EVENT
OVERVIEW

SPIE. PHOTONICS WEST

25–30 JANUARY 2025
THE MOSCONE CENTER | SAN FRANCISCO, CALIFORNIA, USA

SPIE. PHOTONICS WEST

THE WORLD'S PREMIER LASERS, BIOMEDICAL OPTICS AND BIOPHOTONIC TECHNOLOGIES, QUANTUM, AND OPTOELECTRONICS EVENT

The Moscone Center • San Francisco, California, USA

CONFERENCES AND COURSES

25–30 January 2025

FOUR EXHIBITIONS

BiOS Expo: 25–26 January 2025

Quantum West Expo: 28–29 January 2025

Photonics West Exhibition: 28–30 January 2025

Co-located SPIE AR | VR | MR Exhibition: 28–29 January 2025

CO-LOCATED WITH

SPIE AR | VR | MR: 27–29 January 2025

SPIE Global Business Forum: 27 January 2025

SPIE Women in Optics: 26 January 2025

- Cutting-Edge Research
- Four Exhibitions
- Industry Program
- Quantum West Business Summit
- Training and Education

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Innovators in Photonics

TRIOPTICS
See the Difference

SPIE.

SPIE is the international society for optics and photonics. We bring engineers, scientists, students, and business professionals together to advance light-based science and technology. Over the past five years, we have invested more than $25 million in the international optics community through our advocacy and support, including scholarships, educational resources, travel grants, endowed gifts, and public-policy development.

Experience the energy of Photonics West

Welcome! Enjoy a week full of opportunities to learn, share, and grow alongside your peers and community. Listen to cutting-edge research in the conference rooms, engage with the latest technologies on the exhibit floors, learn from experts in courses and the industry stage, and network with the brightest and most innovative minds in photonics.

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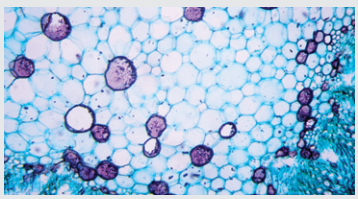
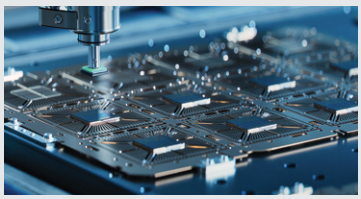


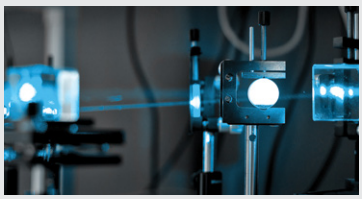
BiOS
The largest biomedical optics and photonics event in this field

PAGES 43–47



LASE
Discover the whole range of advancements in industrial laser technologies and applications

PAGES 48–50



OPTO
The latest developments in optoelectronic devices, components, and materials, and their integration for commercial applications

PAGES 51–54

Quantum West
Showcasing photonics as an enabling technology for quantum 2.0

PAGE 55

Application tracks—PAGE 56

Application tracks enable attendees to explore presentations across conferences and plan their event schedules around the topic of interest. Use the SPIE App for marking which presentations you want to see.

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SPIE.AR|VR|MR

Full conference registration to Photonics West includes access to this co-located event focused on XR hardware, taking place at Moscone West 27–29 January. Full program is online (spie.org/avr) or in the SPIE App.

bwt
INSPIRE THE WORLD

SPIE Photonics West 2025
San Francisco, CA Moscone Center

Booth Number: **349**

Founded in 2003, BWT is dedicated to the mission of "Let the dream drive the light", the vision to become the "Global leader in laser solutions", and the value of "Outstanding innovation", providing Diode laser, Fiber laser, Ultra-fast laser products and solutions to global customers.

The company has always been pursuing continuous innovation and insisted on autonomous and controllable advanced process and technology since its establishment. By taking Beijing head office as the core, BWT has successively established production and R&D centers in Jiangsu and Shenzhen, and invested in the construction of automated and intelligent production bases in Tianjin. To build world-class technical strength and product quality, BWT established a German subsidiary in 2020, taking a solid step for the internationalization of R&D, production and technological innovation.

Diode Laser System | 380nm ~ 1940nm
2mW ~ 6kW

Fiber Laser | 500W ~ 200kW

Ultrafast Laser | Picosecond Laser
Femtosecond Laser

Official website

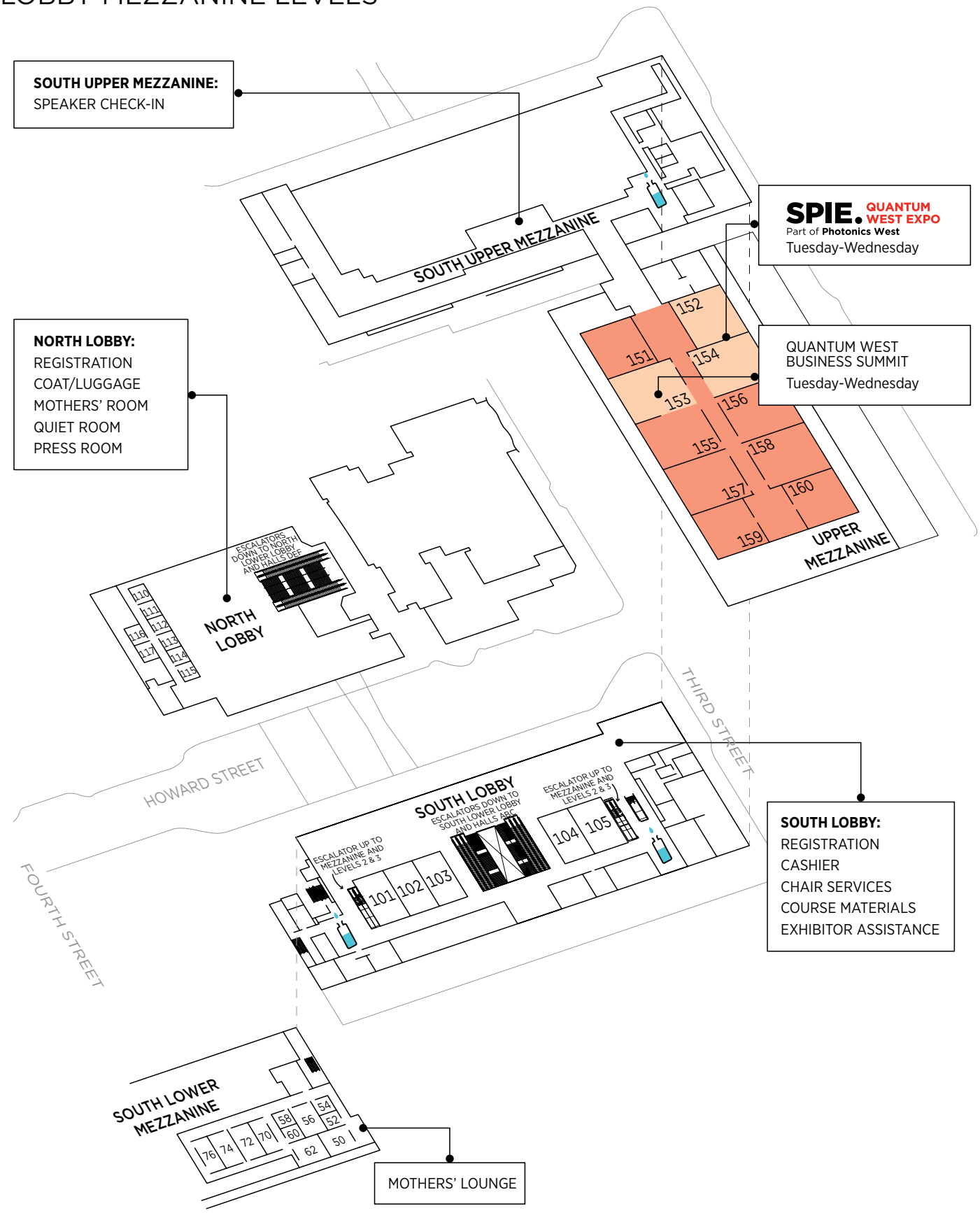
YouTube

BWT Beijing Ltd.
Add: 2nd Fl, Fengtai High-Tech Park,
No. 4A Hangfeng Rd. Beijing, China
Web: www.bwt-bj.com/en

Product & Technical Consultation
Tel: 86-10-83681053
E-mail: sales@bwt-bj.com

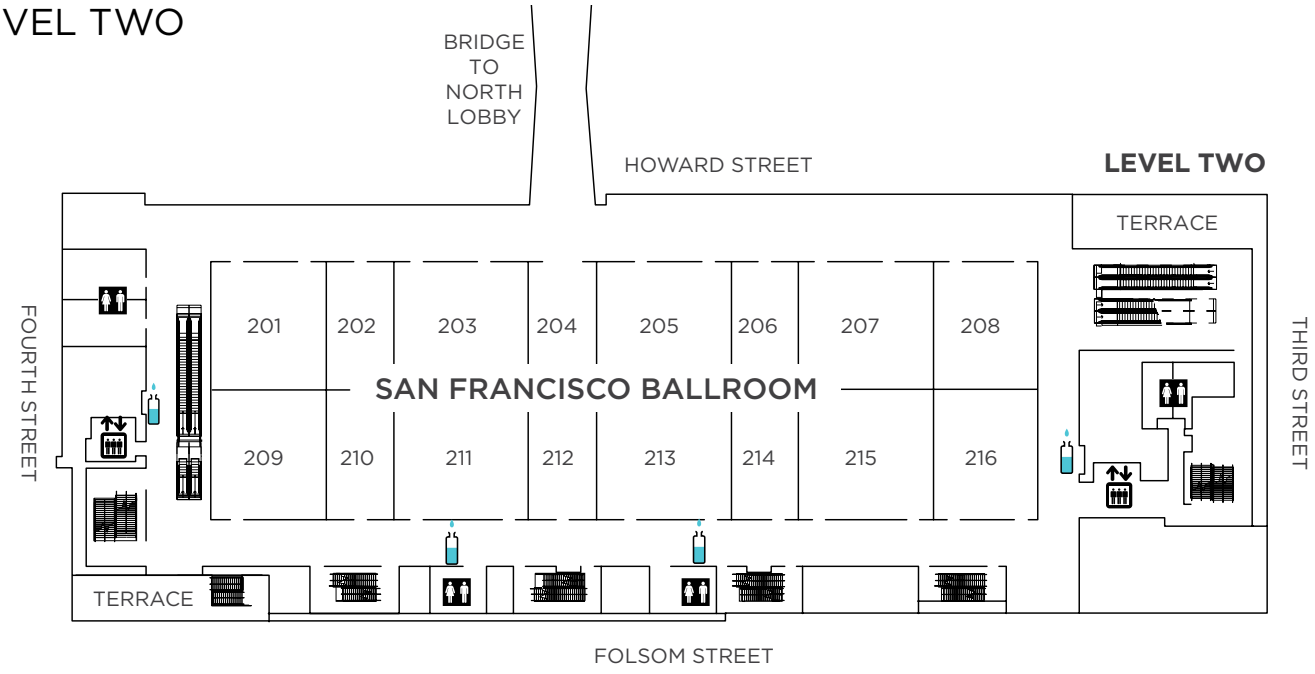
THE MOSCONE CENTER | NORTH AND SOUTH

LOBBY-MEZZANINE LEVELS



THE MOSCONE CENTER | SOUTH

LEVEL TWO



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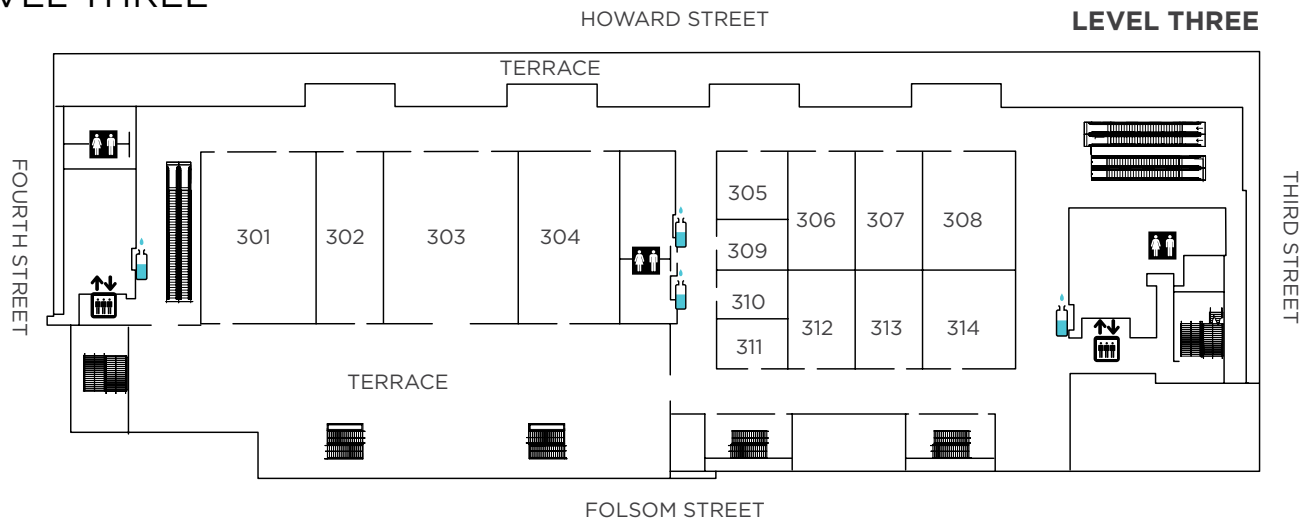
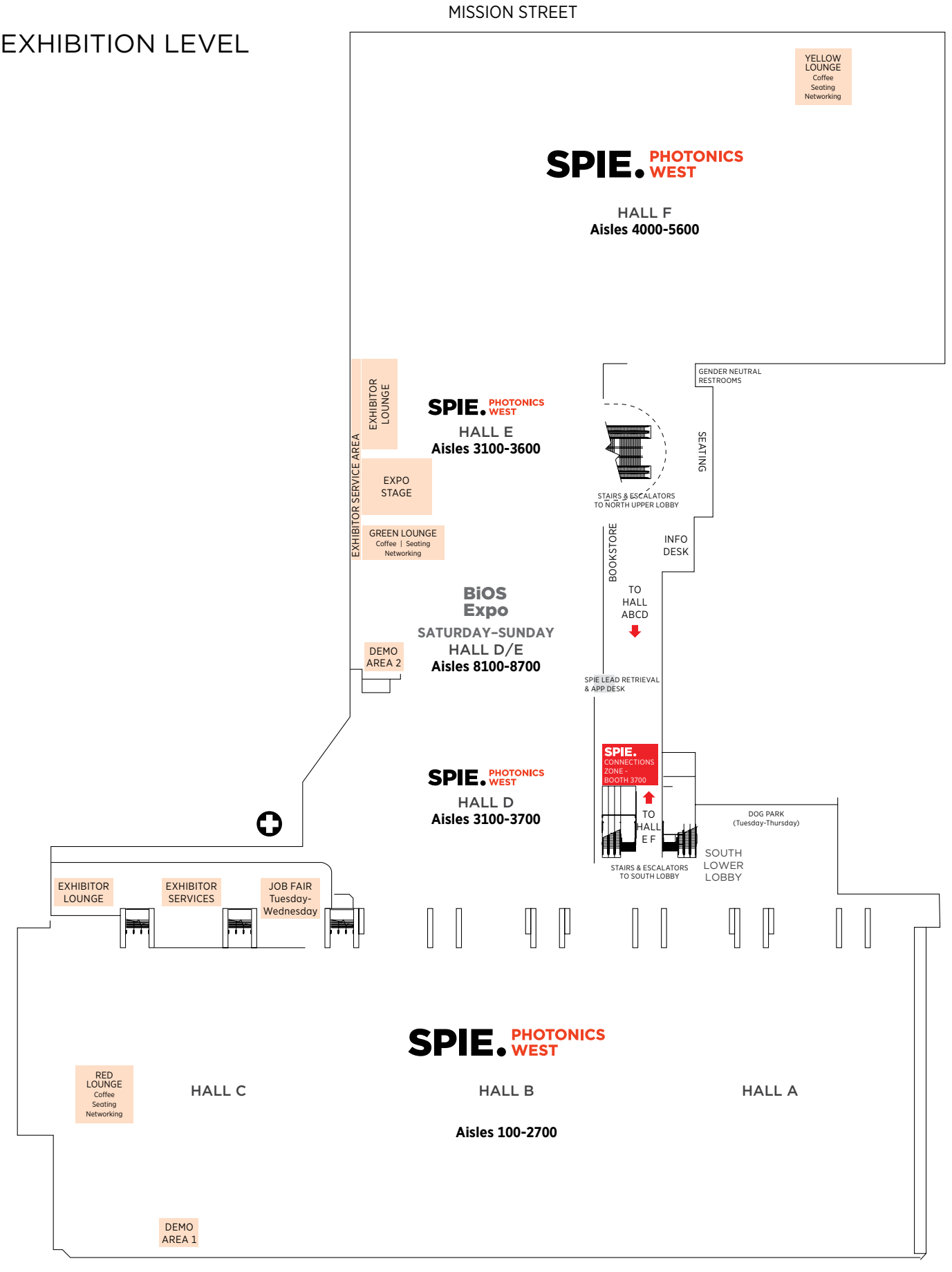


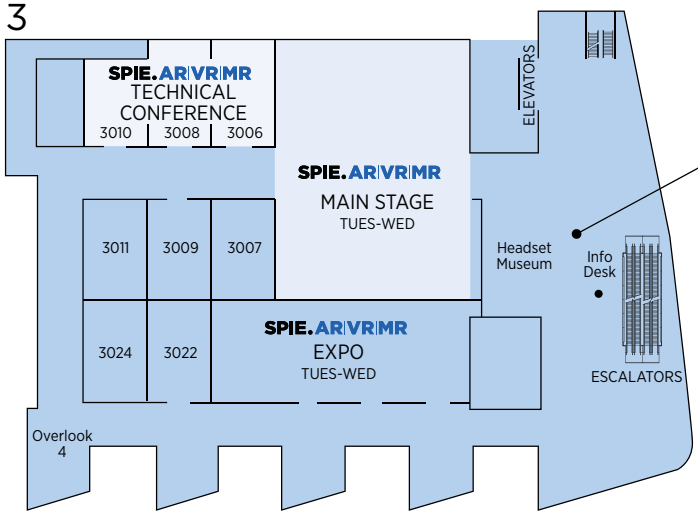
THE MOSCONE CENTER | NORTH AND SOUTH

EXHIBITION LEVEL



THE MOSCONE CENTER | WEST

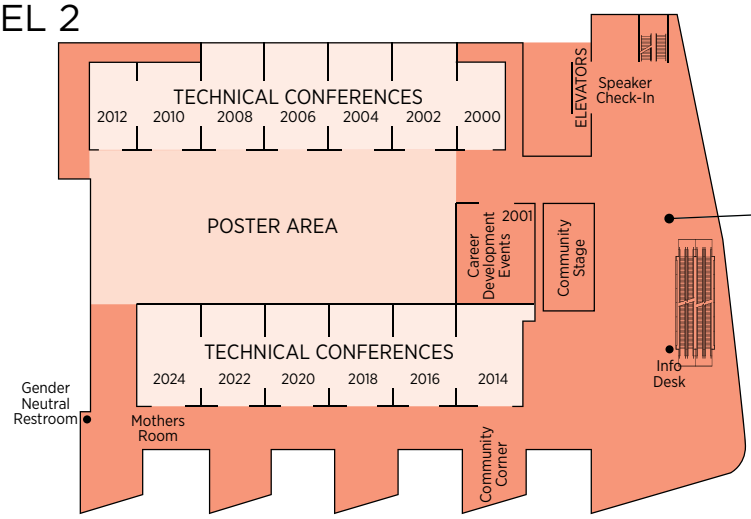
LEVEL 3



SPIE.AR|VR|MR

LEVEL 3 LOBBY:
INFO DESK
AV VR MR POSTERS
EXHIBITOR ASSISTANCE
SPIE LEAD RETRIEVAL & APP DESK

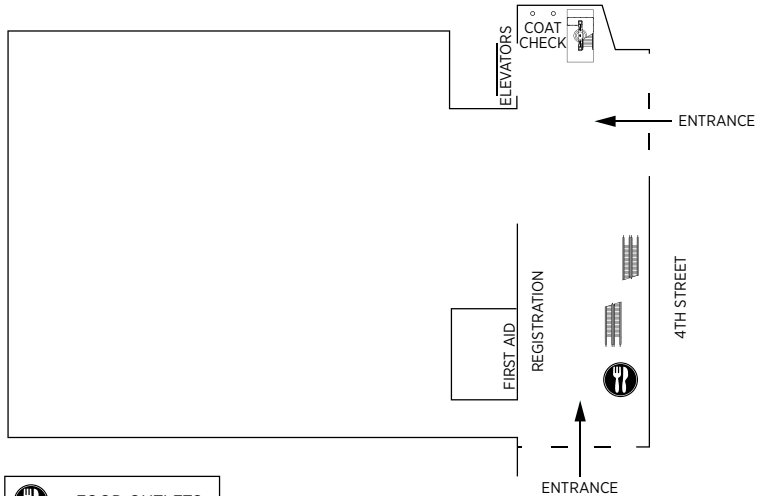
LEVEL 2



SPIE. PHOTONICS WEST

LEVEL 2 LOBBY:
COMMUNITY EVENTS
POSTERS
Sunday, Monday, Tuesday, and Wednesday
RESUME REVIEW
SPIE MEMBER HEADSHOTS

LEVEL 1



Events in Moscone West

SPIE. PHOTONICS WEST

SPIE.AR|VR|MR

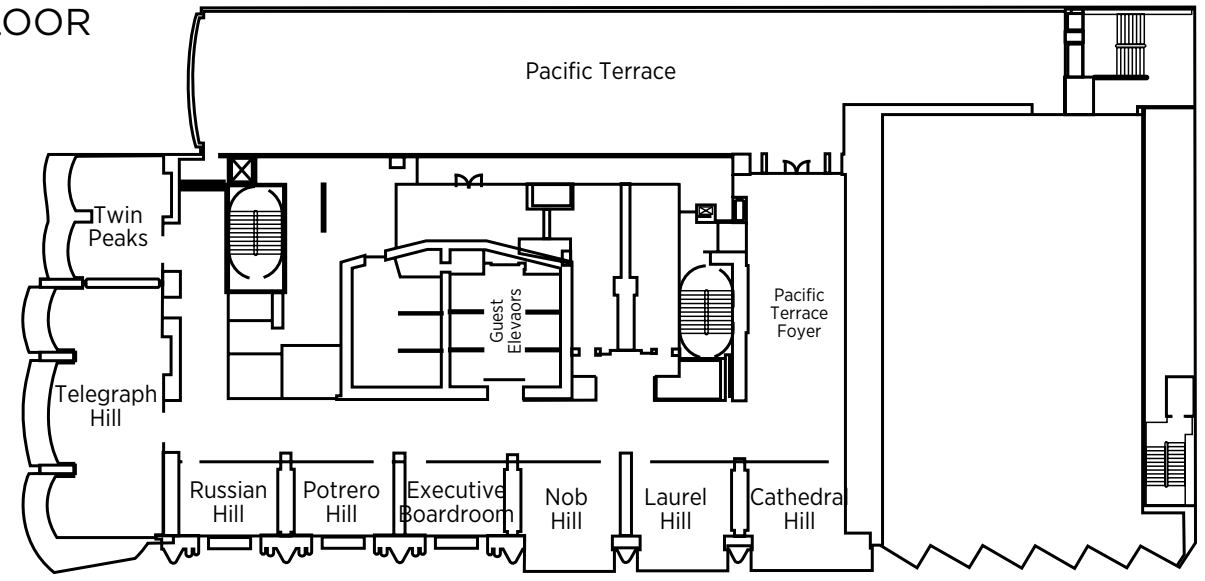
POSTER SESSIONS
Sunday, Monday, Tuesday, Wednesday

HEADSHOTS
Tuesday and Wednesday

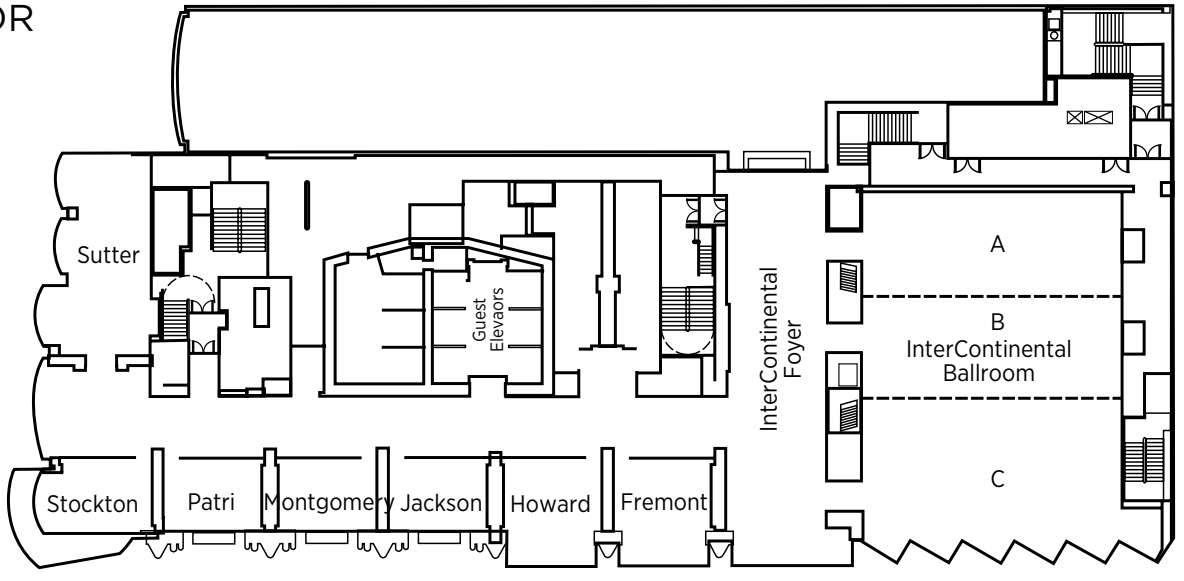
RESUME REVIEW
Tuesday and Wednesday

COMMUNITY EVENTS
Sunday through Wednesday

FOURTH FLOOR

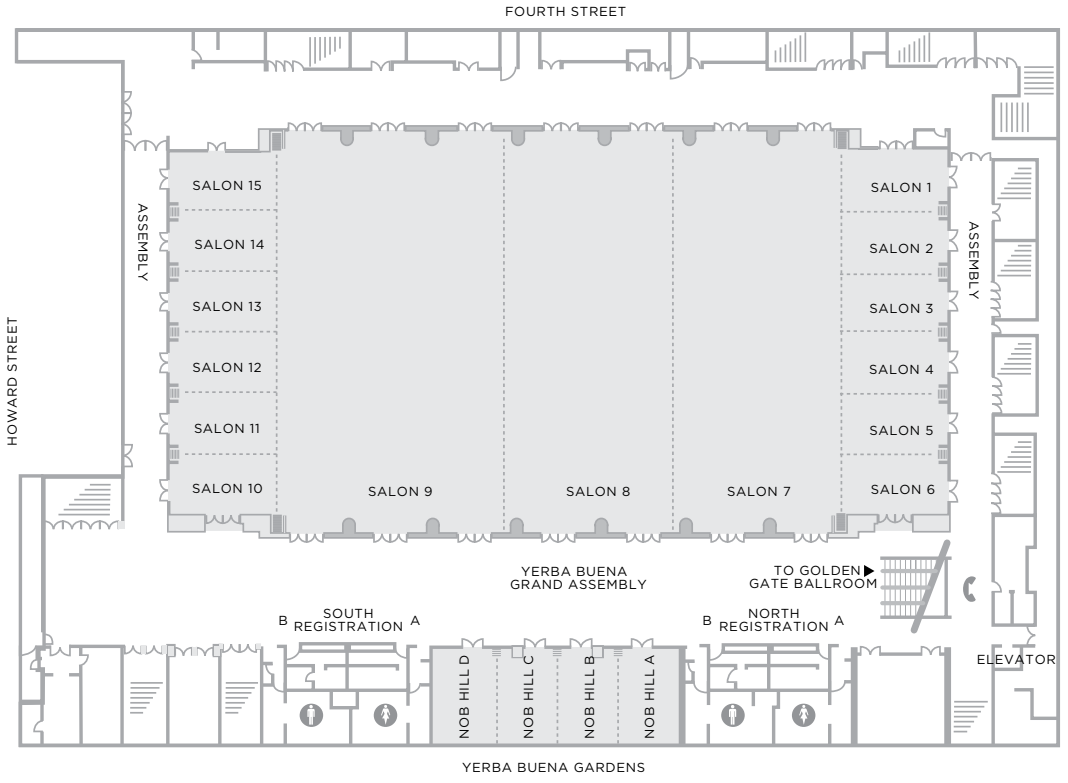


FIFTH FLOOR

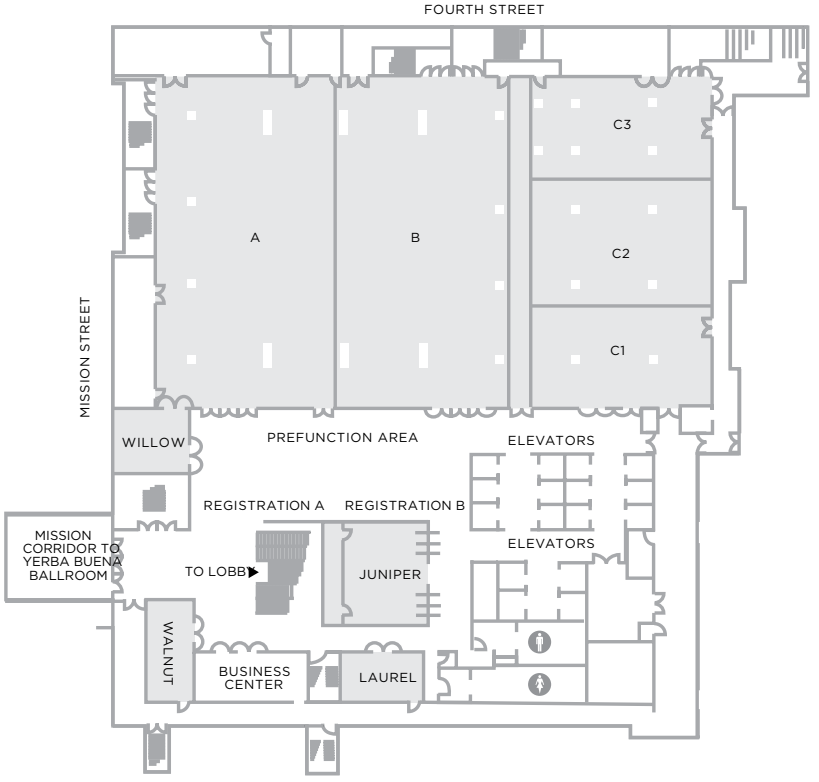


MARRIOTT MARQUIS

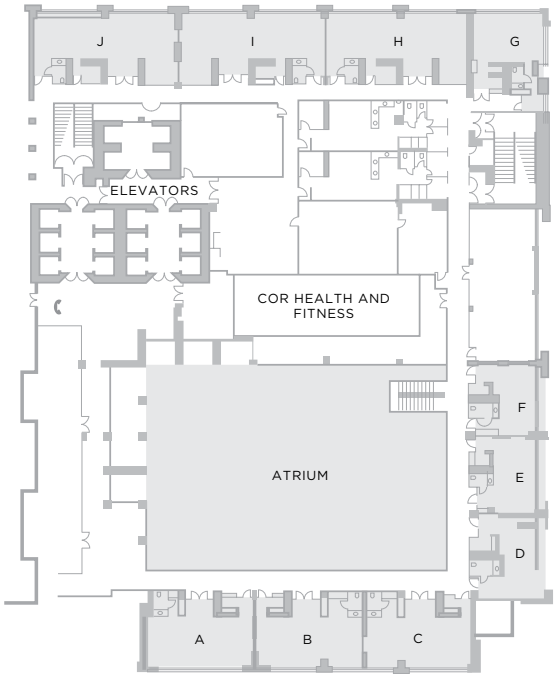
YERBA BUENA BALLROOM / LOWER B2 LEVEL



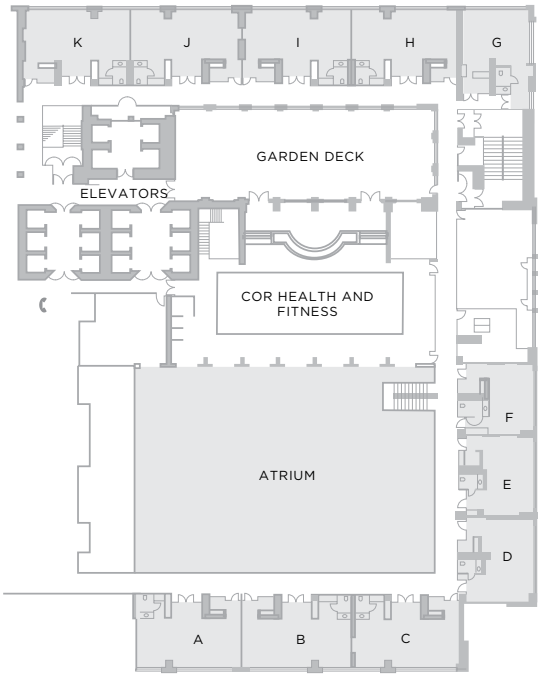
GOLDEN GATE BALLROOM / B2 LEVEL



PACIFIC CONFERENCE SUITES / FOURTH LEVEL



SIERRA CONFERENCE SUITES / FIFTH LEVEL



STREET MAP

PLENARY AND HOT TOPICS SESSIONS

Don't miss this year's fast-paced program of world-class speakers.
Add events to MySchedule online or in the app.

OPEN TO ALL PAID TECHNICAL ATTENDEES.

BiOS Hot Topics

25 January 2025 • 7:00 PM - 9:00 PM
Moscone South, Room 207/215 (Level 2)

Every year at BiOS the community gathers at Saturday Night Hot Topics to hear the latest innovations in the biophotonics field.

7:00 PM
Welcome and Opening Remarks
Paola Taroni
BiOS 2025 Symposium Chair
Politecnico di Milano (Italy)

Sergio Fantini
BiOS 2025 Symposium Chair
Tufts Univ. (USA)

7:05 PM

Presentation of 2025 Britton Chance Biomedical Optics Award
Presented by **Jennifer Barton,** SPIE President, The Univ. of Arizona (USA), followed by recipient's talk

7:30 PM
Moderator Remarks and Introductions
Rainer Leitgeb
BiOS 2025 Symposium Co-Chair
Medizinische Univ. Wien (Austria)

7:35 PM
Sensing of the surgical field enabled by vision and robotics
Daniel Elson
Imperial College London (United Kingdom)

7:45 PM
Live imaging of retinal cell dynamics with dynamic full field OCT
Kate Grieve
INSERM National Institute of Health and Medical Research (France)

7:55 PM
Shining light on gut feelings
Michalina Gora
Wyss Center for Bio and Neuroengineering (Switzerland)

8:05 PM
Interferometric diffuse optics: recent advances and future outlook
Vivek Srinivasan
New York Univ. Grossman School of Medicine (USA)

8:15 PM
Moderator Remarks and Introductions
Laura Marcu
BiOS 2025 Symposium Co-Chair,
Univ. of California, Davis (USA)

8:20 PM
Investigating tissue mechanopathology with speckle techniques
Seemantini Nadkarni
Wellman Center for Photomedicine, Harvard Medical School (USA)

8:30 PM
See the whole movie: continuous real-time monitoring of microphysiological systems with photonic sensors
Benjamin Miller
Univ. of Rochester Medical Center (USA)

8:40 PM
From saliva to surgery: Raman spectroscopy with open sourced software provides diagnostics for viruses and cancer
Frédéric Leblond
Polytechnic Montréal (Canada)

9:00 PM

Presentation of 2025 Biophotonics Technology Innovator Award
Presented by **Laura Marcu,** BiOS 2025 Symposium Co-Chair, Univ. of California, Davis (USA), followed by recipient's talk

Neurotechnologies Plenary

26 January 2025 • 3:30 PM - 5:30 PM
Moscone South, Room 207/215 (Level 2)

This session highlights the breadth of advances in neurophotonics technologies.

Session Chairs:
Shy Shoham
NYU Langone Health (USA)

Anna Wang Roe
Nathan Kline Institute (USA)

3:30 PM
Welcome and Opening Remarks

3:35 PM - 5:20 PM
PRESENTATIONS:

High-sensitivity optogenetic silencing with novel OptoGPCRs
Ofer Yizhar
Weizmann Institute of Science (Israel)

Combining light and sound for scalable brain interrogation and stimulation
Daniel Razansky
Univ. Zürich (Switzerland)

Additional presentations to be announced.

5:20 PM
Final Discussion

Biophotonics Focus: Nanophotonics and Imaging

26 January 2025 • 7:00 PM - 9:00 PM
Moscone South, Room 207/215 (Level 2)

Hear experts working with nanotechnology and various imaging modalities describe how these tools can work together to advance diagnostics and therapeutics.

7:00 PM
Welcome and award presentation
Ammasi Periasamy
Univ. of Virginia (USA)

Announcement of the 2025 SPIE-Franz Hillenkamp Fellowship

7:05 PM
Quantum dots in biomedical imaging: a journey of nano-explorations
Moungi Bawendi
Massachusetts Institute of Technology (USA)
Nobel Prize Winner in Chemistry 2023

7:35 PM
Nanophononics and bioimaging advancing nanomedicine to impact healthcare
Paras Prasad
Univ. at Buffalo (USA)

7:55 PM
Plasmonic nanoparticles for sustainability and societal impact
Naomi Halas
Rice Univ. (USA)

8:15 PM
Application of nanoparticles in anticancer combination therapies: influence of nanoparticle absorption dynamics on therapeutic effect
Joanna Depciuch
Institute of Nuclear Physics, Polish Academy of Sciences (Poland)

8:35 PM: **Q&A**

PLENARY AND HOT TOPICS SESSIONS

OPEN TO ALL PAID TECHNICAL ATTENDEES.

OPTO Plenary

27 January 2025 • 8:00 AM - 10:15 AM
Moscone South, Room 207/215 (Level 2)

Attend the OPTO plenary session to hear the latest on atto-second and THz science, topological photonics, and photonic quantum technologies.

Session Chairs: **Karin Hinzer,** Univ. of Ottawa (Canada) and **Ulrich T. Schwarz,** Technische Univ. Chemnitz (Germany)

8:00 AM - 8:15 AM
Welcome and Opening Remarks

8:15 AM - 8:55 AM
A plasma perspective on attosecond and THz science
Paul Corkum
Univ. of Ottawa (Canada)

8:55 AM - 9:35 AM
Topology in space, time, and space-time
Alexander Szameit
Univ. Rostock (Germany)

9:35 AM - 10:15 AM
Photonic quantum technologies: from integrated quantum devices to designing scalable complex systems
Christine Silberhorn
Univ. Paderborn (Germany)

Quantum West Plenary

27 January 2025 • 1:00 PM - 3:05 PM
Moscone South, Room 207/215 (Level 2)

Quantum West showcases the future of applied quantum technologies that will bring about a quantum-enabled future. Hear outstanding leaders discuss their vision for achieving Quantum 2.0.

Session Chair: **Halina Rubinsztein-Dunlop,** The Univ. of Queensland (Australia)

1:00 PM - 1:05 PM
Welcome and Opening Remarks

Announcement of the 2024 IBM-SPIE HBCU Faculty Accelerator Award in Quantum Optics and Photonics

1:05 PM - 1:45 PM
Quantum structured light takes shape
Andrew Forbes
Univ. of the Witwatersrand, Johannesburg (South Africa)

1:45 PM - 2:25 PM
Optical atomic clocks: refining the definition of time and advancing the future of metrology
Tara Fortier
National Institute of Standards and Technology (USA)

2:25 PM - 3:05 PM
Looking for fossils of the Big Bang in the laboratory
Eric Cornell
National Institute of Standards and Technology (USA)
Nobel Prize in Physics 2001

LASE Plenary and Hot Topics

27 January 2025 • 3:45 PM - 5:40 PM
Moscone South, Room 207/215 (Level 2)

Join us for exceptional plenaries and hot topics addressing laser fusion advancements and the impact on the photonics market, data-driven laser processing, optical frequency combs for interferometry, and how outer space is transforming.

3:45 PM - 3:50 PM
Welcome and Opening Remarks
Session Chairs: **Vassilia Zorba,** Lawrence Berkeley National Lab. (USA) and **Kaoru Minoshima,** Univ. of Electro-Communications (Japan)

3:50 PM - 4:00 PM

Announcement of the 3D Printing Best Paper Awards
Henry Helvajian, The Aerospace Corp. (USA)

4:00 PM - 4:30 PM:
Plenary: Global advancements in laser fusion energy and their implications for the photonics market
Constantin Häfner
Fraunhofer-Institut für Lasertechnik ILT (Germany)

4:30 PM - 4:45 PM:
Hot Topic: Data-driven laser processing: What does the fusion of laser processing and data science bring?
Aiko Narazaki
National Institute of Advanced Industrial Science and Technology (Japan)

4:45 PM - 5:15 PM:
Plenary: Optical frequency combs for interferometry from the mid-infrared to the ultraviolet range
Nathalie Picqué
Max-Born Institute (Germany)

5:15 PM - 5:30 PM:
Hot Topic: The changing landscape of outer space
Henry Helvajian
The Aerospace Corp. (USA)

5:30 PM - 5:40 PM
Q&A for all speakers

TECHNICAL EVENTS

Meet peers interested in the same topics and explore the latest research, hear different perspectives, and participate in engaging discussions. Sessions include poster presentations, panel discussions, and workshops. Find old friends and discover new partnerships.

OPEN TO ALL PAID TECHNICAL ATTENDEES.

Pascal Rol Keynote Address

25 January 2025 • 1:30 PM - 2:30 PM
Moscone South, Room 156 (Upper Mezz)

Join the Ophthalmic Technologies conference for the 2025 Pascal Rol Keynote Address, given this year by Dr. Jeffrey Goldberg, Professor and Chair of Ophthalmology and Director of the Byers Eye Institute at Stanford University.

Panel Discussion: Visualizing and Quantifying Drug Distribution in Tissue

25 January 2025 • 2:30 PM - 3:15 PM
Moscone South, Room 205 (Level 2)

Join the Visualizing and Quantifying Drug Distribution in Tissue conference for a panel discussion on the future of pharmacokinetic and pharmacodynamic technologies in academia and industry.

Translational Research Forum

26 January 2025 • 12:30 PM - 2:00 PM
Moscone South, Room 153 (Upper Mezz)

Join your colleagues in a discussion of outcomes-based studies that can change the lives of patients and visions for translating biophotonics technologies into novel healthcare solutions.

Panel Discussion: Is Light Dosimetry Necessary for Optimal PDT?

26 January 2025 • 9:00 AM - 10:30 AM
Moscone South, Room 151 (Upper Mezz)

Please join the Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy conference for this informative panel discussion.

Panel Discussion: Regulatory Pathways and Market Strategies for Optical Technologies Startups

26 January 2025 • 3:35 PM - 5:20 PM
Moscone South, Room 212 (Level 2)

Join the Optical Fibers and Sensors for Medical Diagnostics, Treatment and Environmental Applications conference for this panel discussion.

Memorial Session for Professor Joe Izatt

27 January 2025 • 8:30 AM - 9:45 AM
Moscone South, Room 203 (Level 2)

Join the Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine conference in honoring Professor Joseph Izatt.

Technical and Business meetings of the Optics and Electro-Optics Standards Council (OEOSC)

26 January 2025
InterContinental Hotel, Sutter (5th Floor)

The technical and business meetings of the Optics and Electro-Optics Standards Council (OEOSC) are open to anyone with an interest in standards for the optics industry. This meeting is specific to Task Force 2, Surface Imperfections.

9:00 AM - 10:30 AM
Accredited Standards Committee for Optics (ASCOP): TF7 - Lasers

11:00 AM - 12:30 PM
Accredited Standards Committee for Optics (ASCOP): TF2 - Surface Imperfections

1:30 PM - 3:00 PM
ASCOP Business Meeting

3:30 PM - 5:30 PM
OEOSC Board and Membership Meeting

Panel Discussion: The Future of Immunophotonics

27 January 2025 • 11:25 AM - 12:15 PM
Moscone South, Room 151 (Upper Mezz)

Please join the Biophotonics and Immune Responses conference for this informative discussion on the future of immunophotonics.

NIH/NIBIB P41 Session

27 January 2025 • 2:00 PM - 5:00 PM
Moscone South, Room 50 (Lower Mezz)

Join a meeting with the leaders and members of the NIH/NIBIB P41 Centers.

Panel Discussion and Awards Ceremony: Microfluidics, BioMEMS, and Medical Microsystems XXIII

27 January 2025 • 3:50 PM - 5:20 PM
Moscone South, Room 204 (Level 2)

Join this panel to discuss current trends in microfluidics, bioMEMS, and medical microsystems. This session will also include an award ceremony for the Microfluidics, BioMEMS, and Medical Microsystems conference.

Panel Discussion: Standardization and Security Aspect of Optical Power Systems

28 January 2025 • 4:45 PM - 5:45 PM
Moscone South, Room 215 (Level 2)

Part of the LASE conference on Optical Power Delivery

Holography Technical Event

28 January 2025 • 7:30 PM - 9:00 PM
InterContinental Hotel, Intercontinental Ballroom B (5th Floor)

Join the Holography Technical Group for a discussion on recent developments and directions in holography.

Innovation Awards in Quantum Sensing and Nano Electronics and Photonics

28 January 2025 • 7:30 PM - 9:00 PM
InterContinental Hotel, Intercontinental Ballroom A (5th Floor)

Join us for presentations by students and outstanding scientists sharing the most notable recent discoveries with broad impact in the areas of quantum sensing and nano electronics and photonics.

Workshop on Methods of Complex Light

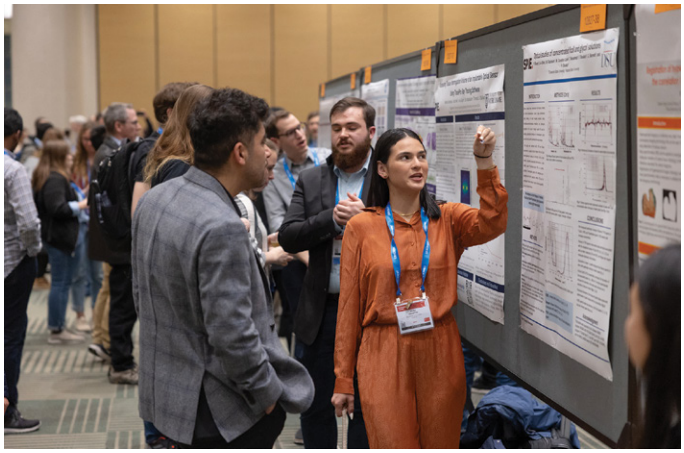
29 January 2025 • 3:30 PM - 5:00 PM
Moscone South, Room 160 (Upper Mezz)

Join us for small-group discussions on technologies related to complex light with a variety of experienced researchers in the field.

Laser Communications

29 January 2025 • 7:30 PM - 9:00 PM
InterContinental Hotel, Intercontinental Ballroom C (5th Floor)

Join us for the annual meeting on laser communications. We invite all professionals involved in theory and applications of free-space laser communications, remote sensing, and supporting technologies.



POSTER SESSIONS

Conference attendees are invited to attend the poster sessions. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field.

BiOS Poster Session - Sunday

26 January 2025 • 5:30 PM - 7:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Sunday 10:00 AM - 5:00 PM

BiOS Student 3-Minute Poster Presentations

Sponsored by JBO, BIOS, and Neurophotonics

27 January 2025 • 4:30 PM - 5:30 PM
Moscone West, Room 2001 (Level 2)

Students present 3-minute rapid-fire overviews of their BiOS poster research. The top three presentations will receive cash prizes.

BiOS Poster Session - Monday

27 January 2025 • 5:30 PM - 7:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Monday 10:00 AM - 5:00 PM

LASE and select BiOS Poster Session - Tuesday

28 January 2025 • 6:00 PM - 8:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Tuesday 10:00 AM - 5:00 PM

OPTO and Quantum West Poster Session - Wednesday

29 January 2025 • 6:00 PM - 8:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Wednesday 10:00 AM - 5:00 PM

Poster authors, view poster presentation guidelines and set-up instructions at:
https://spie.org/PW/poster-guidelines

QUANTUM WEST BUSINESS SUMMIT

Hear from industry experts who have overcome barriers while bringing new quantum technologies to market. Leverage this opportunity to develop new collaborations that will help launch your products into this technological frontier.

OPEN TO ALL PAID TECHNICAL ATTENDEES.

Building a Quantum Workforce

27 January 2025 • 10:00 AM - 11:45 AM
Moscone South, Room 153 (Upper Mezz)

Come hear a panel discussion on the opportunities, challenges, and best practice in creating a pipeline of talented and well-trained scientists and engineers in the quantum field.

MODERATOR

Jessica Wade
Royal Society University Research
Fellow and Lecturer
Imperial College London
(United Kingdom)

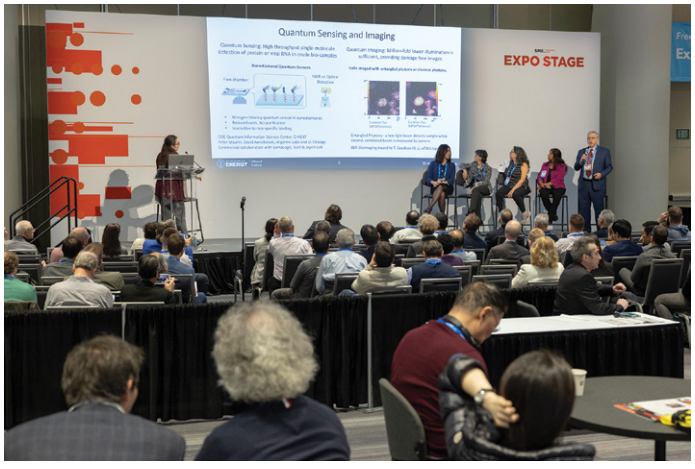
PANELISTS

Heather Lewandowski
Professor, University of Colorado Boulder (USA)
Faculty Director Quantum Initiative Education and Workforce, CUbit (USA)
Fellow, JILA (USA)

Halina Rubinsztein-Dunlop
Professor, University of Queensland (Australia)
Deputy Director, QUBIC (Australia)

Thomas Searles
Associate Professor
University of Illinois Chicago (USA)

Jake Douglass
Quantum Business Development Lead
Sandia National Laboratories (USA)



Opening Session: The State of Quantum

27 January 2025 • 3:15 PM - 4:45 PM
Moscone South, Room 153 (Upper Mezz)

Hear experts discuss the current state of quantum technologies—what is the reality and how close are we to building a robust quantum ecosystem.

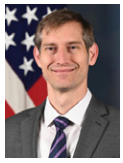
MODERATOR

Carl J. Williams
CEO
CJW Quantum Consulting LLC (USA)

PANELISTS

Peter Knight
Professor
Imperial College London (United Kingdom)

James Kushmerick
Director Physical Measurement Laboratory
NIST (USA)



John Burke
Principal Director of Quantum Science
DOD (USA)

Jay Lowell
Principal Disruptive Computing, Networks & Sensors
Boeing Research and Technology (USA)

Keynote Session

28 January 2025 • 10:30 AM - 12:00 PM PST | Moscone South, Room 153 (Upper Mezz)

Join us as the 2025 Quantum West Business Summit continues with a Keynote Address on how quantum can enable scalable AI computing followed by a Business Intelligence update.

HOST

Mark Wippich
CEO
MPW (USA)

Scalable Supercomputers for AI with Quantum Devices

Jeffrey Shainline
Founder and CEO
Great Sky (USA)

The Market Potential of AI and Quantum for Transformative Compute

Alex Challans
CEO
Resonance (USA)

Quantum Devices for Transformative Compute

28 January 2025 • 1:30 PM - 3:00 PM PST | Moscone South, Room 153 (Upper Mezz)

Join us for a panel discussion exploring the intersection of quantum computing, neuromorphic computing, machine learning and anomaly detection for transformative computation tasks.

MODERATOR
Mark Wippich
CEO
MPW (USA)

PANELISTS
Charina Chou
COO
Google Quantum AI
(USA)

Nicholas Harrigan
Marketing Lead Quantum Computing
nVidia (USA)

Nathan Gemelke
Co-founder,
Chief Technology Strategist
QuEra (USA)

Jeffrey Shainline
Founder and CEO
Great Sky (USA)

Michael Förtsch
CEO
Q.ANT (Germany)

The Intersection of Quantum Computing and AI

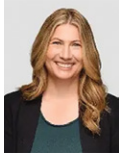
28 January 2025 • 3:30 PM - 5:00 PM
Moscone South, Room 153 (Upper Mezz)

Join us for a panel discussion exploring the interesting intersection of Quantum Computing and AI and the transformational impact these fields have on each other

MODERATOR
Carl J. Williams
CEO
CJW Quantum Consulting LLC (USA)

PANELISTS
Roman Orus
CSO
Multiverse Computing (Spain)

Stefan Cap JD
Head of Business Development, North America
Riverlane (USA)



Jeannette "Jamie" Garcia
Technical Program Director, Algorithms & Partnerships
IBM Quantum (USA)

Matthias Troyer
Technical Fellow and Corporate Vice President of Quantum
Microsoft (USA)

Quantum West Business Summit Reception

28 January 2025 • 5:00 PM - 6:00 PM
Moscone South, Quantum Expo (Upper Mezz)

This reception is in support of the Quantum West Business Summit and in recognition of the International Year of Quantum

OPEN TO ALL PAID TECHNICAL ATTENDEES.

Burning the Ghost Light—Economic Opportunities to Scale the Photonics Supply Chain

29 January 2025 • 10:30 AM - 12:00 PM
Moscone South, Room 153 (Upper Mezz)

This panel discussion highlights the key pain points facing the photonics supply chain today as more businesses grow quantum technologies from R&D to commercial scale.

MODERATOR

Austin Lin
Quantum Standards
Google (USA)

PANELISTS

Carmen Palacios-Berraquero
CEO
Nu Quantum (United Kingdom)

Brennan Peterson
VP Test & Measurement
PsiQuantum (USA)

Eric Takeuchi
VP, Deputy GM Instrumentation
DRS Daylight Solutions (USA)

Eric Kievit
Chief Operating Officer
Qblox (Netherlands)

Advancing Quantum Technologies Through Scalable Frequency Combs

29 January 2025 • 1:15 PM - 2:45 PM
Moscone South, Room 153 (Upper Mezz)

Optical frequency combs play a key role in enabling and advancing quantum technologies. Hear this panel of experts discuss the status and future of this critical component in the quantum supply chain.

MODERATOR

Saeed Pegahan
Frequency Comb Application Scientist
Toptica Photonics (USA)

PANELISTS

Scott Davis
CEO and Founder
Vescent (USA)

Ronald Holzwarth
CTO and Co-Founder
Menlo Systems (Germany)

Wilhelm Kaenders
CTO and Founder
Toptica Photonics (Germany)

Tara Fortier
Group Lead
NIST (USA)

Arman Cingoz
Director of Photonics
Vector Atomic (USA)

The Path from Startups to End Users in Commercializing Quantum Sensing Technology

29 January 2025 • 3:15 PM - 5:00 PM
Moscone South, Room 153 (Upper Mezz)

Learn about the quantum sensor ecosytem and the progress in deploying quantum sensors for commercial applications.

HOST
Roger McKinlay
Challenge Director Quantum Technologies
UK Research and Innovation (United Kingdom)

The Evolving Quantum Sensor Landscape
Anke Lohmann
Founder and Director
Anchored In Ltd (United Kingdom)

High-Precision VCSEL-Based Quantum Sensors: Advancing Commercialization in PNT Applications
Amirhossein Ghods
VP of Photonics
Mesa Quantum, Inc. (USA)

Hamamatsu's Quantum Sensor Technology—Preview of the Upcoming Optically Pumped Magnetometer release
Michael Semmlinger
Research Support Supervisor
Hamamatsu Corporation (USA)

Quantum Sensor Use Cases for PNT
Celia Merzbacher
Executive Director
Quantum Economic Development Consortium (QED-C) (USA)

Quantum Sensing Applications at Boeing
Jay Lowell
Principal Disruptive Computing, Networks & Sensors
Boeing Research and Technology (USA)

Wrap-Up Session

29 January 2025 • 5:00 PM - 5:15 PM
Moscone South, Room 153 (Upper Mezz)

Closing remarks conclude Quantum West Business Summit.

SPIE Global Business Forum is an important event for executives, investors, entrepreneurs, and stakeholders to learn and connect with other leaders. Held in cooperation with leading global analyst organizations, the forum will provide a detailed look at data and trends impacting business across the global photonics industry.

FORUM SCHEDULE

Welcome Networking	
Opening Remarks	**Andrew Brown,** SPIE **Kent Rochford,** SPIE
Global Economic Outlook	**Michael Ryan,** UBS
Photonics Solutions Enabling Advanced Packaging in the AI Era	**John Lee,** MKS Instruments, Inc.
Changing the World, One Nanometer at a Time, Not Alone	**Thomas Plees,** ASML
Materials Inspired Photonics Driving Exciting Megatrends	**Sanjai Parthasarathi,** Coherent Corp.
Networking Lunch	
SPIE 2025 Global Industry Report	**Andrew Brown,** SPIE
The European Photonics Industry: Overview and Prospects in a Fast-Growing Global Market	**Thierry Robin,** TEMATYS
Chinese Laser/Photonics Market Insights	**Bo Gu,** BOS Photonics
Photonics as an Enabling Technology for New Applications: Market and Trends	**Jérôme Mouly,** Yole Group
Networking Break	
CEO Panel	**Industry executives**
Market Update for Photonics	**Brian Perrault,** Needham & Company
SPIE Global Government Affairs Update	**Jennifer O'Bryan,** SPIE
Photonics Industry Trends, Benchmarks and Futures	**John Lincoln,** UK Photonics Leadership Group
Closing Remarks	
Networking Reception	

Separate registration required.

spie.org/gbf

INDUSTRY EVENTS

Valuable information for anyone — from engineers to CEOs — looking for the latest industry insights

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 obstacles to overcome.

INDUSTRY EVENTS ON THE EXPO STAGE ARE OPEN TO ALL REGISTRATION TYPES.

BiOS Expo

Moscone Center, Hall DE (Exhibit Level)

Saturday 25 January 2025 . . . . . 10:00 AM - 5:00 PM
Sunday 26 January 2025. . . . . .10:00 AM - 4:00 PM

Visit top suppliers of the biomedical optics community.

Emergent Quantum and Photonics Technologies in Bio-Applications Beyond National Borders: New Opportunities for International Collaborative Research

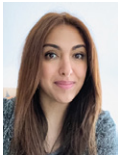
25 January 2025 • 1:00 PM - 2:30 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Learn about the importance of multinational partnerships in emerging areas of biophotonics including the intersection of biophotonics with technologies such as quantum and AI.

MODERATOR

Sergey Polyakov
Physicist
NIST (USA)

PANELISTS



Afrouz Anderson
Program Director for the Division of Applied Science and Technology
National Institutes of Health (NIH), National Institute of Biomedical Imaging and Bioengineering (NIBIB) (USA)

Juha Purmonen
Executive Director of Photonics Finland and Development Manager Business Joensuu (Finland)

Jyrki Saarinen
Professor of Photonics Applications and Commercialization
University of Eastern Finland (Finland)

Petri Koikkalainen
Counselor of Science and Higher Education
Finnish Embassy (Finland)

Sarah Scharf
Regional Program Director for the Division of International Relations
National Institutes of Health (NIH), Fogarty International Center (FIC) (USA)

Light and Sound on Chip for Diagnostics

25 January 2025 • 2:45 PM - 3:15 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come hear about the development of integrated light sources, photodetectors and opto-mechanical ultrasound sensors that are paving the way for the next generation of photoacoustic systems.

PRESENTER

Xavier Rottenberg
imec Fellow
imec (Belgium)

Quantum Biotechnology in Australia

25 January 2025 • 3:30 PM - 4:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come see an overview of research efforts within the Australian Research Council Centre of Excellence in Quantum Biotechnology (QUBIC).

PRESENTER

Warwick Bowen
Director, Australian Research Council Centre of Excellence in Quantum Biotechnology
University of Queensland (Australia)

Quantum Sensing Use Cases for Biomedical Applications: An Industry-Driven Evaluation

25 January 2025 • 4:15 PM - 4:45 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come hear a presentation on the results of an industry-driven assessment of quantum sensing use cases in biomedicine.

PRESENTERS

Celia Merzbacher
Executive Director
QED-C (USA)

Geetha Senthil
Deputy Director
Office of Special Initiatives
National Center for Advancing Translational Sciences (NCATS) (USA)

What is Next in the Analysis of Biological Samples with Spectral Imaging Systems?

26 January 2025 • 11:00 AM - 12:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

This podium discussion aims to explore the current state of spectral imaging systems, highlight the latest developments, and address the challenges associated with emerging applications.

MODERATOR
Antonio Castelo
Photonics Technology Manager
EPIC (Spain)

PANELISTS
Oliver Grass
Founder and Managing Director,
inno-spec GmbH (Germany)
CEO, Spectralliance Holding (Germany)

Fabrizio Preda
CEO
NIREOS (Italy)

Gerard Whoriskey
Technical Director
CoolLED (United Kingdom)

Wouter Charle
Program Manager Spectral Imaging
On-Chip
imec (Belgium)

Future of Quantum Biotechnology

26 January 2025 • 1:00 PM - 2:30 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Learn about the opportunities quantum technologies will provide in the life sciences and engage with the panel discussing the opportunities and challenges in moving these technologies from the lab to the field.

MODERATOR
Halina Rubinsztein-Dunlop
Professor, University of Queensland (Australia)
Deputy Director, QUBIC (Australia)

PANELISTS
Warwick Bowen
Director, Australian Research Council Centre of Excellence in Quantum Biotechnology
University of Queensland (Australia)

Celia Merzbacher
Executive Director
QED-C (USA)

Geetha Senthil
Deputy Director
Office of Special Initiatives
National Center for Advancing Translational Sciences (NCATS) (USA)

Gopal Karemore
Global Quantum Lead in Healthcare and Life Sciences
IBM (USA)

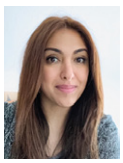
FDA Policies and Procedures: What Academic Investigators and Small Businesses Should Know

26 January 2025 • 2:45 PM - 4:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come hear speakers from industry and regulatory agencies share their perspectives and advice on incorporating regulatory requirements into product development and how to achieve successful regulatory strategies.

HOST
Ramesh Raghavachari
FDA (USA)

Tissue phantoms as regulatory science tools to support medical device development
William C Vogt
FDA/CDRH (USA)



NIBIB opportunities toward technology development and standardization
Afrouz Anderson
NIH/NIBIB (USA)

Unlocking the value of optical tissue phantoms: accelerating clinical translation for medical innovation
Ethan LaRochelle
QUEL Imaging Inc. (USA)

INDUSTRY EVENTS ON THE EXPO STAGE ARE OPEN TO ALL REGISTRATION TYPES, UNLESS OTHERWISE NOTED.

2025 Global Business Forum

27 January 2025 • 9:30 AM - 7:00 PM
Marriott Marquis, Golden Gate Ballroom (B2 Level)

Separate registration is required.

Join us at a business forum for executives, investors, entrepreneurs, and stakeholders across the global photonics industry.

Startup Challenge: Office Hours Session

27 January 2025 • 12:00 PM - 5:00 PM
InterContinental Hotel, Sutter (5th Floor)

Session is by invitation only. Industry professionals from a variety of expertise and backgrounds meet with Startup Challenge finalists.

Sensors and Instrumentation Technical Advisory Committee Open Session

28 January 2025 • 9:30 AM - 11:30 AM
InterContinental Hotel, Intercontinental Ballroom C (5th Floor)

The Sensors and Instrumentation Technical Advisory Committee is an official federal advisory committee within the US Bureau of Industry and Security. Any SPIE Photonics West attendee is welcome during the open session of this meeting.

CHAIR
Jennifer O'Bryan
Director, Government Affairs
SPIE (USA)

Accelerating Photonics Innovations to the Marketplace with the Tech Hubs

28 January 2025 • 10:30 AM - 12:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

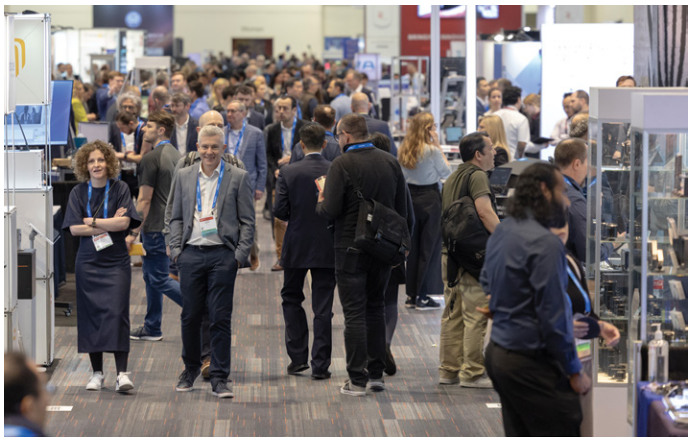
Learn about the US Tech Hubs and the role photonics plays in helping these regional centers of excellence achieve their missions.

MODERATOR
Alexis Vogt
Endowed Chair & Professor of Optics
Monroe Community College (USA)

SPEAKERS
Timothy VanReken
Executive Director
Headwaters Tech Hub (USA)

Joseph Stefko
President and CEO
OneROC (USA)

Zachary Yerushalmi
CEO and Regional Innovation Officer
Elevate Quantum (USA)



Photonics West Exhibition

Moscone Center, North-South (Exhibit Level)

Tuesday 28 January 2025 . . . . . 10:00 AM - 5:00 PM
Wednesday 29 January 2025 . . . . . 10:00 AM - 5:00 PM
Thursday 30 January 2025 . . . . . 10:00 AM - 4:00 PM

The Photonics West Exhibition is the most important show in the industry. Start the year off right by connecting with customers, clients, and prospects. Share your latest solutions, and make important connections as your colleagues and peers continue to build an exciting year of collaboration and business growth.

Exhibitor Product Demos - Hall C

Moscone Center, Hall C (Exhibit Level)

Tuesday 28 January 2025 . . . . . 10:00 AM - 5:00 PM
Wednesday 29 January 2025 . . . . . 10:00 AM - 5:00 PM
Thursday 30 January 2025 . . . . . 10:00 AM - 4:00 PM

See product demonstrations by exhibitors to learn about their latest products and services.

Exhibitor Product Demos - Hall D

Moscone Center, Hall D (Exhibit Level)

Tuesday 28 January 2025 . . . . . 10:00 AM - 5:00 PM
Wednesday 29 January 2025 . . . . . 10:00 AM - 5:00 PM
Thursday 30 January 2025 . . . . . 10:00 AM - 4:00 PM

See product demonstrations by exhibitors to learn about their latest products and services.

Quantum West Expo - Tuesday

Moscone South, Quantum Expo (Upper Mezz)

Tuesday 28 January 2025 . . . . . 10:00 AM - 5:00 PM
Wednesday 29 January 2025 . . . . . 10:00 AM - 5:00 PM

Discover global providers of the best quantum technologies.

How CORNERSTONE is Accelerating the Translation of Technology into the Marketplace for Startup Companies

28 January 2025 • 1:00 PM - 2:15 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Hear how CORNERSTONE and their silicon photonics foundry is helping startup companies move into the marketplace.

MODERATOR

John Lincoln
Chief Executive
Photonics Leadership Group (United Kingdom)

PANELISTS

Graham Reed
Director (Project Lead CORNERSTONE)
Optoelectronics Research Centre
(United Kingdom)

Lia Li
CEO
Zero Point Motion (United Kingdom)

Alice Iles
Head of Tech Acceleration
Future Worlds (United Kingdom)

Richard Pitwon
Principal Engineer
Seagate Research (United Kingdom)

Startup Challenge Finals

28 January 2025 • 2:30 PM - 4:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come see what is in store for the future of Optics and Photonics! Top finalists from around the world pitch their innovations in front of a panel of judges and compete for $10,000 first place prize.

Startup Challenge Awards and Reception

28 January 2025 • 4:15 PM - 4:45 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come see who takes home the title of Startup Challenge 2025 Winner. Enjoy a refreshment while conversing with finalists and winners.

PLAN TO ATTEND

STARTUP challenge

SPIE Photonics West
28 January 2025
The Moscone Center • San Francisco, CA, USA

Come see what is in store for the future of optics and photonics! Top finalists from around the world pitch their innovations in front of a panel of judges and compete for a $10,000 first place prize.

Take advantage of this opportunity to build connections with up-and-coming businesses, find promising investment opportunities, and learn about new technologies entering the optics and photonics space.

STARTUP CHALLENGE FINALISTS

Atzeyo Biosensors, Inc.: Photonic Resonance Absorption Microscopy. The first molecular diagnostic platform for the physician's office addressing cancer care.

Max-IR Labs: AquaCarbon Monitor. Empowering carbon credits with precise CO_2 monitoring in water systems.

Photosynthetic B.V.: Volumetric Micro-Lithography. Enabling the rapid production of complex 3D devices with submicron features.

OptiCardio: OptiCardio. A spectroscopy-enabled device for real-time guidance to reduce the recurrence rate of ablation procedures for atrial fibrillation.

iSLight: Surface-Emitting SLED (Superluminescent LED). iSLight supplies superior lighting solutions to manufacturers of industrial quality-control systems, smart glasses, and imaging instruments.

SureVision: SureVision. A method that evaluates refractive error in the human eye, with a disruptive, flicker-minimization method that is five times faster and two times more precise than the current gold-standard method.

Modendo, Inc.: NeuroVu. Ultra-thin endoscopes for deep-brain imaging.

Founding Partner JENOPTIK

Lead Sponsor HAMAMATSU PHOTON IS OUR BUSINESS

MORE LIGHT

spie.org/startup

SPIE.

INDUSTRY EVENTS ON THE EXPO STAGE ARE OPEN TO ALL REGISTRATION TYPES.

New Materials for Wafer Scale Manufacturing of Optical Interconnects

29 January 2025 • 10:30 AM - 11:30 AM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Hear about advances and the next generation of materials for silicon photonics.

MODERATOR
Vlad Kozlov
Chief Analyst
LightCounting (USA)

PANELISTS
Michael Lebby
CEO
Lightwave Logic Inc. (USA)

Corrado Sciancalepore
Technical Marketing Manager
Photonics & Cloud AI Business Unit
SOITEC (France)

Guijun Ji
Senior Vice President of Strategy
Advanced Fiber Resources (China)

Brad Booth
CEO
NLM Photonics (USA)

Imaging the Invisible: Image Sensor Innovations at imec

29 January 2025 • 11:45 AM - 12:15 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come hear about new image sensor developments at imec, highlighting several world-firsts.

PRESENTER
Pawel Malinowski
Program Manager
imec (Belgium)

Optics and AI: Boundless Synergies for a Limitless Future

29 January 2025 • 1:15 PM - 2:30 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

A discussion to explore how artificial intelligence is both driving innovation in next generation optical products while simultaneously being enhanced by advances in optical technologies.

MODERATOR
Sanjay Gangadhara
Senior Program Director, Optics
Ansys (USA)

PANELISTS
Jessie Rosenberg
Director of Laser Engineering
Lightmatter (USA)

Simon Thibault
Professor
University Laval (Canada)

Chris Smolinski
Founding member
Stealth (USA)

Hannah Noble
Optical Systems Architect
Meta Reality Labs Research (USA)

Challenges in the Characterization and Diagnosis of Ultrafast Laser Beams

29 January 2025 • 2:45 PM - 3:45 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

A forum of experts to discuss the complexities of diagnosing cutting-edge ultrafast pulses, share their insights on characterization difficulties, and explore proposed efficiency and effectivity solutions.

MODERATOR

Antonio Castelo
Photonics Technology Manager
EPIC (Spain)

PANELISTS

Charles Dumas
VP - Sales and Marketing
Gentec-EO (Canada)

Mathieu Semenou
Chief Commercial Officer
Femto Easy (France)

Ingo Rimke
Chief Technology Officer
APE Angewandte Physik & Elektronik GmbH (Germany)

Karolis Madeikis
Senior R&D Engineer
EKSPLA (Lithuania)

Antoine Courjaud
Strategic Business Development
Amplitude (France)

Exploring Applications of Plasma Accelerators at the Extreme Photonics Applications Centre

29 January 2025 • 4:00 PM - 5:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Hear about the newest facility at the Central Laser Facility and the optics and photonics components that make it happen.

Introduction to EPAC and applications of extreme photonics

Tom Butcher
Head, The Centre for Advanced Laser Technology and Applications, Central Laser Facility, STFC Rutherford Appleton Laboratory (United Kingdom)

Panel discussion on laser-driven accelerators: technological challenges and opportunities

MODERATOR

Ric Allott
Director of Business Development and Incubation STFC (United Kingdom)

PANELISTS

John Lincoln
Chief Executive
Photonics Leadership Group (United Kingdom)

Bjorn Manuel Hegelich
CEO and Founder, Tau Systems (USA)
Professor, University of Texas (USA)

Chris Bridle
Large Optic Product and Sales Manager
Manx Precision Optics (United Kingdom)

Tom Butcher
Head, The Centre for Advanced Laser Technology and Applications, Central Laser Facility, STFC Rutherford Appleton Laboratory (United Kingdom)

PRISM AWARDS 25

Congratulations Prism Awards 2025

Finalists

BIOMEDICAL

Delta Life Science

Enspectra Health

Norlase

CAMERAS AND IMAGING SYSTEMS

Eoptic

NIL Technology

Thorlabs, Inc.

LASERS

n2-Photonics GmbH

Scantinel Photonics GmbH

Thorlabs, Inc.

QUANTUM TECH

Ki3 Photonics Technologies Inc.

Leonardo DRS (Daylight Solutions)

Qunnect

OPTICAL MATERIALS AND COMPONENTS

LightPath Technologies

Omega Optical

xolo GmbH

SENSORS

EXALOS

FluIDect GmbH

Interherence GmbH

SOFTWARE

BRELYON

HyperSpectral Corp.

PlanOpSim

TEST AND MEASUREMENT

Innovations in Optics, Inc.

Quartus Engineering Inc.

TRIOPTICS GmbH

CATALYST AWARD 25

SCHOTT AG

Thorlabs, Inc.

Vacuum Innovations

SPIE.

prismawards.org

INDUSTRY EVENTS ON THE EXPO STAGE ARE OPEN TO ALL REGISTRATION TYPES.

Creating a Sustainable Photonics Industry: How Photonics Companies are Addressing Environmental Concerns in Their Operations

30 January 2025 • 10:15 AM - 11:15 AM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Come hear from leaders in the photonics industry on how they integrate elements of sustainability into their corporate cultures and daily operations.

HOSTED BY the business of photonics optics.org

MODERATOR

Matthew Peach
Editor-in-Chief
optics.org (United Kingdom)

PANELISTS

Gwen Macchione
Sustainability Coordinator
Thorlabs (USA)

Estefania Cervantes Montano
Global Sustainability Manager
Edmund Optics (United Kingdom)

Ralf Daferner
Head of Global Sales and Marketing for Advanced Optics
SCHOTT (Germany)

TICKETS AND SEPARATE REGISTRATION REQUIRED.

2025 Prism Awards

29 January 2025 • 6:00 PM - 10:00 PM
Marriott Marquis Hotel, Yerba Buena Ballroom (Lower Level)

An annual international competition that honors the best new optics and photonics products on the market.

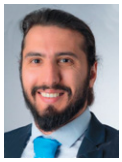
From Surge to Stability: Machine Vision's Next Chapter

30 January 2025 • 11:30 AM - 12:30 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Join the Yole Group team to hear the latest on the machine vision market.

PRESENTERS

Axel Clouet
Senior Technology & Market Analyst – Imaging
Yole Group (France)



Ali Jaffal
Senior Analyst, Compound Semiconductors
Yole Group (France)

Martin Vallo
Senior Analyst, Photonics
Yole Group (France)

Prism Awards Winners Circle

30 January 2025 • 1:30 PM - 3:00 PM
Moscone Center, Expo Stage, Hall DE (Exhibit Level)

Join us to celebrate the winners of the 17th Annual Prism Awards.

PROFESSIONAL DEVELOPMENT

Enjoy four powerful days of career development and job skills advancement. Build these focused events and services into your schedule and use the opportunity to make valuable connections.

OPEN TO ALL PAID TECHNICAL ATTENDEES.

A Celebration of Women in Optics

26 January 2025 • 9:00 AM - 5:00 PM PST | Marriott Marquis Hotel, Golden Gate Ballroom (Level B2)

Separate registration is required.

Join us for a day of keynotes, panels, and networking to celebrate twenty years of our Women in Optics planner.

Evolution and Technology: forces shaping women's roles and opportunities

27 January 2025 • 12:00 PM - 1:00 PM
Moscone West, Community Stage (Level 2)

Join us for lunch and explore how human evolution and technology have shaped women's roles and opportunities, and what the future holds for gender equality.

Evolution and Technology: forces shaping women's roles and opportunities
Presenter: **Jennifer Barton**

Celebrating Optics and Photonics in Africa

27 January 2025 • 4:00 PM - 5:00 PM
Moscone West, Community Stage (Level 2)

Join us in celebrating the growth of the optics and photonics ecosystem across Africa, with a special emphasis on education and outreach in sub-Saharan regions.

Skills to work on now for a future in industry

28 January 2025 • 8:30 AM - 9:30 AM
Moscone West, Room 2001 (Level 2)

Instructor Dr. Ben Cromey walks us through professional skills needed for a successful career in industry. This same workshop is offered on both Tuesday and Wednesday.

Dr. Benjamin Cromey
BAE Systems, Inc

Resumes to Interviews: Student and Early Career Strategies for a Successful Job Search

28 January 2025 • 10:00 AM - 12:00 PM
Moscone West, Room 2001 (Level 2)

Whether you are about to graduate or are a professional looking for a new role, join us for this vital workshop on resume and interview must-dos and don'ts!

Liz Helton
Career Transformation Partners

Neuro-Inclusion in Physics

28 January 2025 • 12:00 PM - 1:00 PM
Moscone West, Community Stage (Level 2)

Join us for lunch and learn how to foster neuro-inclusive physics workspaces by understanding neurodiversity, recognizing barriers, and implementing practical steps for change.

Daisy Shearer
National Quantum Computing Centre

Resume Review

28 January 2025 • 1:00 PM - 5:00 PM
Moscone West, Level 2 Lobby

Free! Bring your resume to receive tactical tips and tricks from a professional resume reviewer.

Liz Helton
Career Transformation Partners

SPIE Student Chapters: Tips and Sips!

28 January 2025 • 1:15 PM - 2:45 PM
Moscone West, Community Stage (Level 2)

SPIE Staff and special guests share best practices, tips and tricks for keeping your Chapter engaged year over year.

Career Speed Mentoring

28 January 2025 • 3:00 PM - 4:00 PM PST | Moscone West, Community Corner (Level 2)

Students and Early Career attendees! Looking to get advice on critical career choices, life in academia, government, industry, and more? Join us for this fun and casual speed-mentoring session. Snacks and drinks provided!

What You Need to Know About Journal Publication: An Intro to Scholarly Publishing

29 January 2025 • 9:00 AM - 10:30 AM
Moscone West, Room 2001 (Level 2)

Learn what to expect, what to avoid, and above all, how to successfully publish your research in a reputable peer-reviewed scholarly journal.

Gwen Weerts
Journals Manager and Editor in Chief of *Photonics Focus*, SPIE

Matt Jungwirth
Manager, Technical Content and Scientific Publishing, SPIE

Resume Review

29 January 2025 • 10:00 AM - 5:00 PM
Moscone West, Level 2 Lobby

Free! Bring your resume to receive tactical tips and tricks from a professional resume reviewer.

Liz Helton
Career Transformation Partners

Skills to work on now for a future in industry

29 January 2025 • 11:00 AM - 12:00 PM
Moscone West, Room 2001 (Level 2)

Instructor Ben Cromey walks us through professional skills needed for a successful career in industry.

Dr. Benjamin Cromey
BAE Systems, Inc

Navigating your Career through Networking: Insights from Women in XR

29 January 2025 • 12:00 PM - 1:00 PM
Moscone West, Community Stage (Level 2)

Join us for lunch and learn how you can elevate your networking skills and advance your career. See conference app for presenter details.

Communication for Self-advocacy and ConflictResolution

30 January 2025 • 12:00 PM - 1:00 PM
Moscone West, Community Stage (Level 2)

Join us for lunch and learn strategies to navigate difficult conversations with confidence and clarity.

Presenter: **Dr. Tara Fortier**

Free Professional Headshots

Moscone West, Level 2 Lobby

Free professional headshots for all SPIE Members and Corporate Members. Be ready to show your proof of Membership.

27 January 2025 • 9:30 AM - 4:30 PM
28 January 2025 • 9:30 AM - 4:30 PM
29 January 2025 • 9:30 AM - 4:30 PM

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SPIE.MEMBERSHIP

SPIE is committed to equipping you with tools to advance and enhance your career.

Moscone Center, Hall C, Room 5 (Exhibit Level)
Tuesday 28 January 2025 • 10:00 AM - 5:00 PM
Wednesday 29 January 2025 • 10:00 AM - 5:00 PM

Meet with companies seeking to hire professionals like you. Bring your resume and put your best foot forward to land your dream job.

Visit the SPIE App or the website for current list of Job Fair exhibitors

spiecareercenter.org

SPIE. CAREER CENTER

MEMBERSHIP EVENTS

Connect with our global optics and photonics community

Your SPIE Membership is your passport to engage with a network of innovators from around the word.

SPIE Fellow & Senior Member Luncheon

27 January 2025 • 12:00 PM - 1:30 PM
InterContinental Hotel, Intercontinental Ballroom (5th Floor)

All Fellow and Senior Members of SPIE are invited to join your colleagues for an SPIE hosted lunch. The new SPIE Fellows attending Photonics West will be introduced and recognized.

SPIE Member After-Dinner Reception

28 January 2025 • 8:00 PM - 9:30 PM
San Francisco Museum of Modern Art (151 Third St)

SPIE Members are invited to join us for an evening of networking, music, art, and celebration of our global optics and photonics community. Enjoy beer, wine, coffee, desserts, and meaningful conversation in one of the largest modern and contemporary art museums in the United States.

Please note: this reception is limited to SPIE Members and Corporate Members only. Please wear your registration badge with your Member ribbon or Corporate Member label and bring a valid ID. If you join as an SPIE Member onsite, please bring your registration receipt. Dress is casual or business attire.

Get your FREE Professional Portrait

Free professional headshots for all SPIE Members and Corporate Members.

Be ready to show your proof of Membership

Moscone West, Level 2 Lobby

27 January 2025 . . . . . 9:30 AM–4:30 PM
28 January 2025 . . . . . 9:30 AM–4:30 PM
29 January 2025 . . . . . 9:30 AM–4:30 PM

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SPIE is committed to equipping you with tools and resources to advance your career.

SPIE.MEMBERSHIP

YOUR MEMBERSHIP, YOUR WAY.

MEMBER BENEFITS:

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Gain new skills and stay current

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Make connections that lead to new opportunities

GROW PROFESSIONALLY
Move forward at every stage of your career

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SOCIAL AND NETWORKING EVENTS

Network with colleagues

Make connections with new and old colleagues. Unwind in more casual settings where conversations can flow more easily and where true relationship building happens.

OPEN TO ALL PAID TECHNICAL ATTENDEES, UNLESS OTHERWISE NOTED.

Biophotonics Summer School Meetup

26 January 2025 • 4:00 PM - 5:00 PM
Moscone West, Community Corner (Level 2)

Join alumni, lecturers, and organizers of the prestigious Biophotonics Summer School at this casual networking event.

SPIE Fellow & Senior Member Luncheon

27 January 2025 • 12:00 PM - 1:30 PM
InterContinental Hotel, Intercontinental Ballroom (5th Floor)

All Fellow and Senior Members of SPIE are invited to join your colleagues for an SPIE-hosted lunch. The new SPIE Fellows attending Photonics West will be introduced and recognized.

Women in Optics Meetup

27 January 2025 • 3:00 PM - 4:00 PM
Moscone West, Community Corner (Level 2)

Join other women in the field for informal discussions and networking.

Executive Women's Meetup

27 January 2025 • 6:30 PM - 7:30 PM
InterContinental Hotel, Pacific Terrace Foyer (4th Floor)

Join other women executives in optics, photonics, and photonics-enabled communities to meet up, network, and share experience.

Photonics West Welcome Reception

27 January 2025 • 7:00 PM - 9:00 PM
Marriott Marquis Hotel, Yerba Buena Ballroom (Lower Level)

Don't miss the Photonics West Welcome Reception and Experience the Greatest Photonics Show on Earth, including nostalgic activities and entertainment along with a nod to the new and now. Must be a registered and paid attendee.

SPIE Scholarship and Student Conference Support Recipients Meetup

28 January 2025 • 4:00 PM - 5:00 PM
Moscone West, Community Stage (Level 2)

Join SPIE scholarship and Student Conference Support recipients at this networking meetup with MKS industry representatives and SPIE leadership.

Publications Reception

28 January 2025 • 5:00 PM - 6:00 PM
Moscone West, Community Corner (Level 2)

This reception is for all volunteers who serve as Editors for SPIE journals, including Optical Engineering, Advanced Photonics, JEI, JNP, JPE, or JOM. Come reconnect with colleagues over snacks and drinks.

LGBTQ+ Social

28 January 2025 • 6:30 PM - 7:30 PM
Moscone West, Community Corner (Level 2)

Come join us and socialize and network with other LGBTQ+ attendees, students, scientists, and allies in the optics and photonics community.

SPIE Member After-Dinner Reception

28 January 2025 • 8:00 PM - 9:30 PM
San Francisco Museum of Modern Art (151 Third St)

SPIE Members are invited to join us for an evening of networking, music, art, and celebration of our global optics and photonics community.

Black Scientists' Social

29 January 2025 • 5:30 PM - 6:30 PM
Moscone West, Community Corner (Level 2)

Join us as we count down to Black History Month with a Black scientists' social.

OPEN TO ALL REGISTRATION TYPES.

Whiskey Tasting at SPIE Booth

South Lower Lobby, Booth 3700 (Exhibit Level)

Sample specialty whiskeys while chatting with colleagues at SPIE Booth #3700.

28 January 2025 . . . . . 2:00 PM - 5:00 PM
29 January 2025 . . . . . 2:00 PM - 5:00 PM
30 January 2025 . . . . . 2:00 PM - 4:00 PM

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Paws for a Break

Moscone South, Lower Lobby (Exhibit Level)

Paws for a break and join some of the most cuddly four-legged animals for a bit of self-care and animal love at the Community Corner.

25 January 2025 . . . . . 3:00 PM - 5:00 PM
26 January 2025 . . . . . 2:00 PM - 4:00 PM
28 January 2025 . . . . . 3:00 PM - 5:00 PM
29 January 2025 . . . . . 3:00 PM - 5:00 PM
30 January 2025 . . . . . 2:00 PM - 4:00 PM

OPTICS & PHOTONICS International Congress

OPIC 2025

PLAN TO ATTEND
opicon.jp

21-25 April 2025
Pacifico Yokohama, Japan

Co-located with

OPTICS & PHOTONICS International Exhibition
OPIE '25

Plenary Session

Wednesday, 23 April
16:15-18:45

LASERs in Space : LASER utilization in space programs and recent topics on the optical data relay satellite in JAXA

Shiro Yamakawa
Japan Aerospace Exploration Agency (JAXA), Japan

Ultrafast Quantum Simulation and Quantum Computing with Ultracold Atom Arrays at Quantum Speed Limit

Kenji Ohmori
Institute for Molecular Science (IMS), Japan

What is Life? Towards Imaging the Molecular Machinery of the Cell

R. J. Dwayne Miller
University of Toronto, Canada

Conferences

ALPS .....Advanced Lasers and Photon Sources
BISC.....Biomedical Imaging and Sensing Conference
FAAP .....The Future of Agriculture and Advanced Photonics
HEDS .....International Conference on High Energy Density Science
ICNNQ.....International Conference on Nano-photonics, Nano-optoelectronics and Quantum technology
LSC.....Conference on Laser and Synchrotron Radiation Combination Experiment
LSSE.....Laser Solutions for Space and the Earth
META.....Meta Photonics: Design, Fabrication, Characterization, and Applications
OMC.....Optical Manipulation and Structured Materials Conference
OPTM.....Optical Technology and Measurement for Industrial Applications
OWPT.....Optical Wireless and Fiber Power Transmission Conference
SI-Thru.....Sensing and Imaging through Scattering and Fluctuating Field in Biology, Telecommunication, and Astronomy
TILA-LIC....Tiny Integrated Laser and Laser Ignition Conference
XOPT.....International Conference on X-ray Optics and Applications

Organaized by OPI (OPTICS & PHOTONICS International Council)

International Partners SPIE. PHOTONICS MEDIA

FOUR WORLD-CLASS EXHIBITIONS

Photonics West Exhibition

Tues. 28 January . . . . . 10:00 AM–5:00 PM

Wed. 29 January . . . . . 10:00 AM–5:00 PM

Thurs. 30 January . . . . . 10:00 AM–4:00 PM

Photonics West is the premier photonics and laser exhibition. Find the latest components, devices, and systems for your research or business needs.

BiOS Expo

Sat. 25 January. . . . . 10:00 am–5:00 pm

Sun. 26 January.. . . . . 10:00 am–4:00 pm

BiOS Expo, the world's largest biomedical optics and biophotonics exhibition, kicks off the Photonics West week. Find the latest technologies from companies supplying biomedical research and healthcare solutions.

Quantum West Expo

Tues. 28 January . . . . . 10:00 AM–5:00 PM
Wed. 29 January . . . . . 10:00 AM–5:00 PM

Find the best Quantum 2.0 technologies. Companies offer an inside look into their innovations, capabilities, and services. Build partnerships that will advance your work, save you money, and keep you on the cutting edge of the Quantum 2.0 revolution.

CO-LOCATED WITH

SPIE.AR|VR|MR

Tues. 28 January . . . . . 10:00 AM–5:00 PM
Wed. 29 January . . . . . 10:00 AM–5:00 PM

Featuring must-see presentations and demonstrations from the biggest names in consumer electronics and up-and-coming XR companies. Located in Moscone Center West, access to this exhibition is included with all registration types.

Learn more: **spie.org/avr**

Walk the floor and see who is exhibiting

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OPTICS & PHOTONICS International Exhibition

OPIE '25

https://www.opie.jp/en/

LASER EXPO
- Power Laser Forum zone
- Laser Lighting - Display, Optical Wireless Power Transmission zone

LENS EXPO

Positioning EXPO

Space & Astronomical Optics EXPO

Sensor & Imaging EXPO

Light Source & Optical Devices EXPO

Optical Communication & Applications EXPO

Co-located with Congress **OPIC2025**

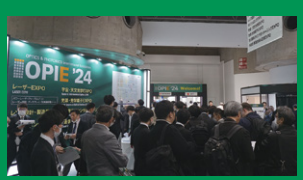
https://opicon.jp/

Plan to Attend!

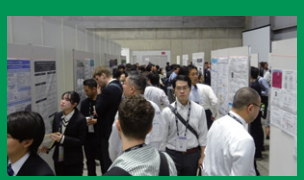
23-25 April, 2025

Pacifico Yokohama, Japan

Total Projected Participation - Exhibitors 500 - Attendees 18,000

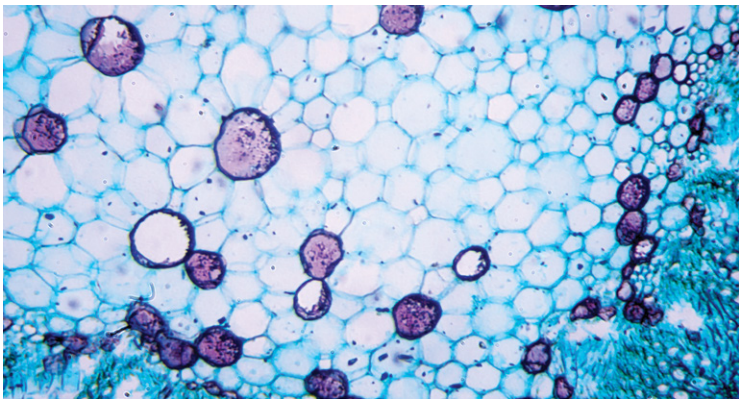






International Partner SPIE. PHOTONICS MEDIA

For further information **OPTRONICS** intl@optronics.co.jp



BiOS

The industry's most important meeting for biophotonics, biomedical optics, and imaging

Speaker Check-In and Preview Station

Locations:

Moscone South, Upper Mezzanine Overlook (Saturday-Thursday)

Moscone West, Level 2 Lobby (Sunday–Thursday)

Open during Registration hours

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 have a laptop, projector, screen, lapel microphone, and laser pointer.

BiOS Poster Sessions

Conference attendees are invited to attend the poster sessions. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field.

BiOS Poster Session - Sunday

26 January 2025 • 5:30 PM - 7:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Sunday 10:00 AM - 5:00 PM

BiOS Student 3-Minute Poster Presentations

Sponsored by JBO, BIOS, and Neurophotonics

27 January 2025 • 4:30 PM - 5:30 PM
Moscone West, Room 2001 (Level 2)

Students present 3-minute rapid-fire overviews of their BiOS poster research. The top three presentations will receive cash prizes.

BiOS Poster Session - Monday

27 January 2025 • 5:30 PM - 7:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Monday 10:00 AM - 5:00 PM

Poster authors: View poster presentation guidelines and set-up instructions at **https://spie.org/PW/poster-guidelines**

BIOS SYMPOSIUM CHAIRS

Sergio Fantini
Tufts Univ. (USA)

Paola Taroni
Politecnico di Milano (Italy)

BIOS SYMPOSIUM CO-CHAIRS

Rainer Leitgeb
Medizinische Univ. Wien (Austria)

Laura Marcu
Univ. of California, Davis (USA)

BIOS PROGRAM TRACK CHAIRS

Medical Photonics: Therapeutics and Diagnostics

Brian Jet-Fei Wong, Beckman Laser Institute and Medical Clinic, Univ. of California, Irvine (USA)
Gabriela Apiou, Wellman Center for Photomedicine and Massachusetts General Hospital Research Institute, Harvard Medical School (USA)

Neurophotonics, Neurosurgery, and Optogenetics

Anna Wang Roe, Nathan Kline Institute, New York Univ. (USA)
Shy Shoham, New York Univ. (USA)

Technologies for Translational Biophotonics

Tuan Vo-Dinh, Duke Univ. (USA)
Anita Mahadevan-Jansen, Vanderbilt Univ. (USA)

Tissue Optics and Light-Tissue Interaction

E. Duco Jansen, Vanderbilt Univ. (USA)
Jessica C. Ramella-Roman, Florida International Univ. (USA)

Biomedical Spectroscopy, Microscopy, and Imaging

Ammasi Periasamy, Univ. of Virginia (USA)
Daniel L. Farkas, Univ. of Southern California (USA) and SMI (USA)

Nano/Biophotonics

Paras Prasad, Univ. at Buffalo (USA)
Ewa M. Goldys, The Univ. of New South Wales (Australia)

BiOS DAILY CONFERENCE SCHEDULE

Check the conference schedule frequently for updates
Presentation times are subject to change

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Medical Photonics: Therapeutics and Diagnostics (Brian Jet-Fei Wong, Gabriela Apiou)					
13292 **Photonics in Dermatology and Plastic Surgery 2025** *(Haishan Zeng; Milind Rajadhyaksha)* Moscone South, Room 154 (Upper Mezz)					
13293 **Advanced Photonics in Urology 2025** *(Hyun Wook Kang; Ronald Sroka; Jian J. Zhang)* Moscone South, Room 301 (Level 3)					
13294 **Imaging, Therapeutics, and Advanced Technology in Head and Neck Surgery and Otolaryngology 2025** *(Brian J. F. Wong; Justus F. Ilgner)* Moscone South, Room 201 (Level 2)					
13295 **Light in Cardiology 2025** *(Gijs van Soest; Irina V. Larina; Christos Bourantas)* Moscone South, Room 155 (Upper Mezz)		13296 **Biophotonics and Immune Responses XX** *(Wei R. Chen; Feifan Zhou)* Moscone South, Room 151 (Upper Mezz)			
13297 **Mechanisms of Photobiomodulation Therapy XIX** *(Ann Liebert; Jeri-Anne Lyons; James D. Carroll)* Moscone South, Room 153 (Upper Mezz)		13298 **Photonic Diagnosis, Monitoring, Prevention, and Treatment of Infections and Inflammatory Diseases 2025** *(Tianhong Dai; Jürgen Popp; Mei X. Wu)* Moscone South, Room 102 (Level 1 Lobby)			
13299 **Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XXXIII** *(David H. Kessel; Tayyaba Hasan; Edward V. Maytin)* Moscone South, Room 151 (Upper Mezz)					
13300 **Ophthalmic Technologies XXXV** *(Daniel X. Hammer; Derek Nankivil; Yuankai K. Tao)* Moscone South, Room 156 (Upper Mezz)					
13301 **Molecular-Guided Surgery: Molecules, Devices, and Applications XI** *(Summer L. Gibbs; Kenneth M. Tichauer)* Moscone South, Room 152 (Upper Mezz)					

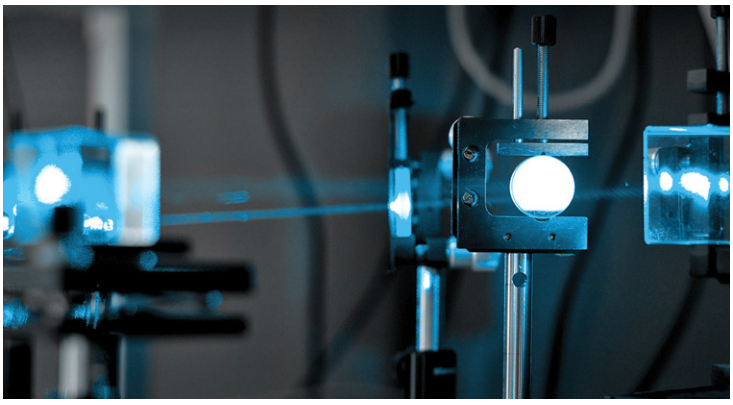
SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Neurophotonics, Neurosurgery, and Optogenetics (Anne Roe, Shy Shoham)					
13302 **Clinical and Translational Neurophotonics 2025** *(Jana M. Kainerstorfer; Erin M. Buckley; Vivek Jay Srinivasan)* Moscone South, Room 105 (Level 1 Lobby)		13303 **Neural Imaging and Sensing 2025** *(Qingming Luo; Jun Ding; Ling Fu)* Moscone South, Room 105 (Level 1 Lobby)			
Conference 13304 **Optogenetics and Optical Manipulation 2025** *(Anna W. Roe; Shy Shoham)* Moscone South, Room 104 (Level 1 Lobby)					
Technologies for Translational Biophotonics (Tuan Vo-Dinh, Anita Mahadevan-Jansen)					
13306 **Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XXIII** *(Caroline Boudoux; James W. Tunnell)* Moscone South, Room 203 (Level 2)		13305 **Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXIX** *(Rainer A. Leitgeb; Yoshiaki Yasuno)* Moscone South, Room 203 (Level 2)			
13307 **Optics and Biophotonics in Low-Resource Settings XI** *(David Levitz; Aydogan Ozcan)* Moscone South, Room 202 (Level 2)					
13308 **Design and Quality for Biomedical Technologies XVIII** *(Gracie Vargas; T. Joshua Pfefer)* Moscone South, Room 211 (Level 2)					
13309 **Multimodal Biomedical Imaging XX** *(Xavier Intes; Marien Ochoa; Mohammad Abbas Yaseen)* Moscone South, Room 204 (Level 2)					
13310 **Optical Fibers and Sensors for Medical Diagnostics, Treatment, and Environmental Applications XXV** *(Israel Gannot; Katy Roodenko)* Moscone South, Room 212 (Level 2)					
		13311 **Optical Biopsy XXIII: Toward Real-Time Spectroscopic Imaging and Diagnosis** *(Robert R. Alfano; Angela B. Seddon; Lingyan Shi; Binlin Wu)* Moscone South, Room 211 (Level 2)			
	13312 **Microfluidics, BioMEMS, and Medical Microsystems XXIII** *(Bastian E. Rapp; Colin Dalton)* Moscone South, Room 204 (Level 2)				
13313 **Biophotonics in Exercise Science, Sports Medicine, Health Monitoring Technologies, and Wearables VI** *(Babak Shadgan; Amir H. Gandjbakhche)* Moscone South, Room 210 (Level 2)		13314 **Optical Tomography and Spectroscopy of Tissue XVI** *(Sergio Fantini; Paola Taroni)* Moscone South, Room 213 (Level 2)			

BiOS DAILY CONFERENCE SCHEDULE

Check the conference schedule frequently for updates
Presentation times are subject to change

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
13315 **Visualizing and Quantifying Drug Distribution in Tissue IX** *(Kin Foong Chan; Conor L. Evans)* Moscone South, Room 205 (Level 2)		13316 **Optical Diagnostics and Sensing XXV: Toward Point-of-Care Diagnostics** *(Gerard L. Coté; Justin S. Baba)* Moscone South, Room 304 (Level 3)			
Tissue Optics, Laser-Tissue Interaction, and Tissue Engineering (E. Duco Jansen, Jessica C. Ramella-Roman)					
13317 **Optical Interactions with Tissue and Cells XXXVI** *(Norbert Linz; Joel N. Bixler; Alex J. Walsh)* Moscone South, Room 160 (Upper Mezz)					
13318 **Dynamics and Fluctuations in Biomedical Photonics XXII** *(Valery V. Tuchin; Martin J. Leahy; Ruikang K. Wang)* Moscone South, Room 304 (Level 3)					
13320 **Biomedical Light Scattering XV** *(Adam Wax; Vadim Backman)* Moscone South, Room 101 (Level 1 Lobby)	13319 **Photons Plus Ultrasound: Imaging and Sensing 2025** *(Alexander A. Oraevsky; Lihong V. Wang)* Moscone South, Room 205 (Level 2)				
13321 **Optical Elastography and Tissue Biomechanics XII** *(Kirill V. Larin; Giuliano Scarcelli)* Moscone South, Room 103 (Level 1 Lobby)					
13322 **Polarized Light and Optical Angular Momentum for Biomedical Diagnostics 2025** *(Jessica C. Ramella-Roman; Hui Ma; Tatiana Novikova; Daniel S. Elson; I. Alex Vitkin)* Moscone South, Room 102 (Level 1 Lobby)					
	13353 **Frontiers in Ultrafast Optics: Biomedical, Scientific, and Industrial Applications XXV** *(Peter R. Herman; Roberto Osellame; Adela Ben-Yakar)* Moscone South, Room 210 (Level 2)				
Biomedical Microscopy, Spectroscopy, and Imaging (Ammasi Periasamy, Daniel L. Farkas)					
		13323 **Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XXIII** *(Attila Tarnok; Jessica P. Houston; Xuantao Su)* Moscone South, Room 312 (Level 3)			
	13324 **Multiphoton Microscopy in the Biomedical Sciences XXV** *(Ammasi Periasamy; Peter T. C. So; Karsten König)* Moscone South, Room 301 (Level 3)			13325 **Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXXII** *(Thomas G. Brown; Tony Wilson; Laura Waller)* Moscone South, Room 301 (Level 3)	
13326 **Single Molecule Spectroscopy and Superresolution Imaging XVIII** *(Rainer Erdmann; Mike Heilemann; Felix Koberling)* Moscone South, Room 307 (Level 3)					

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
13327 **Multiscale Imaging and Spectroscopy VI** *(Paul J. Campagnola; Darren M. Roblyer; Alex J. Walsh)* Moscone South, Room 305 (Level 3)					
	13328 **Adaptive Optics and Wavefront Control for Biological Systems XI** *(Thomas G. Bifano; Na Ji; Lei Tian)* Moscone South, Room 308 (Level 3)				
13329 **Quantitative Phase Imaging XI** *(Yang Liu; YongKeun Park)* Moscone South, Room 311 (Level 3)					
13330 **High-Throughput Biophotonics: Imaging, Spectroscopy, and Beyond X** *(Kevin K. Tsia; Keisuke Goda)* Moscone South, Room 312 (Level 3)					
	13331 **Label-free Biomedical Imaging and Sensing (LBIS) 2025** *(Natan T. Shaked; Oliver Hayden)* Moscone South, Room 303 (Level 3)				
13332 **Advanced Chemical Microscopy for Life Science and Translational Medicine 2025** *(Ji-Xin Cheng; Wei Min; Garth J. Simpson)* Moscone South, Room 314 (Level 3)					
13333 **Computational Optical Imaging and Artificial Intelligence in Biomedical Sciences II** *(Liang Gao; Guoan Zheng; Seung Ah Lee)* Moscone South, Room 306 (Level 3)					
13334 **Endoscopic Microscopy XX** *(Guillermo J. Tearney M.D.; Thomas D. Wang; Melissa J. Suter)* Moscone South, Room 313 (Level 3)					
Nano/Biophotonics (Paras Prasad, Ewa M. Goldys)					
	13335 **Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XXII** *(Dror Fixler; Sebastian Wachsmann-Hogiu)* Moscone South, Room 104 (Level 1 Lobby)				
13336 **Colloidal Nanoparticles for Biomedical Applications XX** *(Marek Osiński; Antonios G. Kanaras)* Moscone South, Room 50 (Lower Mezz)					
	13337 **Plasmonics in Biology and Medicine XXII** *(Tuan Vo-Dinh; Ho-Pui A. Ho; Krishanu Ray)* Moscone South, Room 58 (Lower Mezz)				
13338 **Frontiers in Biological Detection: From Nanosensors to** Systems XVII *(Amos Danielli; Benjamin L. Miller; Sharon M. Weiss)* Moscone South, Room 70 (Lower Mezz)			13339 **Reporters, Contrast Agents, and Molecular Probes for Biomedical Applications XVI** *(Mikhail Y. Berezin; Ramesh Raghavachari)* Moscone South, Room 104 (Level 1 Lobby)		
13340 **Quantum Effects and Measurement Techniques in Biology and Biophotonics II** *(Clarice Aiello; Sergey V. Polyakov; Paige Derr)* Moscone South, Room 54 (Lower Mezz)					



LASE

The most important event for industrial laser, laser source, and laser applications

Speaker Check-In and Preview Station

Locations:

Moscone South, Upper Mezzanine Overlook (Saturday-Thursday)

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Open during Registration hours

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LASE and select BiOS Poster Session

28 January 2025 • 6:00 PM - 8:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Tuesday 10:00 AM - 5:00 PM

Conference attendees are invited to attend the poster sessions. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field.

Poster authors: View poster presentation guidelines and set-up instructions at **https://spie.org/PW/poster-guidelines**

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Vassilia Zorba
Lawrence Berkeley National Lab. (USA)

Kaoru Minoshima
Univ. of Electro-Communications (Japan)

LASE SYMPOSIUM CO-CHAIRS

Stefan Kaierle
Laser Zentrum Hannover e.V. (Germany)

John Ballato
Clemson Univ. (USA)

LASE PROGRAM TRACK CHAIRS

Laser Sources
Clémence Jollivet, Coherent Corp. (USA)
Yasumasa Kawakita, Furukawa Electric Co., Ltd. (Japan)

Nonlinear Optics and Beam Guiding
Vladimir Ilchenko, Jet Propulsion Lab. (USA)
Paul O. Leisher, Luminar Technologies, Inc. (USA)

Micro/Nano Applications
Henry Helvajian, The Aerospace Corp.(USA)
Guido Hennig, Daetwyler Graphics AG (Switzerland)

Macro Applications
Bo Gu, Bos Photonics (USA)
Constantin L. Häfner, Fraunhofer-Institut für Lasertechnik ILT (Germany)

LASE DAILY CONFERENCE SCHEDULE

Check the conference schedule frequently for updates | Presentation times are subject to change

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Laser Sources (Clémence Jollivet, Yasumasa Kawakita)					
	13341 **Solid State Lasers XXXIV: Technology and Devices** *(W. Andrew Clarkson; Ramesh K. Shori)* Moscone South, Room 302 (Level 3)				
		13342 **Fiber Lasers XXII: Technology and Systems** *(Thomas Schreiber; Matthias Savage-Leuchs)* Moscone South, Room 156 (Upper Mezz)			
		13344 **Components and Packaging for Laser Systems XI** *(Alexei L. Glebov; Ruth Houbertz; Stefan W. Heinemann)* Moscone South, Room 206 (Level 2)		13343 **High Power Lasers for Fusion Research VIII** *(Abdul A. S. Awwal; Constantin L. Häfner)* Moscone South, Room 303 (Level 3)	
	13345 **High-Power Diode Laser Technology XXIII** *(Mark S. Zediker; Erik P. Zucker; Jenna Campbell)* Moscone South, Room 201 (Level 2)				
			13346 **Vertical External Cavity Surface Emitting Lasers (VECSELs) XIV** *(Marcel Rattunde)* Moscone South, Room 212 (Level 2)		
Nonlinear Optics/Beam Guiding (Vladimir Ilchenko, Paul O. Leisher)					
			13347 **Nonlinear Frequency Generation and Conversion: Materials and Devices XXIV** *(Jeffrey Moses; Christopher R. Phillips)* Moscone South, Room 151 (Upper Mezz)		
			13348 **Real-time Measurements, Rogue Phenomena, and Single-Shot Applications X** *(Daniel R. Solli; Georg Herink; Serge Bielawski)* Moscone South, Room 314 (Level 3)		
			13349 **Laser Resonators, Microresonators, and Beam Control XXVII** *(Vladimir S. Ilchenko; Andrea M. Armani; Julia V. Sheldakova; Alexis V. Kudryashov; Andrey B. Matsko)* Moscone South, Room 207 (Level 2)		

LASE DAILY CONFERENCE SCHEDULE

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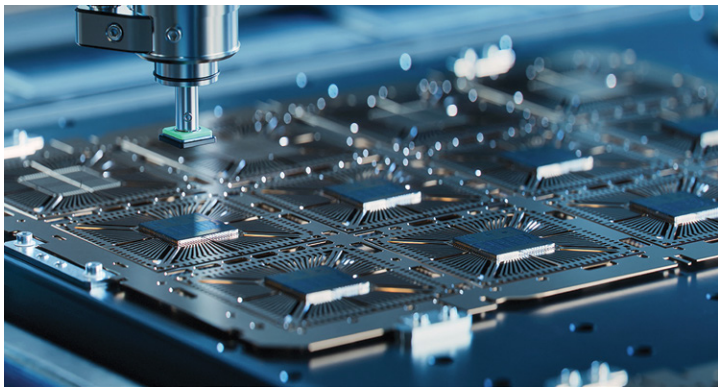
SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Micro/Nano Applications (Henry Helvajian, Guido Hennig)					
		13350 **Laser Applications in Microelectronic and Optoelectronic Manufacturing (LAMOM) XXX** *(Jan Kleinert; Godai Miyaji; Gwenn Pallier)* Moscone South, Room 308 (Sessions 1&4 in Room 214)			
13352 **Nanoscale and Quantum Materials: From Synthesis and Laser Processing to Applications 2025** *(Andrei V. Kabashin; Maria Farsari; Masoud Mahjouri-Samani)* Moscone South, Room 213 (Level 2)		13351 **Laser-based Micro- and Nanoprocessing XIX** *(Rainer Kling; Wilhelm Pfleging; Koji Sugioka)* Moscone South, Room 214 (Level 2)			
	13353 **Frontiers in Ultrafast Optics: Biomedical, Scientific, and Industrial Applications XXV** *(Peter R. Herman; Roberto Osellame; Adela Ben-Yakar)* Moscone South, Room 210 (Level 2)				
			13354 **Laser 3D Manufacturing XII** *(Bo Gu; Hongqiang Chen; Henry Helvajian)* Moscone South, Room 201 (Session 1 in Rm 155)		
Macro Applications (Bo Gu, Constantin L. Häfner)					
			13354 **Laser 3D Manufacturing XII** *(Bo Gu; Hongqiang Chen; Henry Helvajian)* Moscone South, Room 201 (Session 1 in Rm 155)		
			13355 **Free-Space Laser Communications XXXVII** *(Hamid Hemmati; Bryan S. Robinson)* Moscone South, Room 208 (Level 2)		
				13356 **High-Power Laser Materials Processing: Applications, Diagnostics, and Systems XIV** *(Stefan Kaierle; Klaus R. Kleine)* Moscone South, Room 212 (Level 2)	
		13358 **Optical Technologies for Inertial Fusion Energy** *(Stavros G. Demos; Carmen S. Menoni)* Moscone South, Room 76 (Lower Mezz)		13357 **Photonic Technologies in Plant and Agricultural Science II** *(Dag Heinemann; Gerrit Polder)* Moscone South, Room 215 (Level 2)	
			13359 **Optical Power Delivery** *(Bahram Jalali; Carlos Algora; Takeo Maruyama)* Moscone South, Room 215 (Tue); Moscone West, Room 2022 (Wed)		



OPTO

OPTO is the most important optoelectronics conference in the field and addresses the latest developments in a broad range of optoelectronic technologies and their integration for a variety of commercial applications.

Speaker Check-In and Preview Station

Locations:

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OPTO and Quantum West Poster Session

29 January 2025 • 6:00 PM - 8:00 PM
Moscone West, Room 2003 (Level 2)

Poster Setup: Wednesday 10:00 AM - 5:00 PM

Conference attendees are invited to attend the OPTO and Quantum West poster session on Wednesday evening. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field.

Poster authors: View poster presentation guidelines and set-up instructions at **https://spie.org/PW/poster-guidelines**

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Chemnitz (Germany)

Karin Hinzer
Univ. of Ottawa
(Canada)

OPTO SYMPOSIUM CO-CHAIRS

Andrea Blanco-Redondo
CREOL, The College of Optics and Photonics, Univ. of Central Florida (USA)

Georg von Freymann
Rheinland-Pfälzische Technische Univ. Kaiserslautern-Landau (Germany)

OPTO PROGRAM TRACK CHAIRS

Optoelectronic Materials and Devices
Shibin Jiang, AdValue Photonics, Inc. (USA)

Photonic Integration
Yakov Sidorin, Quarles & Brady LLP (USA)
Jean-Emmanuel Broquin, Univ. Grenoble Alpes (France)

Nanotechnologies in Photonics
Ali Adibi, Georgia Institute of Technology (USA)

MOEMS-MEMS in Photonics
Hans Zappe, Univ. of Freiburg (Germany)

Semiconductor Lasers, LEDs, and Applications
Alexey Belyanin, Texas A&M Univ. (USA)
Martin Strassburg, ams-OSRAM International GmbH (Germany)

Displays and Holography
Liang-Chy Chien, Kent State Univ. (USA)

OPTO DAILY CONFERENCE SCHEDULE

Check the conference schedule frequently for updates
Presentation times are subject to change

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Optoelectronic Materials and Devices (Shibin Jiang)					
			13360 **Physics and Simulation of Optoelectronic Devices XXXIII** *(Bernd Witzigmann; Marek Osinski; Yasuhiko Arakawa)* Moscone West, Room 2008 (Level 2)		
			13361 **Physics, Simulation, and Photonic Engineering of Photovoltaic Devices XIV** *(Alexandre Freundlich; Karin Hinzer; Ian R. Sellers; Henning Helmers)* Moscone West, Room 2001 (Tue) and Room 2022 (Wed-Thu)		
		13362 **Optical Components and Materials XXII** *(Shibin Jiang; Michel J. F. Digonnet)* Moscone West, Room 2012 (Level 2)		13363 **Organic Photonic Materials and Devices XXVII** *(William M. Shensky III; Ileana Rau; Okihiro Sugihara)* Moscone West, Room 2012 (Level 2)	
		13364 **Ultrafast Phenomena and Nanophotonics XXIX** *(Markus Betz; Abdulhakem Y. Elezzabi)* Moscone West, Room 2020 (Level 2)			
		13365 **Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications XVIII** *(Laurence P. Sadwick; Tianxin Yang)* Moscone West, Room 2024 (Level 2)			
		13366 **Gallium Nitride Materials and Devices XX** *(Hiroshi Fujioka; Hadis Morkoç; Ulrich T. Schwarz)* Moscone West, Room 2018 (Level 2)			
	13367 **Oxide-based Materials and Devices XVI** *(David J. Rogers; Férechteh H. Teherani)* Moscone West, Room 2014 (Level 2)				
		13368 **2D Photonic Materials and Devices VIII** *(Arka Majumdar; Carlos M. Torres Jr.; Hui Deng)* Moscone West, Room 2010 (Level 2)			
Photonic Integration (Yakov Sidorin, Jean-Emmanuel Broquin)					
		13365 **Terahertz, RF, Millimeter, and Submillimeter-Wave Technology and Applications XVIII** *(Laurence P. Sadwick; Tianxin Yang)* Moscone West, Room 2024 (Level 2)			
		13369 **Integrated Optics: Devices, Materials, and Technologies XXIX** *(Sonia M. García-Blanco; Pavel Cheben)* Moscone South, Room 307 (Level 3)			
		13370 **Smart Photonic and Optoelectronic Integrated Circuits 2025** *(Laurent Vivien; Sailing He)* Moscone South, Room 305 (Level 3)			
			13371 **Silicon Photonics XX** *(Graham T. Reed; Jonathan Bradley)* Moscone South, Room 306 (Session 1 Room 305)		
			13372 **Optical Interconnects and Packaging 2025** *(Ray T. Chen; Henning Schröder)* Moscone South, Room 204 (Level 2)		
		13373 **Photonic Instrumentation Engineering XII** *(Lynda E. Busse; Yakov Soskind)* Moscone South, Room 313 (Level 3)			
			13374 **Next-Generation Optical Communication: Components, Sub-Systems, and Systems XIV** *(Guifang Li; Kazuhide Nakajima; Atul K. Srivastava)* Moscone South, Room 302 (Level 3)		
		13375 **AI and Optical Data Sciences VI** *(Masaya Notomi; Tingyi Zhou)* Moscone South, Room 202 (Level 2)			

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Nanotechnologies in Photonics (Ali Adibi)					
	13376 **Quantum Sensing and Nano Electronics and Photonics XXI** *(Manijeh Razeghi; Giti A. Khodaparast; Miriam S. Vitiello)* Moscone South, Room 101 (Level 1 Lobby)				
		13377 **Photonic and Phononic Properties of Engineered Nanostructures XV** *(Ali Adibi; Shawn-Yu Lin; Axel Scherer)* Moscone South, Room 70 (Lower Mezz)			
		13378 **High Contrast Metastructures XIV** *(Connie J. Chang-Hasnain; Andrea Alù; Weimin Zhou)* Moscone South, Room 311 (Level 3)			
				13379 **Photonic Heat Engines: Science and Applications VII** *(Denis V. Seletskiy; Masaru K. Kuno; Peter J. Pauzauskie)* Moscone South, Room 105 (Level 1 Lobby)	
			13380 **Optical Sensing and Precision Metrology** *(Jacob Scheuer)* Moscone South, Room 54 (Lower Mezz)		
	13381 **Advanced Fabrication Technologies for Micro/Nano Optics and Photonics XVIII** *(Christophe Moser; Eva Blasco; Debashis Chanda; Georg von Freymann)* Moscone South, Room 155 (Upper Mezz)				
MOEMS-MEMS in Photonics (Hans Zappe)					
	13381 **Advanced Fabrication Technologies for Micro/Nano Optics and Photonics XVIII** *(Christophe Moser; Eva Blasco; Debashis Chanda; Georg von Freymann)* Moscone South, Room 155 (Upper Mezz)				
		13382 **MOEMS and Miniaturized Systems XXIV** *(Hans Zappe; Wibool Piyawattanametha; Yong-Hwa Park)* Moscone West, Room 2022 (Level 2)			
			13383 **Emerging Digital Micromirror Device Based Systems and Applications XVII** *(Benjamin L. Lee; Alex Lyubarsky)* Moscone South, Room 206 (Session 1 in Room 155)		
Semiconductor Lasers, LEDs, and Applications (Alexey Belyanin, Martin Strassburg)					
			13360 **Physics and Simulation of Optoelectronic Devices XXXIII** *(Bernd Witzigmann; Marek Osiński; Yasuhiko Arakawa)* Moscone West, Room 2008 (Level 2)		
		13366 **Gallium Nitride Materials and Devices XX** *(Hiroshi Fujioka; Hadis Morkoç; Ulrich T. Schwarz)* Moscone West, Room 2018 (Level 2)			
				13384 **Vertical-Cavity Surface-Emitting Lasers XXIX** *(Kent D. Choquette; Luke A. Graham)* Moscone South, Room 102 (Level 1 Lobby)	
		13385 **Novel In-Plane Semiconductor Lasers XXIV** *(Alexey A. Belyanin; Peter M. Smowton)* Moscone South, Room 103 (Level 1 Lobby)			
		13386 **Light-Emitting Devices, Materials, and Applications XXIX** *(Jong Kyu Kim; Michael R. Krames; Martin Strassburg)* Moscone West, Room 2016 (Level 2)			

OPTO DAILY CONFERENCE SCHEDULE

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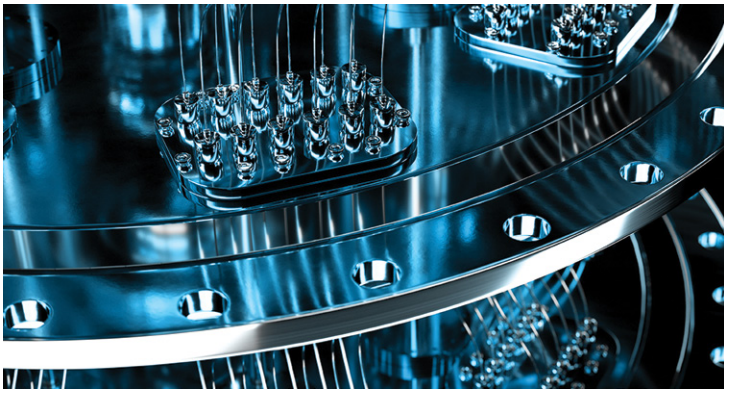
Presentation times are subject to change

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Displays and Holography (Liang-Chy Chien)					
		13387 **Emerging Liquid Crystal Technologies XX** *(Liang-Chy Chien; Nelson V. Tabiryan; Jun Yamamoto)* Moscone West, Room 2004 (Level 2)			
		13388 **Advances in Display Technologies XV** *(Jiun-Haw Lee; Qiong-Hua Wang; Liang-Chy Chien)* Moscone West, Room 2002 (Level 2)		13389 **Ultra-High-Definition Imaging Systems VIII** *(Seizo Miyata; Toyohiko Yatagai; Yasuhiro Koike)* Moscone West, Room 2004 (Level 2)	
			13390 **Practical Holography XXXIX: Displays, Materials, and Applications** *(Pierre-Alexandre J. Blanche; Hiroshi Yoshikawa)* Moscone West, Room 2006 (Level 2)		



QUANTUM WEST

Quantum West showcases the exciting Possibilities of Quantum 2.0 and the future of applied quantum technologies to solve entirely new challenges and provide unique capabilities in large-scale systems.

Speaker Check-In and Preview Station

Locations:

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OPTO and Quantum West Poster Session

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Moscone West, Room 2003 (Level 2)

Poster Setup: Wednesday 10:00 AM - 5:00 PM

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QUANTUM WEST DAILY CONFERENCE SCHEDULE

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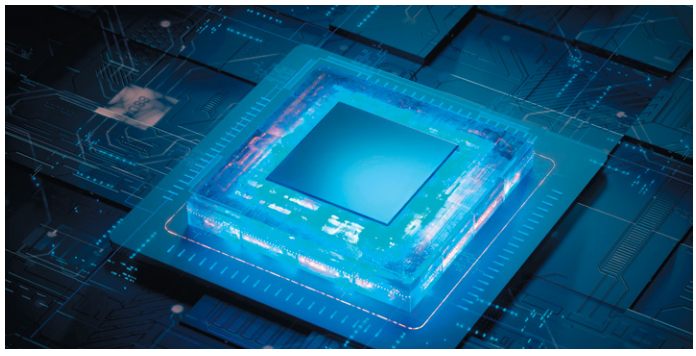
SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
13340 **Quantum Effects and Measurement Techniques in Biology and Biophotonics II** *(Clarice Aiello; Sergey V. Polyakov; Paige Derr)* Moscone South, Room 54 (Lower Mezz)					
13391 **Quantum Computing, Communication, and Simulation V** *(Philip R. Hemmer; Alan L. Migdall)* Moscone South, Room 158 (Upper Mezz)					
13392 **Quantum Sensing, Imaging, and Precision Metrology III** *(Selim M. Shahriar)* Moscone South, Room 157/159 (Upper Mezz)					
		13393 **Complex Light and Optical Forces XIX** *(David L. Andrews; Enrique J. Galvez; Halina Rubinsztein-Dunlop)* Moscone South, Room 160 (Upper Mezz)			

APPLICATION TRACKS

Application tracks enable attendees to group and explore presentations in the conference programs to more easily plan their event schedule around the topic of interest. Application track filters span across all conferences of SPIE Photonics West. The ability to group presentations together across the entire event in this way helps participants more easily locate a presentation in their area of interest and has the reciprocal benefit of helping authors' presentations be more easily found.

Six application tracks to explore

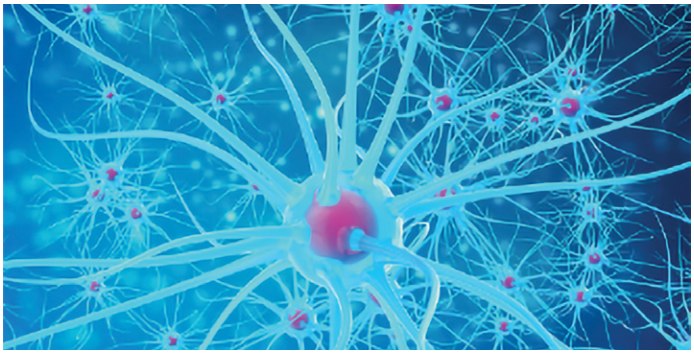


AI/ML - Artificial intelligence / Machine learning

Papers that highlight the use of artificial intelligence, machine learning, and deep learning to create and implement intelligent systems across multiple sectors, technologies, and applications.

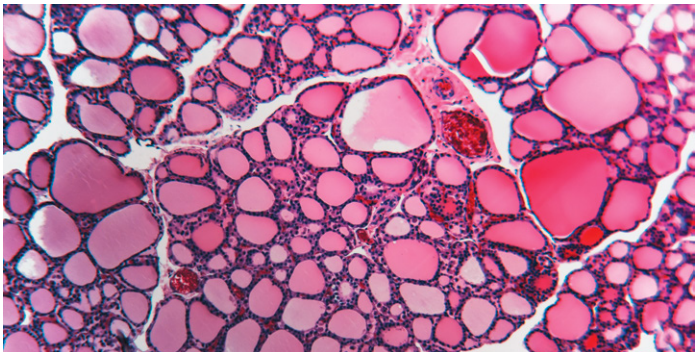
Sustainability

Papers that highlight the use of optics and photonics for renewable energy, natural resource management, sustainable and green manufacturing, and greenhouse gas mitigation in support of the UN Sustainable Development Goals.



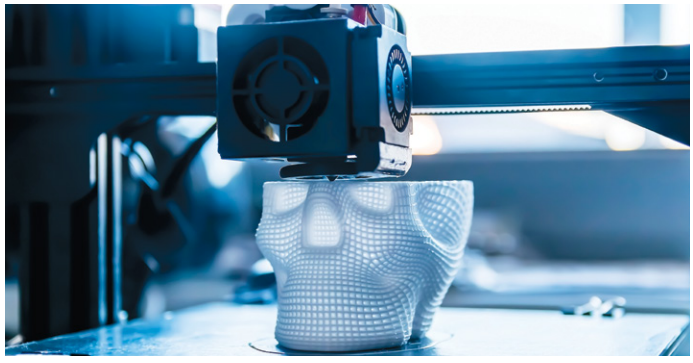
Brain function

Papers that highlight the development of innovative optics and photonics technologies that increase our understanding of brain physiology and function.



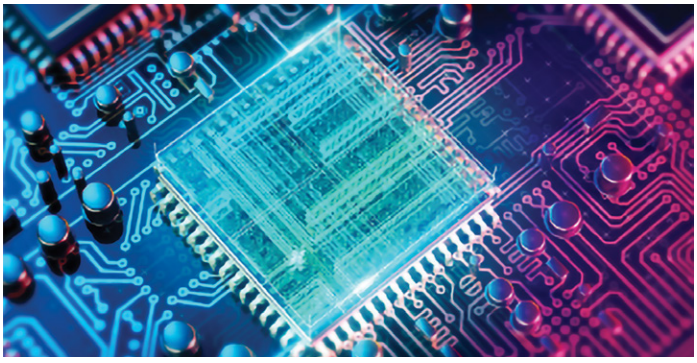
Translational research

Papers that highlight the transition from bench to bedside using the latest photoniacs technologies, tools, and techniques for healthcare.



3D printing

Papers that highlight the innovative use of optics and photonics in multidisciplinary applications for multidimensional manufacturing.



Photonic Chips

Papers that highlight advances in materials, design, fabrication, integration, testing and packaging of photonic components at the chip level.

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SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
AR | VR | MR					
	SC1310 **Optical Metrology for AR/VR/MR** *(Zhou)* **AM**	SC1338 **Display Engines for Mixed Reality: Optical Design & Technology** *(Georgiou)* **AM**			SC1096 **Head-Mounted Display Requirements and Designs for Augmented Reality Applications** *(Browne, Melzer)* **AM–PM**
	SC1218 **Optical Technologies and Architectures for Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) Head-Mounted Displays (HMDs)** *(Kress)* **PM**	SC1317 **Waveguides for Mixed Reality: Principles and Applications** *(Georgiou)* **PM**			
Biomedical Microscopy, Spectroscopy, and Imaging					
SC1345 **Diffuse Optical Imaging and Functional Near Infrared Spectroscopy** *(Dehghani, O'Sullivan)* **AM–PM**					
Imaging					
		SC1336 **Current Trends in Miniature Camera Technology from Visible to Infrared: Optimization for Performance, Size, and Cost** *(Matherson, Dorn)* **AM–PM**	SC1323 **CMOS Image Sensors: Technology, Applications and Camera Design Methodology** *(Crisp)* **PM**	SC1231 **Designing and Specifying Digital Cameras** *(Baldwin)* **AM**	
				SC1334 **Introduction to Photoacoustic (Optoacoustic) Imaging** *(Rosenthal)* **PM**	

AM = 8:30 AM - 12:30 PM
PM = 1:30PM - 5:30 PM
AM-PM: 8:30 AM - 5:30 PM

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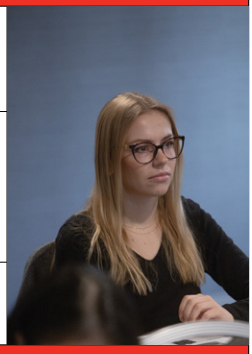
SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Laser Sources					
	SC1346 **Petawatt Peak Powers and Beyond** *(Waxer)* **AM–PM**			SC972 **Basic Laser Technology: Fundamentals and Performance Specifications** *(Sukuta)* **AM**	
	SC752 **Solid State Laser Technology** *(Hodgson)* **AM–PM**				
Macro Applications					
	SC1335 **Laser Beam Propagation in Random Media for Application in Laser Communications, Active Imaging and Laser Radar** *(Stotts)* **AM–PM**	SC1327 **Optical Turbulence and Laser Beam Propagation** *(Toselli)* **AM–PM**			
Metrology and Standards					
	SC1310 **Optical Metrology for AR/VR/MR** *(Zhou)* **AM**		SC863 **Introduction to Modern Optical Drawings – the ISO 10110 Standard** *(Aikens)* **AM**	SC700 **Understanding Scratch and Dig Specifications** *(Aikens)* **AM**	
				SC212 **Modern Optical Testing** *(Kim)* **PM**	
				SC1017 **Optics Surface Inspection Workshop** *(Aikens, Takaki)* **PM**	
Micro/Nano Applications					
		SC1285 **Industrial Ultrafast Lasers for Micro-Processing and Applications** *(Hodgson)* **AM–PM**			
MOEMS-MEMS in Photonics					
SC1125 **Design, Modeling and Fabrication Techniques for Micro-Optics: Applications to Display, Imaging, Sensing and Metrology** *(Kress)* **PM**					
Nano/Biophotonics					
			SC1186 **Fluorescence Sensing and Imaging: Towards Portable Healthcare** *(Levi)* **PM**		

DAILY COURSE SCHEDULE

Check the course schedule and view course descriptions online

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Nanotechnologies in Photonics					
	SC1333 **Inverse Design for Photonics** *(Jin, Kharel)* **AM**				
Neurophotonics, Neurosurgery, and Optogenetics					
		SC1126 **Neurophotonics** *(Levi)* **AM**			
Nonlinear Optics / Beam Guiding					
	SC047 **Introduction to Nonlinear Optics** *(Fisher)* **PM**				
Optical Materials & Fabrication					
			SC1178 **Fundamentals of Molded Optics** *(Symmons, Schaub)* **PM**	SC1086 **Optical Materials, Fabrication and Testing for the Optical Engineer** *(DeGroote Nelson)* **AM**	
Optical Systems & Design | Optomechanics					
	SC156 **Basic Optics for Engineers** *(Poutous)* **AM–PM**	SC1347 **Design of Experiments (DOE) in Optics and Photonics** *(Nikitin)* **AM–PM**	SC935 **Optical System Design: Aberrations, Optimization, and Optical Design Software** *(Bentley)* **AM–PM**	SC1232 **Introduction to LIDAR for Autonomous Vehicles and AR/VR** *(Shaw)* **AM**	SC003 **Practical Optical System Design and Engineering** *(Youngworth, Olson)* **AM–PM**
	SC720 **Cost-Conscious Tolerancing of Optical Systems** *(LeBaron Michels)* **AM–PM**	SC015 **Fastening Optical Elements with Adhesives** *(Daly)* **AM**	SC1199 **Stray Light Analysis and Control** *(Fest)* **AM–PM**	SC010 **Introduction to Optical Alignment Techniques** *(Medicus)* **AM–PM**	
	SC1331 **Embedded Optical Systems** *(Kudenov)* **AM**	SC1311 **Understanding Optical System Specifications: Identifying and Managing Hidden Conflicts** *(Bentley)* **AM**		SC690 **Optical System Design: Layout Principles and Practice** *(Olson)* **AM–PM**	
	SC014 **Introduction to Optomechanical Design (2 DAYS)** *(Vukobratovich)* **AM–PM**				
	SC1247 **Polarized Light and Optical Design** *(Chipman)* **AM–PM**	SC1352 **Cleaning Basics for Optical Components and Hardware** *(Lehmann, Wheeler)* **PM**			
	SC011 **Design of Efficient Illumination Systems** *(Cassarly)* **PM**				
Optoelectronic Materials and Devices					
	SC1277 **Photodetectors: Theory, Practice, and Applications** *(Piatek)* **AM**				

AM = 8:30 AM - 12:30 PM
PM = 1:30PM - 5:30 PM
AM-PM: 8:30 AM - 5:30 PM

SATURDAY 25 January	SUNDAY 26 January	MONDAY 27 January	TUESDAY 28 January	WEDNESDAY 29 January	THURSDAY 30 January
Photonic Integration					
	SC1316 **Heterogeneous Integration of Electrical IC and Photonic IC (Co-Packaged Optics)** *(Lau)* **AM**	SC817 **Silicon Photonics** *(Saini, Liu)* **PM**		**For course pricing use the app or go online**	
	SC1071 **Understanding Diffractive and Meta-Optics** *(Soskind)* **AM–PM**				
Quantum West					
			SC1319 **Quantum Computing: A Concise Introduction** *(Venegas-Andraca)* **AM–PM**		
Sales, Marketing, and Non-Technical Professionals					
		SC1224 **Fundamentals of Optical Engineering** *(Vogt)* **AM**			
		SC1353 **Quantum Technology Essentials for Non-Quantum Professionals** *(Hasanovic)* **AM**			
		SC1170 **A Hands-On Introduction to Optics** *(Diehl)* **PM**			
Semiconductor Lasers, LEDs, and Applications					
			SC1259 **Introduction to Vertical-Cavity Surface-Emitting Lasers (VCSELs) and Applications** *(Choquette)* **AM**	SC1146 **Laser Diode Beam Basics, Characteristics and Manipulation** *(Sun)* **PM**	
Technologies for Translational Biophotonics					
	SC312 **Principles and Applications of Optical Coherence Tomography** *(Fujimoto)* **PM**	SC981 **Biomedical and Biosensing Applications of Optical Fibers and Fiber Sensors** *(Mendez, Pinet)* **PM**			
Tissue Optics, Laser-Tissue Interaction, and Tissue Engineering					
	SC029 **Tissue Optics** *(Jacques)* **PM**	SC1290 **Medical Laser-Tissue Interactions** *(Verdaasdonk)* **AM**			
		SC1349 **The Monte Carlo Method for Photon Transport and its Practical Applications in Biomedical Optics** *(Doronin)* **PM**			

Badge pick up and registration hours

There are three locations for registration at Moscone Center. Please note the different days and times each location is available for service.

The Moscone Center

Friday 24 January	South Lobby	4:00 PM–7:00 PM
Saturday 25 January	North Lobby and South Lobby	7:15 AM–5:00 PM
Sunday 26 January	North Lobby, South Lobby, and West Lobby	7:30 AM–5:00 PM
Monday 27 January	North Lobby, South Lobby, and West Lobby	7:30 AM–5:00 PM
Tuesday 28 January	North Lobby, South Lobby, and West Lobby	7:30 AM–5:00 PM
Wednesday 29 January	North Lobby, South Lobby, and West Lobby	7:45 AM–5:00 PM
Thursday 30 January	South Lobby	7:45 AM–4:00 PM
	West Lobby	7:45 AM–2:00 PM

SPIE Cashier

Location: Moscone Center, South Lobby
Open Friday - Thursday, 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 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 Participation

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

Badge corrections

Badge corrections can be made at the Cashier. Please mark your badge with your changes before approaching the counter.

Speaker Check-In and Preview Station

Location: Moscone South, Upper Mezzanine Overlook (Saturday - Thursday)

Location: Moscone West, Level 2 Lobby (Sunday - Thursday)

Open during Registration hours

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 have a laptop, projector, screen, lapel microphone, and laser pointer.

Internet access

Locations: Moscone Center, North, South, West

Complimentary wireless internet access is available throughout Moscone Center North, South, and West buildings, including the exhibition halls.

SPONSORED BY: AFL

SPIE Conference and Exhibition App

Location: Moscone Center, Hall D entrance (Exhibit Level)

SPIE App developers 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.

Search and browse the program, special events, participants, exhibitors, courses, and more. Build your personalized schedule and sync with the online MySchedule tool. Free Conference App available for iPhone and Android phones. Information about restaurants and food options also available on the App. If you have questions, visit the App Desk.

SPONSORED BY: FISBA Innovators in Photonics TRIOPTICS See the Difference

SPIE Bookstore

Location: Moscone Center North Lower Lobby, Exhibition Level

Saturday–Wednesday . . . . . 8:30 AM–5:30 PM

Thursday . . . . . 8:30 AM–4:00 PM

Stop by the SPIE Bookstore to browse the latest SPIE Press Books, proceedings, and educational materials. 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: Moscone Center, South Lobby

Open Friday - Thursday, during registration hours

Browse course offerings or learn more about SPIE courses available in portable formats, such as online and private group training.

SPIE Press Room

Open during registration hours

For registered press only. The Press Room provides meeting space, refreshments, access to exhibitor press releases, and Internet connections. Press are urged to register before the meeting by emailing name, contact information, and name of publication to media@spie.org. Preregistration closes approximately 10 days before the start of the event.

SPIE luggage and coat check

Location: Moscone Center, North Lobby
Saturday-Thursday, open during registration hours

Location: Moscone Center, West, Level 1 Lobby
Sunday - Thursday, open during registration hours

Complimentary luggage, package, and coat storage are available. Please note posted hours; no late pickup available.

Copy services available near Moscone Center

FedEx Office Print and Ship Center
55 Fourth St
San Francisco, CA 94103
Phone: +1 415-369-9928

CityCopy Print Center
837 Mission St
San Francisco, CA 94103
Phone: +1 415-757-0673

Child care services

Sitters Unlimited
San Francisco Bay Area
408.452.0225
Rachael Osorio
Email: info@bayareasittersunlimited.com
www.bayareasittersunlimited.com

Note: SPIE does not imply an endorsement or recommendation of these services. They are provided on an "information only" basis for your further analysis and decision. Other services may be available.

Mothers' Lounge

Location: Moscone Center, North and South Lobbies

Open during registration hours

The Mothers' Lounge is a lockable room intended for nursing mothers. There is no storage, running water, or refrigeration available in this space.

Quiet Room

Location: Moscone Center, North Lobby, Level 1, Room 115

Open during registration hours

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

Gender inclusive restroom

Two locations: Moscone Center, North Lower Lobby (Exhibit Level) and West Level 2

Urgent message line

An urgent message line is available during registration hours: +1 415-978-3700

Lost and found

Location: Moscone Center, South Lobby, Cashier

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 Moscone Security Control 415.974.4021.

Food and beverage services

Coffee breaks

Location: Moscone Center, near conference rooms and within the exhibit halls when open

Complimentary coffee daily . . . . . 7:00 AM–4:00 PM

SPONSORED BY: AVANTIER, CPG

San Francisco restaurants and city information

Location: Moscone Center, South Lobby

The San Francisco Travel Association will have visitor's guides and maps available. The association sells the San Francisco CityPASS, Muni 1-, 3- and 7-Day Pass-ports, cable car tickets, the Explorer Pass, Muni maps and hop-on-hop-off bus tickets. Staff are available to discuss city information including tips on local restaurants, the city's many attractions, sightseeing suggestions and transit information.

See a list of area restaurants, with hours:
https://www.sftravel.com/eat-drink

Food and refreshments for purchase

Location: Moscone Center, various locations
Saturday–Thursday

There is a variety of food and drink options, including hot and cold snacks, espresso, beverages, hot entrees, deli sandwiches, salads, and pastries available for purchase. Credit cards payments only.

Food Outlet Locations and Menu Highlights

South Upper Lobby
Sat 7:30 AM–1:30 PM
Sun-Wed 7:00 AM–3:00 PM
Thurs 8:00 AM–2:00 PM
M Coffee: Espresso, specialty coffee.

North Lower Lobby, near Hall F entrance
Sat-Sun 8:00 AM–2:00 PM
Mon 7:30 AM–1:30 PM
Tue-Wed 7:00 AM–5:00 PM
Thurs 8:00 AM–3:00 PM
North Side Espresso: Espresso, specialty coffee and crepes.

Back of Hall F
Tue-Thurs 10:00 AM–4:00 PM
Café Savor: soups and sandwiches.

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.

Anti-harassment policy

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

SPIE Conferences app messaging policy

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.

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.

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.

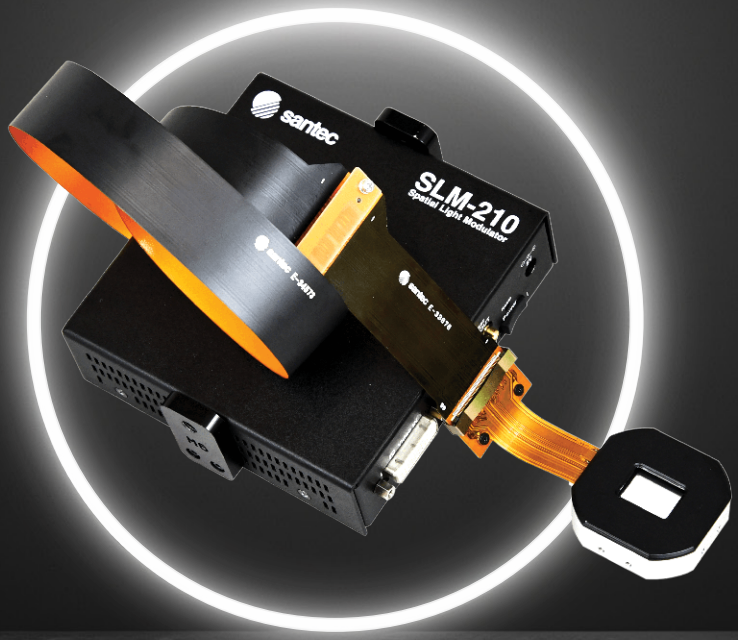
SPIE International Headquarters:
PO Box 10, Bellingham, WA 98227-0010 USA
Tel: +1 360 676 3290 • help@spie.org • www.SPIE.org

SPIE Europe Offices:
2 Alexandra Gate, Ffordd Pengam, Cardiff, CF24 2SA UK
Tel: +44 29 2089 4747 • info@spieeurope.org • www.SPIE.org

santec

LIQUID CRYSTAL ON SILICON BASED

SPATIAL LIGHT MODULATORS

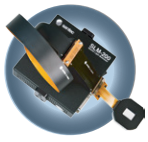


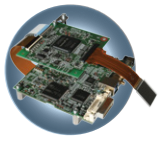
High Resolution
WUXGA (1920 x 1200) resolution,
10-bit (1024 gray levels)

Excellent Phase Stability
The world's highest level of phase stability less than 0.002 π

Innovative Customization
Santec's in-house-developed SLM for tailored solutions

Preliminary

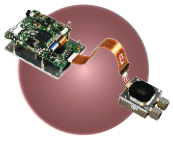

SLM-200
Standard model


SLM-20
Standard model
(Embedded module)


SLM-210
High Speed

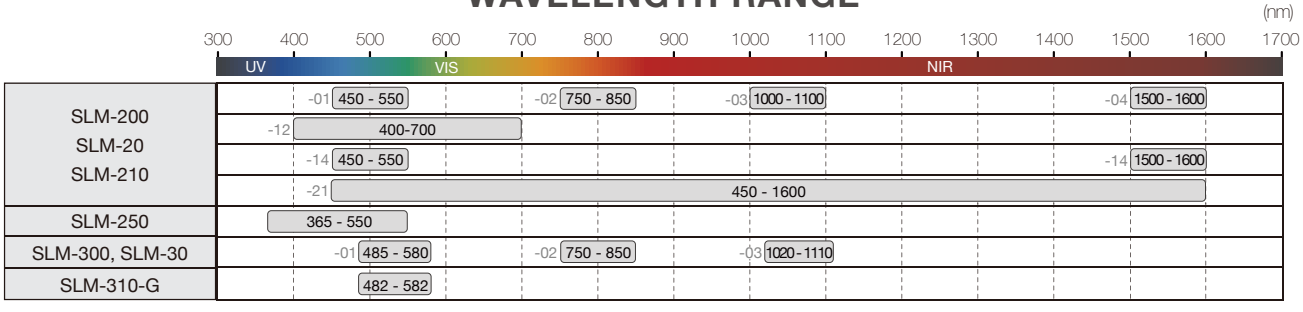

SLM-250
UV Hardened


SLM-300
High Power


SLM-30
High Power
(Embedded module)


SLM-310-G
Laser processing
(500W durable)

WAVELENGTH RANGE



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