Solid State Lasers XXX: Technology and Devices (LA101)

Conference Chairs: W. Andrew Clarkson, Optoelectronics Research Ctr. (United Kingdom); Ramesh K. Shori, Naval Information Warfare Ctr. Pacific (USA)

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The primary purpose of this conference is to highlight the development of new laser sources, advanced technologies, components, and laser system designs that can benefit the development, commercialization, and fielding of new laser platforms based on solid state media and associated frequency-conversion techniques. As the field matures, this conference provides a forum for the discussion of challenges and advances in materials research, applied science, and design innovations that are fundamental to the operation and applications of solid state lasers. Developments in the IR, visible, and UV will be presented, with emphasis on new materials, components, fabrication techniques, and design alternatives that can enhance laser performance, reduce foot-print and/or increase device efficiency, lifetime, and reliability while reducing life-cycle costs. Descriptions of advances necessary to better meet the needs of the many industrial, biomedical, life sciences, communications, lidar, sensing, space and military systems, and applications in which solid state lasers play a significant role are especially solicited.

Key topics include diode-pumped lasers, novel gain materials and gain geometries, ceramic materials, alternative power scaling and resonator design approaches, hybrid fiber/solid state lasers, seed lasers for solid state/fiber amplifiers, and recent developments in tuning, Q-switching, ultrafast pulse generation, and frequency-conversion technologies. Papers describing new modeling tools, measurement techniques, and system miniaturization efforts are also welcome. Several sessions in the area of lasers utilizing thin disk gain media are planned. Contributions on solid state disk lasers, disk laser gain materials including ceramics, and applications of disk lasers are especially solicited. Papers are again solicited for a series of critical technologies sessions on ‘Challenges and Issues in Field, Flight and Space Qualifying Laser Components & Systems’ addressing the needs of ruggedizing airborne and space-qualifiable platforms for communications, lidar, and sensing applications.

Technical areas include (but are not limited to):
- high-power solid state lasers and laser systems
- visible and UV solid state lasers
- eye-safe, mid- and far-IR solid state lasers
- disk lasers
- slab and rectangular waveguide lasers
- single crystal (coatable & cladded) fiber lasers
- seed lasers for solid state and fiber amplifiers
- Q-switching and mode locking media and techniques
- new gain materials and composites
- novel resonator and pumping designs
- donut mode and vortex beam lasers
- resonantly pumped lasers
- single-frequency and narrow line lasers
- lasers using ceramic gain media
- laser modeling, testing, and characterization methods
- high-power beam delivery and characterization
- techniques for improving laser system reliability and efficiency
- compact laser devices and miniaturization efforts
- hybrid fiber/bulk laser systems
- intra-cavity and extra-cavity frequency-converted lasers
- specially designed solid state lasers for specific applications including:
  - medical, life sciences, and biophotonics
  - industrial, microelectronic, imaging, and display
  - lidar, atmospheric, aerospace, and military systems.
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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.

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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

| Abstracts Submission Deadline | 26 August 2020 |
| Acceptance Notification Sent to Contact Author | 2 November 2020 |
| Manuscripts Due (Conferences OE506, and OE801-OE803 Only) | 20 January 2021 |
| Manuscripts Due (All Conferences EXCEPT OE506, and OE801-OE803) | 16 February 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
- 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.

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Contact information

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