



MESSE  
MÜNCHEN

# THE LEADING LIGHT

## CONGRESS OVERVIEW



**SPIE.** DIGITAL OPTICAL  
TECHNOLOGIES



**SPIE.** OPTICAL  
METROLOGY

EUROPEAN CONFERENCES ON  
**BIOMEDICAL  
OPTICS**  
SPIE. OPTICA

[photonics-congress.com](http://photonics-congress.com)

## WORLD<sup>OF</sup> PHOTONICS CONGRESS



JUNE 25–30, 2023

ICM – INTERNATIONAL CONGRESS CENTER MESSE MÜNCHEN

26th International Congress on Photonics in Europe—  
co-located with LASER World of PHOTONICS 2023

# THE QUANTUM REVOLUTION

SEE YOU IN JUNE 2025

JUNE, 24-27, 2025, MESSE MÜNCHEN  
3rd International Trade Show on Quantum Technologies

**WORLD<sup>OF</sup> QUANTUM**



WELCOME:

## The entire world of photonics research at a single location

We cordially welcome you to the World of Photonics Congress: From June 25 to 30, 2023, the international scientific elite will meet in Munich to gather information about lighthouse projects in photonics research.

For the first time since the Corona pandemic, the World of Photonics Congress will be held as an in-person event in Munich, and we are looking forward to personally inviting scientists and researchers from all over the world again.

### In 2023 you can expect:

- ▶ Five conferences that cover all aspects of photonics research
- ▶ Plenary talks and keynotes by world-renowned scientists and nobel laureates
- ▶ First time: Diversity program
- ▶ Several notable award ceremonies
- ▶ Conference partners that include the world's most important scientific associations
- ▶ Some 4,000 fellow researchers from around the world
- ▶ For the first time, access to three trade shows at the same time: LASER World of PHOTONICS, World of QUANTUM and automatica.

All program highlights are available in this brochure. Take advantage of the congress as an opportunity for intense dialog with colleagues and to gather information about the latest solutions involving the tool of light at the exhibition.

We hope you enjoy your stay in Munich!

*Peter Loosen*

Prof. Peter Loosen  
World of Photonics Congress  
Steering Committee Chair

*Ellen Richter-Maierhofer*

Ellen Richter-Maierhofer  
Congress Manager

Rooms 21, 22a, 22b  
Rooms 11, 12a, 12b, 13a, 13b  
Rooms 14a, 14b, 14c  
Speaker's Check-in, Wi-Fi-Lounge  
Rooms 1  
Rooms 2, 3, 4a, 4b, 5  
Wi-Fi-Lounge  
POSTER SESSIONS  
LASER & PHOTONICS  
Halls 81, 82, 83, A2, A3  
West Entrance  
Registration, East, Urban, Taxi,  
Airport Shuttle  
Rooms at B-Hall  
Ennen 811, Maria 821, Museum  
Rooms at A-Hall  
Ennen 821, A21, A22  
Ennen 1 A21, A22, A23, A24, A25  
Ennen 841, 842  
Rooms at Hotel IFA München Messer:  
Room Lobby  
Room Legend

## CONGRESS STRUCTURE:

### Clear outline of topics

**The World of Photonics Congress covers the entire world of photonics in a single event: Five scientific conferences with plenaries, joint sessions and a practice-oriented lecture program address all aspects of photonics and lasers in research and applications.**

## CLEO®/Europe-EQEC 2023—Conference on Lasers and ElectroOptics/Europe and the European Quantum Electronics Conference

Organized by European Physical Society (EPS),  
Optica (formerly OSA) and IEEE Photonics Society

**Monday, June 26, to Friday, June 30**

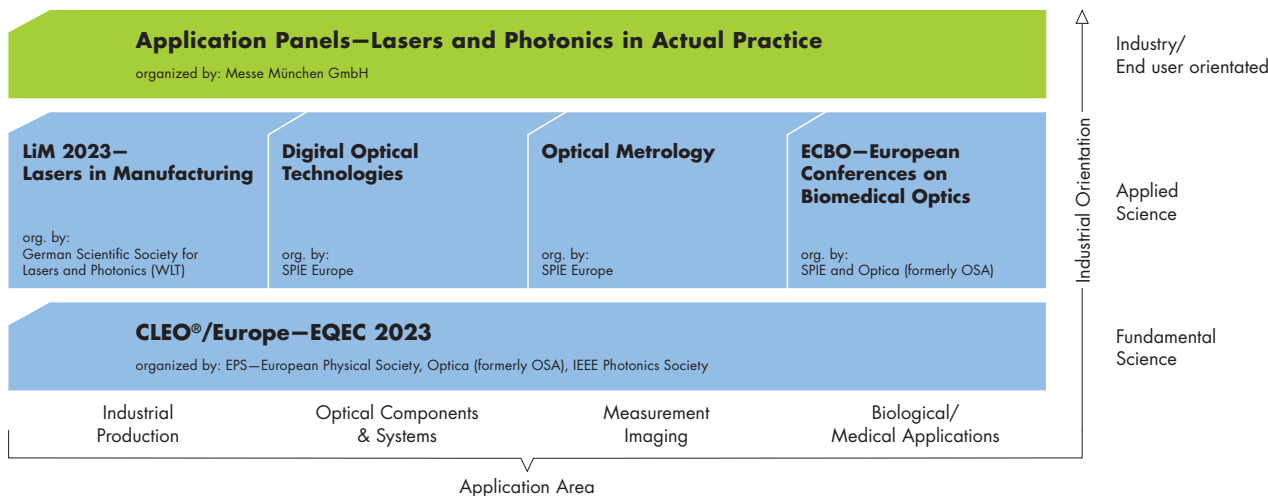
CLEO®/Europe will showcase the latest developments in a wide range of laser and photonics areas including laser source development, materials, ultrafast science, fiber optics, nonlinear optics, terahertz sources, high-field physics, optical telecommunications, nanophotonics and biophotonics.

EQEC will feature the fundamentals of quantum optics, quantum information, atom optics, ultrafast optics, nonlinear phenomena and self-organization, plasmonics and metamaterials, fundamental nanooptics, theoretical and computational photonics.

This combination provides a unique forum to obtain informative overviews and discuss recent advances in a wide spectrum of topics, from fundamental light-matter interactions and new sources of coherent light to technology development, system engineering and applications in industry and applied science.

CLEO®/Europe-EQEC 2023 conferences are Europe's largest conferences on photonics and related research fields. The program features plenary lectures, keynote and tutorial speakers, invited talks, contributed talks and poster sessions within the different topics. Furthermore, the conference will feature 10 short courses and joint symposia.

## World of Photonics Congress 2023



### LiM 2023: Lasers in Manufacturing

Organized by German Scientific Society for Lasers and Photonics (WLT)

#### Monday, June 26, to Thursday, June 29

LiM—Lasers in Manufacturing focuses on the latest developments as well as future trends in the field of laser material processing including process engineering, system technology and process optimization. The conference consists of three sub-conferences—one for macro applications, one for micro applications, and one for additive manufacturing.

It is the aim of the LiM to bring together international experts from research and industry in order to match scientific advances and economic needs for mutual benefit.

### Digital Optical Technologies

Organized by SPIE Europe

#### Sunday, June 25, to Wednesday, June 28

Digital Optical Technologies dedicated to emerging digital trends and perspectives in optics. The symposium will highlight all digital aspects from design, fabrication, to integration in systems and final functionality around the following topics:

- ▶ Immersive displays and sensing
- ▶ IOT sensors
- ▶ Automotive and robotics
- ▶ Computing and datacom
- ▶ Quantum technologies
- ▶ Biomedicine

These are emerging today as very hot topics in academia, research institutions and industry, as well as in the venture capital community. Researchers, engineers, managers, industry leaders as well as market analysts are welcome to share their knowledge and experience, and be part of the ongoing digital optics revolution.

Science and research at a glance:



[photonics-congress.com/structure](https://photonics-congress.com/structure)

### Optical Metrology

Organized by SPIE Europe

#### Monday, June 26, to Thursday, June 29

Optical Metrology focuses on the latest inventions and applications in the field of optical metrology. The symposium will highlight new optical principles and systems for metrology, multimodal sensing, and machine vision with applications in industrial design, production engineering, process monitoring, maintenance support, biotechnology, vehicle navigation, multimedia technology, architecture, archaeology, and arts. Special emphasis is directed to model-based, remote and active approaches, sensor fusion, robot guidance, image sequence processing and scene modelling, and biomaterials characterization, as well as to the preservation of our shared cultural heritage.

### European Conferences on Biomedical Optics (ECBO)

Organized by SPIE, sponsored by Optica (formerly OSA)

#### Sunday, June 25, to Thursday, June 29

ECBO covers basic science, novel technology and applications in the fields of Translational Biophotonics: Diagnostics and Therapeutics, Diffuse Optical Spectroscopy and Imaging, Emerging Technologies for Cell and Tissue Characterization, Advances in Microscopic Imaging, Optoacoustic Methods and Applications in Biophotonics and Optical Coherence Imaging Techniques and Imaging in Scattering Media.

The conference provides a forum to span the gap between basic research and instrumentation engineering, all the way to clinical translation research and mature clinical trials.

### Application Panels—Lasers and Photonics in Actual Practice

Organized by LASER World of PHOTONICS/Messe München

#### Tuesday, June 27, to Friday, June 30

Once again, the World of Photonics Congress will feature Application Panels—a practice-oriented series of lectures that bridge the gap between theory and practice. The Application Panels take place in the forums at the exhibition halls.







THANKS TO  
**The sponsors**

“Bier & Brezel” Opening Get-together:

**SPIE.**

“Happy Hour” Get-together:



European Physical Society  
Quantum Electronics and Optics Division

Conference Bags:

**OPTICA**

Conference Bag Inserts:



Information Points/Banners:



Schäfer+Kirchhoff



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NATURE**

Badge holders:  **COHERENT.**

Water bottles: **SPIE.**



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International Trade Fairs and Congress for Photonics

[world-of-photonics.com/network](http://world-of-photonics.com/network)

**LASER** World of  
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PHOTONICS  
CONGRESS**

**WORLD OF  
PHOTONICS  
QUANTUM**



Conference Rooms at ICM  
Rooms 1–22  
Poster Sessions Hall B0

Conference Rooms 1<sup>st</sup> Floor:  
Einstein Hall B1, B11 • Hertz Hall B2, B21 • Maiman Hall B3, B32  
Curie Hall A1, A11/A12 • Edison Hall A2, A21/A22 • Newton1 Hall A3, A31 • Newton2 Hall A3, A32

STIMULATE THE INNOVATIONS:

## Special events

### Congress Opening with Plenary Talk

#### Laser-driven inertial confinement fusion, power source of the future?

**Tammy Ma**, PhD, National Ignition Facility (NIF), Lawrence Livermore National Laboratory (LLNL), Livermore, USA

**Prof. Dr. Constantin L. Haefner**, Fraunhofer Institute for Laser Technology ILT, Aachen, Germany

Tuesday, June 27, 2023, 14:00–15:30, Room 1, ICM Ground Floor

### Networking & Get together

#### “Bier & Brezel” Get together sponsored by SPIE

All attendees of the World of Photonics Congress are welcome.

Tuesday, June 27, 2023, 17:45–19:45, Foyer and Hall B0, ICM Ground Floor

#### “Happy Hour” sponsored by the European Physical Society through its Quantum Electronics Optics Division (QEOD)

All attendees of the World of Photonics Congress are welcome.

Monday, June 26, 2023, 18:45–19:45, Foyer and Hall B0, ICM Ground Floor

Events for the scientific elite:



## AWARDS

### ► WLT Award Ceremony

Monday, June 26, 2023, 10:30–12:30, Room 13b, ICM First Floor

### ► Herbert Walther Award by Optica and DPG

Tuesday, June 27, 2023, 10:30–12:30, Room 1, ICM Ground Floor

### ► EPS-QEOD Prizes:

#### Quantum Electronics and Optics Division

Tuesday, June 27, 2023, 10:30–12:30, Room 1, ICM Ground Floor

### ► EOS Early Career Women in Photonics Award

Tuesday, June 27, 2023, 10:30–12:30, Room 1, ICM Ground Floor



## CONGRESS HIGHLIGHTS

### At a glance

#### Sunday, June 25, 2023

ECBO Hot Topics

##### **Light for Life**

14:00–15:30, Room 5, ICM Ground Floor

#### Monday, June 26, 2023

EQEC Keynote Talk

##### **Laser transverse patterns control by nonhermitian actions**

**Kestutis Staliunas**, UPC, Spain

08:30–09:15, Room 4a, ICM Ground Floor

EQEC Keynote Talk

##### **Semiconductor Nanolasers**

**Jesper Moerk**, Technical University of Denmark, Denmark

08:30–09:15, Room 4b, ICM Ground Floor

CLEO®/Europe Keynote Talk

##### **Ultrafast attosecond and few-fs sources for control of molecular reactivity at the electron time scale**

**Francesca Calegari**, CFEL-DESY, Germany

08:30–09:15, Room 1 “Albert Einstein” (B11), Hall B1

EQEC Keynote Talk

##### **Laser Spectroscopy as a Probe for Physics Beyond the Standard Model**

**Thomas Udem**, Max Planck Institute of Quantum Optics, Germany

09:00–09:45, Room 6 “Emmett Leith” (B32), Hall B3

Digital Optical Technologies Plenary Session

##### **End-to-end simulation in propelling the new wave of optics and photonics innovation**

**Sanjay Gangadhara**, Ansys Inc., USA

09:05–10:00, Room 21, ICM Second Floor

LiM Plenary & WLT Award Ceremony

##### **3D micro/nano printing using light**

**Maria Farsari**, Forth, Greece

##### **Additive manufacturing for sustainable solutions in hydraulics**

**Valeria Tirelli**, Airo, Italy

10:30–12:00, Room 13b, ICM First Floor

ECBO Plenary Talk

##### **Fluorescence lifetime imaging of NAD(P)H and FAD to monitor immune cell metabolism and function**

**Melissa Skala**, University of Wisconsin, Madison, USA

##### **Holotomography and artificial intelligence: label-free 3D imaging, classification, and inference of live cells and organoids**

**YongKeun Park**, KAIST, South Korea

14:00–15:30, Room 5, ICM Ground Floor

CLEO®/Europe Plenary Session

##### **From nonlinear optics to high-intensity laser physics**

**Prof. Donna Strickland**, University of Waterloo, Ontario, Canada

16:00–17:30, Room 1, ICM Ground Floor

#### Tuesday, June 27, 2023

Herbert Walther Award Lecture by CLEO®/Europe 2023

##### **Quantum computation and quantum simulation with strings of trapped Ca<sup>+</sup> ions**

**Rainer Blatt**, University of Innsbruck/Austrian Academy of Science, Institute for Quantum Optics and Quantum Information, Austria

08:30–09:00, Room 8 “Gustav Hertz” (A12), Hall A1

CLEO®/Europe Keynote Talk

**Nonlinear Optics with Nanoparticles and Metamaterials**

**Anatoly Zayats**, King's College London, United Kingdom

08:30–09:15, Room 4a, ICM Ground Floor

EQEC Plenary Talk

**Photonic machines for large-scale applications and fundamental physics**

**Claudio Conti**, Department of Physics, University Sapienza, Italy

10:30–11:30, Room 1, ICM Ground Floor

World of Photonics Congress Plenary Session

**Laser-driven inertial confinement fusion, power source of the future?**

**Tammy Ma**, PhD, National Ignition Facility (NIF), Lawrence

Livermore National Laboratory (LLNL), Livermore, USA

**Prof. Dr. Constantin L. Haefner**, Fraunhofer Institute for Laser

Technology ILT, Aachen, Germany

14:00–15:30, Room 1, ICM Ground Floor

## Wednesday, June 28, 2023

Optical Metrology Plenary Session

**Remote photonic medicine**

**Zeev Zalevsky**, Bar-Ilan Univ., Israel

10:30–11:25, Room 1, ICM Ground Floor

CLEO®/Europe Keynote talk

**Ultra-low loss hybrid silicon nitride integrated photonics: from chip-scale frequency combs, frequency agile lasers to Erbium amplifiers on chip**

**Tobias J. Kippenberg**, EPFL, Switzerland

14:00–14:45, Room 13b, ICM First Floor

Top lectures for a first-rate audience:



## Thursday, June 29, 2023

EQEC Keynote Talk

**Physics and Application of Complex Lasers**

**Hui Cao**, Yale University, USA

10:30–11:15, Room 14a, ICM First Floor

CLEO®/Europe Keynote Talk

**High power ultrafast moves into the Terahertz domain**

**Clara Saraceno**, Ruhr University Bochum, Germany

14:00–14:15, Room 1 "Albert Einstein" (B11), Hall B1

ECBO Closing Session and Awards

14:00–15:30, Room 5, ICM Ground Floor

## Friday, June 30, 2023

CLEO®/Europe Keynote Talk

**Imaging at the single-photon limit using homodyne detection**

**Miles Padgett**, University of Glasgow, United Kingdom

08:30–09:15, Room 3, ICM Ground Floor

EQEC Keynote Talk

**Air Photonics**

**Stefan Skupin**, Institut Lumière Matière (ILM),

Université de Lyon, France

08:30–09:45, Room 14c, ICM First Floor





# Application Panels

## Bridge the Gap to Practice

FORUM BIOPHOTONICS AND MEDICAL APPLICATIONS HALL B2, BOOTH B2.248	
June 27, 2023 11:00–13:00	Biophotonics with DL meets Pathology, Point of Care and Laboratory Medicine
June 27, 2023 15:00–17:00	SPECTARIS: Photonics for MedTec
June 28, 2023 10:00–12:00	Biophotonic Technologies for Point-of-Care-Testing—Innovations for health/LGT & DGLM
June 28, 2023 15:00–17:00	Optics meets medical robotics
June 29, 2023 10:00–12:00	Advancing Biotechnology through Innovation in Photonics

FORUM LASERS & OPTICS HALL A2, BOOTH A2.249	
June 27, 2023 13:00–17:00	Closing meeting of BMBF funding measure “Open Photonik Pro”
June 28, 2023 10:00–12:00	CW- and Long Pulse Laser
June 28, 2023 15:00–17:00	Ultrashort Pulse Lasers and Beam Delivery
June 29, 2023 10:00–12:00	Integrated Photonics
June 29, 2023 15:00–17:00	Next Generation High Power Diode Lasers

FORUM LASER MATERIALS PROCESSING HALL B3, BOOTH B3.160	
June 27, 2023 11:00–13:00	Machine Vision—beyond 2D information
June 27, 2023 14:20–17:00	No E-Mobility without Lasers—Laser-based Manufacturing of Batteries and Fuel Cells
June 28, 2023 10:00–11:00	Is AI making laser-based manufacturing smart?
June 28, 2023 15:00–17:00	Manufacturing of Microstructures with Pulsed Lasers
June 29, 2023 10:00–12:00	16th International Laser Marketplace
June 29, 2023 15:00–17:00	Additive Manufacturing News from the 3D printing of metallic components

# Supporting Program

## World of QUANTUM

FORUM WORLD OF QUANTUM HALL A1, BOOTH A1.527	
June 27, 2023 10:00–11:00	Quantum Technologies: Politics & Governance
June 27, 2023 11:20–13:20	Quantum Computing & Quantum Simulation
June 27, 2023 14:00–17:00	Integrating the World of Quantum with the World of Business—Part 1
June 28, 2023 10:00–13:20	Integrating the World of Quantum with the World of Business—Part 2
June 28, 2023 14:30–16:30	Quantum Technologies Imaging & Sensing
June 29, 2023 10:00–12:00	Quantum Enabling Technologies
June 28, 2023 13:00–17:00	Quantum Technologies Communication
June 30, 2023 10:00–12:00	Quantum Technologies: Education & Career

FORUM QUANTUM SCIENCE & INDUSTRY HALL A1, BOOTH A1.220	
June 27, 2023 11:15–17:00	Focus Day Quantum Sensing
June 28, 2023 10:00–16:30	Focus Day Quantum Computing
June 29, 2023 10:00–17:00	Quantum Technologies: from Research to Applications



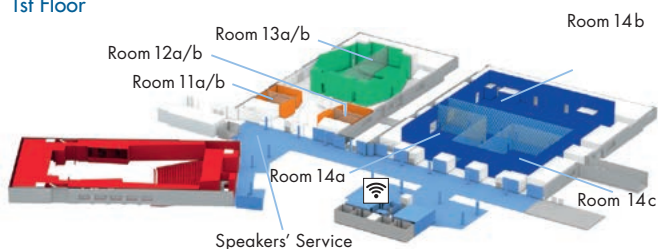
## CONFERENCE MAP: Quick look at the rooms

### Rooms at the ICM and B0

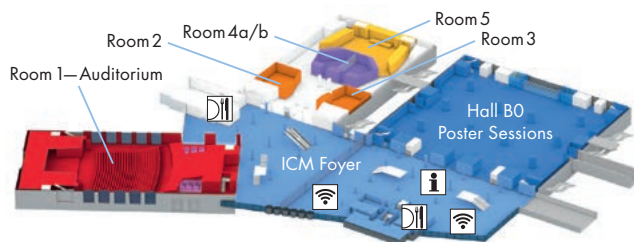
#### 2nd Floor



#### 1st Floor

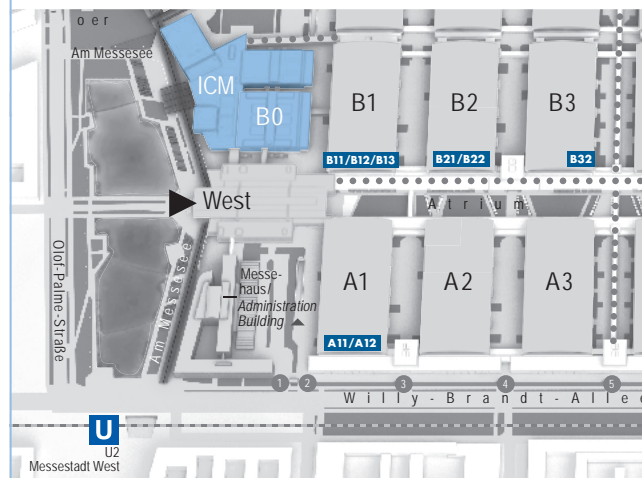


#### Ground Floor



WiFi Lounge
 Catering
 Information Desk

### Rooms at the Exhibition Halls



- B11** Room **"Albert Einstein,"** 1st Floor, Hall B1
- B12** Room **"Emmy Noether,"** 1st Floor, Hall B1
- B13** Room **"Wilhelm Röntgen,"** 1st Floor, Hall B1
- B21** Room **"Theodore Maiman,"** 1st Floor, Hall B2
- B22** Room **"Thomas Edison,"** 1st Floor, Hall B2
- B32** Room **"Emmett Leith,"** 1st Floor, Hall B3
- A11** Room **"Charles Townes,"** 1st Floor, Hall A1
- A12** Room **"Gustav Hertz,"** 1st Floor, Hall A1



## ATTENDEE SERVICES

### At your fingertips

#### Registration

Get your congress ticket at the congress counters in the West Entrance at the Trade Fair Center Messe München.

#### Congress and trade-fair ticket in one

The congress ticket includes admission to all conference events and to the exhibition.

#### Poster sessions

Different poster sessions displayed on each day of the congress invite attendees to exchange ideas and information. The poster sessions are taking place in Hall B0.

#### Speakers' service

Speakers can upload their presentations in advance and can call them up in the conference room. The speakers' service is located on the first floor of the ICM.

#### WiFi Lounge and free WiFi

All congress attendees with a WiFi-enabled device have free access to the Internet in special WiFi Lounges at the Foyer of the ICM. The Internet in the lounges has an unlimited bandwidth and download volume. In addition, attendees can use Messe München WiFi at the fairgrounds. However, this service is limited by bandwidth and download volume.

#### Catering

All attendees of the World of Photonics Congress are invited to attend free coffeebreaks. In addition to the coffee breaks, a number of catering facilities are available. Depending on the weather, the ICM garden will be open.

#### Networking events

Benefit from all the new contacts you can make at the "Bier & Brezel" Get-together, coffee breaks and the "Happy Hour" at this year's congress.



## Program quality on top level: Our partners

### Conference on Lasers and Electro-Optics/ Europe and the European Quantum Electronics Conference 2023 (CLEO®/Europe-EQEC)

**Organizer:** European Physical Society (EPS)

6 rue des Frères Lumière, 68200 Mulhouse, France

Phone: +33 389 32 9448,

[conferences@eps.org](mailto:conferences@eps.org), [cleoeurope.org](http://cleoeurope.org)

### European Conferences on Biomedical Optics (ECBO)

**Organizer:** SPIE Europe

2 Alexandra Gate, Ffordd Pengam, Cardiff, CF24 2SA, UK

Phone: +44 29 2089 4747

[info@spieeurope.org](mailto:info@spieeurope.org), [spie.org/conferences-and-exhibitions/](http://spie.org/conferences-and-exhibitions/)

[european-conferences-on-biomedical-optics](http://european-conferences-on-biomedical-optics)

### Lasers in Manufacturing (LiM 2023)

**Organizer:** Wissenschaftliche Gesellschaft Lasertechnik und  
Photonik e.V. (WLT)

Laser Zentrum Hannover e.V.

Hollerithallee 8, 30419 Hannover, Germany

Phone: +40 511 2788-268, [info@wlt.de](mailto:info@wlt.de),

[wlt.de/lim-conference](http://wlt.de/lim-conference)

### SPIE Optical Metrology/ SPIE Digital Optical Technologies

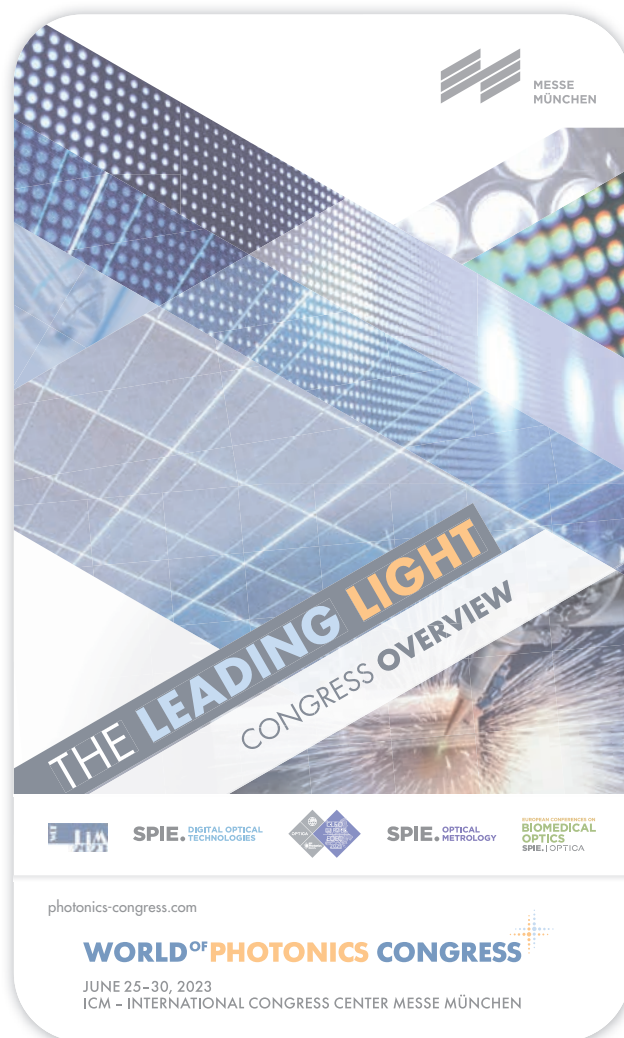
**Organizer:** SPIE Europe

2 Alexandra Gate, Ffordd Pengam, Cardiff, CF24 2SA, UK

Phone: +44 29 2089 4747, [info@spieeurope.org](mailto:info@spieeurope.org),

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[spie.org/conferences-and-exhibitions/digital-optical-technologies](http://spie.org/conferences-and-exhibitions/digital-optical-technologies)







# Laser Symposium & Int. Symposium Additive Manufacturing

November 29–December 1, 2023

**Dresden & Online**

## Hot Topics

- Laser materials processing: from micro to macro
- AM: holistic view of the process chain
- Process monitoring & control
- Emerging technologies & industrial applications

## What to expect

- Renowned speakers from research and industry
- Poster session & industrial exhibition
- Open lab @Fraunhofer IWS
- Exchange of new ideas, discussion & networking

[www.lasersymposium.de](http://www.lasersymposium.de)

