LASER DAMAGE
XLVIII ANNUAL SYMPOSIUM ON OPTICAL MATERIALS FOR HIGH-POWER LASERS

Call for Papers
Submit Abstracts by 25 April 2016
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Boulder Millennium Hotel
Boulder, Colorado, USA

Conference
25–28 September 2016
The leading forum on materials for high-power/high-energy lasers.

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QUESTIONS?

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Join us for this unique event.

The 48th Annual Laser Damage Symposium also known as Symposium on Optical Materials for High Power Lasers will be held from 25–28 September 2016 in a new facility, the Boulder Millenium Hotel, Boulder, Colorado, USA.

This meeting is the leading forum for the exchange of information on the physics/technology of materials for high-power/high-energy lasers. The series of conference proceedings has grown to be a comprehensive source of information on optics for lasers and includes topics on laser-induced damage mechanisms, materials and thin film preparation, durability, properties modeling, testing, and component fabrication. This symposium will start with a kick-off event Sunday Evening Tutorial, will host a featured Mini-Symposium and Thin-Film Laser-Damage Competition, and will include both poster and oral presentations with no parallel sessions.

Distinguished international researchers in the field of optics for high-power/high-energy lasers will present keynote and invited talks. Submissions are solicited in the four core technical sessions and the Mini-Symposium. We urge you to participate by submitting your abstracts, and encourage your colleagues to do the same.

LASER-INDUCED DAMAGE ISSUES:
- Photonic bandgap materials
- High-power fiber lasers
- Fibers for high-power laser applications
- High-power/ultra-fast lasers
- Multi-layer thin films
- Nonlinear optical and laser host materials
- Laser damage in new high-power laser systems

APPLICATIONS OF LASER DAMAGE:
- EUV
- Mirrors
- Nanostructures of optical materials and gratings

LASER-INDUCED DAMAGE RELATED ISSUES:
- Measurement protocols
- Materials characterization
- Fundamental mechanisms
- Contamination of optical components
- Surface and bulk defects
- Metamaterials
- Thermal management of high-power lasers

TUTORIAL
- Advanced Materials for High Laser-damage Resistance

MINI-SYMPOSIUM
- Review of Large-scale High-power Laser Facility Projects

THIN FILM DAMAGE COMPETITION

Abstracts Due: 25 April 2016 | Manuscripts Due: 24 October 2016
www.spie.org/ld16call

SUBMISSIONS ARE NOW BEING ACCEPTED FOR LASER DAMAGE SYMPOSIUM SESSIONS AND THE MINI-SYMPOSIUM.
MATERIALS AND MEASUREMENTS
Damage to the bulk of transparent optical media can occur in amorphous, polymeric, polycrystalline or crystalline materials. Research into, and measurements of phenomena that influence the damage process, such as absorption, thermal conductivity, stress-optic coefficients, moduli and defects are reported, as well as damage testing on bulk materials. With the emergence of micro- and nanostructured materials, especially those used in fiber laser systems and photonic crystal structures, the relationship between the propagating laser flux and engineered defects becomes even more important.

Invited Presentation: Frank Nuernberg, Heraeus Quarzglas GmbH & Co. KG (Germany)

SURFACES, MIRRORS, AND CONTAMINATION
Optical surfaces often limit the fluence of an optic due to intrinsic and extrinsic flaws and defects. Proper surface preparation, subsurface damage control, roughness and scattering reduction, environmental degradation and aging prevention, contamination control, can all improve the performance of mirrors and other surfaces.

Invited Presentation: Ibo Matthews, Lawrence Livermore National Lab. (USA)

THIN FILMS
Because of the tremendous range of applications of optical multilayers for modifying the performance of optical measurements, and because thin films are generally the weakest part of optical systems, research into damage-resistant thin films is a vibrant area. In addition to damage thresholds or sensitivity, researchers are interested in advanced film-deposition technology, contamination, film structure, film design, and film response to environmental attack and aging, including hardness and abrasion resistance.

Invited Presentation: Zhanshan Wang, Tangji Univ. (China)

FUNDAMENTAL MECHANISMS
Topics range from the basics of photon-matter interaction to multiphoton effects, nonlinear refractive index, and self-focusing. This area also includes modeling, such as thermal behavior of defect-initiated damage and the interplay between elements in an optical train that affect performance and hence damage.

Invited Presentation: Dr. Laurent Lamaignere, CEA (France)

TUTORIAL
Advanced Materials for High Laser-damage Resistance

Chairled by: Dr. Marco Jupe, Laser Zentrum Hannover (Germany)

This tutorial is focused on the interplay of three major topics of this Symposium: optical materials; thin films for optical coating technology, contamination, film structure, film design, and film response to environmental attack and aging, including hardness and abrasion resistance.

Invited Presentation: Frank Nuernberg, Heraeus Quarzglas GmbH & Co. KG (Germany)

MINI-SYMPOSIUM ON REVIEW OF LARGE-SCALE HIGH-POWER LASER FACILITY PROJECTS

Chairled by: Dr. Christopher Stolz, Lawrence Livermore National Lab. (USA) and Dr. Stefan Borneis, GSI (Germany)

Significant efforts and funds have been spent to establish and develop several high-power/high-energy laser facilities over last 3 decades. The list includes National Ignition Facility and OMEGA projects in the USA, PHENIX facility in Germany, HiPER and ELI projects in the European Union, Megajoule facility in France, GEKKO XII facility in Japan, and other facilities of similar class around the world. Significant experience has been accumulated in this field by the end of 2015. This Mini-Symposium attempts to bring together representatives from those laser facilities to share their visions of the current state and perspectives in this field.

Invited presentation for Mini-Symposium: Dr. Stefan Borneis, GSI (Germany)

THIN FILM DAMAGE COMPETITION

Broadband Low-dispersion Femtosecond Mirror Thin Film Damage Competition

Coordinated by: Christopher J. Stolz, Raluca Negres, Lawrence Livermore National Lab. (USA)

A double-blind laser damage competition will be held to determine the current laser damage resistance of femtosecond broadband 45 degree multilayer mirrors. The results will be shared at SPIE Laser Damage 2016. The mirrors must meet the following requirements:
- Reflectance < 99.5%
- GDD: 0 ± 100 fs²
- Wavelength 773 nm ± 50 nm
- 45 degrees incidence angle; “P” polarization
- Pulse length 40 fs; Repetition rate 500 Hz
- Environment: Vacuum
- No wavefront or stress requirement
- No surface quality requirement.

This is a continuation of last year’s picosecond laser damage competition. Any new sample submittals must be preapproved by Raluca Negres at (negres2@llnl.gov). Coatings that do not meet the GDD specification will not be tested for laser resistance. The coatings shall be deposited on glass substrates provided by the coating supplier. The dimensions of the substrate shall be 50 mm (± 1 mm) in diameter and at least 10 mm thick. Samples must be received by June 1, 2016 to the following address:

Raluca Negres, L-470
Lawrence Livermore National Laboratory
7000 East Avenue
Livermore, CA 94550

Damage Competition and testing support provided by The Ohio State University

Further information and instructions are available online: WWW.SPIE.ORG/LD16CALL
BY SUBMITTING AN ABSTRACT, I AGREE TO THE FOLLOWING CONDITIONS:

An author or coauthor (including keynote, invited, oral, and poster presenters) will:

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• Attend the meeting.
• Make the presentation as scheduled in the program.
• Submit a manuscript (6 pages minimum) for publication in the SPIE Digital Library and Proceedings of SPIE.
• 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.

SUBMIT AN ABSTRACT AND SUMMARY

http://www.spie.org/LD16call

• Please submit a 1-page maximum, text-only abstract for technical review purposes that is suitable for publication. SPIE is authorized to circulate your abstract to conference committee members for review and selection purposes.
• Please also submit a 100-word text summary suitable for early release. If accepted, this summary text will be published prior to the meeting in the online or printed programs promoting the conference.
• Only original material should be submitted.
• Abstracts should contain enough detail to clearly convey the approach and the results of the research.
• Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.
• Please do not submit the same, or similar, abstracts to multiple conferences.

REVIEW, NOTIFICATION, AND PROGRAM PLACEMENT INFORMATION

• To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.
• Conference Chair/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 the Chairs’ discretion.
• The contact author will receive notification of acceptance and presentation details by e-mail the week of 25 May 2016.

NEW VENUE

Boulder Millennium Harvest House Hotel

Centrally located and with 18,000 square feet of meeting facilities this hotel is an ideal venue for Laser Damage.

AUTHORS NEEDING A VISA TO ATTEND

Individuals requiring Letters of Acceptance to obtain travel visas to attend are advised to submit their abstracts early.

The organizing committee will review to determine acceptance. Once this is complete, you will receive an early notification regarding your submission schedule in May 2016.

Please apply for your visa as soon as possible and no later than 3 months before the meeting.

PROCEEDINGS OF SPIE AND SPIE DIGITAL LIBRARY INFORMATION

• Manuscript instructions are available from the “For Authors/Presenters” link on the conference website.
• Conference Chair/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/Editors’ decisions on whether to allow publication of a manuscript is final.
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• Published papers are indexed in leading scientific databases including Astrophysical Data System (ADS), Chemical Abstracts (relevant content), Compendex, CrossRef, Current Contents, DeepDyve, Google Scholar, Inspec, Portico, Scopus, SPIN, and Web of Science Conference Proceedings Citation Index, and are searchable in the SPIE Digital Library. Full manuscripts are available to SPIE Digital Library subscribers worldwide.

Since 2012, selected papers presented at this Symposium are published in special sections of Optical Engineering – one of major journals published by SPIE. The Special Section on Laser Damage III is planned for January 2017: http://spie.org/publications/journals/optical-engineering/oe-pages/oe-editorial-schedule#Laser_Damage Submissions are due by May 1, 2016 and an be done via SPIE manuscript submission portal.
SUBMIT YOUR ABSTRACT TODAY.

25–28 SEPTEMBER 2016
Make your mark—join this leading forum for the exchange of information on the physics/technology of materials for high-power/high-energy lasers

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