The expanding use of optical imaging and spectroscopy techniques by clinicians in cardiovascular medicine has spurred a wave of scientific research and technical innovation towards new diagnostic modalities in this field. Characterization of coronary atherosclerotic plaque, imaging of therapeutic devices such as stents, and detection of arrhythmogenic changes in the myocardium, all benefit from the resolution and tissue type specificity offered by optics. Therapeutic use of light and lasers continues to find new, targeted applications, aiming for safer interventions with more predictable outcomes. Examples include laser angioplasty, pacemaker lead removal, and ablation of erratic conduction paths in the cardiac wall. Specialized microscopic techniques have revealed myriad details of embryonic cardiac development.

Scientists, engineers, clinical researchers and industry partners meet here to discuss new advances of using light for cardiovascular science and medicine. The aim is to benefit patients, physicians, and fundamental cardiac research. To this end, the conference stimulates collaboration and interdisciplinary exchange, which are paramount for generating new insights and for rearing new technologies towards a role in effective, safe and fast interventions.

Topics will include, but are not limited to, the following:

- imaging of coronary artery disease: OCT, fluorescence, angioscopy, photoacoustics
- optical characterization of atherosclerosis: polarization, spectroscopy, speckle techniques
- optical methods of assessing cardiovascular structure, biomechanics and function
- blood, coagulation and thrombogenesis
- cardiomyopathies
- myocardial ablation
- laser revascularization
- light-tissue interaction of the heart and vessels
- cardiac optogenetics
- photodynamic therapy
- cardiac development
- vascular constructs development (bioengineered tissue)
- image analysis and processing, including machine learning techniques
- new catheters/devices for diagnosis, intervention guidance and therapy
- new light sources, fibers, scanners and other components
- optical studies of the cardiovascular system in animal models
- contrast agents for cardiovascular diagnosis and therapy
- non-invasive technologies for cardiovascular health
- clinical applications
- translation of technology from bench to industry and clinic.

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#PhotonicsWest
Present your research at SPIE Photonics West

Follow the instructions below to develop a successful abstract for submission to a conference and review policies for publication in the Proceedings of SPIE in the SPIE Digital Library. Submissions subject to chair approval.

Important dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Abstracts due</td>
<td>19 July 2023</td>
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<tr>
<td>Registration opens</td>
<td>October 2023</td>
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<tr>
<td>Authors notified and program posts online</td>
<td>9 October 2023</td>
</tr>
<tr>
<td>Submission system opens for manuscripts and poster PDFs*</td>
<td>27 November 2023</td>
</tr>
<tr>
<td>Poster PDFs due for spie.org preview and publication</td>
<td>3 January 2024</td>
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<tr>
<td>Manuscripts due</td>
<td>10 January 2024</td>
</tr>
<tr>
<td>Advance upload deadline for oral presentation slides**</td>
<td>25 January 2024</td>
</tr>
</tbody>
</table>

*Contact author or speaker must register prior to uploading
**After this date slides must be uploaded onsite at Speaker Check-in

What you will need to submit

- Presentation title
- Author(s) information
- Speaker biography
- 250-word abstract for technical review
- 100-word summary of abstract for display in the program
- Keywords used in search for your paper (optional)
- Check the individual conference call for paper or additional requirements (for example, some conferences require 2- to 3-page extended summary for technical review, or have instructions for award competitions)

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.

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- Submit by clicking the “Submit an Abstract” button on the conference page
- Sign in to your SPIE account, or create an account if you do not already have one
- Follow the steps in the submission wizard until the submission process is completed
- If your submission is related to an application track below, indicate the appropriate track when prompted during the submission process

Application track

Listed below are the application tracks available for this meeting. Application tracks aggregate presentations and focus on emerging technical and societal needs that require a multidisciplinary approach.

- AI/ML: 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 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 photonics technologies, tools, and techniques for healthcare
- 3D printing: Papers that highlight the innovative use of optics and photonics in multidisciplinary applications for multidimensional manufacturing

Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:

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- Email messaging for the conference series
- Submit a manuscript by the advertised due date for publication in the Proceedings of SPIE in the SPIE Digital Library
- Obtain funding for registration fees, travel, and accommodations
- Attend the meeting
- Present at the scheduled time

Review and program 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 oral or poster session is subject to chair discretion

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ABSTRACT