SPIE. OPTICAL SYSTEMS DESIGN

2021 CALL FOR PAPERS

OPTICAL SYSTEMS DESIGN

CALL FOR PAPERS

NEW EXTENDED DATE
Submit abstracts by 28 April 2021

Conferences: 13–16 September 2021
Exhibition: 14–16 September 2021
IFEMA
Madrid, Spain

spie.org/osd21call
#SPIEOpticalSystems

SPIE. OPTICAL SYSTEMS DESIGN

Conferences: 13–16 September 2021
Exhibition: 14–16 September 2021
IFEMA
Madrid, Spain

Submit Abstracts by:
28 APRIL 2021

Connect with Your Community

Present at this event showcasing the latest advances in optical systems applications, matierals, and processing

Accepting abstract submissions

Present your research at SPIE Optical Systems Design, the premier European event for optical instrumentation with the latest advances in optical systems applications, materials, and processing. This is an interdisciplinary forum for technicians, engineers, researchers, and managers who are involved in instrumental optics at all levels: design, specification, production, and testing.

A home for your research

As an author, don't hesitate to submit an abstract. Although much in the world remains uncertain, the one constant is that your work is important. SPIE continues our commitment to providing a forum for information sharing, collaboration, and advancing research that is vital to your community. Prepare your abstract and by doing so you will guarantee that your research is ready to be shared.

spie.org/osd21call
#SPIEOpticalSystems

Plan to Participate

Optical instruments are addressing an ever-increasing number of industrial and research applications: imaging and vision, defense, space, telecommunications, transportation, industrial process control, laser fusion, etc. As end users are expecting more demanding performances, optical systems designers and manufacturers are faced with growing challenges.

This symposium on Optical Systems Design in Madrid, Spain will be the eleventh in a series in Europe. It is intended to provide an interdisciplinary forum for technicians, engineers, researchers, and managers who are involved in instrumental optics at all levels: design, specification, production, and testing.

Get face-to-face feedback from your colleagues in an interdisciplinary forum. The symposium represents an excellent opportunity to stay informed and further the debate about the latest (and future) developments in optical design and how strong digital transformation and connectivity drive these developments. There is no doubt that Madrid will be the perfect host for SPIE Europe Optical Systems Design 2021; it is our great pleasure to welcome you.

SYMPOSIUM CHAIR

Marta C. De la Fuente
ASE Optics Europe (Spain)

SYMPOSIUM CO-CHAIR

Juan Carlos Miñano
Univ. Politécnica de Madrid (Spain)

HONORARY SYMPOSIUM CHAIR

Tina Kidger
Kidger Optics Associates (United Kingdom)

Stay Up to Date via Email

Sign up to receive emails about SPIE Optical Systems Design.
spie.org/signup

MANAGED BY

SPIE.EUROPE

SPIE Europe Ltd., a subsidiary of SPIE, is a not-for-profit UK-registered company serving SPIE constituents throughout Europe as an advocate and liaison to political and industry associations within the European optics and photonics community.

In addition to providing membership services, SPIE Europe Ltd. organises and manages internationally recognised conferences, education programmes, and technical exhibitions featuring emerging technologies in optics and photonics.

SPIE International Headquarters
PO Box 10
Bellingham, WA 98227-0010 USA
Tel: +1 360 676 3290
Fax: +1 360 647 1445
help@spie.org / www.SPIE.org

SPIE Europe Office
2 Alexandra Gate
Ffordd Pengam, Cardiff,
CF24 2SA UK
Tel: +44 29 2089 4747
Fax: +44 29 2089 4750
info@spieeurope.org
www.SPIE.org

SUPPORTING ORGANISATIONS

Contents

OSD01 **Optical Design and Engineering VII** 3
Chair(s): Laurent Mazuray; Ulrike Fuchs; James Babington

OSD02 A**dvances in Optical Thin Films VII** 4
Chair(s): Michel Lequime; Detlev Ristau

OSD03 **Optical Fabrication, Testing, and Metrology VI** 5
Chair(s): Roland Geyl; Deitze Otaduy; Reinhard Völkel

OSD04 **Illumination Optics VI** 6
Chair(s): Tina E. Kidger; Stuart David

OSD05 **Computational Optics 2021** 7
Chair(s): Daniel G. Smith; Frank Wyrowski; Andreas Erdmann

OSD06 **Optical Instrument Science, Technology, and Applications** 8
Chair(s): Nils Haverkamp; Breann N. Sitarski; Richard N. Youngworth

Abstract Submission 10

Save the date

NEW EXTENDED DATE
ABSTRACTS DUE: 28 APRIL 2021

AUTHOR NOTIFICATION:
18 JUNE 2021
The contact author will be notified of acceptance by email.

MANUSCRIPTS DUE: 18 AUGUST 2021

PLEASE NOTE: Submission implies the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a full-length manuscript for publication in the conference proceedings.

Optical Design and Engineering VIII (OSD01)

Conference Chairs: **Laurent Mazuray,** Airbus Defence and Space (France); **Ulrike Fuchs,** asphericon GmbH (Germany); **James Babington,** Thales Optronics Ltd. (United Kingdom)

Programme Committee: **Nathalie Blanchard,** INO (Canada); **Andrés Cifuentes,** ASE Optics Europe (Spain); **Andrew J. Court,** TNO (Netherlands); **Eric Herman,** Zygo Corporation (United States); **Demetrio Labate,** Leonardo (Italy); **Paolo Laporta,** Politecnico di Milano (Italy); **Thierry Lépine,** Lab. Hubert Curien (France); **Iain A. Neil,** ScotOptix (Switzerland); **Thomas Nobis,** Carl Zeiss AG (Germany); **Jérôme Primot,** ONERA (France); **Jannick P. Rolland,** Univ. of Rochester (United States); **Elisabetta Rugi Grond,** Thales Alenia Space Switzerland (Switzerland); **Alessio Taiti,** Leonardo (Italy); **Simon Thibault,** Univ. Laval (Canada); **Andrew P. Wood,** Qioptiq Ltd. (United Kingdom); **Richard N. Youngworth,** Riyo-LLC (United States); **María J. Yzuel,** Univ. Autònoma de Barcelona (Spain)

Efficient and successful optical design requires a multidisciplinary approach. The optical designer needs to have material and production expertise, knowledge of the application and potential market, in addition to considerable ability in their main task; the design of an optical system with optimum performance. Advanced optical systems require a clear understanding of the physical limits, material science, and technical possibilities. Only then will the result be a competitive product optimised for best value for money. In many cases, the success of a product in the international marketplace depends on its optical design.

The design software is the main tool for the designer. This tool has to keep pace with the research and development activities in the field of optical elements, illumination, detectors, and other new technologies.

Contributions on the topics of design-to-cost, design-for-manufacture, including productions in series as example for space constellations or military programs, and design-for-industrial innovation are welcome at this conference. These topics are critical to ensuring that optical designs more effectively accommodate production constraints and new process developments in an increasingly competitive environment.

This conference is intended to address an international audience of optical system designers, software development engineers, and R&D experts from industry, institutions, and academia.

Original papers are solicited on, but not limited to, the following areas of research, design, and engineering of optical systems:

- modelling, simulation, and new algorithms
- optomechanical design
- tolerancing and design-for-manufacture
- stray light analysis and prevention
- super resolution systems
- space optics
- x-ray optics
- active and adaptive optics
- integrated and guided optics
- micro-optics
- optics for visual instruments
- detectors, their interface to optics, and associated signal processing
- advanced optical materials
- diffractive and holographic optics
- high-power designs using nonlinear elements
- environmental effects and their compensation
- projection and display systems
- microscopy
- lithography and associated optical systems
- computational imaging
- freeform optics.

Submit your abstract today: spie.org/osd21call

Advances in Optical Thin Films VII (OSD02)

Conference Chairs: **Michel Lequime,** Institut Fresnel (France); **Detlev Ristau,** Laser Zentrum Hannover e.V. (Germany)

Programme Committee: **Claude Amra,** Institut Fresnel (France); **Bertrand Bovard,** Teledyne Imaging Sensors (United States); **Xinbin Cheng,** Tongji Univ. (China); **Franck Delmotte,** Institut d'Optique Graduate School (France); **Chang Kwon Hwangbo,** INHA Univ. (Korea, Republic of); **Lars O. Jensen,** Laser Zentrum Hannover e.V. (Germany); **Juan Ignacio Larruquert,** Consejo Superior de Investigaciones Científicas (Spain); **Cheng Chung Lee,** National Chung Hsing Univ. (Taiwan); **Xu Liu,** Zhejiang Univ. (China); **Julien Lumeau,** Institut Fresnel (France); **Ludvik Martinu,** Ecole Polytechnique de Montréal (Canada); **Angela M. Piegari,** ENEA (Italy); **Francis Placido,** Univ. of the West of Scotland (United Kingdom); **Sven Schröder,** Fraunhofer-Institut für Angewandte Optik und Feinmechanik IOF (Germany); **Ulrike Schulz,** Fraunhofer-Institut für Angewandte Optik und Feinmechanik (Germany); **Christopher J. Stolz,** Lawrence Livermore National Lab. (United States); **Alexander Tikhonravov,** Lomonosov Moscow State Univ. (Russian Federation); **Hrvoje Zorc,** Institut Ruder Boškovic (Croatia)

Optical thin films are today involved in numerous optical systems where they constitute a key to their ultimate performance. For most applications, high accuracy is required on both the optical and non-optical properties, including low-loss energy balance, mechanical and thermal behaviour, laser damage threshold and nonlinear properties. Great progress has been made in almost all aspects but there are still problems and barriers to progress and their identification and possible solutions represent important features of this conference.

The conference will be devoted to thin film optical coatings, with special emphasis on the latest developments in the field. Papers on theoretical, experimental, and technological aspects will cover both fundamental and applied research, as well as development, practical techniques and applications.

We welcome papers describing advances in any aspect of thin film optical coatings and especially in the following areas:

- film deposition methods
- large area deposition
- process control and monitoring
- optical coating materials
- organic optical coatings
- thin film growth and microstructure
- design of optical coatings
- optical coatings on plastic
- coatings for ultrafast optics
- soft x-ray/EUV/DUV/VUV coatings
- optical coatings for displays and lighting
- optical coatings for solar energy utilization
- coatings for security applications
- optical and scattering properties
- coating stress and mechanical properties
- laser-induced damage
- patterned coatings and thin-film arrays
- 1D photonic crystals and metamaterials.

Save the date

NEW EXTENDED DATE
ABSTRACTS DUE: 28 APRIL 2021

AUTHOR NOTIFICATION:
18 JUNE 2021

The contact author will be notified of acceptance by email.

MANUSCRIPTS DUE: 18 AUGUST 2021

PLEASE NOTE: Submission implies the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a full-length manuscript for publication in the conference proceedings.

Optical Fabrication, Testing, and Metrology VII (OSD03)

Conference Chairs: **Roland Geyl,** Safran Reosc (France); **Deitze Otaduy,** Univ. of Deusto (Spain); **Reinhard Völkel,** SUSS MicroOptics SA (Switzerland)

Programme Committee: **Matthias Bischoff,** Berliner Glas KGaA Herbert Kubatz GmbH & Co. (Germany); **Xinbin Cheng,** Tongji Univ. (China); **Jessica DeGroote Nelson,** Optimax Systems, Inc. (United States); **Sead Doric,** Doric Lenses Inc. (Canada); **Oliver W. Fähnle,** FISBA AG (Switzerland); **Pierre Gloesener,** AMOS Ltd. (Belgium); **Philippe Godefroy,** Winlight System S.A. (France); **Caroline Gray,** Glyndwr Innovations Ltd. (United Kingdom); **James E. Harvey,** Photon Engineering LLC (United States); **François Houbre,** Savimex (France); **Shay Joseph,** Rafael Advanced Defense Systems Ltd. (Israel); **Sven R. Kiontke,** aspericon GmbH (Germany); **François Leprêtre,** Thales Angénieux S.A. (France); **Jérôme Néauport,** Commissariat à l'Énergie Atomique (France); **Manfred Prantl,** Alicona Imaging GmbH (Austria); **Sven L. M. Schroeder,** Univ. of Leeds (United Kingdom); **Arkadiusz Swat,** CRW Telesystem-Mesko Sp. z o.o. (Poland); **Lingli Wang,** Jos. Schneider Optische Werke GmbH (Germany); **Alexander Yascovich,** Space Research Institute (Russian Federation)

Today's optical fabrication and testing technologies are facing ever-increasing demands from industry and science. This is driven by tough requirements for cost and time reduction in production and R&D as well as by rapidly developing new application fields.

The optical elements become larger, thinner, segmented ... or smaller. The optical profile is going up to freeform and discontinuous. The figure and finish error specifications are becoming tighter all through the Power Spectral Density curve. Our substrate material choice is enlarging with new ceramics, metal alloys or organic material. The wavelengths of interest are pushing towards EUV and x-rays on one hand or TeraHerz waves on the other hand, etc.

Speed and accuracy of metrology are more than ever as important as the manufacturing process itself and remain key contributor to the economic success of industrial production and new optical manufacturing methods. New techniques like deflectometry offer new perspectives and conventional instrument still see progress in quality, accuracy or on-the-field efficiency thanks to intelligent and user-friendly driving software.

The aim of this conference is to review with the community the latest developments achieved in optical fabrication, testing, and metrology.

- large, mini-, and micro-optics fabrication
- aspheric and complex or free-form optical surfaces
- polishing, grinding, lapping, and cutting
- ultraprecision manufacturing (diamond turning etc.)
- nanostructuring of multifunctional optical surfaces
- novel surface finishing techniques, e.g. laser polishing
- functional coatings fabrication and testing
- glass or polymer molding and additive manufacturing
- optical shop and the environment
- computer integrated manufacture and automation
- rapid surface processing
- exotic or difficult material processing
- figure, mid-, and high-spatial frequencies measurement
- scanning probe techniques
- nano- and microroughness measurement
- light scatter techniques and analysis
- texture and subsurface damage testing
- interferometry and holography
- speckle photography, shearography, and ESPI
- optical metrology at extreme UV wavelengths
- coated surface testing
- surface cleanliness testing
- complete system testing
- novel or specialized testing techniques
- relative and absolute accuracy
- standardization in optical metrology.

Submit your abstract today: **spie.org/osd21call**

Illumination Optics VI (OSD04)

Conference Chairs: **Tina E. Kidger,** Kidger Optics Associates (United Kingdom); **Stuart David,** Synopsys, Inc. (United States)

Programme Committee: **William Cassarly,** Synopsys, Inc. (United States); **Fabian Duerr,** Vrije Univ. Brussel (Belgium); **Florian R. Fournier,** Synopsys, Inc. (United States); **R. John Koshel,** College of Optical Sciences, The Univ. of Arizona (United States); **Julius A. Muschaweck,** ARRI Inc. (Germany); **Steffen Reichel,** Pforzheim Univ. (Germany); **Jannick P. Rolland,** Univ. of Rochester (United States)

Illumination design is a continuously developing field resulting from increased performance demands and rapidly changing technologies. Continuing development of illumination design is driven by new sources (e.g., solid state sources, organic sources, light-emitting polymers, and high luminance discharge sources), new markets and styling considerations (e.g., wearable technologies, smart devices, and automotive applications) and advances in fabrication technologies (e.g., diamond turning of complex surfaces and advanced molding of complex patterns and structures). In addition, several optical design software companies have developed, and continue to develop and improve, sophisticated illumination modeling, including color management, freeform optics, and optimization tools to aid the illumination design engineer. This conference offers an international podium for the discussion of these ongoing illumination R&D activities.

Papers are solicited on all matters pertaining to modern illumination design, including, but not limited to, the following areas:

- illumination optimization
- light transport
- freeform non-imaging optical design
- information display design
- transportation systems illumination
- smart lighting applications
- general/technical lighting
- color management
- scatter and stray light analysis
- LED system design.

Save the date

NEW EXTENDED DATE
ABSTRACTS DUE: 28 APRIL 2021

AUTHOR NOTIFICATION:
18 JUNE 2021

The contact author will be notified of acceptance by email.

MANUSCRIPTS DUE: 18 AUGUST 2021

PLEASE NOTE: Submission implies the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a full-length manuscript for publication in the conference proceedings.

Submit your abstract today: **spie.org/osd21call**

Computational Optics 2021 (OSD05)

Conference Chairs: **Daniel G. Smith,** Nikon Research Corp. of America (United States); **Frank Wyrowski,** Friedrich-Schiller-Univ. Jena (Germany); **Andreas Erdmann,** Fraunhofer-Institut für Integrierte Systeme und Bauelementetechnologie IISB (Germany)

Programme Committee: **Miguel A. Alonso,** Univ. of Rochester (United States); **Sven Burger,** Konrad-Zuse-Zentrum für Informationstechnik Berlin (Germany); **Donis G. Flagello,** Nikon Research Corp. of America (United States); **Ari T. Friberg,** Univ. of Eastern Finland (Finland); **Hans Peter Herzig,** Ecole Polytechnique Fédérale de Lausanne (Switzerland); **Roarke Horstmeyer,** Duke Univ. (United States); **Olivier J. F. Martin,** Ecole Polytechnique Fédérale de Lausanne (Switzerland); **Carsten Rockstuhl,** Karlsruher Institut für Technologie (Germany); **Michael Totzeck,** Carl Zeiss SMT GmbH (Germany); **H. Paul Urbach,** Technische Univ. Delft (Netherlands); **Wei Wang,** Heriot-Watt Univ. (United Kingdom); **Zeev Zalevsky,** Bar-Ilan Univ. (Israel)

Modern optical instruments employ shaping, manipulation, and detection of light in various spatial, spectral, and temporal dimensions. Effective optical design requires modelling a large variety of optical effects, including nonlinear optical materials, advanced polymers and nano-composites, and the ability to do so can broaden the design space and enables innovative solutions. Identification of the best design solutions requires an in-depth understanding of the involved physics and computational methods, which combine various optical modelling approaches, ranging from analytical thin film algorithms to rigorous Maxwell-solvers. Massive parallel computing using modern hardware and software architectures and advanced optimization algorithms fuel the development of computational optics and its growing number of applications in modern optical design.

This conference will address an international audience of scientists and engineers on developments in computational optics; on new theories, algorithms, software, supporting experiments, and applications that are not completely covered by traditional optical design. Papers are sought on the subject of computational optics, including but not limited to, the following sub-areas:

- optical field propagation techniques and special optical modelling techniques including, polarization, ultra-short pulses, coherence, statistical optics, speckle phenomena, light scattering
- propagation techniques suitable for microstructures and freeforms, homogeneous and inhomogeneous media, and crystals
- rigorous electromagnetic field modeling using finite-difference time-domain (FDTD), finite elements methods (FEM), rigorous coupled wave algorithms (RCWA) or similar techniques
- combination of different rigorous and approximate electromagnetic propagation techniques to obtain numerically efficient and highly accurate modelling procedures
- applications of classical and advanced optimization techniques in modern optics, including linear, quadratic, and nonlinear programming, simulated annealing, genetic algorithms, shape optimization, topology optimization and multi-objective optimization techniques
- advances in the design, modeling, and application of metasurfaces and metamaterials
- applications of methods from the field of artificial intelligence to solve problems in the field of computational optics including Bayesian techniques or (deep) neural networks, reinforcement learning
- software interfacing of various models and optimization techniques, massive parallel computing including GPU based solutions for computational optics
- applications of computational optics in various fields including light source modelling, diffuser, imaging, lithography, microscopy, optical metrology, laser beam shaping, diffractive optics, micro-optics, ptychography, and Fourier ptychography
- advances in computational imaging, Eulerian video magnification, image processing, bokeh, deblurring, denoising, plenoptic image processing, computer vision, computed tomography, three-dimensional image processing, specialized computational hardware, and deep convolutional networks, as well as optical system designs optimized to make use of computational imaging corrections
- multi-scale simulations to bridge multiple length scales that matter in optical systems: starting from the molecular scale to an actual material that is considered in the design of optical devices on the macroscale
- multi-physics simulations where optical properties combined with other physical features are important, e.g. quantum, mechanical, thermal, or electrical properties.

Optical Instrument Science, Technology, and Applications (OSD06)

Conference Chairs: **Nils Haverkamp,** Carl Zeiss Industrielle Messtechnik GmbH (Germany); **Breann N. Sitarski,** GMTO Corp. (United States); **Richard N. Youngworth,** Riyo LLC (United States)

Programme Committee: **Nandini Bhattacharya,** Technische Univ. Delft (Netherlands); **Harald Bosse,** Physikalisch-Technische Bundesanstalt (Germany); **Stéphane Guisard,** European Southern Observatory (Germany); **Markus Deguenther,** Carl Zeiss SMT GmbH (Germany); **Simon Hall,** Colour Holographic Ltd. (United Kingdom); **Andrew R. Harvey,** Univ. of Glasgow (United Kingdom); **Alois M. Herkommer,** Univ. Stuttgart (Germany); **Keith J. Kasunic,** Optical Systems Group, LLC (United States); **Stefan Kück,** Physikalisch-Technische Bundesanstalt (Germany); **Michael Layh,** Hochschule Kempten (Germany); **Richard K. Leach,** The Univ. of Nottingham (United Kingdom); **Max Riedel,** Carl Zeiss AG (Germany); **Daniel Rotter,** Swarovski Optik KG (Austria)

Optical instruments play an extremely large role in the application and development of future capability in optics and photonics. Optical instruments are a critical lynchpin in numerous applications ranging from government, industrial, and consumer applications. Science and development on optical instruments is continual as technologies involved vary from robust fully developed instruments to fledgling technologies with a bright future.

This Optical Instrument Science, Technology, and Applications conference has been created to further enable the integration of components, design, and modelling key to successful optical instrument development and applications. The focus of this conference is on optical systems and instruments, along with applications enabled by such methods. Topics can include all stages of development and applications where optical instruments are proposed as solutions versus competing non-optical technologies through optical instruments being the key enabling technology.

Papers are solicited in mature areas and applications of optical systems and instrumentation. Authors are encouraged to submit system and instrument level papers to this conference which has been designed to complement other conferences at the event; these other conferences focus on specific subsystem details such as design, coatings, specific algorithms, and so forth. Additionally, emerging technical areas with projected implementation in the next decade are welcome. Submissions on conceivable contributions of computational methods and machine vision for novel applications and increased productivity are notably endorsed. With value chains from product generation to production and servicing becoming ever more integrated on a global scale, contributions on standardization of hardware and software interfaces, data formats, and full system solutions with optical hardware and software integration are also welcome.

EMERGING AND HOT TOPICS IN INSTRUMENTAL OPTICS

- recent progress on virtual prototyping / system simulation of image processing industrial measuring instruments
- recent progress on algorithms and optics concepts / instruments for 2D and 3D imaging (esp. using lens less, multi- and coded-aperture imaging)
- recent progress on replicative / additive manufacturing of optics
- novel approaches to form and surface measurement
- NMI activities in the field of optics for industry, standardization, and norms
- merging/fusion of optical metrology with tactile and x-ray metrology
- adaptive optics and wavefront sensing for industrial metrology and technology advancements
- structured light, multi-, and hyperspectral imaging for industry
- progress on photonic integrated circuit / ultrafast laser-based metrology
- polarization and beam optics advancement for instrumentation
- progress on coherent methods for object and object scene digitization, object localization
- advancements in high accuracy large scale metrology
- progress on quantum sensing for position and attitude measurement and surface and volume qualification/metrology
- instrumentation, development, and metrology for AR/VR/MR systems
- progress on high-speed image processing, real time architectures for optically guided motion control; protocols / standardization
- mobile device-based metrology and metrology for aspheres and free form optics
- single photon imaging systems / quantum optics / photonics.

CURRENT APPLICATIONS AND EFFECTIVE IMPLEMENTATION

- optical engineering at the system level including end-to-end system development
- optical system layout for instrumentation including microscopes and medical devices
- high volume instrument development process and methodologies
- telescopic systems including binoculars and other ocular devices
- optical instruments for use with scattering or dispersive media.

Save the date

NEW EXTENDED DATE
ABSTRACTS DUE: 28 APRIL 2021

AUTHOR NOTIFICATION:
18 JUNE 2021

The contact author will be notified of acceptance by email.

MANUSCRIPTS DUE: 18 AUGUST 2021

PLEASE NOTE: Submission implies the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a full-length manuscript for publication in the conference proceedings.

Submit your abstract today: **spie.org/osd21call**

Present your research at SPIE Optical Systems Design

Follow these instructions to develop a successful abstract and accompanying manuscript for the conference and for publication in the Proceedings of SPIE in the SPIE Digital Library.

How to submit an abstract

- Go to the conferences page (link below), browse the conference topics and choose one that most closely matches the topics of the work you wish to present. Click "Submit an Abstract" from within that conference, and you'll be prompted to sign in to your spie.org account to complete the submission wizard.
- Browse the conference programme and select conference(s) that most closely matches the topics for your area of research. Important: each abstract may be submitted to one conference only.

What you will need to submit

A completed electronic submission should include the following:

- Title
- Author(s) information
- 500-word abstract for technical review
- 300-word summary for the program
- Keywords used in search for your paper (optional)
- Your decision on publishing your presentation recording to the SPIE Digital Library
- Some conferences may indicate additional requirements in the Call for Papers

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

Submission agreement

Presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract. An author or coauthor will:

- Register and attend the meeting.
- Present as scheduled.
- Publish a 6- to 20-page manuscript in Proceedings of SPIE in the SPIE Digital Library.
- Obtain funding for registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations.
- Ensure that all clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor in the USA, allow at least 60 days for clearance.
- Ensure that you obtain a visa in time, if you need to do so. Visa Application Information and Invitation Requests.

Important dates

Abstracts Submission Deadline	10 March 2021
Acceptance Notification Sent to Contact Author	18 June 2021
Manuscripts Due	18 August 2021

Review and programme placement

- To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.
- Conference Chairs/Editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations.
- Final placement in an speaker or poster session is subject to Chair discretion.

Publication of Proceedings in the SPIE Digital Library

- Conference Chairs/Editors may require manuscript revision before approving publication and reserve the right to reject for publication any paper that does not meet acceptable standards for a scientific publication.
- Conference Chair/Editor decisions on whether to allow publication of a manuscript are final.
- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings of SPIE in the SPIE Digital Library.
- Oral presentations are recorded, and the slides are synced with the presenter's audio. Only those with author permission will be published in the SPIE Digital Library.
- SPIE partners with relevant scientific databases to enable researchers to find the papers in the Proceedings of SPIE easily. The databases that abstract and index these papers include Astrophysical Data System (ADS), Ei Compendex, CrossRef, Google Scholar, Inspec, Scopus, and Web of Science Conference Proceedings Citation Index.
- More publication information available on the SPIE Digital Library.

Contact information

the meeting, contact the Contact the Programme Coordinator (listed in your SPIE.org account)

For questions about your manuscript, contact **AuthorHelp@spie.org**.