

## CONFERENCE REPORT

### The 14<sup>th</sup> OptoElectronics and Communications Conference OECC 2009 IN HONG KONG, CHINA

The OptoElectronics and Communications Conference (OECC) has been a signature event in the area of optoelectronic and optical communication. This year, OECC 2009, the 14th in the series, was held in Hong Kong SAR, China from 13 to 17 July 2009. With its superb facilities, professional service and sophistication, the Hong Kong Convention and Exhibition Centre was selected to be the conference venue. It is also internationally known as the best exhibition and convention centre in Asia for its excellence in hosting the world's greatest events.

OECC 2009 was organized by The Hong Kong Polytechnic University (PolyU), an institution that promotes an application-oriented research culture and commands the capability. OECC 2009 was co-sponsored by the IEEE Hong Kong Section and the IEEE Photonics Society Hong Kong Chapter, and technically co-sponsored by the IEEE Photonics Society. Prof. Ping-kong Alexander Wai of the PolyU served as the Conference Chair, and Prof. Kin Chiang of City University of Hong Kong undertook the role of Technical Program Committee (TPC) Chair.

More than 500 participants from 25 countries were attracted to this conference and they range from academia and researchers, scientists and engineers, and industry professionals of the optoelectronic area.

The conference received a good number of contributed papers with a total of 444. These papers were attributed to the seven technical categories namely: Emerging Technologies; Optical Fiber and Waveguide Devices; Optical Networks and Broadband Access; Optical Sensors and Systems; Optical Signal Processing; Optoelectronic Materials, Devices and Modules; and Transmission Systems and Switching Technologies.

The papers were reviewed by respective Technical Program Subcommittee chairs and their members and a 5-point scale system was used to score the papers. The TPC also aligned on a 3.0 cutting line out of quality concern to identify outstanding papers. As a result of the high scientific quality, 360 papers were accepted which was equivalent to an overall acceptance rate of 81%. Among them, 280 papers were accepted for oral presentation and 80 for poster presentation.

The technical richness of the conference was also augmented by the submission of another 84 invited papers. And 7 postdeadline papers were accepted out of 21 submission. These papers represented an international mix of 24 countries / places from Asia Pacific, Europe, Middle East, and Americas. All accepted papers with valid registration would be included in the IEEE Conference Publications Program (CPP).

The conference program consisted of plenary session, workshops, tutorial sessions and exhibition. The following will outline the various events that took place during the 5-day's conference.

#### **Workshops**

A series of workshops were organized on the first day of the conference for free admission and they were very well received. Table 1 shows OECC 2009 workshop topics and the organizers.

Topic	Organizer
Specialty Optical Fibers, Where is the Next Big Breakthrough?	Dr Liang Dong, <i>IMRA America, USA</i>
Optical Fiber Sensors: Overview and Opportunity	Dr Alexis Mendez, <i>MCH Engineering, USA</i>
Power LED Materials and Devices for Solid-state Lighting	Dr Shu Yuan, <i>ASTRI, Hong Kong</i>
Next-generation Broadband Optical Access – Future Challenges	Prof. Chinlon Lin, <i>Nanyang Technological University, Singapore</i> Prof. L.K. Chen, <i>The Chinese University of Hong Kong, China</i>

Table 1. OECC 2009 workshops.

### Opening Ceremony and Plenary Session

On 14 July 2009, the conference was officially kicked-off by Prof. Timothy Tong, President of the Hong Kong Polytechnic University with a short opening speech and a welcome address by the Conference Chair Prof. Wai. A plenary session was staged following these speeches. 3 top-notch scholars and experts on optoelectronics and optical communications shared their perspectives on the industry's hot topics with the audience. Professor Martin Green, The University of New South Wales, Australia outlined the *Future of Solar Energy*. Professor Wen Liu, FiberHome FuHua Electric Co. Ltd., China presented *Innovative and Cost Effective Optical Components for Fiber Communications*. Professor Alan Willner, University of Southern California, USA presented *Future Directions of Optical Communications*.

### Technical Sessions / Oral and Poster Presentations

OECC 2009 included 70 technical sessions comprising 65 oral presentation sessions, 1 poster session, 1 postdeadline paper session, and 3 IEEE Student Paper Award Competition sessions. 7 technical sessions were dedicated to tutorial speakers with the details shown in Table 2.

There were 6 parallel technical sessions with at most eight paper presentations in one session. The technical sessions covered an exhaustive range of topics in the areas of optoelectronic and optical communication.

Topic	Speaker
Fibre- and Waveguide-based Light Processing Devices	John Love, <i>Australian National University, Australia</i>
Microwave Photonics	Jianping Yao, <i>University of Ottawa, Canada</i>
Ultrafast Nonlinear Optics for Signal Processing: Breaking the Terabit-per-second Barrier	Benjamin J. Eggleton, <i>University of Sydney, Australia</i>
VLSI Photonics: Science and Engineering of Micro/Nano-Photonic Integration	El-Hang Lee, <i>INHA University, Korea</i>
Forward Error Correction in Optical Communication Systems	Takashi Mizuochi, <i>Mitsubishi Electric Corporation, Japan</i>

Photonics Modeling of Components, Systems and Networks	André Richter, <i>VPIsystems, Germany</i>
Optical Coding Theory	Wing C. Kwong, <i>Hofstra University, USA</i>

Table 2. Tutorial sessions.

### Exhibition

OECC 2009 ran an exhibition from 14 to 16 July 2009 in conjunction with the conference. A total of 4 booth exhibitors and 7 tabletop exhibitors showcased their cutting edge technologies and the latest applications at this excellent occasion. OECC 2009 exhibitors include:

- A & P Instrument Co., Ltd.
- Alnair Laboratories Corporation
- Amonics Limited
- Dymek Company Ltd.
- Micron Optics
- Nextrom Oy
- Photonic Group of NICT, Tokyo
- PriTel Inc.
- Santec
- Southern Photonics Ltd.
- Yangtze Optical Fiber & Cable Ltd.

### IEEE Student Paper Award Competition

The Student Paper Award Competition was sponsored by the IEEE Photonics Society. Students ought to be the first author giving an oral presentation of their accepted paper in the conference in order to enter the competition. The competition received an overwhelming response from students. In total 103 papers were received and 17 finalists were selected to give a presentation to compete for the award. Finally 6 students were selected for the “OECC 2009 IEEE Best Student Paper Award” and they are listed in Table 3.

Name of Student	Affiliation	Paper Title
Simin CHEN	University of Melbourne, Australia	Real-time Coherent Optical MIMO-OFDM Reception up to 6.67 Gbps
Md. KHAIRUZZAMAN	University of Tokyo, Japan	Fiber-Nonlinearity Equalization by Maximum-Likelihood-Sequence Estimation (MLSE) in Digital Coherent Receivers
Kin Pang LEI	The Chinese University of Hong Kong, China	Conversion of 40 Gb/s OTDM to 4×10 Gb/s WDM Channels with Extinction Ratio Enhancement by Pump-Modulated Four-Wave Mixing Using Time- and Wavelength-Interleaved Laser Pulses
Xianshu LUO	The Hong Kong University of Science and Technology, China	Dual-Microring Resonator-Coupled Cross-Connect Switch Element for On-Chip Optical Interconnection
Jens LYNGSØ	Crystal Fibre A/S,	Realization of 7-cell hollow-core

	Denmark	photonic crystal fibers with low loss in the region between 1.4 $\mu\text{m}$ and 2.3 $\mu\text{m}$
Feng ZHANG	Nanyang Technological University, Singapore	Optimized Design of Node-and-Link Protecting p-Cycle with Restorability Constraints for Optical Multicast Traffic Protection

Table 3. IEEE Best Student Papers.

### Social Activities

A number of social activities were also organized to boost the exchange and networking atmosphere for conference participants.

There was first a conference reception holding on 13 July 2009 at a function room decorated with the stunning panoramic evening view and skyline as a soft welcome of the delegates.

On the second day evening, the specially-arranged Victoria Harbour Tour let the participants to go aboard the Star Ferry of which origins can be traced to 1880. The Star Ferry's ferry crossings at Victoria Harbour are acclaimed as an important part of the commuter system between Hong Kong Island and Kowloon Peninsula, and essential journeys for visitors. The National Geographic Traveler named the ferry crossing as one of 50 places of a lifetime.

At the conference dinner on 15 July 2009, the 6 winners of the IEEE Student Paper Award Competition were awarded by TPC chair Prof. Kin Chiang and Dr. Hideo Kuwahara, Co-Chair of the International Advisory Committee of OECC. A highlight of the dinner was a Chinese orchestra performance and it made the event an enjoyable moment for the guests in addition to the superb dining and cuisine.

### Corporate Sponsorship

The conference received great support from industry players. These include Diamond Sponsor Nextrom Oy; Bronze Sponsors Amomics Limited, BASAS Microelectronics, Luster Lightwave Co., Ltd., Micron Optics, Specrys Ltd. and QEQuest.com.

### Acknowledgements

The conference chair would like to thank the IEEE Photonics Society for their support throughout the organization of the conference, as well as patron sponsors and exhibitors.

### More Information

Further information on the conference can be found from the conference website at <http://www.oecc2009.org>.

### Biography

Ping-kong Alexander Wai received the Bachelor of Science (Hons) degree from the University of Hong Kong in 1981 and Ph.D. degree from the University of Maryland, College Park, USA, in 1988. After graduation, he joined Science Applications International Corporation in McLean, VA, where he worked on the Tethered Satellite System project which is a space shuttle mission. Then he worked in the Department of Electrical Engineering, University of Maryland, USA on optical fiber transmission systems. In 1996,

he joined the Department of Electronic and Information Engineering, The Hong Kong Polytechnic University. Currently, he is the Chair Professor in Optical Communications. He also serves as Dean of Faculty of Engineering and Associate Vice President of the University. His research interests include optical solitons; optical fiber communication systems; all-optical packet switching; fiber lasers and amplifiers; optical networks; computational photonics; network theories. He has published over a hundred articles in archival journal and had served in the program committees of a number of international conferences. He is the General Chair of the OECC 2009. He is an Associate Editor of Optics Express and a Fellow of Optical Society of America.