

# EXHIBITION GUIDE

EXHIBITION  
23-25 APRIL 2024



**SPIE.** DEFENSE+  
COMMERCIAL  
SENSING

**Conference + Courses: 21-25 April 2024**

Gaylord National Resort & Convention Center  
National Harbor, Maryland, USA

# SPIE. DEFENSE+ COMMERCIAL SENSING

THE EVENT FOR SENSOR RESEARCH AND TECHNOLOGIES TO  
ENHANCE CAPABILITIES FOR DEFENSE AND SECURITY APPLICATIONS

21-25 April 2024

**Conferences and Courses**

Gaylord National Resort & Convention Center  
National Harbor, Maryland, USA

23-25 April 2024

**Exhibition**

Cutting-Edge Research

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Training and Education



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- » And a whole lot more.

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# Experience the energy of SPIE Defense + Commercial Sensing Exhibition— PAGES 15-34

Free exhibition registration gets you access to the exhibition and so much more.



23-25 April 2024

TUESDAY ..... 10:00 AM-5:00 PM

WEDNESDAY ..... 10:00 AM-5:00 PM

THURSDAY ..... 10:00 AM-2:00 PM

Find top, mission-critical and innovative solutions—the best solutions, components, instruments, and system providers from around the world.



## Technical Courses—PAGES 8-9

Receive live instruction directly from an expert and join a group of your peers with similar goals and challenges. Choose from more than 20 courses on topics such as deep learning, electro-optical imaging systems, optomechanics, sensing, infrared imaging, and more.

*Courses priced separately.*



## Industry Events—PAGES 10-12

Join an energized audience at these informative sessions focused on the business side of photonics. Industry experts and leaders from various fields share opportunities and insights.

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## General Information—PAGES 2-3

## Facility Map—PAGES 4-5

## Product Category Listings—PAGES 36-37

## SPIE Corporate Members—PAGES 38-39

## SPIE Policies—PAGES 40-41

# GENERAL INFORMATION

## Badge pick up and registration hours

Location: Gaylord National, Exhibition Level, Hall B/C Foyer

Sunday 21 April	7:30 AM-5:00 PM
Monday 22 April	7:30 AM-5:00 PM
Tuesday 23 April	7:30 AM-5:00 PM
Wednesday 24 April	7:30 AM-5:00 PM
Thursday 25 April	7:30 AM-2:00 PM

## SPIE Cashier

Location: Gaylord National, Exhibition Level, Hall C Lobby  
Open during registration hours

### Registration payments

If you are planning to register onsite, please do so at the "Need to Register" laptop station.

Your credit card payment will be processed during registration.

If you wish to pay with cash or check, you will be directed to the Cashier once you have completed registration except for final payment.

If you have already registered and wish to add a course, workshop, or special event, you may do this online by signing into your SPIE account.

### Receipt and Certificate of Attendance

Preregistered attendees who need an SPIE-stamped receipt or attendees who need a Certificate of Attendance may obtain those at the Cashier.

### Badge Corrections

Badge corrections can be made at the Cashier. Please remove your badge from its holder and mark your badge with your changes before approaching the counter.

## Speaker Check-in and Preview Station

Location: Gaylord National, Ballroom Level, Chesapeake 2/3

Sunday 21 April	11:00 AM-5:00 PM
Monday 22 April	7:30 AM-5:00 PM
Tuesday 23 April	7:30 AM-5:00 PM
Wednesday 24 April	7:30 AM-5:00 PM
Thursday 25 April	7:30 AM-4:00 PM

All speakers must stop at Speaker Check-In to upload and preview their slide presentation files at least two hours before their scheduled session or the day before if you present in the first session. Speakers are not able to present using their own devices. All conference rooms are equipped with a laptop, projector, screen, lapel microphone, and laser pointer.

SPIE will record the audio plus screen content of all presentations. Recordings will be published in the Proceedings of SPIE on the SPIE Digital Library.

## Internet access

Complimentary wireless internet access provided in meeting rooms and lobbies on the conference room level and in the exhibition hall. Instructions will be posted onsite.

## SPIE health and safety products

Stop by registration to pick up complimentary face masks, hand sanitizer, and other safety products all free from SPIE.

## SPIE Conference app information

Location: Gaylord National, Ballroom Level, Potomac Foyer

Our SPIE App developer will be onsite and available to answer any questions on its use or navigation and how to get the best user experience. We welcome your feedback.

This useful tool allows you to search and browse the program, special events, participants, exhibitors, courses, and more. It is free and available for iPhone and Android users. Download the SPIE App: [spie.org/apps](http://spie.org/apps)

APP SPONSORED BY:



## SPIE Bookstore

Location: Gaylord National, Exhibition Hall

Tuesday 23 April	10:00 AM-5:00 PM
Wednesday 24 April	10:00 AM-5:00 PM
Thursday 25 April	10:00 AM-2:00 PM

Stop by the SPIE Bookstore to browse the latest SPIE Press Books. While there, get a t-shirt or educational toy to bring home to the family.

Credit and debit cards only will be accepted; no cash.

## SPIE Course materials

Location: Gaylord National, Exhibition Level, Hall B/C Foyer  
Open during registration hours but closed Thursday

Browse course offerings or learn more about SPIE courses available in portable formats such as online and customizable, in-company courses.

## SPIE luggage and coat check

Complimentary luggage, package, and coat storage are available in the hotel lobby.

## Business Center Office and FedEx Office

Location: Gaylord National, Hotel Lobby

Daily . . . . . 7:00 AM-7:00 PM

### Printing services available

Services include photocopying, faxing, printing services, and shipping. Office supplies are also available.

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## Child care services

### White House Nannies, Inc.

White House Nannies is the #1 recommended babysitting service for guests visiting the DC area.

SPIE does not imply an endorsement nor recommendation of these services. They are provided on an “information only” basis for your further analysis and decision. Other services may be available.

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## ATM and cash services

Gaylord National is a cashless facility. Cash to card kiosks and ATM machines are available in the hotel lobby.

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## Gender inclusive restroom

Gender neutral restrooms available. Location: Ballroom Level next to SPIE Chair Services.

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## Quiet Room

Location: Gaylord National Hotel and Convention Center, Mezzanine Room 5

Open during registration hours

The Quiet Room is intended for silent meditation, reflection, or prayer. No mobile devices or computer use is allowed, and no food or beverages are allowed.

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## Mothers’ Room

Location: Gaylord National Hotel, behind the Concierge Desk

The Mothers’ Room is provided and managed by the hotel. Seating and a sink are available. See hotel front desk for access.

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## Lost and Found

Location: SPIE Cashier

(Gaylord National, Exhibition Level, Hall C Lobby)

Open during registration hours

Found items will be kept at SPIE Cashier in the Registration area during the meeting and available only during registration hours. At the end of the meeting, all found items will be turned over to the National Harbor Security.

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## Food and beverage services

### Complimentary Coffee

Sunday	1:00 PM–4:00 PM	National Harbor Foyer
Monday	7:30 AM–4:00 PM	Potomac Foyer
Tuesday & Wednesday	7:30 AM–9:30 AM	Potomac Foyer
Tuesday & Wednesday	10:00 AM–4:00 PM	Exhibition Hall
Thursday	7:30 AM–9:30 AM	Potomac Foyer
Thursday	10:00 AM–2:00 PM	Exhibition Hall
Thursday	2:00 PM–4:00 PM	Potomac Foyer

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## Food and beverage services

Concessions: Exhibition Hall E

Tuesday and Wednesday . . . . . 11:00 AM–2:00 PM

Thursday . . . . . 11:00 AM–1:30 PM

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## Nearby dining

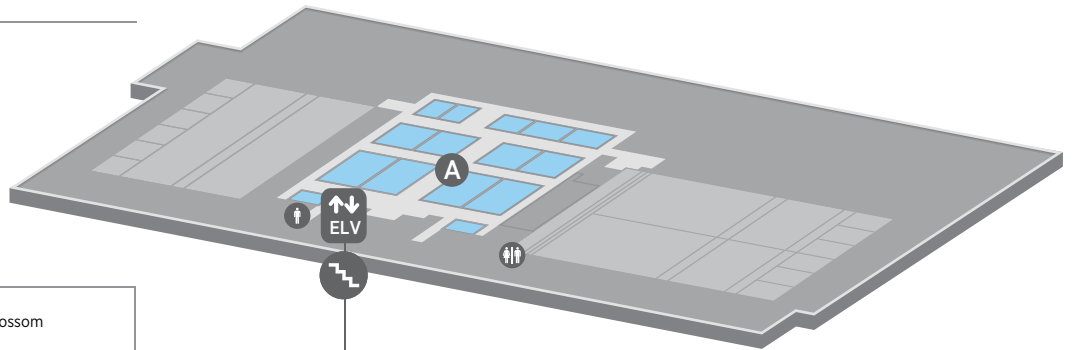
Find dining options in National Harbor:

[nationalharbor.com/dine-drink/](http://nationalharbor.com/dine-drink/)

# GAYLORD PALMS RESORT & CONVENTION CENTER

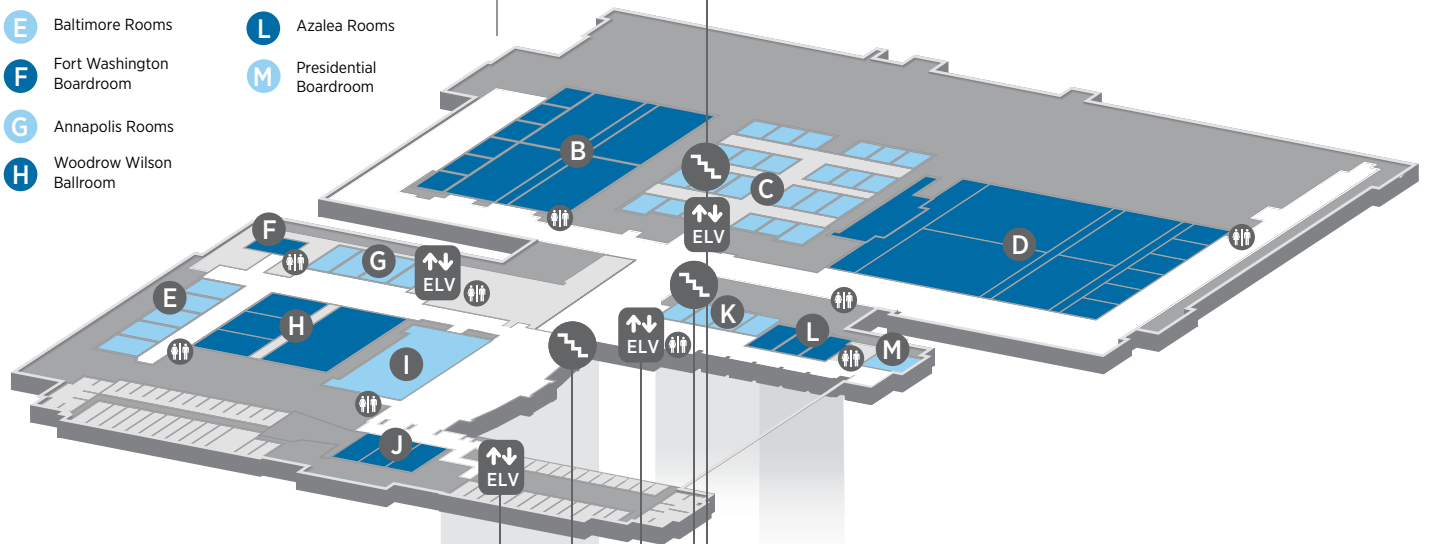
## National Harbor Conference Rooms

**A** National Harbor Conference Rooms



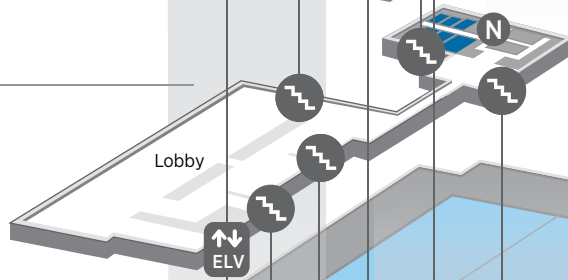
## Ballroom Level

- B** Maryland Ballroom
- C** Chesapeake Conference Rooms
- D** Potomac Ballroom
- E** Baltimore Rooms
- F** Fort Washington Boardroom
- G** Annapolis Rooms
- H** Woodrow Wilson Ballroom
- I** Cherry Blossom Ballroom
- J** Magnolia Rooms
- K** Camellia Rooms
- L** Azalea Rooms
- M** Presidential Boardroom



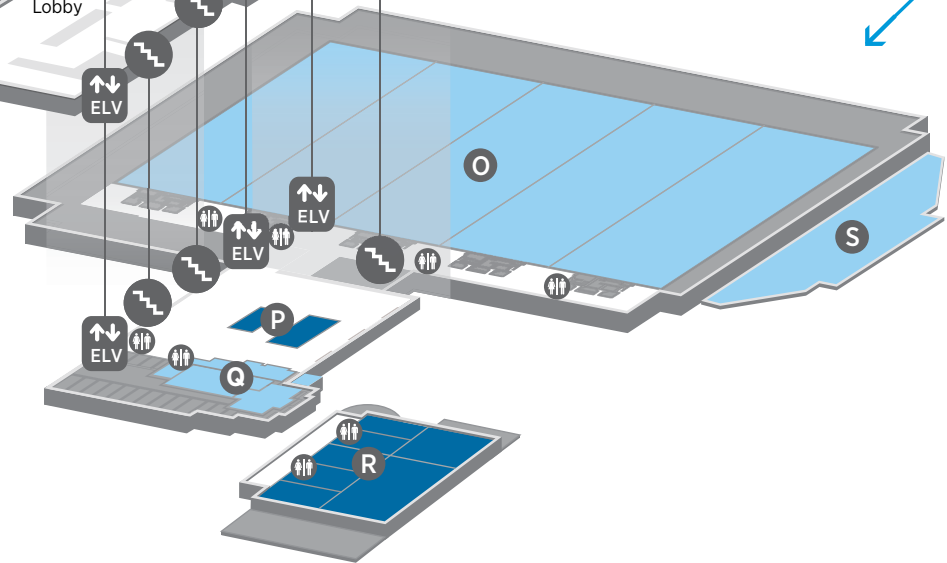
## Lobby Level

**N** Mezzanine Conference Rooms

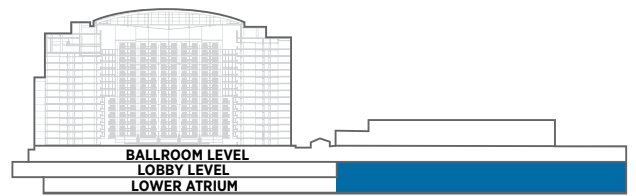


## Lower Atrium

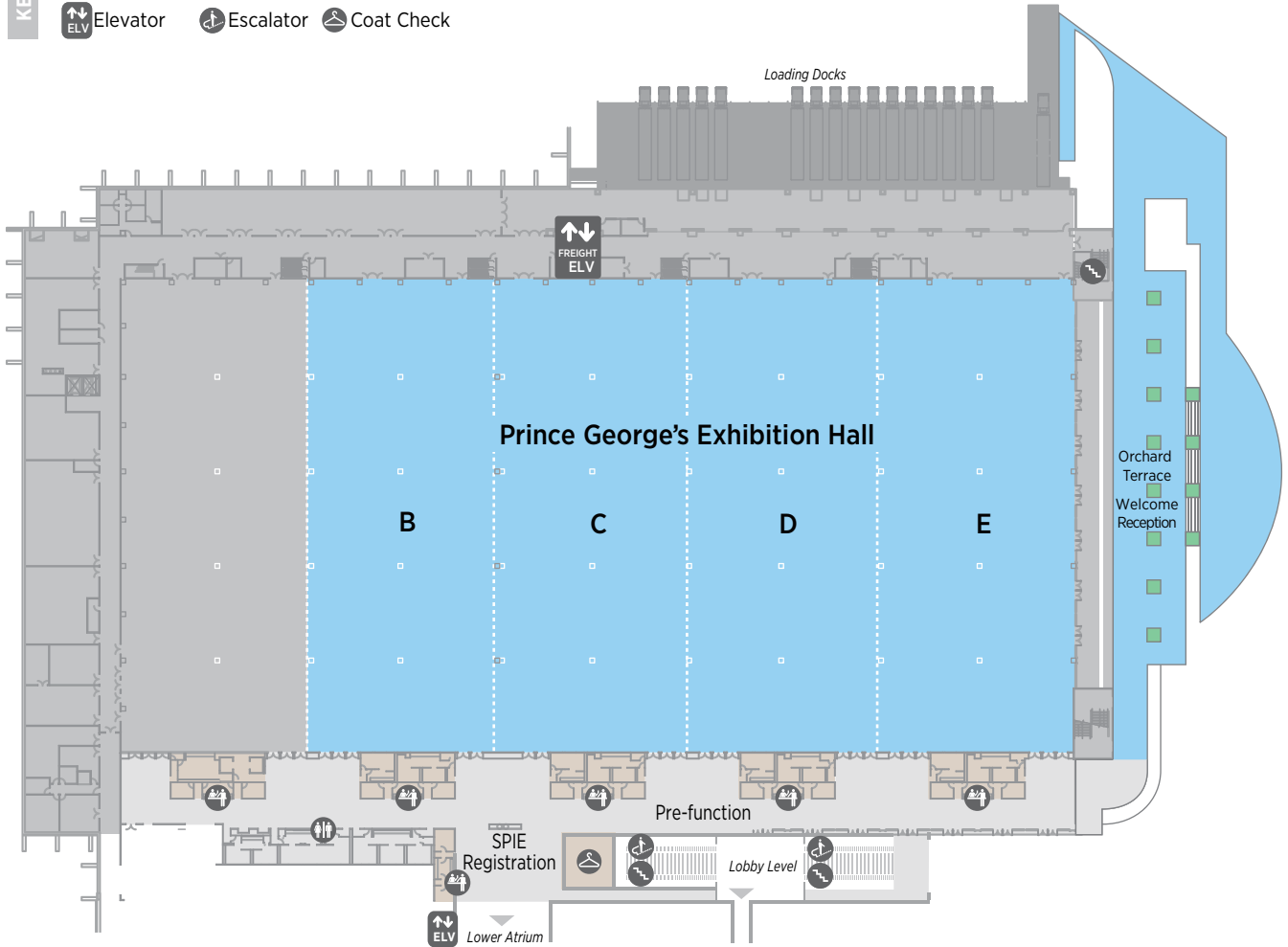
- O** Prince George's Exhibition Hall
- P** Town Square
- Q** Eastern Shore Meeting Space
- R** RiverView Ballroom
- S** Orchard Terrace



# PRINCE GEORGE'S EXHIBITION HALL (Lower Atrium)



- KEY**
- Restrooms
  - Stairs
  - Registration Desks
  - Service Areas
  - Elevator
  - Escalator
  - Coat Check



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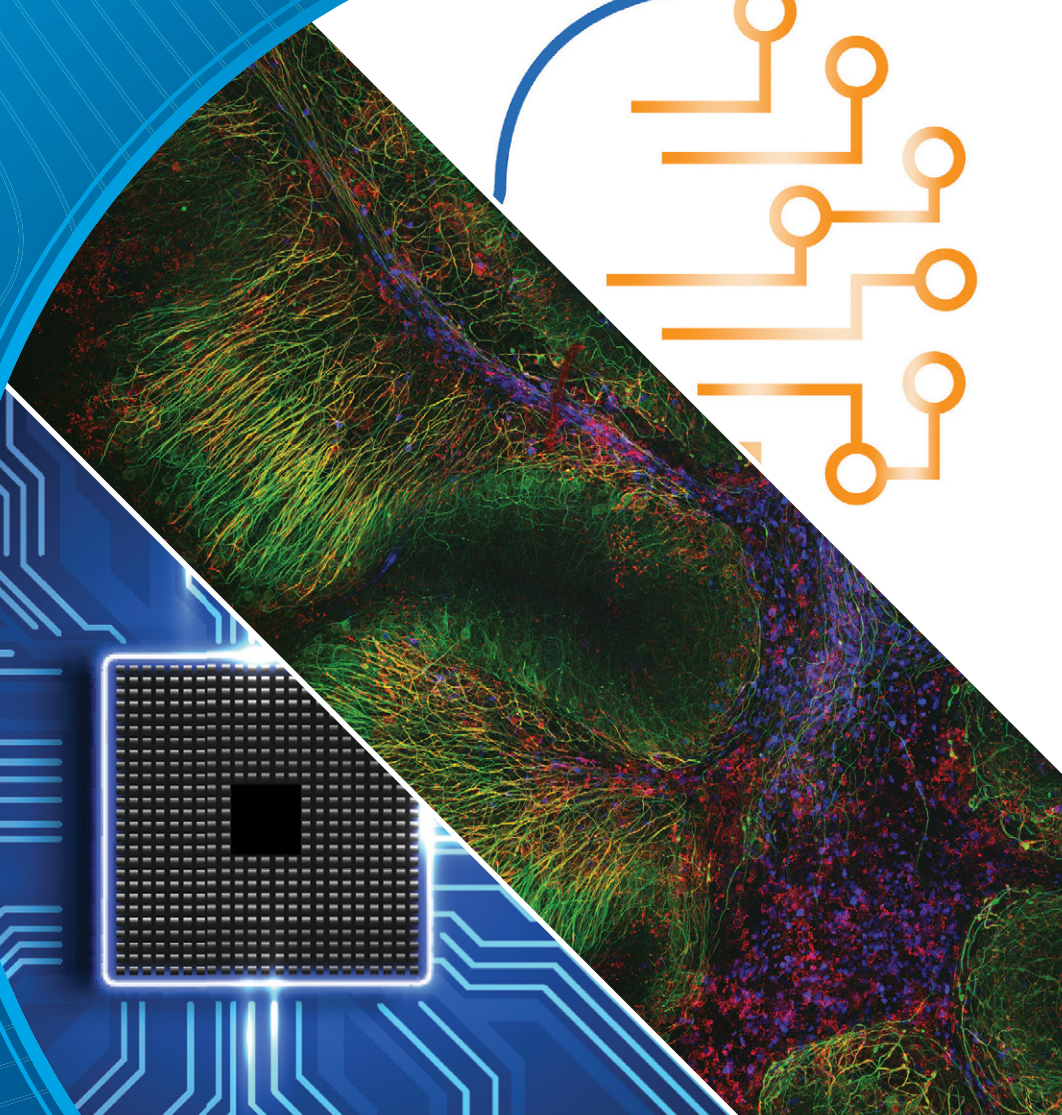
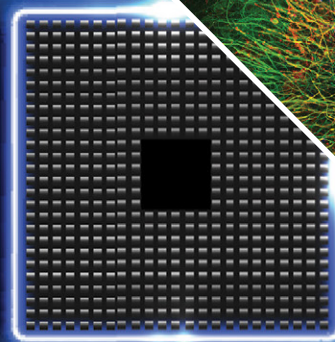
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# COURSE SCHEDULE

Courses complement and expand your Defense + Commercial Sensing experience. Take advantage of this great opportunity to meet face-to-face with an expert instructor and a group of people with similar goals and challenges. See SPIE cashier or register online.

Price key: SPIE Member / Non-Member / Student Member

SUNDAY 21 April 2024	MONDAY 22 April 2024	TUESDAY 23 April 2024	WEDNESDAY 24 April 2024	THURSDAY 25 April 2024
<p>SC014 • Day 1 <b>Introduction to Optomechanical Design</b> Daniel Vukobratovich, Raytheon Missile Systems (USA) 8:30 AM - 5:30 PM \$1,555   \$1,835   \$834</p>	<p>SC014 • Day 2 <b>Introduction to Optomechanical Design</b> Daniel Vukobratovich, Raytheon Missile Systems (USA) 8:30 AM - 5:30 PM</p>	<p>SC152 <b>Infrared Focal Plane Arrays</b> John E. Hubbs, Ball Aerospace &amp; Technologies Corp. (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	<p>SC1336 <b>Current Trends in Miniature Camera Technology from Visible to Infrared: Optimization for Performance, Size, and Cost</b> Kevin J. Matherson, Microsoft Corp. (USA), David A. Dorn, Consultant (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	
<p>SC160 <b>An Introduction to Precision Stabilized Pointing and Tracking Systems</b> James M. Hilkert, Alpha-Theta Technologies (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	<p>SC156 <b>Basic Optics for Engineers</b> Glenn D. Boreman, The Univ. of North Carolina at Charlotte (USA) 8:30 AM - 5:30 PM \$880   \$1,020   \$508</p>	<p>SC1327 <b>Optical Turbulence and Laser Beam Propagation</b> Italo Toselli, Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung IOSB (Germany) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	<p>SC003 <b>Practical Optical System Design</b> Richard N. Youngworth, Riyo LLC (USA), S. Craig Olson, L3Harris Technologies, Inc. (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	
<p>SC1215 <b>Deep Learning Architectures for Defense and Security</b> Nasser M. Nasrabadi, West Virginia Univ. (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	<p>SC154 <b>Electro-Optical Imaging System Performance</b> Gerald C. Holst, JCD Publishing (USA) 8:30 AM - 5:30 PM \$905   \$1,045   \$518</p>		<p>SC900 <b>Uncooled Thermal Imaging Detectors and Systems</b> Charles M. Hanson, SenseIR Solutions, LLC (USA) 8:30 AM - 5:30 PM \$880   \$1,020   \$508</p>	
<p>SC1241 <b>Fundamentals of Infrared Sensing</b> Glenn D. Boreman, The Univ. of North Carolina at Charlotte (USA) 8:30 AM - 5:30 PM \$875   \$1,015   \$506</p>	<p>SC1246 <b>Infrared Imaging Technology Basics</b> Austin A. Richards, Oculus Photonics LLP (USA) 10:30 AM - 12:30 PM \$335   \$360   \$244</p>		<p>SC1342 <b>Technologies and Applications for Miniature Optical Spectrometers and Spectroscopic Sensors</b> Richard A. Crocombe, Crocombe Spectroscopic Consulting, LLC (USA) 1:30 PM - 5:30 PM \$515   \$595   \$338</p>	

## MONEY-BACK GUARANTEE

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

## Digital badges and certificates


SPIE awards digital badges and certificates to participants who attend courses and complete the evaluation and quiz. Digital credentials are always accessible, easily shareable, printable at any time, and verified. For more information visit [spie.org/digital-badges](https://spie.org/digital-badges)

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

## Onsite courses

View course descriptions and register online.

**SPIE Members and Student Members receive discounts on courses.**

SUNDAY 21 April 2024	MONDAY 22 April 2024	TUESDAY 23 April 2024	WEDNESDAY 24 April 2024	THURSDAY 25 April 2024
<p>SC1268 <b>Interpreting Deep Learning Networks</b> Raghuvveer M. Rao, DEVCOM Army Research Lab. (USA) 8:30 AM - 12:30 PM \$515   \$595   \$338</p>	<p>SC1170 <b>A Hands-On Introduction to Optics</b> Damon Diehl, NextCorps Luminate (USA) 1:30 PM - 5:30 PM \$515   \$595   \$338</p>			
<p>SC067 <b>Testing and Evaluation of E-O Imaging Systems</b> Gerald C. Holst, JCD Publishing (USA) 8:30 AM - 5:30 PM \$840   \$980   \$492</p>	<p>SC015 <b>Fastening Optical Elements with Adhesives</b> John G. Daly, Vector Engineering (USA) 1:30 PM - 5:30 PM \$515   \$595   \$338</p>			
<p>SC710 <b>NIR and SWIR Imaging Applications</b> Instructor(s): Austin A. Richards, Oculus Photonics LLP (USA) 1:30 PM - 5:30 PM \$570   \$650   \$360</p>				
<p>SC1288 <b>Problems in Autonomous Vehicle Imaging Systems</b> Barbara G. Grant, Grant Drone Solutions, LLC (USA) 1:30 PM - 5:30 PM \$560   \$640   \$356</p>				
<p>SC1343 <b>Quaternion Neural Networks for Robust Scene Perception</b> Sos S. Agaian, The Graduate Ctr., CUNY (USA) 1:30 PM - 5:30 PM \$515   \$595   \$338</p>				



See full details and updates at [spie.org/dcs](https://spie.org/dcs) or on the **SPIE App**

# INDUSTRY EVENTS

Attend sessions focused on the business side of the optics and photonics industry, including defense and security applications. These events are open to all attendees, including exhibition visitors.

## Thermosense Vendor Session XX

22 April 2024 • 1:00 PM - 4:30 PM | Chesapeake 6

This session is located in the technical conference area and access requires one of either: paid technical badge (Chair, Committee, Speaker, Author, Student, Instructor, or Attendee type) and/or an Exhibitor Technical Pass.

*Session Chairs:* **Beate Oswald-Tranta**, Univ. of Leoben (Austria); **Giovanni Ferrarini**, Istituto per le Tecnologie della Costruzione (Italy)

This special session provides an early opportunity for exhibitors to highlight their latest technology and newest products to the Thermosense, infrared industry, and SPIE DCS technical audience prior to the opening of the Expo.

PRESENTATIONS ARE LISTED IN ORDER OF PRESENTATION:

**Telops Inc.** (Booth 441 / 13047-701)

**G&H | StingRay** (Booth 913 / 13047-702)

**SWIR Vision Systems** (Booth 541 / 13047-703)

**Omega Optical LLC** (Booth 1005 / 13047-704)

**HGH USA - Formerly Electro Optical Industries**  
(Booth 540 / 13047-705)

**IRnova AB** (Booth 418 / 13047-706)

**Thales Cryogenics BV** (Booth 1012 / 13047-707)

**Chroma Technology Corp.** (Booth 1214 / 13047-708)

**SCD USA Infrared, LLC** (Booth 813 / 13047-709)

**RICOR & RICOR USA** (Booth 407 / 13047-710)

**RP Optical USA** (Booth 826 / 13047-711)

## Keynote: Overview of the Joint Directed Energy Transition Office

23 April 2024 • 11:00 AM - 11:45 AM

Prince George Exhibition Hall, Industry Stage

The Joint Directed Energy Transition Office (JDETO) funds basic research, applied research, and advanced technology development in optics and photonics with academic, industry, and government partners, both domestic and international. This talk will provide an overview of the JDETO with an emphasis on how it maps to the DoD Directed Energy Roadmap.



Presenter

**Mark F. Spencer**

Director

Joint Directed Energy Transition Office (JDETO)  
OUSD(R&E)/OASD(CT)/AT/DE (USA)

## Infrared for Industrial Machine Vision - Opportunities and Challenges

23 April 2024 • 1:30 PM - 2:00 PM

Prince George Exhibition Hall, Industry Stage

In recent years, the industrial ecosystem has shown a growing interest in cameras that operate in non-visible wavelengths, driven by new needs related to the semiconductor industry and automotive electrification, for example. In different ways, this represents a significant opportunity for defense-oriented companies as well as more traditional industrial players. At the same time, the path to mass adoption is not yet clear due to a temporary market downturn expected to last until 2025 and the high price of technology platforms. This presentation will explore these opportunities and challenges.



Presenter

**Axel Clouet**

Technology and Market Analyst - Imaging  
Yole Group (France)

## Keynote: Accelerating Research to Impact

23 April 2024 • 2:15 PM - 3:00 PM

Prince George Exhibition Hall, Industry Stage

The U.S. National Science Foundation (NSF) invests in the full spectrum of fundamental research across all areas of science and engineering. With the exciting recent creation of the Directorate for Technology, Innovation and Partnerships (TIP), the NSF is spurring innovation that will rapidly address societal and economic challenges, open opportunities for all Americans and accelerate the creation of critical technologies. Please join us to learn more about how TIP will expand and transform the nation's research and innovation ecosystem, launch deep tech startups, nurture the future workforce, and grow the nation's competitiveness and security for decades to come.



Presenter

**Mara Schindelholz**

Program Director

SBIR/STTR National Science Foundation  
(USA)

## Keynote: Opportunities for Innovative Sensing and Imaging Technologies at ARPA-E

23 April 2024 • 3:15 PM - 4:00 PM

Prince George Exhibition Hall, Industry Stage

ARPA-E has a broad research space that involves decreasing emissions and exports, while improving efficiency, nuclear waste management, and grid resiliency. Courtesy this mission breadth, several broader programs and individual projects have leveraged innovations in the sensing and imaging technology space. This talk will focus on recent successes and potential areas of opportunity with respect to sensing and imaging technologies.



Presenter

**Jenifer Shafer**

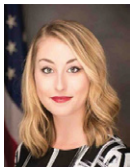
Associate Director of Technology  
and Program Director  
ARPA-E (USA)

## Keynote: NASA's CIS Office: Embracing the Aerospace Community Through Strategic Engagement

23 April 2024 • 4:15 PM - 5:00 PM

Prince George Exhibition Hall, Industry Stage

NASA'S Space Communications and Navigations (SCaN) Projects Division consists of two networks, the Near Space Network and the Deep Space Network. The Near Space Network, which operates out of Goddard Space Flight Center, is looking to the future and is interested in building partnerships with the aerospace community. The Commercialization, Innovation, and Synergies (CIS) Office is part of NASA's Near Space Network and is dedicated to nurturing opportunities for collaboration between NASA, Industry, academia, and other government agencies. As CIS's Industry Engagement Lead, Ali Hale is strategically connecting experts from industry with NASA to create partnerships and exchange ideas on new and innovative technologies for the Near Space Network. She will share paths of engagement with NASA, with the eventual goal of infusing new and existing technologies to provide for a robust marketplace with creative, cost-effective solutions.



Presenter

**Alexandra Hale**

NASA Industry Engagement Lead & Senior Technical Advisor  
The Aerospace Corporation (USA)

## Panel Discussion on Directed Energy: Industrial Base Readiness to support Directed Energy Programs of Record

24 April 2024 • 10:30 AM - 12:00 PM

Prince George Exhibition Hall, Industry Stage

Hear the latest on funding and technical developments, as well as challenges and opportunities, from leaders from industry, academia, and government offices. Panelists will address key areas critical to the future success and adoption of directed energy systems.



Moderator

**Robert Walker**

Vice President of Strategy and Business Development  
Leonardo (USA)

Panelists



**Sandra Biedron**

Chief Scientist  
Element Aero  
(USA)



**Frank E. Peterkin**

Principal Director for Directed Energy  
OUSD (R&E)  
(USA)



**Wilson Miles**

Associate Research Fellow  
NDIA Emerging Technologies Institute (USA)

## Commercial Technology Transfer/Integration to Government Panel

24 April 2024 • 1:15 PM - 2:45 PM

Prince George Exhibition Hall, Industry Stage

Opportunities abound for SME's, small businesses, and start-ups to engage with government agencies to provide innovative technology solutions enabling government programs to achieve their missions. Understanding how best and with which agencies to engage can be a challenging proposition for players in the commercial sector. In this panel discussion, representatives of key government agencies employing rapid, direct, and non-traditional methods of funding, technology transfer, and insertion to accomplish their mission objectives will share their offices' roles, processes, and opportunities. This session will inform and educate the commercial sector on the optimal ways to work with these agencies to mutual benefit.



Moderator

**Teresa Pace**

Engineering Fellow  
L3Harris (USA)

Panelists



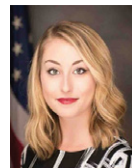
**Matthew Willis**

Director  
Office of Army Prize Competitions and Army Applied SBIR Program  
Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (USA)



**Matthew Turek**

Deputy Director  
Information Innovation Office DARPA (USA)



**Alexandra Hale**

NASA Industry Engagement Lead & Senior Technical Advisor  
The Aerospace Corporation (USA)



**Robert B. Meltzer**

Technical Executive  
National Geospatial-Intelligence Agency (USA)



# INDUSTRY EVENTS

## Evaluating the Health of the Directed Energy Weapon Industrial Base

24 April 2024 • 3:15 PM - 3:45 PM

Prince George Exhibition Hall, Industry Stage

Directed energy weapons (DEWs), including high energy lasers (HELs) and high-power microwaves (HPMs), have emerged as potentially transformative weapons on the modern battlefield. Recent advancements have made DEWs more viable than ever, with many systems possessing the power and range necessary to engage a wide variety of threats, more affordably than current systems. Recent conflicts in the Middle East and Europe have highlighted the importance of munitions capacity as well as the need to both efficiently and effectively counter different kinetic threats. The ability of some DEW systems to engage many targets at once with an “unlimited” magazine could yield enormous economic and tactical benefits.

In January 2024, the National Defense Industrial Association’s Emerging Technologies Institute (ETI) released its latest report, “Directed Energy Weapons: Securing the Path to the Future,” which assessed the supply chains for both high-energy lasers and high-powered microwaves. The report examines four aspects of the supply chain: 1) Critical Raw Materials and Goods, 2) Manufacturing Base and Workforce, 3) Supply Chain Security and Vulnerabilities, and 4) International Partnerships and Allied Nearshoring. ETI will present the key findings and recommendations from this report.



Presenter

**Wilson Miles**

Associate Research Fellow

NDIA Emerging Technologies Institute (USA)

## Lidar Performance Benchmarking Technical Discussion

24 April 2024 • 4:00 PM - 5:00 PM

Prince George Exhibition Hall, Industry Stage

Today there are no vendor-independent standards for automotive lidar performance, such as range, resolution, accuracy, field of view, etc. Attend this discussion to learn about and contribute to field testing of multiple lidar systems on an identical range. Join this working group to discuss lessons learned in the lidar performance benchmarking process and explore ways to improve the lidar performance tests in the future.



Presenter

**Paul McManamon**

President

Exciting Technology LLC (USA)

## Panel Discussion: Keeping National Security AI Trustworthy

25 April 2024 • 11:00 AM - 12:00 PM

Prince George Exhibition Hall, Industry Stage

This panel discussion will explore some of the ethical quandaries and hazards AI-assisted technologies present for national security/defense, including on the battlefield in active conflicts. Many of these capabilities are offered as contract services to militaries, adding another layer of complexity to issues that must be managed to leverage the success promised by AI.

Topics the panel will include:

- » Who controls access to private satellite data?
- » Hallucinations and AI risk management
- » Lethal decision-making by AI machines
- » Fighting AI disinformation in global conflict
- » Trustworthiness of datasets



Moderator

**William Schulz**

Managing Editor of *Photonics Focus*

SPIE (USA)



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23 April 2024 • 10:00 AM - 5:00 PM

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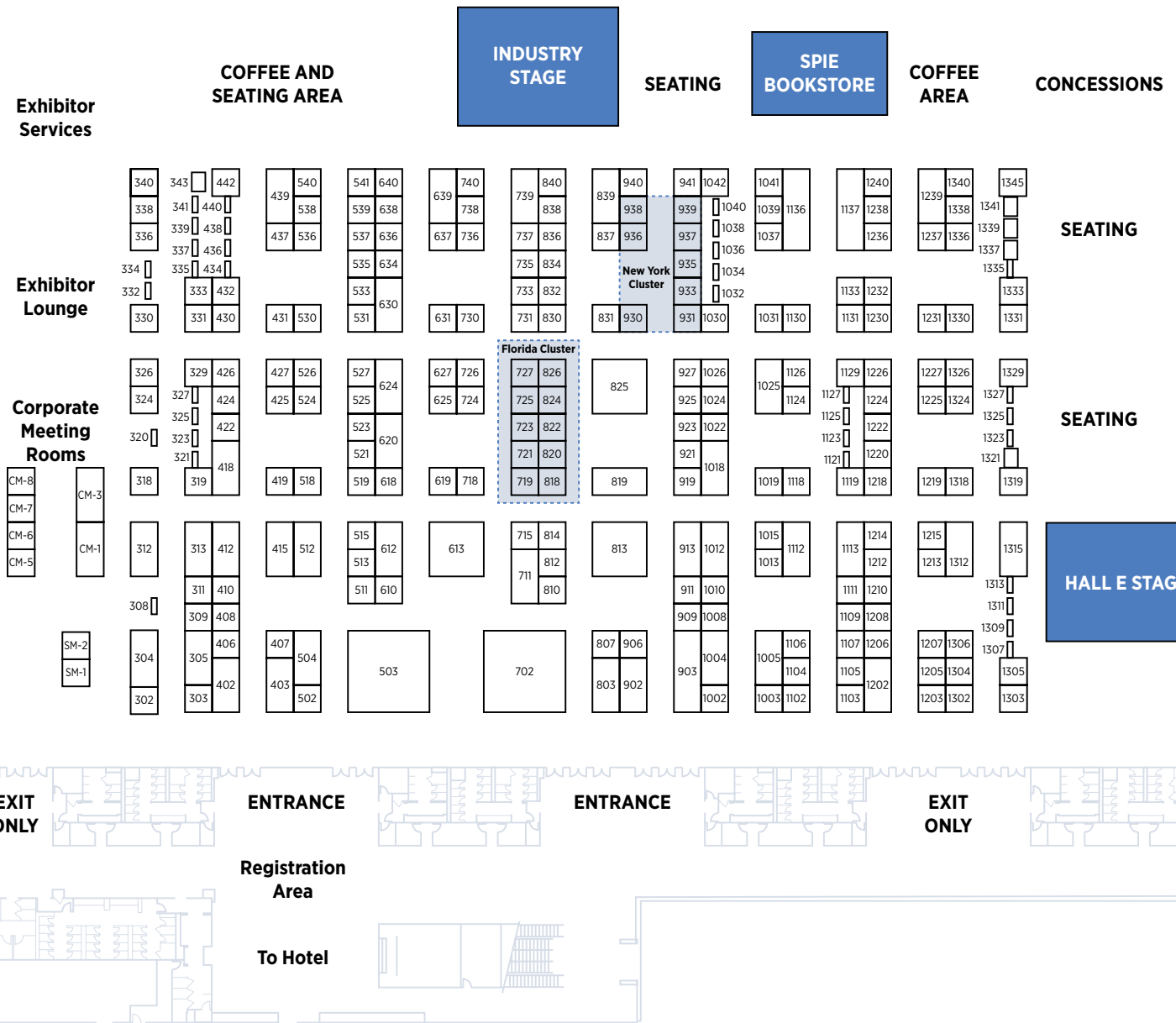
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For further information

**OPTRONICS**

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# SPIE DEFENSE + COMMERCIAL SENSING EXHIBITION

## SPONSOR

### Umicore Optical Materials USA, Inc. #610

**SPIE.** CORPORATE MEMBER

2976 S 614 Rd, Quapaw, OK, 74363-1884 USA  
+1 918 673 1650; fax +1 918 673 2121  
mckenzi.marlow@am.umicore.com;  
https://eom.umicore.com/en/

### Universal Photonics, Inc. #518

**SPIE.** CORPORATE MEMBER

85 Jetson Ln, Central Islip, NY, 11722-1202 USA  
+1 516 935 4000; fax +1 516 935 4039  
info@universalphotonics.com; https://universalphotonics.com/

### U.S. Army Space and Missile Defense Command #339

5220 Martin Road, Redstone Arsenal, AL, 35898 USA  
+1 256 955 3887  
www.smdc.army.mil

### Vacuum Innovations, LLC #1309

90 Ossian St, Dansville, NY, 14437-9101 USA  
+1 585 298 9579; fax +1 585 219 5206  
sales@vacuuminnovations.com; www.vacuuminnovations.com

### Valley Design Corp. #1226

2 Shaker Rd Bldg E-001, Shirley, MA, 01464-2525 USA  
+1 978 425 3030; fax +1 978 425 3031  
info@valleydesign.com; www.valleydesign.com

### Vertex Optics, Inc. #936

90 Victor Heights Pkwy, Victor, NY, 14564-9010 USA  
+1 585 398 7756  
sales@vertexoptics.com; www.vertexoptics.com

### VIAVI Solutions #1113

**SPIE.** CORPORATE MEMBER

1402 Mariner Way, Santa Rosa, CA, 95407-7370 USA  
+1 707 525 9200; fax +1 707 525 7028  
ospcustomerservice@viavisolutions.com; |  
www.viavisolutions.com/en-us/osp

### Vieworks Co., Ltd. #313

41-3 Burim-ro 170beon-gil, Anyang-si, 14055 Korea, Republic of  
+82 70 701 6161; fax +82 31 386 8631  
sales@vieworks.com; vision.vieworks.com

### VIGO Photonics S.A. #1104

ul. Poznańska 129/133, Opatów Mazowiecki, 05-850 Poland  
+48 22 733 54 10; fax +48 22 665 21 55  
info@vigophotonics.com; www.vigophotonics.com

### Vincent Associates #937

**SPIE.** CORPORATE MEMBER

803 Linden Ave, Rochester, NY, 14625-2709 USA  
+1 585 385 5930; fax +1 585 385 6004  
info@uniblitz.com; www.uniblitz.com

### Vision Systems Technology, LLC #1345

12396 World Trade Dr Ste 205, San Diego, CA, 92128-3788 USA  
+1 858 449 1562  
sales@visionsystech.com; www.visionsystech.com

## SPONSOR

### Vital Optics Technology Co., Ltd. #312

**SPIE.** CORPORATE MEMBER

280 Shuman Blvd Ste 145, Naperville, IL, 60563-2500 USA  
+1 630 778 0330; fax +1 630 778 0348  
sales@votinfrared.com;  
https://www.vitalchem.com/business-unit/infrared-laser-detector

### VITEC #1106

3174 Marjan Dr, Atlanta, GA, 30340-3902 USA  
+1 404 320 0110; fax +1 404 320 3132  
atlanta@vitec.com; www.vitec.com

### Wavefront Research, Inc. #1307

1540 Main St, Northampton, PA, 18067-1618 USA  
+1 610 751 0789  
info@wavefrontresearch.com; www.wavefrontresearch.com

### Wooriro Co., Ltd. #335

102-22 Pyeongdongsandan 6beon-ro Gwangsan-gu, Gwangju, 62453 Korea, Republic of  
+82 62 602 8181; fax +82 62 602 8114  
lucky\_sj@wooriro.com; www.wooriro.com/en

### X-BEAM Tech Co., Ltd. #1321

304-306, KCC Welltz Valley, 205, Gasan digital 1-ro, Geumcheon-gu, Seoul, 08501 Korea, Republic of  
+82 2 864 7280; fax +82 2 864 7281  
sales@xbeamtech.co.kr; www.xbeamtech.co.kr

### Xenics NV #439

Interleuvenlaan 80-82, Leuven, Vlaams-Brabant, 3001 Belgium  
+32 16 38 99 00; fax +32 16 38 99 01  
info@exosens.com; www.exosens.com

### Xsoptix LLC #333

71 Bradley Rd Unit 12B, Madison, CT, 06443-2662 USA  
+1 203 401 8093; fax +1 800 878 7282  
sales@xsoptix.com; www.xsoptix.com

### Zaber Technologies Inc. #304

**SPIE.** CORPORATE MEMBER

#2-605 W Kent Ave N, Vancouver, BC, V6P 6T7 Canada  
+1 604 569 3780; fax +1 604 648 8033  
marketing@zaber.com; www.zaber.com

### Zygo Corporation #1003

**SPIE.** CORPORATE MEMBER

21 Laurel Brook Rd, Middlefield, CT, 06455-1291 USA  
+1 860 347 8506; fax +1 860 347 8372  
inquire@zygo.com; www.zygo.com

# PRODUCT CATEGORY

## Astronomy

603 OPTX a Micro-LAM brand  
Active Optical Systems LLC  
Advanced Scientific Concepts, LLC  
ALLVAR  
American Infrared Solutions, LLC  
Andover Corporation  
BAE Systems Sensor Solutions  
CDA InterCorp  
CEDRAT TECHNOLOGIES SA  
Chroma Technology Corp.  
G&H (Gooch & Housego)  
Inrad Optics Inc.  
Leonardo UK Ltd.  
Lockheed Martin Santa Barbara Focalplane  
Materion Balzers Optics  
Meadowlark Optics Inc.  
New Scale Technologies, Inc.  
NYFORS  
OptiGrate - IPG Photonics  
PHASICS Corp.  
Photonic Cleaning Technologies  
Precision Optical  
Princeton Infrared Technologies, Inc.  
Raptor Photonics Ltd.  
Riverhawk Co.  
Sunpower, Inc.  
Teledyne Imaging  
Universal Photonics, Inc.  
Vincent Associates

## Basic Research, Science

Active Optical Systems LLC  
ALLVAR  
attocube systems Inc.  
Avantes, Inc.  
Avantier Inc.  
Axiom Optics  
Bodkin Design & Engineering, LLC  
Covar, LLC  
GAMDAN Optics  
Gentec Electro-Optics Inc.  
Hamamatsu Corp.  
IRflex Corporation  
Lockheed Martin Santa Barbara Focalplane  
New Scale Technologies, Inc.  
NYFORS  
OPTOMAN  
Photon Force Ltd.  
Spectral Evolution, Inc.  
Sunpower, Inc.  
UltraFast Innovations GmbH

## Biomedical, Medical Imaging, Health Care

Analog Modules, Inc.  
Andover Corporation  
attocube systems Inc.  
Avantes, Inc.  
Avantier Inc.  
Axiom Optics  
BAE Systems Sensor Solutions  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
CEDRAT TECHNOLOGIES SA  
EIFys Inc.  
Emberion Oy  
Gentec Electro-Optics Inc.  
Hamamatsu Corp.  
Iridian Spectral Technologies Ltd.  
Kyocera International Inc.  
Materion Balzers Optics

Meadowlark Optics Inc.  
nanoplus America Inc.  
NYFORS  
Obsidian Sensors, Inc.  
OSI Optoelectronics, Inc.  
OZ Optics Ltd.  
PHASICS Corp.  
Photon Etc. Inc  
Photon Force Ltd.  
Raptor Photonics Ltd.  
RPMC Lasers, Inc.  
Spectral Evolution, Inc.  
Sunpower, Inc.  
Syntec Optics  
Universal Photonics, Inc.  
Vincent Associates  
Wavefront Research, Inc.  
Zaber Technologies Inc.

## Cameras and Imaging systems

Advanced Scientific Concepts, LLC  
AGM Container Controls Inc.  
AIM INFRAROT-MODULE GmbH  
American Infrared Solutions, LLC  
Andover Corporation  
Archer OpTx Inc.  
Axiom Optics  
BAE Systems Sensor Solutions  
BaySpec, Inc.  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
CEDRAT TECHNOLOGIES SA  
Chroma Technology Corp.  
Coherent Aerospace & Defense  
Corning Incorporated  
Covar, LLC  
Cyan Systems, Inc.  
Eaton Corporation  
EIFys Inc.  
Emberion Oy  
G&H (Gooch & Housego)  
Gentec Electro-Optics Inc.  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Hinallea Imaging  
IO Industries, Inc.  
Kenko Tokina Co., Ltd.  
KT Photonics Inc.  
Leonardo UK Ltd.  
Le-Tehnika d.o.o.  
LYNRED-USA  
Materion Balzers Optics  
MicroCircuit Laboratories LLC  
MYUTRON Inc.  
New Imaging Technologies  
New Scale Technologies, Inc.  
Obsidian Sensors, Inc.  
Optec S.p.A.  
Optiforms, Inc.  
OSI Optoelectronics, Inc.  
Photon Etc. Inc  
Photon Force Ltd.  
PLX Inc.  
Princeton Infrared Technologies, Inc.  
Raptor Photonics Ltd.  
Riverhawk Co.  
SCD USA Infrared, LLC  
Senseker Engineering Inc.  
Sensors Unlimited, an RTX Company  
Sierra-Olympia Technologies, Inc.  
Specim Spectral Imaging Ltd.  
SRI International  
Sunpower, Inc.  
SWIR Vision Systems  
Syntec Optics

Teledyne Imaging  
Torrent Photonics LLC  
Videology Industrial-Grade  
Cameras, an inTEST Co.  
Vincent Associates  
Vital Optics Technology Co., Ltd.  
Wavefront Research, Inc.

## Chemical and Biological Analysis

Analog Modules, Inc.  
Avantes, Inc.  
BAE Systems Sensor Solutions  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
Corning Incorporated  
EIFys Inc.  
G&H (Gooch & Housego)  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Hinallea Imaging  
Inrad Optics Inc.  
IRflex Corporation  
Iridian Spectral Technologies Ltd.  
Le-Tehnika d.o.o.  
nanoplus America Inc.  
New Scale Technologies, Inc.  
NYFORS  
Precitech Inc.  
Princeton Infrared Technologies, Inc.  
Sensors Unlimited, an RTX Company  
Specim Spectral Imaging Ltd.  
Torrent Photonics LLC  
Wavefront Research, Inc.

## Communications & Networking

BaySpec, Inc.  
CEDRAT TECHNOLOGIES SA  
G&H (Gooch & Housego)  
Glenair Inc.  
Iridian Spectral Technologies Ltd.  
Kyocera International Inc.  
Meadowlark Optics Inc.  
OptiGrate - IPG Photonics  
Optogration Inc.  
OPTOMAN  
Precision Optical  
TeraXion Inc.  
Valley Design Corp.  
Wooriro Co., Ltd.

## Computing Systems, Data Processing

attocube systems Inc.  
Covar, LLC  
Cybel, LLC  
Nippon Control System Corp.  
NYFORS  
Photon Force Ltd.  
Computing, Data Processing Hardware  
Advanced Scientific Concepts, LLC  
Nippon Control System Corp.  
Photon Force Ltd.

## Consulting Services

AGM Container Controls Inc.  
American Ctr. for Optics Manufacturing, Inc.  
Archer OpTx Inc.  
Avantier Inc.  
Bodkin Design & Engineering, LLC  
Cincinnati Sub-Zero Products

LaCroix Precision Optics  
MicroCircuit Laboratories LLC  
NYFORS  
Optical Support Inc.  
Photon Force Ltd.  
Precitech Inc.  
Videology Industrial-Grade  
Cameras, an inTEST Co.

## Consumer Electronics

Kopin  
Materion Balzers Optics  
North American Coating Labs.  
Precitech Inc.  
SkyWater Technology  
Teledyne Imaging

## Defense, Security, Law Enforcement

603 OPTX a Micro-LAM brand  
AccuCoat Inc.  
Active Optical Systems LLC  
Advanced Scientific Concepts, LLC  
Advanced Technical Ceramics Company dba AdTech Ceramics  
AGM Container Controls Inc.  
AIM INFRAROT-MODULE GmbH  
ALLVAR  
American Infrared Solutions, LLC  
Analog Modules, Inc.  
Andover Corporation  
Archer OpTx Inc.  
Attollo Engineering LLC  
Axiom Optics  
BAE Systems Sensor Solutions  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
CDA InterCorp  
CEDRAT TECHNOLOGIES SA  
Coherent Aerospace & Defense  
Corning Incorporated  
Covar, LLC  
Cyan Systems, Inc.  
Cybel, LLC  
Delta Digital Video  
Eaton Corporation  
EIFys Inc.  
Emberion Oy  
G&H (Gooch & Housego)  
Gentec Electro-Optics Inc.  
Glenair Inc.  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Inrad Optics Inc.  
IRflex Corporation  
Kenko Tokina Co., Ltd.  
Kopin  
KT Photonics Inc.  
Kyocera International Inc.  
Leonardo UK Ltd.  
Le-Tehnika d.o.o.  
Lockheed Martin Santa Barbara Focalplane  
LYNRED-USA  
Materion Balzers Optics  
Meadowlark Optics Inc.  
MegaWatt Lasers Inc.  
MicroCircuit Laboratories LLC  
MYUTRON Inc.  
nanoplus America Inc.  
New Imaging Technologies  
New Scale Technologies, Inc.  
Nippon Control System Corp.  
North American Coating Labs.

Obsidian Sensors, Inc.  
OFS Fitel, LLC  
Optec S.p.A.  
Optiforms, Inc.  
OptiGrate - IPG Photonics  
Optogration Inc.  
OPTOMAN  
optoSiC/MERSEN  
OSI Optoelectronics, Inc.  
OZ Optics Ltd.  
Photon Etc. Inc  
Photon Force Ltd.  
Photonic Cleaning Technologies  
PLX Inc.  
Precision Optical  
Precitech Inc.  
Princeton Infrared Technologies, Inc.  
Raptor Photonics Ltd.  
Reynard Corp.  
Riverhawk Co.  
Rocky Mountain Instrument Co.  
RPMC Lasers, Inc.  
SCD USA Infrared, LLC  
Senseker Engineering Inc.  
Sensors Unlimited, an RTX Company  
Sheaumann Laser, Inc.  
SkyWater Technology  
Specim Spectral Imaging Ltd.  
SRI International  
SWIR Vision Systems  
Syntec Optics  
Teledyne Imaging  
Torrent Photonics LLC  
UltraFast Innovations GmbH  
Umicore Optical Materials USA, Inc.  
Universal Photonics, Inc.  
Vital Optics Technology Co., Ltd.  
Wavefront Research, Inc.  
Wooriro Co., Ltd.

## Detectors, Sensors

603 OPTX a Micro-LAM brand  
Advanced Scientific Concepts, LLC  
Advanced Technical Ceramics Company dba AdTech Ceramics  
AGM Container Controls Inc.  
AIM INFRAROT-MODULE GmbH  
Analog Modules, Inc.  
Attollo Engineering LLC  
BAE Systems Sensor Solutions  
BaySpec, Inc.  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
CDA InterCorp  
CEDRAT TECHNOLOGIES SA  
Cyan Systems, Inc.  
Eaton Corporation  
EIFys Inc.  
Emberion Oy  
Gentec Electro-Optics Inc.  
Gigahertz-Optik Inc.  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Hinallea Imaging  
IRflex Corporation  
Kenko Tokina Co., Ltd.  
Kopin  
KT Photonics Inc.  
Kyocera International Inc.  
Leonardo UK Ltd.  
Le-Tehnika d.o.o.  
Lockheed Martin Santa Barbara Focalplane

# PRODUCT CATEGORY

Materion Balzers Optics  
New Imaging Technologies  
NKT Photonics Inc.  
Obsidian Sensors, Inc.  
OFS Fitel, LLC  
Optiforms, Inc.  
Optogration Inc.  
OSI Optoelectronics, Inc.  
OZ Optics Ltd.  
Photon Etc. Inc.  
Photon Force Ltd.  
PLX Inc.  
Princeton Infrared Technologies, Inc.  
Raptor Photonics Ltd.  
SCD USA Infrared, LLC  
Senseker Engineering Inc.  
Sensors Unlimited, an RTX Company  
Sheaumann Laser, Inc.  
Sierra-Olympia Technologies, Inc.  
SkyWater Technology  
Specim Spectral Imaging Ltd.  
Spectral Evolution, Inc.  
SRI International  
Sunpower, Inc.  
Syntec Optics  
Teledyne Imaging  
Torrent Photonics LLC  
Videology Industrial-Grade Cameras, an inTEST Co.  
Wooriro Co., Ltd.

## Displays

Kopin  
MOXTEK Inc  
Displays: Consumer, Information, Entertainment  
AccuCoat Inc.  
Attollo Engineering LLC  
Axiom Optics  
Glenair Inc.  
Kopin  
MOXTEK Inc  
North American Coating Labs.  
Reynard Corp.  
Syntec Optics

## Distributor, Reseller, Integrator

Sierra-Olympia Technologies, Inc.  
Universal Photonics, Inc.

## Earth Sciences, Environmental Monitoring, Climate

Archer OpTx Inc.  
Avantes, Inc.  
Coherent Aerospace & Defense  
Corning Incorporated  
Gigahertz-Optik Inc.  
Headwall Photonics Inc.  
Hinea Imaging  
IRflex Corporation  
Iridian Spectral Technologies Ltd.  
nanoplus America Inc.  
Optec S.p.A.  
Optogration Inc.  
optoSiC/MERSEN  
OZ Optics Ltd.  
Sensors Unlimited, an RTX Company  
Sierra-Olympia Technologies, Inc.  
Specim Spectral Imaging Ltd.  
Spectral Evolution, Inc.  
Sunpower, Inc.

## Electrical/Signal Analysis Equipment

Nippon Control System Corp.

## Electronic Components

Analog Modules, Inc.  
CEDRAT TECHNOLOGIES SA  
ElFys Inc.  
Gigahertz-Optik Inc.  
Glenair Inc.  
OSI Optoelectronics, Inc.  
Senseker Engineering Inc.

## Electronic, Digital Imaging

Advanced Scientific Concepts, LLC  
AGM Container Controls Inc.  
Headwall Photonics Inc.  
IO Industries, Inc.  
Kyocera International Inc.  
OSI Optoelectronics, Inc.  
Senseker Engineering Inc.  
Sierra-Olympia Technologies, Inc.  
Videology Industrial-Grade Cameras, an inTEST Co.

## Emerging Photonics Technologies

Eaton Corporation  
ElFys Inc.  
ficonTEC Service GmbH  
TeraXion Inc.  
Tower Semiconductor USA Inc.

## Fiber Optics and Accessories

Analog Modules, Inc.  
BaySpec, Inc.  
Brimrose Corp. of America  
G&H (Gooch & Housego)  
IRflex Corporation  
Kopin  
Leonardo UK Ltd.  
NKT Photonics Inc.  
NYFORS  
OFS Fitel, LLC  
OPTOMAN  
optoSiC/MERSEN  
OZ Optics Ltd.  
Photonic Cleaning Technologies  
Reynard Corp.  
Spectral Evolution, Inc.  
TeraXion Inc.

## Industrial Sensing and Measurement

American Infrared Solutions, LLC  
attocube systems Inc.  
Axiom Optics  
Brimrose Corp. of America  
CDA InterCorp  
Chroma Technology Corp.  
Cincinnati Sub-Zero Products  
Corning Incorporated  
Eaton Corporation  
ElFys Inc.  
Emberion Oy  
GAMDAN Optics  
Gigahertz-Optik Inc.  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Hinea Imaging  
Inrad Optics Inc.  
IRflex Corporation  
KT Photonics Inc.  
nanoplus America Inc.  
New Imaging Technologies  
NiPro Optics, Inc.  
Obsidian Sensors, Inc.  
OFS Fitel, LLC

OSI Optoelectronics, Inc.  
Photon Etc. Inc.  
PLX Inc.  
Princeton Infrared Technologies, Inc.  
Riverhawk Co.  
RPMC Lasers, Inc.  
SCD USA Infrared, LLC  
Senseker Engineering Inc.  
Sensors Unlimited, an RTX Company  
Sierra-Olympia Technologies, Inc.  
Specim Spectral Imaging Ltd.  
Spectral Evolution, Inc.  
SWIR Vision Systems  
Syntec Optics  
Torrent Photonics LLC  
UltraFast Innovations GmbH  
Vital Optics Technology Co., Ltd.  
Zaber Technologies Inc.

## Information Processing and Computing

Cybel, LLC  
Photon Force Ltd.  
Laser Components and Accessories  
Active Optical Systems LLC  
Advanced Technical Ceramics Company dba AdTech Ceramics  
Alpine Research Optics  
Analog Modules, Inc.  
Avantier Inc.  
Brimrose Corp. of America  
Chroma Technology Corp.  
Coherent Aerospace & Defense  
Cybel, LLC  
G&H (Gooch & Housego)  
GAMDAN Optics  
Gentec Electro-Optics Inc.  
Gigahertz-Optik Inc.  
Infinite Optics Inc.  
IRflex Corporation  
KT Photonics Inc.  
LaCroix Precision Optics  
MegaWatt Lasers Inc.  
New Scale Technologies, Inc.  
NKT Photonics Inc.  
OFS Fitel, LLC  
OptiGrate - IPG Photonics  
optoSiC/MERSEN  
OZ Optics Ltd.  
PHASICS Corp.  
Photonic Cleaning Technologies  
PLX Inc.  
Reynard Corp.  
Riverhawk Co.  
RPMC Lasers, Inc.  
Vincent Associates  
Vital Optics Technology Co., Ltd.

## Laser Industry

Active Optical Systems LLC  
Analog Modules, Inc.  
Archer OpTx Inc.  
Attollo Engineering LLC  
Avantier Inc.  
Buhler Inc.  
Coherent Aerospace & Defense  
Cybel, LLC  
GAMDAN Optics  
Gentec Electro-Optics Inc.  
Kyocera International Inc.  
MegaWatt Lasers Inc.  
New Imaging Technologies  
NiPro Optics, Inc.  
NKT Photonics Inc.  
OptiGrate - IPG Photonics  
Optogration Inc.

OPTOMAN  
optoSiC/MERSEN  
PHASICS Corp.  
Photonic Cleaning Technologies  
PLX Inc.  
RPMC Lasers, Inc.  
Sheaumann Laser, Inc.  
SWIR Vision Systems  
TeraXion Inc.  
UltraFast Innovations GmbH  
Valley Design Corp.  
Vincent Associates  
Vital Optics Technology Co., Ltd.

## Lasers and Systems

Axiom Optics  
Cybel, LLC  
Hamamatsu Corp.  
MegaWatt Lasers Inc.  
nanoplus America Inc.  
NKT Photonics Inc.  
OFS Fitel, LLC  
OptiGrate - IPG Photonics  
Optogration Inc.  
OSI Optoelectronics, Inc.  
OZ Optics Ltd.  
Riverhawk Co.  
RPMC Lasers, Inc.  
Sunpower, Inc.  
TeraXion Inc.

## LED, OLED, non-laser Light Sources

Chroma Technology Corp.  
ElFys Inc.  
Hamamatsu Corp.  
Kopin  
nanoplus America Inc.  
Optical Support Inc.  
OZ Optics Ltd.  
UltraFast Innovations GmbH

## Lighting and Illumination

Avantes, Inc.  
Infinite Optics Inc.  
Precitech Inc.  
Reynard Corp.

## Lithographic Equipment

Optical Support Inc.

## Machine Vision, Factory Automation

AccuCoat Inc.  
Active Optical Systems LLC  
Attollo Engineering LLC  
Brimrose Corp. of America  
Buhler Inc.  
CEDRAT TECHNOLOGIES SA  
Chroma Technology Corp.  
Covar, LLC  
Emberion Oy  
ficonTEC Service GmbH  
Headwall Photonics Inc.  
Hinea Imaging  
Kopin  
LYNRED-USA  
MYUTRON Inc.  
New Imaging Technologies  
New Scale Technologies, Inc.  
Optiforms, Inc.  
OptoTech Optical Machinery Inc.  
OSI Optoelectronics, Inc.  
Photonic Cleaning Technologies  
Princeton Infrared Technologies, Inc.  
Reynard Corp.  
SCD USA Infrared, LLC

Sensors Unlimited, an RTX Company  
Specim Spectral Imaging Ltd.  
SWIR Vision Systems  
Vincent Associates  
Wavefront Research, Inc.

## Materials Processing, Lasers in Manufacturing

Analog Modules, Inc.  
attocube systems Inc.  
GAMDAN Optics  
Gentec Electro-Optics Inc.  
MegaWatt Lasers Inc.  
NiPro Optics, Inc.  
OZ Optics Ltd.  
Rocky Mountain Instrument Co.  
RPMC Lasers, Inc.  
TeraXion Inc.  
Valley Design Corp.  
Vital Optics Technology Co., Ltd.

## Materials, Abrasives, Chemicals

Advanced Technical Ceramics Company dba AdTech Ceramics  
ALLVAR  
Buhler Inc.  
GAMDAN Optics  
Infinite Optics Inc.  
Photonic Cleaning Technologies  
Universal Photonics, Inc.  
Valley Design Corp.

## Microscopes

attocube systems Inc.  
BAE Systems Sensor Solutions  
Bodkin Design & Engineering, LLC  
Hinea Imaging  
Meadowlark Optics Inc.  
NYFORS  
PHASICS Corp.  
Princeton Infrared Technologies, Inc.  
Videology Industrial-Grade Cameras, an inTEST Co.  
Vincent Associates  
Zaber Technologies Inc.

## Microtechnology

New Scale Technologies, Inc.  
PLX Inc.

## Misc consumables and equipment

ficonTEC Service GmbH

## Nanotechnology products

CEDRAT TECHNOLOGIES SA  
Emberion Oy  
MOXTEK Inc

## Optical Coatings, Thin Films

AccuCoat Inc.  
Alpine Research Optics  
Andover Corporation  
Archer OpTx Inc.  
Avantier Inc.  
Buhler Inc.  
Chroma Technology Corp.  
Coherent Aerospace & Defense  
Corning Incorporated  
DynaVac  
Hardin Optical Co.

Infinite Optics Inc.  
Inrad Optics Inc.  
Iridian Spectral Technologies Ltd.  
LaCroix Precision Optics  
Materion Balzers Optics  
NiPro Optics, Inc  
North American Coating Labs.  
Optiforms, Inc.  
OPTOMAN  
OptoTech Optical Machinery Inc.  
Precision Optical Reynard Corp.  
Rocky Mountain Instrument Co.  
Teledyne Imaging  
Torrent Photonics LLC  
UltraFast Innovations GmbH  
Umicore Optical Materials USA, Inc.  
Vital Optics Technology Co., Ltd.

### Optical Communication, Networking Devices

TeraXion Inc.  
Wooriro Co., Ltd.

### Optical Components - Filters, Mirrors, Other

AccuCoat Inc.  
Active Optical Systems LLC  
ALLVAR  
Alpine Research Optics  
Andover Corporation  
Archer OpTx Inc.  
Avantier Inc.  
Buhler Inc.  
Chroma Technology Corp.  
Corning Incorporated  
DynaVac  
G&H (Gooch & Housego)  
Gentec Electro-Optics Inc.  
Hardin Optical Co.  
Headwall Photonics Inc.  
Infinite Optics Inc.  
Inrad Optics Inc.  
Iridian Spectral Technologies Ltd.  
Kyocera International Inc.  
LaCroix Precision Optics  
Meadowlark Optics Inc.  
MegaWatt Lasers Inc.  
MOXTEK Inc  
NiPro Optics, Inc  
Optec S.p.A.  
Optiforms, Inc.  
OptiGrate - IPG Photonics  
OPTOMAN  
optoSiC/MERSEN  
Precision Optical  
Reynard Corp.  
Rocky Mountain Instrument Co.  
Syntec Optics  
Torrent Photonics LLC  
UltraFast Innovations GmbH  
Valley Design Corp.  
Vital Optics Technology Co., Ltd.

### Optical Components - Lenses

603 OPTX a Micro-LAM brand  
AccuCoat Inc.  
Alpine Research Optics  
American Ctr. for Optics Manufacturing, Inc.  
Archer OpTx Inc.  
Avantier Inc.

Coherent Aerospace & Defense  
Corning Incorporated  
Criterion Instrument  
G&H (Gooch & Housego)  
Hardin Optical Co.  
Infinite Optics Inc.  
Inrad Optics Inc.  
Kyocera International Inc.  
LaCroix Precision Optics  
MYUTRON Inc.  
OFS Fitel, LLC  
Optec S.p.A.  
OPTOMAN  
optoSiC/MERSEN  
Reynard Corp.  
Rocky Mountain Instrument Co.  
Syntec Optics  
Torrent Photonics LLC  
Umicore Optical Materials USA, Inc.  
Universal Photonics, Inc.  
Valley Design Corp.  
Vital Optics Technology Co., Ltd.

### Optical Design and Engineering

AccuCoat Inc.  
Advanced Scientific Concepts, LLC  
ALLVAR  
Andover Corporation  
Archer OpTx Inc.  
Attollo Engineering LLC  
Avantier Inc.  
Chroma Technology Corp.  
Coherent Aerospace & Defense  
Corning Incorporated  
G&H (Gooch & Housego)  
Kenko Tokina Co., Ltd.  
Kopin  
LaCroix Precision Optics  
MegaWatt Lasers Inc.  
NiPro Optics, Inc  
NKT Photonics Inc.  
Optec S.p.A.  
Optical Support Inc.  
optoSiC/MERSEN  
PHASICS Corp.  
PLX Inc.  
Raptor Photonics Ltd.  
Riverhawk Co.  
Rocky Mountain Instrument Co.  
SWIR Vision Systems  
Syntec Optics  
Teledyne Imaging  
Torrent Photonics LLC  
Tower Semiconductor USA Inc.  
Vincent Associates

### Optical Fabrication Equipment

ALLVAR  
American Ctr. for Optics Manufacturing, Inc.  
Andover Corporation  
Buhler Inc.  
New Imaging Technologies  
NiPro Optics, Inc  
OptiPro Systems, LLC  
optoSiC/MERSEN  
OptoTech Optical Machinery Inc.  
Photonic Cleaning Technologies  
Precitech Inc.  
Universal Photonics, Inc.

### Optics Manufacturing

603 OPTX a Micro-LAM brand  
AccuCoat Inc.  
ALLVAR

Andover Corporation  
Archer OpTx Inc.  
Avantier Inc.  
Buhler Inc.  
Coherent Aerospace & Defense  
ficonTEC Service GmbH  
Hardin Optical Co.  
Infinite Optics Inc.  
Inrad Optics Inc.  
Kenko Tokina Co., Ltd.  
LaCroix Precision Optics  
Leonardo UK Ltd.  
MegaWatt Lasers Inc.  
MicroCircuit Laboratories LLC  
MOXTEK Inc  
NKT Photonics Inc.  
North American Coating Labs.  
OFS Fitel, LLC  
Optec S.p.A.  
Optical Support Inc.  
OptiGrate - IPG Photonics  
OptiPro Systems, LLC  
OPTOMAN  
optoSiC/MERSEN  
OptoTech Optical Machinery Inc.  
PHASICS Corp.  
Photonic Cleaning Technologies  
PLX Inc.  
Precision Optical  
Precitech Inc.  
Reynard Corp.  
Rocky Mountain Instrument Co.  
Torrent Photonics LLC  
Umicore Optical Materials USA, Inc.  
Universal Photonics, Inc.  
Valley Design Corp.  
Vital Optics Technology Co., Ltd.  
Zaber Technologies Inc.

### Optomechanical Components, Devices

ALLVAR  
New Scale Technologies, Inc.  
Optical Support Inc.  
Precision Optical  
Rocky Mountain Instrument Co.  
Valley Design Corp.  
Vincent Associates

### Photonic Integration

Eaton Corporation  
ficonTEC Service GmbH  
MicroCircuit Laboratories LLC  
NKT Photonics Inc.  
Raptor Photonics Ltd.  
TeraXion Inc.

### Positioning Equipment, Motion Control and Accessories

attocube systems Inc.  
Axiom Optics  
CDA InterCorp  
CEDRAT TECHNOLOGIES SA  
Criterion Instrument  
New Scale Technologies, Inc.  
Precitech Inc.  
Zaber Technologies Inc.

### Publishers, Associations, Clusters, Societies

Aerospace & Defense Technology  
American Ctr. for Optics Manufacturing, Inc.

Semiconductor Defense Security  
Advanced Technical Ceramics Company dba AdTech Ceramics  
Avantes, Inc.  
Coherent Aerospace & Defense  
Inrad Optics Inc.  
Kopin  
Materion Balzers Optics  
MicroCircuit Laboratories LLC  
Precision Optical  
Raptor Photonics Ltd.  
Riverhawk Co.  
Senseker Engineering Inc.  
SkyWater Technology  
Valley Design Corp.

### Semiconductor Manufacturing

Buhler Inc.  
ELFys Inc.  
FormFactor, Inc.  
MicroCircuit Laboratories LLC  
New Imaging Technologies  
Optiforms, Inc.  
Riverhawk Co.  
SkyWater Technology  
Sunpower, Inc.  
Tower Semiconductor USA Inc.  
Valley Design Corp.

### Software

Active Optical Systems LLC  
Covar, LLC  
MicroCircuit Laboratories LLC  
New Imaging Technologies  
Spectral Evolution, Inc.  
Solar & Alternative Energy  
AGM Container Controls Inc.  
Meadowlark Optics Inc.  
Optiforms, Inc.  
Spectral Evolution, Inc.  
Solar and Alternative Energy Technology  
Syntec Optics

### Spectroscopy Devices and Equipment

Avantes, Inc.  
Axiom Optics  
BAE Systems Sensor Solutions  
BaySpec, Inc.  
Bodkin Design & Engineering, LLC  
Brimrose Corp. of America  
Corning Incorporated  
Hamamatsu Corp.  
Headwall Photonics Inc.  
Hinea Imaging  
Materion Balzers Optics  
nanoplus America Inc.  
OptiGrate - IPG Photonics  
Photon Force Ltd.  
Raptor Photonics Ltd.  
Specim Spectral Imaging Ltd.  
Spectral Evolution, Inc.  
Sunpower, Inc.  
Teledyne Imaging  
Vincent Associates

### Structural and Infrastructure Sensing

BAE Systems Sensor Solutions  
BaySpec, Inc.  
OZ Optics Ltd.

Precision Optical  
TeraXion Inc.

### Test and Measurement, Metrology

AGM Container Controls Inc.  
American Ctr. for Optics Manufacturing, Inc.  
Analog Modules, Inc.  
Avantes, Inc.  
Axiom Optics  
Cincinnati Sub-Zero Products  
Emberion Oy  
FormFactor, Inc.  
Gentec Electro-Optics Inc.  
Gigahertz-Optik Inc.  
Inrad Optics Inc.  
Meadowlark Optics Inc.  
New Imaging Technologies  
NiPro Optics, Inc  
Optical Support Inc.  
OptiPro Systems, LLC  
OptoTech Optical Machinery Inc.  
PHASICS Corp.  
Photonic Cleaning Technologies  
Precision Optical  
Precitech Inc.  
Riverhawk Co.  
UltraFast Innovations GmbH

### Vacuum, Cooling, Gas Handling Equipment

AIM INFRAROT-MODULE GmbH  
Buhler Inc.  
Eaton Corporation  
FormFactor, Inc.  
Kyocera International Inc.  
NiPro Optics, Inc  
PHASICS Corp.  
Sunpower, Inc.  
Universal Photonics, Inc.

### Vehicle Sensing and Control

Advanced Scientific Concepts, LLC  
Advanced Technical Ceramics Company dba AdTech Ceramics  
Buhler Inc.  
Emberion Oy  
Gigahertz-Optik Inc.  
Iridian Spectral Technologies Ltd.  
Kyocera International Inc.  
Materion Balzers Optics  
NiPro Optics, Inc  
Obsidian Sensors, Inc.  
Optogration Inc.  
OSI Optoelectronics, Inc.  
Raptor Photonics Ltd.  
TeraXion Inc.  
Umicore Optical Materials USA, Inc.  
Universal Photonics, Inc.  
Wavefront Research, Inc.

# SPIE.

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3L Systems  
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Access Laser Co.  
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Acqubit  
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AdTech Ceramics  
AdTech Photonics, Inc.  
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Advance Reproductions Corp.  
Advanced Fiber Resources (Zhuhai) Ltd.  
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Aeluma, Inc.  
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Aerotech, Inc.  
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Amplitude Laser Inc.  
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Ansys Canada Ltd.  
Ansys, Inc.  
A-One Technology Ltd.  
AP Technologies Ltd.  
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asphericon  
asphericon GmbH  
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Avantier Inc.  
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Axiom Optics  
Ayase America Inc.  
Ball Aerospace  
BaySpec, Inc.  
Beamtech Optronics Co., Ltd.  
Beijing RealLight Technology Co., Ltd.  
Beijing TRANS Manufacture and Trade Co., Ltd.  
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Berkshire Photonics  
Bionic France SARRL  
BluGlass, Ltd.  
Boston Electronics Corp.  
Boston Micromachines Corp.  
Boulder Nonlinear Systems  
Boxin Photoelectric Co., Ltd.  
Brandywine Photonics, LLC  
Brewer Science, Inc.  
Brightlaser Ltd.  
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CMC Microsystems  
Coastal Connections  
Collimated Holes, Inc.  
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DataRay Inc.  
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Deltronic Crystal Industries, Inc.  
DeUve Photonics  
DFM A/S  
Dino-Lite Digital Microscope  
Dioptic GmbH  
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Diverse Optics Inc.
- DRS Daylight Solutions  
Dynasil Fused Silica  
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Edmund Optics Inc.  
Edmund Optics UK Ltd.  
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ELAS Technologies Investment GmbH  
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Emberion Oy  
Empire West, Inc.  
Energetiq Technology, Inc.  
EPIX, Inc.  
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Evaporated Coatings, Inc.  
Everix, Inc.  
Exail SAS  
EXALOS AG  
ExOptronics, Inc.  
FastMicro B.V.  
FEMTOprint SA  
Fiber Optic Ctr., Inc.  
FiberBridge Photonics GmbH  
Fibercore Ltd.  
Fiberoptic Systems, Inc.  
Fibertech Optica Inc.  
First Light Imaging S.A.S.  
FISBA AG  
FJW Optical Systems, Inc.  
FlexEnable Technology Ltd.  
Fluence sp. z o.o  
Focuslight Technologies, Inc.  
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Fotofab, LLC  
Frankfurt Laser Co.  
Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP  
Fraunhofer-Institut für Photonische Mikrosysteme IPMS  
Freedom Photonics, LLC  
Fresnel Technologies Inc.
- Fujian Hitronics Technologies Inc.  
Fuzhou Alpha Optics Co., Ltd.  
Fuzhou Intpho Technology Co., Ltd.  
Fuzhou WTS Photonics Co., Ltd.  
G&H Group  
G5 Infrared, LLC  
GAMDAN Optics  
Gamma Scientific  
Gauss Labs  
GenSys Inc  
Gentec Electro-Optics Inc.  
Glenair, Inc.  
Global Superabrasives, LLC  
Greenlight Optics, LLC  
Grintech GmbH  
Gudeng, Inc.  
Guernsey Coating Labs., Inc.  
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GW Laser Technology LLC  
Haas Laser Technologies, Inc.  
Hamamatsu Corp.  
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HC Photonics Corp.  
Headwall Photonics, Inc.  
Heidelberg Instruments Inc.  
Heidelberg Instruments Mikrotechnik GmbH  
HEIDENHAIN Corp.  
Hellma Materials GmbH  
Heraeus Quartz North America LLC  
HighRI Optics, Inc.  
Hinds Instruments, Inc.  
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Hofstadter Analytical Services, LLC  
HOLO/OR Ltd.  
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HORIBA Scientific  
HOYA Corp. USA  
Huanic Corp.  
Hyperion Optics USA Inc.  
HySpex, Norsk Elektro Optikk AS  
IDEX Health & Science, LLC  
IDEX Optical Technologies  
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- Imagine Optic SA  
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IMRA America, Inc.  
IMT Precision on Glass  
Incom, Inc.  
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Infrared Materials, Inc.  
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Innolume GmbH  
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International Defense & Security Solutions, Inc.  
InterOptics, LLC  
Intlvac Thin Film Intpho (Fujian) Technology Co., Ltd.  
IO Industries, Inc.  
I-Photonics UAB  
iPronics Programmable Photonics, S.L.  
IRD Glass  
IRflex Corporation  
Irisiome Solutions  
IRnova AB  
J.A. Woollam Co., Inc.  
Janos Technology, LLC  
JENOPTIK Optical Systems GmbH  
Luvantix SSCP  
Luxel Corp.  
Luxottica S.r.l.  
Machinix Ltd.  
Mad City Labs., Inc.  
Mahr  
Marina Photonics, Inc.  
Market Tech, Inc.  
Materion Balzers Optics  
Maxphotonics Co., Ltd.  
Meadowlark Optics, Inc.  
MEETOPTICS  
MegaWatt Lasers, Inc.  
memQ Inc.  
Meopta - optika, s.r.o.  
MES SOLUTIONS DOO  
Metoree  
MICLEDI microdisplays  
Micro Laser Systems, Inc.
- Micro-LAM, Inc.  
MICRONIX USA, LLC  
MIKROP AG  
Mikro-Tasarim Elektronik San. ve Tic. A.S.  
Milindex, Inc.  
Mindrum Precision, Inc.  
Minus K Technology Inc.  
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MPA Crystal Corp.  
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nanosystec Inc.  
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National Institute of Standards and Technology  
National Scientific Optics, Inc.  
Natsume Optical Corp.  
Naval Surface Warfare Ctr. Dahlgren Div.  
Navitar Inc.  
Necsel IP, Inc.  
New Imaging Technologies  
New Source Technology, LLC  
New York Photonics  
NexDome Observatories Inc.  
NextCorps  
NIL Technology ApS



# Moving technology to market - together.



NKT Photonics A/S  
 NKT Photonics Inc.  
 nLIGHT, Inc.  
 NLM Photonics  
 NoIR InSight  
 NorPix, Inc.  
 North American Coating Labs.  
 Northrop Grumman Cutting Edge  
 Optronics  
 Novanta, Inc.  
 Novotech, Inc.  
 NP Photonics, Inc.  
 NTFL  
 NuFlare Technology, Inc.  
 NUVIEW, Inc.  
 Nüvü Cameras Inc.  
 O/E Land Inc.  
 Obducat Technologies AB  
 Ocean Insight B.V.  
 Ocean Optics  
 Octave Photonics LLC  
 OEwaves, Inc.  
 Ohara Corp.  
 OHTAMA Co., Ltd.  
 Omega Optical Holdings, LLC  
 Omicron Laserage Laserprodukte GmbH  
 Ontar Corporation  
 Optical Engines, Inc.  
 Optical Filter Source, LLC  
 Optical Support, Inc.  
 Opticho Inc., Ltd.  
 Optics Technology, Inc.  
 Optics Valley  
 Optiforms, Inc.  
 OptiGrate - IPG Photonics  
 Optikos Corp.

Optikron GmbH  
 Optimax Systems, Inc.  
 OptiPro Systems, LLC  
 OptiPulse, Inc.  
 Optiwave Systems Inc.  
 Opto-Alignment Technology, Inc.  
 Optogama UAB  
 Optogration Inc.  
 Opto-Line International, Inc.  
 OPTOMAN  
 Optonetic LLC  
 Optronique  
 Optoprofiler LLC  
 OptoSigma Corp.  
 OptoSigma Europe S.A.S.  
 OptoTech  
 Optikmaschinen GmbH  
 Optotune Switzerland AG  
 optX Imaging Systems  
 OSELA Inc.  
 OSI Optoelectronics, Inc.  
 Oxsius SA  
 OZ Optics Ltd.  
 Pacific Lasertec, LLC  
 Palomar Technologies, Inc.  
 Pantec Biosolutions AG  
 Park Optics  
 Pavilion Integration Corp.  
 Pecchioli Research Srl  
 Perkins Precision Developments, LLC  
 PFG Precision Optics, Inc.  
 PHASICS Corp.  
 PHIX Photonics Assembly  
 Photon Engineering LLC

Photon Etc. Inc  
 Photon Force Ltd.  
 PHOTON LINES Ltd.  
 Photonic Cleaning Technologies  
 Photonics Foundry GmbH  
 Photonics Industries International, Inc.  
 Photonics Industry & Technology Development Association  
 Photonics Media/Laurin Publishing  
 Photonics Technologies Ltd.  
 PHOTONIS Netherlands B.V.  
 Photonis Scientific, Inc.  
 PhotoSound Technologies, Inc.  
 PI (Physik Instrumente) L.P.  
 PIEZOCONCEPT  
 PIKE Technologies  
 Pixel Photonics GmbH  
 Planar JSC  
 PlanOpSim  
 PLC Industries Pte Ltd.  
 POG Precision Optics Gera  
 poLight ASA  
 Power Technology, Inc.  
 PowerPhotonic Inc.  
 PowerPhotonic Ltd  
 Precision Glass & Optics  
 Precision Optical  
 Precitech Inc.  
 Princeton Infrared Technologies, Inc.  
 Prior Scientific Inc.  
 Prospective Instruments LK OG  
 Pure Photonics  
 Pureon Inc.  
 PWY Service GmbH & Co. KG

QDI Systems B.V.  
 QED Optics  
 QED Technologies, Inc.  
 Qingdao Lasence Co., Ltd.  
 QPC Lasers Inc.  
 Qual Diamond Hi-Tech  
 QuantCAD LLC  
 QuantiC  
 Quartus Engineering Inc.  
 Qunnect, Inc.  
 QZabre Ltd.  
 R Specialty Optical Fibers LLC  
 Radiant Vision Systems, LLC  
 Raicol Crystals Ltd.  
 Rainbow Research Optics, Inc.  
 Raptor Photonics Ltd.  
 Raysung Photonics Inc.  
 Redondo Optics, Inc.  
 RedWave Labs Ltd.  
 Reynard Corp.  
 RICOR USA, Inc.  
 Rigaku Innovative Technologies, Inc.  
 Riverhawk Co.  
 Rochester Precision Optics, LLC  
 Rocky Mountain Instrument Co.  
 Ruda Optical  
 Sacher Lasertechnik GmbH  
 Safran Optics 1  
 Santeq USA Corp.  
 Satisloh North America Inc.  
 SCANLAB America, Inc.  
 ScannerMAX  
 Schäfter + Kirchhoff GmbH  
 Schneider Optical Machines Inc.  
 Schneider Optics, Inc.  
 SCHOTT North America, Inc.  
 SCI Engineered Materials  
 scia Systems GmbH  
 Science and Technology Facilities Council  
 Seattle Photonics Associates LLC  
 Seiwa Optical America Inc.  
 SemiNex Corp.  
 Sensalight Technologies GmbH  
 Sensir Inc.

SFC Energy B.V.  
 Shanghai Optics Inc.  
 Sheaumann Laser, Inc.  
 SiCART (Zhuhai) Technology Co., Ltd.  
 Sierra Precision Optics  
 Sierra-Olympia Technologies, Inc.  
 SILIOS Technologies  
 Sill Optics GmbH  
 Siskiyou Corporation  
 SmarAct Inc.  
 Somos IWT  
 son-x GmbH  
 Spectrogon AB  
 Spectrogon UK Ltd.  
 Spectrogon US, Inc.  
 Spectrolight Inc.  
 Spectrum Scientific, Inc.  
 Spica Technologies, Inc.  
 SPO Precision Optics  
 SPU System Inc.  
 SRI International  
 Stanford Computer Optics, Inc.  
 Sunny Technology  
 Superlum Diodes Ltd.  
 Surface Optics Corp.  
 Swabian Instruments GmbH  
 Swabian Instruments USA Inc.  
 SWIR Vision Systems  
 Sydor Optics, Inc.  
 Synopsys GmbH  
 Synopsys, Inc.  
 TAU Systems, Inc.

Taylor Hobson  
 Technica Optical Components, LLC  
 Technical Manufacturing Corp.  
 Tecnisco Ltd.  
 TelAztec LLC  
 Teledyne Imaging  
 TeraXion Inc.  
 The Aerospace Corp.  
 The Institute of Optics, Univ. of Rochester  
 Thermo Fisher Scientific Inc.  
 ThinFilms, Inc.  
 Thorlabs, Inc.  
 TLC International  
 World Headquarters  
 TOPTICA Photonics AG  
 TOPTICA Photonics, Inc.  
 Torrent Photonics  
 Tower Optical Corp.  
 TriLite Technologies GmbH  
 TRUMPF Inc.  
 TRUMPF Scientific Lasers GmbH + Co. KG  
 Tucsen Photonics Co., Ltd.  
 Turning Point Lasers Corporation  
 TwinStar Optics, Coatings & Crystals, Inc.

Twoptics Systems Design SL  
 Tydex  
 Umicore Optical Materials USA, Inc.  
 UNI Optics Co., Ltd.  
 Universal Photonics Inc.  
 Valtech Corp.  
 Vermont Photonics Technologies Corp.  
 Vertilite Inc.  
 Vescent Photonics Inc.  
 VIALUX GmbH  
 ViaSat, Inc.  
 Viavi Solutions Inc.  
 Video Scope International, Ltd.  
 Video Systems Srl  
 Videology Industrial-Grade Cameras, an inTEST Co.  
 Vincent Associates  
 VisiMax Technologies, Inc.  
 Vital Optics Technology Co., Ltd.  
 V-Optics SAS  
 Vortex Optical Coatings Ltd.  
 Walk Laser Optics, LLC  
 Wasatch Photonics, Inc.  
 Wavelength Electronics, Inc.

Wavelength Opto-Electronic (S) Pte. Ltd.  
 WEINERT Fiber Optics, Inc.  
 WINHO Optical Mfg. Co., Ltd.  
 World Star Tech  
 Wyant College of Optical Sciences  
 Wyse Light  
 Wyvern  
 Xcimer Energy, Inc.  
 XIMEA Corp.  
 XONOX Technology Inc.  
 Youopto Technology Co., Ltd.  
 YSL Photonics  
 Z & Z Optoelectronics Tech. Co., Ltd.  
 Zaber Technologies Inc.  
 ZAZA, Inc.  
 Zemax, LLC  
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 Zhongshan Meisu Technology Co., Ltd.  
 Z-Optics Co., Ltd.  
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SPIE Corporate Member list as of 1 March 2024

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## Acceptance of policies and registration conditions

The following policies and conditions apply to all SPIE events, both online and in person. As a condition of registration, you will be required to acknowledge and accept the SPIE policies and conditions contained herein.

SPIE has established a confidential reporting system for all SPIE event participants to raise concerns about possible unethical or inappropriate behavior within our community. When at an SPIE event, you may contact any SPIE staff with concerns. If you feel that you are in immediate danger, please dial the local emergency number for police intervention.

### Agreement to hold harmless

Attendee agrees to release and hold harmless SPIE from any and all claims, demands, and causes of action arising out of or relating to your participation in the event you are registering to participate in and use of any associated facilities or hotels.

### Be well agreement

You acknowledge that attending an event involves some risk of exposure to COVID-19 or other communicable diseases. You voluntarily assume this risk and agree not to hold SPIE or any of its affiliates liable for any illness you may contract. You also agree not to attend the event if you feel ill or have had recent exposure to a COVID-19 case.

SPIE will provide hand sanitizer locations and disposable face masks upon request.

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It is SPIE policy that all employees, volunteers, and participants are entitled to respectful treatment. Any form of bullying, discrimination, harassment, sexual or otherwise, is unacceptable and will not be tolerated. This policy applies to all locations and situations where SPIE business is conducted and to all SPIE-sponsored activities and events.

*Read complete policy:*

<https://spie.org/about-spie/the-society/policies-and-reporting>

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The SPIE Conferences app supports attendee-to-attendee messaging to facilitate professional networking among meeting participants. This feature should not be used to push high-volume solicitations, and messaging will be disabled for attendees who exceed reasonable use or are in violation of other SPIE event policies. Attendees should report inappropriate use via the app reporting feature. SPIE will also monitor for high-volume patterns suggesting improper use.

### SPIE Conferences app connect feature

The connect feature in the SPIE Conferences app is a personal networking tool that allows individuals to share their contact information with other attendees via their phones while using the SPIE app. This tool should not be used for systematic scanning of badges for managing sales leads. Inappropriate use is a violation of event policy.

### SPIE Conferences app lead retrieval feature

The lead retrieval feature in the SPIE Conferences app is a lead generation tool that allows attendees to share their contact information with SPIE exhibitors. Exhibitor representatives using the lead retrieval app may scan attendee badges in the exhibition or supporting company events after receiving permission from an attendee. It should not be used in the technical conference area. The lead retrieval feature will be disabled for exhibitor representatives who exceed reasonable use or are in violation of other SPIE event policies. Attendees should report inappropriate use by notifying staff or contacting support via the help link in the app.

### Attendee registration and admission policies

SPIE, or their officially designated event management, in their sole discretion, reserves the right to accept or decline an individual's registration for an event. Further, SPIE, or event management, reserves the right to prohibit entry of or to remove any individual whether registered or not, be they attendees, exhibitors, representatives, or vendors, whose conduct is not in keeping with the character and purpose of the event. Without limiting the foregoing, SPIE and event management reserve the right to remove or refuse entry to anyone who has registered or gained access under false pretenses, provided false information, or for any other reason whatsoever that they deem is cause under the circumstances.

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### Capture and use of a person's image

By registering for an SPIE event, you grant full permission to SPIE to capture, store, use, and/or reproduce your image or likeness, including incidental capture of any individuals in your household or workplace, by any audio and/or visual recording technique and create derivative works of these images and recordings in any SPIE media now known or later developed, for any legitimate SPIE purpose. By registering for an SPIE event, you waive any right to inspect or approve the use of the images or recordings or of any written copy. You also waive any right to royalties or other compensation arising from or related to the use of the images, recordings, or materials. By registering, you release, defend, indemnify, and hold harmless SPIE from and against any claims, damages, or liability arising from or related to the use of the images, recordings, or materials, including but not limited to claims of defamation, invasion of privacy, or rights of publicity or copyright infringement, or any misuse, distortion, blurring, alteration, optical illusion, or use in composite form that may occur or be produced in taking, processing, reduction, or production of the finished product, its publication or distribution.

### Code of conduct

SPIE is committed to providing a harassment- and discrimination-free experience for everyone at our events, an experience that embraces the richness of diversity where participants may exchange ideas, learn, network, and socialize in the company of colleagues in an environment of mutual respect.

*Read complete code:*

<https://spie.org/about-spie/the-society/policies-and-reporting>

### Event and course cancellation by SPIE

If for some unforeseen reason, SPIE should have to cancel a course or an entire event, processed registration fees for the canceled activity will be refunded to registrants. Registrants will be responsible for the cancellation of travel arrangements or housing reservations and the applicable fees.

### Family-friendly policy

**CONFERENCE EVENTS:** all conference technical and networking events require a badge for admission. Registered attendees may bring children with them if they have been issued a badge. Registration badges for children under 18 are free and available at the SPIE registration desk onsite. Children under 14 years of age must be accompanied by an adult at all times, and guardians are asked to help maintain a professional, disturbance-free conference environment.

**EXHIBITION HALL:** everyone who attends the exhibition must be registered and have a badge. Badges for children are free and available onsite at the registration desk. Children under 14 years of age must be accompanied by an adult at all times. Guardians are asked to help maintain a professional, disturbance-free exhibition environment. Children under 18 are not allowed in the exhibition area during exhibition move-in and move-out.

### Identification requirement

To verify registered participants and provide a measure of security, SPIE will ask attendees to present a government-issued photo identification at registration to collect registration materials. Individuals are not allowed to pick up badges for other attendees. Further, attendees may not have some other person participate in their place at any conference-related activity. Such other individuals will be required to register on their own behalf to participate.

For online events, SPIE requires individuals to register with their legal identity.

### Laser-pointer safety policy

SPIE events are subject to the applicable laser safety rules and regulations of the host location. SPIE supplies industry-standard Class 2 presentation laser pointers for all conference and other meeting rooms. For safety reasons, SPIE requests that presenters use provided laser pointers. The use of a personal laser pointer represents the user's acceptance of liability for any damage or injuries to the presenter or others.

### No smoking policy

Attendees will observe all non-smoking regulations that are publicly posted by the facilities used by the event.

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## Online commenting policy

SPIE moderates all comments posted in an online event. We encourage robust discussion, the exchange of scientific ideas, and the sharing of multiple, diverse perspectives. We expect the discussion to be consistent with the norms of scholarly research community interactions at events. Online event participants should report any comments or content that falls short of those community norms. We will remove comments, content, or people that are considered inappropriate by SPIE standards or that:

- are defamatory, libelous, obscene, indecent, abusive, or threatening to others
- infringe the copyright, trademark, or other rights of a third party
- upload viruses or are a cybersecurity hazard
- are off-topic or inappropriately commercial in nature
- are in violation of any applicable laws or regulations

## Payment policy

Registrations must be fully paid before access to the conference is allowed. SPIE accepts VISA, MasterCard, American Express, Discover, Diner's Club, checks, and wire transfers. Onsite registrations can also be paid with cash.

## Recording policy

**CONFERENCES AND POSTER SESSIONS:** audio and video recordings are prohibited without prior written consent of SPIE and the presenter. Consent forms are available at Speaker Check-in, SPIE Registration, or the Chair Services Desk. Individuals not complying with this policy will be asked to surrender their recording media and leave the conference room. Refusal to comply with such requests is grounds for expulsion from the event. Please see the SPIE code of conduct.

**COURSES:** audio and video recordings are prohibited without explicit permission from SPIE and the instructor. Individuals not complying with this policy will be asked to surrender their recording media and leave the classroom. Refusal to comply with such requests is grounds for expulsion from the event.

**EXHIBITION:** attendees may not record interviews on the exhibition floor nor record or photograph exhibitor booth displays and/or products without explicit permission from SPIE and on-site company representatives. Consent forms are available at Exhibitor Assistance. Individuals not complying with this policy will be asked to surrender their recording media and leave the exhibition hall. Refusal to comply with such requests is grounds for expulsion from the event.

## Unauthorized solicitation

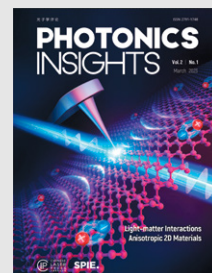
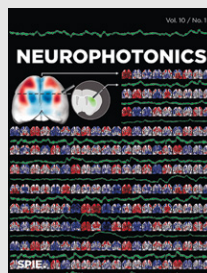
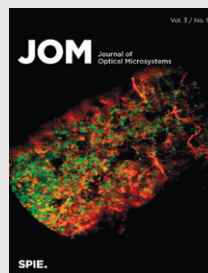
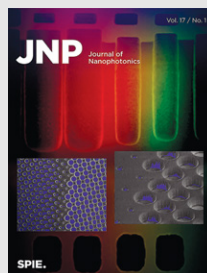
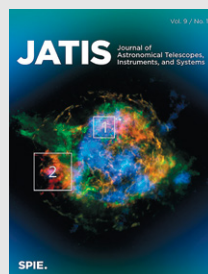
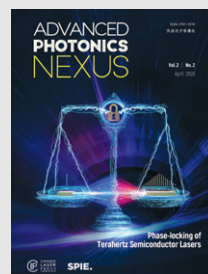
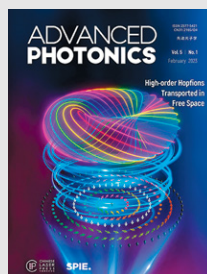
Unauthorized solicitation in the exhibition hall is prohibited. Any non-exhibiting organization observed to be distributing information or soliciting business in the aisles, or in another company's booth, will be asked to leave immediately.

## Unsecured items

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

## Wireless internet service

At most events, SPIE provides wireless access for attendees. Properly secure your computer before accessing the public wireless network. SPIE is not responsible for computer viruses or other kinds of computer damage.



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