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Pacific Rim Laser Damage 2016

Optical Materials for High-Power Lasers

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Jianda Shao
Wolfgang Rudolph
Editors

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Introduction

As a part of Optics and Photonics International Congress (OPIC), we organized the 6th Pacific-Rim Laser Damage conference 2016 (PLD'16), held at Yokohama from 18 to 20 May 2016. This conference was co-sponsored by SPIE, and Shanghai Institute of Optics and Fine Mechanics (SIOM) in China. The PLD conference was started at 2009 by Prof. Jianda Shao at SIOM as a satellite meeting of the SPIE Laser Damage conference in Boulder, Colorado, USA, a conference with 48 years of history. The main purpose of PLD is to offer a chance to many Chinese research staff and students to contribute to an international conference. At the first PLD conference, Dr. K. Sugioka of Riken served as the co-chair from Japan. I joined at the 2nd meeting in 2011 at the request of Prof. J. Shao, and since the 3rd meeting in 2013, I have acted as a co-chair of the conference. The 4th PLD meeting was held in Yokohama, Japan in 2014 as part of the OPIC conference due to a strong request by Prof. J. Shao.

The PLD meeting is held biyearly in Shanghai, China, but PLD'14 and PLD'16 were held in Yokohama. These conferences were co-chaired by Prof. J. Shao and Prof. W. Rudolph, The Univ. of New Mexico (United States), just like the other PLD meetings. The International Program Committee of PLD'16 was the almost the exact same as PLD'15, and we selected Japanese members as the Organizing Committee.

Joint session with LIC, SLPC conferences

At this conference, we planned joint sessions with the Laser Ignition conference (LIC'16) and Smart Laser Process conference (SLPC'16) because these conferences have common interests in the interaction of laser light and matter. The PLD, LIC, and SLPC conferences each nominated two invited talks, and we had two joint sessions on 18 May 2016.

From PLD, findings on high power coating research and modeling of laser damage in NIF (National Ignition Facility) were reported. From LIC, semiconductor dicing and applications of microchip lasers were reported. From SLPC, paint removal and the fiver transportation of ultra-short pulses were reported.

I wish to express deep thanks to Mr. K. Washio for organizing this joint session.

Oral and Invited talks

We had a total of 10 sessions including the poster session. We selected 10 invited talks according to the recommendations of the Program Committee members. One of them was the Plenary talk from SIOM reporting on the recent progress in high power optics, contamination problem and high power gratings. This talk was scheduled to be given by Prof. J. Shao, but unfortunately he could not come.

In the other 7 invited talks, selected speakers from 6 countries reported on the progress of their research. Most notably was the talk on harmonic generation from thin film coatings by The Univ. of New Mexico (United States). The promising point of this presentation was in the 10% harmonic conversion, which was possible in calculation without damage of the coating. This talk was planned as Prof. W. Rudolph's talk, but he was not able to come and it was presented by another person.

Poster session

In the poster session, 7 reports were presented concerning resist removal, the fundamental process of metal processing, the semiconductor process, fine-particle generation, the anti-reflection nano-structure, CMOS camera damage, and the stress control of coatings.

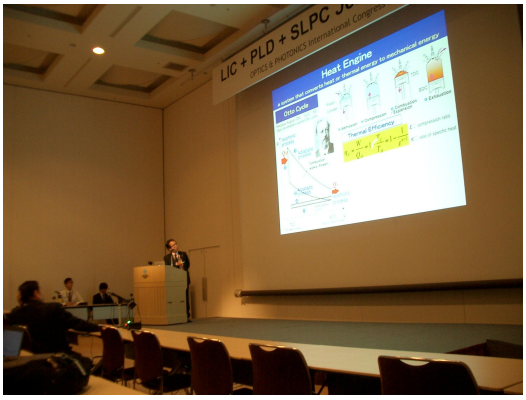
Contributions

At the beginning of the abstract registration, we had 54 people submit abstracts through the SPIE submission site, however after the announcement of the program, 9 withdrawals were made and 10 presenters were absent, so the final presentation count was 35. The ratio of over-sea papers was 74%, and over-sea attendees were 63% because of the small domestic population of research activity in Japan.

The contributions were from China 11, United States 6, Japan 9, France 3, Germany, Austria, Switzerland, Lithuania, Egypt, and Korea 1 each, respectively.

Conclusions

PLD'16 was held as a part of the OPIC conferences in Yokohama, Japan. This system is very effective to support small international conferences, which is difficult to achieve alone. The author wishes to express deep thanks to the organizing members of OPIC and SPIE as the chair of PLD'16.



Takahisa Jitsuno