

# Technical Program



## Asia-Pacific Optical Communications

**Conference + Workshops + Courses: 1–5 November 2007**

Wuhan Science & Technology Convention & Exhibition Center  
Wuhan, China

NETWORK WITH PEERS — HEAR THE LATEST RESEARCH



- 
- ▶ **Passive Components and Fiber-Based Devices**
  - ▶ **Optoelectronic Materials and Devices**
  - ▶ **Optical Transmission, Switching, and Subsystems**
  - ▶ **Network Architectures, Management, and Applications**
- 

*Sponsored by:*

**SPIE**

**Chinese Optical Society (COS)**

**China Institute of Communications (CIC)**

**The People's Government of Wuhan Municipality**

*Cooperating Organizations:*

**Wuhan National Lab. for Optoelectronics (WNLO)**

**The Productivity Promotion Center of Wuhan East Lake  
Hi-Tech Development Zone**

**Wuhan Research Institute of Posts and Telecommunications**

**The State Optoelectronic & Information Industry Base of China**

## Welcome to APOC 2007!

APOC 2007  
General Chairs



**Chung-en Zah**  
Corning Inc. (USA)



**Chaohui Ye**  
Wuhan National Lab. for  
Optoelectronics (China)



**Bingkun Zhou**  
Tsinghua Univ. (China)



**Yun C. Chung**  
KAIST (Korea)

Welcome to the 7th Asia-Pacific Optical Communications Conference (APOC), one of the world's major conferences in the field of optical communications, which will be held 1-5 November 2007, in the Wuhan Optics Valley of China. The conference is organized by SPIE, the Chinese Optical Society, the Wuhan National Laboratory for Optoelectronics, the Productivity Promotion Center of the Wuhan East Lake Hi-Tech Development Zone and the Wuhan Research Institute of Posts and Telecommunications.

APOC 2007 will feature a half day of plenary presentations on 2 November covering a broad range of high-interest topics covered by executives and experts from the optical communications, telecom and information industries. We expect to host more than 500 contributed and 110 invited papers given by many of the world's most prominent researchers and business leaders. In addition, on Thursday 1 November two workshops on the hot topics of Optical Switching and Routing Technologies and Optical Wireless Access Networks will be held, and two complimentary short courses on the timely topics of Slow and Fast Light in Semiconductor Nanostructures and Microstructured Optical Fibers and Applications will be given. On Saturday, 3 November a full day Industry Forum with emphasis on Chinese and international business and market developments will enable you to learn from telecom executives and technical managers about new business opportunities.

The APOC Technical Program Committee is pleased to continue the selection of the Best Student Paper Awards, which will be given to students who are first authors and presenters of exceptional contributed talks. One winner each will be selected for the four subject areas of the conference.

We are sure that you will enjoy your visit to Wuhan which is situated at the confluence of the Yangtze River and its greatest branch, with many unique sights scattered around its huge metropolis including East Lake, Yellow Crane Tower, Guiyuan Temple, Hubei Provincial Museum, Three Gorges, etc. We will offer a special tour to see the world's largest hydroelectric project (Three Gorges Dam Project) on Wednesday 31 October, before the conference. On Saturday 3 November a special visit to the Hubei Provincial Museum has been planned for the banquet attendees to see a complete set of 65 Chime Bells, which were found well preserved in a huge tomb built more than 2,400 years ago. Musicians wearing ancient dresses will play traditional and modern musical pieces with a replica set of these bells.

We welcome your participation in this important international forum and are looking forward to meeting you at APOC 2007 in Wuhan!

Left cover photo courtesy of  
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Middle cover photo courtesy  
of Georgia Tech.

Wednesday 31 October	Thursday 1 November	Friday 2 November	Saturday 3 November	Sunday 4 November	Monday 5 November
<b>Three Gorges Dam Tour,</b> Starts at 08.00 to 20.00, p. 4	Morning Workshop: <b>Optical Switching and Routing Technologies,</b> 08.15 to 12.30, p. 20	<b>Plenary Presentations,</b> 08.30 to 12.30, p. 12	<b>Industry Forum,</b> 08.45 to 15.30, p. 16	<b>Poster Session,</b> 12.30 to 14.00, p. 54	<b>Poster Session,</b> 12.30 to 14.00, p. 54
		Conference 6781: <b>Passive Components and Fiber-Based Devices</b> (APOC01), p. 28			
	Afternoon Workshop: <b>Optical Wireless Access Networks,</b> 14.00 to 17.00, p. 24	Conference 6782: <b>Optoelectronic Materials and Devices</b> (APOC02), p. 28			
		Conference 6783: <b>Optical Transmission, Switching, and Subsystems</b> (APOC03), p. 29			
		Conference 6784: <b>Network Architectures, Management, and Applications</b> (APOC04), p. 29			
Course: <b>Slow and Fast Light in Semiconductor Nanostructures</b> (Chang-Hasnain), 14.00 to 15.30, p. 27		<b>Welcome Reception,</b> 18.00 to 21.00, p. 4	<b>Bell Concert/Banquet/Best Student Paper Award,</b> 16.30 to 21.00, p. 4		
Course: <b>Microstructured Optical Fibers and Applications</b> (Li), 16.00 to 17.30, p. 27					

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<b>Thursday Morning Workshop</b> . . . . .	<b>20-23</b>
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• <b>Passive Components and Fiber-Based Devices</b>	
• <b>Optoelectronic Materials and Devices</b>	
• <b>Optical Transmission, Switching, and Subsystems</b>	
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# General Information

## Conference Location

APOC 2007 will be held at Wuhan Science & Technology Convention & Exhibition Center (WSTCEC) which is located in Wuhan Optics Valley with the total area of 15,000 m<sup>2</sup>.

## Official Language

The official language of the conference presentations is English.

## Registration Information

- Full conference registration fees include admission to all conference sessions, panels, industry forums, technical group meetings, poster sessions, coffee breaks, and the welcome reception. Also included is your choice of publication from this meeting: printed or CD-ROM volumes of Proceedings of SPIE. See details on the registration form. *Proceedings and CD-ROMs as part of a registration include tax and shipping. Proceedings and CD-ROMs purchased separately do not include shipping or taxes. See details on the registration form.*
- **Courses** are complimentary, however a fee of \$5 each to cover the cost of course notes is required, and will be collected onsite.

## Conference Proceedings

Manuscripts will be reviewed by the technical subcommittee co-chairs and selected experts. Conference proceedings will be published in English and available after the symposium. SPIE Proceedings are indexed in INSPEC, Ei Compendex, Physics Abstracts, Chemical Abstracts, International Aerospace Abstracts, Index to Scientific and Technical Proceedings, and NASA Astrophysical Data System.

## Poster Presentations

Poster authors will begin displaying posters after 10:00 am Sunday morning. Poster sessions, with authors present at their posters, will be held Sunday and Monday from 12.30 to 14.00.

Poster presentations are listed at the end of the conference program, p. 54-60.



## Tour program

*October 31, Wednesday*

*Starts at 08.00 and lasts all day*

**Place:** Three Gorges Dam

**Itinerary:** Take the bus at the entrance of WSTCEC at 08:00, arrive Yichang at 12:30, then head for Three Gorges Dam after lunch to view the whole scenery of the dam on TANZI hill and visit the Museum of dam model, Flood gate (sluice gate), the largest five-step ship lock in the world. Return to Wuhan after supper.

**Fee:** \$48 (*Register onsite*)

## Welcome Reception

*November 2, Friday*

**Place:** Kanglong Taizi Restaurant

**Time:** 18:00 to 21:00

## Coffee/Tea Break

Coffee/Tea will be served during the morning and afternoon breaks. Please check the individual technical conference listings for exact times.



## Bell Concert, Banquet, and Best Student Paper Award

*November 3, Saturday*

### Bell Concert

**Place:** Hubei Provincial Museum

**Time:** 17:30 to 18:30

Bus leaves WSTCEC at 16:30

Bus leaves Museum at 18:30

### Banquet and Best Student Paper Award

**Place:** Wuhan East Lake Hotel

**Time:** 19:00 to 21:00

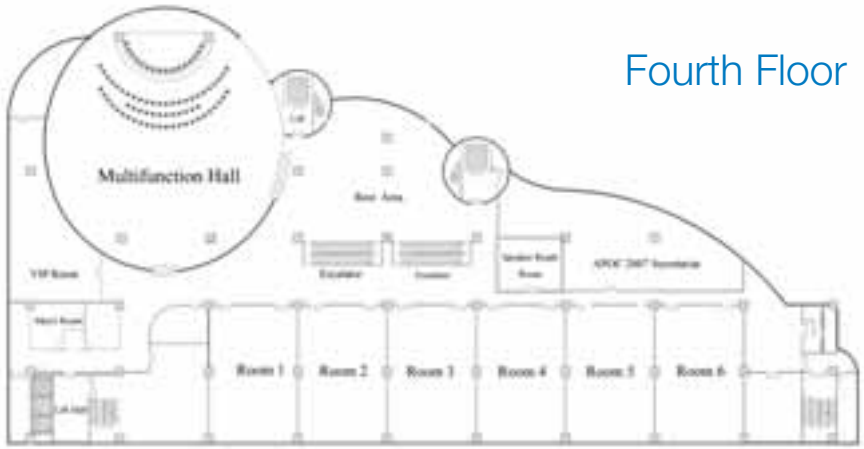
**Total Fee:** \$50

*Banquet fee not included with registration. Please reserve and pay in advance at the Registration Desk.*

*Best Student Paper Award  
Sponsored by*

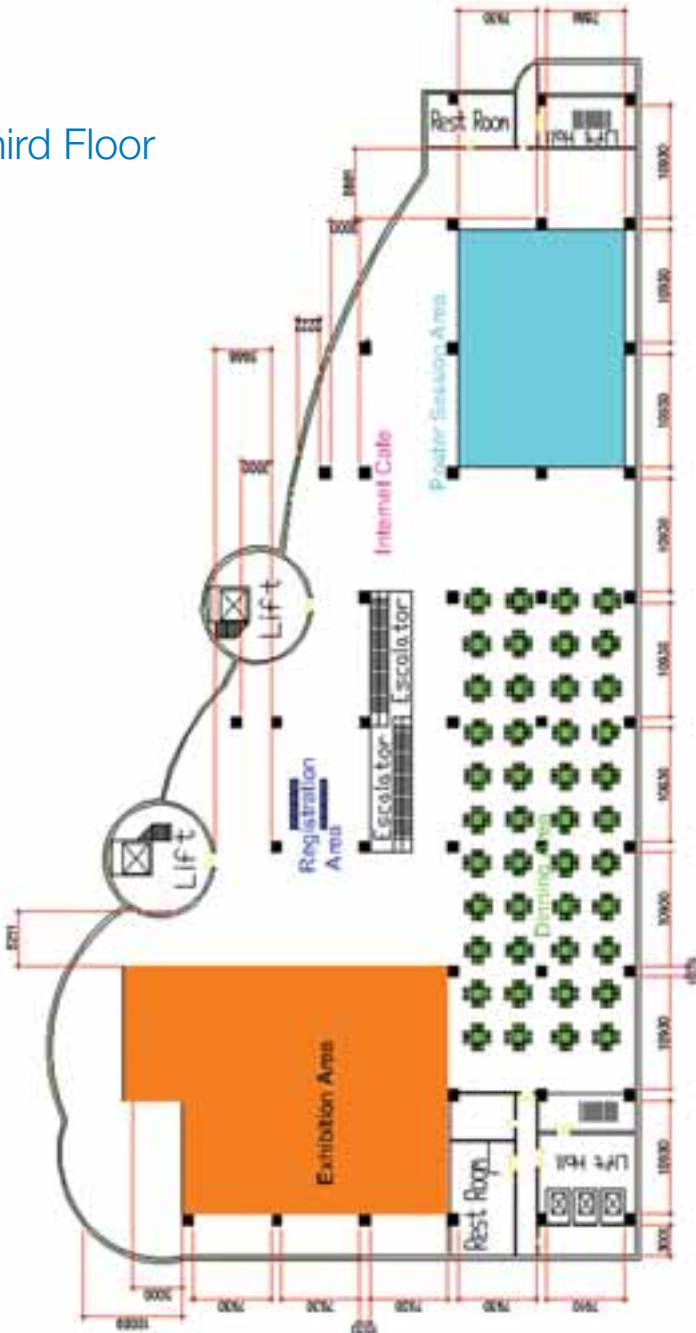
**RSOFT**  
Design Group

# Wuhan Science & Technology Convention & Exhibition Center Floor Plan



Fourth Floor

Third Floor





# Chairs/Committees/Cooperating Organizations

## General Chairs

**Chung-en Zah**, Corning Inc. (USA)  
**Chaohui Ye**, Wuhan National Lab. for  
Optoelectronics (China)  
**Bingkun Zhou**, Tsinghua Univ. (China)  
**Yun C. Chung**, KAIST (Korea)

## General Technical Chairs

**Zhiping Zhou**, Wuhan National Lab. for  
Optoelectronics (China)  
**Lars Thylen**, Royal Institute of Technology  
(Sweden)  
**Shinji Tsuji**, Hitachi Central Research Labs.  
(Japan)

## Local Organizing Committee

**Yanjue Wang**, Wuhan National Lab. for  
Optoelectronics (China) – Co-chair  
**Yamin Xia**, The productivity Promotion Center of  
Wuhan East Lake Hi-tech Development Zone  
(China) – Co-chair  
**Lin Lin**, Wuhan National Lab. for Optoelectronics  
(China)  
**Qian Mao**, Wuhan Research Institute of Posts and  
Telecommunications (China) and China  
Institute of Communications (China)  
**Jiefeng Xu**, The Productivity Promotion Center of  
Wuhan East Lake Hi-tech Development Zone  
(China)  
**Haiyan Zhang**, Wuhan Research Institute (China)

## Steering Committee

**Connie Chang-Hasnain**, Univ. of California/  
Berkeley (USA) - Chair  
**Yasuhiko Arakawa**, Univ. of Tokyo (Japan)  
**Yixin Chen**, Shanghai Jiao Tong Univ. (China)  
**Yun C. Chung**, KAIST (South Korea)  
**Chongcheng Fan**, Tsinghua Univ. (China)  
**Sailing He**, Zhejiang Univ. (China)  
**Weisheng Hu**, Shanghai Jiao Tong Univ. (China)  
**Jim Hsieh**, Sheumann Inc. (USA)  
**Peter Kaiser**, Santec Corp. (USA)  
**Jae Chang Kim**, Pusan National Univ. (South  
Korea)  
**Tien P. Lee**, Consultant, Bell Communications  
Research (retired) (USA)  
**Tingye Li**, AT&T Labs. (Retired) (USA)  
**Yi Luo**, Tsinghua Univ. (China)  
**Qian Mao**, Wuhan Research Institute of Posts and  
Telecommunications (China) and China  
Institute of Communications (China)  
**Xiaomin Ren**, Beijing Univ. of Posts and  
Telecommunications (China)  
**Lars Thylen**, Royal Institute of Technology  
(Sweden)  
**Rodney Tucker**, Univ. of Melbourne (Australia)  
**Jiaying Wang**, ZTE Beijing Institute (China)  
**Jinxue Wang**, Raytheon (USA)  
**Alan Willner**, Univ. of Southern California (USA)  
and IEEE-LEOS (USA)  
**Shizhong Xie**, Tsinghua Univ. (China)  
**Anshi Xu**, Peking Univ. (China)  
**Bingkun Zhou**, Tsinghua Univ. (China)

## Ex-officio Members of Steering Committee

**Chung-en Zah**, Corning Inc. (USA)  
**Zhiping Zhou**, Wuhan National Lab. for  
Optoelectronics (China)

## International Advisory Committee

**Rodney C. Alferness**, Alcatel-Lucent  
Technologies/Bell Labs. (USA)  
**Joseph Berthold**, Ciena Corp. (USA)  
**Lianghui Chen**, Institute of Semiconductors  
(China)  
**Kwok-Wai Cheung**, Chinese Univ. of Hong Kong  
(Hong Kong, China)  
**Alan Dowdell**, Corning China Ltd. (China)  
**Shuping He**, Fiberhome Communications Co.,  
Ltd. (China)  
**Ivan P. Kaminow**, Kaminow Lightwave  
Technology (USA)  
**Charles K. Kao**, ITX Services Ltd. (Hong Kong,  
China)  
**Jingtong Lin**, Beijing Univ. of Posts and  
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**Yung-Sheng Liu**, Tsinghua Univ. (Taiwan)  
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Group (Japan)  
**Kangnan Qi**, Tsinghua Univ. (China)  
**Ken-Ichi Sato**, Nagoya Univ. (Japan)  
**Ping Shum**, Nanyang Technological Univ.  
(Singapore)  
**Kristian E. Stubkjaer**, Technical Univ. Denmark,  
COM (Denmark)  
**Daikou Tei**, Santec Corp. (Japan)  
**Yoshihiro Uda**, NEC Corp. (Japan)  
**Hequan Wu**, China Academy of Engineering  
(China)  
**Hisaharu Yanagawa**, Furukawa Electric Co. Ltd.  
(Japan)  
**Fei Yuan**, ZTE Corp. (China)  
**Herwig Zech**, Siemens AG (Germany)

## Cooperating Organizations

**Wuhan National Lab. for Optoelectronics  
(WNLO)**  
**The Productivity Promotion Center of Wuhan  
East Lake Hi-Tech Development Zone**  
**Wuhan Research Institute of Posts and  
Telecommunications**  
**The State Optoelectronic & Information  
Industry Base of China**

## Conference 6781

### Passive Components and Fiber-Based Devices (APOC01)

*Conference Chair:* **Ming-Jun Li**, Corning Inc. (USA)

*Cochairs:* **Jianping Chen**, Shanghai Jiao Tong Univ. (China); **Satoki Kawanishi**, Nippon Telegraph and Telephone Corp. (Japan); **Ian H. White**, Univ. of Cambridge (United Kingdom)

*Program Committee:* **Roel G. Baets**, Univ. Gent (Belgium); **Alberto Bononi**, Univ. degli Studi di Parma (Italy); **Xiang-Fei Chen**, Nanjing Univ. (China); **Yuh-Jen Chen**, Academia Sinica (Taiwan); **Kin Seng Chiang**, City Univ. of Hong Kong (Hong Kong China); **Benjamin J. Eggleton**, The Univ. of Sydney (Australia); **John M. Fini**, OFS Fitel, LLC (USA); **Helmut Heidrich**, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany); **Zhengyu Huang**, RSoft Design Group, Inc. (USA); **Jørn M. Hvam**, Danmarks Tekniske Univ. (Denmark); **Xiaofeng Jin**, Zhejiang Univ. (China); **Donghan Lee**, Chungnam National Univ. (South Korea); **David P. Machewirth**, Nufern (USA); **Ivo Montrosset**, Politecnico di Torino (Italy); **Kyunghwan Oh**, Yonsei Univ. (South Korea); **Namkyoo Park**, Seoul National Univ. (South Korea); **Rong-Hui Qu**, Shanghai Institute of Optics and Fine Mechanics/CAS (China); **Stojan Radic**, Univ. of California/San Diego (USA); **Yun-Jiang Rao**, Univ. of Electronic Science and Technology of China (China); **Ken Sakuma**, Fujikura Ltd. (Japan); **Akihiko Shinya**, NTT Basic Research Labs. (Japan); **Ping Shum**, Nanyang Technological Univ. (Singapore); **Hiroyuki Tsuda**, Keio Univ. (Japan); **Jia Ying Wang**, ZTE Corp. (China)

## Conference 6783

### Optical Transmission, Switching, and Subsystems (APOC03)

*Conference Chair:* **Dominique Chiaroni**, Alcatel-Lucent R&I (France)

*Cochairs:* **Wanyi Gu**, Beijing Univ. of Posts and Telecommunications (China); **Ken-ichi Kitayama**, Osaka Univ. (Japan); **Chang-Soo Park**, Gwangju Institute of Science and Technology (South Korea)

*Program Committee:* **Jean-Christophe Antona**, Alcatel Research & Innovation (France); **Daniel J. Blumenthal**, Univ. of California/Santa Barbara (USA); **Calvin C. K. Chan**, The Chinese Univ. of Hong Kong (Hong Kong China); **Hongwei Chen**, Tsinghua Univ. (China); **Pierpaolo C. Ghiggino**, Ericsson AB (Sweden); **Qi Guo**, South China Normal Univ. (China); **Hoon Kim**, SAMSUNG Electronics Co., Ltd. (South Korea); **Peter M. Krummrich**, Siemens AG (Germany); **Chunfei Li**, Harbin Institute of Technology (China); **Xiang Liu**, Lucent Technologies/Bell Labs. (USA); **Hisao Nakajima**, France Télécom R&D (France); **Giancarlo Prati**, Scuola Superiore Sant'Anna (Italy); **Chunming Qiao**, Univ. at Buffalo (USA); **Ken-ichi Sato**, Nagoya Univ. (Japan); **Michael Sauer**, Corning Inc. (USA); **William Shieh**, The Univ. of Melbourne (Australia); **Alexandros Stavdas**, Univ. of Peloponnese (Greece); **Yikai Su**, Shanghai Jiao Tong Univ. (China); **Elaine Wong**, The Univ. of Melbourne (Australia)

## Conference 6782

### Optoelectronic Materials and Devices (APOC02)

*Conference Chair:* **Yoshiaki Nakano**, The Univ. of Tokyo (Japan)

*Cochairs:* **Jens Buus**, Gayton Photonics Ltd. (United Kingdom); **David S. Citrin**, Georgia Institute of Technology (USA); **Jinzhong Yu**, Institute of Semiconductors (China)

*Program Committee:* **Alfred R. Adams**, Univ. of Surrey (United Kingdom); **Markus-Christian Amann**, Walter Schottky Institute (Germany); **Dan Botez**, Univ. of Wisconsin/Madison (USA); **Kent D. Choquette**, Univ. of Illinois at Urbana-Champaign (USA); **Jen-Inn Chyi**, National Central Univ. (Taiwan); **Akihiko Kasukawa**, The Furukawa Electric Co., Ltd. (Japan); **Fumio Koyama**, Tokyo Institute of Technology (Japan); **Yong-Hee Lee**, Korea Advanced Institute of Science and Technology (South Korea); **Yu-Hwa Lo**, Univ. of California/San Diego (USA); **Kikuo Makita**, NEC Corp. (Japan); **Berthold E. Schmidt**, Bookham AG (Switzerland); **Meint K. Smit**, Technische Univ. Eindhoven (Netherlands); **JunQiang Sun**, Huazhong Univ. of Science and Technology (China); **Shinji Tsuji**, Hitachi Central Research Lab. (Japan); **Chih-Chung Yang**, National Taiwan Univ. (Taiwan)

## Conference 6784

### Network Architectures, Management, and Applications (APOC04)

*Conference Chair:* **Jianli Wang**, Wuhan Research Institute of Posts and Telecommunications (China)

*Cochairs:* **Gee-Kung Chang**, Georgia Institute of Technology (USA); **Yoshio Itaya**, NTT Photonics Labs. (Japan); **Herwig Zech**, Siemens AG (Germany)

*Program Committee:* **Benny Bing**, Georgia Institute of Technology (USA); **Ted D. Chang**, ZTE USA, Inc. (USA); **Ning Ge**, Tsinghua Univ. (China); **Weisheng Hu**, Shanghai Jiao Tong Univ. (China); **Bongtae Kim**, Electronics and Telecommunications Research Institute (South Korea); **Andreas B. Kirstaedter**, Siemens AG (Germany); **Deming Liu**, Huazhong Univ. of Science and Technology (China); **Xinyi Liu**, Hong Kong Applied Science and Technology Research Institute Co. Ltd. (Hong Kong China); **Kevin W. Lu**, Telcordia Technologies, Inc. (USA); **Jin-Yi Pan**, Photonic Bridges, Inc. (China); **Loukas Paraschis**, Cisco Systems, Inc. (USA); **Mario Pickavet**, Ghent Univ. (Belgium); **Shigeo Urushidani**, National Institute of Informatics (Japan); **Jing Wu**, Communications Research Ctr. Canada (Canada); **Zhu Yang**, FiberHome Technologies Group (China); **Hiroshi Yokosuka**, Fujikura Ltd. (Japan); **Maria C. Yuang**, National Chiao Tung Univ. (Taiwan); **Hanyi Zhang**, Tsinghua Univ. (China); **Jie Zhang**, Beijing Univ. of Posts and Telecommunications (China)

# Program-at-a-Glance

	Conference 6781 Passive Components and Fiber-Based Devices (APOC01)		Conference 6782 Optoelectronic Materials and Devices (APOC02)	
	ROOM 1	ROOM 2	ROOM 3	
<b>Friday, 2 November</b>	<b>Concurrent Running Sessions</b>			
8.30 to 10.00	Welcome from the APOC 2007 General Chairs			
	<b>Plenary Session I</b>			
10.00 to 10.30	Coffee/Tea Break			
10.30 to 12.30	<b>Plenary Session II</b>			
12.30 to 14.00	Lunch Break			
14.00 to 16.00	<b>SESSION 1a</b>	<b>SESSION 1b</b>	<b>SESSION 1</b>	
	Nonlinear Optical Devices	Fiber Sensors 1	Silicon Photonics Symposium	
16.00 to 16.30	Coffee/Tea Break			
16.30 to 18.30	<b>SESSION 2a</b>	<b>SESSION 2b</b>	<b>SESSION 2</b>	
	High Power Fiber Lasers	Fiber and Waveguide Gratings	All-Optical Processing	
<b>Saturday, 3 November</b>				
8.30 to 10.00	<b>SESSION 3a</b>	<b>SESSION 3b</b>	<b>SESSION 3</b>	
	Best Student Paper Session	Raman Amplifiers	Best Student Paper Session	
10.00 to 10.30	Coffee/Tea Break			
10.30 to 12.30	<b>SESSION 4a</b>	<b>SESSION 4b</b>	<b>SESSION 4</b>	
	Microstructured Fibers	Optical Components I	Photonic Integration	
12.30 to 14.00	Lunch Break			
14.00 to 16.00	<b>SESSION 5a</b>	<b>SESSION 5b</b>	<b>SESSION 5</b>	
	Nano Photonic Devices	Photonic Crystal Fibers	Micro Lasers	
<b>Sunday, 4 November</b>				
8.30 to 10.00	<b>SESSION 6</b>		<b>SESSION 6a</b>	<b>SESSION 6b</b>
	Optical Devices		Novel Application	Quantum Well Optical Modulators
10.00 to 10.30	Coffee/Tea Break			
10.30 to 12.30	<b>SESSION 7</b>		<b>SESSION 7a</b>	<b>SESSION 7b</b>
	Optical Components II		Photonic Crystals and Fibers	Telecom and RF Photonics
12.30 to 14.00	Lunch Break			
14.00 to 16.00	<b>SESSION 8a</b>	<b>SESSION 8b</b>	<b>SESSION 8</b>	
	PMD and Polarization Effects	Fiber Lasers and Amplifiers	Tunable Lasers	
16.00 to 16.30	Coffee/Tea Break			
16.30 to 18.30	<b>SESSION 9a</b>	<b>SESSION 9b</b>	<b>SESSION 9</b>	
	Optical Fibers	Planar Waveguide Devices	Cost-Effective Components	



**Conference 6783**  
**Optical Transmission,  
 Switching, and Subsystems**  
 (APOC03)

**Conference 6784**  
**Network Architectures,  
 Management, and Applications**  
 (APOC04)

ROOM 4	ROOM 5	ROOM 6
<b>Concurrent Running Sessions</b>		
Welcome from the APOC 2007 General Chairs		
<b>Plenary Session I</b>		
Coffee/Tea Break		
<b>Plenary Session II</b>		
Lunch Break		
<b>SESSION 1a</b>	<b>SESSION 1b</b>	<b>SESSION 1</b>
WDM Networks I	Transmission Systems	Network Evolution Symposium
Coffee/Tea Break		
<b>SESSION 2</b>		<b>SESSION 2a</b> <b>SESSION 2b</b>
WDM Networks II		Carrier Ethernet    Network Case Study Symposium
<b>SESSION 3a</b>	<b>SESSION 3b</b>	<b>SESSION 3</b>
Best Student Paper Session	Physical Effects	Best Student Paper Session
Coffee/Tea Break		
<b>SESSION 4a</b>	<b>SESSION 4b</b>	<b>SESSION 4</b>
Modeling and System/Network Design	Modulation Format and Associate Lasers	Next Generation Networks
Lunch Break		
<b>SESSION 5</b>		<b>SESSION 5a</b> <b>SESSION 5b</b>
Future Optical Networks		Automatically Switched Optical Networks    Protection/Restoration
<b>SESSION 6</b>		<b>SESSION 6a</b> <b>SESSION 6b</b>
OPS/OBS I		Grid Network I    Operation, Administration, and Maintenance I
Coffee/Tea Break		
<b>SESSION 7</b>		<b>SESSION 7a</b> <b>SESSION 7b</b>
OPS/OBS II		Grid Network II    Operation, Administration, and Maintenance II
Lunch Break		
<b>SESSION 8a</b>	<b>SESSION 8b</b>	<b>SESSION 8</b>
OPS/OBS III	Impairments in Transmission Systems	Access Network
Coffee/Tea Break		
<b>SESSION 9a</b>	<b>SESSION 9b</b>	<b>SESSION 9</b>
Optical Switching	Fiber Optics and Transmission Function/Effects	Passive Optical Network

# Program-at-a-Glance

		Conference 6781 Passive Components and Fiber-Based Devices (APOC01)		Conference 6782 Optoelectronic Materials and Devices (APOC02)
		ROOM 1	ROOM 2	ROOM 3
<b>Monday, 5 November</b>	<b>Concurrent Running Sessions</b>			
	8.30 to 10.00	<b>SESSION 10a</b> Fiber Sensors II	<b>SESSION 10b</b> Slow Light and Optical Delay Lines	<b>SESSION 10</b> Modulators and Switches
	10.00 to 10.30	Coffee/Tea Break		
	10.30 to 12.30	<b>SESSION 11a</b> Multiple Wavelength Lasers	<b>SESSION 11b</b> Fiber Devices	<b>SESSION 11</b> Novel Photonic Components
	12.30 to 14.00	Lunch Break		
	14.00 to 16.00	<b>SESSION 12</b> Modulation and Pulse Reshaping		<b>SESSION 12</b> Quantum Structure Devices
	16.00 to 16.30	Coffee/Tea Break		
	16.30 to 18.30	<b>SESSION 13</b> Short Pulse Lasers		

<b>Conference 6783</b> <b>Optical Transmission, Switching, and Subsystems</b> <b>(APOC03)</b>		<b>Conference 6784</b> <b>Network Architectures, Management, and Applications</b> <b>(APOC04)</b>	
ROOM 4	ROOM 5	ROOM 6	
Concurrent Running Sessions			
<b>SESSION 10a</b>	<b>SESSION 10b</b>	<b>SESSION 10</b>	
OCDMA	Optical Processing I	Transport MPLS	
Coffee/Tea Break			
<b>SESSION 11a</b>	<b>SESSION 11b</b>	<b>SESSION 11</b>	
Access I	Optical Processing II	Modeling and Routing	
Lunch Break			
<b>SESSION 12</b>		<b>SESSION 12a</b>	<b>SESSION 12b</b>
Access II		WDM/Optical Switching	Net/Wireless/Home Net
Coffee/Tea Break			
<b>SESSION 13</b>		<b>SESSION 13a</b>	<b>SESSION 13b</b>
RoF and Wirelss Access Networks		Service Switch	Net Architecture

# Plenary Presentations

## Friday 2 November

Multifunction Hall

### Chairs:



**Chung-en Zah,**  
Corning Inc. (USA);



**Chaohui Ye,**  
Wuhan National Lab. for  
Optoelectronics (China);



**Bingkun Zhou,**  
Tsinghua Univ. (China);



**Yun Chung,**  
KAIST (Korea)

8.30: **Opening Ceremony and  
Welcome from APOC 2007 General  
Chairs**

9.30: **Optical Fiber Communications in  
China: State of the Art and  
Innovation**  
**Zisen Zhao,** Wuhan Research  
Institute of Posts and Telecommuni-  
cations (China)

10.00: **Fiber-to-the-Home: A global  
reality – at last**  
**John R. Igel,** Corning Inc. (USA)

10.30: **Challenge for Service and Network  
Convergence**  
**Shigeyuki Akiba,** KDDI R&D Labs.,  
Inc. (Japan)

11.00: Break

11.30: **How Will Optical Networks  
Continue to Transform the Way the  
World Communicates?**  
**Jean-Luc Beylat,** Alcatel-Lucent  
(France)

12.00: **Mid-Infrared Semiconductor Light  
Sources and Their Applications**  
**Aizhen Li,** Shanghai Institute of  
Microsystem and Information  
Technology (China)

12.30: **The Telecom 2.0 – the New  
Investment Opportunities from VCs  
Perspectives**  
**Shoa-Kai Liu,** Rustic Canyon  
Partners (USA)

## Optical Fiber Communications in China: State of the Art and Innovation



**Zisen Zhao,**  
Wuhan Research Institute of Posts  
and Telecommunications (China)

*Abstract:* This talk will present the state of the art of optical fiber communications in China, including systems, FTTH, devices and markets. As innovation is being emphasized recently by the Chinese government, innovative activities in the area will be discussed briefly.

*Biography:* Zisen Zhao was born in Shanghai, China in 1932. He graduated from the Communications Department of Shanghai Jiaotong University in 1953. In 1973, he and his colleagues began their pioneering research on optical fiber communications at the Wuhan Research Institute of Posts and Telecommunications (WRI) in Wuhan, China. From 1983 to 1992, he was Chief Engineer & Vice President of WRI. He is now Senior Technical Advisor to WRI. He is a member of the Chinese Academy of Engineering and an IEEE Fellow.

## Fiber-to-the-Home: A global reality – at last



**John R. Igel,**  
Corning Inc. (USA)

**Abstract:** The wide-scale deployment of Fiber-to-the-Home (FTTH) has been a much anticipated. A decade ago, FTTH was limited to trials or otherwise small deployments. But decisions by large carriers in Japan and the US to deploy FTTH widely, has resulted in significant and rapid growth in the number of homes connected with optical fiber. These deployments prompted and benefited from a wave of innovation. New products and procedures have significantly reduced costs while increasing deployment speed and improving scalability. These innovations, together with the market success of these large carriers and an ever increasing consumer demand for bandwidth has prompted interest in and deployment of FTTH worldwide. This presentation will discuss this global phenomenon.

**Biography:** Mr. Igel joined Corning Optical Fiber in 1986 and held a variety of positions in manufacturing and engineering before being appointed Director, Technology and Quality at Optical Fibres, a Corning joint venture company located in Deeside, Wales, UK in 1994. At Optical Fibres he oversaw engineering, product and process development and technology transfer activities.

Mr. Igel returned to the US in 1998 as Manager, International Business Development in the Optical Fiber division and participated in several merger and acquisition transactions. Then, he was named Product Line Manager with responsibility for access and data communications fibers and later served as Asst. Chief of Staff, Optical Communications. Mr. Igel was appointed to his current position in April 2003. In this role, he has global responsibility for Corning's FTTx program.

He holds a Bachelor of Science degree in physics from the United States Naval Academy.

## Challenge for Service and Network Convergence



**Shigeyuki Akiba,**  
KDDI R&D Labs., Inc. (Japan)

**Abstract:** Information and communication technologies (ICT) are driving our world flat and small. Mobile service has introduced mobility and personalization into our communication style, while optical fiber infrastructure has brought about IP-centric broadband applications. KDDI promotes FMBC (Fixed Mobile and Broadcasting Convergence) in terms of both software that provides customer support, service and content and hardware such as information and communication networks.

"Ultra 3G" is the KDDI's next generation FMBC concept and is based on common IP technology, enabling to accommodate wireless broadband access (cdma 2000 EVDO Rev.A ) and fixed broadband access, such as FTTH and ADSL.0KDDI's high-quality IP-based content delivery network (CDN) enables QoS guaranteed IP services ; IP telephone services with equivalent quality to existing fixed telephone and triple play services (DVD-quality videos (multicast and VoD), IP telephone, and 100Mbit/s high-speed Internet) over optical fiber lines.

Establishing a common all-IP network from many independent service networks is itself a big technical challenge. We have focused on the migration from the SDH-based network to the packet-based network including access and core, aiming at using common optical infrastructure for IP-based services. Existing fixed telephone network will be replaced with all-IP fixed telephone network by early 2008. In addition to building the all-IP network, operation and maintenance of such a huge integrated network requires new approach for high reliability and efficiency. In this talk key aspects concerning coming all-IP converged networks and services are discussed.

**Biography:** Shigeyuki Akiba received B.S., M.S., and Ph. D degrees from Tokyo Institute of Technology in 1974, 1976, and 1984, respectively. Since he joined KDD and started working on InGaAsP/InP semiconductor lasers in 1976, Dr. Akiba has been primarily involved in R&D activities at KDD R&D Laboratories. In 1979 he succeeded in room temperature cw operation of 1.5 micron wavelength range semiconductor lasers for the first time. From 1980 to 1981 he was with MIT, Cambridge, Massachusetts, where he made mode-locked semiconductor lasers with compact external resonator for high speed pulse generation. From 1989 to 1991 he worked at Intelsat in Washington D.C. for next generation communication satellite technology including optical inter-satellite link. Since 1991 he had been involved as a group leader in developing high capacity transoceanic undersea cable systems utilizing optical amplifier technique, which led to realization of TPC-5. Development of WDM undersea cable systems was another key responsibility in later 1990's as a manager in the projects such as PC-1, Japan-US and TAT-14. He became President of KDD R&D Laboratories Inc. in 2000 and President of KDDI Submarine Cable Systems Inc. in 2002. Since 2005 he has been President of KDDI R&D Laboratories Inc. Dr. Akiba is a Fellow of IEICE Japan and IEEE.



# Plenary Presentations

## How Will Optical Networks Continue to Transform the Way the World Communicates?



**Jean-Luc Beylat,**  
Alcatel-Lucent (France)

**Abstract:** While the impressive progress of optical communications over the last few decades have opened the doors of the worldwide Internet, the entire telecommunications value chain is undergoing now a huge transformation. The lines between traditional fixed lines, mobile and competitive carriers are blurring. New “pure internet” players are offering a disruptive service model, and the industry is being re-shaped through the relationships being formed between Service and Content providers. In the residential market there is acceleration in the rollout of IPTV, where ‘Interaction’, ‘Content’ and ‘Personalisation’ are the key characteristics.

At the heart of this transformation, optical networks are pressed by explosive demand for quality broadband, and carriers are responding by unifying around a single IP infrastructure. From the access to the core, the optical network must respond to this new world order. To be successful, carriers must match the huge bandwidth increase with the architectural and technology decisions that will lead to a significant decrease in the cost-per-bit. This means building scalable and efficient optical networks, but also ones that are secure and simple to manage. Research in optical networks is addressing all these challenges by increasing again the capacity (more than 20Tbit/s in one fibre), by adding more and more flexibility at the wavelength level, by reducing cost with new modulation formats and by extending the optical power from the core to the access.

The talk will review optical technology challenges across a number of areas. Particular emphasis will be given to recent developments, such as multi-Terabit/s transmission, advanced modulation formats, coherent systems, optical processing and 100GEth challenges. We will illustrate how optical networks will continue to transform the way the world communicates.

**Biography:** Jean-Luc Beylat - Vice President, Strategic Cooperative R&D Programs- is responsible for the coordination of cooperative and strategic R&D programs of Alcatel-Lucent.

Jean-Luc joined Alcatel in 1984, and spent seven years working on semiconductor lasers at Alcatel’s research center in Marcoussis, France. In 1992, he launched Alcatel’s WDM transmission activities and also managed a research group on optical amplification. In 1996, he was appointed Director of the Optical Systems & Networks Department in Alcatel’s research center driving worldwide research activities in terrestrial and submarine transmission. In 2000, he was appointed program director of the Alcatel’s Optics Groups and later, Vice president of network solutions of the Alcatel’s Optical Networking activities. In his last position, he was a key contributor of the optical product line evolution in regards to cost optimization and data content, helping Alcatel to maintain a #1 position in optical networking since 2001. In November 2005, he has joined the Alcatel CTO office.

Dr. Jean-Luc Beylat holds a Ph.D. in semiconductor lasers and their applications from “l’Université Pierre et Marie Curie” (France). He has authored or co-authored over 50 technical articles and has been responsible for the filing of 15 patents. He has several times served as chairman of distinguished international conferences. He was the chairman of ECOC 06.

## Mid-Infrared Semiconductor Light Sources and Their Applications



**Aizhen Li,**  
Shanghai Institute of  
Microsystem and Information  
Technology (China)

**Abstract:** Mid-infrared semiconductor lasers are of great interesting light sources for applications in trace gas sensing by tunable diode laser absorption spectroscopy (TDLAS) in fields as in environmental monitoring, medical diagnostics and homeland security, space-free communication. Mid-infrared light sources including intersubband unipolar quantum cascade lasers (QCLs), interband cascade lasers (ICLs), and multi-quantum well laser diodes (MQWLDs) have been made a great progress and covered a wide wavelength range of 2.0 to 20  $\mu\text{m}$ .

In this presentation, we review the progress in mid-infrared light sources and report our recent advances in the development of mid-infrared light sources both multi-mode and single-mode InP-based QCLs, GaSb-based MQWLDs operating at room temperature with high power and low threshold current density by either gas source molecular beam epitaxy or solid source molecular beam epitaxy. We will also present our device applications to gas sensing.

**Biography:** Aizhen Li, professor of Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences. Li graduated from Fudan University(1958), then joined Shanghai Institute of Metallurgy, Chinese Academy of Sciences(1958-2001, predecessor of SIMIT), became a full professor in 1988, and advisor of Ph.D students elected and authorized by the Degree Committee of the State Council in 1990. She was directors of Department of Semiconductor Materials and Department of Functional Materials and Devices, Academic Director of State Key Laboratory of Functional Materials for Informatics authorized by Chinese Academy of Sciences(1997-2004). Li was a visiting scholar and visiting professor of Carnegie Mellon University, USA, visiting professor of Max-Planck Society, Paul-Drude Institute of Solid State Electronics, Germany.

She has been engaged in research on III-V Semiconductor Materials for electronic and photonic devices, in particular in the field of quantum nanostructures for high speed electronic devices and mid-infrared InP-based unipolar intersubband quantum cascade lasers and GaSb-based interband multi-quantum well laser diodes by molecular beam epitaxy (MBE). She has published 235 papers, 27 patents, 33 prizes, and 14 honors. In 2004, she won the Academy of Sciences for the Developing World (TWAS) Prize in Engineering Sciences.

Li is a member of the MBE International Advisory Committee (1992-2008), Chair of Program Committee of the 11th International Conference on MBE, member of the Scientific Committee of the Mid-Infrared Optoelectronics: Materials and Devices. Li was elected a member of the Asia Pacific Academy of Materials in June, 2003. On the 1st of May, 2007, Li was elected a foreign associate of the National Academy of Sciences, the United States of America.

## The Telecom 2.0 – the New Investment Opportunities from VCs Perspectives



**Shoa-Kai Liu,**  
Rustic Canyon Partners (USA)

**Abstract:** The recently resurgence of telecom related start-up IPOs and M&A deals has helped investors to cautiously regain their confidence by way of a recovered healthy market and respectable growth since the \$6 trillion telecom market value bubble burst seven years ago.

New consumer services and applications such as the Google deep search and its ubiquitous online advertisement platform, ever spreading YouTube like video sharing and social networking sites, million of daily sessions of IPTV, innovative contents of time and space shifting business model, “triple-plays” through the convergence of services at different levels, mobile TV rollout, and the acceleration in FTTX, WiMax, and 3G broadband access deployments; these enablers have been demanding not only more bandwidth but also on different classes of QoS and user expectations and experiences.

Conversely the existing technological obsolescence of TDM centric infrastructure is nearing the end of life cycle; in addition, the vanishing of corporate talents and memories through downsizing and rightsizing of the telecom industry has left the networking gears in the field like an orphaned child. Meanwhile, the packet based services and fierce competition from both existing players and new comers, and the optimizing of cost structure to maximizing revenue and profitability have pressured carriers and service operators to drastically change their operations to remain business competitive.

Does this change in the landscape present new investment opportunities for venture investment in the emerging Telecom 2.0 era or is the present “euphoria” an echo of pre-bubble era champagne toasts? What will the risk profiles and reward potentials be going forward? Where is and in the near future will be the center of investment activity? This talk will be centered on the discussion how we can learn from the mistakes of the past where billions of dollars were lost in inflated and hyped markets, and explore how the level of venture investment activities are reviving once again.

**Biography:** Shoa-Kai Liu joined the Rustic Canyon Partners’ team on 2004 with 25 years of diverse technical and management experience in telecommunication networks and services, data and optical networking, and semiconductors. Most recently, Shoa-Kai served as the Director of Network Technology Development at MCI, where he and his team evaluated emerging telecommunication technology. After he joined MCI in 1982, he spent 22 years focused on networking technology development and deployment for networks that today provide the backbone of the Internet. He played a central role in MCI’s strategic network planning, large system integration, services, and products rollout on a global scale.

Shoa-Kai is also a proven entrepreneur. From 1998 to 1999, he was the co-founder and VP of Market Development at Avanex, where he helped the company grow into one of the largest optical component suppliers worldwide. Prior to MCI, his experiences also included working in various government projects such as the OTH Radar System, the SDI, the NASA Space Telescope ground data network system, and the USAF Consolidated Space Operation Center Communication System Modernization, while he worked at SAI, Inc., CSC, and the Aerospace Corporation.

Shoa-Kai graduated from Northern Illinois University with MSCS, earned MSEE, majored in Communication at George Washington University, and earned an M.B.A. with International Management track from the University of Dallas. He served as the MCI Fellow of Technology Leadership Council from 1993 to 1995 and has chaired various industry conference committees and been a frequent speaker at OFC, Supercom, WOCC, SATEC, and METS conferences. Shoa-Kai is active with the Chinese Institute of Engineer Association and Photonic Society of Chinese-Americans. He has been awarded four patents. Now, he serves three companies’ Board member and Technical Advisory Board in various companies.

**Saturday, 3 November 2007  
08.45 to 15.30**

*Multifunction Hall*

- 08.45: **Welcome Remarks by Co-Chairs**
- 09.00: **Zhiqiang Fan**, VP, Fiberhome International (China)  
*The Value of 40G DWDM to the Carriers*
- 09.30: **Michael Lebby**, President, Opto-Electronic Industry Development Association (OIDA) (USA)  
*Worldwide Trends in Optoelectronics*
- 10.00 to 10.30: Coffee/Tea Break
- 10.30: **Feng Huang**, Alcatel-Lucent Shanghai Bell (China)  
*The Application of T-MPLS in MAN*
- 11.00: **Wen Liu**, CTO, Accelink Technologies Inc. (China)  
*Innovative and Cost Effective Components for Optical Networks*
- 11.30: **Joseph Berthold**, VP, Network Architecture and Standards, Ciena Corp. (USA)  
*Future Optical Networks, including Interoperability and Standards Issues*
- 12.00 to 14.00: Lunch Break
- 14.00: **Stan Lumish**, CTO, JDSU (USA)  
*Subsystems Challenges for Datacom and Telecom*
- 14.30: **N. Anders Olsson**, Sr. VP of Engineering, Finisar Corp. (USA)  
*Transceiver Trends from 1 to 100 Gb/s*
- 15.00: **Ping Xie**, CTO and China Country Manager, NeoPhotonics (USA/China)  
*Challenges of Establishing an Optical Components Business in China*

**Organizers:**



**SPIE** Connecting minds.  
Advancing light.

**Chairs:**

**Yuelong Yan**, *Editor in Chief*,  
Telecom World (China)



**Peter Kaiser**,  
*Advisor*,  
Santec Corporation (USA)

## Scope of Industry Forum

The rapid growth in telecom services and subscribers in China and other parts of the Asia Pacific Region has resulted in an urgent need to develop a powerful information network infrastructure which provides integrated access to high speed Internet, data, voice and video services at reasonable costs. As at previous APOC conferences, an Industry Forum is being organized at APOC 2007 that will address some of the specific challenges faced by network operators and content providers in China and elsewhere as they compete with each other to provide the information and entertainment services which customers want and are able to pay for. Emphasis is being placed on hearing the opinions of industry leaders and technical experts from China, and on comparing their views with those of international experts on how to evolve the core, metro and access networks with low-cost multi-service platforms based on IP and their integration with wireless services.

This Industry Forum will provide a valuable opportunity for industry executives and technical marketing professionals from China to meet and network among themselves as well as with their international colleagues, and to discuss both similar as well as differing developments in the evolution of the information infrastructure of tomorrow.

Simultaneous translation will be provided at the Industry Forum as the only event at APOC 2007 to have this feature.

## Worldwide Trends in Optoelectronics



**Michael Lebby,**  
President and CEO, OIDA (USA)

*Abstract:* The global optoelectronics market is reviewed showing the dominance of flat panel displays and the steady rise in communications revenue. The market is segmented into consumer/entertainment, computers and communications. The communications business for optoelectronics has been increasing consistently for the past 4-to-5 years and is a sign that the market is maturing from the huge swing effects of the bubble in 2000. This has allowed optoelectronic component and systems companies to focus on new products and technological solutions such as tunable lasers, ROADMs, integrated optoelectronic components etc. There is also the emergence of new frontiers such as 100Gbps in both serial as well as parallel, multiplexed formats. New technologies such as silicon photonics and nanophotonics are emerging in the marketplace in a number of different forms and applications.

*Biography:* Michael Lebby joined OIDA in 2005 and became its president and CEO in February, 2006. With more than 170 U.S. patents issued in optoelectronics, Lebby's career has spanned all aspects of the optoelectronics business ranging from research and development, manufacturing, and finance, to sales, marketing, and investing.

In 1985, Lebby's research took him to AT&T Bell Laboratories, followed in 1989 by a move to Motorola's Phoenix Corporate Research Laboratory in Phoenix, Arizona. Early in 1997, he became an R&D Business Technology Development Manager where he managed all aspects of advanced technologies in corporate R&D.

In August 1998, Lebby joined AMP as a member of the Global Optoelectronics Division's management team, where he was responsible for growing AMP's fiber optic datacom and telecom business through external interactions that include mergers, acquisitions strategic alliances, and technical strategic planning. In 1999, Lebby joined Intel as a corporate investor and was responsible for sourcing, negotiating, and closing private placement equity deals in the optical networking, component, and semiconductor arenas.

In 2001, Lebby founded a new fiber optics company, Ignis Optics, where he served as the CEO, President, and Board Member in addition to acting as VP of Sales, Marketing and Business Director during the growth phases. Ignis Optics was acquired by Bookham Technology in October 2003 and Lebby became responsible for corporate and technical strategy at Bookham Technology.

In 2005, the IEEE Board of Directors elected Lebby to IEEE Fellow for contributions to optoelectronics technology.

## Future Optical Networks, Including Interoperability and Standards Issues



**Joseph Berthold,** VP,  
Network Architecture and Standards,  
Ciena Corp. (USA)

*Abstract:* We continue to observe sustained growth in network traffic, causing increasing strain in core networks. If narrowcast and unicast traffic become the norm for residential entertainment services as predicted, traffic in metro networks will also face unprecedented increases. Linear scaling of network capacity, even within the new IP over optical network architecture, will result in intolerably high costs in the metro. A dynamically optimized packet/optical hybrid architecture offers the possibility of scaling capacity in a cost-effective way. This talk will address future optical network architectures, along with the standards and interoperability issues that must be addressed to realize those architectures.

*Biography:* Joseph Berthold is currently Vice President, Network Architecture at CIENA Corporation, where he has worked since early 1997. He contributes to the understanding of future network architecture directions, network service concepts, the definition of CIENA's networking products, and is responsible for the coordination of CIENA's work in industry standards.

Dr. Berthold served as the Technical Committee Chair of the Optical Internetworking Forum (OIF) from its formation in 1998 until 2001, and as a member of its Board of Directors and President since 2002. He also serves on the Board of Directors of ATIS, the Alliance for Telecommunications Industry Solutions. He has been a long-term contributor to the Optical Fiber Communications Conference, OFC, was the Technical Program Co-chair for OFC 2001 and the General Co-Chair for OFC 2003.

From 1984 until 1997, Dr. Berthold worked in the Applied Research Area of Bellcore, where he was responsible for the management of research programs related to broadband network systems, and was the program manager and chairman of the Technical Management Committee for the Multiwavelength Optical Networking Consortium (MONET). He managed previous Bellcore research programs in high-capacity protocol processing, high-speed electronic switching and high-speed multiplexing. Before his tenure at Bellcore, Dr. Berthold spent six years with Bell Labs in Murray Hill, NJ, where he was responsible for a semiconductor device technology development group.

## Subsystems Challenges for Datacom and Telecom



**Stan Lumish,**  
CTO, JDSU (USA)

*Abstract:* The optical communications industry is seeing a recent resurgence, thanks to heightened competitive forces, new behavioral norms, and other factors. Basically the explosion in the demand for video has driven dramatic growth in the need for bandwidth over the internet. So now simple dense WDM transport is no longer sufficient to meet the latest networking requirements. An Agile Optical Network, or AON, is required. The AON enables not just the transport but the manipulation of optical wavelengths. With new requirements come new challenges; so the AON requires new subsystems. In this presentation we will set the stage by describing some of the external factors creating the impetus to build AON networks. Then we will describe the basics of the AON, the key subsystems that make up the AON and how the new challenges for AON datacom and telecom applications are faced and overcome.

*Biography:* Dr. Stan Lumish is Chief Technology Officer (CTO) and is responsible for JDSU's overall technology strategy for its communications, commercial, and consumer markets. Prior to this, he was CTO for the communications business. Previously, Dr. Lumish managed the Optical Layer Products Group. He joined JDSU in February 2000 to lead R&D for Network Product Applications and, subsequently, for the Transmission Subsystems Group and the Optical Networks Research Group. Prior to JDSU, Dr. Lumish held management positions with Lucent, where he received the Bell Labs Fellow award.

Dr. Lumish holds B.E., M.S. and Ph.D. degrees, all in Electrical Engineering, from the State University of New York at Stony Brook. He is a member of a number of engineering honor societies (Tau Beta Pi, Eta Kappa Nu and Sigma Xi) and is a senior member of the IEEE.

## Transceiver Trends from 1 to 100 Gb/s



**N. Anders Olsson,**  
Sr. VP of Engineering,  
Finisar Corp. (USA)

*Abstract:* MSA and standards based optical transceivers have become the ubiquitous interface for most data and telecommunication optical links. Worldwide installations of transceivers add several Mbit/s of transmission capacity for each and every living person on earth every month of the year. Transceivers come in several flavors covering data rates from Mbit/s to 100Gbit/s and cost from \$5/Gbit/s to \$500/Gbit/s.

This presentation examines the trends, key market and technical drivers and challenges for the dominant transceiver form factors and applications.

*Biography:* N. Anders Olsson is Senior Vice President of Engineering at Finisar Corp. Prior to joining Finisar in January 2004, Anders was the President and CEO of Photon-X Inc. From April 2000 to April, 2003, he was cofounder, COO and CTO of CENiX Inc. Prior to CENiX, Anders held a number of positions at Bell Laboratories, Lucent Network Systems, and Lucent Microelectronics; the first in basic research and the last as GM and Vice President of the \$1B Optoelectronics Division. He has published approximately 150 journal articles, 70 conference talks, and has more than 10 patents in the field of optical communications. He also coauthored a graduate level text book on Optical Amplifiers (Academic Press) in 1999. Prior to receiving his PhD in Electrical Engineering from Cornell University in 1982, he worked in oil exploration for Schlumberger Overseas SA in the Far East region.



## Challenges of Establishing an Optical Components Business in China



**Ping Xie,**  
CTO and China Country Manager,  
NeoPhotonics (USA/China)

*Abstract:* In today's highly competitive environment, manufacturing in low cost countries is a necessity and no longer a competitive edge. It is both strongly competitive and culturally challenging for US tech companies to develop their offshore footprint. Further, as Asia is emerging from an emerging manufacturer to a consumer oriented society, local demands present new opportunities and challenges. In this talk, we'll present our experience and perspective of selecting partners and in choosing China as our Asia manufacturing and business base. Our experience of merging with a Chinese enterprise with government ownership will also be shared.

*Biography:* Dr. Ping Xie has over fifteen years of product development experience in lasers, fiber optical components and subsystems. At NEOPHOTONICS, He has served as Vice President of engineering, China Sales Manager and General Manager of NEOPHOTONICS China. Prior joining NEOPHOTONICS, he has held positions in Finisar Corporation Transwave Division as Vice President of Engineering, in New Focus Corporation as Vice president of Passive Device Engineering and he served as a product line manager and technical staff at JDSU. He has also worked as the technical staff member at Los Alamos National Lab and at Candela Laser Corporation. Dr. Xie received his PhD and MS degrees in Applied Physics and Physics, both from the University of Michigan. He received his bachelor's degree in Electrical Engineering with emphasis in fiber optics and microwaves from Tsinghua University, Beijing, China.

## Optical Switching and Routing Technologies

Nov 1, 2007 (Thursday)

Room 1

08.15 to 12.30

With the continuing growth of Internet and the introduction of high-bit rate WDM links in metro and backbone networks, the current switching paradigm will not be able to use the available bandwidth efficiently. R&D interest in optical packet/burst switching and technologies of high-speed switches and routers continue to grow over the last few years. The scope of the Optical Switching and Routing Technologies (OSRT) Workshop is focused on the technology of high-speed optical switches and routers and optical packet/burst/label switching for the next generation network. As a part of APOC 2007, OSRT will comprise technical sessions for the presentation of novel research results and overview of the progress, and panel sessions for the discussion of hot topics. In particular, it will discuss the following two main topics.

### High performance switches and routers

- Architectures
- Analysis and simulation
- Electronic and optical switching fabrics
- Field trials
- Implementations
- Measurements
- Prototypes
- Performance evaluation and measurement
- System development

### Optical packet/burst/label switching

- Architectures
- Analysis and simulation
- Challenges and technical issues
- Field trials
- Impact of higher layer protocols and services
- Implementations
- Measurements
- Optical buffer and optical memory
- Prototypes
- Performance evaluation and measurement
- Routing protocols
- System development
- Traffic engineering and control
- Quality of service
- WDM/OTDM switching and routing

For more information please contact Co-Chairs: Siyuan Yu (s.yu@bristol.ac.uk) and Nan Chi (nanchi@mail.hust.edu.cn)

## Tentative Workshop Program:

08.15: Welcome

08.30 to 10.30: Invited talks

## 100gbit/s Packet Generation and Switching



**Gee Kung Chang,**  
Georgia Institute of Technology  
(USA)

*Biography:* Prof. G. K. Chang earned his bachelor degree in Physics from National Tsinghua Univ. in Taiwan in 1969, and his doctoral degree from the Univ. of California, Riverside, in 1976. He spent the following two years doing postdoctoral research in experimental electron/photon physics at Rutgers and Cornell Univ.. Dr. Chang spent the next 23 years within the Bell Systems in New Jersey—Bell Labs, Bellcore, and Telcordia Technologies where he served in various capacities including Director of the Optical Networking Systems and Testbed, Director of the Optical System Integration and Network Interoperability, and finally, Executive Director and Chief Scientist of the Optical Internet Research Group. Prior to joining Georgia Tech, he served as Vice President and Chief Technology Strategist of OpNext, Inc., in charge of technology planning and product strategy for advanced optical networking components.

Dr. Chang has been granted twenty-eight patents in the area of optoelectronic devices, high speed integrated circuits, telecommunication switching components and systems, WDM optical networking elements and systems, multiwavelength optical networks, optical network security, and optical label switching routers. He has co-authored over 130 journal and conference papers.

## Title to be Announced



**Mike O'Mahony,**  
Univ. of Essex (United Kingdom)

*Biography:* Mike J O'Mahony received his Ph.D degree in 1977, from the Univ. of Essex, England for research into digital transmission systems. In 1979 he joined the Optical System Research Division of British Telecom working on research into fibre-optic systems for undersea systems; in particular experimental and theoretical studies of receiver and transmitter design. In 1984 he became a Group Leader responsible for the study and application of optical amplifiers to transmission systems. Areas of interest included optical amplifiers, coherent optics, pico-second pulse systems and optical networks. In 1991 he joined the Dept. of Electronic Systems Engineering at the Univ. of Essex as Prof. of Communication Networks. He was Head of Dept. from 1996-1999. Current research is related to the study of future network infrastructures and technologies, in particular optical packet switching. He is principal investigator for grants supported by industry, national research councils and the EU. Prof. O'Mahony is the author of over 250 papers relating to optical communications, is a member of the IEE and a senior member of the IEEE.

## The Architecture, Protocol, Systems Integration, and Field Trial of Optical Label Switching Networks in support of Multi-Service Applications



**S. J. Ben Yoo,**  
Univ. of California/Davis (USA)

*Biography:* Prof. S. J. Ben Yoo joined Univ. of California/Davis as an Associate Prof. of Electrical and Computer Engineering in March 1999. His current research involves advanced switching techniques and optical communications systems for the Next Generation Internet. Prior to joining UC Davis, he was a Senior Scientist at Bellcore leading technical efforts in optical networking research. His research activities at Bellcore included optical-label switching for the Next Generation Internet, power transients in reconfigurable optical networks, wavelength interchanging cross-connects, wavelength converters, vertical cavity lasers, and high-speed modulators. He also participated in the ATD/MONET systems integration, the OC-192 SONET Ring studies, and a number of standardization activities. Prior to joining Bellcore in 1991, Prof. Yoo conducted research on nonlinear optical processes in quantum wells, four-wave mixing study of relaxation mechanisms in dye molecules, and ultra-fast diffusion driven photodetectors. During this period, he also conducted research on life-time measurements of intersubband transitions and on nonlinear optical storage mechanisms at Bell Labs. and at IBM Research Labs., respectively. Prof. Yoo received the B.S. degree with distinction in Electrical Engineering, the M.S. degree in Electrical Engineering, and the Ph.D. degree in Electrical Engineering with minor in Physics, all from Stanford Univ. His Ph.D. thesis at Stanford Univ. was on linear and nonlinear optical spectroscopy of quantum well intersubband transitions. Prof. Yoo is a Fellow of IEEE/LEOS and a Fellow of OSA and member of Tau Beta Pi..

## All-Optical Self-Routing Packet Switching



**Idelfonso Tafur Monroy,**  
Danmarks Tekniske Univ. (Denmark)

*Biography:* Idelfonso Tafur Monroy, graduated from the Bonch-Bruевич Institute of Communications, St. Petersburg, Russia, in 1992, where he received a M.Sc. degree in multichannel telecommunications. In 1996 he received a Technology Licentiate degree in telecommunications theory from the Royal Institute of Technology, Stockholm, Sweden. The same year he joined the Electrical Engineering Dept. of the Eindhoven Univ. of Technology, The Netherlands, where he earned a Ph.D. degree in 1999 and worked as an assistant Prof. until 2006. Currently he is an Associate Prof. at the Dept. of Communications, Optics & Materials (COM•DTU) at the Technical Univ. of Denmark (DTU). He has participated in several European research projects (APEX, BLISS, STOLAS, LASAGNE, MUFINS). He has supervised over 25 master projects, co-supervised 3 PhD projects. Has published over 120 journal and conference papers, including 10 invited contributions and he is a co-author of a patent application, a research book and book chapters. His research inter-

ests are in the area of photonic technologies and systems for integrated metro and access networks, broadband access networks, optical coherent communications, wireless photonics, optical networking and communication theory.

## Optical Codes in Switchings and Multiple Access



**Ken-Ichi Kitayama,**  
Osaka Univ. (Japan)

*Biography:* Prof. Ken-Ichi Kitayama. His research interests are in photonic networks and radio-on-fiber communications. He has published over 190 papers in refereed journals, written two book chapters, translated one book. He holds more than 30 patents. He currently serves on the Editorial Boards of the IEEE Photonics Technology Letters, IEEE Transactions on Communications, and Optical Switching and Networking as the Associate Editor. He is a Fellow of IEEE and a Fellow of IEICE of Japan.

## Field Trial of 10GE over High-Speed Colored OPS Network



**Naoya Wada,**  
National Institute of Information and Communications Technology (Japan)

*Biography:* Dr. Wada received the B.E., M.E., and Dr. Eng. degrees in electronics from Hokkaido Univ., Sapporo, Japan, in 1991, 1993, and 1996, respectively. In 1996, he joined the Communications Research Lab. (CRL), Ministry of Posts and Telecommunications, Tokyo, Japan. He is currently a Senior Researcher of the National Institute of Information and Communications Technology (NICT), Tokyo, Japan. Since April 2006, he has been project reader of Photonic Node Project and research manager of the Photonic Network Group.

His current research interests are in the area of photonic networks and optical communication technologies, such as optical packet switching (OPS) network, optical processing, and optical code-division multiple access (OCDMA) system. He has published more than 50 papers in refereed journals and more than 150 papers in refereed international conferences. Dr. Wada received the 1999 Young Engineer Award from the Institute of Electronics, Information and Communication Engineers of Japan, and the 2005 Young Researcher Award from the Ministry of Education, Culture, Sports, Science and Technology. He is a member of IEEE Comsoc, IEEE LEOS, the Institute of Electronics, Information and Communication Engineers (IEICE), the Japan Society of Applied Physics (JSAP), and the Optical Society of Japan (OSJ).

## Versatile Optical Switch Technology for Dynamic Optical Networking



**Siyuan Yu,**  
Univ. of Bristol  
(United Kingdom)

*Biography:* Siyuan Yu was born in Nanchang, Jiangxi Province, China, in May 1963. He received his B. Eng. Degree from Tsinghua Univ., Beijing, China, in 1984, the M. Eng. degree from Wuhan Research Institute of Post and Telecommunications, Wuhan, China, in 1987, where he worked on the frequency stabilization of semiconductor lasers, and the Ph.D. degree in electronics and electrical engineering from the Univ. of Glasgow, Glasgow, U.K., in 1997, where he studied monolithically integrated mode-locked semiconductor ring lasers.

He joined the Dept. of Optoelectronic Engineering, Huazhong Univ. of Science and Technology in 1987 and worked on semiconductor optical amplifiers and other optoelectronic devices. In 1996, he joined the Dept. of Electrical and Electronic Engineering, Univ. of Bristol, Bristol, U.K., where he is currently a Reader. His current research interests are photonic devices in optical networks including optical packet switches, tunable lasers, wavelength converters, and all-optical switches. He is the author of more than 100 papers and inventor or co-inventor of one Chinese patent and four United Kingdom and international patents.

## Wavelength Packet Switching in Radio-over-Fiber Systems



**Liam Barry,**  
Dublin City Univ. (Ireland)

*Biography:* Prof. Liam Barry received his BE (Electronic Engineering) and MEngSc (Optical Communications) degrees from Univ. College Dublin in 1991 and 1993 respectively. From February 1993 until January 1996 he was employed as a Research Engineer in the Optical Systems Dept. of France Telecom's Research Labs. (CNET) in Lannion, France. During this period his research involved the use of ultra short optical pulses in high capacity optical networks, and as a result of this work he obtained his PhD Degree from the Univ. of Rennes in France. In February 1996 he joined the Applied Optics Centre in Auckland Univ., New Zealand, as a Research Fellow. His work in New Zealand was mainly concerned with optical pulse generation and measurement, and the use of optical nonlinearities for high speed all-optical switching in fibre networks. In March 1998 he took up a lecturing position in the School of Electronic Engineering at Dublin City Univ., and established the Radio and Optical Communications Lab., which is part of the Research Institute for Networks and Communications Engineering (RINCE). He is currently Associate Prof. in the School of Electronic Engineering, Director of RINCE, and a Principal Investigator for Science Foundation Ireland. His main research focus is the design, characterization, and implementation of novel devices and subsystems in high-speed optical networks.

10.30 to 10.45: Coffee break

10.45 to 12.30: Invited talks

## A High-Performance Optical Packet-Switched Metro WDM Ring Network-Technology and Experimentation



**Maria C Yuang,**  
National Chiao Tung Univ.  
(Taiwan, China)

*Biography:* Maria C. Yuang received the B.S. degree in applied mathematics from the National Chiao Tung Univ., Taiwan, in 1978; the M.S. degree in computer science from the Univ. of Maryland, College Park, Maryland, in 1981; and the Ph.D. degree in electrical engineering and computer science from the Polytechnic Univ., Brooklyn, New York, in 1989. From 1981 to 1990, she was with AT&T Bell Labs. and Bell Communications Research (Bellcore), where she was a member of technical staff working on high speed networking and protocol engineering. She was also an Adjunct Prof. at the Dept. of Electrical Engineering, Polytechnic Univ., during 1989-1990. In 1990, she joined National Chiao Tung Univ., Taiwan, China, where she is currently a Prof. of the Dept. of Computer Science and Information Engineering. Her current research interests include optical and broadband networking, wireless local/access networking, multimedia communications, and performance modeling and analysis.

## Multicasting and Burst-Like Switch Connections of ASON/GMPLS



**Weisheng Hu,**  
Shanghai JiaoTong Univ. (China)

*Biography:* Weisheng Hu received B.Sc, M.En, and Ph.D. from Tsinghua Univ., Beijing Univ. of Science and Technology, and Nanjing Univ. in 1986, 1989 and 1997 respectively. He joined Shanghai Jiao Tong Univ. as a post-doctorate fellow from 1997 to 1998, and as Prof. from 1999 up to now. He is the director of the State Key Lab. of Advanced Optical Communication Systems and Networks. He participated two Task Force of CAINONET and 3TNET project during 1999 to 2006. His research activities are mainly on photonic switching and optical networks. He has published ~130 peering journal and conference papers. He serves for several conferences, e.g. OFC, APOC, OECC, COIN, OpticsEast, WOBS, etc.

## Optical Buffering and Contention Resolution



**Ronelle Geldenhuys**  
University of New South Wales,  
Australia

*Biography:* Ronelle Geldenhuys received her B.Eng (Electronic) and M.Eng (Management of Technology) degrees from the University of Pretoria, South Africa in 1997 and 1999 respectively, and her Ph.D. in electro-optics from the Eindhoven University of Technology in the Netherlands in 2007. She was a senior lecturer at the University of Pretoria 2000 – 2006, and is currently a senior lecturer in the School of Electrical Engineering and Telecommunications at the University of New South Wales, Australia. Her research interests are optical signal processing, optical switching, and optical buffering and contention resolution

## High-Performance Router Based on Flexible-Switching For Next Generation Network



**Jinshu Su,**  
National Univ. of Defense  
Technology (China)

*Biography:* Jin-shu Su received his Ph.D. degree from National Univ. of Defense Technology, Changsha, in 2000. He is a Prof. of School of Computer at National Univ. of Defense Technology, and Faculty Director of the Institute of Network Technology and Information Security. His current research interests include architecture of the future Internet, analysis and design of high performance switches and routers, sensor networks, congestion control, routing protocols and network security. He has published more than 70 refereed articles of which 11 are indexed by SCI. He has coauthored four books titled High-performance Computer Networks, Basic Application of Computer Networks, Project of Computer Software Assistant Design, and Guide of Using Internet.

## Networking Technology for Large Size of WDM-Based Optical Network



**Xiaoping Zheng,**  
Tsinghua Univ. (China)

*Biography:* Dr. Zheng, was born in Jiangsu, on Aug. 06 1965. He received his B.S. degree in Zhongshan University in 1986, M.S. degree in Southeast University in 1994, and Ph.D in Tsinghua University in 1998.

From 1998 on, He has been working with the Dept. of Electronic Engineering, Tsinghua University. His research activities are mainly focused on automatically switched optical networks (ASON) and wireless over optical network. He was awarded 4 prizes by the Chinese Governmental Ministries for his scientific contributions and invention achievements, authored and co-authored more than 70 papers and had 5 patents, and 5 proposals were adopted by ITU-T G.15. He is the standing director of Beijing Society of Optics, and was the member of the Expert-Group who was responsible for the drafting strategic program of High Performance Wide-Band Communication Network during the 10th-five year plan of China.

## Labeled Optical Burst Switching Network Testbed



**Jian Wu,**  
Beijing Univ. of Posts and  
Telecommunications (China)

*Biography:* Jian Wu received the Ph.D. degree in Physical Electronics from Tsinghua Univ. in 1999. From 1999 to 2001, he was a Postdoctoral Fellow in Optical Communication Center, Beijing Univ. of Posts and Telecommunications, where he worked in the area of high-speed optical networks and all-optical signal processing. Currently, he is an Associate Prof. at the Key Lab. of Optical Communication and Lightwave Technology of MOE, Beijing Univ. of Posts and Telecommunications. His research interests include optical packet/burst switching networks, network architecture and simulation, all optical signal processing, high-speed optical transmission system, nonlinear fiber optics and high-speed opto-electronic devices.

## Potential Labeling Schemes for High Speed OLS Networks



**Hongwei Chen,**  
Tsinghua Univ. (China)

*Biography:* Hongwei Chen was born in Inner Mongolia, China, in 1979. He received the B.E. degree and Ph.D degree in electronic engineering from Tsinghua Univ., Beijing, China, in 2001 and 2006 respectively. He is currently in the faculty of the Dept. of Electronic Engineering, Tsinghua Univ.. His current areas of interest are high-speed optical communications and optical packet switching networks. Dr. Chen got the Best Student Paper Award of APOC 2004 and was a sub-committee member of APOC2005, APOC2007 and CLEO-PR2007.

## Recent Advances in Orthogonal Modulation Optical Labeling



**Nan Chi,**  
Huazhong Univ. of Science and  
Technology (China)

*Biography:* Nan Chi was born in Liaoning, China on March 3, 1974. She received the B.S. degree and Ph.D degree in electrical engineering from Beijing Univ. of Posts and Telecommunications, Beijing, China in 1996 and 2001, respectively.

From July 2001 to December 2004, she worked as assistant Prof. at the Research Center COM, Technical Univ. of Denmark, Lyngby, Denmark. From January 2005 to April 2006, she was a research associate at the Univ. of Bristol, Bristol, United Kingdom. Since June 2006, she joined Wuhan National Lab. for Optoelectronics, Huazhong Univ. of Science and Technology, where she worked as a full Prof.. She is the author or co-author of more than 100 papers and co-inventor of two United States patents. Her research interests are in the area of optical packet/burst switching, all-optical processing and advanced modulation formats.



# Thursday Afternoon Workshop

## Optical Wireless Access Networks

Nov 1, 2007 (Thursday)

Room 1

14.00 to 17.00

The Asia-Pacific Optical Communications Conference 2007 in Wuhan, China, invites contributions to a Workshop in the area of the Convergence of Optical Wireless Access Networks.

SCOPE: The workshop will focus on technologies, networks, and sub-systems for the convergence of wireless and wired optical networks. Radio over Fiber transmission and technologies, electro-optical upconversion and millimeter-wave generation techniques, RF front-end design and implementation, applications and system demonstrations of optical wireless access networks, techniques for very high data rate transmission (>1 Gb/s) over fiber-wireless systems, and related topics will be discussed.

- Radio-over-fiber network architectures
- Integration radio-over-fiber with WDM-PON system
- Advanced components for radio-over-fiber systems
- Optical millimeter-wave generation and demodulation techniques
- Quality of service in radio-over-fiber system
- All-optical frequency mixing and signal processing techniques
- Advanced modulation formats in radio-over-fiber system
- Coding and protection techniques for high bit rate wireless links
- Protocol design for optical wireless access networks
- UWB radio over fiber technologies
- Free space optical wireless access systems
- IPTV and HDTV over optical wireless
- Advancements of WiFi and WiMax for fixed-wireless in metro & access networks
- Applications of radio-over-fiber technique in new areas other than in telecommunication

For more information please contact Co-Chairs: Gee-Kung Chang ([gkchang@ece.gatech.edu](mailto:gkchang@ece.gatech.edu)) and Michael Sauer ([sauerm@corning.com](mailto:sauerm@corning.com))

## Tentative Workshop Program:

14.00: Welcome

14.15 to 15.40: Invited talks

## Title to be announced



**Gee Kung Chang,**  
Georgia Institute of Technology  
(USA)

*Biography:* Prof. G. K. Chang earned his bachelor degree in Physics from National Tsinghua Univ. in Taiwan in 1969, and his doctoral degree from the Univ. of California, Riverside, in 1976. He spent the following two years doing postdoctoral research in experimental electron/photon physics at Rutgers and Cornell Univ.. Dr. Chang spent the next 23 years within the Bell Systems in New Jersey—Bell Labs, Bellcore, and Telcordia Technologies where he served in various capacities including Director of the Optical Networking Systems and Testbed, Director of the Optical System Integration and Network Interoperability, and finally, Executive Director and Chief Scientist of the Optical Internet Research Group. Prior to joining Georgia Tech, he served as Vice President and Chief Technology Strategist of OpNext, Inc., in charge of technology planning and product strategy for advanced optical networking components.

Dr. Chang has been granted twenty-eight patents in the area of optoelectronic devices, high speed integrated circuits, telecommunication switching components and systems, WDM optical networking elements and systems, multiwavelength optical networks, optical network security, and optical label switching routers. He has co-authored over 130 journal and conference papers.

## Enabling Technologies for Super Broad-band Optical Wireless Systems



**Jianjun Yu,**  
NEC Labs America (USA)

*Biography:* Jianjun Yu (M'03–SM'04) received the B.S. degree in optics from Xiangtan University, Xiangtan, China, in September 1990 and the M. E. and Ph. D. degrees in optical communications from the Beijing University of Posts and Telecommunications, Beijing, China, in September 1990, April 1996, and January 1999, respectively.

From June 1999 to January 2001, he worked at the Research Center COM, Technical University of Denmark, Lyngby, Denmark, as an Assistant Research Professor. From February 2001 to December 2002, he worked for Lucent Technologies and Agere Systems, New Jersey, USA, as a member of the technical staff. He joined in the Georgia Institute of Technology, Atlanta, GA, in January 2003, where he was a Research Engineer II and served as the Director of the Optical Network Laboratory. He is currently a member of the technical staff with the NEC Laboratories America, Princeton, NJ. He is also an Adjunct Professor at the Georgia Institute of Technology and the Beijing University of Posts and Telecommunications. As the first author, he has more than 90 publications in prestigious journals and conferences.

## SOA-Based All-Optical Frequency Conversion Techniques for RoF Applications



**Jong-In Song,**  
Guangzhou Institute of Technology  
(South Korea)

*Biography:* Jong-In Song received the B.S. degree from Seoul National University in electronics engineering in 1980 and the M.S. degree from Korea Advanced Institute of Science and Technology in electronics engineering in 1982 and the Ph. D. degree from Columbia University, NY, in electrical and electronics engineering in 1990. From 1986 to 1990 he worked as a graduate research assistant at the Center for Telecommunications Research, where he pioneered high-performance GaAs/AlGaAs two dimensional electron gas (2DEG) charge coupled device research for microwave and infrared imaging applications. He joined the Electronics Science and Technology division at Bellcore, where he worked primary on the development of microwave transistors including GaInP/GaAs, InAlAs/InGaAs, InP/InGaAs HBTs and their application to MMICs from 1990 to 1994. He was also involved in the research on the MMICs for phase arrayed antenna T/R modules that incorporate InP/InGaAs HBTs for SSPA and InAlAs/InGaAs HEMTs for LNA monolithically. He joined Gwangju Institute of Science and Technology (GIST) in 1994 and is currently a professor in the department of information and communications. His current research interests include millimeter-wave over fiber (MMoF) for broadband wireless access and distributed sensor network. He is currently the director of the Center for Hybrid Optical Access Network supported by the Ministry of Information and Communications and the director of the Center for Distributed Sensor Network supported by the Ministry of Science and Technology.

## Emerging Optical Wireless Architectures and Standards

**Sudhir Dixit,** Nokia (USA)

15.40 to 16.10: Coffee break

16.10 to 17.00: Invited talks

## Short-Range Fiber-Radio Links with VCSELs



**Michael Sauer,**  
Corning, Inc. (USA)

*Biography:* Dr. Michael Sauer is a Research Associate at the Science and Technology division of Corning Incorporated in Corning, New York, where he is responsible for high-speed optical networks and communication research. His interests include fiber-wireless system design, high-speed fiber-optic transmission systems, digital signal processing techniques and modulation formats for high data rate systems, signal conditioning with fiber-based components, optical network architectures, and optical packet switching. Prior to joining Corning in 2001, he was a Research Scientist at the Communications Laboratory of Dresden University of Technology. His research areas included fiber Bragg gratings, generation and transmission of millimeter-wave signals, and architectures of millimeter-wave communications systems. He received a Dr.-Ing. (Ph.D.) degree in electrical engineering from Dresden University of Technology, Germany, in 2000. Dr. Sauer is member of the IEEE Lasers and Electro-Optics Society and the IEEE Communications Society.

## Overcoming Impairments in Hybrid Fiber-Wireless Links



**Christina Lim,**  
Univ. of Melbourne (Australia)

*Biography:* Christina Lim received the B.E. (First Class Hons) and Ph.D. degrees in Electrical and Electronic Engineering from the University of Melbourne, Australia in 1995 and 2000, respectively. In 1999, she joined the Photonics Research Laboratory (a member of the Australian Photonics Cooperative Research Centre) at the University of Melbourne. She is currently a Senior Research Fellow with the ARC Special Research Centre for Ultra-Broadband Information Networks (CUBIN), Department of Electrical and Electronic Engineering, The University of Melbourne. Dr Lim was one of the recipients of the 1999 IEEE Lasers and Electro-Optics Society (IEEE LEOS) Graduate Student Fellowship and also the recipient of the 2004 Australian Research Council Australian Research Fellowship.

## Recent Progress on Radio-over-Fiber Study in I<sup>2</sup>R of Singapore



**Yong-Xin Guo,**  
Institute of Infocomm Research  
(Singapore)

*Biography:* Yong-Xin Guo received the Ph.D. degree from City University of Hong Kong in electronic engineering in 2001. Since then, he has been with the Institute for Infocomm Research, Singapore, now as a Research Scientist. He also holds appointments of Guest Professor of Nanjing University of Science and Technology and Adjunct Assistant Professor at the National University of Singapore. He has published over 100 technical papers in international journals and conference proceedings. His publications have been cited by others over 200 times. He holds one China Patent and one US patent. He is a Senior Member of IEEE. His current research interests include radio-over-fiber technology, microwave and millimeter-wave circuits, LTCC passives and modules, microstrip antennas and dielectric resonator antennas.

## Ultra Wide Band over Fiber Transparent Architectures for High Bit-Rate in-Building Networks



**Anna Pizzinat,**  
France Telecom R&D (France)

*Biography:* Anna Pizzinat graduated with honours in Electronic Engineering in 1999 and obtained the Ph.D. degree in 2003 at the University of Padova, Italy. In 2001 she was at Pirelli Labs (Milan, Italy) working on the laboratory and field realisation of a 4x40 Gbit/s system. In 2002 she was at University of Maryland Baltimore County to study the effects of random birefringence on spun fibres. From 2003 to 2005 she was responsible for the Photonics laboratory at University of Padova. There she was involved in laboratory courses and her research was focused on polarisation properties of single mode fibers. She participated in international research projects (IST-ACTS Esther, IST Atlas, Italy-Korea Scientific Prot. 2003-2005) and contributed to the ITU-T study group 15 and IEC SC86A. Since 2006 she joined France Telecom R&D where she is currently engaged in research on the next generation optical access networks and in particular radio over fibre systems. She is author of approximately 40 scientific papers on international journals and international conferences, and 2 international patents. She is referee for Phot. Technol. Lett., J. of Lightwave Technol. and Optics Comm.

Two complimentary courses will be given by Prof. Connie Chang-Hasnain of Univ. of California/Berkeley (USA) and Dr. Ming-Jun Li of Corning Inc. (USA) on Thursday afternoon, 1 November. Course participants only need to pay the cost of class notes to learn compelling, current hot (research/application) topics that are most likely not discussed in university class rooms.

### Thursday, 1 November 2007

14.00 to 15.30 • Room 2

#### Slow and Fast Light in Semiconductor Nanostructures

The ability to manipulate the speed of light has recently become one of the most exciting emergent topics in optics. There are several experimental demonstrations showing the capability to slow down light more than six orders of magnitude in a variety of media, ranging from atomic vapor, solid state crystal, to semiconductors. These results have led to intensive research into new materials, devices, and system studies that examine their impact to new applications. It is believed that we are on the verge of a dramatic change in the way we envision and construct communication, processing and control systems.

One direct application of slow and fast light devices is in the area of communications. One grand challenge remaining in information technology today is to store and buffer optical signals directly in optical format. As such, optical signals must be converted to electronic signals to route, switch or be processed. This resulted in significant latencies and traffic congestions in current networks. In addition, keeping the data in optical domain during the routing process can greatly reduce the power, complexity and size of the routers. To this end, a controllable optical delay line can effectively function as an optical buffer, and the storage is proportional to the variability of the group velocity. In addition to optical buffers, slow and fast light devices can be used as tunable true-time delay elements in microwave photonics, which are important for remotely controlling phased array antenna. Other novel applications include nonlinear optics, optical signal processing, and quantum information processing.

There are various approaches that can be used to vary the optical group velocity. Ultra slow or fast group velocity may result from a large material dispersion, waveguide dispersion, or both. In this course, we provide a review of recent progress of slow and fast light using semiconductor devices. Specifically, we will discuss results obtained using semiconductor quantum-well/quantum-dot absorber and optical amplifiers. Slow and fast light are controllable electrically by changing the bias current or voltage as well as optically by changing the pump laser intensity and wavelength. Delay-bandwidth trade-off and other figures of merits are analyzed.



*Instructor:*  
**Connie Chang-Hasnain,**  
Univ. of California/Berkeley (USA)

Connie Chang-Hasnain is the John R. Whinnery Chair Professor in the Electrical Engineering and Computer Sciences Department at the University of California, Berkeley, where she also serves as Director of the Center for Optoelectronic Nanostructured Semiconductor Technologies (CONSRT) and Chair of the Nanoscale Science and Engineering Graduate Group. Prior to joining the Berkeley faculty, Dr. Chang-Hasnain was a member of the technical staff at Bellcore (1987–1992) and an Assistant Professor of Electrical Engineering at Stanford University (1992–1996).

*Courses are complimentary, however a fee of \$5 each to cover the cost of course notes is required and will be collected at registration.*

Prof. Chang-Hasnain's research interests span a wide range from devices to materials and physics. They include vertical cavity surface emitting lasers, micro-electro-mechanically tunable lasers, optical injection-locked high-speed lasers, slow and fast light, and nano-optoelectronic devices. Professor Chang-Hasnain was named a Presidential Faculty Fellow, Packard Fellow, and Sloan Research Fellow. She was awarded with an IEEE LEOS Distinguished Lecturer Award, IEEE LEOS William Streifer Award, the Gilbreth Lecturer Award from National Academy of Engineering, and the 2007 Nick Holonyak Jr. Award from the Optical Society of America. She is a Fellow of the IEEE, OSA and IEE, and an Honorary Member of A.F. Ioffe Institute.

#### Microstructured Optical Fibers and Applications

Microstructured optical fibers including photonic crystal optical fibers and photonic bandgap fibers represent two new paradigms for manipulating light. These novel structures offer new optical properties and promise a number of potential applications. This short course intends to give an introduction to microstructured fibers to students. First, two guiding mechanisms, i.e. index-guiding and photonic bandgap guiding will be explained and compared with traditional optical fibers. Next, numerical methods analyze fiber propagation properties such as propagation constant constants, losses, and mode field distribution will be reviewed. Then, manufacturing methods for microstructured fibers will be presented. Finally, optical properties and applications of microstructured fiber will be discussed, including endlessly single-mode fibers, large mode area fibers, high numerical aperture fibers, birefringent and polarizing fibers, and fibers for nonlinear applications.

16.00 to 17.30 • Room 2



*Instructor:*  
**Ming-Jun Li,**  
Corning, Inc. (USA)

Dr. Ming-Jun Li received the B.Sc. degree from the Beijing Institute of Technology, China, the M.Sc. degree from University of Franche-Comté, France, and the Ph.D. degree from University of Nice, France. Dr. Li has been with Corning Incorporated for 17 years and is currently a Research Fellow in Optical Physics and Network Technology Research Group. His research work is related to new optical fibers for different applications. He holds 30 U.S. patents and has published one book chapter and authored and co-authored over 120 technical papers in journals and conferences.

Dr. Li received the 1998 French National Prize on Guidedwave Optics for his work on Cerenkov second harmonic generation. He also received 2005 Stookey Award for exploratory research at Corning Incorporated. He has served as an Associate Editor for the Journal of Lightwave Technology from 1999 to 2004. He is currently a technical committee member for OFC, ITCOM and a lead subcommittee chair for APOC.

## Passive Components and Fiber-Based Devices (APOC01)

Friday-Monday 2-5 November 2007  
 Proceedings of SPIE Vol. 6781

## Optoelectronic Materials and Devices (APOC02)

Friday-Monday 2-5 November 2007  
 Proceedings of SPIE Vol. 6782

### Friday 2 November

Room 1

14.00 to 16.00

#### SESSION 1a Nonlinear Optical Devices

*Chair: Jianping Chen,*  
 Shanghai Jiao Tong Univ.  
 (China)

14.00: **Ultrafast all-optical photonic circuits using nonlinear optics (Tutorial)** (*Invited Paper*),



B. J. Eggleton,  
 The Univ. of Sydney  
 (Australia)  
 [6781-01]

15.00: **Experimental demonstration of widely-tunable wavelength conversion between ps-pulses based on four-wave mixing in cascaded highly nonlinear fiber,**  
 H. Cao, Foshan Univ. (China); J. Sun, Huazhong Univ. of Science and Technology (China); W. Chen, Foshan Univ. (China); D. X. Huang, Huazhong Univ. of Science and Technology (China) . . . . . [6781-02]

15.15: **Improvement of four-wave mixing efficiency in DSF by clock pumping,**  
 A. Yang, Beijing Institute of Technology (China) . . . . . [6781-03]

15.30: **Supercontinuum generation in optical fibers** (*Invited Paper*),



S. Li, A. B. Ruffin,  
 D. V. Kuksenkov,  
 M. Li, D. A. Nolan, Corning Inc. (USA)  
 [6781-04]

Coffee/  
 Tea Break . 16.00 to 16.30

Room 2

14.00 to 16.00

#### SESSION 1b Fiber Sensors I

*Chair: Yun-Jiang Rao,*  
 Univ. of Electronic Science and Technology of China  
 (China)

14.00: **Minute stress pressure fiber sensor based on clock recovery technology,** H. Chen, D. Tao, X. Ma, Yangtze Univ. (China) . . . [6781-10]

14.15: **A fiber optic hydrophone with an acoustic filter,** W. Zefeng, Y. M. Hu, National Univ. of Defense Technology (China) . . . . . [6781-11]

14.30: **A dissolved oxygen sensor based on ruthenium fluorescence and U-shaped plastic optical fiber,** F. Chu, Shanghai Institute of Optics and Fine Mechanics (China) . . . . . [6781-12]

14.45: **Application of high birefringence fiber Sagnac loop mirror in temperature sensing,** B. Liu, G. Kai, S. Yuan, Nankai Univ. (China) . . . . . [6781-13]

15.00: **Fiber optics in high-resolution biophotonic imaging** (*Invited Paper*), X. Li, Univ. of Washington (USA) . . . . . [6781-14]

15.30: **Novel force sensor based on a high-birefringence fiber loop mirror and a freely-supported beam,** S. Li, Q. Zhao, B. Dong, T. Liao, Y. Miao, X. Zeng, Nankai Univ. (China) . . . [6781-15]

15.45: **Effect of wavelength shift of light source in the fiber coupler evanescent wave temperature sensor system,** M. Wang, F. Pang, T. Wang, Shanghai Univ. (China) . . . . . [6781-16]


Coffee/  
 Tea Break 16.00 to 16.30

Room 3

14.00 to 16.00

#### SESSION 1 Silicon Photonics Symposium

*Chair: Yoshiaki Nakano,*  
 The Univ. of Tokyo (Japan)

14.00: **Si photonics: past, present, and future (Tutorial)** (*Invited Paper*),  
 K. Wada,  
 The Univ. of Tokyo (Japan)  
 [6782-01]

15.00: **Micro/nano scale silicon-based photonic devices** (*Invited Paper*),  
 Z. J. Zhou,  
 Huazhong Univ. of Science and Technology (China) and Georgia Institute of Technology (USA) [6782-02]

15.30: **Ge-nanoclusters doped silica-on-silicon waveguides** (*Invited Paper*),  
 H. Ou, T. P. Rørdam, K. Rottwitz, F. Grumsen, A. Horsewell, R. W. Berg, Danmarks Tekniske Univ. (Denmark) . [6782-03]

Coffee/  
 Tea Break 16.00 to 16.30



# Optical Transmission, Switching, and Subsystems (APOC03)

Friday-Monday 2-5 November 2007  
Proceedings of SPIE Vol. 6783

# Network Architectures, Management, and Applications (APOC04)

Friday-Monday 2-5 November 2007  
Proceedings of SPIE Vol. 6783

## Friday 2 November

Room 4

14.00 to 16.00

### SESSION 1a WDM Networks I

Chair: **Masatoshi Suzuki**,  
KDDI R&D Labs., Inc.  
(Japan)

14.00: **Prospects and challenges of hierarchical optical networks** (*Invited Paper*),  
K. Sato, Nagoya Univ. (Japan) [6783-01]



14.30: **CARRIOCAS project: An experimental high bit rate optical network tailored for computing and data intensive distributed applications** (*Invited Paper*),



O. Audouin, O. Leclerc, Alcatel (France); A. Cavalli, Institut National des Télécommunications (France); C. Mouton, EDF (France); J. Oksman, Supélec (France); D. Rodrigues, Commissariat à l'Energie Atomique (France); L. Thual, France Télécom (France) . . . . . [6783-02]

15.00: **A novel priority-based wavelength assignment algorithm for dynamic traffic in WDM networks**, Z. Le, M. Lu, Zhejiang Univ. of Technology (China) . . . . . [6783-03]

15.15: **Multicast routing algorithms in hierarchical intelligent optical networks**, L. Kong, Beijing Univ. of Posts and Telecommunications (USA) . . . . . [6783-04]

15.30: **A novel topology-based integrated routing algorithm for IP/WDM traffic grooming**, Z. Yang, G. Lin, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . [6783-05]

15.45: **A novel restoration mechanism for control plane in the ASON network**, H. Bai, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-06]

Room 5

14.00 to 15.45

### SESSION 1b Transmission Systems

Chair: **Yutaka Miyamoto**,  
Nippon Telegraph and Telephone Corp. (Japan)

14.00: **Performance comparison of modulation format for 100-Gb/s transmission**, N. Takeda, I. Morita, H. Tanaka, KDDI R&D Labs., Inc. (Japan) . . . . [6783-13]

14.15: **Channel pre-emphasis equalization for 40x40Gbit/s WDM system**, A. Yang, Beijing Institute of Technology (China) . . . . . [6783-14]

14.30: **40Gbps NRZ transmitting over 500km based on broadband dispersion compensation CFBG**, J. Cao, M. Wang, S. Jian, Beijing Jiaotong Univ. (China) . . . [6783-16]

14.45: **Optical systems at 40Gb/s and beyond** (*Invited Paper*),



K. Roberts, Nortel Networks Ltd. (Canada) [6783-17]

15.15: **Next generation terabit-class transmission systems** (*Invited Paper*), J. Antona, Alcatel Alsthom Recherche (France) . . . . . [6783-18]

Coffee/  
Tea Break 15.45 to 16.30

Room 6

14.30 to 16.00

### SESSION 1 Network Evolution Symposium

Chair: **Gee-Kung Chang**,  
Georgia Institute of Technology (USA)

14.30: **Multi-layer networking: evolution to packet transport networks** (*Invited Paper*),  
G. Grammel, V. Duarte, Alcatel-Lucent Deutschland AG (Germany) [6784-02]



15.00: **Fixed mobile convergence (FMC) architectures for broadband access: integration of EPON and WiMax** (*Invited Paper*), G. Shen, R. S. Tucker, The Univ. of Melbourne (Australia) . . . . [6784-03]

15.30: **How does the all-IP application change the fundamentals of the transport networks and product architecture?** (*Invited Paper*), J. Pan, Photonic Bridges, Inc. (China) . . . . . [6784-04]

Coffee/  
Tea Break 16.00 to 16.30



**Friday 2 November**

**Room 1**

16.30 to 18.30

**SESSION 2a  
High Power Fiber Lasers**

*Chair: Satoki Kawanishi, Nippon Telegraph and Telephone Corp. (Japan)*

**16.30: Recent advances in high power fiber lasers at 1.06 microns and eyesafe wavelengths (Invited Paper),**



A. Carter, Nufern (USA) [6781-05]

**17.00: Bend distortion in large-mode-area amplifier fiber design (Invited Paper), J. M. Fini, OFS Fitel, LLC (USA) . . . . . [6781-06]**

**17.30: High-efficiency ytterbium-doped photonic crystal fiber laser of all-fiber configurations, W. Chen, Huazhong Univ. of Science and Technology (China); J. Li, FiberHome Telecommunication Technologies Co., Ltd. (China); N. Dai, P. Lu, Huazhong Univ. of Science and Technology (China) . . . . . [6781-07]**

**17.45: The effects of co-doping GeO2 and Al3+ on ytterbium-doped fiber, L. Wang, F. Yan, Y. Fu, Y. Li, T. Gong, P. Liu, Y. Liu, S. Jian, Beijing Jiaotong Univ. (China) . . . [6781-08]**

**18.00: Suppressing nonlinear effects for power scaling of high-power fiber lasers (Invited Paper),**



A. Liu, Corning Inc. (USA) [6781-09]

**Room 2**

16.30 to 18.30

**SESSION 2b  
Fiber and Waveguide Gratings**

*Chair: Xiaofeng Jin, Zhejiang Univ. (China)*

**16.30: The novel fiber devices with laser machining technique (Invited Paper),**



W. Shin, Kwangju Institute of Science and Technology (South Korea) and Advanced Photonics Research Institute (South Korea) . . . . . [6781-17]

**17.00: An approach to improve the switch performance of the  $\lambda/4$  phase-shifted grating during practical application process, J. Chen, G. Xia, J. Tian, X. Tang, Z. Wu, Southwest Univ. (China) . . . [6781-18]**

**17.15: Analysis for transmission characteristics of multi-cavity fiber Fabry-Perot filters based on fiber Bragg gratings, O. Xu, S. Lu, S. Feng, X. Dong, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6781-19]**

**17.30: Special long-period fiber grating devices (Invited Paper),**



Y. Rao, Univ. of Electronic Science and Technology of China (China); T. Zhu, Chongqing Univ. (China) . . . . . [6781-20]

**18.00: Fiber Bragg grating as optical filter in satellites laser communication, C. Wen, The PLA Univ. of Science and Technology (China) . . . . . [6781-21]**

**18.15: A novel complex long-period-grating-assisted coupler, X. Dong, S. Lu, S. Feng, O. Xu, Beijing Jiaotong Univ. (China) . . . . . [6781-22]**

**Room 3**

16.30 to 18.30

**SESSION 2  
All-Optical Processing**

*Chair: Yong Liu, Univ. of Electronic Science and Technology of China (China)*

**16.30: Photonic buffer memory based on polarization bistability in VCSELs (Invited Paper),**



H. Kawaguchi, Nara Institute of Science and Technology (Japan) [6782-04]

**17.00: Bistable micro semiconductor ring lasers (Invited Paper),**



S. Yu, Univ. of Bristol (United Kingdom) [6782-05]

**17.30: Ultrafast optical processing with chirping semiconductor optical amplifiers, J. Wang, A. Maitra, W. Freude, J. Leuthold, Univ. Karlsruhe (Germany) . . . . . [6782-06]**

**17.45: 40Gb/s all-optical digital encoder/comparator based on semiconductor optical amplifiers, J. Dong, Y. Wang, X. Zhang, Huazhong Univ. of Science and Technology (China) . . . . . [6782-07]**

**18.00: 40Gb/s all-optical AND gate based on cascaded SOAs and optical filtering, J. Xu, X. Zhang, Huazhong Univ. of Science and Technology (China) . . . . . [6782-08]**

**18.15: Analysis of femtosecond self-polarization modulation in semiconductor optical amplifier, M. Liu, A. Yang, Y. Sun, Beijing Institute of Technology (China) . . . . . [6782-09]**

## Conference 6783

Optical Transmission, Switching, and Subsystems (APOC03)

## Conference 6784

Network Architectures, Management, and Applications (APOC04)

### Friday 2 November


#### Room 4

16.30 to 18.30

#### SESSION 2a WDM Networks II

Chair: **Ken-ichi Sato**, Nagoya Univ. (Japan)

#### 16.30: IP/optical network for FMBC services

(Invited Paper),  
 M. Suzuki, KDDI R&D Labs., Inc. (Japan) [6783-07]

17.00: **Tutorial on optical metropolitan networks: packet format, MAC protocols and quality of service** (Invited Paper),  
T. Atmaca, V. H. Nguyen, D. Popa, Institut National des Télécommunications (France) . . . . . [6783-08]

17.30: **A novel load balancing strategy in wavelength-routed optical network**, Z. Le, M. Fu, Zhejiang Univ. of Technology (China) . . . . . [6783-09]

17.45: **A novel integrated routing algorithm in IP/GMPLS over WDM networks**, J. Huang, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6783-10]

18.00: **A novel routing and wavelength assignment algorithm for multicast in optical grid networks**, J. Qiao, Beijing Univ. of Posts and Telecommunications (China); B. Liu, Tsinghua Univ. (China); Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-11]

18.15: **A novel approach to shared-path protection for WDM network**, R. Yang, H. Wang, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-12]

#### Room 5

16.30 to 18.30

#### SESSION 2a Carrier Ethernet

Chair: **Guangzhi Li**, AT&T Labs. Research (USA)

16.30: **Next generation 100Gb/s ethernet technologies** (Invited Paper), G. Chang, A. Chowdhury, J. Yu, Georgia Institute of Technology (USA); R. Younce, Tellabs, Inc. (USA) . . . . . [6784-09]

17.00: **Architectures and technologies for transport ethernet in metro and core optical networks** (Invited Paper),  
 A. Autenrieth, Nokia Siemens Networks (USA) . [6784-10]

17.30: **Static task scheduling based on ethernet virtual connections with varied granularities in ethernet over SDH networks**, L. Shi, W. Sun, G. Xie, Y. Jin, W. Guo, W. Hu, Shanghai Jiao Tong Univ. (China) . . . . . [6784-11]

17.45: **Research on the reliability of carrier ethernet**, X. Wu, Huazhong Univ. of Science and Technology (China) . . . . . [6784-12]

18.00: **The GMPLS-based span-ring transmission mechanism for multiple resilient packet ring**, X. Wu, Huazhong Univ. of Science and Technology (China) . . . . . [6784-13]


#### Room 6

16.30 to 18.00

#### SESSION 2b Network Case Study Symposium

Chair: **Jianli Wang**, Wuhan Research Institute of Posts and Telecommunications (China)

16.30: **Optical networking for mainstream research and education networks** (Invited Paper), R. Nuijts, SURFnet b.v. (Netherlands) . . . [6784-05]

17.00: **SINET3: advanced optical and IP hybrid network** (Invited Paper),  
 S. Urushidani, National Institute of Informatics (Japan) [6784-07]

17.30: **Towards a future access network: the PIEMAN, MUSE and ADAM projects** (Invited Paper), H. Rohde, C. Xie, Nokia Siemens Networks GmbH & Co. KG (Germany); S. Randel, Siemens AG (Germany); K. Kloppe, Nokia Siemens Networks GmbH & Co. KG (Germany) . . . . . [6784-08]

**Saturday 3 November**

**Room 1**

8.30 to 10.00

**SESSION 3a  
Best Student Paper Session**

*Chair: Ming-Jun Li, Corning Inc. (USA)*

08.30: **Novel design of m-profile ytterbium-doped fibers prepared for high-power fiber lasers**, J. Li, X. Mao, J. Peng, L. Liu, H. Wei, Y. Fu, T. G. Ning, S. Jian, Beijing Jiaotong Univ. (China) . . . [6781-23]

08.45: **Design of highly nonlinear photonic crystal fibers with flattened dispersion over S+C+L wavelength bands**, H. Fang, S. Lou, T. Guo, L. Yao, H. Li, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6781-24]

09.00: **Modal noise investigation in multimode polymer waveguides**, J. Beals IV, N. Bamiedakis, R. V. Pentyl, I. H. White, Univ. of Cambridge (United Kingdom); J. V. DeGroot, Jr., T. Clapp, Dow Corning Corp. (USA) . . . . [6781-25]

09.15: **Influence of FBG sidelobe on Bragg grating-based Q-switched fiber laser**, X. Cheng, P. Shum, Nanyang Technological Univ. (Singapore); J. Zhang, Institute of Microelectronics (Singapore); M. L. Tang, Nanyang Technological Univ. (Singapore) [6781-26]

09.30: **Submicron-diameter silica taper with a Bragg multilayer structure**, L. Ma, Y. Matsuura, Tohoku Univ. (Japan) . . . . . [6781-27]

09.45: **Dual-wavelength packets buffering in DLOB based on SOA**, C. Tian, C. Wu, Beijing Jiaotong Univ. (China) . . . . . [6781-28]

Coffee/  
Tea Break 10.00 to 10.30

**Room 2**

8.30 to 10.00

**SESSION 3b  
Raman Amplifiers**

*Chair: Ian H. White, Univ. of Cambridge (United Kingdom)*

08.30: **Noise in distributed Raman amplification** (*Invited Paper*),



P. B. Gallion, J. H. Zhou, Ecole Nationale Supérieure des Télécommunications (France) [6781-40]

09.00: **Gain flatness performance of backward-pumped distributed fiber Raman amplifiers with pump wavelengths in different arrangement**, J. Li, X. Mao, J. Peng, L. Liu, H. Wei, T. G. Ning, Z. Tong, S. Jian, Beijing Jiaotong Univ. (China) . . . [6781-41]

09.15: **Applications of dispersion-compensating Raman amplifiers** (*Invited Paper*), R. Kjær, Danmarks Tekniske Univ. (Denmark) . . . . [6781-42]

09.45: **Parameters optimization of a high efficiency discrete Raman fiber amplifier**, L. Dou, Peking Univ. (China); S. Liaw, National Taiwan Univ. of Science and Technology (Taiwan); M. Li, Peking Univ. (China); Y. Lin, National Taiwan Univ. of Science and Technology (Taiwan); A. Xu, Peking Univ. (China) . . . . . [6781-43]

Coffee/  
Tea Break 10.00 to 10.30

**Room 3**

8.45 to 10.00

**SESSION 2  
Best Student Paper Session**

*Chair: Yoshiaki Nakano, The Univ. of Tokyo (Japan)*

08.45: **1.55 μm extremely efficient and polarization insensitive tunable Mach-Zehnder wavelength duplexer based on an InGaAsP/InP ridge waveguide structure**, L. Xu, X. J. M. Leijtens, M. J. H. Sander-Jochem, R. Noetzel, M. K. Smit, Technische Univ. Eindhoven (Netherlands) . . . [6782-11]

09.00: **Ultrafast multifunctional all-optical logic gates based on single semiconductor optical amplifier**, J. Dong, X. Zhang, Y. Wang, D. X. Huang, Huazhong Univ. of Science and Technology (China) . . . . . [6782-12]

09.15: **Electrooptic properties of InGaAsP asymmetric double quantum wells: enhanced slope efficiency in waveguide electroabsorption modulators**, D. K. Kim, D. S. Citrin, Georgia Institute of Technology (USA) . . . . . [6782-13]

09.30: **The spectral feature analysis of semiconductor thin disk laser**, C. He, L. Qin, J. Li, X. Liang, Y. Ning II, L. Wang, Changchun Institute of Optics, Fine Mechanics and Physics (China) . . . . . [6782-14]

09.45: **Variable wavelength conversion based on fan-out grating in QPM-LN**, Y. Wang, Y. Huang, Z. Weng, H. Yan, R. Ye, J. Zhu, Xiamen Univ. (China) . . . . . [6782-15]

Coffee/  
Tea Break 10.00 to 10.30

Saturday 3 November

Room 4

8.30 to 10.00

**SESSION 3a**  
**Best Student Paper Session**

*Chairs:* **Dominique Chiaroni**, Alcatel-Lucent R&I (France); **Chang-Soo Park**, Gwangju Institute of Science and Technology (South Korea)

08.30: **SBS based slow-light performance comparison of 10-Gb/s NRZ, PSBT and DPSK signals**, L. Yi, Y. Jaouen, Ecole Nationale Supérieure des Télécommunications (France); W. Hu, Y. Su, Shanghai Jiao Tong Univ. (China); P. B. Gallion, Ecole Nationale Supérieure des Télécommunications (France) . . . . . [6783-19]

08.45: **Low-cost multimode fibre gigabit ethernet using Manchester encoded signal for an improved transmission performance**, C. H. Kwok, R. V. Penty, I. H. White, Univ. of Cambridge (United Kingdom) . . . . . [6783-20]

09.00: **Traffic performance evaluation of optical label switching nodes with optical layer multicast**, N. Yan, A. Alcaide-Garcia, E. Tangdiongga, A. M. J. Koonen, Technische Univ. Eindhoven (Netherlands) . . . [6783-21]

09.15: **Are MLSE and nonlinear equalization required for optical single sideband modulation?**, C. Xia, W. Rosenkranz, Christian-Albrechts-Univ. zu Kiel (Germany) [6783-22]

09.30: **Theoretical and experimental research of clock recovery from transmitted NRZ data stream**, M. Chen, F. Zhang, J. Cao, Y. Chen, X. Qin, B. Lv, D. Lu, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6783-23]

09.45: **Performance of optical minimum-shift keying in 40Gbit/s WDM transmission system**, H. Chen, Shanghai Jiao Tong Univ. (China) . . . [6783-24]

Coffee/  
Tea Break 10.00 to 10.30

Room 5

8.30 to 10.00

**SESSION 3b**  
**Physical Effects**

*Chair:* **Ken-ichi Kitayama**, Osaka Univ. (Japan)

08.30: **Overview of important results concerning the application of optical phase conjugation to increase system robustness** (*Invited Paper*),



S. L. Jansen, KDDI R&D Labs., Inc. (Japan); D. van den Borne, Technische Univ.

Eindhoven (Netherlands); P. M. Krummrich, S. H. Spälder, Siemens AG (Germany);

H. Suche, W. Sohler, Univ. Paderborn (Germany); G. Khoe, H. de Waardt, Technische Univ. Eindhoven (Netherlands); I. Morita, H. Tanaka, KDDI R&D Labs., Inc. (Japan) . . . . . [6783-37]

09.00: **Propagation properties of self-similar pulses in normal-dispersion fiber amplifiers**, S. Li, W. Xu, F. Jie, W. Liu, South China Normal Univ. (China) . . . . . [6783-38]

09.15: **Understanding of timing jitter induced by IXPM in CFG compensating optical fiber transmission systems**, X. Qin, J. Cao, F. Zhang, B. Lv, D. Lu, M. Chen, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6783-39]

09.30: **Effect of gain spectral linewidth on chirp of 10 Gbit/s RZ data stream converted by inverse optical comb injected semiconductor optical amplifier**, K. Yu, National Chiao Tung Univ. (Taiwan); M. Lo, G. Lin, National Taiwan Univ. (Taiwan) . . . . . [6783-40]

09.45: **Effect of initial chirp on picosecond pulse breakup in the optical fiber in the presence of noise**, C. Deng, S. Wen, Hunan Univ. (China) . . . [6783-41]

Coffee/  
Tea Break 10.00 to 10.30

Room 6

8.30 to 10.00

**SESSION 3**  
**Best Student Paper Session**

*Chair:* **Jianli Wang**, Wuhan Research Institute of Posts and Telecommunications (China)

08.30: **Optical slotted circuit switched network: a bandwidth efficient alternative to wavelength-routed network**, Y. Li, M. Collier, Dublin City Univ. (Ireland) . . . . . [6784-14]

08.45: **A novel protection scheme for hybrid WDM/TDM PONs**, J. Chen, L. Wosinska, S. He, Kungliga Tekniska Högskolan (Sweden) . . . . . [6784-15]

09.00: **Experiment implementation of protocol interface between GMPLS and LOBS testbed**, P. Huang, W. Zhang, Beijing Univ. of Posts and Telecommunications (China); H. Guo, KDDI R&D Labs., Inc. (Japan); J. Wu, Beijing Univ. of Posts and Telecommunications (China); T. Tsuritani, T. Otani, M. Suzuki, KDDI R&D Labs., Inc. (Japan); J. Lin, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-16]

09.15: **Performance evaluation of a multi-granularity and multi-connectivity circuit switched network**, N. Guo, M. Xin, W. Sun, Y. Jin, W. Guo, W. Hu, Shanghai Jiao Tong Univ. (China) . . . . . [6784-17]

09.30: **An implementation of optical grid network architecture for data-intensive application based on OGSA**, D. Qu, Beijing Univ. of Posts and Telecommunications (China) . . . [6784-18]

09.45: **Multiple self-protected spanning-trees-based architecture for fast recovery and load balance in metro ethernet**, W. Chen, L. Zeng, Tsinghua Univ. (China) . . . . . [6784-19]

Coffee/  
Tea Break 10.00 to 10.30

**Room 1**

10.30 to 12.30

**SESSION 4a  
Microstructured  
Fibers**

*Chair: John M. Fini, OFS  
Fitel, LLC (USA)*

**10.30: Soft glass microstructured optical fibers: fundamentals, fabrication and device applications**

*(Invited Paper),*



T. M. Monro,  
The Univ. of  
Adelaide  
(Australia)  
[6781-29]

**11.00: An investigation of design, fabrication and measurement for photonic crystal fibers,**  
W. Tong, J. Luo, Q. Han,  
H. Wei, H. Wang, R. Matai,  
Yangtze Optical Fibre and  
Cable Co., Ltd.  
(China) . . . . . [6781-30]

**11.15: Fabrication and characteristics of high birefringence polymer photonic crystal fibers,**  
Y. Zhang, Baoji College of  
Arts and Science (China)  
and Xi'an Institute of  
Optics and Precision  
Mechanics  
(China) . . . . . [6781-31]

**11.30: Novel accesses to achieve selective filling in a photonic bandgap fiber,**  
J. Du, Y. Liu, Z. Wang,  
Q. Shi, Z. Liu, G. Kai,  
X. Dong, Nankai Univ.  
(China) . . . . . [6781-32]

**11.45: Experimental investigation of tunable all-solid photonic bandgap fiber coupler,**  
G. Ren, P. Shum, Nanyang  
Technological Univ.  
(Singapore) . . . . . [6781-33]

**12.00: Dual-concentric-core all-solid photonic bandgap fiber with large negative dispersion,**  
Q. Fang, G. Kai, Z. Wang,  
X. Dong, Nankai Univ.  
(China) . . . . . [6781-34]

**12.15: Hybrid guiding in liquid-crystal photonic crystal fibers,**  
J. Sun,  
C. Chan, N. Ni, Nanyang  
Technological Univ.  
(Singapore) . . . . . [6781-35]

Lunch Break 12.30 to 14.00

**Room 2**

10.30 to 12.15

**SESSION 4b  
Optical Components I**

*Chair: Hau P. Chan, City  
Univ. of Hong Kong (Hong  
Kong China)*

**10.30: Stresses analysis of MEMS scanning mirrors based on end-restrained single crystal silicon prismatic bar,**  
C. Mu, Shanghai Institute  
of Microsystem and  
Information Technology  
(China) . . . . . [6781-45]

**10.45: Cost-effective optical waveguide components for printed circuit applications**  
*(Invited Paper),* J. V.  
DeGroot, Jr., Dow Corning  
Corp. (USA) . . . . . [6781-46]

**11.15: Tunable frequency and angular photonic crystal filter,**  
Z. Cui,  
Beijing Univ. of Posts and  
Telecommunications  
(China) . . . . . [6781-47]

**11.30: Wavelength division demultiplexing with photonic crystal self-collimation interference,**  
Y. Wang,  
Y. Qiu, Fujian Normal Univ.  
(China); X. Chen, G. Lin,  
Minjiang Univ. (China);  
H. Hong, Fujian Normal  
Univ. (China) . . . . . [6781-48]

**11.45: Advances in polymer optical devices, circuits, components, and modules**  
*(Invited Paper),*



L. A. Eldada,  
DuPont  
Photonics  
Technologies  
(USA) . . . . . [6781-49]

Lunch Break 12.15 to 14.00

**Room 3**

10.30 to 12.30

**SESSION 4  
Photonic Integration**

*Chair: Nong Chen,  
ArchCom Technology Inc.  
USA (USA)*

**10.30: The advantages of PIC-based digital optical networks** *(Invited Paper),*



D. F. Welch,  
Infinaera (USA)  
[6782-16]

**11.00: A monolithic integrated dual-wavelength tunable photodetector based on a taper GaAs substrate,**  
J. Lv, Beijing Univ. of Posts  
and Telecommunications  
(China) . . . . . [6782-17]

**11.15: Multiplication characteristics of InP/InGaAs avalanche photodiodes with a thicker charge layer,**  
Y. Zhao, Huazhong Univ. of  
Science and Technology  
(China) . . . . . [6782-18]

**11.30: On the performance analysis and design of a novel shared-layer integrated device using RCE-p-i-n-PD/SHBT,**  
S. Zhou,  
Zhejiang Univ. of  
Technology (China);  
D. Xiong, H. Cui, Y. Chong,  
Beijing Univ. of Posts and  
Telecommunications  
(China); J. Gao, Institute  
of Semiconductors  
(China) . . . . . [6782-19]

**11.45: Study on the crosstalk of a novel monolithically-integrated optical transceiver for EPON,**  
Z. Huan, L. Wei,  
Wuhan National Lab. for  
Optoelectronics (China);  
L. Xun, McMaster Univ.  
(Canada) . . . . . [6782-20]

**12.00: InP-based optoelectronic components for all optical communication**  
*(Invited Paper),*



D. K. Oh, Y. S.  
Back,  
Electronics and  
Telecom-  
munications  
Research Institute (South  
Korea) . . . . . [6782-21]

Lunch Break 12.30 to 14.00

**Saturday 3 November**

Room 4

10.30 to 12.30

**SESSION 4a  
Modeling and System/  
Network Design**

*Chair: Michael J. O'Mahony, Univ. of Essex (United Kingdom)*

**10.30: Physical layer modeling of passive optical networks** (*Invited Paper*), J. K. Patel, Z. Huang, D. H. Richards, E. Ghillino, P. V. Mena, A. Panicker, RSoft Design Group, Inc. (USA) [6783-25]

**11.00: Architectural issues of the CANON concept** (*Invited Paper*), A. Stavdas, T. Orphanoudakis, C. Matrakidis, C. T. Politi, H. C. Lelligou, A. Drakos, J. D. Angelopoulos, Univ. of Peloponnese (Greece) . . . . . [6783-26]

**11.30: Group scheduling based on control-packet batch processing in optical burst switched networks**, C. Yuan, Peking Univ. (China) . . . [6783-27]

**11.45: A new proportional differentiated QoS scheme based on batch scheduling and preemption for optical burst switching network**, S. Huang, Chongqing Univ. of Posts and Telecommunications (China); X. Yang, Univ. of Electronic Science and Technology of China (China); Q. Chen, K. Long, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6783-28]

**12.00: A quantized delay buffer model for fiber delay lines in optical packet switching networks**, Z. Liang, S. Xiao, Shanghai Jiao Tong Univ. (China) . . . [6783-29]

**12.15: A new bursty assigned traffic model and performance analysis in optical burst switching**, C. C. H. Bob, Wuhan Communication Command College (China) . . . . . [6783-30]

Lunch Break 12.30 to 14.00

Room 5

10.30 to 12.30

**SESSION 4b  
Modulation Format  
and Associate Lasers**

*Chair: Sander L. Jansen, KDDI R&D Labs., Inc. (Japan)*

**10.30: Chaotic communication based on delayed optoelectronic feedback semiconductor laser with two time delays**, T. Wu, F. Lin, National Tsing Hua Univ. (Taiwan) . . . . . [6783-42]

**10.45: Short pulse generation based on directly-modulated laser and phase modulator**, A. Zhang, J. Yu, H. Hu, L. Zhang, W. Wang, Y. Jiang, W. Jing, E. Yang, Tianjin Univ. (China) . . . [6783-43]

**11.00: A new optical secure communication system**, F. Luo, N. Fang, C. Wang, Z. Huang, Shanghai Univ. (China) . . . . . [6783-44]

**11.15: 40-Gbit/s OCDM/WDM system based on supercontinuum source and SSFBG**, X. Chen, D. X. Huang, X. Yuan, Huazhong Univ. of Science and Technology (China) . . . . . [6783-45]

**11.30: Recent results on advanced transmission using phase shift keying formats** (*Invited Paper*), Y. Miyamoto, Nippon Telegraph and Telephone Corp. (Japan) . . [6783-46]

**12.00: Optical codes in optical networkings** (*Invited Paper*), K. Kitayama, Osaka Univ. (Japan)[6783-47]

Lunch Break 12.30 to 14.00

Room 6

10.30 to 12.15

**SESSION 4  
Next Generation  
Networks**

*Chair: Sergi Figuerola, Fundación i2CAT (Spain)*

**10.30: Technical challenges in building the NGN: NTT's activities** (*Invited Paper*),

 T. Murakami, Nippon Telegraph and Telephone Corp. (Japan) [6784-20]

**11.00: Latest key technology for NGN** (*Invited Paper*), T. Ota, The Furukawa Electric Co., Ltd. (Japan) . . . . . [6784-21]

**11.30: IMS-based service network convergence and implementation of service triggering in IMS**, S. Zou, Y. Wei, Wuhan ZhongGuang Telecommunications Co. (China) and Wuhan Research Institute of Posts and Telecommunications (China); J. Wang, Wuhan Research Institute of Posts and Telecommunications (China) . . . . . [6784-22]

**11.45: Research on high availability of IMS core network**, Y. Wei, Wuhan Research Institute of Posts and Telecommunications (China) . . . . . [6784-23]

**12.00: The research of service provision based on service-oriented architecture for NGN**, Y. Jie, ZhongGuang Telecommunication Co. (China) . . . . . [6784-24]

Lunch Break 12.15 to 14.00



**Saturday 3 November**

**Room 1**

14.00 to 16.00

**SESSION 5a  
Nano Photonic Devices**

*Chair: Tanya M. Monro,*  
The Univ. of Adelaide  
(Australia)

14.00: **Innovative nano-optical devices for optical communications** (*Invited Paper*),



J. Wang,  
NanoOpto Corp.  
(USA) . [6781-36]

14.30: **Optical device based on metal-wire nanograting** (*Invited Paper*), W. Liu, Huazhong Univ. of Science and Technology (China) . . . . . [6781-37]

15.00: **Silica nanowires: manipulating light at the nanoscale** (*Invited Paper*),



E. D. Mazur,  
Harvard Univ.  
(USA) . [6781-38]

15.30: **Optical interconnect technology for computer systems** (*Invited Paper*),



K. Ohashi,  
T. Nakata, NEC  
Corp. (Japan)  
[6781-39]

**Room 2**

14.00 to 16.00

**SESSION 5b  
Photonic Crystal Fibers**

*Chair: David W. Peckham,*  
OFS Fitel, LLC (USA)

14.00: **Squeezed elliptical hole photonic crystal fiber for all optical signal processing**, Z. Wang, Y. Wang, C. Song, R. Zhao, Beijing Jiaotong Univ. (China) . . . . . [6781-50]

14.15: **Less polarization coupling and high extinction ratio of a near-elliptic cladding polarization-maintaining photonic crystal fiber**, L. Wang, F. Yan, P. Liu, Y. Li, T. Gong, Y. Liu, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6781-51]

14.30: **Polarization-stable highly-birefringent photonic crystal fiber with near-elliptic inner cladding structure**, Y. Li, F. Yan, L. Wang, Beijing Jiaotong Univ. (China) . . . . . [6781-52]

14.45: **Design of two-mode photonic crystal fiber**, S. Lou, Beijing Jiaotong Univ. (China) . . . . . [6781-53]

15.00: **A design of large negative dispersion photonic crystal fibers**, H. Li, S. Lou, H. Fang, T. Guo, L. Yao, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6781-54]

15.15: **Compact two-dimensional finite-difference time-domain method utilizing auxiliary differential equations for the full-vectorial analysis of photonic crystal fibers**, J. J. Hu, P. Shum, G. Ren, Nanyang Technological Univ. (Singapore) [6781-55]

15.30: **Full-vector finite element analysis of birefringence properties in rectangle lattice photonic crystal with circular and elliptical holes**, M. Chen, Y. Liu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6781-56]

15.45: **Ultra-broadband wavelength conversion system by using photonic crystal fiber**, Z. Lu, J. Liu, S. Taebi, Y. Song, National Research Council Canada (Canada); X. Zhang, Concordia Univ. (Canada); T. J. Hall, Univ. of Ottawa (Canada) . . . . . [6781-57]

**Room 3**

14.00 to 16.00

**SESSION 5  
Micro Lasers**

*Chair: Yong-Hee Lee,*  
Korea Advanced Institute of Science and Technology (South Korea)

14.00: **Fundamentals and applications of long wavelength VCSELs** (*Tutorial*) (*Invited Paper*),



N. Nishiyama,  
Tokyo Institute of Technology (Japan);  
C. G. Caneau,  
C. Zah, Corning Inc.  
(USA) . . . . . [6782-22]

15.00: **Moving from ultrafast VCSELs to MIXSELs: a new class of ultrafast semiconductor lasers** (*Invited Paper*),



U. Keller, ETH  
Zürich  
(Switzerland)  
[6782-23]

15.30: **High power VCSEL device with periodic gain active region**, Y. Ning II, Changchun Institute of Optics, Fine Mechanics and Physics (China) . . . . . [6782-24]

15.45: **Semiconductor ring lasers with active vertical coupler structures**, R. Zhang, O. Ansell, S. Yu, Univ. of Bristol (United Kingdom) . . . . . [6782-25]

Saturday 3 November

Room 4

14.00 to 16.00

**SESSION 5  
Future Optical Networks**

*Chair: Alexandros Stavdas, Univ. of Peloponnese (Greece)*

14.00: **FTTH and 40G/100G long-haul systems** (*Invited Paper*),



X. Cao, RuLight Corp. (USA) [6783-31]

14.30: **All-optical packet switching using optical-labels: experiments and results** (*Invited Paper*),



S. J. B. Yoo, Univ. of California/Davis (USA) . [6783-58]

15.00: **Mark insertion coding method for orthogonal ASK/DPSK packet switching**, N. Chi, X. Wang, D. X. Huang, Huazhong Univ. of Science and Technology (China) . . . . . [6783-33]

15.15: **Analyses, simulations and experiments on the performance of the token-based optical burst transport ring networks**, X. Liu, G. Wen, H. Wang, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-34]

15.30: **Burst assembly in OBS under unsymmetrical traffic**, C. Chen, J. Wu, J. Lin, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-35]

15.45: **IP calking: a novel decrease contention scheme in optical burst switched networks**, C. Yuan, Peking Univ. (China) . . . . . [6783-36]

Room 5

14.00 to 15.45

**SESSION 5a  
Automatically Switched Optical Networks**

*Chair: Gert Grammel, Alcatel-Lucent Deutschland AG (Germany)*

14.00: **A novel disjoint path selection scheme with shared risk link groups in ASON**, D. Jiao, X. Wang, Y. Lu, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-31]

14.15: **Research and simulation of ASON survivability testbed**, P. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-32]

14.30: **Transport network services provision in extended service plane based on automatic switching optical network**, H. Zhang, X. Chen, L. Wang, P. Jia, J. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-33]

14.45: **GMPLS control plane mechanism for commissioning and maintaining optical label switched paths**, S. Kashiwara, K. Ogaki, T. Tsuritani, T. Otani, KDDI R&D Labs., Inc. (Japan) . . . . . [6784-34]

15.00: **Multi-domain ASON/GMPLS network operation: current status and future evolution** (*Invited Paper*), I. Nishioka, NEC Corp. (Japan) . . . . . [6784-35]

15.30: **A simulation study on hierarchical routing in ASON networks**, Y. Qiu, North China Electric Power Univ. (China); Y. Ji, D. Hsu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-36]

Room 6

14.00 to 16.00

**SESSION 5b  
Protection/Restoration**

*Chair: Shigeo Urushidani, National Institute of Informatics (Japan)*

14.00: **A simple and efficient restoration scheme in multimedia networks** (*Invited Paper*), G. Li, D. Wang, AT&T Labs. Research (USA) [6784-25]



14.30: **Ethernet ring protection with managed FDB using APS payload** (*Invited Paper*), J. Rhee, J. Im, Information and Communications Univ. (South Korea); J. Ryoo, B. S. Joo, Electronics and Telecommunications Research Institute (South Korea) . . . . . [6784-26]

15.00: **BLE protection scheme for light-trail WDM mesh networks**, J. Xing, H. Wang, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-27]

15.15: **A novel multi-domain protection scheme in hybrid optical networks**, Y. Wang, X. Wang, Y. Lu, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-28]

15.30: **The study of protection algorithms with shared risk link group (SRLG) constraint**, P. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-29]

15.45: **Shared protection schemes for multi-granularity optical networks**, G. Lin, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-30]

**Conference 6781**

**Passive Components and Fiber-Based Devices (APOC01)**

**Conference 6782**

**Optoelectronic Materials and Devices (APOC02)**

**Sunday 4 November**

**Room 1**

08.30 to 10.00

**SESSION 6  
Optical Devices**

*Chair: Shenping Li,*  
Corning Inc. (USA)

08.30: **Liquid crystal devices for photonics applications (Tutorial)** (*Invited Paper*), V. G. Chigrinov, Hong Kong Univ. of Science and Technology (Hong Kong China) . . . . . [6781-58]

09.30: **Reliability study in the fabrication and packaging of optical devices** (*Invited Paper*), H. P. Chan, M. A. Uddin, City Univ. of Hong Kong (Hong Kong China) [6781-59]



Coffee/  
Tea Break 10.00 to 10.30

**Room 2**

08.30 to 10.00

**SESSION 6a  
Novel Application**

*Chair: Jen-Inn Chyi,*  
National Central Univ. (Taiwan)

08.30: **Research trend of solid state lighting** (*Invited Paper*),



Y. Luo, Tsinghua Univ. (China) [6782-26]

09.00: **Optical gain in 407nm and 470nm InGaN/GaN heterostructures: signature of quantum-dot states**, B. Witzigmann, ETH Zürich (Switzerland); U. T. Schwarz, Univ. Regensburg (Germany); M. Tomamichel, S. Steiger, R. Veprek, ETH Zürich (Switzerland) . . . [6782-27]

09.15: **Analysis of the focusing performance of microlens made of anisotropically dielectric material by multi-wavelength illumination**, J. Liu, Beijing Jiaotong Univ. (China) . . . [6782-28]

09.30: **Applications of swept light sources in imaging, sensor and tests** (*Invited Paper*),



L. T. Li, Y. Tang, W. Xu, Q. Qi, InPhenix Inc. (USA) [6782-29]

Coffee/  
Tea Break 10.00 to 10.30

**Room 3**

08.30 to 10.00

**SESSION 6b  
Quantum Well Optical Modulators**

*Chair: Minghua Wang,*  
Zhejiang Univ. (China)

08.30: **Design and fabrication of high performance electroabsorption modulator**, H. Yang, Nanyang Technological Univ. (Singapore) [6782-37]

08.45: **A novel coupled quantum well with large negative electrorefractive index change and low absorption loss**, Z. Xu, Zhejiang Univ. of Science and Technology (China) . . . . . [6782-38]

09.00: **Nano-structured special quantum well for high-performance optical modulators** (*Invited Paper*),



K. Tada, T. Arakawa, Yokohama National Univ. (Japan) [6782-39]

09.30: **Polarization-independent large positive electrorefractive index change in a strained InGaAs/InAlAs coupled quantum well**, Z. Xu, Zhejiang Univ. of Science and Technology (China) . . . . . [6782-40]

09.45: **Demonstration of the integrated electroabsorption modulator/distributed feedback laser based on improved butt-joint scheme**, Y. Cheng, Institute of Semiconductors (China) . . . . [6782-41]

Coffee/  
Tea Break 10.00 to 10.30

**Conference 6783**

**Optical Transmission, Switching, and Subsystems (APOC03)**

**Conference 6784**

**Network Architectures, Management, and Applications (APOC04)**

**Sunday 4 November**

Room 4

08.30 to 10.00

**SESSION 6  
OPS/OBS I**

*Chair:* **Daniel J. Blumenthal**, Univ. of California/Santa Barbara (USA)

**08.30: 160Gbps all-optical packet switch demonstrator**

*(Invited Paper)*, N. Wada, National Institute of Information and Communications Technology (Japan) . . . . . [6783-48]

**09.00: Guaranteeing burst routing in the ROMEO optical network**

*(Invited Paper)*, D. Barth, A. Basic, J. M. Fourneau, D. Nott, F. Quessette, S. Rousseau, Univ. de Versailles Saint-Quentin-en Yvelines (France) [6783-49]

**09.30: The QoS-aware head-drop mechanism for contentions resolution in optical burst switching networks,**

X. Yang, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6783-50]

**09.45: Combining core drop policy and edge determinant thresholds in TCP over OBS networks with retransmission,**

S. Peng, Z. Li, A. Xu, Peking Univ. (China) . . . . . [6783-51]

Coffee/  
Tea Break 10.00 to 10.30

Room 5

08.30 to 10.00

**SESSION 6a  
Grid Network I**

*Chair:* **Admela Jukan**, Technische Univ. Braunschweig (Germany)

**08.30: Economics-based pricing and request scheduling scheme for lightpath resources of grid-enabled optical networks,**

X. Yang, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6784-37]

**08.45: Grid optical user network interface (GOUNI) integrating optical networks with grid services,**

X. Jiao, X. Hu, D. Liu, Y. Qiao, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-38]

**09.00: Resource co-scheduling algorithms on optical grid for distributed computing,**


L. Kong, Beijing Univ. of Posts and Telecommunications (China) . . . [6784-39]

**09.15: Study of a novel fast restoration mechanism for data-intensive applications in grid-enabled optical networks,**

L. Wu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-40]

**09.30: Impairment constraint networking algorithms and their integration with GMPLS to support grid computing applications**

*(Invited Paper)*,

 I. Tomkos, Athens Information Technology (Greece)[6784-41]

Coffee/  
Tea Break 10.00 to 10.30

Room 6

08.30 to 10.00

**SESSION 6b  
Operation, Administration, and Maintenance I**

*Chair:* **Yoshio Itaya**, NTT Photonics Labs. (Japan)

**08.30: Control and management technologies on distributed optical network**

*(Invited Paper)*, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-49]

**09.00: Fault management in next-generation all-optical networks**

*(Invited Paper)*, H. Zeng, Cisco Systems, Inc. (Canada) [6784-50]

**09.30: Performance and fault monitoring with enhanced GMPLS-based control plane in the next-generation optical network,**

Z. Huang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-51]

**09.45: Research on new framework of NGN web-based management,**

Z. Nian, ZhongGuang Telecommunication Co. (China) . . . . . [6784-52]

Coffee/  
Tea Break 10.00 to 10.30

**Sunday 4 November**

**Room 1**

10.30 to 12.15

**SESSION 7  
Optical Components II**

*Chair: Yosuke Tanaka, Tokyo Univ. of Agriculture and Technology (Japan)*

**10.30: Micro-module technology and its applications in the optical subassembly of a transceiver (Invited Paper),**



Y. Lu, EZconn Corp. (China) [6781-60]

**11.00: Property analysis of a reflection-type filter composed of microring resonator array and MZI, O. Xu, S. Lu, S. Feng, X. Dong, P. Li, S. Jian, Beijing Jiaotong Univ. (China) . . . . . [6781-61]**

**11.15: A bidirectional WDM module for multi-channels transceiver, J. Zhang, Institute of Microelectronics (Singapore) . . . . . [6781-62]**

**11.30: Optical injection-mode-locking of a weak-resonant-cavity Fabry-Perot laser diode-based fiber ring, G. Peng, G. Lin, National Taiwan Univ. (Taiwan) . . . . . [6781-63]**

**11.45: Transmission characteristics of dual micro-ring resonators coupled via a 3x3 coupler, X. Zhang, D. X. Huang, X. Zhang, Huazhong Univ. of Science and Technology (China) . . . . . [6781-64]**

**12.00: Design of optical thin film systems for ultraviolet narrow-band interference filters based on needle optimization technique, G. Peng, J. Yang, H. Wu, H. Jia, S. Chang, National Univ. of Defense Technology (China) . . . . . [6781-65]**

Lunch Break 12.15 to 14.00

**Room 2**

10.30 to 12.30

**SESSION 7a  
Photonic Crystals and Fibers**

*Chair: Shinji Yamashita, The Univ. of Tokyo (Japan)*

**10.30: Silicon-based ultra-compact modulators with photonic crystals, R. Hao, D. Gao, Huazhong Univ. of Science and Technology (China); D. S. Citrin, Georgia Institute of Technology (USA); Z. J. Zhou, Huazhong Univ. of Science and Technology (China) . . . . . [6782-30]**

**10.45: Negative refraction and birefringence in a two-dimensional flat perfect PC, Z. Li, B. Liang, H. Guo, J. Chen, S. Zhuang, Univ. of Shanghai for Science and Technology (China) . . . . . [6782-31]**

**11.00: Broad-band local field enhancement of a 2D nano-cavity, X. Su, J. Liu, Beijing Jiaotong Univ. (China) . . . . . [6782-32]**

**11.15: Wide-band transmission of slow light in 1D photonic crystal coupled resonator optical waveguide, C. Li, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6782-33]**

**11.30: Continuous-wave optical fiber based supercontinuum light source, Z. Lu, Y. Song, J. Liu, National Research Council Canada (Canada); X. Zhang, Concordia Univ. (Canada) . . . . . [6782-34]**

**11.45: Hybrid modelocking based on nonlinear polarization rotation in a SOA fiber ring laser, F. Wang, Chongqing Institute of Technology (China) . . . . . [6782-35]**

**12.00: Liquid crystal photonic bandgap fiber components (Invited Paper),**



T. T. Alkeskjold, L. Scolari, A. O. Bjarklev, Danmarks Tekniske Univ. (Denmark) . . . . . [6782-36]

Lunch Break 12.30 to 14.00

**Room 3**

10.30 to 12.30

**SESSION 7b  
Telecom and RF Photonics**

*Chair: Christophe Kazmierski, Consultant (France)*

**10.30: Recent advances in laser diodes for telecom/ datacom applications (Invited Paper), N. Grote,**



Fraunhofer-Gesellschaft (Germany) [6782-42]

**11.00:  $\lambda/4$  phase-shifted distributed feedback lasers with chirped grating: dynamic single-mode and modulation characteristics analyses, X. Jia, Sichuan Normal Univ. (China) . . . . . [6782-43]**

**11.15: Field trial of 160 Gb/s all-optical packet switching (Invited Paper),**



Y. Liu, Technische Univ. Eindhoven (Netherlands) and Univ. of Electronic Science and

Technology of China (China); J. Herrera, Technische Univ. Eindhoven (Netherlands) and Univ. Politècnica de Valencia (Spain); O. Raz, E. Tangdiongga, Technische Univ. Eindhoven (Netherlands); J. Marti, F. Ramos, Univ. Politècnica de València (Spain); G. D. Maxwell, A. J. Poustie, The Ctr. for Integrated Photonics Ltd. (United Kingdom); H. C. H. Mulvad, Danmarks Tekniske Univ. (Denmark); M. T. Hill, H. de Waardt, G. Khoe, A. M. J. Koonen, H. J. S. Dorren, Technische Univ. Eindhoven (Netherlands) . . . . . [6782-44]

**11.45: Theoretical analysis of nonlinear polarization rotation influence on optical sampling in semiconductor optical amplifier, M. Liu, A. Yang, Y. Sun, Beijing Institute of Technology (China) . . . . . [6782-45]**

**12.00: Design of all-optical UWB monocycle generation for UWB-over-fibre communications, J. Dong, X. Zhang, Huazhong Univ. of Science and Technology (China); S. Fu, Nanyang Technological Univ. (Singapore) . . . . . [6782-46]**

**12.15: A simple approach of high-purity millimeter-wave signal photonic generation, T. Wang, M. Chen, H. Chen, S. Xie, Tsinghua Univ. (China) . . . . . [6782-47]**  
Lunch Break 12.30 to 14.00

**Conference 6783**

**Optical Transmission, Switching, and Subsystems (APOC03)**

**Conference 6784**

**Network Architectures, Management, and Applications (APOC04)**

**Sunday 4 November**

**Room 4**

10.30 to 12.30

**SESSION 7  
OPS/OBS II**

*Chair: Giancarlo Prati, Consorzio Nazionale Interuniv. per le Telecomunicazioni (Italy)*

10.30: **Optical packet switching in USA** (*Invited Paper*), D. J. Blumenthal, Univ. of California/Santa Barbara (USA) . . . [6783-52]

11.00: **Development of an optical label switching node prototype and key devices** (*Invited Paper*), Y. Nakano, The Univ. of Tokyo (Japan) [6783-53]



11.30: **Adaptive optical packet switching**, S. Xiao, Z. Liu, Z. Liang, Z. Zhao, K. Qu, Shanghai Jiao Tong Univ. (China) . . . [6783-54]

11.45: **Research on fixed burst-length assembly algorithm in OBS test-bed**, G. Wang, Beijing Univ. of Posts and Telecommunications (China) and Key Lab. of Optical Communication and Lightwave Technology (China) . . . . . [6783-55]

12.00: **Performance experiment of RBUDP over OBS networks**, X. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-56]

12.15: **Experimental investigation on aggregation amplification of TCP throughput in OBS mesh network testbed**, H. Jiang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-57]

Lunch Break 12.30 to 14.00

**Room 5**

10.30 to 12.30

**SESSION 7a  
Grid Network II**

*Chair: Ioannis Tomkos, Athens Information Technology (Greece)*

10.30: **A novel signaling method to decrease the connection setup time in optical grid networks**, X. Hu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-42]

10.45: **Network resource on-demand reservation based on time-window in optical grid network**, R. Wu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-43]

11.00: **Application linear adaptive algorithm for load balance in optical grid**, W. Zhuang, D. Liu, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-44]

11.15: **Rescheduling policy for fault-tolerant optical grid**, Z. Sun, W. Guo, Y. Jin, W. Sun, W. Hu, Shanghai Jiao Tong Univ. (China) . . . . . [6784-45]

11.30: **Optical control plane for the grid community** (*Invited Paper*), A. Jukan, Technische Univ. Braunschweig (Germany) . . . . . [6784-46]

12.00: **Dynamic multi DAG scheduling algorithm for optical grid environment**, L. Zhu, G. Wei, Y. Jin, W. Hu, W. Sun, Shanghai Jiao Tong Univ. (China) . . . [6784-47]

12.15: **Time-path routing and scheduling optimization algorithm based on max-flow theoretic**, Z. Liu, W. Guo, Y. Jin, W. Sun, W. Hu, Shanghai Jiao Tong Univ. (China) . . . . . [6784-48]

Lunch Break 12.30 to 14.00

**Room 6**

10.30 to 12.30

**SESSION 7b  
Operation, Administration, and Maintenance II**

*Chair: Yuefeng Ji, Beijing Univ. of Posts and Telecommunications (China)*

10.30: **Management of optical virtual private networks** (*Invited Paper*), J. Wu, Communications Research Ctr. Canada (Canada) [6784-53]



11.00: **Optical performance monitoring and network diagnosis in reconfigurable optical networks** (*Invited Paper*), L. Chen, C. C. K. Chan, The Chinese Univ. of Hong Kong (Hong Kong China); G. Lu, National Institute of Information and Communications Technology (Japan); Y. Ku, C. Lin, The Chinese Univ. of Hong Kong (Hong Kong China) . . . . . [6784-54]



11.30: **Implementation and measurement of Cluster management for network switch**, X. Feng, Wuhan Institute of Technology (China); X. Yun, FiberHome Telecommunication Technologies Co., Ltd. (China) . . . . . [6784-55]

11.45: **Service-oriented network management system based on OBS ring networks**, H. Zhou, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-56]

12.00: **WS-SP: a framework for multi-service provisioning in the next generation optical network**, X. Chen, J. Zhang, P. Jia, L. Wang, Y. Cheng, H. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-57]

12.00: **WS-SP: a framework for multi-service provisioning in the next generation optical network**, X. Chen, J. Zhang, P. Jia, L. Wang, Y. Cheng, H. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-57]

12.15: **Design and implementation of SNMP-based GEAPON network management system with a web interface**, C. Cao, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-58]

Lunch Break 12.30 to 14.00



**Room 1**

14.00 to 16.00

**SESSION 8a  
PMD and Polarization Effects**

Chair: **Mei Du**, OFS Fitel, LLC (USA)

14.00: **Low-PMD transmission fibers and cables** (*Invited Paper*),



T. Geisler, OFS Fitel Denmark ApS (Denmark) [6781-66]

14.30: **Effect of extrinsic perturbation by transverse pressure, bending and tension birefringence**, C. M. Jadhao, G.S. College of Khamgaon (India); D. S. Dhote, Brijlal Biyani Science College of Amravati (India) . [6781-67]

14.45: **Comparison between the effects of PDL on the DOP-feedback PMD compensation in RZ- and NRZ- modulated systems**, L. Zhang, Shandong Univ. (China); P. Song, Jinan Univ. (China) and Shandong Univ. (China); Q. Hu, Accelink Technologies Co., Ltd. (China); S. Zhao, Shandong Univ. (China) . . . . . [6781-68]

15.00: **Research on voltage-controlled polarization controller in the polarization mode dispersion compensation experiment**, G. Duan, L. Zhang, X. Zhang, B. Yang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6781-69]

15.15: **Experimental study of zero tension PMD measurement**, W. Huang, Yangtze Optical Fibre and Cable Co., Ltd. (China) . . . . . [6781-70]

15.30: **Spatially- and spectrally-resolved polarization mode dispersion measurement in optical fibers**, H. Dong, P. Shum, Nanyang Technological Univ. (Singapore) . . . . [6781-71]

15.45: **Principal state of polarization analysis in piezoelectric polarization controller**, Z. Li, C. Wu, Beijing Jiaotong Univ. (China) . . . . . [6781-72]

Coffee/  
Tea Break 16.00 to 16.30

**Room 2**

14.00 to 15.30

**SESSION 8b  
Fiber Lasers and Amplifiers**

Chair: **Anping Liu**, Corning Inc. (USA)

14.00: **Research on noise and quantum conversion efficiency of Yb-doped fiber amplifiers**, H. Chen, X. Ma, Y. Han, Y. Zhang, C. Huang, Yangtze Univ. (China) . . . . . [6781-79]

14.15: **Design considerations for L band erbium-doped hole-assisted lightguide fiber amplifiers**, K. Zheng, Beijing Jiaotong Univ. (China) . . . . . [6781-80]

14.30: **Broadband emission and amplification from chromium-doped fibers** (*Invited Paper*), S. Huang,



National Taiwan Univ. (Taiwan); K. Y. Huang, National Sun Yat-Sen Univ. (Taiwan); K. Y. Hsu, National Taiwan Univ. (Taiwan); C. N. Tsai, National Sun Yat-Sen Univ. (Taiwan); P. S. Yeh, National Taiwan Univ. of Science and Technology (Taiwan) . . . . . [6781-81]

15.00: **Brillouin-erbium fiber laser with a Sagnac loop filter**, P. Wang, Univ. of Electronic Science and Technology of China (China) . . . . . [6781-82]

15.15: **Realization of coherent polarization locking of two orthogonal-polarization beams in a Michelson compound cavity based on the polarization-dependence losses of a polarizer**, F. Liu, Nankai Univ. (China) . . . [6781-85]

Coffee/  
Tea Break 15.30 to 16.30

**Room 3**

14.00 to 16.00

**SESSION 8  
Tunable Lasers**

Chair: **Jens Buus**, Gayton Photonics Ltd. (United Kingdom)

14.00: **Widely tunable lasers based on mode-hop-free semiconductor lasers array**



(*Invited Paper*), T. Kurobe, The Furukawa Electric Co., Ltd. (Japan) [6782-48]

14.30: **Automated chip on carrier screening of an SOA-integrated full band tunable laser (DSDBR)**, W. Chao, Bookham Technology (Shenzhen) Co., Ltd. (China); G. Dimitropoulos, Bookham Technology plc (United Kingdom); X. Wu, Bookham Technology (Shenzhen) Co., Ltd. (China) . . . . . [6782-49]

14.45: **A compact tunable transmitter assembly for high performance 10 Gbps optical systems**, Y. Zhang, Shandong Univ. (China) . . . . . [6782-50]

15.00: **Static properties of widely-tunable external cavity semiconductor laser with sampled fiber grating**, X. He, Y. Yu, D. X. Huang, Huazhong Univ. of Science and Technology (China); D. Wang, The Hong Kong Polytechnic Univ. (Hong Kong China) . . . [6782-51]

15.15: **Theoretical model and simulation of the extremely short external cavity semiconductor laser**, G. Xia, Z. Wu, J. Wu, L. Li, X. Qiu, Southwest Univ. (China) . . . [6782-52]

15.30: **Trend and applications of tunable semiconductor lasers** (*Invited Paper*),



S. Lee, Y. Pan, Y. Hung, C. Yao, National Taiwan Univ. of Science and Technology (Taiwan) . . . . . [6782-53]

Coffee/  
Tea Break 16.00 to 16.30

Sunday 4 November

Room 4

14.30 to 16.00

**SESSION 8a  
OPS/OBS III**

Chair: **Giancarlo Prati**,  
Consorzio Nazionale  
Interuniv. per le  
Telecomunicazioni (Italy)

14.30: **100Gbit/s signal packet generation and switching** (*Invited Paper*), J. Yu, NEC Labs. America, Inc. (USA) . [6783-59]



15.00: **An RWA algorithm for OBS networks based on iterative local optimization of total blocking probability**, T. Yoshikawa, H. Nagashima, H. Hasegawa, K. Sato, Nagoya Univ. (Japan) . . . . . [6783-60]

15.15: **Performance evaluation of dynamic assembly period algorithm in TCP over OBS networks**, S. Peng, Z. Li, A. Xu, Peking Univ. (China) . . . . . [6783-61]

15.30: **Performance evaluation of multi-protocol optical switch routing algorithm under multimedia traffic**, Z. Omar, K. Khairi, B. H. L. Lee, S. B. Mohd Shukor, Telekom Research & Development Sdn. Bhd. (Malaysia) . . . . . [6783-62]

15.45: **Performance of unequal probability outputting issue in optical burst switching network**, R. Hou, Y. C. Yang, South-Central Univ. for Nationalities (China) . . . . . [6783-63]

Coffee/  
Tea Break 16.00 to 16.30

Room 5

14.00 to 16.00

**SESSION 8b  
Impairments in  
Transmission Systems**

Chair: **Yun-Chur Chung**,  
Korea Advanced Institute  
of Science and Technology  
(South Korea)

14.00: **Volterra-based nonlinear equalizer with reduced complexity**, D. Fritzsche, D. Breuer, T-Systems International GmbH (Germany); C. Schäffer, Technische Univ. Dresden (Germany) . . . . . [6783-70]

14.15: **PMD compensation in 10Gb/s DPSK optical communication system**, X. Zhang, Beijing Univ. of Posts and Telecommunications (China) and The Key Lab. of Optical Communications and Lightwave Technologies (China); G. Duan, L. Xi, W. Xu, G. Fang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-71]

14.30: **Research on feed-forward PMD compensation**, J. Wang, Civil Aviation Univ. of China (China) . . [6783-72]

14.45: **A novel scheme of adaptive dispersion compensation in transparent optical networks**, T. Liu, J. Zhang, H. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-73]

15.00: **Optical power transients and its control in a photonic network** (*Invited Paper*),

X. Zhou, M. Feuer, M. Birk, AT&T Labs. Research (USA) [6783-74]

15.30: **Distortion tolerance in future optical networks** (*Invited Paper*), S. Aramideh, CoreOptics GmbH (Germany) . . . . . [6783-75]

Coffee/  
Tea Break 16.00 to 16.30

Room 6

14.00 to 16.00

**SESSION 8  
Access Network**

Chair: **Gregor V. Bochmann**, Univ. of Ottawa (Canada)

14.00: **Key technologies for evolving optical access networks** (*Invited Paper*),



T. Imai,  
Kanagawa Univ.  
(Japan) [6784-59]

14.30: **TCP performance among diverse sessions over a GE-PON system**, M. Xu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-60]

14.45: **Performance management for network QoS analysis in EPON system**, Z. Li, D. Liu, C. Zhang, G. Wu, Huazhong Univ. of Science and Technology (China) . . . . . [6784-61]

15.00: **A new method to implement dynamic bandwidth allocation in gigabit-capable passive optical networks**, M. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-62]

15.15: **Class gated dynamic bandwidth allocation algorithm for supporting QoS in the EPON**, J. Hwang, H. Kim, M. Yoo, Soongsil Univ. (South Korea) . . [6784-63]

15.30: **Building new access network using reconfigurable optical grid network and wireless network**, Y. Qiu, North China Electric Power Univ. (China); Y. Ji, D. Hsu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-64]

15.45: **Immediate IPTV channel leave by explicit user tracking in PON**, P. Zhu, Y. Hideya, Y. Satoshi, Hitachi (China) Research & Development Corp. (China) . . [6784-65]

Coffee/  
Tea Break 16.00 to 16.30

Room 1

16.30 to 18.30

**SESSION 9a  
Optical Fibers**

*Chair: Xiang-Fei Chen,*  
Nanjing Univ. (China)

16.30: **Advances in fibers and transmission line technology for long haul submarine systems** (*Invited Paper*), D. W. Peckham, J. Kim, R. L. Lingle, Jr., OFS Fitel, LLC (USA) . . . . . [6781-73]

17.00: **Correlation between size and distribution of pre- and post-proof test level flaw of draw-abraded fiber,** S. Bhaumik, Sterlite Optical Technologies Ltd. (USA) . . . . . [6781-74]

17.15: **A novel optical fibre doped with the nano-material as InP,** C. Xi, L. Lee, R. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6781-75]

17.30: **Coded optical time domain reflectometry: principle and applications** (*Invited Paper*),



N. Park, J. Lee, J. Park, J. G. Shim, Seoul National Univ. of Technology (South Korea); H. Yoon, J. H. Kim, Korea Telecom (South Korea); K. Kim, J. Byun, LuxPert Technologies (South Korea); G. Bolognini, Scuola Superiore Sant'Anna (Italy); D. Lee, Seoul National Univ. of Technology (South Korea); F. Di Pasquale, Scuola Superiore Sant'Anna (Italy) . . . . . [6781-76]

18.00: **Higher order mode-based large negative dispersion in step-index fibers for dispersion compensation,** X. Mao, T. Xia, S. Jian, F. Yan, J. Li, J. Peng, L. Liu, Beijing Jiaotong Univ. (China) . . . . . [6781-77]

18.15: **Approach for reducing the excess loss in LWPF fiber after D2 treatment,** X. Qian, Yangtze Optical Fibre and Cable Co., Ltd. (China) . . . . . [6781-78]

Room 2

16.30 to 18.15

**SESSION 9b  
Planar Waveguide Devices**

*Chair: Sheng-Lung Huang,* National Taiwan Univ. (Taiwan)

16.30: **Finite element study of metal-corner plasmon polariton waveguides,** M. Yan, M. Qiu, Kungliga Tekniska Högskolan (Sweden) . . . . . [6781-86]

16.45: **High-speed silicon optical switches based on carrier depletion,** Z. Li, J. Yu, S. Chen, Q. Wang, Institute of Semiconductors (China) . . . . . [6781-87]

17.00: **Integrated optics passive and active devices made by ion-exchange on glass substrate** (*Invited Paper*), J. Broquin, L. Bastard, E. Ghibaudo, Ecole Nationale Supérieure d'Electronique et de Radioélectricité de Grenoble (France)[6781-88]

17.30: **Research of Mach-Zehnder interferometer in electro-optic integrated acceleration,** Y. Zhang, Yanshan Univ. (China); J. Wei, Tianjin Navigation Instrument Research Institute (China); C. Chen, Tianjin Univ. (China) . . . . . [6781-89]

17.45: **A new improved WKB solution of the symmetrical multiple quantum wells planar waveguide,** F. Guo, L. Li, Fujian Normal Univ. (China); M. Wang, Zhejiang Univ. (China) . . . . . [6781-90]

18.00: **Fabrication of 3D waveguides by induction coupled plasma etching on LiNbO<sub>3</sub>/LiTaO<sub>3</sub> single crystal film by liquid phase epitaxy growth,** Z. Ren, S. Yu, Univ. of Bristol (United Kingdom); J. Marshall, D. Walker, P. A. Thomas, The Univ. of Warwick (United Kingdom) . . . . . [6781-91]

Room 3

16.30 to 18.30

**SESSION 9  
Cost-Effective Components**

*Chair: Guang-Hua Duan,* Alcatel-Thales III-V Lab. (France)

16.30: **Advanced technologies for colorless access networks** (*Invited Paper*), C. Kazmierski, Alcatel-Thales III-V Lab. (France); P. Chanclou, France Télécom R&D (France); J. Lazaro, Univ. Politècnica de Catalunya (Spain) . . . . . [6782-54]



17.00: **Cost-effective telecom/datacom semiconductor lasers** (*Invited Paper*), N. Chen, D. T. R. Chen, W. Hsin, S. B. Chen, F. Xiong, H. Erlig, P. Chen, G. Chiang, X. Yeh, D. Scott, Archcom Technology Inc., USA (USA); A. Scherer, California Institute of Technology (USA)[6782-55]



17.30: **980 nm pump laser module with 750 mW output power,** B. Guo, Z. J. Hu, Q. D. He, Bookham Technology (Shenzhen) Co., Ltd. (China); S. Loten III, J. Greatrex, Bookham Technology plc (United Kingdom); S. Mohrdiek, T. Pliska, Bookham AG (Switzerland) . . . [6782-56]

17.45: **Design of taper coupler for effective laser and single mode fiber coupling with large tolerance,** J. Zhang, Institute of Microelectronics (Singapore) . . . . . [6782-57]

18.00: **Photonics studies on dilute nitrides at long wavelength for telecommunication** (*Invited Paper*), C. Peng, M. Pessa, Tampere Univ. of Technology (Finland) [6782-58]



**Room 4**

16.45 to 18.30

**SESSION 9a  
Optical Switching**

*Chair: Yoshiaki Nakano, The Univ. of Tokyo (Japan)*

**16.45: Modeling analysis of high-speed magneto-optic switch**, S. Lin, Z. Weng, Y. Zhu, Z. Chen, M. Wang, X. Chen, Xiamen Univ. (China) . . . [6783-65]

**17.00: Photonic 2x2 switching node** (*Invited Paper*),



G. Prati, A. Bogoni, L. Poti, P. Castoldi, Consorzio Nazionale Interuniv. per le Telecomunicazioni (Italy) . . . . . [6783-66]

**17.30: Recent progress in silicon-based optical waveguide switches** (*Invited Paper*),



B. Li, Sun Yat-Sen Univ. (China) [6783-67]

**18.00: S-HOS: a self-adaptive hybrid optical switching**, S. Huang, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6783-68]

**18.15: Optically monostable operation of a monolithic semiconductor ring laser using an external optical injection**, Z. Wang, G. Yuan, S. Yu, Univ. of Bristol (United Kingdom); G. Giuliani, Univ. degli Studi di Pavia (Italy); S. Furst, M. Sorel, Univ. of Glasgow (United Kingdom) . . . . . [6783-69]

**Room 5**

16.30 to 18.30

**SESSION 9b  
Fiber Optics and Transmission Functions/Effects**

*Chair: Xiang Zhou, AT&T Labs. Research (USA)*

**16.30: Ultra-high speed MMF transmission using mode-field matched center launching technique** (*Invited Paper*),



Y. C. Chung, D. H. Shim, Y. Takushima, Korea Advanced Institute of Science and Technology (South Korea) . . [6783-76]

**17.00: All-optical wavelength converter concepts for high data rate D(Q)PSK transmission**, B. Huettl,

Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany); R. Elschner, Technische Univ. Berlin (Germany); H. Suche, Univ. Paderborn (Germany); A. Gual i Coca, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany); C. Bunge, Technische Univ. Berlin (Germany)); etc. . [6783-77]

**17.15: Influence of electronic correlation on four-wave mixing and cross-phase modulation in silica-and-tellurite-based EDFA**, Y. L. Xue, East China Normal Univ. (China) . . . . . [6783-78]

**17.30: A Poincaré approach to investigate nonlinear polarization rotation in semiconductor optical amplifiers and its application to all-optical wavelength conversion**, L. Guo, M. J. Connelly, Univ. of Limerick (Ireland) . . . . . [6783-79]

**17.45: All-optical passive format conversions from RZ and CS-RZ signals to NRZ signals at 40Gb/s**, Y. Yu, X. Zhang, Huazhong Univ. of Science and Technology (China); X. Xu, Huawei Technologies Co., Ltd. (China); D. X. Huang, Huazhong Univ. of Science and Technology (China) . . . . . [6783-80]

**18.00: Fiber optics: recent results** (*Invited Paper*), P. C. Ghiggino, Ericsson AB (Italy) . . . . . [6783-81]

**Room 6**

16.30 to 18.30

**SESSION 9  
Passive Optical Network**

*Chair: Takamasa Imai, Kanagawa Univ. (Japan)*

**16.30: Extended bandwidth management mechanism among multi-OLTs** (*Invited Paper*),



N. Zhang, H. Yoshiuchi, Hitachi (China) Ltd. (China) [6784-66]

**17.00: Design of controllable multicast for IPTV over EPON**, C. Zhang, D. Liu, Z. Li, G. Wu, Huazhong Univ. of Science and Technology (China) . . . . . [6784-67]

**17.15: A new WDM-PON architecture supporting competitive system cost and high dynamic resource allocation capability**, H. Kim, J. Hwang, M. Yoo, Soongsil Univ. (South Korea) . . . . . [6784-68]

**17.30: Upstream OOK remodulation scheme using injection-locked FP laser with downstream inverse-RZ data in WDM passive optical network**, J. Tse, The Chinese Univ. of Hong Kong (Hong Kong China); G. Lu, National Institute of Information and Communications Technology (Japan); L. Chen, C. C. K. Chan, The Chinese Univ. of Hong Kong (Hong Kong China) . . . . . [6784-69]

**17.45: An effective way to improve the performance in ethernet PON system**, X. Fu, L. Min, Tianjin Univ. (China) . . . . . [6784-70]

**18.00: High capacity and scalable WDM-PON architecture using optical add/drop multiplexer**, I. Sahrul Hilmi, Telekom Research & Development Sdn. Bhd. (Malaysia) . . . . . [6784-71]

**18.15: A new hybrid CWDM/TDM-PON architecture of next generation FTTH**, P. Zhang, FiberHome Telecommunication Technologies Co., Ltd. (China) . . . . . [6784-72]

Room 1

08.30 to 09.45

**SESSION 10a  
Fiber Sensors II**

*Chair: Xingde Li, Univ. of Washington (USA)*

08.30: **Investigation on optimized launch power in the distributed Brillouin fiber sensor design**, Y. Gong, Institute for Infocomm Research (Singapore); P. Shum, H. Dong, S. Fu, X. Tian, M. L. Tang, L. Xia, Nanyang Technological Univ. (Singapore); Z. Chen, J. Hao, J. Ng, P. Varghese, Institute for Infocomm Research (Singapore) . . . . [6781-92]

08.45: **A multi-point temperature warning sensor system with different thresholds using a multi-channel reference FBG**, L. Xia, Nanyang Technological Univ. (Singapore) . . . . [6781-93]

09.00: **Chirped fiber Bragg grating sensor based on phase delay**, Q. Sun, Huazhong Univ. of Science and Technology (China) and Nanyang Technological Univ. (Singapore) . . . . [6781-94]

09.15: **Demodulation system of fiber grating sensors based on phase-lock and cross phase modulation**, J. Zhang, C. Yu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6781-95]

09.30: **A novel interrogation technique for time-division multiplexing fiber Bragg grating sensor net**, S. Liu, Y. Yu, J. Zhang, Research Institute of Fiber Optics (China) . . . . . [6781-96]

Coffee/  
Tea Break 09.45 to 10.30

Room 2

08.30 to 09.45

**SESSION 10b  
Slow Light and Optical Delay Lines**

*Chair: Woojin Shin, Gwangju Institute of Science and Technology (South Korea)*

08.30: **Broadband Brillouin slow-light based on phase modulation in optical fibers**, Y. Dong, Z. Lu, Q. Li, Harbin Institute of Technology (China) . . . . . [6781-114]

08.45: **Numerical study of all-optical delay line based on wavelength conversion in SOA and dispersion in DCF**, Z. Hu, J. Sun, J. Wang, J. Xu, Wuhan National Lab. for Optoelectronics (China) . . . . . [6781-115]

09.00: **Topology-optimized and dispersion-tailored photonic crystal slow-light devices** (*Invited Paper*), L. H. Frandsen, Danmarks Tekniske Univ. (Denmark) . . . . [6781-116]

09.30: **Evaluation of dispersive Bragg gratings structures (BG) for the processing of RF signals with large time delays and bandwidths**, M. Kaba, F. C. Zhou, A. Lim, Nanyang Technological Univ. (Singapore); D. J. Decoster, Univ. des Sciences et Technologies de Lille (France); J. Huignard, S. G. Tonda, D. Dolfi, Thales Research & Technology (France); J. Chazelas, Thales Airborne Systems (France) . . . . . [6781-117]

Coffee/  
Tea Break 09.45 to 10.30

Room 3

08.30 to 10.00

**SESSION 10  
Modulators and Switches**

*Chair: Kunio Tada, Kanazawa Institute of Technology (Japan)*

08.30: **Intersubband photonic devices by group-III nitrides** (*Invited Paper*),  P. Holmstrom, Kungliga Tekniska Högskolan (Sweden) and Sophia Univ. (Japan); T. Aggerstam, Kungliga Tekniska Högskolan (Sweden); X. Y. Liu, Chalmers Tekniska Högskolan (Sweden); G. Kobayashi, A. Kikuchi, K. Kishino, Sophia Univ. (Japan); S. Lourdudoss, Kungliga Tekniska Högskolan (Sweden); T. G. Andersson, Chalmers Tekniska Högskola (Sweden); L. Thylén, Kungliga Tekniska Högskolan (Sweden) . . . . . [6782-59]

09.00: **Semiconductor optical modulators** (*Invited Paper*), M. Wang, J. Zhou, Q. Zhou, J. Yang, Zhejiang Univ. (China) . . . . . [6782-60]

09.30: **Investigation on electro-optic single-sideband modulation using period phase reversal electrode**, J. Hu, X. Yuan, Huazhong Univ. of Science and Technology (China) . . . . . [6782-61]

09.45: **Design of a novel high-speed magneto-optic modulator**, J. Wan, Y. Huang, Z. Weng, H. Yan, Y. Wang, Z. Wu, R. Ye, Xiamen Univ. (China) . . . . . [6782-62]

Coffee/  
Tea Break 10.00 to 10.30



**Conference 6783**

**Optical Transmission, Switching, and Subsystems (APOC03)**

**Conference 6784**

**Network Architectures, Management, and Applications (APOC04)**

**Monday 5 November**

Room 4

08.30 to 10.00

**SESSION 10a  
OCDMA**

*Chair: Elaine Wong*, The Univ. of Melbourne (Australia)

08.30: **Hybrid WDM/OCDMA for next generation access network** (*Invited Paper*),



X. Wang, N. Wada, T. Miyazaki, National Institute of Information

and Communications Technology (Japan); G. Cincotti, Univ. degli Studi di Roma Tre (Italy); K. Kitayama, Osaka Univ. (Japan) . . . . . [6783-82]

09.00: **Analysis of pulse width and chip length on DS-OCDMA system**, Y. Zhang, S. Xie, Tsinghua Univ. (China) . . . [6783-83]

09.15: **Performance analysis of phase-encoded OCDMA system using superstructured fiber Bragg gratings**, X. Chen, D. X. Huang, X. Yuan, Huazhong Univ. of Science and Technology (China) . . . . . [6783-84]

09.30: **Sensitivity analysis of coherent ultrashort light pulse CDMA communication system with respect to dispersion**, V. Ataie, K. Jamshidi, Sharif Univ. of Technology (Iran) [6783-85]

09.45: **OCDMA-PON with chaotic spread spectrum sequence**, L. Yang, G. Shou, Z. Qian, Y. Hu, Z. Guo, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-86]

Coffee/  
Tea Break 10.00 to 10.30

Room 5

08.30 to 10.00

**SESSION 10b  
Optical Processing I**

*Chair: Norihiko Nishizawa*, Osaka Univ. (Japan)

08.30: **Chromatic dispersion induced PM-AM conversion and its application in the all-optical clock recovery of NRZ-DPSK signals**, M. L. Tang, S. Fu, W. Zhong, Nanyang Technological Univ. (Singapore); Y. J. Wen, Institute for Infocomm Research (Singapore); P. Shum, Nanyang Technological Univ. (Singapore) . . . [6783-105]

08.45: **Theoretical and experimental study on 10GHz all-optical packet clock recovery**, W. Wang, J. Yu, A. Zhang, Y. Cui, H. Hu, B. Han, L. Zhang, Tianjin Univ. (China) . . . . . [6783-106]

09.00: **Progress in system design using integrated multi-element interferometric switches** (*Invited Paper*),



H. Avramopoulos, E. Kehayas, G. T. Kanellos, L. Stampoulidis, National Technical Univ. of Athens (Greece); G. Theophilopoulos, Univ. of Patras (Greece) . . . . . [6783-107]

09.30: **All-optical regenerative multicasting at 4x10Gb/s for WDM based on an SOA and a single optical source**, L. Zhang, J. Yu, H. Hu, A. Zhang, W. Wang, Y. Jiang, W. Jing, E. Yang, Tianjin Univ. (China) . . . . . [6783-108]

09.45: **All-optical clock recovery from NRZ signal through preprocessing by single narrow-band filter**, Y. Yu, X. Zhang, D. X. Huang, Huazhong Univ. of Science and Technology (China) . . . . . [6783-109]

Coffee/  
Tea Break 10.00 to 10.30

Room 6

08.30 to 10.00

**SESSION 10  
Transport MPLS**

*Chair: Itaru Nishioka*, NEC Corp. (Japan)

08.30: **Adaptability of optical multi-service transport networks** (*Invited Paper*),



J. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) [6784-73]

09.00: **Controlling mechanism for dual label transport in T-MPLS**, B. Li, K. Liu, S. Huang, Y. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-74]

09.15: **Modeling and simulation of T-MPLS network**, B. Li, J. Li, Y. Deng, Y. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-75]

09.30: **Carrier class metro ethernet services over T-MPLS packet transport networks**, Z. Li, J. Wu, Y. Zhang, W. Gu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-76]

09.45: **A hardware design on node in transport MPLS packet network based on FPGA**, J. Wu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-77]

Coffee/Tea Break 10.00 to 10.30



**Room 1**

10.30 to 12.30

**SESSION11a  
Multiple Wavelength Lasers**

*Chair: Lars H. Frandsen, Danmarks Tekniske Univ. (Denmark)*

**10.30: Multiwavelength tunable fiber lasers** (*Invited Paper*),



P. Shum, M. L. Tang, Nanyang Technological Univ. (Singapore); X. Dong, The

Hong Kong Polytechnic Univ. (Hong Kong China); Y. Gong, Institute for Infocomm Research (Singapore); S. Fu, H. Dong, Nanyang Technological Univ. (Singapore) . . . . . [6781-97]

**11.00: Study the application of polarization scrambler in the multi-wavelength fiber laser**, T. Li, Beijing Jiaotong Univ. (China) . . . . . [6781-98]

**11.15: Research on pump depletion of optical parametric amplification in photonic crystal fibers**, R. Zhang, Beijing Univ. of Posts and Telecommunications (China) . . . . [6781-99]

**11.30: Multiwavelength erbium-doped fiber lasers with tilted Bragg gratings in single mode fibers**, L. Jin, B. Liu, L. Xu, J. Zhang, Y. Liu, G. Kai, S. Yuan, X. Dong, Nankai Univ. (China) . . [6781-100]

**11.45: Wavelength dynamics in passive mode-locked fiber laser by using nonlinear polarization rotation technique**, H. Zhang, H. Xu, X. Fu, L. Qian, S. Wen, Hunan Univ. (China) . . . . . [6781-101]

**12.00: Switchable multiwavelength erbium-doped fiber laser incorporating a sampled fiber Bragg grating written in polarization-maintaining fiber**, Z. Liu, Y. Liu, J. Du, S. Yuan, X. Dong, Nankai Univ. (China) . . . . . [6781-102]

**12.15: High erbium-doped ASE source using optical circulator and fiber loop mirror based on the double-pass double-stage configuration**, X. Lee, Nanchang Institute of Aeronautical Technology (China) . . . . . [6781-103]

Lunch Break 12.30 to 14.00

**Room 2**

10.30 to 12.15

**SESSION 11b  
Fiber Devices**

*Chair: Yosuke Tanaka, Tokyo Univ. of Agriculture and Technology (Japan)*

**10.30: A novel all-fiber magneto-optic switch based on high-speed magnetic field module**, M. Wang, Z. Weng, Z. Chen, Y. Zhu, X. Chen, S. Lin, Xiamen Univ. (China) . . . . . [6781-118]

**10.45: The influence of extinction ratio of input signal on copied signal in fiber ring cavity**, Y. Wang, C. Wu, Beijing Jiaotong Univ. (USA) . . . [6781-119]

**11.00: Advanced topics on fusion splicing of specialty fibers and devices** (*Invited Paper*),



B. Wang, E. Mies, Vytran LLC (USA) [6781-120]

**11.30: Theoretical analysis of feedback high birefringence fiber loop mirror with dramatically enhanced free spectral range**, G. Sun, Y. Chung, Gwangju Institute of Science and Technology (China) . . . . . [6781-121]

**11.45: All-optical switching based on cross-phase modulation using Bragg grating in the highly nonlinear photonic crystal fiber**, Y. Liu, X. Sang, C. Yu, D. Hsu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6781-122]

**12.00: Optimal design of a tapered multimode interference coupler based on a genetic algorithm**, H. Wu, Wuhan National Lab. for Optoelectronics (China) and Huazhong Univ. of Science and Technology (China) . . . . . [6781-123]

Lunch Break 12.15 to 14.00

**Room 3**

10.30 to 12.00

**SESSION 11  
Novel Photonics Components**

*Chair: Junqiang Sun, Huazhong Univ. of Science and Technology (China)*

**10.30: Birefringent hollow core fibers** (*Invited Paper*),



P. J. Roberts, Danmarks Tekniske Univ. (Denmark) [6782-63]

**11.00: Experimental demonstration of PPLN-based double ring fiber laser and its application to 40 Gb/s wavelength conversion**, J. Wang, J. Sun, Q. Sun, Huazhong Univ. of Science and Technology (China) . . . . . [6782-64]

**11.15: Light waveguide electro-optical printed circuit board**, F. Luo, M. Cao, X. Zhou, J. Xu, Z. Luo, J. Yuan, Huazhong Univ. of Science and Technology (China) . . . . . [6782-65]

**11.30: Carbon-nanotube-based photonic devices** (*Invited Paper*),



S. Yamashita, The Univ. of Tokyo (Japan) [6782-68]

Lunch Break 12.00 to 14.00

Monday 5 November

Room 4

10.30 to 12.30

**SESSION 11a**  
Access I

*Chair: Xu Wang*, National Institute of Information and Communications Technology (Japan)

10.30: **Enhanced reflection tolerance of upstream signal in RSOA-based WDM-PON using Manchester coding**, A. Murakami, KDDI R&D Labs., Inc. (Japan); Y. Lee, K. Cho, Y. Takushima, Korea Advanced Institute of Science and Technology (South Korea); A. Agata, K. Tanaka, Y. Horiuchi, KDDI R&D Labs., Inc. (Japan); Y. C. Chung, Korea Advanced Institute of Science and Technology (South Korea) .. [6783-87]

10.45: **Tunable OTDR using self-locked RSOA for line monitoring of WDM-PON**, T. Kim, M. Chalapathi, Gwangju Institute of Science and Technology (South Korea); S. Hann, Korea Photonics Technology Institute (South Korea); C. Park, Gwangju Institute of Science and Technology (South Korea) .. [6783-88]

11.00: **Downstream traffic control policy of EPON**, X. Feng, Wuhan Institute of Technology (China) [6783-89]

11.15: **22-channel capacity of 2.5 Gbit/s DWDM-PON ONU transmitter by direct-modularly side-mode injection locked FPLD**, Y. Liao, National Chiao Tung Univ. (Taiwan); Y. Chen, Univ. of Maryland/Baltimore County (USA); G. Lin, National Taiwan Univ. (Taiwan) .. [6783-90]

11.30: **Applications of optically injection-locked 1.55 μm VCSELs in wavelength division multiplexed passive optical networks** (*Invited Paper*), E. Wong, The Univ. of Melbourne (Australia); X. Zhao, C. J. Chang-Hasnain, Univ. of California/Berkeley (USA); W. Hofmann, M. Amann, Walter Schottky Institute (Germany) .. [6783-91]

12.00: **High-speed long-reach wavelength-division-multiplexed passive optical network architectures** (*Invited Paper*), C. H. Kim, Univ. of Seoul (South Korea) [6783-92]



*Invited Paper*, E. Wong, The Univ. of Melbourne (Australia); X. Zhao, C. J.



*Invited Paper*, C. H. Kim, Univ. of Seoul (South Korea) [6783-92]

Room 5

10.30 to 12.15

**SESSION 11b**  
Optical Processing II

*Chair: Hercules Avramopoulos*, National Technical Univ. of Athens (Greece)

10.30: **Highly functional optical control using ultrafast nonlinear optical effects induced by ultrashort pulse** (*Invited Paper*),



N. Nishizawa, Osaka Univ. (Japan) [6783-110]

11.00: **System performance of slow-light buffering and storage in silicon nano-waveguide** (*Invited Paper*),



Y. Su, Shanghai Jiao Tong Univ. (China) [6783-111]

11.30: **Demonstration of an all-optical routing decision circuit**, Y. Liu, Univ. of Electronic Science and Technology of China (China) and Technische Univ. Eindhoven (Netherlands); J. M. Martinez, Univ. Politécnica de Valencia (Spain); J. Herrera, Technische Univ. Eindhoven (Netherlands); R. Clavero, F. Ramos, Univ. Politécnica de Valencia (Spain); etc. ... [6783-112]

11.45: **40-Gb/s all-optical serial to parallel converter**, H. Hu, J. Yu, L. Zhang, A. Zhang, W. Wang, B. Han, Y. Jiang, W. Jing, E. Yang, Tianjin Univ. (China) .. [6783-114]

12.00: **The nonlinear polarization switching using the principal states of polarizations in SOA**, M. Cheng, Beijing Jiaotong Univ. (China) .. [6783-115]

Lunch Break 12.15 to 14.00

Room 6

10.30 to 12.30

**SESSION 11**  
Modeling and Routing

*Chair: Toshihiko Ota*, The Furukawa Electric Co., Ltd. (Japan)

10.30: **Changes of traffic characteristics after large-scale aggregation in 3Tnet: modeling, analysis and evaluation**, C. Yuan, Peking Univ. (China) .. [6784-78]

10.45: **A novel hybrid topology generator for network simulation**, G. Lin, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) ... [6784-79]

11.00: **Evaluation of delay performance in valiant load-balancing network**, Y. Yu, Y. Jin, H. Cheng, Y. Gao, W. Sun, W. Guo, W. Hu, Shanghai Jiao Tong Univ. (China) ... [6784-80]

11.15: **On QoS guarantee in MPLS network with software deadline awareness**, Y. Gao, Y. Jin, H. Cheng, Y. Yu, W. Sun, W. Guo, W. Hu, Shanghai Jiao Tong Univ. (China) .. [6784-81]

11.30: **A new multi-path routing mechanism in MANET**, Y. Tao, K. Tao, Chongqing Univ. of Posts and Telecommunications (China) .. [6784-82]

11.45: **Dynamic routing algorithm for large file transport in optical network**, P. Zhang, W. Guo, Y. Jin, W. Sun, W. Hu, Shanghai Jiao Tong Univ. (China) .. [6784-83]

12.00: **Local node re-routing for RSVP-TE**, Y. Hua, M. Wang, Y. Lu, Y. Ji, Beijing Univ. of Posts and Telecommunications (China) .. [6784-84]

12.15: **Performance analysis and experiments of distributed dynamic routing in GMPLS controlled optical networks**, G. Gao, B. Mo, L. Wang, J. Zhang, Y. Cheng, W. Gu, Beijing Univ. of Posts and Telecommunications (China) .. [6784-85]

Lunch Break 12.30 to 14.00

## Conference 6781

Passive Components and Fiber-Based  
Devices (APOC01)

## Conference 6782

Optoelectronic Materials and Devices  
(APOC02)

Monday 5 November

Room 1

14.00 to 15.30

### SESSION 12 Modulation and Pulse Reshaping

Chair: **Baishi Wang**, Vytran  
LLC (USA)

#### 14.00: **Directly-modulated lasers for high speed optical transmission**

(Invited Paper), M. Du, OFS  
Fitel, LLC (USA); L. Grüner-  
Nielsen, OFS Fitel  
Denmark ApS  
(Denmark) . . . . [6781-104]

#### 14.30: **Acousto-optic programmable ultrashort optical pulse shape modulator**, T. Liao,

Q. Zhao, B. Dong,  
S. Li, Nankai Univ.  
(China) . . . . . [6781-105]

#### 14.45: **Design and fabrication of acousto- optic waveguide phase modulator in electro- optic integrated acceleration**,

Y. Zhang, Yanshan Univ.  
(China) . . . . . [6781-106]

#### 15.00: **Automatic short- pulse reshaping for high- speed optical communication systems**

(Invited Paper), Y. Tanaka,  
T. Kurokawa, Tokyo Univ.  
of Agriculture and Tech-  
nology (Japan) [6781-107]

Coffee/

Tea Break 15.30 to 16.30

Room 2

Room 3

14.00 to 16.00

### SESSION 12 Quantum Structure Devices

Chair: **Norbert Grote**,  
Fraunhofer-Gesellschaft  
(Germany)

#### 14.00: **InAs/InP based quantum dot mode- locked lasers at 1.5 $\mu\text{m}$**

(Invited Paper),  
 G. Duan, Alcatel-  
Thales III-V Lab.  
(France)  
[6782-69]

#### 14.30: **Influence of flux on the growth of InAs quantum dots on GaAs- patterned substrate**,

Y. Song, Beijing Univ. of  
Posts and  
Telecommunications  
(China) and Consultant  
(China) . . . . . [6782-70]

#### 14.45: **The strain energy density distribution of the capping layer surface for InAs/GaAs quantum dot along different growth directions**, Z. Yu, Y. Liu,

Beijing Univ. of Posts and  
Telecommunications  
(China) . . . . . [6782-71]

#### 15.00: **Quantum-dot semiconductor waveguide devices**, Z. Lu,

J. Liu, S. Raymond,  
P. J. Poole, P. J. Barrios,  
S. Haffouz, D. Poitras,  
G. J. Pakulski, S. Taebi,  
Y. Song, National  
Research Council Canada  
(Canada); X. Zhang,  
Concordia Univ. (Canada);  
T. J. Hall, Univ. of Ottawa  
(Canada) . . . . . [6782-72]

#### 15.15: **The coupled electronic state of the stack quantum dots by axial symmetrical finite element analysis**, Y. Liu,

Z. Yu, X. M. Ren, Beijing  
Univ. of Posts and  
Telecommunications  
(China) . . . . . [6782-73]

#### 15.30: **Determination on wave function of quantum structures using finite-difference time-domain**, B. Jia,

Z. Yu, Y. Liu, Beijing Univ.  
of Posts and  
Telecommunications  
(China) . . . . . [6782-74]

#### 15.45: **Gain switched pulse generation from quantum well laser using SPICE simulator**, M. S.

Ozyazici, Gaziantep Univ.  
(Turkey) . . . . . [6782-75]

## Conference 6783

Optical Transmission, Switching, and Subsystems (APOC03)

## Conference 6784

Network Architectures, Management, and Applications (APOC04)

### Monday 5 November

Room 4

14.00 to 16.00

#### SESSION 12 Access II

Chair: **Michael Sauer**,  
Corning Inc. (USA)

14.00: **PMD-supported coherent optical OFDM** (Invited Paper),



W. Shieh, The Univ. of Melbourne (Australia) [6783-93]

14.30: **Long reach passive optical networks** (Invited Paper), I. Tafur-Monroy, Technische Univ. Eindhoven (Netherlands) . . . [6783-94]

15.00: **Extended-reach operation of 10 Gb/s multimode-fibre links using multichannel 16-QAM modulation**, J. Ingham, Univ. of Cambridge (United Kingdom); D. Cunningham, Avago Technologies Ltd. (United Kingdom); J. Ha, R. V. Penty, I. H. White, Univ. of Cambridge (United Kingdom) . . . . . [6783-95]

15.15: **Self-seeding injection of anti-reflection coated FP laser amplifier based transmitters for wavelength division multiplexing PON**, G. Lin, S. Ko, Y. Huang, H. Wang, National Taiwan Univ. (Taiwan); Y. Liao, National Chiao Tung Univ. (Taiwan); G. Lin, National Taiwan Univ. (Taiwan) . . . [6783-96]

15.30: **A novel wavelength-shared WDM-PON system and its quick collision test method for upstream channels**, W. Li, Huazhong Univ. of Science and Technology (China); Y. Li, Central China Normal Univ. (China); H. Zhang, Huazhong Univ. of Science and Technology (China) . . . . . [6783-97]

15.45: **An adaptive forward error correction method for high-speed optical Ethernet**, J. Dai, Wuhan Research Institute of Posts and Telecommunications (China) and Huazhong Univ. of Science and Technology (China); S. Yu, Wuhan Research Institute of Posts and Telecommunications (China) . . . . . [6783-98]

Coffee/  
Tea Break 16.00 to 16.30

Room 5

14.00 to 16.00

#### SESSION 12a WDM/Optical Switching

Chair: **Achim Autenrieth**,  
Nokia Siemens Networks (Germany)

14.00: **A novel scheme for DWDM optical millimeter-wave generation and wavelength reuse for uplink connection**, L. Hu, L. Chen, S. Wen, Hunan Univ. (China) . . . [6784-99]

14.15: **Impairment-aware network performance of 40Gbps, 16-wavelength IP/GMPLS over WDM system**, X. Shao, P. Shum, L. Zhang, Nanyang Technological Univ. (Singapore) . . . [6784-100]

14.30: **Time-space label switched optical networks** (Invited Paper), Z. Li, S. Peng, A. Xu, L. Xie, Peking Univ. (China) [6784-101]



15.00: **A heuristic algorithm for priority-based lightpath allocation in survivable WDM mesh networks**, X. Wei, Univ. of Electronic Science and Technology of China (China) . [6784-102]

15.15: **Proposal of a multi-layer network architecture for OBS/GMPLS network interworking**, H. Guo, T. Tsuritani, KDDI R&D Labs., Inc. (Japan); Y. Yin, Beijing Univ. of Posts and Telecommunications (China); T. Otani, KDDI R&D Labs., Inc. (Japan); J. Wu, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-103]

15.30: **Investigation on traffic grooming of OPS edge node base on FDLs**, K. Gao, C. Wu, Beijing Jiaotong Univ. (China) . . . . . [6784-104]

15.45: **Comparison of retransmission schemes in optical burst switched networks**, P. Zhang, Peking Univ. (China) . . . . . [6784-105]

Coffee/  
Tea Break 16.00 to 16.30

Room 6

14.00 to 16.00

#### SESSION 12b Net/Wireless/Home Net

Chair: **Roeland Nuijts**,  
SURFnet b.v. (Netherlands)

14.00: **A new routing algorithm for mobile agents in wireless ad hoc sensor networks**, J. Wang, Z. Mi, Nanjing Univ. of Posts and Telecommunications (China) . . . . . [6784-86]

14.15: **A novel interrogation technique for time-division multiplexing fiber Bragg grating sensor net**, S. Liu, Y. Yu, J. Zhang, Heilongjiang Univ. (China) . . . . . [6784-87]

14.30: **Distribution QoS scheme for a novel of hybrid optical wireless network**, S. Wang, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6784-88]

14.45: **A review of full-duplex WDM RoF architectures**, M. H. Raza, K. Zaidi, S. M. H. Zaidi, National Univ. of Science and Technology (Pakistan) . . . . . [6784-89]

15.00: **Fiber at the home: broadband communication and multiple sensing** (Invited Paper), W. Xu, B. Liu, Wuhan Broadband Photonics Co., Ltd. (China) . . . . . [6784-90]

15.30: **Research on the model of home networking**, X. Yun, FiberHome Telecommunication Technologies Co., Ltd. (China); X. Feng, Wuhan Institute of Technology (China) . . . . . [6784-91]

15.45: **Traffic management for prioritized information in the next generation home network**, K. Oguchi, S. Yamakawa, S. Terada, Y. Okazaki, Y. Kakishima, K. Tojo, D. Hanawa, Seikei Univ. (Japan) . . . [6784-92]

Coffee/  
Tea Break 16.00 to 16.30

Room 1

16.30 to 18.00

**SESSION 13  
Short Pulse Lasers**

*Chair: Ping Shum,*  
Nanyang Technological  
Univ. (Singapore)

16.30: **The pulse formation study of self-similar mode-locked fiber laser,** C. Tu, Nankai Univ. (China) . . . . . [6781-108]

16.45: **Effect of coherence on the ultrashort solitons in passively mode locked fiber laser,** D. Lei, H. Xu, S. Wen, X. Fu, Hunan Univ. (China) . . . . . [6781-109]

17.00: **50fs pulse generation directly from a nonlinear polarization rotation fiber laser,** W. Xu, South China Normal Univ. (China) . . . . . [6781-110]

17.15: **Analytical research on pulse compression by using nonlinear optical loop mirror based on crystal fiber,** S. Li, Beijing Institute of Technology (China) . . . . . [6781-111]

17.30: **The influence of femtosecond pulse initial width and chirp on its self-similar evolution and compression,** C. Tu, Nankai Univ. (China) . . . . . [6781-112]

17.45: **Mathematical series for analysis of detuned active mode locked lasers,** H. Q. Lam, P. Shum, Nanyang Technological Univ. (Singapore); B. N. Le, Monash Univ. (Australia); Y. Gong, Institute for Infocomm Research (Singapore); S. Fu, Nanyang Technological Univ. (Singapore)[6781-113]

## Conference 6783

Optical Transmission, Switching, and Subsystems (APOC03)

## Conference 6784

Network Architectures, Management, and Applications (APOC04)

### Monday 5 November

#### Room 4

16.30 to 18.30

#### SESSION 13 RoF and Wireless Access Networks

**Chair: Idelfonso Tafur-Monroy**, Danmarks Tekniske Univ. (Netherlands)

#### 16.30: Cost-effective radio-over-fiber systems based on VCSELs

(Invited Paper),



M. Sauer,  
A. Kobayakov,  
N. Nishiyama,  
C. G. Caneau,  
C. Zah, Corning Inc. (USA) . . . . . [6783-99]

#### 17.00: Cost-effective hybrid fiber wireless systems

(Invited Paper),  
T. A. Nirmalathas,  
C. Lim,  
M. Bakaul,  
N. Nadarajah,  
M. Attygalle,



D. Novak, R. Waterhouse, The Univ. of Melbourne (Australia) . . . . [6783-100]

#### 17.30: A bidirectional gigabit WDM-RoF system for wired/wireless transmission using reflective SOA

D. W. Lee, Y. Won, S. Han, Yonsei Univ. (South Korea) . . . . . [6783-101]

#### 17.45: A novel scheme to generate millimeter wave with wavelength reuse based on optical-carrier-suppression

C. Huang, L. Chen, S. Wen, Hunan Univ. (China) . . [6783-102]

#### 18.00: Millimeter-wave optical pulse generation using n:1 time multiplexer and temporal Talbot effect

Z. Pan, Shanghai Institute of Optics and Fine Mechanics (China) . . . . . [6783-103]

#### 18.15: Optical generation of millimeter-wave signals for fibre-radio system using Bragg gratings as filters

J. Pei, Beijing Univ. of Posts and Telecommunications (China) . . . . . [6783-104]

#### Room 5

16.30 to 18.30

#### SESSION 13a Service Switch

**Chair: Harald Rohde**, Nokia Siemens Networks GmbH & Co. KG (Germany)

#### 16.30: A novel congestion control algorithm for multimedia stream

J. Hao, Huazhong Univ. of Science and Technology (China) . . . . . [6784-106]

#### 16.45: A sliding-window-based efficient forwarding mechanism in shared memory switch fabric

Y. Wang, Huazhong Univ. of Science and Technology (China); S. Yu, Wuhan Research Institute of Posts and Telecommunications (China) . . . . . [6784-107]

#### 17.00: Design and implement of ATCA-based storage network switch prototype

J. Zhu, J. Zhou, D. Zeng, Huazhong Univ. of Science and Technology (China) . . . . . [6784-108]

#### 17.15: Low jitter scheduling with redundancy control for input-queued switches

H. Cheng, Shanghai Jiao Tong Univ. (China) . . . . . [6784-109]

#### 17.30: IP over optical multicasting for large-scale video delivery

(Invited Paper), Y. Jin, Shanghai Jiao Tong Univ. (China) . . . . . [6784-110]

#### 18.00: PHOSPHORUS: single-step on-demand services across multi-domain networks for e-science

(Invited Paper), S. Figuerola, Fundación i2CAT (Spain)[6784-111]



#### Room 6

16.30 to 18.30

#### SESSION 13b Net Architecture

**Chair: Olivier Audouin**, Alcatel (France)

#### 16.30: Design of an agile all-photonic network

(Invited Paper), G. V. Bochmann, Univ. of Ottawa (Canada) [6784-93]

#### 17.00: Recent advances in very-high-capacity transmission technology

(Invited Paper), S. Aisawa, Y. Hibino, NTT Network Innovation Labs. (Japan) . . . . . [6784-94]

#### 17.30: A novel node architecture for all-optical switching networks

C. Yuan, Peking Univ. (China) . . . [6784-95]

#### 17.45: Complex communication networks architecture

S. S. U. H. Jafri, P. Johnson, A. Taleb-Bendiab, Liverpool John Moores Univ. (United Kingdom) . . . . . [6784-96]

#### 18.00: Multiple source multiple destination network tomography in nonstationary communication networks

L. Chen, Chongqing Univ. of Posts and Telecommunications (China) . . . . . [6784-97]

#### 18.15: Load balancing and robustness in communication networks

S. S. U. H. Jafri, P. Johnson, A. Taleb-Bendiab, Liverpool John Moores Univ. (United Kingdom) . . . . . [6784-98]



## POSTER SESSION · 4-5 November

12.30 to 14.00 · Third Floor

Poster authors will begin displaying posters after 10:00 am Sunday morning. Poster sessions, with authors present at their posters, will be held Sunday and Monday from 12.30 to 14.00. Posters must be removed immediately after the poster session on Monday. Posters not removed at this time will be considered unwanted and will be discarded.

- ✓ **Complex modes in negative-refractive-index fibers**, M. Cheng, Minjiang Univ. (China) ..... [6781-125]
- ✓ **All-optical microwave photonic filters with hi-bi linearly-chirped grating**, Y. Gong, Institute for Infocomm Research (Singapore); G. Ning, P. Shum, Nanyang Technological Univ. (Singapore); J. Hao, Institute for Infocomm Research (Singapore); M. L. Tang, H. Dong, S. Fu, Nanyang Technological Univ. (Singapore); V. Paulose, Institute for Infocomm Research (Singapore) ..... [6781-126]
- ✓ **Research on the photosensitive fiber's mechanical performance**, T. Feng, Yangtze Optical Fibre and Cable Co., Ltd. (China) ..... [6781-127]
- ✓ **A novel fibre Bragg grating hydrophone system**, Y. Wang, W. Ren, Z. Tan, Y. Liu, Beijing Jiaotong Univ. (China) ..... [6781-128]
- ✓ **Analysis of transmission characteristics of PFBG based on FEM with first-order transparent boundary conditions**, Y. Wang, Y. Wei, Z. Tan, Y. Liu, W. Ren, Beijing Jiaotong Univ. (China) ..... [6781-129]
- ✓ **The optimization of solar blind UV high reflectance coatings**, H. Zhang, H. Jia, J. Yang, S. Chang, H. Ying, National Univ. of Defense Technology (China) ..... [6781-130]
- ✓ **Numerical analysis of stimulated Brillouin scattering in high power double-clad fiber lasers**, G. Liu, D. Liu, Huazhong Univ. of Science and Technology (China) ..... [6781-131]
- ✓ **Study on the improved femtosecond pulse generation system**, C. Wang, F. Zhang, Z. Tong, T. G. Ning, S. Jian, Beijing Jiaotong Univ. (China) [6781-132]
- ✓ **A novel method of edge filter demodulation by using temperature-independence HBF Sagnac LM**, Y. Huang, Nanjing Univ. of Posts and Telecommunications (China) ..... [6781-133]
- ✓ **Application of GeO<sub>2</sub>-doped silica waveguides in optical modulator**, J. Li, China Jiliang Univ. (China) ..... [6781-134]
- ✓ **Novel optic switch based on silicon/kaolinite photonic crystal line-defect waveguides**, J. Li, China Jiliang Univ. (China) ..... [6781-135]
- ✓ **An investigation on effect of time aging on mechanical behavior of optical fiber with partially-cured coating**, S. Bhaumik, Sterlite Optical Technologies Ltd. (India) ..... [6781-136]
- ✓ **Multiple polarization states of vector solitons in fiber laser**, W. Chen, Foshan Univ. (China); W. Xu, South China Normal Univ. (China); H. Cao, D. Han, Foshan Univ. (China) ..... [6781-137]
- ✓ **Energy transmission and distribution of guided modes in parallel-plate waveguide coupler**, J. Liu, C. Huang, Hunan Institute of Science and Technology (China); J. Sun, D. X. Huang, Huazhong Univ. of Science and Technology (China) ..... [6781-138]
- ✓ **Improvement on delay characteristics of cascaded chirped FBGs**, S. Lu, O. Xu, X. Dong, B. Li, S. Jian, Beijing Jiaotong Univ. (China) ..... [6781-139]
- ✓ **A global design of high power Nd<sup>3+</sup>-Yb<sup>3+</sup> co-doped fiber lasers**, F. Zhang, C. Wang, R. Geng, S. Jian, Beijing Jiaotong Univ. (China) ..... [6781-140]
- ✓ **Design of broadband dispersion compensating fiber with the small core photonic crystal fiber**, M. Wu, Huazhong Univ. of Science and Technology (China) ..... [6781-141]
- ✓ **Investigation on the mode and noise of short cavity Er/Yb fiber laser**, Y. Guo, T. Wang, B. Bai, J. Huo, P. Li, H. Yan, Jilin Univ. (China) ..... [6781-142]
- ✓ **Resonant-cavity based monolithic white light-emitting diode**, L. Huang, D. X. Huang, F. Wen, Huazhong Univ. of Science and Technology (China) ..... [6782-76]
- ✓ **Multi-quantum-well InGaNaNs/GaAs resonant cavity enhanced photodetector with integrated vertical taper structure**, Y. Xu, Beijing Univ. of Posts and Telecommunications (China) ..... [6782-77]
- ✓ **High power vertical cavity surface-emitting laser with high reliability**, C. Yan, Changchun Univ. of Science and Technology (China) ..... [6782-78]
- ✓ **Characterization of white OLEDs**, W. Chen, Univ. of Electronic Science and Technology of China (China) ..... [6782-79]
- ✓ **Parameter optimization of nonlinear SOA in an SOA-MZI packet-level self-synchronization scheme**, L. Cai, Beijing Jiaotong Univ. (China) ..... [6782-80]
- ✓ **Fine-tuning of the spectral efficiency based on tunneling splitting in multiple quantum well system**, C. Huang, J. Liu, W. Hu, Hunan Institute of Science and Technology (China) ..... [6782-81]
- ✓ **Large-aperture low-threshold current 980nm VCSELs fabricated with pulsed anodic oxidation**, J. Cui, Y. Ning II, T. Li, Y. Sun, B. Peng, Y. Zhang, G. Liu, L. Wang, Changchun Institute of Optics, Fine Mechanics and Physics (China) ..... [6782-82]
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12.30 to 14.00 · Third Floor

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