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## Laser Resonators, Microresonators, and Beam Control XXIII (LA203)

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Innovation in laser resonator design is key to solving various scientific and technological problems, from improving the fundamental performance of laser systems to enabling new laser-based applications. Advancement in laser design can take many forms including controlling the shape of the laser beam, improving the cavity performance, and creating new functionality. These features are frequently interdependent, as advances in laser system design rapidly leads to new application areas.

Classical approaches to cavity design and beam shaping have been recently amended with vast new opportunities stemming from achievements of material science, micro- and nano-fabrication, metrology, and instrumentation. New technical and industrial needs stimulate new methods of beam shaping and control for optimized energy delivery in fabrication, communication, sensing, and other laser uses.

Advances in the field of optical microresonators have produced an expanding toolkit for a growing number of photonics applications, including optical frequency combs, microphotonic frequency metrology, signal processing, quantum communication and computing, high-rate data communication, biochemical, inertial, range sensors (LiDARs), and other emerging areas.

This conference provides a forum to bridge the communities of innovators in laser resonators, beam control and shaping, and microcavity technology and microlaser-based applications. Conference papers are solicited on a wide range of topics related to the conference title, including but not limited to the following:

### LASER RESONATORS

- active and adaptive laser resonators
- stable and unstable laser resonators for high-quality laser beams
- resonators for gas, solid state, and fiber lasers
- high-stability laser resonators.

### MICRORESONATORS AND APPLICATIONS

- novel microresonator topologies, fabrication and coupling methods, material platforms and packaging methods
- dispersion management, nonlinear effects and functionalization
- microcavities in optical frequency combs
- microcavities in parametric oscillation and frequency conversion
- microcavity lasers and optical micro-clocks
- microresonators in RF photonics: oscillators, receivers, and signal processors
- quantum optics with microresonators: single photon and correlated sources, qubits, switching and routing
- microresonator optomechanics, Brillouin scattering, cooling, phonon lasers, particle manipulation
- microresonators in biochemical, inertial, and other sensors, including LiDAR.

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**BEAM SHAPING AND BEAM CONTROL**

- fiber coupling of diode lasers
- fiber coupling of laser radiation
- lasers with phase conjugation
- high-power femtosecond lasers: beam and pulse control and formation
- laser beam homogenization
- laser intensity distribution transformation
- beam control of multi-KW lasers
- new optical elements and systems for lasers
- laser beam characterization and measurement of laser beam parameters
- spatial stabilization of laser beam shapes
- beam delivery systems
- feedback and control systems for aiming, frequency stabilization, or energy absorption
- high-power and high-brightness beam delivery optics, including advanced isolators, connectors, beam switches, etc.
- high-speed beam steering devices, including KTN scanners, etc.
- advanced beam shapers and spatial light modulators for smart laser processing, etc.
- novel polarization and angular momentum state conversion devices and technologies.

## 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.

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### 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

Abstracts Submission Deadline	15 July 2020
Acceptance Notification Sent to Contact Author	21 September 2020
Manuscripts Due (Conferences OE506, and OE801-OE803 Only)	9 December 2020
Manuscripts Due (All Conferences EXCEPT OE506, and OE801-OE803)	5 January 2021

### 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

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- 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.

## Add an application track to help get your presentation noticed

When submitting an abstract, add an application track during the submission process to increase the visibility of your presentation in the program. Application tracks offer a second presentation listing so participants can easily locate presentations in the program on their area of interest.

### APPLICATION TRACK

#### Instructions

1. Select a conference online, click “Submit an Abstract,” and follow the instructions.
2. Indicate the appropriate track when prompted during the submission process.

Accepted presentations will be listed in both the conference and application track listing in the program.

### SAVE THE DATE

**Abstracts Due:  
15 July 2020**

**Author Notification:  
21 September 2020**

The contact author will be notified of acceptance by email.

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