Laser Flash

Report on 13th Optics & Photonics International Congress (OPIC 2024)

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1. Introduction

The esteemed Optics and Photonics International Congress (OPIC) has been meticulously organized by the Optics and Photonics International Council (OPI Council) and held annually at the prestigious venue of Pacifico Yokohama since 2012. The 13th OPIC was graciously hosted during April 22-26, 2024 by the Co-Chairs: Kishan Dholakia (Professor, University of St. Andrews, United Kingdom), Shuji Sakabe (Professor Emeritus, Kyoto University, Japan), Irina Sorokina (Professor, Norwegian University of Science and Technology, Norway), Din Ping Tsai (Professor, City University of Hong Kong, Hong Kong), and Toyohiko Yatagai (Professor Emeritus, University of Tsukuba and Utsunomiya University, Japan).

OPIC is composed of a series of Specialized International Conferences, covering a range of technology fields: lasers, biomedicine, nano-photonics, optical measurement, optical manipulation, x-ray optics, IoT, display and lighting, high energy density science, power transmission, and space and earth science. By holding different optics-related technical conferences in one location based on common elemental technologies and by sharing the supply and demand in various fields, OPIC contributes to accelerating the development and applications of these technologies and has evolved into one of the largest international conferences, providing an optimal platform for participants to efficiently interact with each other on the latest advances in science and technology of optics, photonics, and their applications.

In light of the world-wide spread of the new coronavirus (COVID-19), OPIC2020 and 2021 were held in an online/virtual format and OPIC2022 in a hybrid format. In 2023, the organizer, OPI Council, decided that the full face-to-face OPIC meeting would be revived in Yokohama. The evolution in the numbers of specialized conferences, papers presented, and participants of OPIC during 2012-2024 is shown in Fig. 1.

This year, the OPIC 2024 Plenary Session was held, featuring the following distinguished distinguished speakers (Figs. 2&3):

1) Dr. Bernard Kress (Google, USA), "Optics and Photonics as key enabling technologies for smart glasses".
2) Dr. Fatima Bencheikh (Koala Tech. Inc., Japan), "Organic semiconductor laser diode: challenges and perspectives".
3) Dr. Markus Roth (Focused Energy Inc., USA), "Proton Fast Ignition as a path to commercial fusion energy".

The OPIC Banquet was held in the evening of April 25, after the Plenary Session, at the Ballroom of the Intercontinental Hotel adjacent to the Conference Hall. The Banquet commenced with a traditional "Kagami-Biraki" (sake cask breaking) by the Congress and Committee Chairs and the Plenary Speakers (Fig. 4), followed by a toast by the IAB Chair and the Conference Chairs. At the fully packed banquet hall, the participants engaged in free conversations.

It was announced at the end of the Banquet that OPIC 2025

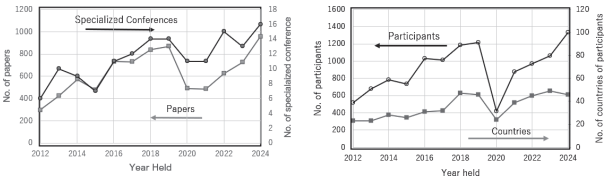

Fig. 1 Transition of OPIC on number of specialized conferences, number of papers, number of participants, and number of countries of participants since the first OPIC held in 2012.

Fig. 2 Plenary speakers of OPIC2024. (From left) Dr. Bernard Kress, Dr. Fatima Bencheikh, and Dr. Markus Roth.

Fig. 3 Snapshot of plenary session of OPIC2024.

Fig. 4. “Kagami-Biraki” at the OPIC2024 Banquet.

will be held from 21-25 April, 2025 at Pacifico Yokohama under Toyohiko Yatagai as the Congress Chair. Subsequently, we briefly report on operation, implementation, and summary of OPIC 2024.

2. Operation of OPIC2024

After 2023, when a complete recovery of the social system from COVID-19 was achieved, many major international academic conferences returned to 100% face-to-face meetings, and hybrid meetings with remote presentation have almost disappeared. This is partly because the operation cost for hybrid conferences is higher, and partly because face-to-face interaction is extremely effective for exchanging information between researchers. In the conference banquet of OPIC2024, ~450 conference participants got together and enjoyed networking.

At the start of OPIC2024 organization, we encouraged the invitation of not only Japanese co-chairs but also co-chairs from overseas to the Specialized International Conferences participating in OPIC2024, and strongly requested that the proportion of female and overseas members be increased on the steering committee and program committee.

This year, perhaps partially due to the weaker yen, the number of participants from overseas researchers increased (36% in total) and the number of presentations by students from overseas increased. Since time slots for oral presentations were limited at each conference, many Specialized International Conferences made effective use of poster presentations, with a total of 255 poster presentations taking place over the three days. To maximize attendee convenience, the presentation time schedules of Specialized International Conferences were synchronized, and conference attendance and access to abstracts were properly managed by the OPIC staff. Abstracts of all papers presented at OPIC2024 were available for download and access at the Web site by all registered attendees.

This year, following OPIC2022 and 2023, to further promote exchange between the international conference (OPIC) and the exhibition (OPIE), the OPIC enlightenment seminar titled “Latest Technology Trends” was held remotely on March 26-28 by representatives of Specialized International Conferences. Pre-registration was required, but participation was free of charge. Thanks to the enthusiastic and easy-to-understand presentations of the lecturers, the seminar was very successful in introducing the world’s latest trends in optics and photonics to seminar participants from various industries.

3. Implementation of Specialized International Conferences

At OPIC 2024, 16 Specialized International Conferences were held by the conference chairs as shown in Table 1. The Specialized International Conferences used a common conference organization platform for call-for-papers, submissions, reviews and programs, and registration, which was developed through the management of previous OPIC conferences since 2012. As a result, we are very pleased to have recorded the highest number of papers and participants in the past 13 years. Table 2 shows the numbers of the presented papers and the registered participants of the 16 Specialized International Conferences. Detailed account of each conference will be reported separately in this and the following issues of The Review of Laser Engineering.

Special mention should be made of the participation of a new Specialized International Conference, BFSS (Business and Finance in Sustainable Society). Although it is unique among science and technology conferences, people involved in finance and capital markets and researchers in the fields of optics and photonics got together to exchange experiences and challenges in startup venture companies, and to socially implement and commercialize seed technologies from universities.

The congress program, including messages by the conference chairs, abstracts of the plenary lectures, and brief summaries of the invited and contributed papers of the Specialized International Conferences were available for free on the OPIC website. The 1 - 2-page abstracts of all papers were available to all participants on the web during the Congress.

4. Summary of OPIC 2024

OPTICS & PHOTONICS International Congress 2024 (OPIC 2024) and Optics and Photonics International Exhibition (OPIE2024) were held from April 22 -26, 2024. In total, 956 papers were presented at the Plenary Session and 16 Specialized International Conferences. There were 1336 registered participants, spread across 46 countries, with 35.9% of participants coming from overseas. These numbers are higher than those of OPIC2019 held before COVID-19.

We are confident that the organization and operation of OPIC2024 were successful, contributing to recognition of OPIC as a high-quality international conference on optics and photonics. We believe that OPIC can be the real face-to-face communication field for science and technology of optics and photonics. We must continue this work and support pioneering activities that nurture the seeds of academic technology and foster new industries.

5. Acknowledgement

We would like to thank all participants to OPIC 2024. We are very grateful to Dr. Bernard Kress, Dr. Fatima Bencheikh, and Dr. Markus Roth. for presenting the plenary lectures. We are also indebted to Congress Co-Chairs, Prof. R. Poprawe, Prof. C. P. J. Barty and Prof. R. Li, for providing advice and encouragement in organizing the OPIC2024.

We deeply appreciate Chairs, secretaries, and staff of the Specialized International Conferences for organizing valuable and active conferences, as well as the board and committee members of the Organizing Committee and the Steering Committee for their contribution to organize OPIC 2024. Also, thanks are due to the staff of OPIC management for their dedication to implementing OPIC.

Table 1 Specialized International Conferences in OPIC2024 and Conference Chairs.

ALPS	The 14th Advanced Lasers and Photon Sources Hitoki Yoneda and Ruxin Li (China)
BFSS	Business and Finance in Sustainable Society 2024 -towards the expansion of photonics industry- Rie H. Kang
BISC	The 10th Biomedical Imaging and Sensing Conference Osamu Matoba, Yasuhiro Awatsuji, Yuan Luo (Taiwan), and Izumi Nishidate
HEDS	International Conference on High Energy Density Science 2024 Ryouske Kodama and Takayoshi Sano
ICNN	International Conference on Nano-photonics and Nano-optoelectronics 2024 Yasuhiro Arakawa
IP	Information Photonics 2024 Yoshio Hayasaki, Stephan Reichlt (Germany), and Jae-Hyeung Park (Korea)
LDC	Laser Display and Lighting Conference 2023 Kazuo Kuroda, Hiroshi Murata, and Fergal Shevlin (Ireland)
LEDIA	The 10th International Conference on Light-Emitting Devices and Their Industrial Applications Hiroshi Amano
LSC	Conference on Laser and Synchrotron Radiation Combination Experiment 2024 Toshihiko Shimizu
LSSE	Laser Solutions for Space and the Earth 2024 Satoshi Wada
OMC	The 11th Optical Manipulation and Structured Materials Conference Takashige Omatsu, Kishan Dholakia (UK), and Sile Nic Chormaic
OPTM	Optical Technology and Measurement for Industrial Applications 2024 Rainer Tutsch (Germany), Toru Yoshizawa, and Yukitoshi Otani
OWPT	The 6th Optical Wireless and Fiber Power Transmission Conference Tomoyuki Miyamoto and Motoharu Matsuura
SLPC	The 5th Smart Laser Processing Conference Masahiro Tsukamoto and Andreas Ostendorf (Germany)
TILA-LIC	Tiny Integrated Laser and Laser Ignition Conference 2024 Takunori Taira
XOPT	International Conference on X-ray Optics and Applications 2024 Tetsuya Ishikawa and Kazuto Yamauchi

Table 2 Summary of the numbers of presentations and registrants.

	Number of presentations				Number of registrants			
	Oral		Poster	Total	General	Student	Invited	Total
	Invited	Contributed						
Plenary	3			3			3	3
ALPS	35	92	87	214	90	101	66	257
BFSS	10	7	1	18	15	0	11	26
BISC	12	30	32	74	45	38	14	97
HEDS	26	32	11	69	41	20	26	87
ICNN	13	19	10	42	40	14	3	57
IP	8	27	13	48	37	24	0	61
LDC	22	20	2	44	57	18	4	79
LEDIA	6	16	18	40	26	25	5	56
LSC	28	7	0	35	32	7	3	42
LSSE	29	7	0	36	41	3	7	51
OMC	16	52	13	81	61	25	10	96
OPTM	7	23	10	40	36	20	2	58
OWPT	10	25	9	44	47	28	0	75
SLPC	15	31	25	71	63	30	3	96
TILA-LIC	16	19	5	40	47	5	0	52
XOPT	10	25	19	54	50	18	12	80
Joint ALPS & HEDS	3	0	0	3	0	0	0	0
OPIC Congress, Sponsor, Exhibitor							63	63
Total	269	432	255	956	728	376	232	1336

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