#405

51 Ayer Rajah Crescent #02-15/16, Singapore, Singapore, 139948
65 6779 7976; fax 65 6779 2792
kslee@deltaoptics.com; www.deltaoptics.com

New Product: Hardened steel optical insert produced by Diamond-Direct-Cut-On-Steel (DDCS).

Delta Optics Technologies, a Singapore company incorporated in 2004, is in the business of diamond turning of optical insert and molding of plastic lens and mirror. The company is equipped with Diamond Turning Machine, Profilometer, Tool-maker Microscope, Diamond Cutter Re-sharpener, etc., and has direct access to use optical analytical instruments such as White-light Interferometer, Zygo Interferometer, Spectrophotometer, etc. of Singapore Institute of Manufacturing Technology. Contact: Lee KamSung, Director, Sales & Marketing, kslee@deltaoptics.com; Dr. Liu XiangDong, Director, Technical, xdlu@deltaoptics.com.

Exhibitor Listing

Diacut, Inc.

#903

773 Highway 105, PO Box 217, Palmer Lake, CO, 80133
719/481-4205; fax 719/488-0872
sales@diacut.com; www.diacut.com

Diacut is a customer-oriented manufacturer specializing in high precision diamond and CBN wheels. Our wheels are used for slot-grinding, slicing and dicing, grooving and cut-off operations for glass, ceramics, quartz, sapphire and ferrite. Our wheels are made to customer specifications and are used on high production machines such as K&S, MTI, ITI, Disco and standard surface grinders. Contact: Rene Furrer, Owner, sales@diacut.com; Toni Furrer, VP of Sales, sales@diacut.com.

Diffraction International Ltd.

#310

13033 Ridgedale Dr #139, Minnetonka, MN, 55305-1807
952/945-9912; fax 952/400-8959
info@diffraction.com; www.diffraction.com

New Product: Our new 6025-format CGH nulls provide larger apertures and greater precision with faster delivery.

Diffraction International is the leader in supplying custom CGH diffractive null correctors for interferometric testing of cylinders and aspheres. We provide design, fabrication, certification and full documentation. Durango Interferometry Software brings phase shifting and static analysis to any interferometer. An intuitive graphical interface provides full control of analysis and complete access to raw data. Durango supports most hardware and imports several interferometry data formats. Contact: Steven M. Arnold, President, info@diffraction.com; Mark Mulhern, Optical Engineer, info@diffraction.com.

Displays & Optical Technologies, Inc.

#711

APOMA

1105 Wonder St, Round Rock, TX, 78681
512/246-6400; fax 512/246-6060
info@doti-optics.com; www.doti-optics.com

Dyna Technologies, Inc.

#106

1670 Tropic Park Dr, Sanford, FL, 32773
407/330-6423; fax 407/330-6121
information@dti-fla.com; www.dti-fla.com

New Product: A compact press designed for compression molding of glass optical elements for product development.

Dyna Technologies, Inc. is a manufacturer of a precision glass molding press for production of optical elements such as aspheric lenses. The press features a fully enclosed design for vacuum and inert gas purging operation. Programmable feedback controls provide high precision position, force, heating and cooling profiles throughout the molding process. Contact: Howard Painter, President, hpainter@dti-fla.com; Brent Binkley, Director of GMT, bbinkley@dti-fla.com.

Dynasil Corp./EMF Corp.

#401

SPIE Corporate Member

APOMA

239 Cherry St, Ithaca, NY, 14850
607/272-3320 ext. 26; fax 607/272-3340
sales@dynasil.com; www.dynasil.com

E.T. Precision Optics, Inc.

#402

SPIE Corporate Member

33 Curlew St, Rochester, NY, 14606
585/254-2560; fax 585/254-2966
jgligora@etprecision.com; www.etprecision.com

Since 1992, ET Precision Optics specializes in precision component machining. Our customers are optical manufacturers, medical, telecommunication, aerospace and military industries. We utilize 5-axis CNC mills, 9-axis lathes and EDM to machine high precision rotational and prismatic components. We hold tolerances as close as $\pm 0.0002''$ and finishes of four RA. What sets us apart is our customer focus, commitment to quality (ISO-9001:2000 registered), attention to detail and on-time delivery. Contact: John Gligigora, Product Engineer Manager, jgligora@etprecision.com.

EMD Chemicals Inc.

#905

SPIE Corporate Member

480 S Democrat Rd, Gibbstown, NJ, 08027
856/423-6300
www.emdchemicals.com

New Product: Super Hydrophobics Top Coats HHD High Index Oxide Mixture.

We are an experienced manufacturer of high purity materials. We have developed Patinal® evaporants, with chemical, optical, electrical and mechanical properties suitable for evaporation. They are supplied as granules, tablets, discs or powders, to best suit the application. Contact: George Zeiter, Sales Manager, george.zeiter@emdchemicals.com; Elaine Hauss, Product Manager, Internal Sales, elaine.hauss@emdchemicals.com.

Engineering Synthesis Design, Inc.

#1001

SPIE Corporate Member

310 S Williams Blvd Ste 210, Tucson, AZ, 85711-4483
520/296-3068; fax 520/296-2897
info@engsynthesis.com; www.engsynthesis.com

ESDI is a globally recognized leader in providing innovative surface & wavefront metrology solutions for astronomical, aerospace, bio-medical, optical fabrication, & production metrology applications. ESDI products include the world-renowned IntelliWave™ software; Intellium™ Fizeau, Shearing & Point-Diffraction Interferometers (classical & vibration-insensitive); Scatterometers; Interferometer Accessories, Upgrades, and Training; and Custom Metrology Solutions. Contact: Don Pearson, Director, Sales & Marketing, sales@engsynthesis.com.

Eperner Technology, Inc.

#1102

SPIE Corporate Member

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

Custom designed infrared lightpipes, electroformed IR radiation shields and cold shields. Low-emissivity Gold and Laser Black® an inorganic non-outgassing coating that some say, "Actually swallows light". Also a broad range of optical fabrication and coating technologies will be displayed with free samples of Laser Gold®, the world's standard for a rugged IR reflective coating. Contact: David Eperner, President, David@epner.com; Paul Brancato, General Manager, Paul@epner.com.

Equipment Acquisition Resources, Inc. #808

SPIE Corporate Member

555 S Vermont St, Palatine, IL, 60067
847/705-7636; fax 847/705-7685
sales@eartechology.com; www.eartechology.com

New Product: Leading Service Provider for Electronic Materials Abrasive Technology.

EAR Technology is a leading service provider for electronic materials abrasive technology, maintaining the world's largest inventory of secondary market equipment for the photonics industry. EARBid is an online auction service that specializes in the remarketing and selling of semiconductor equipment. We have extensive experience in managing the disposition of surplus capital assets for the photonics industry. Contact: Mark Anstett, President, Marka@eartechology.com; Bruce Costello, Director Auction Services, Bruce@earbid.com.

Ferrotec GmbH #206

Seerosenstr 1, Unterensingen, Germany, 72669
49 7022 9270 0; fax 49 7022 9270 1598
gmbh@de.ferrotec.com; www.ferrotec.com

New Product: Electron Beam Evaporators, High Voltage Power Supplies, Evaporation Controller.

Ferrotec is a diversified technology company with a worldwide presence. Ferrotec was founded on a technology core of Ferrofluid magnetic liquid and Ferrofluidic® sealing. The product portfolio includes Silicon Crystal Growing Systems, Multi Wire Saw for Wafer Cutting, Quartz Crucible utilized in CZ Systems, Vacuum Feedthroughs, Ferrofluids, Fabricated Quartz, Thermoelectric Modules, E-Beam Evaporators, and related accessories. Contact: Kevin Schmidlein, Product Manger E-Beam Solutions, schmidk@ferrotec.com; Juergen Pfaehler, General Manager Vacuum Solutions, jpfahler@de.ferrotec.com.

Ferson Technologies, Inc. #1002

APOMA

5801 Gulf Tech Dr, Ocean Springs, MS, 39564
228/875-8146; fax 228/875-5947
www.ferson.com

Manufacturer of custom precision optical components including lenses, prisms, windows, mirrors, cylindrical lenses, filters, beamsplitters and domes. Capabilities include optical coating design and services and optical assemblies. Contact: Louis S. Peters, General Manager, lpeters@ferson.com; Connie Spence, Applications Engineer, cspence@ferson.com.

fineoptix GmbH #309

Schmalheck 18, Hüttenberg, Germany, 35625
49 6441 2104910; fax 49 6441 2104911
info@fineoptix.com; www.fineoptix.com

New Product: new vertical interferometer workstation VT 750 for workshops with excellent price/performance ratio.

fineoptix is a very flexible, rapid response manufacturer of optical components made to customers specification, equipped with state of the art CNC manufacturing, top class metrology and QED SSI Stitching Interferometrie & MRF Finishing. fineoptix offers a new RSI-Plus Service for improvement of polished optics. MPF Systems, a brand of fineoptix, offers innovative and affordable interferometric metrology products - Transmission Spheres, Workshop Interferometers, Fringe Analyzing Software. Contact: Mr. Peter Flug, CEO, p.flug@fineoptix.com; Mr. Claus-Peter Soose, Process Engineer, info@fineoptix.com.

FLIR Systems, Inc. #209

SPIE Corporate Member **APOMA**

27700 SW Parkway Ave, Wilsonville, OR, 97070
503/498-3303; fax 503/498-3551
kip.nix@flir.com; www.flir.com

FLIR Precision Optics manufactures components for Boresight Target Acquisition Systems, Gunner Auxiliary Sights, Early Warning Missile Systems, and Satellite Optics. FLIR Precision Optics is a leading supplier of Infrared Windows, precision reticles, Metallized windows, Filters, and optical coatings for Navigation and Detection Systems with a focus on high quality and on-time deliveries. AS9100 certified, FLIR Systems provides solutions to the military, scientific, and medical industries. Contact: Kip Nix, Business Development Manager, kip.nix@flir.com; Sufi Johnson, Customer Service Representative, sufi.johnson@flir.com.

G.M. Associates, Inc. #113

9824 Kitty Ln, Oakland, CA, 94501
510/430-0806; fax 510/562-9809
info@gmassoc.com; www.gmassoc.com

New Product: We have added new cutting solutions with our Co₂ laser, waterjet and wiresaw machinery.

Our expertise is working with quartz materials. Slicing/cutting: ingots, plates, discs, wafers, blank materials, wiresaw slicing, ID slicing, laser cutting, water jet cutting. Machining: flanges, insulators, pedestals precision grinding contours drilling, slots, angles, radii, grooves, tapers, and custom. Finishing: mechanical/fire polishing, lapping, sandblasting. Fabrication: repairs, R&D, lab ware, joints, and custom construction. Contact: Lisa Vanegas, Vice President/Sales, lisa@gmassoc.com; John Hauer, Sales Engineer, Terri Hartman, Sales.

Glass Fab Inc. #801

SPIE Corporate Member **APOMA**

257 Ormond St, Rochester, NY, 14605
585/262-4000; fax 585/454-4305
info@glassfab.com; www.glassfab.com

Manufacture of custom blanks. Products include fused quartz, fused silica, optical glasses, filter glasses and low/ultra low expansion glasses. Capabilities include annealing, slumping, sawing, grinding, edging, drilling, water jet cutting, CNC shaping and CNC generating. Contact: Daniel Saltzman, President, d_saltzman@glassfab.com; Wayne Leon, Sales Manager, w_leon@glassfab.com.

G-S PLASTIC OPTICS #410

SPIE Corporate Member **APOMA**

408 St Paul St, Rochester, NY, 14605
585/295-0200; fax 585/232-2314
info@gsoptics.com; www.gsoptics.com

G-S PLASTIC OPTICS specializes in the custom manufacture of precision polymer optics for use in imaging, scanning, detection and illumination applications worldwide. The company has in-house capability to provide diamond turned and injection molded prototypes, production injection molding, thin film and reflective coatings and integrated optical solutions to meet a wide range of military, medical, commercial and consumer markets. Contact: Will Beich, Director of New Business Development, willbeich@gsoptics.com; Jeff Cookinham, Application Engineer, jcookinham@gsoptics.com

Exhibitor Listing

GTI Technologies

#201

6 Armstrong Rd, Shelton, CT, 06484
203/929-2200; fax 203/926-0074
info@gti-usa.com; www.gti-usa.com

GTI Technologies sells and services multi-wire slicing saws and wafer lamination, delamination, and mounting tools from Takatori, carbon fiber end effectors from Astel, wafer scribing equipment from JFP. Contact: Robert Thron, VP Sales, bob@gti-usa.com.

Heraeus Quartz America

#804

SPIE Corporate Member

100 Heraeus Blvd., Buford, GA, 30518
678/714-4350; fax 678/714-4358
sales.hqa-optics@heraeus.com; www.heraeusoptics.com

Hinds Instruments, Inc.

#307

SPIE Corporate Member

7245 NW Evergreen Pkwy, Hillsboro, OR, 97124-7135
503/690-2000; fax 503/690-3000
sales@hindsinstruments.com; www.hindsinstruments.com

Hinds Instruments Exicor® product line measures low-level retardation in FPD materials. It is designed to measure and display both the magnitude and fast axis orientation of the retardation in both laboratory and manufacturing settings. A unique design eliminates moving parts and offers unsurpassed sensitivity and precision. Contact: Doug Mark, Sales Engineer, sales@exicor.com; Connie Wimmer, Technical Sales, sales@hindsinstruments.com.

II-VI Infrared

#1110

APOMA

375 Saxonburg Blvd, Saxonburg, PA, 16056
724/352-1504; fax 724/352-4980
info@iiviiinfrared.com; www.iiviiinfrared.com

II-VI INFRARED, the world leader in CO2 laser and infrared optics, designs and produces lenses, mirrors, windows, partial reflectors, beam splitters, phase retarders, rhombs, beam expanders, polarizers, wave plates, modulators and more. IR materials include ZnSe, ZnS and ZnS MultiSpectral. Capabilities include optical design and engineering, optics manufacturing, diamond turning, thin film coating, optical assemblies, world-class quality assurance and international sales and support. Contact: Tom Neff, Regional Manager, Americas, tneff@ii-vi.com.

Imagine Optic

#114

SPIE Corporate Member

18 rue Charles De Gaulle, Orsay, France, 91400
33 1 648 61560; fax 33 1 648 61561
contact@imagine-optic.com; www.imagine-optic.com

New Product: SL Sys Neo: automatized characterization device of small optical components.

Imagine Optic is the world's leading providers of Shack-Hartmann wavefront sensing hardware and software, adaptive optics technologies and professional services in applied optics. We work with scientists and industrialists in domains including pure science, industrial quality control, space and defense, semiconductors and many others. Since 1996, we've been supplying industry leaders around the world with the high-quality products and services that they need to perform. Contact: Jerome Ballesta, US Sales Manager, jballesta@imagine-optic.com; Mark Zacharia, PR, mz@elucido-partners.net.

International Business Center of Greater Rochester NY

#305

100 Chestnut St Ste 1910, Rochester, NY, 14604
585/530-6200
info@IBCRochester.com; www.RochesterBiz.com/IBC

Intlvac

#302

247 Armstrong Ave Unit 6, Georgetown, ON, Canada, L7G 4X6
905/873-0166; fax 905/873-0168
amanda@intlvac.com; www.intlvac.com

New Product: Thin film coatings: AR, DLC, dielectrics, filters, ITO, metals, optical fiber metallization, etc.

Intlvac offers a diverse range of specialty thin film coating services for a variety of applications including optics, fiber optics, photonics, biophotonics, nanotechnology, semiconductors, displays, acoustics, military, surveillance, industrial, scientific, astronomy and aerospace. We offer a wide range of coating technologies such as AC Magnetron Sputtering, DC Magnetron Sputtering, Electron Beam Source, Ion-Beam Assist, Ion-Beam Etching, Ion-Beam Sputtering, PECVD, Resistance Source. Contact: Dino Deligiannis, President, dino@intlvac.com; Parmjeet Panchhi, Coating Manager, ppanchhi@intlvac.com.

IRD Glass

#211

SPIE Corporate Member

810 E St Paul St, Litchfield, MN, 55355
320/693-7217; fax 320/693-7216
ird@irdglass.com; www.irdglass.com

New Product: IRD Glass has recently perfected a new process to manufacture cylindrical laser reflector mirrors.

IRD Glass specializes in manufacturing optical & industrial glass components from a wide range of raw materials, borosilicate to Spinel to Zerodur. They excel at holding very precise tolerances to help their customers solve excessive variation issues. Due to their customer-intimate solutions, IRD has become the sole-source provider to large and small corporations across the globe in the machine vision, sensors, medical, pressure transducer, defense, aerospace and process control industries. Contact: Todd Anderson, Sales and Marketing, todd@irdglass.com; Dirk Kvale, General Manager, dirk@irdglass.com.

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The Optronics Co., Ltd. International Dept.

Sanken Bldg., 5-5, Shin-Ogawamachi, Shinjuku-ku, Tokyo 162-0814 Japan
Fax +81 3 5229-7253 E-mail: intl@optronics.co.jp

Exhibitor Listing

Isuzu Glass Inc. #1004

SPIE Corporate Member

23505 Crenshaw Blvd Ste 130, Torrance, CA, 90505
310/517-1866; fax 310/517-1869
sales@isuzuglass.com; www.isuzuglass.com

New Product: Non Toxic Chalcogenide IR Transmitting Glass.

Custom manufacturer of molded glass optical components and optical filter glass. Aspheric, fly eye, rod lenses and lens arrays. CPC's and secondary concentrators. Manufacturer of laser safety glass, UV absorbing, neutral density, heat absorbing and contrast enhancing filter glasses. Contact: Hiro Yokoi, Vice President, hiro@isuzuglass.com; Mike Preston, Sales, mike@isuzuglass.com.

JENOPTIK Laser, Optik, Systeme GmbH #411

SPIE Corporate Member

Goeschwitzer Strasse 25, Jena, Germany, 07745
49 3641 65 3148; fax 49 3641 65 3677
optics@jenoptik.com; www.jenoptik-los.com

The Optics Business Unit of the JENOPTIK Laser, Optik, Systeme GmbH is a leading OEM supplier of high-precision optical components of varied shapes and materials from XUV to IR. Oriented towards customers' targets it develops and produces customized lenses, subsystems and opto-mechanical modules for the semiconductor equipment industry, laser material processing, defense and security, scanning applications, medical engineering, metrology and machine vision. Contact: Mr. Michael Kahlke, Head of Sales Optics, michael.kahlke@jenoptik.com; Mr. Ray Malcom, V.P., Sales & Marketing of Coastal Optical Systems, Inc., ray.malcom@coastalopt.com.

JENOPTIK Polymer Systems, Inc. #409

2117 Buffalo Rd #222, Rochester, NY, 14624
585/272-6184; fax 585/424-6436
ldobosz@jenoptik-ps.com; www.jenoptik-ps.com/USA

Jenoptik Polymer Systems is a technology driven company delivering high quality polymer optical components and optoelectronic assemblies to customer specifications. We offer the full process chain with complete in-house capabilities in optical design, diamond turning, injection molding, thin film coating and optoelectronic assembly and packaging to provide solutions from prototyping to high volume manufacturing. We also offer custom LEDs, photodiodes and color measurement sensors. Contact: Lynn Dobosz, Managing Director, info@jenoptik-ps.com.

JML Optical Industries Inc. #1322

820 Linden Ave, Rochester, NY, 14625
585/248-8900; fax 585/248-8924
jml@jmloptical.com; www.jmloptical.com

New Product: Newly updated Web-site featuring thousands of off the shelf precision optics, lenses and coatings.

JML Optical is a world-class manufacturer of precision optical components and systems. We also apply thin-film coatings on a variety of substrates. Our 4th edition catalog has over 4000 stock optical products available. We do custom OEM designs and manufacture prototypes through high volume production quantities. Everything from design, through manufacturing and coating can be done under one roof at our Rochester, NY headquarters. Contact: Gregg Sadwick, Sales Manager, greggs@jmloptical.com; Marty Roberts, Director of Catalog Division, martyr@jmloptical.com.

KDF #207

10 Volvo Dr, Rockleigh, NJ, 07647
201/784-5005
todd@kdf.com; www.kdf.com

Kodak #1306

2400 Mt Read Blvd, Rochester, NY, 14650-3092
585/722-4251; fax 585/477-8798
steven.hallatt@kodak.com; www.kodak.com/go/mpaccessories.com

Kopp Glass, Inc. #1336

2108 Palmer St, Pittsburgh, PA, 15218
412/271-0190; fax 412/271-4103
sales@koppglass.com; www.koppglass.com

Kreischer Optics, Ltd. #210

APOMA

1729 Oak Dr, McHenry, IL, 60050-0306
815/344-4220; fax 815/344-4221
optics@kreischer.com; www.kreischer.com

New Product: Aspheric manufacturing capacity doubled with added versatility and ability for rapid prototyping.

Custom manufacture of precision optical components and sub-assemblies including aspherical, cylindrical and spherical lenses, mirrors, prisms, windows and master test glasses. In house capabilities include rapid prototyping, lens design, optical testing services and coating. Contact: Cody B. Kreischer, President, cody@kreischer.com; Deborah L. Trexler, Office Manager, debbie@kreischer.com.

Kugler of America LTD #707

SPIE Corporate Member

48 South Rd Unit I, Somers, CT, 06071
860/749-6400; fax 860/749-6600
info@kuglerofamerica.com; www.kuglerofamerica.com

New Product: Micro Gantry System GU, 3-5 axis freeform, Laser and Mechanical micro machining, 3 sigma < 250nm.

We are a leading manufacturer of ultra-precision Machining Systems for Optical Surfaces, Optical 3D Structured Surfaces, Waver-thinning and Micromachining applications, as well as Laser Micro machining E.g.: Fly-cutters, Drum -Turning machines, Micromachining Systems, Custom Metal Mirrors, Optical structured surfaces, CO₂-Laser Beam Delivery Systems and Laser Mirrors for OEM and Scientific end users. Contact: Meinrad Schirmeister, General Manager, info@kuglerofamerica.com.

LaCroix Optical Co. #311

SPIE Corporate Member **APOMA**

PO Box 2556, Batesville, AR, 72503
870/698-1881; fax 870/698-1880
karen@lacroixoptical.com; www.lacroixoptical.com

LaCroix Optical Co., a leading manufacturer of custom precision optics for more than 60 years, specializes in achromats, lenses, windows, prisms, wedges and mirrors. An ISO 9001:2000 registered company, LaCroix Optical Co. can supply your optical components in any volume. With a unique combination of modern and conventional production and testing equipment plus an in-house coating facility LaCroix Optical Co. is your source for custom precision optics. Contact: Tom Cox, Manufacturing Engineer, tom@lacroixoptical.com; David Cossey, Manufacturing Engineer, david@lacroixoptical.com.

Larsen Equipment Design, Inc. #904

APOMA

1117 NW 52nd St, Seattle, WA, 98107-5130
800/789-5121; fax 206/789-7756
pam@larsenequipment.com; www.larsenequipment.com

New Product: Come see our new 4" capacity polisher. It includes the functions and design of our micro-polishers.

Larsen Equipment Design is your USA manufacturer of precision optical equipment for micro, miniature and now 4" lenses. Since 1981 we have been recognized as the source for your optics manufacturing needs. Our polishers are made with sturdy stainless steel cases and sealed spindles for worry free operation. Have tooling requirements? Our Engineering Department can help. Turn to us as your precision optics manufacturing resource. Contact: Erik A. Larsen, President, erik@larsenequipment.com.

Laser Focus World #116



PennWell Publishing, 98 Spit Brook Rd, Nashua, NH,
03062-5737
603/891-0123; fax 603/891-0574
www.laserfocusworld.com

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: Kathy Bush, Publisher, kathyb@pennwell.com; Debbie Bouley, Audience Development Manager, debbieb@pennwell.com.

LBP Incorporated #1346

2365 Cox Rd, Bloomfield, NY, 14469
585/624-3052; fax 585/624-1038
frank@lbpinc.com; www.lbpinc.com

Leybold Optics USA, Inc. #800



539 James Jackson Ave, Cary, NC, 27513
919/657-7100; fax 919/657-7101
www.leyboldoptics.com

New Product: 8 inch HELIOS sputtering system for optical coating.

Leybold Optics is a standard-setting, technologically innovative company in the business of vacuum coating systems used for coatings from the deep ultraviolet to the far infrared. The SYRUSPro is a high productivity electron beam gun coating tool with ion plasma assisted deposition for production of dense and shift free optical coatings. The HELIOS system is based on reactive magnetron sputtering and includes an in situ optical monitoring system and delivers dense and shift-free films. Contact: Tobias Haecker, Sales Manager, tobias.haecker@leyboldoptics.com.

Liebmann Optical Co. #411

1 Industrial Pky, Easthampton, MA, 01027-1164
413/527-0079; fax 413 527 5132
sales@liebmann.com; www.liebmann.com

M Cubed Technologies #604

921 Main St, Monroe, CT, 06468
203/452-2333; fax 203/452-2335
www.mmmmt.com

MacroTech Steuerungstechnik GmbH #208

Neuhaldenstrae 12a, Korntal-Munchingen, Germany, 70825
49 711 83502 73; fax 49 711 83502 81
m.bresch@macrotech.de; www.macrotech.de

Metrology Concepts LLC #1326



3495 Winton Pl Bldg E Ste 120, Rochester, NY, 14623
585/427-9155; fax 585/427-9026
info@metrologyconcepts.com; www.metrologyconcepts.com

New Product: 8, 10 & 12" horizontal interferometers and accessories. Compact design fits onto 3' x 6' table.

Supplier of measurement solutions for surface and wavefront metrology. Core technologies include phase shifting interferometry, wavefront sensing, optical and mechanical profilometry. Standard and custom instrumentation offered as well as support of existing metrology, training and measurement services. Contact: John Nemechek, JNemechek@MetrologyConcepts.com.

Meyer Burger AG #602

Alte Bernstr 146A, Steffisburg, Switzerland, 3616
41 33 439 05 14
sales@meyerburger.ch; www.meyerburger.ch

Mildex, Inc. #708



1388 Crittenden Rd, Rochester, NY, 14623-2308
585/473-6540; fax 585/475-1971
info@mildex.com; www.mildex.com

New Product: Automatic Lens Centering Machine with Robot; LenScan 200 non-contact optics metrology system.

Model SPCM-M1-AT50 fully automatic lens centering/beveling machine with loading/unloading robot will be displayed. Also demonstrated will be Fogale LenScan 200 able to measure directly lens positions and center thickness inside of closed optical assemblies quickly and accurately. Also displayed is Trioptics OptiSpheric-OptiCentric system for measurement of EFL, BFL, FFL, MTF and Centration errors of single lenses or lens assemblies. Contact: Harvey Miller, mildex@eznet.net.

Model Optics #809

10 Dixon Ave, Woodstock, NY, 12498
845/679-7386; fax 845/679-7449
lkim@modeloptics.com; www.modeloptics.com

New Product: Custom fabrication in IR materials including ZnSe, ZnS, Ge and more.

Custom fabricator of precision optics and optical assemblies. Full fabrication, coating, assembly and testing of prototype to mid volume quantities in house. Rapid optical component fabrication services include coated optics delivered within 1 week. Contact: Larry Kim, lkim@modeloptics.com.

Exhibitor Listing

Moore Nanotechnology Systems LLC #700

APOMA

426A Winchester St, Keene, NH, 03431-0605
603/352-3030; fax 603/352-3363
sales@nanotechs.com; www.nanotechs.com

Nanotech® Ultra-Precision Machining Systems are available in various models with 2 to 5 axes of CNC motion. Single point diamond turning or deterministic microgrinding of spherical, aspheric, freeform, linear diffractive, and prismatic optical structures yield form accuracies as fine as 50nm P-V and surface finishes < 2nm Ra. All Nanotech machines utilize a programming resolution of 1.0 nanometer, and an unprecedented system feedback resolution of only 0.034 nanometer. Contact: Bob Cassin, Sales Manager, cassin@nanotechs.com; Jeff Perra, Sales Engineer, perra@nanotechs.com.

Naked Optics Corp. #1103



843 Cypress Pkwy #412, Kissimmee, FL, 34759
908/685-0352; fax 908/325-0250
sales@nakedoptics.com; www.nakedoptics.com

Supplier of IR optics and diamond-turned components with aspheric, diffractive & free-form surfaces in IR materials, plastics and metals; optical design services; IR materials including ZnSe, Sapphire, BaF₂, CaF₂ and optical glass in finished & blank forms: raw optical glass, molded and CNC-machined blanks of all optical materials. Polished windows and substrates from prototype to high-volume production. Contact: Buzz Nesti, sales@nakedoptics.com; Glen Dunn, Sales Mgr, glen@nakedoptics.com.

Nanovea #1000

6 Morgan Ste 156, Irvine, CA, 92618
949/461-9292; fax 949/461-9232
info@nanovea.com; www.nanovea.com

Nanovea, a Division of Micro Photonics Inc., manufactures testing Instruments for Instrumented Indentation, Scratch/Adhesion, Wear/Friction, Non-Contact 3D Profilometry and is also a provider of Contract Laboratory Services. Nanovea's instruments can be found in distinguished educational and industrial organizations around the world. Thousands of clients rely on Nanovea for innovative solutions, technically superior products, and comprehensive laboratory contract service. Contact: info@nanovea.com.

New York Photonics Industry Association #507

150 Lucius Gordon Dr, West Henrietta, NY, 14586
585/329-4029; fax 585/214-2458
info@newyorkphotonics.org; www.newyorkphotonics.org

NiCoForm Inc. #1354

72 Cascade Dr, Rochester, NY, 14614
585/454-5530; fax 585/454-5167
officemanager@nicofom.com; www.nicofom.com

New Product: Paper: Opto-mechanical design and fabrication of a reliable and light weight stray light baffle.

Ingenuity is at the core of NiCoForm's ability to solve the most challenging technical problems. Electroforms produced with our trademark high strength alloy, NiColoy®, outperform traditional ones in both dynamic and static applications. The high strength of NiColoy® and the replication capabilities of electroforming enable the manufacturing of a variety of components which cannot be made by any other method. A paper will be presented during Session 5: Optical Engineering on Tuesday. Contact: Joe Jachlewski, Project Engineer, info@nicofom.com.

Norland Products Inc. #606

2540 Rte 130 Bldg 100, PO Box 637, Cranbury, NJ, 08512
609/395-1966; fax 609/395-9006
tnorland@norlandproducts.com; www.norlandproducts.com

New Product: New optical adhesive that meets Bellcore GR-1221-Core requirement of 85C/85RH for 2000 hours.

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: Tim Norland, General Manager, tnorland@norlandproducts.com.

North American Coating Laboratories #706

9450 Pineneedle Dr, Mentor, OH, 44060
440/357-7000; fax 440/357-7001
info@nacl.com; www.nacl.com

North American Coating Laboratories provides optical coatings for a variety of customers in the polymer and glass optics markets. Our experience in both dip and vacuum-applied processes make NACL one of the most respected organizations in the optical coatings field. Our coating competencies include Protective, Scratch-resistant, Reflective, Anti-reflective, Filter, Conductive, ITO, and Chemically Resistive coatings. North American Coating Laboratories is certified to ISO 9001:2000 standards. Contact: Dan Fiore, Business Development Manager, dfiore@nacl.com; Brian Wilson, President, bwilson@nacl.com.

Novotech, Inc. #308



916 Main St, Acton, MA, 01720
978/929-9458; fax 978/929-9459
peters@novotech.net; www.novotechinc.com

New Product: OptiPro SX150 CNC Lens Generator for meeting all tolerancing requirements.

Novotech is a global manufacturer of infrared optical materials and services. Infrared germanium is stocked in substantial inventories from ingots to polished or coated optics. Novotech purchases and upgrades the materials from the source, allowing us to offer you a more competitive price. Our crystal growth, fabrication and coating capabilities offer depth of experience that can be applied to your programs. IR Materials include Germanium, Silicon, ZnSe, ZnS, ZnS Cleartran & Sapphire. Contact: Peter Schwarzer, Account Manager, peters@Novotech.net; Michael Hulen, President, mhulen@Novotech.net.

Ocean Optics, Inc.

#1101

830 Douglas Ave, Dunedin, FL, 34698
727/733-2447; fax 727/733-3962
info@oceanoptics.com; www.oceanoptics.com

Ocean Thin Films has pioneered an optical coatings production methodology that combines modern optical thin film deposition techniques with the precision and mass-production capabilities of microlithographic procedures. This patented process enables micron-scale precision patterning of optical thin film coatings on a single substrate. Multiple depositions of patterns to different filter types, including dichroic, can be aligned with remarkable micron-scale precision and repeatability. Contact: John Dougherty, Application Engineer, john.dougherty@oceanoptics.com.

Ohara Corp.

#901

SPIE Corporate Member **APOMA**
50 Columbia Rd, Branchburg, NJ, 08876
908/218-0100; fax 908/218-1685
chrisghio@oharacorp.com; www.oharacorp.com

New Product: Ohara is now a one stop shop for optical materials: Optical Glass, IR materials, CaF2 & Fused Silica.

Ohara is a producer of optical glass, zero expansion CCZ, and polished substrates. Other offerings now include Calcium Fluoride and other IR materials such as Germanium, Sapphire, ZnSe, ZnS, BaF2, Silicon and many other materials. We are also pleased to announce our newest group, Ohara Quartz, specializing in fused silica materials. Index measurement services are also available. Contact: Chris Ghio, Sales Manager, chrisghio@oharacorp.com.

NEW YORK
welcome to the state of applied photonics

OPTIFAB RECEPTION
Tuesday, May 12, 5:00PM

**Join the members of APOMA
and the Rochester Regional Photonics Cluster
for the Optifab Reception,
featuring Rochester's own...**

Nik and the Nice Guys!

**Tuesday, May 12
The Hyatt Ballroom
5:00 PM**

APOMA

Exhibitor Listing

Optical Perspectives Group, LLC

#102

7011 E Calle Tolosa, Tucson, AZ, 85750-2532
520/529-2950
reparks@optiper.com; www.optiper.com

Optics & Laser Europe

#1310

IOP Publishing Ltd., Dirac House Temple Back, Bristol, United Kingdom, BSI 6BE
44 (0) 117 929 7481; fax 44 (0) 117 930 1178
custserv@optics.org; www.optics.org

Optics & Laser Europe magazine provides news, R&D, features, show previews and EOS newsletter. Published 11 times a year, along with the quarterly supplement Optics Products, the annual Technology Guide and the new Optics Careers recruitment guide. For a free subscription complete the online form at <http://optics.org/subscribe>. For further information on how the optics portfolio can help with your marketing strategy, visit <http://optics.org/cws/advertising>. Contact: Rose Guardino, Sales Manager, guardino@ioppubusa.com; Susan Curtis, Publisher, susan.curtis@iop.org.

Optics Technology, Inc.

#500

APOMA

3800 Monroe Ave Door #6, Pittsford, NY, 14534
585/586-0950; fax 585/248-2371
info@opticstechnology.com; www.opticstechnology.com

Optics Technology, Inc. designs, manufactures and assembles custom application microscope objective and micro-optical lens systems. Wavelength region spans the UV through the far IR. OTI offers rapid design and prototyping services and works with all the standard optical glasses and crystals. Contact: Dominick Polizzi, Director of Sales & Marketing, sales@opticstechnology.com.

Optikos Corp.

#811

SPIE Corporate Member

107 Audubon Rd Bldg 3, Wakefield, MA, 01880
617/354-7557; fax 617/354-5946
sales@optikos.com; www.optikos.com

Optikos Corporation is the world's largest manufacturer of equipment for the measurement of optical image quality and a leading provider of optical product development services. As the world leader in the field of MTF testing, Optikos offers complete solutions for both component and system level tests on imaging systems operating from the ultraviolet to the far infrared. Optikos's product line includes testing suites for measuring the performance of optical and electro-optical imaging systems. Contact: Jamie Hutchins, VP, Sales and Marketing, jhutchins@optikos.com; James Scott, Key Account Manager, jscott@optikos.com.

Optimax Systems, Inc.

#508

SPIE Corporate Member APOMA

6367 Dean Pky, Ontario, NY, 14519
585/265-1066; fax 585/265-1033
sales@optimaxsi.com; www.optimaxsi.com

Optimax is dedicated to small volume, high quality, and quick delivery of precision optical components. Specializing in aspheres, cylinders, plano-optics and spheres, manufactured to customer-supplied specifications. With more than 100 opticians, we enjoy a good challenge, call us! Tel: 877-396-7846, Fax: 585-286-1033, www.optimaxsi.com. Contact: Joe Pinto, Sales Engineer, sales@optimaxsi.com; Joseph Spilman, Sales Engineer, sales@optimaxsi.com.

OptiPro Systems

#414

SPIE Corporate Member APOMA

6368 Dean Pky, Ontario, NY, 14519
585/265-0160; fax 585/265-9416
lynda@optipro.com; www.optipro.com

New Product: UltraSurf Ultra high precision CNC 5 axis noncontact surface metrology for measuring complex shapes.

Fabrication products include CNC Optical Machining Centers and Cad/Cam software for 4/5 axis grinding & polishing of spherical, aspherical and conformed optics. Popular low-cost "eSX 150" is quickly becoming the industry standard for manufacturing complex optical components. Manufacturer and distributor of optical / surface metrology equipment – Electronic Spherometers, Zeiss Surface Profilometers, and STIL MicroMeasure non-contact surface measurement systems with resolution to 1 nm. Contact: Mike Bechtold, President, mike@optipro.com.

Optiworks, Inc.

#605

#204 1-2-4 Azuchi-machi, Chuo-ku, Osaka, Japan, 5410052
81 6 6264 7310; fax 81 6 6264 7310
sales@optiworks.jp; www.optiworks.jp

OptiWorks is independent optics engineering company from Osaka Japan. OptiWorks will propose and provide optical system design, prototyping and production line to all worldwide customers. From 2008, OptiWorks adds new product line based on optical metrology especially digital interferometer and related optics. OptiWorks started optical polishing service by QED MRF system with his own metrology capability. OptiWorks will provide optics global supply chain network. Contact: Toshihide Dohi, president, sales@optiworks.jp.

OPTIX Co.

#1111

Darvenitza Zone Bl 19 Ent 3 Office 1, Sofia, Bulgaria, 1756
359 2 88 43 620; fax 359 2 88 43 624
sales@primoptix.com; www.primoptix.com

Optix specializes in the design and production of optical elements, optomechanical and optoelectronic systems, devices and components with laser, medical imaging, and defense applications. Contact: Janice Hunter, U.S. Sales Manager, janice.hunter@primoptix.com.

Opto-Alignment Technology

#809

SPIE Corporate Member

1034 Van Buren Ave, Indian Trail, NC, 28079
704/893-0399
steve.bohuczky@optoalignment.com; www.optoalignment.com

New Product: IR optics non-contact real-time optical centration & angular ultra-precision alignment.

Manufacturer & Service provider for Ultra-Precision Optical Alignment Technology: Non-contact real-time optical centration & angular measurement. LASER ALIGNMENT & ASSEMBLY STATION™ (LAS): sub-micron Total Indicated Runout (TIR) instantly for spherical aspherical cylindrical. ALIGN CEMENT BOND lenses faster with Calculens™ software. Not ready to do it yourself? We'll take your concept to prototype to production. Other products: Hands-free LENS HANDLER™ Delrin vacuum pick-up, OPTO-WIPES™. Contact: Steve Bohuczky, Director Business Development, steve.bohuczky@optoalignment.com; Sasha Pearlman, President.

OptoSigma Corp.

#1008

SPIE Corporate Member

2001 Deere Ave, Santa Ana, CA, 92705
949/851-5881; fax 949/851-5058
sales@optosigma.com; www.optosigma.com

New Product: Extended Contact Goniometers offer more robust movement; smaller, stronger, simpler - more accuracy.

OptoSigma is one of seven global manufacturing facilities located in Santa Ana, CA. Offering a huge variety of catalog and custom optics, opto-mechanics, positioners and motor stages, and outstanding optical coating services at substantial savings over competitors. Engineers on hand for 3-D drawings, application questions, etc., right product - right price - right now. Contact: Michelle Young, Sales Manager, sales@optosigma.com; Clayton Summers, Sr. Mechanical Engineer, clayton@optosigma.com.

OptoTech Optical Machinery

#715

APOMA

PO Box 131, East Greenville, PA, 18041
215/679-2091; fax 215/679-2013
info@optotech.us;

Designs, develops and manufactures machinery and new process technology for precision optics and ophthalmics. CNC and conventional high-speed generators/polishers (1 to 800 mm diam), 5-axis processing centers, centering/edging, plano/prism, rod, cylinder, aspheric machines, interferometers, autocollimators and software. In-house tool design and manufacture. Consumables, parts, repairs and maintenance contracts. Contact: Heidi Hofke, General Manager, h.hofke@optotech.us.

The Optronics Co., Ltd.

#107

Sanken Bldg, 5-5 Shin Ogawamachi, Shinjuku-ku Tokyo, Japan, 162-0814
81 3 5225 6614; fax 81 3 5229 7253
www.optronics.co.jp

New Product: Lens Design & Manufacturing Expo 2010.

Optronics, the leading photonics magazine in Japan, provides the latest news and information on the photonics industry including fiber optics, lasers, optics, imaging and optoelectronics. Contact: Sakae Shibasaki, intl@optronics.co.jp.

P.R. Hoffman Machine Products

#900

APOMA

1517 Commerce Ave, Carlisle, PA, 17015
717/243-9900; fax 717/243-4542
prhoff@prhoffman.com; www.prhoffman.com

P.R. Hoffman manufactures planetary double-sided lapping and polishing machinery. Photonics, electro-optics, semiconductor, quartz, ceramics, glass, and medical industries that require flat and parallel part surfaces, precision thickness tolerances, and surface finishes, use P.R. Hoffman products. We are a global supplier of lapping carriers, waxless polishing templates, conditioning gears and brushes. Contact: David Evans, evansd@prhoffman.com; Rod Murray, Rmurray@prhoffman.com.

PFG Precision Optics

#403

SPIE Corporate Member APOMA

733 Bienville Blvd, Ocean Springs, MS, 39564-2842
228/875-0165; fax 228/875-9354
cody@pfgoptics.com; www.pfgoptics.com

PFG Optics is an ISO 9001:2000 certified manufacturer of precision optics, coatings, & assemblies from UV to Near-IR wavelengths. Our specialties include high index, high included angle, & truncated lenses using the latest CNC milling, shaping, polishing with MRF finishing & edging technology. Double sided & planetary polishing for windows, wedges, filters & prisms. Custom vacuum-deposited & Ion-assisted coatings. Assemblies include Telecentric, Eyepiece, Scan & Imaging Lenses. Contact: Colin Green, VP Sales, cody@pfgoptics.com; Barbara Dudiak, Sales, sales@pfgoptics.com.

Photon Gear, Inc.

#1324

APOMA

245 David Pkwy, Ontario, NY, 14519
585/265-3360; fax 585/265-3364
sales@photongear.com; www.photongear.com

Photon Gear specializes in the design, assembly and characterization of high-precision optical systems. Custom lens assemblies are verified with interferometric test capabilities from 266 nm to 1600 nm. Supported application areas include semiconductor inspection and processing, military, metrology, biomedical, laser scanning and polymer optics. We also provide contract optical engineering and optical design as well as systems engineering support for custom software and optical hardware. Contact: Gary Blough, President, blough@photongear.com; John Bowen, Senior Optical Engineer, bowen@photongear.com.

Photonics Media

#906

Laurin Publishing, Berkshire Common, 2 South St, Pittsfield, MA, 01201-6109
413/499-0514; fax 413/442-3180
photonics@laurin.com; www.photonics.com

Photonics Media is Laurin Publishing Company's international suite of media and as such the pulse of the industry. More than 50 years as the leading publications. In print with the Photonics Directory, Photonics Spectra, Biophotonics International, EuroPhotonics, and Photonics Showcase magazines and online at Photonics.com. Contact: Ron Sherwood, North American & Asian Sales Manager, photonics@laurin.com; Charley Troy, Senior Editor, editorial@laurin.com.

Photonics Online

#110

5340 Fryling Rd, Erie, PA, 16510
819/897-7700; fax 819/897-7800
cbrocious@vertmarkets.com; www.photonicsonline.com

Photonics Online is the Internet's leading source of cutting-edge technical information about the laser, optics, optoelectronics, fiber optics, and imaging industries. You have instant access to a comprehensive web site that delivers the latest information on a wide variety of pertinent topics such as diode-pumped solid state (DPSS) laser systems, nonlinear optics, high-speed detectors, fiber optic components, optical coatings, and optical design and fabrication. Contact: Tim Bretz, Publisher, tbretz@vertmarkets.com.

Exhibitor Listing

Picard Industries #1346

4960 Quaker Hill Rd, Albion, NY, 14411
585/589-0358
info@picard-industries.com; www.picard-industries.com

Plan Optik AG #400

Ueber Der Bitz 3, Elsoff, Germany, 56479
49 2664 50680; fax 49 2664 506891
info@planoptik.com; www.planoptik.com

New Product: Micro lenses in glass, plano-convex and plano-concave micro lenses made of borosilicate glass.

Plan Optik AG from Germany produces optical components from glass, fused silica, glass ceramics as well as glass-silicon-compounds. The core competence is wafers for opto electronic applications, micro lenses and large, polished substrates. From glass and glass ceramics - maximum dimension of such plano parallel substrates is 3,000 mm (10 ft). These substrates are used for large laser mirrors and as scale substrates for 3D measuring devices of most measuring device producers worldwide. Contact: Carsten Wesselkamp, Sales Manager, c.wesselkamp@planoptik.com.

Precision Glass & Optics #911

 SPIE Corporate Member

3600 W Moore Ave, Santa Ana, CA, 92704
714/540-0126; fax 714/540-1482
info@pgo.com; www.pgo.com

New Product: PG&O now offers laser marking and waterjet cutting capabilities.

PG&O combines the high volume, low cost manufacturing of the commercial glass industry with the technical precision of optical and thin film coating. This single facility approach makes us uniquely qualified to satisfy today's optical component needs. We focus on both technical needs and the cost controls so vital to customer satisfaction. Our experts will work with your staff to make the transition from prototype to production both smooth and cost-effective. Contact: Sales.



COFFEE BREAK SPONSOR

QED Technologies, Inc. #215

 SPIE Corporate Member **APOMA**

1040 University Ave, Rochester, NY, 14607
585/256-6540; fax 585/256-3211
townell@qedmrf.com; www.qedmrf.com

New Product: QED's ASI™ measures steep aspheres with 1000 waves of departure, without dedicated null lenses.

QED's metrology and polishing systems provide optics manufacturers with the tools to deliver quality optics with confidence. Our metrology systems make manufacturing processes even more efficient by enabling in-line and final testing of all of the optics in your shop. QED's MRF® polishing platforms are synonymous with reliability, predictability, quality and speed. More than ever, MRF® is versatile, scalable and easy to use. www.qedmrf.com. Contact: Mike DeMarci, Sales Manager, demarco@qedmrf.com; Marc Tricard, Director of Business Development, tricard@qedmrf.com.

R. Mathews Optical Works, Inc. #200

APOMA

26280 Twelve Trees Ln, Poulsbo, WA, 98370
360/697-6160; fax 360/697-7417
bob@mathewsoptical.com; www.mathewsoptical.com

Manufacturer of custom precision aspheric lenses and mirrors. Aspheric lenses from 10mm to 280mm diameter can be made from all glass types for prototype and production. Contact: Bob Mathews, President, bob@mathewsoptical.com.

RAPT Industries, Inc. #406

 SPIE Corporate Member **APOMA**

46535 Fremont Blvd, Fremont, CA, 94538
510/933-1000; fax 510/661-9227
sales@raptindustries.com; www.raptindustries.com

New Product: HELIOS and EOS non-contact figuring tools rapidly produce high-precision, damage-free optics.

RAPT Industries has pioneered the development of our proprietary Reactive Atom Plasma (RAP™) process for precision, damage-free shaping of optics. Our non-contact figuring tools, EOS and HELIOS can be used to produce optics up to 2m in diameter. In addition, RAPT Industries produces advanced silicon carbide optics for defense, aerospace and semiconductor applications. RAPT's Freeport, PA facility has established an unmatched reputation for speed, accuracy and reliability. Contact: Roman Salij, Director of Business Development, roman.salij.rapt@sbcglobal.net; Pradeep Subrahmanyam, CEO, sales@raptindustries.com.

Reflexite Optical Solutions Business #1318

Bldg 500, 500 Lee Rd, Rochester, NY, 14606
716/647-1440

display.optics@reflexite.com; www.display-optics.com

Reflexite Optical Solutions Business combines expertise in optical engineering, microreplication and polymer processing to provide microstructured polymer optical films and components. Our components are used in Display Systems for military, automotive and consumer products; Lighting Systems for architectural and signal lights; Instrumentation Optics for passive infrared sensors, vision systems, photographic viewing screens; Solar Collection Systems, plus a wide variety of custom products. Contact: Donna Desmarais, Manager Optical Solutions Business, US Operations, donna.desmarais@reflexite.com.

Rochester Precision Optics LLC #505

 SPIE Corporate Member **APOMA**

850 John St, West Henrietta, NY, 14586
585/292-5450; fax 585/292-5459
sales@rpoptics.com; www.rpoptics.com

Manufacturer of precision molded glass visible and LWIR aspherical lenses and optical assemblies for Defense, Imaging, Industrial and Medical industries. Vertically integrated manufacturing for prototype and high volume. The latest automated optical manufacturing, diamond turning, advanced thin film coating and precision machine centers based on over 25 years of development and production experience at Kodak Optical Imaging Systems. Visible to Infrared molded aspheres from 1mm to 60mm diameters. Contact: Edward Patton, Director Sales and Marketing, epatton@rpoptics.com; Matt Pembroke, mpembroke@rpoptics.com.

Roth & Rau AG

#203

Gewerbering 3, Hohenstein-Ernstthal, Germany, 09337
49 37 23 49 88 0; fax 49 37 23 49 88 25
sales-us@roth-rau.de; www.roth-rau.de

New Product: IonSys - multilayer deposition (500 mm x 200 mm); IonScan - ion beam figuring (300 mm sq).

Roth & Rau operates worldwide as an experienced equipment supplier of ion beam and plasma process for optics industry. In ion beam technology multilayer deposition systems are provided for X-ray and UV applications. As unique solution a localized ion beam milling system is offered for ion beam figuring. For manufacturing of large area micro-patterned optical devices re-active gas compatible etchers are available for structuring of quartz samples and metal films. Contact: Andrea Kunz, Sales Director Germany / U.S.A., sales-us@roth-rau.de; Dr. Michael Zeuner, VP Plasma and Ion Beam, sales-us@roth-rau.de.

R.W. Lindsay Inc.

#1109

581 Rock Beach Rd, Rochester, NY, 14617
585/544-7310; fax 585/544-2028
lindsaycorp@aol.com; www.rwlindsay.com

Saint-Gobain Grains & Powders

#1350

1 New Bond St, Worcester, MA, 01615-0137
800/243-0028; fax 508/795-2812
cermatworcester@saint-gobain.com;
www.innovativeorganics.com

New Product: AmberClean L12A biodegradable metal cleaner and AmberCut 420A biodegradable lapping vehicle.

Saint-Gobain Grains & Powders manufactures precision abrasives and chemicals for the critical surface finishing and cleaning of metals, glasses, crystals, optical & electro-optical materials, semiconductor, sapphire, silicon carbide and III-V/II-VI compounds. Products include alumina, zirconia, ceria, diamond, silicon carbide and other abrasive particles and polishing slurries with sizes as small as 50 nm. Biodegradable coolants, lubricants, cleaners and polishing pads complete the range. Contact: James Millar, Sales Manager, james.m.millar@saint-gobain.com; John Doherty, Sales Manager, john.f.doherty@saint-gobain.com.

Salem Distributing Company, Inc.

#810

SPIE Corporate Member

5901 Gun Club Rd, Winston-Salem, NC, 27103
336/766-1104; fax 336/766-1119
sales@salem-dist.com; www.salem-dist.com

Salem ASM offers a line of high-quality precision materials from A to Z. **ABRASIVES:** Alumina, Silicon Carbide, Boron Carbide; **POLISHES:** Cerium Oxide, Aluminum Oxide, Submicron Alumina, Colloids, Pitch, Acculap Synthetic Pitch; **PADS:** Stock Removal, Primary Polish, Final Polish, Polyurethane, Napped Poromeric; **DIAMONDS:** Blades, Core Drills. All of these materials were designed exclusively to enhance the quality and efficiency of any precision surfacing and polishing application. Contact: Steve Albright, Salbright@salem-dist.com.



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See full course listing, p. 3.



GENERAL REFRESHMENT SPONSOR

Satisloh North America Inc.

#515

SPIE Corporate Member **APOMA**

N116 W18111 Morse Dr, Germantown, WI, 53022
262/255-6001; fax 262/255-6002
lori.heller@satisloh.com; www.satisloh.com

New Product: SPM/S 60 360° multi-functional swivel head with 2-tool spindle technology and process flexibility.

The Satisloh line includes generators, polishers, laser centering, and coating machines (sputtering) for all applications. A supplier of diamond wheels and pellets, spherometer rings, and spare parts, we offer a complete range of consumable products – including distribution of Mueller Diamonds, Desmopan and Desmoflex polishing pads, and Borer Chemical ultrasonic cleaning products. Contact: Tom Godin, Sales Engineer, tom.godin@satisloh.com; Lori Heller, Sales Administrator, lori.heller@satisloh.com.

Schneider GmbH & Co. KG

#115

APOMA

Brueckenstr 21, Steffenberg, Germany, 35239
49 6465 9144 0; fax 49 6465 466 3
info@schneider-om.com; www.schneider-om.com

New Product: Versatile machine for grinding spheres and aspheres with extended special-processing capabilities.

Schneider is one of the world's leading suppliers of processing solutions to the precision-optical and ophthalmic industry. Schneider innovations set the pace – in grinding and polishing of precision aspheres, in freeform generating and polishing of eye glasses and in process metrology. Schneider offers the full range of generating, polishing and centering machines as well as measuring systems for high-quality precision-optics production. Contact: Dr. Thomas Danger, Vice President Sales / Business Development Precision Optics, t.danger@schneider-om.com; Carolin Block, Sales Assistant, c.block@schneider-om.com.

SCHOTT North America, Inc. - Advanced Optics

#600

SPIE Corporate Member **APOMA**

400 York Ave, Duryea, PA, 18642
570/457-7485; fax 570/457-6960
info.optics@us.schott.com; www.us.schott.com

Advanced Optics offers a broad range of cutting-edge components & materials for optical & lithographic applications & is a leading manufacturer of calcium fluoride crystals, fused silica, "ZERODUR" glass ceramics, filters optical & i-line glass. A global network of manufacturing facilities is integrated from material development to finishing operations, which include high-precision processing & metrology expertise. Contact: Marlene Deily, Promotions Manager, marlene.deily@us.schott.com; Steve Sokach, Director of Marketing/Sales, steve.sokach@us.schott.com.

SGS Slicing Solutions, Inc.

#602

SPIE Corporate Member **APOMA**

309 Rte 94, Columbia, NJ, 07832
908/496-8999; fax 908/496-8998
info@sgs-inc.com; www.sgs-inc.com

SGS Slicing Solutions is the exclusive North American agent for Meyer Burger AG of Switzerland. SGS offers sales, service, support, and spare parts, as well as process development for all Meyer Burger equipment. Meyer Burger is a world renowned machinery manufacturer which specializes in slicing equipment for the Semiconductor, Solar, Optical, Ceramic, Medical Imaging and other industries that need to slice hard or brittle materials. Wire, band, cropping, I.D. and O.D. saws. Contact: Rick Baarck, rbaarck@sgs-inc.com.

Exhibitor Listing

Shanghai Optics

#1342

SPIE Corporate Member

148 Main St, Metuchen, NJ, 08840
732/321-6915; fax 732/875-0298
sales@shanghai-optics.com; www.shanghai-optics.com

New Product: ZnSe, Ge, Silicon blanks. Full assembly services and high precision wafer polishing.

Shanghai Optics is a full service manufacturer of high precision optical flats, lenses, beamsplitters, light pipes, telecom filters, precision laser optics and filters for digital imaging, aspheric surfaces, plastic optics, micro optics and UV optics. Materials include: CaF₂, MgF₂, GaAs, Ge, Zinc Selenide, Zinc Sulfide, Silicon, and more. Contact: Brad Lewis, Director of Business Development, blewis@shanghai-optics.com; Joanna Lee, Vice President of Sales, jlee@shanghai-optics.com.

Shimadzu Corp.

#104

3 Kanda-Nishikicho 1-chome, Mr. Naoki Yoshida/Optical Devices Dept., Chiyoda-ku Tokyo, Japan, 101-8448
81 3 3219 5797; fax 81 3 3129 5567
nyoshida@shimadzu.com; www.shimadzu.com/opt

SiC Processing USA

#602

6949 N Cutter Cir, Portland, OR, 97127
503/345-0326; fax 503/285-5602
d.doelger@sic-processing.com; www.sic-processing.com

SlicingTech

#806

SPIE Corporate Member

432 Mt Bethel Way, Bamgor, PA, 18013
610/588-7884; fax 610/588-7885
mhartman@slicingtech.com; www.slicingtech.com
SlicingTech combines a large capacity with state of the art Wire Saws to provide customers with a high precision manufacturing opportunity. Our services range from R&D prototyping to total production support. Contact: Mike Hartman, General Manager, mhartman@slicingtech.com; John Streisguth, Product Manager, jstreisguth@slicingtech.com.

Spartan Polishing Products

#112

PO Box 1932, Spartanburg, SC, 29304
864/576-7919; fax 864/574-4507
info@spartanfelt.com; www.spartanfelt.com

Specialty Glass Products

#902

2885 Terwood Rd, Willow Grove, PA, 19090
215/659-8400; fax 215/659-7217
sales@sgpinc.com; www.sgpinc.com
Manufacturer of precision glass parts using borosilicate, quartz, filter glass and sapphire materials for biomedical, communications, laser and fiber optic manufacturing, aerospace and avionics, semiconductor technology and electronics applications. Fabrication of micro orifices, beam splitters, substrates and wafers. Services include CNC drilling, grinding, single and double sided lapping and polishing to 1/4 wave flatness, chemical strengthening, coating, laser cutting, fabrication and multifforming. Contact: Beau Ahrrington, Sales Engineer, sales@sgpinc.com; Ursula Leslie, Customer Service, ursula@sgpinc.com.

Spectra Services, Inc.

#1352

APOMA

6359 Dean Pkwy, Ontario, NY, 14519
585/265-4320; fax 585/265-4374
mspecht@spectraservices.com; www.spectraservices.com

New Product: PhaseView is the easiest way for qualitative and quantitative 3D imaging.

Spectra provides a comprehensive selection of new and used microscopes from many of today's leading manufacturers as well as complimentary products such as motorized stages, digital cameras, fiber optics, measurement equipment and image analysis software. Contact: Michael Specht, Sales, Mspecht@spectraservices.com.

Spectrum Thin Films Corp.

#506

SPIE Corporate Member **APOMA**

135 Marcus Blvd, Hauppauge, NY, 11788
631/901-1010; fax 631/236-4309
info@spectrumthinfilms.com; www.spectrumthinfilms.com

Spica Technologies, Inc.

#705

18 Clinton Dr #3, Hollis, NH, 03049
603/882-8233; fax 603/882-8614
sales@spicatech.com; www.spicatech.com

Spica Technologies provides a variety of test and measurement services to the manufacturers and end users of optical components. In addition to our laser damage test capabilities, Spica also maintains a broad range of optical test services including optical density measurements, laser based reflection measurements, environmental exposure, surface roughness and flatness. Contact: Michael Thomas, President, sales@spicatech.com

Swift Glass Co.

#503

APOMA

131 W 22nd St, Elmira Heights, NY, 14903
607/723-7166; fax 607/732-5829
quality@swiftglass.com; www.swiftglass.com
Specializing in precision fabrication of Borofloat, Pyrex, Vycor, B-270, Starphire, Kopp and Schott Color Filters, Quartz, Fused Silica, Sapphire, and Soda Lime materials. Processes include CNC Milling, Double Sided Lapping and Polishing, Chem Strengthening, Heat Tempering, and Edge Grinding and Polishing. Contact: Charlie Burke, V.P., cburke@swiftglass.com; Tony Speciale, Customer Service Manager, tspeciale@swiftglass.com.

 **HOTEL ROOM KEY SPONSOR**

Sydor Optics, Inc.

#501

SPIE Corporate Member **APOMA**

31 Jet View Dr, Rochester, NY, 14624
585/271-7300; fax 585/271-7309
sales@sydor.com; www.sydor.com

Manufacturing precision, flat-surfaced, parallel and wedged optics and specializing in double-sided grinding and polishing. Sydor has been offering custom optical components with consistent delivery, quality and service for over 40 years. Sydor Optics offers prototype, to high volume OEM production. Products include: beam splitters, color filters, debris shields, glass wafers, grating substrates, light pipes, light-weighted substrates, mirrors, optical flats, wedges, and windows. Contact: Mike Naselaris, General Manager, sales@sydor.com; James Sydor, President, sales@sydor.com.

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Syntec Optics

#510

SPIE Corporate Member **APOMA**

7100 Junction Rd, Pavilion, NY, 14525
585/768-2513; fax 585/768-6099
info@syntecoptics.com; www.syntecoptics.com

Hybrid solutions that push the polymer envelope. Syntec Optics is the largest independent custom manufacturer of precision plastic optics in the U.S. Capabilities consist of optical and mechanical design, including optics that combine polymer and glass; optical and opaque mold building; including fixture tooling; single-point diamond turning, including HRDT™ for high refraction, high thermal optics and also plano polishing. Fully integrated custom metrology and assembly services. Contact: Lori Steffenilla, VP Manufacturing Operations, lsteffenilla@syntecoptics.com; Richard Arndt, VP/GM, rarndt@syntecoptics.com.

Taylor Hobson - AMETEK Ultra Precision Technologies

#610

APOMA

1725 Western Dr, West Chicago, IL, 60185
630/621-3099; fax 630/231-1739
sales@taylorhobson.us; www.taylor-hobson.com

New Product: PGI Blu - A high precision 3D metrology instrument for steep-sided aspheric optics.

Taylor Hobson is an ultra-precision technology company operating at the highest levels of accuracy. We provide contact and non-contact measurement solutions to the most demanding applications on a global basis. We are continually evolving our products to meet the ever-increasing demands of today's industries. Taylor Hobson products are widely used in the development and production of next generation technologies, particularly in semiconductor, hard disk and precision optics. Contact: Rick Parnoff, Regional Sales Manager, Rick.Parnoff@ametec.com; Mark Middleton, Business Development Manager, Mark.Middleton@ametec.com.

Techmetals, Inc.

#603

SPIE Corporate Member **APOMA**

345 Springfield St, Dayton, OH, 45403
937/253-5311; fax 937/258-5732
info@techmetals.com; www.techmetals.com

Optakoat - the coating of choice for SPDT applications of precision optics, mirrors, critical optic molding applications, BEF and solar panel film production. Techmetals also offers Optic Grade EN, Anodize, Silver and TM-Rx Medical Grade Chrome. See our complete list of custom designed coatings at www.techmetals.com. Contact: Steve Deisher, GM - Optics Department, sdeisher@techmetals.com; Tara Schumaker, Operations Mgr - Optics Department, tschumaker@sd-enterprises.com.

Technodiamant USA Inc.

#408

35A Kennedy Rd Box 398, Tranquility, NJ, 07879
908/850-8505; fax 908/850-8506
info@technodiamant.com; www.technodiamant.com

New Product: High-Clearance controlled waviness tools with 32 degrees of front clearance, waviness <0.05 microns!

Technodiamant offers a full range of quality diamond tools, including turning tools with nanometer-scale controlled waviness. Several tool styles are available from stock, and custom tools can be delivered in 3-5 weeks depending on the application. Natural, synthetic, and single crystal CVD diamond are offered. Quality metalbond and resinbond wheels are also offered. Contact: David Slaperud, Sales Manager - North America, dave@technodiamant.com; Ronald de Vries, Sales Manager - International, ronald@technodiamant.nl.

Tecport Optics, Inc.

#212

SPIE Corporate Member

6901 TPC Dr Ste 450, Orlando, FL, 32822
407/855-1212; fax 407/855-1213
sales@tecportoptics.com; www.tecportoptics.com

Manufacturer of Vacuum Coating Systems for Precision Optics, Ophthalmic, Flat Panel Display, Imaging and Telecommunication applications. An industry leader in innovation, quality, reliability, software and service. Sophisticated yet user friendly systems employ leading edge technology such as plasma assisted deposition. Systems are custom built and pre-configured for your process and your volume. Process is pre-configured and installed systems are production-ready within one week. Contact: Joseph Kim, Vice President, jkim@tecportoptics.com; Frank Helmes, Director of Sales and Marketing.

Tempo Clean Room Foam

#1330

SPIE Corporate Member **APOMA**

1227 N Miller Park Ct, Visalia, CA, 93291
559/651-7711; fax 559/651-0123
tempo@tempo-foam.com; www.tempo-foam.com

New Product: New edge protectors for rectangular glass.

Labor saving stock and custom static dissipative packages for wafers and optics. Clean room compatible foams are lint free, test reports posted on website. Contact: Doug Rogers, President, tempo@tempo-foam.com.

Treibacher Industrie AG

#404

Auer-Von-Welsbach-Str 1, Althofen Carinthia, Austria, 9330
43 4262 505; fax 43 4262 2005
treibacher@treibacher.com; www.treibacher.com

Treibacher Industrie AG, has been a global player in the Rare Earth industry for over a century. Polishing Powders based on Cerium Oxide are produced under the trademark AUERPOL®. The applications vary from beveling of mirrors, polishing of LC-displays, crystal glass and polish of optical components like lenses and prisms in binoculars, microscopes, telescopes, night-vision devices and laser. The qualities Auerpol PW 70, WPP, PZ 110, PZ 250 and PZ 500 are used for precision optics. Contact: Erich Rack, Product Manager, erich.rack@treibacher.com; Julia Schaller, Assistant to Product Manager, julia.schaller@treibacher.com.

Trioptics GmbH

#1009

SPIE Corporate Member

Hafenstr 35-39, Wedel, Germany, 22880
49 4103 18006 0; fax 41 4103 18006 20
info@trioptics.com; www.trioptics.com

New Product: OptiCentric automated cementing & bonding; WaveMaster PRO Wafer miniature waver-level lenses testing.

Manufacturer stock/custom Optical Test Equipment: OptiCentric®-automated alignment, centering, cementing & bonding, centration error measurement; OptiSpheric®-Industry's standard for complete optical characterization (EFL, BFL, MTF, radius); ImageMaster® MTF-characterization-UV-VIS-IR, mobile phone and wafer level lens testing; WaveMaster®-Real time wave front analysis; PrismMaster®-Prism measurement; SpectroMaster®-Refractive Index measurement; Electronic and visual autocollimators. Contact: Eugen Dumitrescu, Managing Director, e.dumitrescu@trioptics.com; Simon Zilian, Sales Manager, sales@trioptics.com.

UCM AG

#802

Langenhagstr 25, Rheineck, Switzerland, 9424
41 71 886 6760; fax 41 71 886 6761
ucm@ucm-ag.com; www.ucm-ag.com

UCM designs aqueous in-line cleaning systems and fulfills the highest requests for the cleanliness of substrates. The modular design allows individual and economical conception; adapted to any particular demand. All processes are controlled and steered with a PLC control unit. The customer friendly visualization of the process allows to safe all relevant parameters. Contact: Rolf-Martin Hohl, President, r.hohl@ucm-ag.com.

Umicore Optical Materials USA Inc.

#300

APOMA

PO Box 737, Quapaw, OK, 74363
918/673-1650; fax 918/673-2121
opticalmaterials@umicore.com; www.umicore.com

New Product: GASIR®, blanks, finished lenses, mounted optics, coatings, lens assemblies.

Umicore offers infrared materials, thin-film optical coatings and components for thermal imaging and sensing applications. Umicore supplies high quality germanium blanks and optics. Umicore's innovation is GASIR®, chalcogenide glasses that are molded into finished optics with complex geometry, including asphero -diffractive surfaces. GASIR®1 and GASIR®3 molded optics are developed for high-volume, low-cost applications. Umicore's optical-mechanical design competencies enable the manufacture of custom and standard infrared lens assemblies. Contact: Henri Chomette, Senior Manager Marketing & Sales, henri.chomette@umicore.com; Jeff Koch, Sales Germanium, jeff.koch@umicore.com.



United Lens Co., Inc.

#701

APOMA

259 Worcester St, Southbridge, MA, 01550-1376
508/765-5421; fax 508/765-0500
www.unitedlens.com

Manufacturer of custom molded and precision machined blanks as well as flat optics and thin film coatings. Large inventories of optical glass, fused silica, fused quartz, filter glasses and various low expansion materials. Extensive manufacturing capabilities allows for rapid delivery. Contact: Ken Plouffe, Sales Manager - Molding Division, kplouffe@unitedlens.com; Paul DiGregorio, Vice President - Sales, pdigregorio@unitedlens.com.

Universal Photonics, Inc.

#1015

SPIE Corporate Member APOMA

495 W John St, Hicksville, NY, 11801
800/645-7173; fax 516/935-4144
info@universalphotonics.com; www.universalphotonics.com

New Product: Somos 400 rpm, double-sided lapping & polishing machines – MDF 400 & 630.

Specializing in developing & formulating consumables & machinery for lapping/polishing glass, plastic, crystals, infrared, semiconductor, electro, laser & fiber optics. Including polish pads & compounds, ultra-pure alumina, colloidal silicas, thermoplastic adhesives, holding foils, diamond powders, compounds & lapping film, slurries for sapphire/CaF, lens bonding material, precision pitch, waxes & cements. Machinery: Advantage & DAMA, HKS centrifuges, SOMOS Double-sided Lapping & Polishing. Contact: Justin Mahanna, Technical Sales Representative, justinm@universalphotonics.com; John Pecorella, Sales rep, johnp@universalphotonics.com.

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University of Rochester, The Institute of Optics

#509

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Optical Engineering, Industries and National Laboratories can interact with The Institute's faculty and students through The Institute's Industrial Associates Program, which meets on campus twice annually. Also of interest to Industry is the Optics Summer School Program. See www.optics.rochester.edu for more details. Contact: Prof. Wayne Knox, Director and Professor, wknox@optics.rochester.edu; Prof. Gary Wicks, Associate Director and Professor, wicks@optics.rochester.edu.

Vacuum Process Technology, Inc.

#608

70 Industrial Park Rd, Plymouth, MA, 02360
508/732-7200; fax 508/732-0317
sales@vpotec.com; www.vpotec.com

Vacuum Process Technology, LLC (VPT) designs and manufactures precision thin film deposition systems for a wide range of applications. VPT provides physical vapor deposition systems using ion-beam, sputtering, electron-beam, and plasma assisted thin film deposition technologies. Our applications laboratory is available for development and verification of coating processes. Contact: Steven Chiavaroli, VP - Sales and Marketing, schiavaroli@vpotec.com.

Exhibitor Listing

Valtech Corp.

#607

APOMA

2113 Sanatoga Station Rd, Pottstown, PA, 19464
610/705-5900; fax 610/705-0300
info@valtechcorp.com; www.valtechcorp.com

New Product: Valtron DP 153 and DP 154. Aqueous cleaner for removal of micro particulate on optical substrates.

Valtech Corporation is a global manufacturer of formulated detergents, specialty adhesives and custom molded polymers. Our Products are supplied into the semiconductor, computer disk drive, precision optical, ophthalmic, photovoltaic, medical, and instrumentation industries. Contact: Lynne Sacerdote, Market Development Manager, l.sacerdote@valtechcorp.com; Bob Girard, VP Operations, b.girard@valtechcorp.com.

VisiMax Technologies, Inc.

#1334

9177 Dutton Dr, Twinsburg, OH, 44087
330/405-8330; fax 330/405-8332
mclark@visimaxtechnologies.com; www.visimaxtechnologies.com

VisiMax is a world class provider of precision optical coatings for both glass and polymer optics. VisiMax offers an extensive range of coating types including anti-reflection, beamsplitters, hot and cold mirrors, protective hardcoatings, ND filters, bandpass filters, metal and dielectric reflectors, as well as custom coating needs. Cleanroom coating facility with state-of-the art coating systems and automation. Prototype volumes to full scale production. Contact: Dane Clark, President, dclark@visimaxtechnologies.com.

Welch Allyn Lighting Products

#1003

4619 Jordan Rd, PO Box 187, Skaneateles Falls, NY, 13153
315/685-2803; fax 315/685-2854
www.walamp.com

New Product: High stability UV HPX lamp, Solarc NGX HID lamp, Solarc HID metal halide fiberoptic illuminator.

Manufacturer of high-performance lighting devices and technology for professional users and OEM's. We offer high quality and innovative custom lighting solutions. Our patent portfolio covers platforms of lamp wattages, technology types and system illuminators. Our engineering team manages wattage, output, lamp life, spectral characteristics, reflectors, bases and optics that integrate into other system components. Our products excel in the production of light from 320 nm into the near-IR. Contact: Doug Rutan, Marketing Manager, RutanD@welchallyn.com; Jim Kiesa, Sales Manager, Kiesaj@welchallyn.com.

Westchester Technologies, Inc.

#100

SPIE Corporate Member

APOMA

8 John Walsh Blvd, Peekskill, NY, 10566
914/736-1034; fax 914/736-1217
ctownleywti@optonline.net; www.microoptics.com

Manufacture of precision micro optics. Contact: Roger Prah, President, rprahlwti@optonline.net; Robert Dwuznik, Production Manager, bobdw@optonline.net.

Western Photonics Technology

#805

SPIE Corporate Member

626 S Sierra Vista Ave Ste 101, Alhambra, CA, 91801
626/289-1686; fax 626/289-1048
info@wptec.com; www.wptec.com

New Product: Sapphire and Germanium window, 0.8mm lens.

Headquarter in the United States and factories in China. Develops and manufactures miniature optics (lens, prism, window), optics (window, lens, prism; filter), IR, visible, UV optics (Sapphire, Germanium, ZnSe, CaF₂), laser and optical crystals (Nd:YAG, BBO), coatings, optical system, fiber optics (fiber pigtail), borescopes (IR, visible, UV rigid/flexible borescope, high temperature borescope, endoscope, etc.), lasers (CTH:YAG laser, Nd:YAG laser, CO₂ laser), hologram (label). Contact: Roger Xie, North American Manager, Alison, alison@wptec.com.



COFFEE BREAK SPONSOR

Wordingham Technologies

#504

SPIE Corporate Member

580 Fisher Station Dr, Victor, NY, 14564
585/924-2294; fax 585/924-7660
sales@wordingham.com; www.wordingham.com

Wrisley Abrasives

#301

PO Box 631, Simsbury, CT, 06070
860/651-1813; fax 860/658-7773
info@bwabrasives.com; www.bwabrasives.com

New Product: Advanced Diamond Tooling for IR Materials.

Wrisley Abrasives has engineered diamond tools for precision optics for over 20 years! We have a tremendous amount of experience grinding an array of materials including IR, visible, hard crystals, and ceramics. We offer a wide range of diamond tool geometries such as generators, end mills, core drills, band saw blades, and numerous wheel types. Bond types include metal bond, resin bond, copper-filled resin, electroplated, and brazed. US made for quick delivery and competitive price. Contact: Dan Patrick, President, dan@bwabrasives.com; Keith Biddle, Sales Engineer, keith@bwabrasives.com.

ZEMAX Development Corp.

#1100

3001 112th Ave NE Ste 202, Bellevue, WA, 98004-8017
425/822-3406; fax 425/889-4687
sales@zemax.com; www.zemax.com

ZEMAX Development Corporation publishes the ZEMAX® Optical Design Program which can be used for both sequential and non-sequential ray tracing. Our software can be used to conceptualize, design, optimize, analyze, tolerance and document virtually any optical system. ZEMAX® also goes beyond the traditional limits of ray tracing software by allowing users to use diffraction calculations to propagate any arbitrary beam through an optical system. Contact: Sales Department, sales@zemax.com; Technical Support, support@zemax.com.

Zygo Corporation

#815

SPIE Corporate Member

APOMA

Laurel Brook Rd, Middlefield, CT, 06455-1291
860/347-8506; fax 860/346-4188
inquire@zygo.com; www.zygo.com

Zygo Corporation is a worldwide supplier of optical metrology instruments, precision optics, and electro-optical design and manufacturing services, providing productivity and yield improvement solutions for manufacturers of precision components for a variety of industries. Zygo Corporation provides a wide range of inspection, surface analysis, precision displacement measurement, and automated solutions. Contact: George Neale, Director of Sales and Support, gneale@zygo.com; Steve Kobak, Account Manager, skobak@zygo.com.

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NiCoForm Inc.

Electronics, Signal Analysis Equipment

EUV Lithography

Imagine Optic

Fiber Optic Components, Equipment, Systems

Australian Centre for Precision Optics. CSIRO
Model Optics
Ocean Optics, Inc.
Optics Technology, Inc.
Rochester Precision Optics LLC
Tempo Clean Room Foam
Welch Allyn Lighting Products

Finished Optics, Filters, & Coatings, Optical Fabrication Equipment

AccuCoat, Inc.
Ametek Precitech, Inc.
Angstrom Precision Optics
Ariel Optics, Inc.
Australian Centre for Precision Optics. CSIRO
Contour Fine Tooling
Coresix Precision Glass, Inc.
Corning Incorporated
DCM Tech, Inc.
FLIR Systems, Inc.
Glass Fab Inc.
G-S PLASTIC OPTICS
Hinds Instruments, Inc.
II-VI Infrared
Intlvac
IRD Glass
Isuzu Glass Inc.
JML Optical Industries Inc.
Kreischer Optics, Ltd.
Kugler of America LTD
Mildex, Inc.
Model Optics
Moore Nanotechnology Systems LLC
North American Coating
Laboratories
Ocean Optics, Inc.
Ohara Corp.
OptiPro Systems
P.R. Hoffman Machine Products
PFG Precision Optics
Plan Optik AG
Precision Glass & Optics
RAPT Industries, Inc.
Rochester Precision Optics LLC

SCHOTT North America, Inc. -
Advanced Optics
Sydor Optics, Inc.
Taylor Hobson - AMETEK Ultra
Precision Technologies
Techmetals, Inc.
Technodiamant USA Inc.
Tempo Clean Room Foam
UCM AG
Umicore Optical Materials USA
Inc.
United Lens Co., Inc.
Vacuum Process Technology, Inc.
VisiMax Technologies, Inc.
Westchester Technologies, Inc.
Zygo Corporation

High Speed Imaging and Sensing

Engineering Synthesis Design, Inc.
Trioptics GmbH

Illumination Engineering

Apollo Optical Systems Inc.
JENOPTIK Polymer Systems, Inc.

Infrared Sources, Detectors, Systems

Angstrom Precision Optics
JENOPTIK Polymer Systems, Inc.
Novotech, Inc.
Trioptics GmbH

Lasers and Other Light Sources, Laser Accessories, Laser Systems

Engineering Synthesis Design, Inc.
Metrology Concepts LLC
Spica Technologies, Inc.
Western Photonics Technology

Life Sciences

Intlvac
Optics Technology, Inc.

Metrology, Inspection and Process Control

4D Technology Corp.
Ametek Precitech, Inc.
Applied Surface Technologies
Australian Centre for Precision Optics. CSIRO
Corning Incorporated
Diffraction International Ltd.
Engineering Synthesis Design, Inc.
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GTI Technologies
Hinds Instruments, Inc.
Imagine Optic
JENOPTIK Laser, Optik, Systeme GmbH
Kreischer Optics, Ltd.
Metrology Concepts LLC

Mildex, Inc.
OptiPro Systems
Optiworks, Inc.
Opto-Alignment Technology
Photon Gear, Inc.
QED Technologies, Inc.
SlicingTech
Taylor Hobson - AMETEK Ultra
Precision Technologies
Trioptics GmbH
Zygo Corporation

Nanotechnology

Applied Surface Technologies
Equipment Acquisition Resources, Inc.
Ferrotec GmbH
Intlvac
Technodiamant USA Inc.
Universal Photonics, Inc.

Non-Optical Lithography

Applied Image, Inc.

Optical Components

AccuCoat, Inc.
Advanced Glass Industries
Angstrom Precision Optics
Apollo Optical Systems Inc.
Applied Image, Inc.
Ariel Optics, Inc.
Australian Centre for Precision Optics. CSIRO
Contour Fine Tooling
Coresix Precision Glass, Inc.
Delta Optics Technologies Pte Ltd.
Dyna Technologies, Inc.
Ferson Technologies, Inc.
FLIR Systems, Inc.
G-S PLASTIC OPTICS
II-VI Infrared
Intlvac
IRD Glass
Isuzu Glass Inc.
JENOPTIK Laser, Optik, Systeme GmbH
JENOPTIK Polymer Systems, Inc.
JML Optical Industries Inc.
Kreischer Optics, Ltd.
Kugler of America LTD
LaCroix Optical Co.
Model Optics
Naked Optics Corp.
NiCoForm Inc.
Norland Products Inc.
North American Coating
Laboratories
Novotech, Inc.
Ocean Optics, Inc.
Ohara Corp.
Optics Technology, Inc.
Optimax Systems, Inc.
Optiworks, Inc.
Opto-Alignment Technology
PFG Precision Optics
Photon Gear, Inc.
Plan Optik AG
Precision Glass & Optics
QED Technologies, Inc.
R. Mathews Optical Works, Inc.
RAPT Industries, Inc.

Reflexite Optical Solutions
Business
Rochester Precision Optics LLC
SCHOTT North America, Inc. -
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Shanghai Optics
Specialty Glass Products
Swift Glass Co.
Sydor Optics, Inc.
Syntec Optics
Techmetals, Inc.
Umicore Optical Materials USA
Inc.
United Lens Co., Inc.
Welch Allyn Lighting Products
Westchester Technologies, Inc.
Western Photonics Technology
Zygo Corporation

Optical Detectors

Apollo Optical Systems Inc.
Swift Glass Co.

Optical Fibers

Corning Incorporated
FLIR Systems, Inc.
Intlvac
Specialty Glass Products
Welch Allyn Lighting Products
Western Photonics Technology

Optical Materials and Substrates

Advanced Glass Industries
Angstrom Precision Optics
Ariel Optics, Inc.
Coresix Precision Glass, Inc.
Ferson Technologies, Inc.
FLIR Systems, Inc.
Glass Fab Inc.
II-VI Infrared
IRD Glass
Isuzu Glass Inc.
JML Optical Industries Inc.
Kreischer Optics, Ltd.
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Rochester Precision Optics LLC
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SlicingTech
Specialty Glass Products
Techmetals, Inc.
Tempo Clean Room Foam
Valtech Corp.

Optical Test and Measurement Equipment, Interferometer

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Diffraction International Ltd.
Engineering Synthesis Design,
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Hinds Instruments, Inc.
Imagine Optic
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Metrology Concepts LLC
Mildex, Inc.
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Optiworks, Inc.
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Photon Gear, Inc.
QED Technologies, Inc.
Schneider GmbH & Co. KG
SGS Slicing Solutions, Inc.
Spectra Services, Inc.
Spica Technologies, Inc.
Taylor Hobson - AMETEK Ultra
Precision Technologies
Trioptics GmbH
Universal Photonics, Inc.
Western Photonics Technology
Zygo Corporation

Optical/Laser Microlithography

Opto-Alignment Technology
SCHOTT North America, Inc. -
Advanced Optics
Shanghai Optics

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Advanced Glass Industries
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Apollo Optical Systems Inc.
Applied Surface Technologies
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Australian Centre for Precision
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Coastal Optical Systems
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Delta Optics Technologies Pte
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Dyna Technologies, Inc.
Ferson Technologies, Inc.
FLIR Systems, Inc.
Glass Fab Inc.
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Hinds Instruments, Inc.
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Imagine Optic
IRD Glass
Isuzu Glass Inc.
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GmbH
JENOPTIK Polymer Systems, Inc.
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Laboratories
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Ocean Optics, Inc.
Ohara Corp.
Optics Technology, Inc.
Optimax Systems, Inc.
Optiworks, Inc.
Opto-Alignment Technology
Plan Optik AG
Precision Glass & Optics
QED Technologies, Inc.
R. Mathews Optical Works, Inc.
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Sydor Optics, Inc.
Syntec Optics
Techmetals, Inc.
Technodiamant USA Inc.
Tempo Clean Room Foam
Trioptics GmbH
United Lens Co., Inc.
Universal Photonics, Inc.
Valtech Corp.
Welch Allyn Lighting Products
Westchester Technologies, Inc.
Western Photonics Technology
Zygo Corporation

Photonics Equipment Manufacturer

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Applied Surface Technologies
Dyna Technologies, Inc.
Ferrotec GmbH
GTI Technologies
JENOPTIK Laser, Optik, Systeme
GmbH
Larsen Equipment Design, Inc.
Metrology Concepts LLC
Photon Gear, Inc.
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Satisloh North America Inc.
SGS Slicing Solutions, Inc.
Vacuum Process Technology, Inc.

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EMD Chemicals Inc.
GTI Technologies

Sensor & Sensor Systems

Metrology Concepts LLC

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Optronics Co., Ltd. (The)
Photonics Media

Software

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Diffraction International Ltd.
Engineering Synthesis Design,
Inc.
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Spectra Services, Inc.
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Norland Products Inc.
RAPT Industries, Inc.
SGS Slicing Solutions, Inc.
Shanghai Optics
Swift Glass Co.
Vacuum Process Technology, Inc.
Valtech Corp.

Vacuum, Cooling, Gas Handling Equipment

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Ferrotec GmbH
Leybold Optics USA, Inc.
Vacuum Process Technology, Inc.

Wafer Handling Automation

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OUR MISSION STATEMENT

APOMA represents a broad constituency of precision optics manufacturers, and the supporting industry along with academic associates, whose mutual interest is the advancement and expansion of optics manufacturing and technology. **APOMA** is pledged to act on behalf of its members, whose common interests are far more important than the small differences that have for too long fragmented the industry. Common concern and cooperation are the essential foundation of sustaining a viable technology base.

INDUSTRY ADVOCATE

In 1988, **APOMA** wrote a comprehensive industrial modernization proposal advocating the effective cooperation of industry, academia and government. Areas that receive **APOMA** support are: Optical Standards, OptiFab, Optical Fabrication Training and Student Travel to Optical Fabrication and Testing seminars.

MEETINGS & PUBLICATIONS

- **APOMA** schedules at least two national meetings each year. Meeting dates and times conveniently coincide with the major conferences of the SPIE and OSA. Members are advised of the meeting day and time.
- **APOMA** Members receive a newsletter discussing issues, activities, meeting dates and items of critical interest.

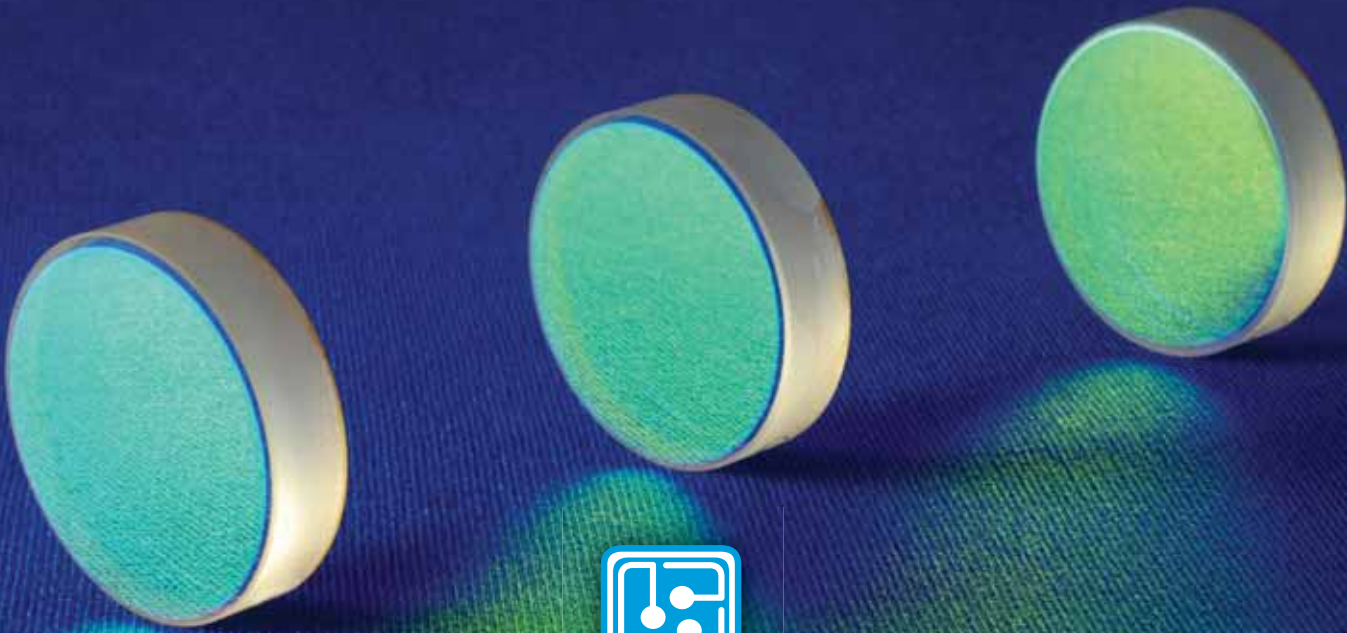


OBJECTIVES

- Provide a forum for peers and associates to discuss opportunities and concerns in the optics industry.
- Initiate actions that stimulate advances in science, technology and business opportunities for the optical community.
- Serve as a unified, coherent voice in promoting expansion and growth of the optics manufacturing base.

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