Diagnostic and Therapeutic Applications of Light in Cardiology 2021 (BO104)

Conference Chairs: Laura Marcu, Univ. of California, Davis (USA); Gijs van Soest, Erasmus MC (Netherlands)

Program Committee: Christos Bourantas, St. Bartholomew’s Hospital (United Kingdom); Kenton W. Gregory M.D., Oregon Medical Laser Ctr. (USA); Christine P. Hendon, Columbia Univ. (USA); Stanislav Y. Emelianov, Georgia Institute of Technology (USA); Guillermo J. Tearney M.D., Massachusetts General Hospital (USA)

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.

Submit abstracts by 26 August 2020
**Present your research at SPIE Photonics West**

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**
1. Browse the conference program and select the conference(s) that most closely matches the topics of the research you wish to present. Important: each abstract may be submitted to one conference only.
2. Click “Submit an Abstract” from within the conference you’ve chosen, and you’ll be prompted to sign in to your spie.org account to complete the submission wizard.
3. If your submission is related to an application track, indicate the appropriate track when prompted during the submission process.

**What you will need to submit**
A completed electronic submission should include the following:
- Title
- Author(s) information
- 250-word abstract for technical review
- 100-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 (slide capture and audio)
- Check the individual conference Call for Papers for additional requirements (for example, some conferences require 2- to 3-page extended summary for technical review, or have instructions for competing for awards)

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.

**Important dates**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstracts Submission Deadline</td>
<td>26 August 2020</td>
</tr>
<tr>
<td>Acceptance Notification Sent to Contact Author</td>
<td>2 November 2020</td>
</tr>
<tr>
<td>Manuscripts Due (Conferences OE506, and OE801-OE803 Only)</td>
<td>20 January 2021</td>
</tr>
<tr>
<td>Manuscripts Due (All Conferences EXCEPT OE506, and OE801-OE803)</td>
<td>16 February 2021</td>
</tr>
</tbody>
</table>

**Submission agreement**
Presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:
- Register and pay the author registration fee
- Attend the meeting
- Present at the scheduled time
- Publish their manuscript in the SPIE Digital Library
- 6-page manuscript minimum for LASE and OPTO; 4-page minimum for BIOS; 20-page maximum
- 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.

**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 Chairs’ 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 presentation slides are synced with the presenter’s audio. Only those presentations 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), El Compendex, CrossRef, Google Scholar, Inspect, Scopus, and Web of Science Conference Proceedings Citation Index.
- More publication information available on the SPIE Digital Library.

**Contact information**
For questions about submitting an abstract, or the meeting, contact the Conference Program Coordinator.