

## Laser-based Micro- and Nanopackaging and Assembly VI (LA111)



**Conference Chairs:** **Friedrich G. Bachmann**, LUMERA LASER GmbH (Germany); **Wilhelm Pflöging**, Karlsruhe Institut für Technologie (Germany); **Kunihiko Washio**, Paradigm Laser Research Ltd. (Japan)

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Cutting-edge technological visions and applications are increasingly based on micro- and nano-system technologies. The realization of such devices or functional prototypes is often a new challenge for patterning, packaging and assembly. Scientists and engineers are increasingly confronted with tasks that cannot be accomplished with conventional tools.

Demands in high-tech industries are growing for specialized prototype and high-throughput devices with micro- and nano-scaled structures including fluidic, biologic, chemical, electronic, mechanical or photonic features. Nano-materials and nano-patterning technology increasingly coexist with micro-materials and micro-structuring technologies leading to new applications and research fields but also to new challenges for appropriate assembly and packaging technologies.

Laser-assisted packaging is emerging as an increasingly important technology which can be established in new technical approaches, in order to overcome apparent process limitations on nearly each material and for different length scaling. The aim of this conference is to bring together scientists and engineers working on laser-based processes on micro- and nanometer scale for advanced applications such as for photovoltaics, energy storage systems, photonic devices (OLED), MOEMS, MEMS/bio-MEMS, NEMS, micro- and nano-fluidic devices, analytical systems (e.g. lab-on-chip) or bio-compatible devices. Papers are solicited on the following application-oriented topics and other packaging related issues:

- fundamental physical and chemical issues in laser-based micro- and nano-fabrication, packaging and assembly
- laser separation (cutting, scribing, dicing, cleaving)
- laser joining (welding, soldering, bonding, sealing) of metals, polymers, ceramics or dissimilar materials
- direct-write processing and surface modification
- laser transformations and modification for integrated device functionalities (annealing, curing, alloying, doping, metallization, texturing, cleaning, polymerization, sintering, cladding, bending, forming change of chemical/physical properties)
- laser ablation and micro- and nano-machining relevant for device fabrication and packaging (drilling, marking, engraving, milling, caving, texturing, trimming, deflashing, lithography)

- laser processes for alternative energy sources and advanced energy storage systems (e.g. lithium-ion batteries), power-electronics devices, high-brightness white LEDs, photovoltaics processing including contact formation, laser-assisted selective metallization, edge isolation, thin film processing, soldering, etc.
- laser processing and packaging of thin and flexible advanced electronic, optoelectronic and photonic components including OLED
- structuring, packaging and assembling of components in micro-reaction technology, micro-electronic and photonic devices, MOEMS, MEMS/bio-MEMS, NEMS, micro- and nano-fluidic devices and analytical systems (e.g. lab-on-chip)
- advanced adaptive optics and beam engineering methods for improving laser processes, yields and throughput.
- innovative “green photonics” for micro- and nano-packaging and assembly.

### JOINT SESSION WITH LA110 “Laser Applications in Microelectronic and Optoelectronic Manufacturing (LAMOM) XVII”

This session is addressed to recent progresses in laser-assisted development and fabrication of advanced solar cell devices and materials. A broad range of advanced laser processes are of interest including materials research and applications such as hole drilling, groove formation, edge isolation, cutting, doping, soldering, and laser thin film ablation for silicon or organic solar cells.



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See page 2 for details.



## Critical Dates

Abstract Due Date: 11 July 2011  
Post-Meeting Manuscript Due Date:  
19 December 2011

By submitting an abstract, I agree to the following conditions:

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

- Register at the reduced author registration rate (current SPIE Members receive an additional discount on the registration fee).
- Attend the meeting.
- Make the presentation as scheduled in the program.
- Submit a full-length manuscript (6 pages minimum) for publication in the SPIE Digital Library, Proceedings of SPIE, and CD-ROM compilations.
- Obtain funding for their 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 online at: [spie.org/lasecall](http://spie.org/lasecall)

- Abstracts should contain enough detail to clearly convey the approach and the results of the research. Accepted abstracts will be published and made available at the meeting. Please submit a **250-word abstract** for review.
- 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.
- If this research is working toward improvements in energy, sustainability, and conservation, enter GREEN PHOTONICS as your first keyword in step 4 of the online submission wizard, and upload a 1-2 page summary in step 6. Abstracts accepted to the virtual Green Photonics Symposium will receive increased exposure at Photonics West and will be considered for Best Paper recognition. Note: 1-2 page upload not required if submission does not qualify as "Green Photonics."
- 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.
- The contact author will receive notification of acceptance and presentation details by e-mail no later than 19 September 2011.
- Final placement in an oral or poster session is subject to the Chairs' discretion.

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- 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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SPIE International Headquarters  
P.O. Box 10, Bellingham, WA 98227-0010 USA  
Tel: +1 888 504 8171 or +1 360 676 3290,  
Fax: +1 360 647 1445  
[customerservice@spie.org](mailto:customerservice@spie.org) • [SPIE.org](http://SPIE.org)



# General Information

## Venue

The Moscone Center  
747 Howard Street

San Francisco, CA 94103-3118 USA

San Francisco is often called “Everybody’s Favorite City,” a title earned by its scenic beauty, cultural attractions, diverse communities, and world-class cuisine. Visitors rate the atmosphere and ambience as their top reason for visiting San Francisco. Measuring 49 square miles, this walkable city is dotted with landmarks like the Golden Gate Bridge, cable cars, and Alcatraz.

## Registration

SPIE Photonics West registration will be available October 2011

All participants, including invited speakers, contributed speakers, session chairs, co-chairs, and committee members, must pay a registration fee. Authors, coauthors, program committee members, and session chairs are accorded a reduced symposium registration fee.

Fee information for conferences, courses, a registration form, and technical and general information will be available on the SPIE website in October 2011.

## Hotel Information

Opening of the hotel reservation process for SPIE Photonics West 2012 is scheduled for the beginning of July 2011. SPIE will arrange special discounted hotel rates for SPIE attendees that will be available when housing opens.

The website will be kept current with any updates.

## Student Travel Contingency Grants

A limited number of SPIE contingency student travel grants will be awarded based on need. Applications must be received no later than 14 November 2011. Eligible applicants must present an accepted paper at this meeting. Offer applies to undergraduate/graduate students who are enrolled full-time and have not yet received their PhD.

## Clearance Information

If government and/or company clearance is required to present and publish your presentation, start the process now to ensure that you receive clearance if your paper is accepted.

## Important News for All Visitors from Outside the United States

Find important requirements for visiting the United States on the SPIE Photonics West website. There are new steps that ALL visitors to the United States need to follow.

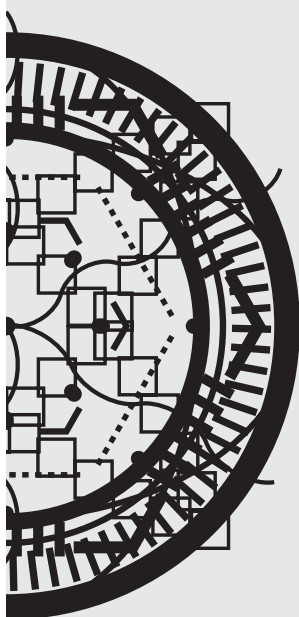
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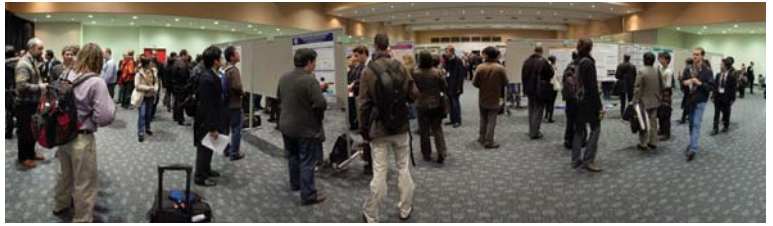
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