

Exhibition Guide

# Optifab 2007

Exhibition:

**15–17 May 2007**

Conference and Courses:

**14–17 May 2007**

Rochester Riverside Convention Center  
Rochester, New York USA



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# Optifab 2007

Conference · Courses · Exhibition

**Exhibition: 15–17 May 2007**

**Conference and Courses: 14–17 May 2007**

Rochester Riverside Convention Center  
Rochester, New York USA

## Exhibition Co-chairs



**James M. Sydor,**  
Sydor Optics, Inc.



**Richard A. Nasca,**  
Corning Tropel Corp.

## About SPIE

SPIE is a not-for-profit international society dedicated to furthering technological innovations. Established in 1955, SPIE has a long history of producing international meetings that push the forefront of photonics technologies and their applications.

## About APOMA

The American Precision Optics Manufacturers Association represents a broad base of precision optics manufacturers and supporting industries whose mutual interest is to expand and advance optics manufacturing technology. The 150-member organization promotes regional educational centers for the optics industry, provides student grant funding, participates in the formation of optical standards for the industry, and actively sponsors technical workshops aimed at improving technical dialogue and exchange within the membership.

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Manufacturers Association

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# General Information



## Rochester Riverside Convention Center

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

## Registration Hours

*Rochester Riverside Convention Center Registration*

*Convention Center Galleria*

Monday–Wednesday ..... 7:30 am to 5:00 pm  
Thursday ..... 7:30 am to 4:00 pm

## Exhibition Hours

*Rochester Riverside Convention Center  
Empire Hall*

Tuesday 15 May ..... 10:00 am to 5:00 pm  
Wednesday 16 May ..... 10:00 am to 5:00 pm  
Thursday 17 May ..... 10:00 am to 4:00 pm

## Message Center

Rochester Riverside Convention Center, located near registration. Messages will be taken during registration hours Monday through Thursday by calling **585 770-2360**

## WiFi

### Complimentary Internet Wireless Access

*Sponsored by:*



Complimentary wireless access to the Internet for all conference attendees will be available. Bring 802.11b wireless-enabled laptops or PDAs.

## Coffee Breaks at the Convention Center

Complimentary coffee will be served in the Exhibition Hall, Tuesday through Thursday each day at approximately 10:30 am and 3:00 pm.

*Wednesday Coffee Break Sponsored by:*



## Interactive Poster Session (for Technical Attendees)

Wednesday ..... 5:00 to 6:30 pm

Technical Attendees are requested to wear their registration badges for admittance.

*Refreshments Sponsored by:*



Authors must be present for discussion during the Interactive Poster Session.

## Audio/Video/Digital Recording Policy

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 Show 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.

## No Suitcasing Please

Please note that while all meeting attendees are invited to the exhibition, any attendee who is observed to be soliciting business in the aisles or other public spaces, in another company's booth, or in violation of any portion of the SPIE Exhibition Policy will be asked to leave the exhibition area immediately. Additional penalties may be applied. Please report any violations you may observe to show management.

## Ground Transportation



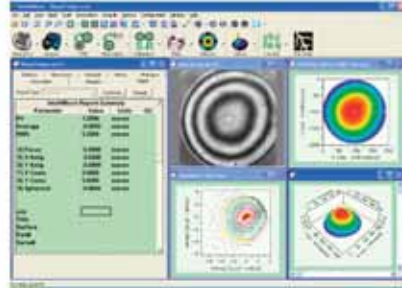
**Hertz Car Rental** has been selected as the official car rental agency for this Symposium. To reserve a car at the reduced conference rates, use the **Hertz Meeting Code CV# 029B0010**. Book on-line at [www.hertz.com](http://www.hertz.com).

## Taxi

Cost of a taxi one way from the airport to either hotel is approximately \$13.00.

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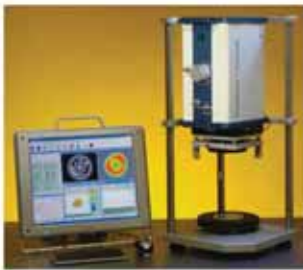
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Booth # 800

# Daily Event Schedule

| Monday<br>14 May   | Tuesday<br>15 May  | Wednesday<br>16 May  | Thursday<br>17 May   |
|--|--|--|--|
| <b>Optifab Technical Conference</b> ( <i>Kumler, Pfaff</i> )   |  |  |  |
| <b>SC842 Optical Coating Design and Analysis for High Manufacturability</b> ( <i>Kruschwitz</i> ), 8:30 am to 12:30 pm | <b>SC720 Cost-Conscious Tolerancing of Optical Systems</b> ( <i>Youngworth</i> ) 1:30 to 5:30 pm | <b>Interactive Poster Session</b> (for Technical Attendees), 5:00 to 6:30 pm | See SPIE Cashier to register for the Technical Conference or a course. |
| <b>SC721 Precision Machining of Optics</b> ( <i>Riedl</i> ) 8:30 am to 5:30 pm   | <b>SC700 Understanding Scratch and Dig Specifications</b> ( <i>Aikens</i> ) 8:30 am to 12:30 pm  | <b>SC220 Optical Alignment Mechanisms</b> ( <i>Guyer</i> ) 1:30 to 5:30 pm   |  |
| <b>SC350 Optical Manufacturing Overview</b> ( <i>Novak</i> ) 8:30 am to 5:30 pm  | <b>SC552 Aspheric Optics: Design, Fabrication, and Test</b> ( <i>Fischer</i> ) 1:30 to 5:30 pm   | <b>SC212 Modern Optical Testing</b> ( <i>Wyant</i> ) 8:30 am to 12:30 pm     |  |
|  | <b>SC015 Structural Adhesives for Optical Bonding</b> ( <i>Daly</i> ) 8:30 am to 12:30 pm        |  |  |
| <b>Exhibition</b>  |  |  |  |
|  | 10:00 am to 5:00 pm  | 10:00 am to 5:00 pm  | 10:00 am to 4:00 pm  |



## New York Industry Association

[www.newyorkphotonics.org](http://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 2007:

**AccuCoat, Inc.**  
Booth #1324

**Advanced Glass Industries**  
Booth #503

**Applied Image, Inc.**  
Booth #511

**Evaporated Metal Films**  
Booth #1314

**Greater Rochester Enterprise**  
Booth #506

**JML Optical Industries Inc.**  
Booth #1318

**Miraclean Ultrasonic Cleaning Systems**  
Booth #501

**Model Optics, Inc.**  
Booth #508

**New York Photonics Industry Association**  
Booth #509

**Optimax Systems, Inc.**  
Booth #1326

**Photon Gear, Inc.**  
Booth #1322

**R. Kraft**  
Booth #1320

**Reflexite Display Optics**  
Booth #1310

**Rochester Precision Optics**  
Booth #504

**Swift Glass Co.**  
Booth #507

**Spectrum Thin Films Corp.**  
Booth #502

**Stefan Sydor Optics, Inc.**  
Booth #500

**Syntec Technologies, Inc.**  
Booth #510

**University of Rochester**  
Booth #505

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**Wednesday Morning Coffee Break**



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JENOPTIK Laser, Optik, Systeme GmbH - Business Unit Optics  
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# Optifab 2007

## Exhibition Hours

Rochester Riverside Convention Center  
Empire Hall

Tuesday 15 May . . . . . 10:00 am to 5:00 pm

Wednesday 16 May . . . . . 10:00 am to 5:00 pm

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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 30–32, 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.

# Exhibitor Listing

## 4D Technology Corp.

#609

**SPIE** Corporate Member

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

**New Product: FizCam 2000 dynamic interferometer measures thin glass, remote cavities and multi-surface optics.**

4D Technology designs and manufactures interferometers for non-contact surface metrology. Employing innovative phase sensors, 4D's dynamic interferometers are insensitive to vibration and air turbulence, providing high speed, high spatial resolution measurements in as little as 1 microsecond. 4D combines expertise in metrology, opto-mechanical design, software development and manufacturing to develop, engineer and commercialize innovative products for a wide variety of optics applications. Contact: Chip Ragan, North American Sales, chip.ragan@4dtechnology.com; Steve Martinek, International Sales, steve.martinek@4dtechnology.com.

## A.M.F. Optics, Inc.

#1006

30 Nashua St, Woburn, MA, 01801  
781/933-6125; fax 781/933-6420  
info@amfoptics.com; www.amfoptics.com

## AccuCoat, Inc.

#1324

**APOMA**

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

Accucoat is a supplier of thin film coatings on polymer, metal and glass 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 58 years combined engineering experience can provide custom designed solutions. Contact: Alan Parsons, Sales Engineer, alan@accucoatinc.com.

## Accura Technics

#907

310 Marlboro St, Keene, NH, 03431  
603/355-2727; fax 603/355-1175  
info@accuratechnics.com; www accuratetechnics.com

**New Product: MicroTol: CNC ultra-precision grinding machine capable of producing spherical & aspherical surfaces.**

Accura Technics is a domestic manufacturer of production oriented ultra-precision machine tools. These systems are automation ready and can be configured as grinders, lathes or combinations of turning and grinding. Accura's compact machines are suited for the production of optics and precision components. Contact: Myrt Graham, Sales and Applications Engineer, mgraham@accuratechnics.com.

## Advanced Glass Industries

#503

**APOMA**

PO Box 60467, 1335 Emerson St, Rochester, NY, 14606  
585/458-8040; fax 585/458-8087  
agj@advancedglass.net; www.advancedglass.net

**New Product: Exclusive North American distributor of GFE evaporated thin film coating materials.**

Manufacturer of molded and precision machined glass products. Services include precision custom molding, annealing, slumping, sawing, grinding, generating, edging, waterjet cutting and CNC machining. Extensive inventory includes Optical and Filter glass, Fused Quartz, Fused Silica and industrial glass. We also buy and sell used optical equipment. Exclusive North American distributor of GFE evaporated thin film coating materials. Contact: Henry Louis, Sales Manager; Anthony Marino, President.

## Aerotech, Inc.

#1342

**SPIE** Corporate Member

101 Zeta Dr, Pittsburgh, PA, 15238-2897  
412/963-7470; fax 412/963-7459  
sales@aerotech.com; www.aerotech.com

**New Product: ABRs Series Low Profile, Direct-Drive, Air-Bearing Rotary Stages with Large Apertures.**

Aerotech manufactures automated alignment, positioning and motion control systems and components for 24/7 manufacturing. Our products include optical mounts; a complete line of multi-axis photonic/fiberoptic direct-drive nanopositioners; gantry systems; goniometers; linear, rotary and lift stages; single- and multi-axis motion controllers; drives; linear and rotary motors; and cleanroom, vacuum-prepped and other custom systems. Contact: Scott Schmidt, Applications Engineer, Precision Positioning Group, sschmidt@aerotech.com.

## Angstrom Precision Optics Inc.

#113

**APOMA**

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

**New Product: APO is now offering ultra parallel flat precision polished plano germanium windows.**

Manufacturer of precision polished plano elements. Products are 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 scratch dig and 1/20 wave flatness. CNC dicing and slicing services. Materials include optical glass, fused quartz/silica, filter glass, germanium, Borofloat and float glass. APO provides quality optics at a low cost with our expedited 2-3 day delivery. Contact: Ron Schulmerich, President.

## Apollo Optical Systems, LLC

#407

**SPIE** Corporate Member

330 Clay Rd, Rochester, NY, 14623  
585/272-6170; fax 585/272-6177  
info@apollooptical.com; www.apollooptical.com

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, Vice President of Manufacturing, Tribastone@ApolloOptical.com.

## APPLIED IMAGE Group

#511

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 as well as NIST Certification services 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, Sales Manager, panderson@appliedimage.com; Luke Hobson, Sales Manager, lhobson@appliedimage.com.

## APS Optics

#1352

42257 Troyer Ave, Fremont, CA, 94539  
510/656-9295; fax 510/353-1109  
apsoptics@usa.net; www.apsoptics.com

## Ariel Optics, Inc.

#112

**SPIE** Corporate Member

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

Ariel Optics specializes in the manufacture of precision plano optical components. Products include Prisms, Light Pipes, Beam Splitters, Mirrors and Reference Flats with dimensions ranging from .7mm to 500mm. Quantities from prototype to mid Volume production. Average lead times are less than 4 weeks with expedited deliveries on request. Contact: Robb Sawyer, Marketing Manager, robb@arieloptycs.com

## ASE Optics, Inc.

#704

2489 Brighton Henrietta Town Line Rd, Rochester, NY, 14623  
585/272-1208; fax 716/624-8083  
sales@aseoptics.com; www.aseoptics.com

### New Product: Scanning 3-dimensional metrology system.

ASE Optics is a supplier of optical engineering talent for world-class optical systems, with a demonstrated record of providing cost effective designs and innovative applied engineering solutions across a wide range of applications. We will be showcasing a 3-dimensional, non-contact, optical profiling system. The optical profiling system is ideal for the metrology of aspheric surfaces that can not be measured with conventional optical metrology systems. Contact: Christopher Cotton, President, chrisc@aseoptics.com.

## Axsys Technologies IR Systems

#904

**SPIE** Corporate Member

24 Simon St, Nashua, NH, 03060  
603/864-6300; fax 603/864-6450  
www.axsys.com

Contact: Peter Kornik, Business Development Manager, pkornik@axsys.com; Carl Rouette, Coating Lab Manager, crouette@axsys.com.

## Brysen Optical Corp, A Division of FLIR Systems, Inc.

#401

27700A SW Pky Ave, Wilsonville, OR, 97070  
503/498-3880; fax 503/498-3551  
info@brysenoptical.com; www.brysenoptical.com

### New Product: Diamond Like Carbon (DLC)- hard, high transparent protective coating from abrasion & chemical damage.

Brysen designs & manufactures optical components, coatings & electro-optical assemblies. Capabilities include design & production of windows, filters & mirrors spanning the spectral range including antireflection, DLC, bandstop, bandpass, dichroic, metal, dielectric, dark mirrors and durability coatings. Also solderable edge metalizations for use in hermetic sealing of windows & reticles. Surface Quality Standards Scratch & Dig sets conforming to US Army drawing 7641866. Contact: Brett Lombardo, Business Development Manager, blombardo@brysenoptical.com; Ashish Mistry, Director, Optics Business Unit, ashish.mistry@flir.com.

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200 Valley Road, Suite 305  
Mt. Arlington, NJ 07856  
Tel: 888-462-9700 or 973-770-7220  
internet: www.technodiamant.com

# Exhibitor Listing

## CDGM Glass Co. USA

#111

472 Old Country Rd, Rochester, NY, 14612  
585/424-0800; fax 585/227-2228  
www.cdgmglass.com

CDGM is the largest producer of optical glass in Asia, with production capacity to melt 8 to 10 thousand tons per year. CDGM has a portfolio of over 200 types of optical glass including lanthanum, low tg moldable, environmentally friendly and high transmission glass in sheets or rods. In addition to supplying the opto-electronics market with high quality glass for over half a century, CDGM has the ability to create direct or re-pressed blanks and spherical lenses from 5mm to 300mm. Contact: Robert Muldowney, President, rmuldowney@cdgmglass.com.

## Center for Rapid Product Realization

#207

164 Belk Bldg, Cullowhee, NC, 28723  
828/227-2435; fax 828/227-7838  
sanger@wcu.edu; rapid.wcu.edu

## Centerline Technologies

#105

**SPIE** Corporate Member

577 Main St Ste 270, Hudson, MA, 01749  
978/568-1330; fax 978/568-1334  
sales@centerlinetech-usa.com; www.centerlinetech-usa.com

Centerline Technologies capabilities include precision lapping, polishing, laser machining, diamond sawing, edge/diamond machining, tumbling and a filled via planarity process. Materials, Alumina (99.6% & 96%), AlN, BeO, Fused Silica/Quartz, Sapphire, Lithium Niobate, Titanates, Ferrites, Garnet, Silicon Carbide, Tungsten Carbide and more. For more info see www.centerlinetech-usa.com. Contact: Hugh Muffoletto, Chief Executive Officer, hugh@centerlinetech-usa.com; Rob Naugler, Operations Manager, rob@centerlinetech-usa.com.

## Chardon Tool

#307

PO Box 291, 115 Parker Ct, Chardon, OH, 44024  
440/286-6440; fax 440/286-7165  
info@chardontool.com; www.chardontool.com

## cleanroomservices.com

#1320

129 Shorecliff Dr, Rochester, NY, 14612  
585/621-6946  
clnrmsrvs@yahoo.com; www.cleanroomservices.com  
Sale of cleanroom systems, components, furnishings and supplies. In-House Services: Design assistance, certification of cleanrooms and Laminar Flow Benches, troubleshooting, performance appraisals of existing cleanrooms, precision cleaning of cleanroom facilities, training seminars for those considering and/or using cleanrooms. Contact: Ralph Kraft, President.

## CMPC Surface Finishes

#608

**SPIE** Corporate Member

39 Official Rd, Addison, IL, 60101  
630/543-6682; fax 630/543-4013  
surf-fin@att.net; www.surfacefinishes.com



**Wi-Fi Sponsor**

## Coastal Optical Systems, Inc.

#409

**APOMA SPIE** Corporate Member

4480 S Tiffany Dr, West Palm Beach, FL, 33407  
561/881-7400; fax 561/881-1947  
sales@coastalopt.com; www.coastalopt.com

Coastal Optical Systems (www.coastalopt.com) specializes in rapid design and manufacture of custom precision lens assemblies and sensor integration for aerospace and defense, biomedical, machine vision, astronomical research, telecom and 3-D entertainment markets. Design, optical fabrication, assembly, system alignment and optical testing are performed in-house in West Palm Beach, FL. COSI is a subsidiary of Jenoptik (www.jenoptik-los.de). Contact: Ray Malcom, Vice President, Sales & Marketing, ray.malcom@coastalopt.com; Darcie Balfany, Sales & Marketing, darcie.balfany@coastalopt.com.

## Contour Fine Tooling

#706

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

Over the past 25 years, Contour Fine Tooling has earned a reputation for innovation, precision, quality and value for money in the field of Single Point Diamond cutting tools. Standard and Special tools are offered, with varying levels of precision, utilizing both natural & synthetic single crystal stones. Waviness down to 50 nanometers or 0.05 microns. Radius sizes from 3 microns up to 100's of millimeters. Let us help you with your next project/tool design. Contact: Jeffrey Tomlin, Vice President & General Manager, jeff@contour-diamonds.com; John Smith Ruddick, Managing Director.

## Corning Inc.

#815

**APOMA SPIE** Corporate Member

60 O'Connor Rd, Fairport, NY, 14450  
585/388-3500; fax 585/377-6332  
optics\_info@corning.com; www.corning.com

Corning Specialty Materials is a world-leading supplier of complete optical solutions. Building upon over 150 years of Corning's innovation and material science, the Corning Specialty Materials group provides its customers "One Stop Shopping" for their most challenging optical requirements. The markets we serve include Aerospace and Defense, Astronomy, Display, Semiconductor and many more. Contact: Louie Denes, Manager, New Business Development, denesl@corning.com; David Young, Marketing Communications, youngdj@corning.com.

## CSIRO Australian Centre for Precision Optics

#1300

Bradfield Road, West Lindfield, Sydney, NSW, Australia, 2070  
61 2 9413 7000; fax 61 2 9413 7200  
khuen.wong@csiro.au; http://www.cip.csiro.au/IMP/Optical

We specialise in research services and custom product development. We supply precision custom coated optics in glass, ceramics, crystals and metals. Products include super-flat and long radii surfaces to lambda/500, precision spheres to 30 nm asphericity, cube corners, beam-splitters, etalon tuneable filters, multi-layer coatings, photonics components. Integrated fabrication, metrology and coatings facilities. New products include super-polishing of sapphire. Contact: Bob Oreb, bob.oreb@csiro.au; Roger Netterfield, roger.netterfield@csiro.au.

**DAC International, Inc. #1104**

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

Manufacturer of CNC Equipment and Software for the Production of standard or specialty lenses, such as asphere or toric designs. Contact: Chris Pantle, Sales Manager, cpantle@dac-intl.com; Chip Heavican, Executive Vice President, cheavican@dac-intl.com.

**Davidson Optronics, Inc. #607**

**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

**New Product: MARAD - computerized autocollimator analysis system - automates your instrument.**

Davidson Optronics provides optical metrology and test equipment regarded as the standard of the industry, including alignment telescopes, autocollimators, plano interferometers, optical flats, prisms and polygons. We also produce the TV Optoliner, a complete system for evaluating imaging devices. Custom components and instrumentation work is done in NIST-Certified facility. Contact: Charles Gaugh, Sales Manager.

**DCM Tech, Inc. #203**

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

**New Product: IG 281SD grinding system in both rotary table and orbital "fine grinding" configurations.**

DCM manufactures rotary table grinding systems for crystal, ceramic, composites and specialty alloys. Machines range from basic lab models to PLC/Servo controlled production units. Contact: Skip Green, Technical Sales, skipgreen@dcm-tech.com; Mike Anderson, Product Manager, mikeanderson@dcm-tech.com.

**Denton Vacuum, LLC #109**

Coating Div, 1259 N Church St, Moorestown, NJ, 08057  
856/439-9100; fax 856/439-9111  
sales@dentonvacuum.com; www.dentonvacuum.com

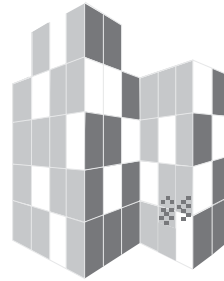
**New Product: Desktop Pro is compactly designed for high performance sputtering.**

Denton Vacuum's 130+ man-years of process engineering expertise in evaporation, sputtering, ion-assisted processes and plasma-enhanced chemical vapor deposition (PECVD) is the foundation on which the company has been built. State-of-the-art controls and automation drive best-in-class hardware/subsystems on a customer-specific system design. Contact: James Colbridge, Marketing Manager, jcolbridge@dentonvacuum.com; David Mount, Sales Manager, dmount@dentonvacuum.com.

**Diacut, Inc. #1348**

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 of resin bond Diamond blades. The high precision wheels are made to customer specifications and are used on high productions machines such as K&S, MTI, ITI, Disco plus standard surface grinders. The blades are used for slicing and dicing, grooving and precision cut-off operations to grind glass, ceramics, quartz, sapphire, ferrite. Contact: Rene Furrer, Owner; Toni Furrer, Vice President Sales.



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**Diffraction International Ltd. #311**

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

**New Product: See our new CGH framing system. Get a free CDROM featuring Durango Interferometry Software.**

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 Arnold, President; Helen Paul, Operations Manager.

# Exhibitor Listing

## Displays & Optical Technologies, Inc. #410

### APOMA

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

Displays & Optical Technologies manufactures massive, lightweight optics for research, flight simulation, photolithographic and entertainment applications. We bend, grind and polish optics to approximately 100" diagonal measure. Our specialty is manufacturing accurate lightweight, slumped glass optics. We are a custom manufacturer and can handle prototype to production quantities. See our link to the Smithsonian's massive VERITAS Gamma Ray Research telescopes. Contact: Monty Ma Gill.

## dopa Diamond Tools #305

### SPIE Corporate Member

Plauener Str 163-165, Berlin, Germany, 10353  
49 3098 318 811; fax 49 3098 318 817  
info@dopa-diatools.com; www.dopa-diatools.com

**New Product: Grinding tools for hard and brittle materials like sapphire, quartz, germanium, silicon and others.**

Dopa diamond tools develops and produces grinding, fine grinding and pre-polishing tools for the machining of most different optical materials. Our tools generate very high surface qualities with nearly no sub-surface damage, so one is able to cut down his polishing time and simultaneously increase his workpieces quality. Whether you want to machine spherical or plane components. We offer you a custom tailored solution. Our division www.dopa-service.com offers high quality contract work. Contact: Mario Patraschkov, Marketing & Sales, mario@dopa-diatools.com; Marcel Patraschkov, Technical Sales, marcel@dopa-diatools.com.

## Dyna Technologies, Inc. #1354

### SPIE Corporate Member

1445 Dolgner Pl Ste 40, Sanford, FL, 32771  
407/330-6423; fax 407/330-6121  
information@dti-fla.com; www.dti-fla.com

A manufacturer of precision glass molding presses for production of optical elements such as aspheric lenses. The presses feature 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; Robert Farmer, Business Coordinator, rfarmer@dti-fla.com.

## E.T. Precision Optics Inc. #108

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

## Engineering Synthesis Design, Inc. #800

### SPIE Corporate Member

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

**New Product: New Fizeau Interferometers: Intellium Z100HR for high aspheric optics & Intellium Z100NIR for 1064nm.**

ESDI is a complete surface and wavefront metrology solutions provider. Our products, widely used on shop floors, in R&D labs and in OEM devices, include 'IntelliWave' instrument-independent interferometric analysis software, Fizeau, shearing, point diffraction interferometers (classical to vibration-insensitive technology), wavefront sensors and scatterometers. We also provide interferometry accessories, training, interferometer upgrades, measurement services and custom metrology solutions. Contact: Kristi Helmrich, Sales Accounts Manager.

## Engis Corp. #102

105 W Hintz Rd, Wheeling, IL, 60090  
847/808-9400; fax 847/808-9430  
info@engis.com; www.engis.com

Engis is a manufacturer of diamond powders, slurries and lubricants for optical finishing. Engis offers complete systems for flat finishing of a wide range of crystals with "turnkey" processes. Additionally, Engis provides electroplated diamond tools for grinding without dressing, in grit ranges down to the single micron level. Contact: Mike Foley, Product Manager, mfoley@engis.com; Tom Zerfas, Regional Sales Manager, tzerfas@engis.com.

## Epner Technology, Inc. #1338

### SPIE Corporate Member

78 Kingsland Ave, Brooklyn, NY, 11222-5603  
718/782-5948; fax 718/963-2930  
epner78@aol.com; www.epner.com

A broad range of electroplating, optical fabrication and coating technologies including-electroformed cold shields, custom designed infrared lightpipes, laser pump cavity reflectors, Laser Gold<sup>®</sup>, the NIST infrared standard exhibits theoretically low emissivity and Laser Black<sup>®</sup> which "swallows light". Contact: David Epner, President, David@epner.com.

## Equipment Acquisition Resources #905

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

**New Product: Process engineering program to include manufacturing capabilities for dicing/slicing saws.**

At E.A.R. we have the finest state of the art dicing/slicing saws available for the purpose of dicing your material to sub-micron accuracies if required. Sheldon Player promotes that "Our engineering team is readily available for design, re-work, re-design and testing of your application. Our goals are exactly the same as yours, which is to work continuously on your application until completed in a 100% satisfactory state within the timeline allotted and within your R&D budget". Contact: Mark Anstett, Vice President, marka@eartechology.com; Sheldon Player, President, sheldonp@eartechology.com.

## Evaporated Metal Films Corp. #1314

SPIE Corporate Member

239 Cherry St, Ithaca, NY, 14850  
607/272-3320; fax 607/272-3369

info@emf-corp.com; www.emf-corp.com

Evaporated Metal Films (EMF) Corporation offers thin film coatings for applications with high complexity & rapid turnaround requirements. Coatings can be applied to glass, metal or plastic components for optical, conductive, reactive & decorative performance. Call us for antireflection coatings, mirrors, beamsplitters, neutral density filters. Substrate sizes from .25" to 2 meters. In-house design, prototyping, production teams available for consultation. Contact: Megan Shay, Chief Executive Officer, mdshay@aol.com.

## Excell Technology #104

1001 Varian St, San Carlos, CA, 94070  
650/592-6224; fax 650/592-6684

val@excelltechnology.com; www.excelltechnology.com

Leading specialist in rebuilding to OEM Grinders, Lappers, Saws, etc. 30 year track record. Visit our 20,000 sq ft Facility. Onsite Training, Process Eng & Product Development. We feature Speedfam, Peter Wolters, Strasbaugh, Lapmaster, Blanchard, PR Hoffman, etc. We hold ourselves to the highest standards using OEM specs as our quality benchmark. Our processes and equipment have changed over the years, but our operational values are still the same: Quality, Service & Reliability. Contact: David Hodges, President, dhodges@excelltechnology.com; Valerie Defigueiredo, Administration, val@excelltechnology.com.

## Fairfield Crystal Technology, LLC #1350

SPIE Corporate Member

8 S End Plz, New Milford, CT, 06776  
860/354-2111; fax 860/354-3093

info@fairfieldcrystal.com; www.fairfieldcrystal.com

**New Product: CaF<sub>2</sub>, MgF<sub>2</sub>, BaF<sub>2</sub>, single crystals, IR to deep UV.**

Fairfield Crystal Technology is a leading supplier of high quality, high purity, single-crystal materials for next generation precision optical and compound semiconductor devices. Our crystal materials are used in the excimer lasers, microlithography, development of solid-state lighting, optical storage, wireless communications, medical imaging, high power lasers, nuclear medicine and bio-agent detection. Contact: Andy Timmerman, Sales Manager, atimmerman@fairfieldcrystal.com.

## Ferson Technologies, Inc. #206

APOMA

5801 Gulf Tech Dr, Ocean Springs, MS, 39503  
228/875-8146; fax 228/875-5947

cspence@ferson.com; www.ferson.com

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

## Filmetrics, Inc. #205

9355 Chesapeake Dr, San Diego, CA, 92123  
858/573-9300; fax 858/573-9400

info@filmetrics.com; www.filmetrics.com

Measure thin films from 30 angstroms to 450µm with Filmetrics spectral reflectance based systems. Filmetrics features a complete line of affordable UV to NIR spectrometer systems for measuring thickness, optical constants and deposition rates of thin films. Single-spot and mapping systems available. Contact Jim Elman, elman@filmetrics.com; Michael Klayman, klayman@filmetrics.com for more information.

# WaveMaster<sup>®</sup> PRO

## Fast and accurate Aspherical Lens Tester

WaveMaster<sup>®</sup> PRO is a new instrument providing real time wave front measurement and analysis of spherical and aspherical optics.

The WaveMaster<sup>®</sup> PRO features high spatial resolution and accuracy, can be simply set up in finite or infinity conjugates configuration and incorporates the state of the art wave front sensing technology. A high precision 5 axis sample holder allows for easy and fast alignment of the sample. Further features include:

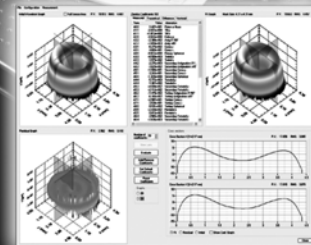
- Tilt dynamic range:  $> \pm 3^\circ$  (1500  $\lambda$ )
- Focus dynamic range:  $\pm 0.03$  m to  $\pm \infty$  (1800  $\lambda$ )
- Repeatability (RMS):  $< \lambda/200$
- Wave front measurement accuracy: RMS:  $\lambda/20$
- Live display of measured, fitted and residual wave front
- Live Zernike analysis
- Complete measurement report, etc.

Applications include measurement of mobile phone and digital camera lenses, lenses for automotive sensors or any other spherical or highly aspherical optics.



**New!**

WaveMaster<sup>®</sup> PRO  
WAFER for ultra fast  
measurement of  
lenses on wafers



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# TRIOPTICS

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Phone: ++49-4103-18006-0 · Fax: ++49-4103-18006-20  
E-mail: info@trioptics.com · www.trioptics.com

# Exhibitor Listing

## Flow International Corp. #1106

23500 64th Ave S, Kent, WA, 98032  
253/850-3500; fax 253/813-9377  
info@flowcorp.com; www.flowcorp.com

Flow International Corporation (Flow), the inventor of abrasive waterjet technology, is the world leader in the development and manufacture of ultrahigh-pressure (UHP) waterjet systems. Contact: Jarret Clarke, Sales & Marketing Assistant, info@flowcorp.com.

## Fogale Nanotech #901

Bat A Ville Active-Parc Acti, 125 rue de l'Hostellerie, NIMES, France, 30900  
33 4 66 62 05 55; fax 33 4 66 62 71 60  
info@fogale.fr; www.fogale.fr

**New Product: LISE-LI System: It measures positions and thicknesses in optical systems with submicron accuracy.**

FOGALE nanotech, an engineering company created in 1983, is today a reference in the field of high accuracy metrology systems. Its sensors and systems based on capacitive, inductive or optical metrology are used for a wide variety of applications in industry and research. Examples are optical sensors for the dimensional control of lenses, capacitive sensors for collision avoidance in medical instrumentation or capacitive sensors for viable cell density measurements in fermentation processes. Contact: Rainer Wilhelm, r.wilhelm@fogale.fr; Alain Courteville, a.courteville@fogale.fr.

## FRT of America, LLC #118

48 South Road #1, Somers, CT, 06071  
860/749-3885; fax 860/749-3899  
info@frtofamerica.com; www.frtofamerica.com

**New Product: MicroGlider Asphere.**

FRT is recognized as a valued partner for non-contact, optical metrology systems and solutions. FRT of America serves you, our customers by providing high quality measuring systems and services, which fulfill your research, Q.A., inspection and verification needs. FRT MicroProf® and MicroGlider® surface topography, profile, form, roughness and micro-dimensioning measuring systems. FRT – The Art of Metrology™. Contact: Paul Flynn, General Manager.

## GEMCITY Engineering and Manufacturing #1102

401 Leo St, Dayton, OH, 45404  
937/223-5544; fax 937/226-1908  
sales@gemcity.com; www.gemcity.com

**New Product: Low cost manufacturing center in Thailand.**

GEMCITY Services: Contract manufacturing services; design and build of custom equipment; build to print machine building services; low cost manufacturing center in Thailand. Contact: David Jansen, Senior Engineer, djansen@gemcity.com.

## GfE Metalle und Materialien GmbH #503

Hoefener str 45, Nuernberg, Germany, 90431  
49 911 9315 424; fax 49 911 9315 1424  
astrid.plewa@gfe.com; www.gfe.com

**New Product: Hafnium Oxide and Tantalum Pentoxide.**

GfE Coating Materials is a leading manufacturer of PVD coating materials for optical applications and other thin film markets. Products include evaporation coating materials for high and low index thin film layers. We provide shaped sources, granules and target configurations. GfE Coating Materials is headquartered in Nuremberg, Germany. Subsidiaries are in Wayne, PA - USA and Shanghai, China. Contact: Astrid Plewa, World Sales Executive; Cameron May, Vice President, cameron.may@gfe.com.

## Glass Fab Inc. #805

APOMA SPIE Corporate Member

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

Manufacturers 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, CNC generating and CMM capabilities. Contact: Dan Saltzman, President, d\_saltzman@glassfab.com; Wayne Leon, Sales Manager, w\_leon@glassfab.com.

## Greater Rochester Enterprise #506

100 Chestnut St Ste 1910, Rochester, NY, 14604  
585/530-6200; fax 585/546-8477  
info@rochesterbiz.com

A history of innovation has firmly rooted Rochester, NY's economy in optics, imaging and photonics. With more than 50 leading optics companies, world-renowned university programs and exceptional research facilities, you can appreciate the potential that exists in the Rochester, NY Region. We have what successful businesses need: A high-caliber workforce; prime real estate at costs below the national average; and aggressive incentives. Visit www.RochesterBiz.com. Contact: Staci Henning, Marketing Director, Staci@RochesterBiz.com; Jay Martinez, Managing Director, Business Development, Jay@RochesterBiz.com.

## G-S PLASTIC OPTICS #701

APOMA SPIE Corporate Member

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

**New Product: NEW in-house precision optical coating system for polymer substrates.**

G-S PLASTIC OPTICS specializes in the custom manufacture of precision polymer optics for use in imaging, scanning and detection 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, wbeich@gsoptics.com.

## GTI Technologies #1100

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, backgrounding systems from Supfina and GTI, carbon fiber end effectors from Astel, wafer scribing equipment from JFP and GTI Dicing systems. Contact: Robert Thron, Vice President Sales, bob@gti-usa.com.

## Harold Johnson Optical Labs. #1117

APOMA

1826 W 169th St, Gardena, CA, 90247  
310/327-3051; fax 310/327-6179  
hj@hjol.com; www.hjol.com

Custom manufacturer of cylindrical and spherical lenses, achromats, prisms, mirrors, filters, domes, hyper-hemispheres and multielement assemblies in prototype and volume quantities for industrial, medical, research, commercial and MIL-SPEC applications. Contact: Julia Stockwell, Sales, julia@hjol.com; Hal Johnson, President.



**Heraeus Quartz America****#403**SPIE Corporate Member

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

Heraeus Quartz America LLC. is a US subsidiary of Heraeus Quarzglas GmbH & Co. KG. Heraeus Quarzglas is one of the world's market and technology leaders in the manufacture of high-purity natural and synthetic fused glass used in the semiconductor, lamp, optics and optical communications markets. Contact: Bambi Everett, Marketing Manager.

**Hinds Instruments, Inc.****#1336**SPIE Corporate Member

3175 NW Aloclek Dr Ste 170, Hillsboro, OR, 97124  
503/690-2000; fax 503/690-3000  
sales@exicor.com; www.hindsinstruments.com

Hinds Instruments, Inc. develops and manufactures photoelastic modulator-based systems and components that exploit the high sensitivity of PEM polarization analysis technology. This capability has become integral to a wide variety of applications involving measurement of such parameters as birefringence, Stokes polarimetry, dichroism, optical rotation and others in research, metrology and on-line environments. Contact: Andy Kaplan, Sales Manager, akaplan@hindsinstruments.com.

**Hoya Corp. USA****#808**SPIE Corporate Member

101 Metro Dr Ste 500, San Jose, CA, 95110  
408/441-3300; fax 408/451-9524  
www.hoyaoptics.com

HOYA CORPORATION USA is a leading provider of optical materials and components. Our product portfolio includes Molded Aspheric Lenses, LCD Display Glass, CCD Cover Glass, Silicon Wafer Bonding Glass and Color Filter Glass. We also offer a variety of Coatings and Fabrication capabilities.

**II-VI Infrared****#1306****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 CO<sub>2</sub> laser and infrared optics, designs and produces lenses, mirrors, nozzles, 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, National Sales Manager, tneff@ii-vi.com.

**Innovative Fabrication, Inc.****#1306**

44 Stedman St Ste 11, Lowell, MA, 01851  
978/466-0003; fax 978/446-0444  
info@innovative-fabrication.com;  
www.innovative-fabrication.com

At Innovative Fabrication we utilize state of the art dicing saws and process expertise to provide customers with high quality cutting and machining services. We also have CNC and manual coring and milling machines, surface grinders, ID slicing capability and more. Please consider us for all of your dicing, slicing and coring needs. Contact: Patrick Slattery, President; Timothy Gonsalves, Operations.

**Intlvac****#1000**

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

Intlvac manufactures systems for Physical Vapor Deposition such as the Nanochrome™ and Nanoquest Ion Beam for R&D and production coating of optical components, sensors and plastics. The Nanochrome™ series are Electron Beam or Magnetron Sputter Thin Film Deposition Systems. The Nanoquest series are for Ion Beam Sputtering or Etch. Systems are fully automated, under LabVIEW with PLC control. Intlvac provides process development for sputtering, Ion Beam sputter/etch and ion assisted evaporation. Contact: Dino Deligiannis, President.

**ITT Corp.****#1005**

1447 St. Paul St, PO Box 60488, Rochester, NY, 14621  
585/269-5600  
www.ssd.itt.com

Since the first space mission, ITT has assisted researchers in the public and private sectors to view the Earth, stars, planets and galaxies. We manufacture precision optical components for ground-based telescopes, electro-optical systems for space-based observatories and imaging sensors for space exploration—all designed to let us see further into space than ever before. For more information visit [www.ssd.itt.com](http://www.ssd.itt.com). Contact: Clifford Olds, Space Science Business Development Manager, clifford.olds@itt.com.

**General Refreshment Sponsor****JENOPTIK Laser, Optik, Systeme GmbH****#601**SPIE Corporate Member

Goeschwitzer Strasse 25, Jena, Germany, 07745  
49 3641 65 3311; fax 49 3641 65 3677  
www.jenoptik-los.com

**New Product: Compact high aperture IR telescope lenses. High-precision F-theta scan lenses.**

The Business Unit Optics of the JENOPTIK Laser, Optik, Systeme GmbH is a leading OEM supplier of high-precision optical components of manifold shapes and materials from DUV to IR. Oriented towards customersl targets it develops and produces customized lenses, subsystems and opto-mechanical modules for the semiconductor equipment industry, laser material processing, defence and security, scanning applications, medical engineering, interferometry and machine vision. Contact: Wolfgang Seiferth, Manager Sales and Marketing Optics, wolfgang.seiferth@jenoptik.com; Ray Malcom, Vice President, Sales and Marketing, Coastal Optical Systems, Inc., sales@coastalopt.com.

**JENOPTIK Polymer Systems, Inc.****#809**SPIE Corporate Member

2117 Buffalo Rd #222, Rochester, NY, 14624  
585/272-6184; fax 585/272-6177  
www.jenoptik-ps.com/USA

Jenoptik Polymer Systems designs and manufactures polymer optical components and opto-electronic assemblies to customer specifications. The company is a full process chain supplier with complete in-house capabilities in optical design, diamond turning, injection molding, thin film coating and optoelectronic assembly and packaging. With factories in the USA, Germany and China customers benefit from our global supply chain capabilities. Contact: Lynn Dobosz, Senior Optical Program Engineer, ldobosz@jenoptik-ps.com; Scott Cahall, Chief Optical Scientist, scahall@jenoptik-ps.com.

# Exhibitor Listing

## JML Optical Industries Inc. #1318

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

**New Product: New 4th edition JML direct catalog.**

JML is a leading ISO certified designer, manufacturer and coater of precision optical components and systems. Stock items as well as custom made prototypes and large volume production optics. Our optics are used for medical, robotic, inspection, military, semiconductor, digital printing and CCD imaging applications. Contact: Marty Roberts, Director Catalog Division, martyr@jmloptical.com; Gary Clark, Vice President Sales and Engineering, garyc@jmloptical.com.

## KLA-Tencor, ADE Division #703

APOMA SPIE Corporate Member

3470 E Universal Way, Tucson, AZ, 85706  
520/573-9250; fax 520/573-9355  
sales1@phase-shift.com; www.phase-shift.com

## Kleir International #1109

1613 S Murray Blvd, Colorado Springs, CO, 80916  
303/520-8311; fax 815/717-9565  
info@kleir.com; www.kleirco.com

Precision contract slicing using DWT saws. Low kerf loss with high quality cuts. We offer quick turnaround from small quantities to large production runs. Experience with a wide range of materials. Contact: Mark Kleir, Operations Manager, info@kleirco.com

## Kopp Glass, Inc. #1330

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

Leading specialty glass manufacturer specializing in color filters, molded and precision glass. More than 300 compositions of clear and colored glass from UV to IR. Complete line of night vision and color glass (prev. Corning) filters. Custom formulation and molding capabilities. Filters: UV, color filters, color correcting, NVIS, IR, neutral density, Holmium/Didymium, Neodymium and more (many market equivalents). Contact: Gregory Bako, Product Manager, Color Filters & NVIS, gbako@koppglass.com; Matt Cottrill, Director of Sales and Marketing, mcottrill@koppglass.com.

## Kreischer Optics, Ltd. #1346

APOMA

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

Kreischer Optics, Ltd. uses CNC technology to manufacture custom optical components, including aspheric, cylindrical and spherical lenses, mirrors, prisms, windows and master test glasses. Also provides subassemblies, lens design and testing services. Rapid prototyping available, including custom aspheres. Contact: Cody Kreischer, President.

## Kugler of America LTD #303

48 South Rd Unit 1, Somers, CT, 06071  
860/749-6400; fax 860/749-6600  
info@kuglerofamerica.com; www.kuglerofamerica.com

## L-3 Communications, Tinsley Laboratories, Inc. #1004

SPIE Corporate Member

4040 Lakeside Dr, Richmond, CA, 94806  
510/222-8110; fax 510/223-4534  
sales@asphere.com; www.asphere.com

Manufacturer of custom precision optical components including complex aspheric surfaces for reflective and refractive systems from 50mm to 1.5 meters in size and a wide variety of materials, including glass, beryllium and silicon carbide. Founded in 1926 and also known in the industry as the "Asphere Company", Tinsley has many years of experience fabricating precision optics in such areas as Space and Astronomy, Laser Fusion, Surveillance and Tactical. Contact: Clay Sylvester, Director of Sales and Marketing, clay.sylvester@l-3com.com; Teri Bordeau, Sales Support Administrator, teri.bordeau@l-3com.com.

## LaCroix Optical Co. #310

APOMA SPIE Corporate Member

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

For 60 years, LaCroix Optical Co. has manufactured custom precision optics including achromats, lenses, windows, prisms, wedges and mirrors. LaCroix Optical Co. is an ISO 9001:2000 registered company that can supply your optical components in any volume. A combination of modern and conventional production equipment plus an in-house coating facility allows LaCroix Optical Co. to be responsive to your needs. Contact: Tom Cox, Manufacturing Engineer, tom@lacroixoptical.com; Kirk Warden, Sales Engineer, kirk@lacroixoptical.com.

## Larsen Equipment Design, Inc. #1104

APOMA

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

Larsen Equipment Design specializes in superior quality bench-top polishing equipment for micro and miniature optics. Since 1981 we have been recognized as the source for your micro optics manufacturing needs. Our polishers are made with sturdy stainless steel cases and sealed spindles for worry free operation. Our engineering department can also help with your tooling requirements. For your complete precision optics resources turn to us. Contact: Erik Larsen, President, erik@larsenequipment.com.

## Laser Focus World #100

SPIE Corporate Member

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

*Laser Focus World* is a monthly magazine for engineers, researchers, scientists and technical professionals providing comprehensive global coverage of optoelectronic technologies, applications and markets. The magazine reports on and analyzes the latest developments and significant trends in both technology and business in the worldwide optoelectronics and photonics industry.

## LEYBOLD OPTICS USA, Inc. #1105

SPIE Corporate Member

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

**Liebmann Optical Co.**

#409

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

Liebmann Optical specializes in the manufacture of precision spherical glass lenses, typically 0.5 mm to 105 mm diameter. Conventional and CNC polishing. AR coating in house. BBAR, V coat or combination. Laser damage coatings. 250-2000nm. Tight centration tolerances. Doublets and metal and glass assemblies. Complete documentation with 7 interferometers, spectrophotometers, etc. Prototypes to thousands per month. Contact: Robert Bush.

**LightMachinery Inc.**

#300

272 Spring St, Almonte, ON, Canada, K0A 1A0  
613/749-4895; fax 613/749-8179  
sales@lightmachinery.com; www.lightmachinery.com

**New Product: FJP-1150F Fluid Jet Polishing Machine.**  
**Deterministic finishing corrects surfaces within 6nm of spec.**

LightMachinery manufactures custom optics and optical fabrication equipment including the FJP-1150 Fluid Jet Polishing system. Contact: Gregg Senechal, Business Manager, gsenechal@lightmachinery.com; John Hunter, President, jhunter@lightmachinery.com.

**Lion Precision**

#1010

563 Shoreview Park Rd, St. Paul, MN, 55126  
651/484-6544; fax 651/484-6824  
info@lionprecision.com; www.lionprecision.com

**New Product: Elite Series high-resolution capacitive, noncontact displacement sensors.**

Lion Precision is an industry leader in the design, manufacture and application of noncontact displacement sensors. High-performance designs use capacitive and eddy-current technologies. The market leader and major supplier to the semi-conductor, disk drive and automotive industries. Measurement ranges of ten microns with two nanometer resolution to measurement ranges of over 10mm. A variety of packages are available to accommodate different applications. Contact: Jerry Mueller, Sales Engineer - Eastern US, Canada, Pacific Rim, jerry@lionprecision.com; Kent Queensland, Sales Engineer - Western US, Mexico, Europe, kent@lionprecision.com.

**LPI Precision Optics Ltd.**

#1302

Unit G02 G/F Photonics Ctr/Hong Kong Science Park,  
No 2 Science Park East Ave, Shatin New Territories,  
Hong Kong China  
852 2428 8812; fax 852 2144 2566  
info@lpipo.com; www.lpipo.com

LPI, as a leader of Non-Imaging Optics (NIO), is known for offering extremely compact, efficient and innovative optical design solutions to its customers' lighting projects. LPI Precision Optics Ltd., the manufacturing arm of the LPI team located in the Hong Kong Science Park, employs the latest 5 axis Moore Nanotech 350FG diamond turning machine and is able to provide complicated freeform optics, either prototypes, precision mold inserts or mass production parts to its customers. Contact: Bill Tse, General Manager, btse@lpipo.com; Wenda Jiang, DT Manager, wendajiang@lpipo.com.

**Lunzer, Inc.**

#1008

**APOMA**

280 N Midland Ave, Saddle Brook, NJ, 07663  
201/794-2800; fax 201/794-2338  
sales@lunzer.com; www.lunzer.com

LUNZER manufactures a complete range of diamond tooling for glass, crystalline and ceramic optics. Amongst our products on display will be generating tools, grinding wheels, milling tools, polishing tools and core drills. We offer application specific tooling and welcome technical inquiries. Contact: Robert Moore, Operations Manager, rmoore@lunzer.com; Jay Lunzer, Vice President, jay@lunzer.com.

**MediVision Optics**

#103

1440 S State College Blvd #1D, Anaheim, CA, 92806  
714/563-2772; fax 714/563-2711  
rjohnson@medivisionusa.com; www.medivisionusa.com

MediVision offers custom optics ranging from spherical, flat to multi-element systems. Sizes ranging from 0.5mm to 400mm. Additional capabilities include ground and polished aspheric lenses. We work with customers from prototype to production. Contact: Roxanne Johnson, Optics Sales Manager; Alex Vayser, President, optics@medivisionusa.com.

**Metrology Concepts LLC**

#1123

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

Manufacturer of modular interferometer solutions for micro-optics, CNC optics, molded lenses, optical windows and precision flat components. Standard and high resolution systems available. Miniaturized units for SPDT lathes and other in situ applications. Standard apertures include 1, 10, 50, 100, 150, 300 millimeters. Contact: John Nemechek, Sales and Marketing Manager, jjn@fisbaoptik.com.

**Meyer Burger AG #604**

Alte Bernstr 146A, Steffisburg, Switzerland, 3613  
41 33 4390514; fax 41 33 4390510  
sales@meyerburger.ch; www.meyerburger.ch

**Micro Care Corp.**

#1121

**SPIE** Corporate Member

595 John Downey Dr, New Britain, CT, 06051  
860/827-0626; fax 860/827-8105  
techsupport@microcare.com; www.microcare.com

**New Product: Precision Optical Cleaner, a nonflammable, plastic-safe cleaner for any optical component.**

Micro Care is the world leader in critical cleaning. New at OptiFab: Non-aqueous, low-energy cleaners for lenses, mirrors, diffraction gratings, inspection systems and other photonic components. These remove oils, waxes, buffing compounds and water. These cleaners out-perform IPA and water, are safe for coatings and components, protect your people and the environment and are easy to ship, store and handle. Clean faster and better, at lower cost: Visit Micro Care at Table 1121. Contact: Bill Lucy, Vice President.

**Micro Photonics Inc.**

#901

**SPIE** Corporate Member

21 Morgan Ste 200, Irvine, CA, 92618  
949/461-9292; fax 949/461-9232  
infoca@microphotonics.com; www.microphotonics.com

**New Product: The new SPM ProberStation 150 delivers incredibly fast, highly repeatable AFM and SPM studies.**

Micro Photonics is a leading provider of advanced instrumentation, training and contract laboratory services. Specializations: Nano and Micro Mechanical Testing, X-Ray Micro Tomography, X-Ray Diffraction, 3D Non-Contact Profilometry, Thin Film Analysis, Biological Imaging Instruments and NSOM, SPM & AFM systems. Our Nanovea Series profilers, hardness, scratch, friction and wear testers offer functionality, economical pricing, and extensive options to meet your specific application requirements. Contact: Craig Leising, craig@microphotonics.com; Pierre Leroux, pierre@microphotonics.com.

# Exhibitor Listing

## Mildex, Inc.

#909

**SPIE** Corporate Member

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

**New Product: NAG-250 Ultra-precision surface grinder combines grinding and lapping into one time saving operation.**

Available for demonstration is GME Model NAG-250 ultra-precision surface grinder. NAG-250 integrates grinding and lapping operations into one process, saving production time. Use of high stiffness air bearing and vacuum chuck result in superfine finishes (1.7 $\mu$ m Rmax) and high throughput. Also displayed is TRIOPTICS OPTISPHERIC/OPTICENTRIC lens testing system. The instrument can measure EFL, BFL, FFL, Radius, MTF and lens centering errors of lenses and systems. Results are traceable NPL/PTB. Contact: Harvey Miller, President.

## Miraclean Ultrasonics

#501

PO Box 100, Ashville, NY, 14710  
716/763-4343; fax 716/763-3555  
soundwaves@miraclean.com; www.miraclean.com

**New Product: SonicCell Max fully automated small footprint parts cleaning, passivating, or fpi line.**

Miraclean® supplies high performance ultrasonic cleaning equipment for parts cleaning and mold cleaning, parts washers with agitation and ultrasonics, passivation lines (nitric or citric) and liquid penetrant inspection lines. Systems may be single tanks or multiple station console lines and may be manual or automated. Contact: Dennis Myers; Brian Sutton.

## Model Optics, Inc.

#508

**SPIE** Corporate Member

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

Manufacture custom precision optic components & assemblies to customer specifications. Customers include biomedical, aerospace, automotive, semiconductor, telecom & entertainment industries. Optical coating services, optical design, optomechanical design, Class 1000 Clean room facility. Specialize in economical prototype to medium production volumes. Double sided lapping capabilities can support medium volumes of precision plano windows. Contact: Larry Kim, President, lkim@modeloptics.com.

## Moore Nanotechnology Systems LLC

#801

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

**New Product: Introducing the Nanotech Fast Tool Servo and NanoCAM™ freeform programming software.**

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@nanotechsys.com; Jeff Perra, Sales Engineer, perra@nanotechsys.com.

## Naked Optics Corp.

#212

**SPIE** Corporate Member

8 Heritage Ct, North Branch, NJ, 08876  
908/685-0352; fax 908/325-0250  
sales@nakedoptics.com; www.nakedoptics.com

Supplier of glass and IR materials in blank form; IR optics and diamond-turned components with aspheric, diffractive & hybrid surfaces in IR materials, plastics and metals; optical design services; IR materials including ZnS (clear & IR grades), Ge, ZnSe, Si, chalcogenide. Contact: Buzz Nesti, buzz@nakedoptics.com; Glen Dunn, glen@nakedoptics.com.

## New York Photonics Industry Association

#509

2489 Brighton Henrietta Town Line Rd, Rochester, NY, 14623  
585/329-4029; fax 585/697-0956  
tbattley@rrpc-ny.org; www.newyorkphotonics.org

**New Product: 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.

## Norland Products Inc.

#1009

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

**New Product: NBA 107 cold blocking UV adhesive used for polishing lenses can be dissolved with warm soapy water.**

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

## North American Coating Labs.

#606

9450 Pineneedle Dr, Mentor, OH, 44060  
440/357-7000; fax 440/357-7001  
dfiore@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 Chemical Resistive coatings. North American Coating Laboratories is an ISO 9001:2000 certified organization. Contact: Dan Fiore, Sales Engineer; Brian Wilson, President, bwilson@nacl.com.

**North American EN Inc.**

#211

776 Lunt Ave, Elk Grove Village, IL, 60007  
847/952-3680; fax 847/690-0171  
ehoberman@northamericanen.com;  
www.northamericanen.com

**New Product: Advanced electroless nickel for the optics and diamond turning industries.**

North American EN, Inc. (NAEN) is a world wide leader in electroless nickel plating for the optics industry. NAEN is an industry leader through our commitment to engineering excellence, customer relations and the approach to all projects with a team concept. NAEN is capable of producing an extremely thick deposit uniformly and pit free. We can handle virtually any size part from the very small to the very large as well as most designs, from flats, to aspheres, to drums. Contact: Ethan Hoberman, Senior Process Engineer.

**Ocean Optics, Inc.**

#811

**SPIE** Corporate Member

830 Douglas Ave, Dunedin, FL, 34698-5761  
727/733-2447; fax 727/733-3962  
info@oceanoptics.com; www.oceanoptics.com

**New Product: Ocean Optics is proud to debut the next-generation Jaz family of ethernet-based instrumentation.**

Ocean Optics is the leader in optical sensing with nearly 100,000 spectrometers sold. We've expanded the frontiers of optical sensing and photonics, making it an innovative foundation where life-changing ideas are built. With diverse applications in chemistry, biological research, environmental monitoring and education, our extensive line of complementary technologies include spectrometers, sampling accessories, sensors and optics. Visit our website, OceanOptics.com for more information. Contact: Application Sales Engineer.



## Please save the date of the 7th Annual WNY Optics / Photonics Golf Tournament

Thursday July 19<sup>th</sup>

All proceeds to benefit the Golisano Children's Hospital  
at the University of Rochester Medical Center

Please join the Western NY area optics / photonics companies and organizations for the seventh annual charity golf outing at beautiful Shadow Lake and Shadow Pines Golf courses in Penfield, NY (just 3 miles east of Rochester). Previous tournaments have included representation from an average of 85+ companies including organizations such as SPIE, OSA, APOMA, PIANY and RRPC. Thanks to past support, we have raised over \$27,000.00 for the children's hospital to date.

Come out and enjoy the great outdoors with a day of golf, dinner and prizes with your friends, customers, vendors and other members of the WNY optics community. Corporate level and hole sponsorships are available and a great way to demonstrate your organization's participation as well, even if you cannot make it the day of the tournament.



The cost for golf and dinner is \$100.00 per person. If you cannot make both, you are welcome to join us for either individually at a cost of \$70.00 each. Additional information, to be included on our mailing list or if you would like to volunteer your time to help us organizing the tournament contact:

Ron or Diane Schulmerich @ 585-663-7230, M-F 8:00 am – 5:00 pm · After 6:00 pm @ 585-359-2102.  
E-mail address: [wnyoptics@rochester.rr.com](mailto:wnyoptics@rochester.rr.com).

***Thank you and we look forward to seeing you there!***

# Exhibitor Listing

## Ohara Corp.

#200

APOMA SPIE Corporate Member

50 Columbia Rd, Branchburg, NJ, 08876  
908/218-0100; fax 908/218-1685  
sales@oharacorp.com; www.oharacorp.com

**New Product: ClearCeramZ: Ultra-low thermal expansion glass-ceramic material.**

For more than 70 years, Ohara has been building a reputation as one of the finest optical glass manufacturers in the world. We provide critical material to technology leaders in areas of photography, astronomy, microlithography, telecommunications, medical and data storage. We offer 1 day deliveries on almost all of our more than 120 glass types. Other offerings including cut blanks, molded/pressed blanks, homogeneity graded glass and polished substrates. Strong customer service is our specialty! Contact: Chris Ghio, Sales Manager, chrisghio@oharacorp.com; Brion Hoffman, President, brionhoffman@oharacorp.com.

## Optics & Laser Europe

#1201

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

## Optics Technology, Inc.

#705

APOMA

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

Established in 1986 as a designer and manufacturer of precision miniature and sub-miniature optical and mechanical systems and assemblies. Our design capability is based on many years of experience designing and fabricating the optical and mechanical systems and components for medical, industrial and defense applications. Components range in size from less than 1mm to 30mm in diameter. Manufacturing capabilities include prototype through moderate production runs. Contact: Dominick Polizzi, Sales & Marketing Manager, sales@opticstechnology.com.

## Opticsfab - Agency for Optics Fabrication

#116

Frankfurter Str 20, Hittenberg, Germany, 35625  
49 6441 210 40 90; fax 49 6441 210 40 91  
p.flug@opticsfab.com

**New Product: MPF-INTERFERO4 low cost ref-spheres - made in Germany. CLARALUNA-advanced fringe analyzing software.**

OPTICSFAB consults for optics production needs through representing leading equipment manufacturers. Europe: QED-TECHNOLOGIES and SCHNEIDER-OPTICMACHINES for advanced CNC Optics processing and metrology equipment. Europe and NA: STOCK-OPTICMACHINES, providing advanced non CNC equipment for flat-, high aperture and micro optics as well as pre-processing equipment. OPTICSFAB distributes MPF-INTERFERO4 transmission spheres for interferometers and CLARALUNA, an advanced fringe analyzing software. Contact: Peter Flug, Managing Director; Annette Flug, Administration & Sales, a.flug@opticsfab.com.

## Optikos Corp

#1003

SPIE Corporate Member

107 Audubon Road, Bldg. 3, Wakefield, MA, 01880  
617/354-7557; fax 617/354-5946  
info@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, Vice President, Sales & Marketing, jhutchins@optikos.com; Ryan McDonough, Senior Sales Executive, rmcdonough@optikos.com.

## Optimax Systems, Inc.

#1326

APOMA SPIE Corporate Member

6367 Dean Pky, Ontario, NY, 14519-8939  
585/265-1020; fax 585/265-1033  
sales@optimaxsi.com; www.optimaxsi.com

**New Product: OptiTrac - verify the delivery status of your optics - on-line anytime, at your convenience.**

Prototype optics in 1 week. Optimax provides rapid prototyping of precision optical components in sizes from 3 to 300mm and quantities of 1 to 100. Having fun making optics - Aspheres, Cylinders, Spheres and Plano/Flats. All parts are manufactured to customer supplied specifications and final inspection data is included with the optics. Contact: Rick Plympton, Vice President; Joe Pinto, Sales.

## OptiPro Systems

#415

APOMA SPIE Corporate Member

6368 Dean Pky, Ontario, NY, 14519-8939  
585/265-0160; fax 585/265-9416  
sales@optipro.com; www.optipro.com

**New Product: OptiPro ePX 150 UltraForm - Spherical, Aspherical and Conformal 5-axis CNC Polishing machine.**

Fabrication products include CNC Optical Machining Centers and Cad/Cam software for 4/5 axis grinding & polishing of spherical, aspherical and conformal 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, TSK Accretech Surface Profilometers and STIL MicroMeasure non-contact surface measurement systems with resolution to 1 nm. Contact: Mike Bechtold, President, Mike@optipro.com; David Mohring, dmohring@optipro.com.

## OptiWorks, Inc.

#406

Mitsuru Plaza 204, 1-2-4 Aduchi-chou Chuou-ku, Osaka, Japan, 541-0052  
81 6 6264 7310; fax 81 6 6264 7310  
dohi@optiworks.jp; www.optiworks.jp

OptiWorks is an independent optics engineering company from Osaka Japan. OptiWorks will propose and provide optical system design, prototyping and production line to all worldwide customers. OptiWorks is organizing a forum on optics engineering and related marketing information. Also OptiWorks will provide optics global supply chain network. Contact: Toshihide Dohi, Managing Director, sales@optiworks.jp.

# Lens Design and Manufacturing Expo 2008

23-25 April 2008  
Pacifico Yokohama



As the only exhibition in Japan dedicated specifically to lens design and manufacturing, Lens Expo 2008 is the best opportunity to find the most interested and motivated buyers and design makers, services of lenses and lens design or manufacturing.

Reserve  
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now !

Sponsored by  
**The Optronics Co., Ltd.**

**Total Projected Participation** - Exhibitors 250  
- Attendees 10,000

co-located with  
**LASER EXPO 2008**  
**Optical Fiber Integrated Technologies Exhibition 2008**

For further information **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 <http://www.optronics.co.jp>

# Exhibitor Listing

## OPTIX Co.

#1011

Darventiza Zone, bl 19 ent 3 office 1, Sofia, Bulgaria, BG-1746  
359 2 9750885; fax 359 2 9750888  
sales@primoptix.com; www.primoptix.com

**New Product: Opto-mechanical and opto-electronic custom assemblies, endoscopes and micro objectives, Ge lenses.**

OPTIX Co. is a contemporary enterprise with a completely closed production cycle. Founded in 1998, the company quickly established a justified reputation for designing, manufacturing and testing of quality optical components and assemblies, optomechanical and optoelectronic systems. Due to its cutting-edge technologies and updated optical and mechanical design software, OPTIX Co. is able to complete all production steps- from prototyping to serial manufacturing. Contact: Peter Cholakov, Key Account Manager, peter.cholakov@primoptix.com.

## OptoSigma Corp.

#605

**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" Motor Stages, exclusive to OptoSigma; with controller/driver, PC interface.**

Global manufacturer of precision optics, opto-mechanics, motorized positioners and custom optical coatings. Advanced Plasma Ion - Assist deposition coatings are robust with high damage threshold. Low profile holders, mounts, positioners and motor products complete the offering. Free catalog.

## OptoTech Optikmaschinen GmbH #715

**APOMA**

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

Designs, develops and manufactures machinery and new process technology for precision optics and ophthalmics. CNC and conventional high-speed generators and polishers for 01-800mm, centering/edging, plano/prism, rod, cylinder and aspheric machines, interferometers, autocollimators and software. In-house tool design and manufacture. Also offers consumables, machine parts, repairs and maintenance contracts.

## P.R. Hoffman Machine Products #1111

1517 Commerce Ave, Carlisle, PA, 17015  
717/243-9900; fax 800/776-3830  
prhoff@prhoffman.com; www.prhoffman.com

P.R. Hoffman is a leading manufacturer of planetary double-sided lapping and polishing machinery. Photonics, electro-optics, semiconductor, quartz, ceramics, glass, electronics, metalworking, medical, etc.-where industries require parts with flat and parallel surfaces and precision tolerances for thickness and surface finish, you'll find a need for P.R. Hoffman products. We are a global supplier of lapping carriers, waxless polishing templates, conditioning gears and brushes. Contact: David Evans, Sales Engineer, evansd@prhoffman.com; Rod Murray, Engineering Technician, Rmurray@prhoffman.com.

## PFG Optics

#711

**APOMA SPiE** Corporate Member

733 Bienville Blvd, Ocean Springs, MS, 39564  
228/875-0165; fax 228/875-9354  
sales@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 prisms, windows, wedges & filters. Custom vacuum-deposited & Ion-assisted coatings. Assemblies include Telecentric, Eyepiece, Scan & Imaging Lenses. Contact: Colin Green, Vice President Sales, cody@pfgoptics.com; Barbara Dudiak, Sales Coordinator, sales@pfgoptics.com.

## Phila Optics, Inc

#804

326 Bustleton Pike, Feasterville, PA, 19053  
215/322-1667; fax 215/322-1524  
info@philaoptics.com; www.philaoptics.com

**New Product: Fabrication of spherical, aspherical and extra-axis aspherical mirrors with diameter of up to 2000mm.**

Our company offers a wide range of custom made optical components in production and prototype quantities. We supply optics that are fabricated from optical transparent glasses, optical color glasses, fused silica, optical crystals and plastic: Lenses (spherical, cylindrical and aspherical), lens (objectives)—design and production, prisms, filters, mirrors (flat, spherical, aspherical), windows and substrates, beam splitters, laser optical components, components from optical crystals. Contact: Eugene Saknovsky, President, eugene@philaoptics.com.

## Phoenix Optical Glass Ltd.

#212

Glascod Rd , St Asaph, United Kingdom, LL17 0LJ  
44 1745 584484; fax 44 1745 584050  
buzz@nakedoptics.com; www.pogl.co.uk

**New Product: 3-axis diamond turning.**

Manufacturer of IR optics and diamond-turned components with aspheric, diffractive & hybrid surfaces in IR materials, plastics and metals; optical design services; optical materials in finished & blank forms: Molded and CNC-machined blanks of all optical materials. Contact: Buzz Nesti; Tony Palframan, t.p@pogl.co.uk.

## Photon Gear, Inc.

#1322

**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 services as well as systems engineering support for custom software and optical hardware. Contact: Gary Blough, President, blough@photongear.com.



**Photonics Spectra #910**

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

*Photonics Spectra* is the leading photonics magazine serving industries that use photonic technology: Lasers, imaging, fiber optics, optics, electro-optics and photonic component manufacturing. It presents the latest news articles and in-depth reports on photonics technology. It is distributed free to those who use or apply photonics. Contact: Timothy Dupree, Regional Manager, photonics@laurin.com; Nancy Lamontagne, Managing Editor, pseditorial@laurin.com.

**Photonics.com/Photonics Directory #405**

2 South St, PO Box 4949, Pittsfield, MA, 01202-4949  
413/499-0514; fax 413/442-3180  
Directory@laurin.com; www.photonics.com

Photonics.com is the only complete on-line source of photonics information developed by the leading photonics publisher for over 50 years. This web site includes daily news, new products and feature articles. Fully searchable, it provides access to the contents of the award-winning *Photonics Spectra* and *The Photonics Directory*. Additional features are the *Photonics Dictionary*, an industry employment center and event calendar. Contact: Jeff Nichols, Regional Sales Manager, jeff.nichols@laurin.com; Craig Suriner, Regional Sales Manager, craig.suriner@laurin.com.

**Precision Asphere, LLC #301**

**SPIE** Corporate Member

48860 Milmont Dr Unit 105-C, Fremont, CA, 94538  
510/668-1508; fax 510/668-1595  
info@precisionasphere.com; www.precisionasphere.com

**New Product: We extended our asphere fabrication capability beyond glasses.**

PRECISION ASPHERE, LLC. is a USA based manufacturing company specializing in custom aspheres. With our proprietary computer controlled technology and over 12 years of asphere manufacturing experience, PRECISION ASPHERE offers you the highest performance-to-cost ratio in the industry. Contact: John Kong, jkong@precisionasphere.com; Kevin Young, kyoung@precisionasphere.com.

**Precision Glass & Optics #1001**

3600 W Moore Ave, Santa Ana, CA, 92704-6835  
714/540-0126; fax 714/540-1482  
info@pgo.com; www.pgo.com

**New Product: PG&O now offer Precision Optics and Thin Film Coating.**

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. Contact: Daniel Bukaty, Sales, dan@pgo.com; DK, Sales, dk@pgo.com.

**Precision Optical #610**

**APOMA**

869 W 17th St, Costa Mesa, CA, 92627-4336  
949/631-6800; fax 949/642-7501  
sales@precisionoptical.com; www.precisionoptical.com

Manufacturer of laser-quality precision optical assemblies and components (VUV to IR) including prisms, mirrors, windows, retroreflectors, filters, plate-type beamsplitters, alignment cubes, polarizing and nonpolarizing cube beamsplitters and coatints. Contact: Rod Randolph, President, rrandolph@precisionoptical.com; Al Lambert, Jr., Sales Engineer, alambertjr@precisionoptical.com.

**Precitech, Inc. #708**

**APOMA SPIE** Corporate Member

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

Ametek Precitech has a complete line of ultra-precision single-point and multi-axis diamond turning, grinding, grooving and milling machines as well as additional solutions such as servo machining with our FTS and STS technology and a new HydroRound, hydrostatic rotary bearing. Core machine product lines consist of Nanoform, Freeform, Optoform and Planoform. We also produce a range of related metrology systems measuring for roundness, squarness, flatness, concentricity and cylindricity. Contact: Chris Stroshine, North America Sales Manager, cstroshine@precitech.com; Rob Koning, Metrology Sales Manager, rkoning@precitech.com.

**Provac AG #908**

Foehrenweg 8, Balzers, Liechtenstein, 9496  
423 388 19 40; fax 423 388 199 44  
head.office@provac.li; www.provac.li

Provac-AG, a member of the RICMAR Group, designs, manufactures, services, and refurbishes high vacuum coating systems for precision optics, semiconductor, display, and ophthalmic markets. Since 1992, Provac's technical expertise and keen ability to provide customers with application specific, tailored processes, optimized hardware configurations, continuous improvement in technology and quality, and superior on-site service remains unsurpassed. Additionally, Provac refurbishes Balzers and other OEM vacuum systems to "like new" condition, upgrades controls and electrical systems, provides quality components and consumables at competitive prices. Contact David Gary-Business Unit Manager at (858) 539-6108 or david.gary@ricmar.at, www.ricmar.com. (See Ricmar Sales and Service-US).

**Show Bag Sponsor****QED Technologies, Inc. #314**

**APOMA SPIE** Corporate Member

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

**New Product: The SSIA™ extends standard interferometry to mild aspheres without null lenses.**

QED provides technology-based solutions for the precision optics industry. QED collaborates with our customers to find solutions that increase productivity, reduce cycle times, improve delivery reliability and add capabilities. We develop finishing & metrology strategies to help them meet their goals for today and tomorrow. From its industry-proven MRF® machines to its breakthrough Stitching Interferometers, QED can help you find a solution that you feel confident in. Contact: Michael DeMarco, Marketing Manager, demarco@qedmrf.com.

**R. Mathews Optical Works, Inc. #210**

**APOMA**

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

R. Mathews Optical Works is a manufacturer of custom precision aspheric lenses from all glass types in prototype and production quantities. Contact: Bob Mathews, President.

# Exhibitor Listing

## Reflexite Display Optics

#1310

### APOMA

Bldg 500, 500 Lee Rd, Rochester, NY, 14606  
585/647-1140

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

Reflexite Display Optics business is the Management of Light for the Display (digital, backlit and rear projection displays), Instrumentation (passive infrared sensors) and Lighting (LED systems, diffusers, prism arrays) markets. We combine our expertise in optical design/engineering, microreplication and polymer processing to provide microstructured polymer optical films and components to meet differentiated optical solutions for OEM customers worldwide.

Contact: Donna Desmarais, Manager Optical Solutions Business, US Operations, donna.desmarais@reflexite.com.

## Ricmar Sales & Service US

#908

### SPIE Corporate Member

2889 W Canyon Ave, San Diego, CA, 92123

858/539-6108; fax 858/539-6108

info@ricmar.com; www.ricmar.com

Ricmar's Sales and Service organization "Focusing on Customer Goals-Supporting Customer Success" is your worldwide point of contact providing responsive technical, sales, and service support for our partner companies Provac, Proaut, and Mechatronic. We act local and think global. Contact David Gary-Business Unit Manager at (858) 539-6108 or david.gary@ricmar.at, www.ricmar.com. (See Provac-AG)

## Rochester Precision Optics LLC

#504

### APOMA SPIE Corporate Member

850 John St, W. Henrietta, NY, 14586

585/292-5450; fax 585/292-5459

sales@rpoptics.com; www.rpoptics.com

Rochester Precision Optics (RPO) delivers complete optical manufacturing solutions of superior quality from custom design to value-added assembly. Proven technology and trusted experience characterize our capabilities, which include Precision Glass Molding, Diamond Turning, Prototyping, Coating, Assembly & Test and a full Machine Shop. Our vertical integration provides low cost solutions to our clients with shorter lead-times. We guarantee your satisfaction from design to delivery. Contact: Matthew Pembroke, Outside Sales & Marketing, mpembroke@rpoptics.com.

## Saint-Gobain Grains & Powders

#900

Surface Conditioning Group, 1 New Bond St, Worcester, MA, 01615-0137

800/243-0028; fax 508/795-2380

cematworchester@saint-gobain.com;

www.innovativeorganics.com

Saint-Gobain Grains & Powders (Surface Conditioning Group) consists of four companies, Innovative Organics, Warren-Amplex, ABC Superabrasives and Specialty Particles. The group manufacture abrasive particles, slurries, coolants and cleaners for machining processes. Products include alumina, zirconia, nanoceria, synthetic diamond, cBN and B4C particles and slurries. A large range of polishing cloths compliments the abrasive lapping/polishing products. ISO 9001:2000. Contact: James Millar, Sales Manager, james.m.millar@saint-gobain.com; John Doherty, Sales Manager, john.f.doherty@saint-gobain.com.

## Salem Distributing Co.

#101

### SPIE Corporate Member

5901 Gun Club Rd, Winston-Salem, NC, 27103

336/766-1104; fax 336/766-1119

sales@salemndist.com; www.salemndist.com

Salem ASM offers a complete line of high-quality precision materials from Aluminum Oxide Compounds to Zirconium Oxide Slurries as well as an array of state-of-the-art polishing pad materials from Napped Poromeric to Cast Polyurethane. All of these materials were designed exclusively to enhance the quality and efficiency of any surfacing and polishing application. Contact: Gary Jackson, Precision Electro-Optical Division Manager, gjackson@salemndist.com.



### General Refreshment Sponsor

## Satisloh North America Inc.

#515

### APOMA SPIE Corporate Member

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 & process flexibility.**

The Satisloh line includes generators, polishers, laser centering and coating machines (with a PDS option) 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: Lynn Stigler, Sales Engineer, lynn.stigler@satisloh.com; Tom Godin, Sales Engineer, tom.godin@satisloh.com.



### Show Bag Sponsor

## Schneider GmbH & Co. KG

#115

### APOMA

Brueckenstr 21, Steffenberg, Germany, 35239

49 6465 9144 0; fax 49 6465 4663

info@schneider-om.com; www.schneider-om.com

**New Product: Spheroline SLP120E for polishing high-quality spheres at an excellent investment-performance ratio.**

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. The company is the pioneer for new technologies which customers need to be successful in the future. Schneider offers the full range of generating, polishing, and centering machines as well as measuring systems for high-quality precision-optics production. Contact: Mr. Thomas Danger, Vice President, Sales/Business Development Precision Optics, t.danger@schneider-om.com.

## SCHOTT North America, Inc.

#600

### APOMA SPIE Corporate Member

400 York Ave, Duryea, PA, 18642-2036

570/457-7485; fax 570/457-7330

info.optics@us.schott.com; www.us.schott.com

SCHOTT Optics for Devices is a leading manufacturer of optical glass & glass ceramics with a comprehensive expertise in high precision processing of optical components. The product portfolio ranges from optical glass & preforms for precision molding, glass filters & plane-parallel substrates, to precision molded & polished aspheric lenses as well as zero-expansion glass ceramics. Contact: Marlene Deily, Promotions Manager, marlene.deily@us.schott.com; Steve Sokach, Sales Director, steve.sokach@us.schott.com.

## SCHOTT North America, Inc. - Fiber Optics #600

### APOMA

62 Columbus St, Auburn, NY, 13021  
315/255-2791; fax 315/255-2695

SCHOTT's Fiber Optics division manufactures a variety of Fiber Optic & LED components serving the medical, industrial, defense, automotive and retail lighting industries. Visit us at booth 600! Contact: Katie Pepler, Marketing Manager, [katie.pepler@us.schott.com](mailto:katie.pepler@us.schott.com).

## SGS Slicing Solutions, Inc. #604

**SPIE** Corporate Member

309 Route 94, Columbia, NJ 07832  
973/584-8288; fax 973/584-7556  
[sales@sgs-inc.com](mailto:sales@sgs-inc.com); [www.sgs-inc.com](http://www.sgs-inc.com)

SGS Slicing Solutions is the exclusive North America Agent for Meyer Burger AG of Switzerland, offering sales, service, support, spare parts, as well as process development for all Meyer Burger equipment. Meyer Burger is a world renowned machinery manufacturer, specializing in slicing equipment for the Semiconductor, Solar, Optical, Ceramics, Medical Imaging or any industry that need to slice hard or brittle materials. Wire Saws, Band Saws, Cropping Saws, I.D. Saws, O. D. Saws. Contact: Rick Baarck, Sales Manager, [rbaarck@sgs-inc.com](mailto:rbaarck@sgs-inc.com).

## SiC Processing USA #604

6949 N Cutter Cir, Portland, OR, 97217  
503/345-0326; fax 503/285-5602  
[info@sic-processing.com](mailto:info@sic-processing.com); [www.sic-processing.com](http://www.sic-processing.com)

## SlicingTech #306

432 Mt Bethel Hwy, Bangor, PA, 18013  
610/588-7884; fax 610/588-7885  
[www.slicingtech.com](http://www.slicingtech.com)

### New Product: Wire Saw Guideroll Re-coating and Re-grooving.

Wire saw contract slicing of fused silica, glass, fiber optic materials, silicon, etc. SlicingTech has a large installed base of wire saws, ID saws and cropping saws for state of the art slicing with high throughput and excellent surface finish. Large diameter capability with quick turnaround times. R&D services for product development. US distributor of Secasi x-ray for crystal orientation. Used/refurbished Meyer Burger TS-23 ID saws available. Contact: Mike Hartman, General Manager, [mhartman@slicingtech.com](mailto:mhartman@slicingtech.com); John Streisguth, Product Manager, [jstreisguth@slicingtech.com](mailto:jstreisguth@slicingtech.com).

## Space Alliance Technology Outreach Program #1334

235 Harrison St, Syracuse, NY, 13202  
315/701-0685; fax 315/701-0729  
[info@satopny.com](mailto:info@satopny.com); [www.satopny.com](http://www.satopny.com)

Utilizes network of NASA contractors and educators to provide up to 40 hours FREE engineering services to small businesses/inventors. NASA-funded. Entirely free. Contact: AJ Lucas, Deputy Program Director, [lucas@satopny.com](mailto:lucas@satopny.com); Cathy Niedzwiecki, Office Manager, [cathy@satopny.com](mailto:cathy@satopny.com).

## Spectra Services #107

6359 Dean Pkwy, Ontario, NY, 14519  
585/265-4320; fax 585/265-4374  
[www.spectraservices.com](http://www.spectraservices.com)

### New Product: Confocal microscope and software for deconvolution.

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. Whether you need a single microscope, complete imaging system or a custom-designed imaging solution, our experienced imaging specialists will demonstrate our products and help you determine the product that best suits your requirements. Contact: Michael Specht, Sales Manager, [mspecht@spectraservices.com](mailto:mspecht@spectraservices.com).

## Spectrum Thin Films Corp #502

**SPIE** Corporate Member

100 Knickerbocker Ave Ste E, Bohemia, NY, 11716  
631/589-3502; fax 631/589-3514  
[info@spectrumthinfilms.com](mailto:info@spectrumthinfilms.com); [www.spectrumthinfilms.com](http://www.spectrumthinfilms.com)

### New Product: Ion Beam Sputtering capable of coating complex coatings. IR coatings @ 10.6 microns.

Manufacturer of high quality optics and optical coatings. Spectrum Thin Films has the most advanced equipment with many coating machines in continuous operation as well as environmental test chambers and advanced spectrophotometers. We can handle your job in a fast cost effective manner to meet your most demanding needs. Contact: Wayne Griffith, Sales & Marketing Manager, [wayne@spectrumthinfilms.com](mailto:wayne@spectrumthinfilms.com); Phil Barrows, Sales Representative, [pbarrow@bluehilloptical.com](mailto:pbarrow@bluehilloptical.com).

## Spica Technologies, Inc. #400

**SPIE** Corporate Member

18 Clinton Dr #3, Hollis, NH, 03049  
603/882-8233; fax 603/882-8614  
[mgentile@spicatech.com](mailto:mgentile@spicatech.com); [www.spicatech.com](http://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: Michele Turner, [sales@spicatech.com](mailto:sales@spicatech.com).

## Stock Konstruktion GmbH #114

Am Stollenbach 7-9, Hahnst Otten-Zollhaus, Germany, 65623  
49 6430 9250448; fax 49 6430 925 0453  
[www.stock-konstruktion.de](http://www.stock-konstruktion.de)

## Sumita Optical Glass, Inc. #1108

4-7-25 Harigaya, Urawa-ku, Saitama, Japan, 338-8565  
81 48 832 3165; fax 81 48 824 0734  
[www.sumita-opt.co.jp](http://www.sumita-opt.co.jp)

### New Product: K-PSFn214, high index optical glass for precision molding of which nd value is 2.14352.

Established in 1953, Sumita Optical Glass, Inc. has been engaged in researching, developing and manufacturing various optical products such as optical glass, fiber optics, functional glass, etc. for many years to come and we won a lot of awards for development of an aspheric molded glass lens, low dispersion optical glass and so on. We continue to strive to supply the best qualified values to our customers with a win-win relationship. Contact: Yoshiyasu Enomoto, Assistant Manager, [enomoto@sumita-opt.co.jp](mailto:enomoto@sumita-opt.co.jp); Hidenobu Ishikawa, Sub-Assistant Manager, [ishikawa@sumita-opt.co.jp](mailto:ishikawa@sumita-opt.co.jp).

# Exhibitor Listing

## Swift Glass Co.

#507

### APOMA

131 W 22nd St, Elmira Heights, NY, 14903  
607/723-7166; fax 607/732-5829  
quality@swiftglass.com; www.swiftglass.com

Specializing in the complete fabrication package of Borofloat, Pyrex, Schott and Kopp color filters, Fused Silica, Quartz, Vycor, Sapphire Bk-7, B-270, Starphire and Soda Lime materials. Processes include double sided lapping and polishing, edge grinding and polishing, hole drilling, sand blasting, precision CNC machining, heat tempering and chemical strengthening. Contact: Charles Burke, cburke@swiftglass.com.

## Sycon Instruments Inc.

#106

6757 Kinne St, East Syracuse, NY, 13057  
315/463-5297; fax 315/463-5298  
info@sycon.com; www.sycon.com



### Hotel Room Key Sponsor

## Sydor Optics, Inc.

#500

One Blossom Rd, Rochester, NY, 14610  
585/271-7300; fax 585/271-7309  
sales@sydor.com; www.sydor.com

Manufacturer of precision, flat-surfaced, parallel and wedged optics specializing in double-sided grinding and polishing. Products include: Beamsplitters, debris shields, filters, flats, grating substrates, lightpipes, light-weighted substrates, mirrors, wafers, wedges and windows. Contact: James Sydor, President; Mike Naselaris, General Manager.

## Syntec Optics

#510

### APOMA SPIE Corporate Member

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: Paul Tolley, Vice President/General Manager, ptolley@syntecoptics.com; Rick Arndt, Vice President of Tooling, rarnrdt@syntecoptics.com.

## Taylor Hobson Inc.

#309

### APOMA

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

**New Product: The new Form Talysurf PGI 1260 3D Aspheric Measurement System will be at Optifab 2007.**

Taylor Hobson aims to be the best provider of form and surface finish measurement systems world-wide. Aspheric optics manufacturers will be familiar with the form measurement capabilities of the Form Talysurf PGI. 3D aspheric measurement is now available with the new PGI 1260 system, as well as 90° slope capability from the PGI 1250. The non-contact Talysurf CCI will also be at the show, on the booth (#708) of our AMETEK partner company Precitech. Contact: Rick Parnoff, US (East Coast) Sales Manager, Taylor Hobson Inc., rick.parnoff@ametec.com; Matthew Hutchinson, Business Development Manager, Precision Optics, matthew.hutchinson@ametec.co.uk.

## tec5USA

#707

### SPIE Corporate Member

80 Skyline Dr, Plainview, NY, 11803  
516/653-2000; fax 516/939-0555  
info@tec5USA.com; www.tec5USA.com

**New Product: Quality control software for manufacturing of optics.**

Detector-array based process and lab spectrometer systems, 190 to 2500nm, wide-range light sources. Very high reproducibility, fast data acquisition of up to 1000 spectra/sec. Various software packages for process control or data base access. Ideal instrumentation for transmission/absorption, emission, diffuse reflection measurements, thin-film analysis. Customization. Hellma UV Laser optics. Contact: Gert Noll, General Manager, gert.noll@tec5usa.com; Arek Betlej, Technical Sales, arek.betlej@tec5usa.com.

## Techmetals, Inc.

#806

### SPIE Corporate Member

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

The Optics Division is dedicated to metal finishing optical components such as optical lenses, mirrors, lenticular rolls and telescope components. We have capability to handle difficult precision engineering jobs. We offer "Optical Grade Electroless Nickel" and Optakoat® for the photonic, optic and diamond turning industries. Contact: Steve Deisher, Vice President/General Manager Optics, sdeisher@techmetals.com; Tara Schumaker, Optics Operations, tschumaker@techmetals.com.

## Technodiamant USA Inc.

#802

200 Valley Rd Ste 305, Mt. Arlington, NJ, 07856  
973/770-7220; fax 973/770-7225  
info@technodiamant.com; www.technodiamant.com

**New Product: Nano-waviness tools for precision diamond turning.**

Technodiamant offers a full line of precision diamond tools, wheels and core drills. Our recently completed vibration-free 4800 sq-ft addition to our facility enables us to produce extremely low waviness diamond tools for turning brass, aluminum, plastics and crystalline IR materials. Diamond core drills are available from 0.55mm OD up to 175mm OD. Metalbond and resinbond diamond and CBN wheels are offered. Ask us about our no-obligation test program! Contact: David Slaperud, Sales Manager/North America, dave@technodiamant.com; Ronald DeVries, Sales Manager/International, ronald@technodiamant.nl.

## Technotrade International

#906

7 Perimeter Rd, Manchester, NH, 03103  
603/622-5011; fax 603/622-5211  
sales@technotradeinc.com; www.technotradeinc.com

**New Product: Deconex aqueous precision cleaning chemicals for ultrasonic and spray wash baths.**

TECHNOTRADE is the distributor of the Deconex line of aqueous based precision cleaning and stripping chemicals suitable for precision optics, ophthalmic lenses, all metals, glass and plastics. Contact: Johnny Hagen, Vice President Sales; Albrecht Auwaerter, President.

**Tecport Optics, Inc.****#1119**6901 TPC Dr Ste 450, Orlando, FL, 32822  
407/855-1212; fax 407/855-1213

sales@tecportoptics.com; www.tecportoptics.com

Manufacturer of Coating Systems for Precision Optics, Ophthalmic, Flat Panel Displays, Imaging, and Telecommunication industries. Systems range from manual to fully automatic; batch to cluster tool; single to in-line mass production. Tecport provides On-Site Service and Service Contract for all Coating Systems, Systems Rebuilding, and Systems Upgrade. **EXTREME COMPETITIVE PRICING.** Contact: Joseph Kim, Vice President, jkim@tecportoptics.com; Frank Helmes, Director of Sales and Marketing, fhelmes@comcast.net.

**Tempo Plastic Co.****#709****SPIE** Corporate Member1227 N Miller Park Ct, Visalia, CA, 93291  
559/651-7711; fax 559/651-0123

tempo@tempo-foam.com; www.tempo-foam.com

**New Product: 333mm OD single wafer pack, holds varying thickness and smaller diameters.**

Stock and custom protective packages for glass and fiber coil management. Clean room compatible foams available with static dissipative certification. Modular molds available for low cost customization. Contact: Doug Rogers, President.

**ThomasNet****#1002**5 Penn Plaza, New York, NY, 10001  
212/629-2100; fax 212/629-1146  
www.thomasnet.com

ThomasNet.com is the Internet's leading industrial destination site, where buyers and engineers from companies of all sizes, the government and the military go to find industrial suppliers, online catalogs and CAD drawings. For suppliers, ThomasNet provides solutions for creating information-rich websites that help increase sales from new and existing customers. Contact: promoteyourbusiness@thomasnet.com.

**3M Company, Electronics Markets Materials Division****#1115**317 Corporate Headquarters, 3M Center, St Paul, MN, 55144-1000  
888/364-3577; fax 651/737-1790  
www.3m.com

**New Product: 3M™'s Trizact™ diamond Tile fixed abrasive for grinding & lapping of hard brittle materials.**

3M™ will display its Trizact™ diamond Tile fixed abrasive which is being widely used in the optics industry to replace slurries or fixed abrasive pellet laps. This structured diamond abrasive removes stock faster, reduces sub-surface damage and produces a finer intermediate finish that reduces polishing time. It can be used on a variety of optical lenses and components made of fused quartz/silica, borosilicate glass, silicon, sapphire, SiC, glass ceramic and other hard materials. Contact: Lew Tousignant, Application-Sales Engineer, tousig@mmm.com; Bruce Sventek, Technical Specialist, BASventek@mmm.com.

**Trioptics GmbH****#1110****SPIE** Corporate Member

Hafenstr 39, Wedel, Germany, 22880

49 4103 180060; fax 41 4103 1800620

info@trioptics.com; www.trioptics.com

**New Product: ImageMaster PRO WAFER Aut. MTF tester for wafer level lenses. WaveMaster PRO Aspheric lens tester.**

ImageMaster PRO WAFER-Automated MTF tester for measurement of wafer level lenses for mobile phones. Accuracy traceable to international standards. Measurement time: 3 sec for one lens (9 MTF values, EFL, FFL, BFL). Designed for 24 hours non stop operation. WaveMaster PRO -Automated production tester for highly aspheric lenses. Measurement of the wavefront in transmission or/and surface topography in reflection mode of wafer level or individual lenses. Contact: Simon Zilian, Sales Engineer, s.zilian@trioptics.com; Aiko Ruprecht, Optical Scientist, a.ruprecht@trioptics.com.

**UCM AG****#408**

Langenhagstr 25, Rheineck, Switzerland, CH-9424

41 71 886 6760; fax 41 71 886 6761

h.hofstetter@ucm-ag.com; www.ucm-ag.com

**New Product: Ultrasonic Cleaning Systems for any optical components.**

We design Ultrasonic Cleaning Machines according to your requirements. Prior to that we develop a cleaning process adapted to your particular needs and we guarantee the results! Based on the process and your substrates we design the Cleaning Machine. UCM Ultrasonic Cleaning Machines are designed to meet also the highest quality requirements -for any optical material - for a cleaning prior to vacuum coating. Contact: Hans Ulrich Hofstetter, Sales Engineer.

**Umicore Optical Materials USA Inc. #308****APOMA**

2976 S 614 Rd, Quapaw, OK, 74363

918/673-1650; fax 918/673-2121

www.umicore.optical.com

**New Product: GASIR®, germanium blanks, windows, wafers, mounted optics, coatings, finished lenses and assemblies.**

Umicore offers infrared materials, thin-film optical coatings & components for thermal imaging & sensing applications. Umicore supplies quality germanium blanks & optics. Umicore's latest innovation is GASIR®, a line of infrared chalcogenide glasses, molded into finished optics with complex geometry. GASIR®1 & GASIR®3 molded optics are developed for high-volume, low-cost applications. Umicore's optical-mechanical competencies enable the manufacture of custom & standard infrared lens assemblies. Contact: Jeff Koch, Sales Manager, jeff.koch@am.umicore.com; Craig Snee, Sales Manager - GASIR®, craig.snee@am.umicore.com.

**Lanyard Sponsor****United Lens Co., Inc.****#700**

259 Worcester St, Southbridge, MA, 01550

508/765-5421; fax 508/765-0500

www.unitedlens.com

# Exhibitor Listing

## Universal Photonics, Inc.

#1015

APOMA SPIE Corporate Member

495 W John St, Hicksville, NY, 11801-1014  
516/935-4000; fax 516/935-4039  
info@universalphotonics.com; www.universalphotonics.com

**New Product: Microgrit Ultra – Refined aluminum oxide. UNILAP 60 – Suspension treatment for aluminum oxide.**

Lap/polish consumables and machinery for critical surfacing glass, crystals, infrared, plastic, semiconductor, electro/laser/fiber optics. Extensive product line: Rhodes LP Unalon® pads, Hastilite® sub-angstrom, superfine slurries, Rhodite® compounds, ultra-pure alumina, colloidal silica, precision pitches, waxes, cements, coolants, diamond slurries. Machinery: Advantage, DAMA, centrifuges and new generation double-sided, high-speed polishing/lapping machines from SOMOS International. Contact: Justin Mahanna, Technical Sales Representative, justinm@universalphotonics.com; Richard Nastasi, Executive Vice President, richardn@universalphotonics.com.

## University of Rochester

#505

APOMA

PO Box 270186, Wilmot Bldg River Campus,  
Rochester, NY, 14627  
585/275-2322; fax 585/271-1027  
www.optics.rochester.edu

The Institute of Optics is the original university Optics program in the United States, founded in 1929. More than 2400 B.S., M.S. and Ph.D. degrees have been granted in Optical Physics, Applied Optics and Optical Engineering and currently about 200 students are in the program. Companies interact through the Industrial Associates and Summer School Programs. See <http://www.optics.rochester.edu> for more. Contact: Prof. Wayne Knox, Director and Professor, wknnox@optics.rochester.edu; Prof. Gary Wicks, Associate Director and Professor, wicks@optics.rochester.edu.

## Vacuum Process Technology, Inc. #902

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

Vacuum Process Technology, Inc (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, Vice President Sales and Marketing, schiavaroli@vptec.com.

## Valtech Corp.

#807

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

Valtech Corporation manufactures Aqueous Cleaning Formulations for surface preparation prior to coating applications. Our portfolio of detergents are designed to remove a wide range of contaminants from various substrates and are used in ultrasonic, immersion and spray wash processes. All formulations are designed to freely rinse for maximum coating adhesion. Valtech also manufactures adhesive systems that are used as temporary protective coatings in grinding and polishing applications. Contact: Phillip Sundin, Sales Engineer, p.sundin@valtechcorp.com.

## View Micro-Metrology

#1007

1650 N Voyager Ave, Simi Valley, CA, 93063  
805/578-5000; fax 805/578-5249  
info1@vieweng.com; www.viewengineering.com

**New Product: VIEW Pinnacle 250 Automated Scratch & Dig Optical Defect Characterization System.**

VIEW Micro-Metrology provides fully automated, non-contact dimensional measurement and defect characterization systems for optical, data storage, semiconductor and MEMs device fabrication. Contact: Tim Sladden, Regional Manager, tsladden@viewmm.com; Vijay Patel, President, vpatel@viewmm.com.

## VisiMax Technologies, Inc.

#1332

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

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.

## Vitron GmbH

#212

Am Nasstal 5, Jena, Germany, 07751  
49 3641 288130; fax 49 3641 288155  
buzz@nakedoptics.com; www.vitron.de

Manufacturer of IR materials: ZnS in FLIR and Clear grades; moldable chalcogenide glasses; CaF<sub>2</sub> & BaF<sub>2</sub> blanks. Contact: Buzz Nesti.

## Well Diamond Wire Saws, Inc. #201

4708 S Old Peachtree Rd 500-D, Norcross, GA, 30071  
770/582-9887; fax 770/582-9339  
welldws@welldiamondwiresaws.com;  
www.welldiamondwiresaws.com

Well Diamond Wire Saws are designed and proven to cut smoothly, safely and with extraordinary precision through ceramics, glass, metal, rubber, plastics and all bonded materials regardless of the various hardnesses of the materials. Appropriate industrial applications include quality control, research and development, failure analysis as well as production environments. Manufactured in Europe for over 34 years with hundreds of systems in operation. Contact: Walter Ebner, Business Development.

## Westchester Technologies, Inc.

#208

APOMA SPIE Corporate Member

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

## Wolcott-Park, Inc.

#204

### APOMA

1700 Hudson Ave, Rochester, NY, 14617

585/342-3120; fax 585/342-3176

r.park@wolcott-park.com; www.wolcott-park.com

Distributor of adhesives and sealants, specializing in optics, aerospace and electronics. UV curing adhesives, along with fast set silicones and epoxies. Low outgassing and refractive index are just a few of our special benefits. Many can be mixed and dispensed right from the package and offer easy cure schedules. We also carry a full line of dispensing equipment and UV curing systems for your every need. Contact: Ken Anderson, Vice President Marketing, k.anderson@wolcott-park.com or Rich Park, President, R.Park@wolcott-park.com.



**Wednesday Morning Coffee Break Sponsor**

## Wordingham Technologies

#302

**SPIE** Corporate Member

580 Fisher Station Dr, Victor, NY, 14564

585/924-2294; fax 585/924-7660

sales@wordingham.com; www.wordingham.com

Wordingham Technologies, produces precision custom machined components exclusively for the optical, photonics, precision instrumentation markets. Our reputation of zero defects and absolute on time delivery is well known in the industry. We provide components for products such as, optical devices/lenses, laser devices, machine vision/illumination, micro/nano positioning and medical instrumentation. See why we are considered "The Mechanical Partner to the Optical World". Contact: J. Michael Grady, Vice President/General Manager.

## wzw-optics AG

#402

Wegenstr 18, Balgach, Switzerland, 9436

41 71 722 12 14; fax 41 71 722 12 40

optics@wzw.ch; www.wzw.ch

wzw-optic AG is a supplier for optics in a broad field of application. Fast prototyping, custom designed optical components as well as optical assemblies are our key strength. Our customer can also benefit from our know-how for the development of optics and for the optimization of optical performance. We are willing to assume risks on complex projects.

## Zygo Corp.

#915

**APOMA** **SPIE** Corporate Member

Laurel Brook Rd, PO Box 448, Middlefield, CT, 06455-0448

860/347-8506; fax 860/347-3968

inquire@zygo.com; www.zygo.com

For more than 35 years, Zygo Corporation has delivered leading edge optical metrology solutions to optics and photonics manufacturers. With unparalleled experience and reputation, ZYGO provides interferometric instruments and precision optical components, assemblies and electro-optical design to the aerospace, defense, semiconductor, automotive and optical industries. Contact: Stan Bialecki, Account Manager, sbialecki@zygo.com; Steve Kobak, Account Manager, skobak@zygo.com.

# Product Index

## Abrasives, Chemicals & Process Materials

DCM Tech, Inc.  
Denton Vacuum, LLC  
Diffraction International Ltd.  
dopa Diamond Tools  
Electronics Markets Materials Division, 3M Company  
Engis Corp.  
Equipment Acquisition Resources  
GfE Metalle und Materialien GmbH  
GTI Technologies  
Lunzer, Inc.  
Micro Care Corp.  
Norland Products Inc.  
Opticsfab - Agency for Optics Fabrication  
Saint-Gobain Grains & Powders  
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Universal Photonics, Inc.  
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Well Diamond Wire Saws, Inc.

## Astronomy

Aerotech, Inc.  
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Model Optics, Inc.  
North American Coating Labs.  
Ohara Corp.  
QED Technologies, Inc.  
SCHOTT North America, Inc.  
Spectrum Thin Films Corp  
Wordingham Technologies

## Cameras and CCD Components

APPLIED IMAGE Group  
Brysen Optical Corp, A Division of FLIR Systems, Inc.  
CDGM Glass Co USA  
Coastal Optical Systems, Inc.  
Harold Johnson Optical Labs.  
Hoya Corp. USA  
Innovative Fabrication, Inc.  
Micro Photonics Inc.  
Model Optics, Inc.

Moore Nanotechnology Systems LLC  
Norland Products Inc.  
North American Coating Labs.  
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OptiWorks, Inc.  
OPTIX Co.  
Phila Optics, Inc  
Precision Glass & Optics  
SCHOTT North America, Inc.  
Spectra Services  
Spectrum Thin Films Corp  
tec5USA  
Wordingham Technologies

## Chemical & Biological Sensing

Diffraction International Ltd.  
Displays & Optical Technologies, Inc.  
Fogale Nanotech  
North American Coating Labs.  
Ocean Optics, Inc.  
Precision Glass & Optics

## Clinical, Chemical and Biological Instrumentation

APPLIED IMAGE Group  
Fogale Nanotech  
Kopp Glass, Inc.  
North American Coating Labs.  
Ocean Optics, Inc.  
Precision Glass & Optics  
UCM AG

## Communications

Hoya Corp. USA  
North American Coating Labs.  
Precision Glass & Optics  
Spectrum Thin Films Corp

## Displays

Apollo Optical Systems, LLC  
Corning Inc.  
Displays & Optical Technologies, Inc.  
Glass Fab Inc.  
Hoya Corp. USA  
Kopp Glass, Inc.  
Norland Products Inc.  
North American Coating Labs.  
OptiWorks, Inc.  
Precision Glass & Optics  
Spectrum Thin Films Corp

## Distributor or Reseller

cleanroomservices.com  
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Equipment Acquisition Resources  
Glass Fab Inc.  
GTI Technologies  
Micro Photonics Inc.

Mildex, Inc.  
Ocean Optics, Inc.  
SGS Slicing Solutions, Inc.  
SlicingTech  
Technotrade International

## Electron-Beam Lithography

Aerotech, Inc.  
APPLIED IMAGE Group  
Denton Vacuum, LLC  
Intlvac

## Electronic Imaging Components, Equipment, Systems

Aerotech, Inc.  
Denton Vacuum, LLC  
Harold Johnson Optical Labs.  
Hoya Corp. USA  
North American Coating Labs.  
Optics Technology, Inc.  
Precision Glass & Optics  
Wordingham Technologies

## Electronics, Signal Analysis Equipment

Hoya Corp. USA  
North American Coating Labs.  
Precision Glass & Optics  
tec5USA

## EUV Lithography

Aerotech, Inc.  
Angstrom Precision Optics Inc.  
APPLIED IMAGE Group  
Harold Johnson Optical Labs.  
L-3 Communications, Tinsley Laboratories, Inc.  
Ohara Corp.  
Precision Glass & Optics

## Fiber Optic Components, Equipment, Systems

Aerotech, Inc.  
Denton Vacuum, LLC  
Engis Corp.  
Epner Technology, Inc.  
Fogale Nanotech  
Heraeus Quartz America  
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Model Optics, Inc.  
North American Coating Labs.  
Ocean Optics, Inc.  
Optics Technology, Inc.  
Precision Glass & Optics  
SCHOTT North America, Inc. - Fiber Optics  
tec5USA  
Tempo Plastic Co.  
Umicore Optical Materials USA Inc.  
Wordingham Technologies

## Finished Optics, Filters, & Coatings, Optical Fabrication Equipment

Accura Technics  
Aerotech, Inc.  
Angstrom Precision Optics Inc.  
Brysen Optical Corp, A Division of FLIR Systems, Inc.  
Coastal Optical Systems, Inc.  
Contour Fine Tooling  
Corning Inc.  
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dopa Diamond Tools  
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Engis Corp.  
Epner Technology, Inc.  
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Ferson Technologies, Inc.  
Fogale Nanotech  
GfE Metalle und Materialien GmbH  
Glass Fab Inc.  
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Harold Johnson Optical Labs.  
Heraeus Quartz America  
Hoya Corp. USA  
II-VI Infrared  
Innovative Fabrication, Inc.  
JENOPTIK Laser, Optik, Systeme GmbH  
JENOPTIK Polymer Systems, Inc.  
JML Optical Industries Inc.  
Kopp Glass, Inc.  
Kreischer Optics, Ltd.  
LightMachinery Inc.  
Lunzer, Inc.  
MediVision Optics  
Mildex, Inc.  
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Opticsfab - Agency for Optics Fabrication  
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OptiPro Systems  
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OPTIX Co.  
OptoSigma Corp.  
P.R. Hoffman Machine Products  
PFG Optics  
Phila Optics, Inc  
Phoenix Optical Glass Ltd.  
Precision Glass & Optics  
QED Technologies, Inc.  
Rochester Precision Optics LLC  
Spectrum Thin Films Corp



Swift Glass Co.  
Sydor Optics, Inc.  
tec5USA  
Technodiamant USA Inc.  
Tempo Plastic Co.  
Umicore Optical Materials USA Inc.  
VisiMax Technologies, Inc.  
zww-optics AG  
Zygo Corp.

## High Speed Imaging and Sensing

Brysen Optical Corp, A Division of FLIR Systems, Inc.  
Coastal Optical Systems, Inc.  
JML Optical Industries Inc.  
Kopp Glass, Inc.  
Ocean Optics, Inc.  
Precision Glass & Optics  
Spectra Services  
tec5USA  
View Micro-Metrology  
Wordingham Technologies

## Illumination Engineering

JENOPTIK Polymer Systems, Inc.  
Kopp Glass, Inc.

## Infrared Sources, Detectors, Systems

Axsys Technologies IR Systems  
Epner Technology, Inc.  
Fairfield Crystal Technology, LLC  
Hoya Corp. USA  
II-VI Infrared  
Kopp Glass, Inc.  
Optics Technology, Inc.  
OPTIX Co.  
Phoenix Optical Glass Ltd.  
Precision Glass & Optics  
Umicore Optical Materials USA Inc.  
Vitron GmbH  
Wordingham Technologies

## Ion-Beam Lithography

Aerotech, Inc.  
APPLIED IMAGE Group  
Denton Vacuum, LLC  
Intivac  
Spectrum Thin Films Corp

## Lasers and Other Light Sources, Laser Accessories, Laser Systems

Aerotech, Inc.  
Epner Technology, Inc.  
Fairfield Crystal Technology, LLC  
Hoya Corp. USA  
II-VI Infrared  
Innovative Fabrication, Inc.

LightMachinery Inc.  
Moore Nanotechnology Systems LLC  
North American Coating Labs.  
Ocean Optics, Inc.  
Precision Glass & Optics  
Wordingham Technologies

## Law Enforcement Technologies

APPLIED IMAGE Group  
Kopp Glass, Inc.  
North American Coating Labs.  
Ocean Optics, Inc.  
OPTIX Co.  
Precision Glass & Optics

## Life Sciences

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## Metrology, Inspection and Process Control

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Lion Precision  
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Zygo Corp.

## Nanotechnology

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Wordingham Technologies

## Non-Optical Lithography

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APPLIED IMAGE Group

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Advanced Glass Industries  
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Apollo Optical Systems, LLC  
APPLIED IMAGE Group  
Ariel Optics, Inc.  
Axsys Technologies IR Systems  
Brysen Optical Corp, A Division of FLIR Systems, Inc.  
CDGM Glass Co USA  
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Harold Johnson Optical Labs.  
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Hoya Corp. USA  
II-VI Infrared  
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LPI Precision Optics Ltd.  
MediVision Optics  
Moore Nanotechnology Systems LLC

Naked Optics Corp.  
Norland Products Inc.  
North American Coating Labs.  
North American EN Inc.  
Ocean Optics, Inc.  
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OPTIX Co.  
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R. Mathews Optical Works, Inc.  
Reflexite Display Optics  
Rochester Precision Optics LLC  
SCHOTT North America, Inc.  
Sumita Optical Glass, Inc.  
Swift Glass Co.  
Sydor Optics, Inc.  
Syntec Optics  
tec5USA  
Vitron GmbH  
Wordingham Technologies  
zww-optics AG  
Zygo Corp.

## Optical Detectors

LPI Precision Optics Ltd.  
North American Coating Labs.  
Ocean Optics, Inc.  
Precision Glass & Optics  
tec5USA

## Optical Fibers

Denton Vacuum, LLC  
Heraeus Quartz America  
Model Optics, Inc.  
Ocean Optics, Inc.  
Sumita Optical Glass, Inc.  
tec5USA  
Tempo Plastic Co.

## Optical Materials and Substrates

Advanced Glass Industries  
Angstrom Precision Optics Inc.  
Axsys Technologies IR Systems  
Brysen Optical Corp, A Division of FLIR Systems, Inc.  
CDGM Glass Co USA  
Centerline Technologies  
Corning Inc.

# Product Index

Denton Vacuum, LLC  
Displays & Optical Technologies, Inc.  
dopa Diamond Tools  
Epner Technology, Inc.  
Fairfield Crystal Technology, LLC  
Ferson Technologies, Inc.  
GfE Metalle und Materialien GmbH  
Glass Fab Inc.  
Heraeus Quartz America  
Hoya Corp. USA  
II-VI Infrared  
JML Optical Industries Inc.  
Kopp Glass, Inc.  
Moore Nanotechnology Systems LLC  
Naked Optics Corp.  
Norland Products Inc.  
North American Coating Labs.  
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Ocean Optics, Inc.  
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Phoenix Optical Glass Ltd.  
Precision Glass & Optics  
SCHOTT North America, Inc.  
SlicingTech  
Swift Glass Co.  
Techmetals, Inc.  
Tempo Plastic Co.  
Vitron GmbH  
wzw-optics AG

## Optical Test and Measurement Equipment, Interferometer

4D Technology Corp.  
Aerotech, Inc.  
APPLIED IMAGE Group  
ASE Optics, Inc.  
Axsys Technologies IR Systems  
Corning Inc.  
Davidson Optronics, Inc.  
Engineering Synthesis Design, Inc.  
Fairfield Crystal Technology, LLC  
Fogale Nanotech  
Glass Fab Inc.  
LPI Precision Optics Ltd.  
Micro Photonics Inc.  
Mildex, Inc.  
North American Coating Labs.  
Ocean Optics, Inc.  
Optics Technology, Inc.  
Opticsfab - Agency for Optics Fabrication  
Optikos Corp  
OptiPro Systems  
OptiWorks, Inc.  
QED Technologies, Inc.  
Schneider GmbH & Co. KG  
Spica Technologies, Inc.  
Taylor Hobson Inc.

tec5USA  
Trioptics GmbH  
View Micro-Metrology  
Wordingham Technologies  
Zygo Corp.

## Optical/Laser Microlithography

Aerotech, Inc.  
APPLIED IMAGE Group  
Corning Inc.  
Fairfield Crystal Technology, LLC  
Heraeus Quartz America  
Moore Nanotechnology Systems LLC  
SCHOTT North America, Inc.  
Wordingham Technologies

## Optics Manufacturing

AccuCoat, Inc.  
Aerotech, Inc.  
Angstrom Precision Optics Inc.  
Apollo Optical Systems, LLC  
Ariel Optics, Inc.  
Axsys Technologies IR Systems  
Brysen Optical Corp, A Division of FLIR Systems, Inc.  
CDGM Glass Co USA  
Coastal Optical Systems, Inc.  
Contour Fine Tooling  
Corning Inc.  
DAC International, Inc.  
Davidson Optronics, Inc.  
Denton Vacuum, LLC  
Displays & Optical Technologies, Inc.  
dopa Diamond Tools  
Evaporated Metal Films Corp.  
Fairfield Crystal Technology, LLC  
Ferson Technologies, Inc.  
GEMCITY Engineering and Manufacturing  
Glass Fab Inc.  
G-S PLASTIC OPTICS  
Harold Johnson Optical Labs.  
Heraeus Quartz America  
Hoya Corp. USA  
II-VI Infrared  
JENOPTIK Laser, Optik, Systeme GmbH  
JENOPTIK Polymer Systems, Inc.  
JML Optical Industries Inc.  
Kleir International  
Kopp Glass, Inc.  
Kreischer Optics, Ltd.  
L-3 Communications, Tinsley Laboratories, Inc.  
LaCroix Optical Co.  
Larsen Equipment Design, Inc.  
LightMachinery Inc.  
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Lunzer, Inc.  
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Model Optics, Inc.

Moore Nanotechnology Systems LLC  
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North American EN Inc.  
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Ohara Corp.  
Optics Technology, Inc.  
Opticsfab - Agency for Optics Fabrication  
Optimax Systems, Inc.  
OptiWorks, Inc.  
OPTIX Co.  
OptoSigma Corp.  
PFG Optics  
Phila Optics, Inc  
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Syntec Optics  
tec5USA  
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Tempo Plastic Co.  
Trioptics GmbH  
UCM AG  
wzw-optics AG  
Zygo Corp.

## Photonics Equipment Manufacturer

ASE Optics, Inc.  
DCM Tech, Inc.  
Engis Corp.  
GTI Technologies  
JENOPTIK Laser, Optik, Systeme GmbH  
Micro Photonics Inc.  
Moore Nanotechnology Systems LLC  
Ocean Optics, Inc.  
P.R. Hoffman Machine Products  
Satisloh North America Inc.  
Wordingham Technologies

## Resist Technology and Processing

GTI Technologies

## Sensor & Sensor Systems

Coastal Optical Systems, Inc.  
Fogale Nanotech  
JENOPTIK Polymer Systems, Inc.  
Lion Precision  
LPI Precision Optics Ltd.

Ocean Optics, Inc.  
Taylor Hobson Inc.  
tec5USA  
Trioptics GmbH  
Wordingham Technologies

## Services and Publications (Including Professional Societies)

ASE Optics, Inc.  
Photonics Spectra  
Photonics.com/Photonics Directory  
Space Alliance Technology Outreach Program

## Software

APPLIED IMAGE Group  
DAC International, Inc.  
Engineering Synthesis Design, Inc.  
GEMCITY Engineering and Manufacturing  
Ocean Optics, Inc.  
Opticsfab - Agency for Optics Fabrication  
Taylor Hobson Inc.  
tec5USA

## Solar and Alternative Energy

Innovative Fabrication, Inc.  
JENOPTIK Polymer Systems, Inc.  
North American Coating Labs.  
SGS Slicing Solutions, Inc.

## Vacuum, Cooling, Gas Handling Equipment

Denton Vacuum, LLC  
Tecport Optics, Inc.  
Vacuum Process Technology, Inc.

## Wafer Handling Automation

Aerotech, Inc.  
Denton Vacuum, LLC  
Equipment Acquisition Resources  
GEMCITY Engineering and Manufacturing  
GTI Technologies  
SGS Slicing Solutions, Inc.

## X-Ray Lithography

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APPLIED IMAGE Group  
GTI Technologies  
L-3 Communications, Tinsley Laboratories, Inc.  
Micro Photonics Inc.

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- **APOMA** Members receive a newsletter discussing issues, activities, meeting dates and items of critical interest.



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- Serve as a unified, coherent voice in promoting expansion and growth of the optics manufacturing base.

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