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Welcome

Important Information

REGISTRATION
Saturday, November 8, 2014
14:00-18:00 at Lobby
Sunday, Monday
November 9-10, 2014
8:30-18:00 at Lobby

BOAT TOURISM
Sunday, November 9, 2014
19:00 at Lobby

CONFERENCE BANQUET
Monday, November 10, 2014
18:30 at Ballroom

Organizers

Sponsors
WELCOME MESSAGE FROM THE TPC CHAIR

On behalf of the Executive Committee and the hosting Suzhou University and Suzhou Institute of Electronics, it is my great pleasure to welcome you to the 13th International Conference on Optical Communications and Networks (ICOCN). Since its commencement in 2002, the ICOCN conference has grown steadily to become one of the most important conferences in the area of optical communications and networking in the Asia-Pacific region. In particular, this year’s ICOCN aims at addressing the themes of optical networks, optical transmission subsystems and techniques, and photonic devices and integration.

This year we are honored to have three world renowned scholars, Prof. Rodney S. Tucker of Melbourne University, Dr. Ori Gerstel, CTO of Sedona Systems, Israel, and Dr. Peter J. Winzer of Bell Labs, USA, to be our plenary speakers. Not only have each of them made extraordinary contributions to the field of optical communications and networking, their diverse expertise and keen visions in both academia and industry are equally outstanding. We look forward to their stimulating and scholastic talks.

Also, this year we have accepted more than 120 papers by the authors from more than 13 countries and regions, among which 59 are invited talks. All the papers were carefully reviewed by more than 30 TPC members and reviewers, with each paper evaluated by at least two reviewers. All these papers and talks are organized into eight lecture-style oral sessions and one interactive poster session. We are confident that you will find the technical program of ICOCN 2014 very stimulating and inspiring.

We would like to acknowledge the IEEE Photonics Society, the Suzhou Association for Science and Technology, and Zhongtian Broadband Technology Co. Ltd for their great partnership in sponsoring the ICOCN 2014. We feel deeply grateful to all the people who have contributed to make this event possible, including the authors who contributed papers, the conference steering committee (especially Prof. Perry Shum), the conference international advisory committee, the invited speakers, and the diligent TPC members and reviewers. Thanks are also extended to the conference administrative committee, the volunteers, and supporters, for their tireless efforts throughout the course of the conference.

Finally, we wish all the participants a very fruitful and productive conference, and also an unforgettable stay in Suzhou where you will find the perfect blend of ancient and modern building styles and cultures.

Gangxiang Shen, Soochow University
TPC Chair, ICOCN 2014
Welcome

Conference Committees

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Rodney S. Tucker (University of Melbourne, Australia)
Moshe Zukerman (City University of Hong Kong)

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Xiaohan Sun (Southeast University, China)
Heming Zhao (Soochow University, China)
Chi Xue (Zhongtian Technology Co. Ltd.)

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Chao Lu (Hong Kong Polytechnic University)
Guy Omidyar (Omidyar-Institute, USA)
Athikom Roeksabutr (Mahanakorn University of Technology, Thailand)
Perry Shum (Nanyang Technological University, Singapore)
Chongqing Wu (Beijing Jiaotong University, China)

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Qi Yang (State Key Laboratory of Optical Communication Technologies and Networks, Wuhan, China)
Zhongqi Pan (University of Louisiana at Lafayette, USA)
Liming Zhang (Bell Labs, Alcatel-Lucent, USA)
Jian Wang (Huazhong University of Science and Technology, China)
Jianguo Liu (Institute of Semiconductors, Chinese Academy of Sciences, China)
Welcome

TPC Members

SC1: Optical networks

Calvin CK Chan (Chinese University of Hong Kong) (Co-Chair)
Jie Zhang (Beijing University of Posts and Telecommunications, China) (Co-Chair)
Jason Jue (University of Texas at Dallas, USA) (Co-Chair)
Jiajia Chen (University of Texas at Dallas, USA) (Co-Chair)
Jiajia Chen (Royal Institute of Technology, Sweden)
Lei Guo (Northeastern University, China)
Philip Ji (NEC Labs, USA)
Weiqiang Sun (Shanghai Jiao Tong University, China)
Massimo Tornatore (Politecnico di Milano, Italy)
Elaine Wong (University of Melbourne, Australia)
Yuki Yoshida (Osaka University, Japan)
Zuqing Zhu (University of Science and Technology of China, China)

SC 2: Transmission subsystems and techniques

Changyuan Yu (National University of Singapore, Singapore) (Co-Chair)
Qi Yang (State Key Laboratory of Optical Communication Technologies and Networks, Wuhan, China) (Co-Chair)
Zhongqi Pan (University of Louisiana at Lafayette, USA) (Co-Chair)
Jian Chen (Nanjing University of Posts and Telecommunications, China)
Kai-Ming Feng (National Tsinghua University, Taiwan)
Hoon Kim (National University of Singapore, Singapore)
Zhaohui Li (Jinan University, China)
Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)
Lianshan Yan (Southwest Jiaotong University, China)
Xingwen Yi (University of Electronic Science and Technology of China, China)
Wende Zhong (Nanyang Technological University, Singapore)

SC 3: Photonic devices and integration

Liming Zhang (Bell Labs, Alcatel-Lucent, USA) (Co-Chair)
Jian Wang (Huazhong University of Science and Technology, China) (Co-Chair)
Jianguo Liu (Institute of Semiconductors, Chinese Academy of Sciences, China) (Co-Chair)
Junming An (Institute of Semiconductors, Chinese Academy of Sciences, China)
Antonella Bogoni (Photonic Networks National Laboratory-CNIT, Italy)
Xiangfei Chen (Nanjing University, China)
Yanning Liu (Coadna, USA)
Minghao Qi (Purdue University, USA)
Yikai Su (Shanghai Jiao Tong University, China)

Organizing Committee

Gangxiang Shen (Soochow University, China) (Chair)
Xiaodong Fu (Zhejiang Broadband Technology Co. Ltd.) (Co-Chair)
Weidong Shao (Soochow University, China)
Lian Xiang (Soochow University, China)
Bowen Chen (Soochow University, China)
Xiaoling Wang (Soochow University, China)
Yongcheng Li (Soochow University, China)
**Program**

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<td><strong>1st Session</strong> <em>(8:45-10:00)</em></td>
<td><strong>Opening Ceremony</strong> <em>(8:45-9:15)</em></td>
<td>*<em>Plenary Session 1-Prof. Rodney S. Tucker (9:15-10:00)</em></td>
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<td><strong>2nd Session</strong> <em>(10:30-12:00)</em></td>
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<td>*<em>Plenary Session 3-Dr. Peter J. Winzer (11:15-12:00)</em></td>
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<td><strong>3rd Session</strong> <em>(13:00-15:00)</em></td>
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<td><strong>3rd Session</strong> <em>(13:50-15:50)</em></td>
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**Explanation of Session Codes**

The first letter of codes denotes the day of the week (Sunday=S, Monday=M). The second number indicates the session series on that day (for instance, 3 denotes the 3rd session on that day). The third number denotes room number. The number at the end of the code (separated from room number with a period) indicates the position of the talk in the session.

For example, a presentation coded S32.1 indicates that a paper with information of (Sunday, 3rd session, room 2, 1st talk).
Towards a Green Internet

Rodney S. Tucker
University of Melbourne, Australia

Abstract: The Internet and the associated cloud computing infrastructure consume a small but growing fraction of the global electricity supply. The energy consumption of the network is currently dominated by access networks, both wired and wireless, but the energy consumption of routers and switches in the network is also rising rapidly, and could eventually dominate. In this talk, I will examine the key contributors to energy consumption in the Internet and cloud computing, and examine some approaches that will assist in the evolution of a more energy-efficient network.

Biography: Rodney S. Tucker is a Laureate Professor at the University of Melbourne. He is Director of the Institute for a Broadband-Enabled Society (IBES) and the Centre for Energy-Efficient Telecommunications (CEET). He has held positions at the University of Queensland, the University of California, Berkeley, Cornell University, Plessey Research, AT&T Bell Laboratories, Hewlett Packard Laboratories, and Agilent Technologies. He joined the University of Melbourne in 1990.

Professor Tucker is a Fellow of the Australian Academy of Science, a Fellow of the Australian Academy of Technological Sciences and Engineering, a Fellow of the Optical Society of America, and a Fellow of the Institute of Electrical and Electronics Engineers (IEEE). He served on the Management Committee of the Australian Telecommunications and Electronics Research Board from 1991 to 1993, and has been a member of the Australasian Council on Quantum Electronics. From 1995 to 1999, he served as a member of the Board of Governors of the IEEE Lasers and Electro-Optics Society. He was Editor-in-Chief of the IEEE Transactions on Microwave Theory and Techniques from 1988 to 1990, Guest Editor of the IEEE Journal of Selected Topics in Quantum Electronics Special Issue on Semiconductor Lasers, June 1995, Guest Editor of the IEEE Transactions on Microwave Theory and Techniques, Special Issue on Microwave and Millimetre-Wave Photonics, September 1995, and Associate Editor of IEEE Photonics Technology Letters from 1997 – 2006. He is currently Vice-President Publications of the IEEE Photonics Society.

Professor Tucker received the BE (Elec) degree from the University of Melbourne in 1969, and the
PhD degree, also from the University of Melbourne, in 1975. In 1970 he was awarded the Fisk Prize by the Institution of Radio and Electronics Engineers, Australia, and in 1975 he was awarded a Harkness Fellowship by the Commonwealth Fund, New York. He received the Institution of Engineers, Australia, M.A. Sargent Medal for 1995 for his contributions to Electrical Engineering and was named IEEE Lasers and Electro-Optics Society Distinguished Lecturer for the year 1995-96. In 1997 he was awarded the Australia Prize, Australia’s premier international award for science and technology, for his contributions to telecommunications and in 2007 he received the IEEE LEOS Aron Kressel Award. He has been named one of ISI’s Highly-Cited Researchers.

10:30-11:15

**Likely and Unlikely Directions for the Evolution of the Optical Layer**

Ori Gerstel

*CTO, Sedona Systems, Israel*

**Abstract:** The SDN concept originated from the IP layer but has raised significant interest for optical networks as well. However, since the control and management of optical networks and IP networks has been fundamentally different, the value and impact of SDN is also different. Optical networks have been centrally managed – which is a similar paradigm to that of SDN. In addition – while Openflow provides a new paradigm for managing a router, it does not represent a paradigm shift for managing an optical node. At the same time, SDN does provide some unique advantages – especially when considering multi-vendor, multi-domain and multi-layer networks.

**Biography:** Ori Gerstel is CTO, Sedona Systems, Israel. Until the end of 2013, Ori was a Principal Engineer at Cisco, where he was responsible for identifying opportunities for integration of routers and transport technologies. Before joining Cisco in 2002, Ori held senior architecture positions at Tellabs and Nortel, where he architected the first mesh optical network and the first fully switched optical network respectively. He started his work in optical networking at IBM, where the first commercial DWDM system was developed. For his contribution, he was awarded the grade of IEEE Fellow (2008) and OSA Fellow (2013).

Ori published over 90 papers in the main international conferences and journals in the field, as well as several book chapters. He holds over 35 granted patents on optical networks, and a similar number of pending patents. He served as conference committee member and co-chair of several communication conferences and has been regularly invited to teach short courses and attend panels. He also serves as editor-in-chief for the primary journal for optical networking (JOCN) and as a steering committee member for the OFC/NFOEC conference. Ori holds a Ph.D. degree from the Technion.
Spatial Multiplexing: The Final Frontier in Optical Network Capacity Scaling

Peter J. Winzer

Optical Transmission Systems and Networks Research Department, Bell Labs

Abstract: With network traffic growing between 30% and 90% per year, depending on application segment and geography, conventional single-mode fiber systems are rapidly approaching their fundamental Shannon capacity limits. In fact, today’s Wavelength-Division Multiplexing (WDM) products are already within a factor of 3 to 6 from their fundamental limits, with little room for economically attractive growth. As such, it is critically important to deploy capacity using parallelism in the frequency domain (i.e., multi-band systems) or in the spatial domain (i.e., Space-Division Multiplexing, SDM). While the former route will be able to provide a stop-gap solution to meet the most immediate traffic needs, the latter allows for orders of magnitude in capacity scalability. In this talk, we will review SDM research and take a look at integration options that need to be pursued to make SDM a commercially attractive reality. We will explore implications of crosstalk mitigation techniques on multiple-input-multiple-output (MIMO) digital signal processing as well as on network architectures and show that spatial superchannels seem to be the only long-term scalable solution for high-capacity optical networks of the future.

Biography: Peter J. Winzer heads the Optical Transmission Systems and Networks Research Department at Bell Labs, Alcatel-Lucent, in Holmdel, NJ. He received his Ph.D. in electrical engineering from the Vienna University of Technology, Austria, in 1998. Supported by the European Space Agency (ESA), he investigated space-borne Doppler lidar and laser communications using high-sensitivity digital modulation and detection. At Bell Labs since 2000, he has focused on various aspects of high-bandwidth fiber-optic communication systems, including Raman amplification, advanced optical modulation formats and receiver concepts, digital signal processing and coding, as well as on robust network architectures for dynamic data services. He demonstrated several high-speed and high-capacity optical transmission records, including the first 100G and the first 400G electronically multiplexed optical transmission systems and the first field trial of live 100G video traffic over an existing carrier network. Since 2008 he has been investigating space-division multiplexing (SDM) and optical multiple-input-multiple-output (MIMO) as a promising option to scale optical transport systems. He has widely published and patented and is actively involved in technical and organizational tasks with the IEEE Photonics Society and the Optical Society of America (OSA), currently serving as Editor-in-Chief for the IEEE/OSA Journal of Lightwave Technology and as Technical Program Chair of the 2014 Optical Fiber Communications Conference (OFC). Dr. Winzer is a Distinguished Member of Technical Staff at Bell Labs and a Fellow of the IEEE and the OSA.
Technical Program

13:00-15:00

Room 1-S31  Elastic Optical Networks

Chair: Pin-Han Ho (University of Waterloo, Canada)

13:00  (S31.1) Spectrally and Spatially Flexible Optical Networking  
Invited talk
Ioannis Tomkos (Athens Information Technology, Greece)

13:20  (S31.2) Elastic Optical Networking Architecture, System, and Technologies  
Invited talk
Ben Yoo (University of California, Davis, USA)

13:40  (S31.3) A Novel Routing and Bandwidth Allocation Strategy for Elastic Optical Networks  
Invited talk
Pin-Han Ho (University of Waterloo, Canada)

14:00  (S31.4) An Optimal Independent Sets Based Greedy Spectral Defragmentation Algorithm in Elastic Optical Network
Jiahui Wu (Beijing University of Posts and Telecommunications, China); Min Zhang (Beijing University of Posts and Telecommunications, China); Yanan Yue (Beijing University of Posts and Telecommunications, China); Fazong Wang (Beijing University of Posts and Telecommunications, China); Shanguo Huang (Beijing University of Posts and Telecommunications, China)

14:20  (S31.5) A Service-Based Schedule Scheme in Flexi-Grid Optical Network
Minglu Xiao (Beijing University of Posts and Telecommunications, China); Yang Wang (China Electric Power Research Institute, China); Jie Zhang (Beijing University of Posts and Telecommunications, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Yiming Yu (Beijing University of Posts and Telecommunications, China); Hui Yang (Beijing University of Posts and Telecommunications, China); Qiang Wang (Beijing University of Posts and Telecommunications, China); Xiaobing Niu (ZTE, China); Zhenyu Wang (ZTE, China); Dajiang Wang (ZTE, China)

14:40  (S31.6) Combination of Distributed and Centralized Control Architecture Based on PCE Protocol for Large Scale Multi-Domain Elastic Optical Network
Xiaoshuang Li (Beijing University of Posts and Telecommunications, China)

Room 2-S32  Optical Transmission Systems I

Chair: Changyuan Yu (National University of Singapore, Singapore)

13:00  (S32.1) Optical Wireless Communications over Broad Spectra  
Invited talk
Technical Program

Zhengyuan Xu (University of Science and Technology of China, China)

13:20 (S32.2) Offset-QAM Multicarrier Technology for Optical Systems and Networks  
*Invited talk*  
Jian Zhao (Tyndall Institute, Ireland)

13:40 (S32.3) Key Technologies for Elastic Optical Networks  
*Invited talk*  
Zhangyuan Chen (Peking University, China)

14:00 (S32.4) Wavelength Conversion of High-Order QAM Signals for Future Transparent All-Optical Networks  
*Invited talk*  
Guowei Lu (National Institute of Information and Communications Technology, Japan)

14:20 (S32.5) High-Speed Optical Wireless Communications in Personal Area Networks  
*Invited talk*  
Christina Lim/Ke Wang (The University of Melbourne, Australia)

14:40 (S32.6) New Low-complexity but Effective Mitigation for Penalties from In-band Crosstalk of Multicore Fiber with Advanced Modulation Formats  
Borui Li (Huazhong University of Science and Technology, China); Ming Tang (Huazhong University of Science and Technology, China); Songnian Fu (Huazhong University of Science and Technology, China); Jingchi Cheng (Huazhong University of Science and Technology, China); Shiwei Zhou (Huazhong University of Science and Technology, China)

Room 3-S33  Active Components and Applications I

Chair: Jian Wang (Huazhong University of Science and Technology, China)

13:00 (S33.1) Thulium Doped Fiber Laser Operating at 2μm Region  
*Invited talk*  
Yong Liu (University of Electronic Science and Technology of China, China)

13:20 (S33.2) Demonstration of a Low-Cost Cascade Tunable Semiconductor DFB Laser  
*Invited talk*  
Xiangfei Chen (Nanjing University, China)

13:40 (S33.3) High Performance PDs for Microwave Photonics  
*Invited talk*  
Bing Xiong (Tsinghua University, China)

14:00 (S33.4) Actively Mode-Locked Fiber Laser with Pulse Intensity Feed-Forward  
*Invited talk*  
Feifei Yin (Beijing University of Posts and Telecommunications, China)

14:20 (S33.5) Design of Multi-Pumped Raman Fiber Amplifier by Differential Evolution Optimization
Technical Program

Mingjie Li (Beijing University of Posts and Telecommunications, China); Lijia Zhang (Beijing University of Posts and Telecommunications, China); Bo Liu (Beijing University of Posts and Telecommunications, China); Qi Zhang (Beijing University of Posts and Telecommunications, China); Yongjun Wang (Beijing University of Posts and Telecommunications, China); Qinghua Tian (Beijing University of Posts and Telecommunications, China); Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China); Kai Wang (Beijing University of Posts and Telecommunications, China); Jiaxiu Zou (Beijing University of Posts and Telecommunications, China)

14:40 (S33.6) **Pulse-Width Optimization of Pulsed-Pump Fiber Optical Parametric Amplifiers**
Yao Zou (Soochow University, China); Mingyi Gao (Soochow University, China); Shangfei Yang (Soochow University, China)

15:30-17:30

Room 1-S41  Optical Networking Technology I

Chair: Ioannis Tomkos (Athens Information Technology, Greece)

15:30 (S41.1) **Perspectives and Challenges for Future Dynamic Optical Networks**  
*Invited talk*
Xiaoping Zheng/Nan Hua (Tsinghua University, China)

15:50 (S41.2) **A Path Monitoring Scheme for Reconfigurable Optical Switching Networks**  
*Invited talk*
Calvin CK Chan (Chinese University of Hong Kong, Hong Kong)

16:10 (S41.3) **Filterless Optical Network Architectures for Core and Submarine Applications**  
*Invited talk*
Christine Tremblay (ÉTS, Canada)

16:30 (S41.4) **Experimental Assessment of a Cognitive Mechanism to Reduce the Impact of Outdated TEDs in Optical Networks**
Natalia Fernández (Universidad of Valladolid, Spain); Ramón J. Durán (University of Valladolid, Spain); Domenico Siracusa (CREATE-NET; Politecnico Di Milano, Italy); Antonio Francescon (CREATE-NET, Italy); Ignacio de Miguel (University of Valladolid, Spain); Ignacio Rodríguez (University of Valladolid, Spain); Juan Carlos Aguado (University of Valladolid, Spain); Elio Salvadori (Create-Net, Italy); Rubén M. Lorenzo (University of Valladolid, Spain)

16:50 (S41.5) **An Analysis of Optimized CapEx for Multi-Core Fiber based Optical Networks**
Yao Li (Tsinghua University, China); Hua Nan (Tsinghua University, China); Xiaoping
**Technical Program**

Zheng (Tsinghua University, China)

17:10  (S41.6) An Improved Ant Colony Algorithm for Dynamic Traffic Grooming in Asynchronous Optical Packets Switching Networks
Hengjian Tang (Southeast University, China); Fuding Zhang (Southeast University, China); Xiaolu Zhang (Southeast University, China); Yu Zheng (Southeast University, China); Ying Wang (Southeast University, China); Junhua Qiu (Southeast University, China); Xiaohan Sun (Southeast University, China)

**Room 2-S42  Fiber Nonlinearity and Compensation**

Chair: Zhangyuan Chen (Peking University, China)

15:30  (S42.1) Investigation of the Nonlinearity in Few-Mode Fibers  *Invited talk*
Zhongqi Pan (University of Louisiana at Lafayette, USA)

15:50  (S42.2) Design and Performance Evaluation of Rectangular Optical Filter Based on Stimulated Brillouin Scattering in Optical Fiber  *Invited talk*
Lilin Yi (Shanghai Jiaotong University, China)

16:10  (S42.3) Crosstalk Caused by Fiber Nonlinear Polarization Rotation in DP-QPSK Systems
Lanlan Liu (Beijing Jiaotong University, China); Chongqing Wu (Beijing Jiaotong University, Institute of Optical Information, China); Yongliang Li (Beijing Jiaotong University, China); Shuai Yang (Beijing Jiaotong University, China)

16:30  (S42.4) RCLED Nonlinearity Mitigation for Polymer Optical Fiber Communications
Pu Miao (Southeast University, China); Lenan Wu (Southeast University, China); Linning Peng (Southeast University, China)

16:50  (S42.5) MIMO Signal Processing for Mode Division Multiplexing with RLSCMA Algorithm
Haiyuan Zhao (Beijing University of Posts and Telecommunications, China); Lijia Zhang (Beijing University of Posts and Telecommunications, China); Bo Liu (Beijing University of Posts and Telecommunications, China); Qi Zhang (Beijing University of Posts and Telecommunications, China); Yongjun Wang (Beijing University of Posts and Telecommunications, China); Qinghua Tian (Beijing University of Posts and Telecommunications, China); Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China)

17:10  (S42.6) Phase Regeneration of Phase Modulated Signals in Mode Multiplexed System Using a Silicon Waveguide
Weili Yang (Huazhong University of Science and Technology, China); Yu Yu (Huazhong University of Science and Technology, China)
Technical Program

University of Science and Technology, China; Liao Chen (Huazhong University of Science and Technology, China); Guanyu Chen (Huazhong University of Science and Technology, China); Mengyuan Ye (Huazhong University of Science and Technology, China); Xinliang Zhang (Huazhong University of Science and Technology, China)

Room 3-S43  Integrated Devices

Chair: Lech Wosinski (Royal Institute of Technology, Sweden)

15:30  (S43.1)  Recent Progress in Communications Using Orbital Angular Momentum of EM waves  Invited talk
Siyuan Yu (University of Bristol, UK)

15:50  (S43.2)  2D Material Integration on Chip: Opportunities and Challenges  Invited talk
Tingyi Gu (Columbia University, USA)

16:10  (S43.3)  SPP Based Photonic Integrated Devices  Invited talk
Yidong Huang (Tsinghua University, China)

16:30  (S43.4)  Cascaded Integration of Electroabsorption Modulators for High Speed, Low-Driving Power and Chirp Control Application  Invited talk
Yi-Jen Chiu (National Sun Yat-Sen University, Taiwan)

16:50  (S43.5)  Nanophotonic Devices for On-chip Optical Signal Transmission and Processing  Invited talk
Jian Wang (Huazhong University of Science and Technology, China)

17:10  (S43.6)  Integrated Devices for Parallel Optical Signal Processing  Invited talk
Yu Yu (Huazhong University of Science and Technology, China)

17:30-19:00
Buffet

19:00-21:00
Boat Tourism of Suzhou Moat
Monday, November 10

8:30-10:30

Room 1-M11  Optical Datacenter Networks
Chair: Lei Guo (Northeastern University, China)

8:30  (M11.1) Data Center Optical Transportation Network  Invited talk
Weisheng Hu (Shanghai Jiaotong University, China)

8:50  (M11.2) A Relocation-Based Heuristic for Restoring Optical Cloud Services  
Invited talk
Lena Wosinska (Royal Institute of Technology, Sweden)

9:10  (M11.3) Fighting against Core Switch Failures in Scalable Distributed Data Center Networks  Invited talk
Bin Wu (Tianjin University, China)

9:30  (M11.4) Deployment of Backup Core Switch in Scalable Distributed Data Center Networks
Yanli Zhang (University of Electronic Science and Technology of China, China); Changde Li (Beijing Institute of Satellite Information Engineering, China); Yun Shi (Beijing Institute of Satellite Information Engineering, China); Jie Xiao (Tianjin University, China); Bin Wu (Tianjin University, China); Hong Wen (UESTC, China); Xiaohong Jiang (Future University-Hakodate, Japan)

9:50  (M11.5) Hybrid Access Network Architecture for Datacenter Based on Asynchronous Optical Packet Switching
Fuding Zhang (Southeast University, China); Xu Zhou (Southeast University, China); Xiaohan Sun (Southeast University, China)

10:10  (M11.6) Virtual Machine Migration Techniques for Managing Time-Vari ed Workloads
Shaoping Zheng (University of Electronic Science and Technology of China, China); Hongfang Yu (University of Electronic Science and Technology of China, China); Vishal Anand (The College at Brockport, State University of New York, USA)

Room 2-M12  Optical Transmission Systems II
Chair: Zhongqi Pan (University of Louisiana at Lafayette, USA)

8:30  (M12.1) Transmission and Detection Techniques for Short Range Optical Communication Systems  Invited talk
Chao Lu (Hong Kong Polytechnic University, Hong Kong)
8:50  (M12.2) **Flexible High-Order QAM Transmitters for Elastic Optical Networks**  
*Invited talk*  
Guowei Lu (National Institute of Information and Communications Technology, Japan)

9:10  (M12.3) **Advanced DSP Techniques Enabling Flexible Transmissions and Elastic Optical Networks**  
*Invited talk*  
Alan LAU (Hong Kong Polytechnic University, Hong Kong)

9:30  (M12.4) **Optical Layer Security Enabled by Optical Code Based Technology in Optical Communication Systems**  
*Invited talk*  
Xu Wang (Heriot-Watt University, UK)

9:50  (M12.5) **Reconfigurable FEC Codes for Software-Defined Optical Transceivers**  
Christoforos Kachris (Athens Information Technology, Democritus University of Thrace, Greece); George Tzimpragos (Athens Information Technology, Greece); Dimitrios Soudris (National Technical University of Athens, Greece); Ioannis Tomkos (AIT, Greece)

10:10 (M12.6) **Filtering Effects of Cascaded Flex-Grid ROADMs with High Spectral Resolution Filters on the Transmission of Nyquist and Quasi-Nyquist WDM Super-Channels**  
Pablo Torres-Ferrera (Universidad Nacional Autonoma de Mexico - UNAM, Mexico); Jose Manuel Rivas (Athens Information Technology, Greece); Dimitris Klonidis (AIT, Greece); Dan Marom (Hebrew University, Jerusalem, Israel); Ramon Gutierrez-Castrejon (Universidad Nacional Autonoma de Mexico - UNAM, Mexico); Ioannis Tomkos (AIT, Greece)

**Room 3-M13  Silicon Photonics**

Chair: Xiangfei Cheng (Nanjing University, China)

8:30  (M13.1) **Hybrid Plasmonic Components Based on Silicon Nanowire Platform**  
*Invited talk*  
Lech Wosinski (Royal Institute of Technology, Sweden)

8:50  (M13.2) **Silicon Photonics for Advanced Optical Communications**  
*Invited talk*  
Zhiping Zhou (Peking University, China)

9:10  (M13.3) **An All-Silicon Optical Diode**  
*Invited talk*  
Jian Wang (Purdue University, USA)

9:30  (M13.4) **Monolithically Integrated MOSFET for Controlling Silicon Optical Switch: Is an On-Chip Transistor Capable of Driving a Thermo-optic Phase Shifter?**  
*Invited talk*  
Guangwei Cong (National Institute of Advanced Industrial Science and Technology, Japan)
9:50  (M13.5) **Broadband 4x4 Non-Blocking Optical Switch Fabric Based on Mach-Zehnder Interferometers**  
*Invited talk*  
Linjie Zhou (Shanghai Jiaotong University, China)

10:10  (M13.6) **Silicon Based Optical Matrix Processor for Parallel Computing**  
*Invited talk*  
Lin Yang (Institute of Semiconductor, China)

**10:50-12:50**

**Room 1-M21  Optical Networking Technology II**

Chair: Lena Wosinska (Royal Institute of Technology, Sweden)

10:50  (M21.1) **Optical Paths Supporting Quorums for Efficient Communication**  
*Invited talk*  
Arun K. Somani (Iowa State University, USA)

11:10  (M21.2) **All-Optical Switching for 100-Gb/s and Beyond Optical Networks**  
*Invited talk*  
Ning Deng (Huawei, China)

11:30  (M21.3) **3D Torus ONoC: Topology Design, Router Modeling and Adaptive Routing Algorithm**  
*Invited talk*  
Weigang Hou (Northeast University, China)

11:50  (M21.4) **Impacts of Link-cost and Routing Methods on Overlay Network Performances for Dynamic Traffic Grooming**  
Xiaojun Yu (Nanyang Technological University, Singapore); Gaoxi Xiao (Nanyang Technological University, Singapore); Tee Hiang Cheng (Nanyang Technological University, Singapore); Dezhao Huang (Nanyang Technological University, Singapore)

12:10  (M21.5) **The Functional Architecture of Integrated Sensing Network**  
Xiaolu Zhang (Southeast University, China); Hanfei Sun (Southeast University, China); Pan Chao (Southeast University, China); Xu Zhou (Southeast University, China); Ying Wang (Southeast University, China); Junhua Qiu (Southeast University, China); Yu Zheng (Southeast University, China); Hengjian Tang (Southeast University, China); Xiaohan Sun (Southeast University, China)

12:30  (M21.6) **Theoretical Demonstration of Light Injection into the Communication Fiber**  
Weimin Ding (Beijing University of Posts and Telecommunications, China); Junyi Zhang (Beijing University of Posts and Telecommunications, China); Hongbin Xia (Beijing University of Posts and Telecommunications, China)
Technical Program

Room 2-M22  OFDM Systems

Chair: Qi Yang (State Key Laboratory of Optical Communication Technologies and Networks, China)

10:50  (M22.1) 100G Direct Detection Using Optical OFDM/OQAM  Invited talk
Qi Yang (State Key Laboratory of Optical Communication Technologies and Networks, China)

11:10  (M22.2) Pilot-Based Bind Phase Estimation Method for Coherent Optical OFDM
Invited talk
Zhaohui Li (Jinan University, China)

11:30  (M22.3) DSP-Enhanced TWDM-PON with DSB Modulation towards 100G
Invited talk
Juhao Li (Peking University, China)

11:50  (M22.4) Improved Phase Noise Tolerance Using Phase-Conjugated OFDM Subcarriers
Invited talk
Xinwen Yi (University of Electronic Science and Technology of China, China)

12:10  (M22.5) A Comparative Study of Nonlinear Comping Schemes for CO-OFDM Transmissions
Stéphane Azou (CNRS/Lab-STICC and Ecole Nationale d'Ingénieurs de Brest (ENIB), France); Serban Bejan (Military Technical Academy of Bucharest, Romania); Pascal Morel (ENIB, France); Ammar Sharaiha (ENIB, France)

12:30  (M22.6) Experimental Demonstration of 100-Gb/s Direct Detection OFDM/OQAM Signal over 80-km SSMF within 50-GHz Optical Grid Using a Single Photodiode
Chao Li (Huazhong University of Science and Technology, China); Haibo Li (State Key Lab. of Optical Comm. Technologies and Networks, China); Qi Yang (FiberHome, China); Ming Luo (FiberHome, China); Xuebing Zhang (Jinan University, China); Rong Hu (State Key Lab. of Optical Comm. Technologies and Networks, China); Zhaohui Li (The Hong Kong Polytechnic University, Hong Kong); Wei Li (Huazhong University of Science and Technology, China); Shaohua Yu (Huazhong University of Science and Technology, China)

Room 3-M23  Active Components and Applications II

Chair: Guowei Lu (National Institute of Information and Communications Technology, Japan)

10:50  (M23.1) Integrated Photonics and Components for Space-Division Multiplexing Systems  Invited talk
Nicolas K. Fontaine (Bell Labs, Alcatel-Lucent, USA)

11:10  (M23.2) Optical Switching of Nyquist Superchannel with Flexible Bit Rate
Technical Program

Invited talk
Fan Zhang (Peking University, China)

11:30  (M23.3) On-Chip Light Control via Reconstruction-Equivalent-Chirp Technique and Its Application for Multi-Wavelength DFB Laser Array  Invited talk
Yuechun Shi (Nanjing University, China)

11:50  (M23.4) Photonic Generation of Hybrid PPM-BPSK Microwave Signals Utilizing Polarization-Maintaining FBG  Invited talk
Jia Ye (Southwest Jiaotong University, China)

12:10  (M23.5) Sidelobe Suppression in the Generation of Beam Carrying Orbital Angular Momentum
Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Ji Hao (Beijing University of Posts and Telecommunications, China); Jingjing Han (Beijing University of Posts and Telecommunications, China); Can Xu (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China); Li Li (Beijing University of Posts and Telecommunications, China)

12:30  (M23.6) Stimulated Brillouin Scattering Based Optical Frequency Comb Generation Using a Stocks Wave Recycling Loop
Xiaozhong Ge (Nanjing University of Aeronautics and Astronautics, China); Fangzheng Zhang (Nanjing University of Aeronautics and Astronautics, China); Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)

13:50-15:50
Room 1-M31  Software Defined Optical Networks
Chair: Christine Tremblay (ÉTS, Canada)

13:50  (M31.1) Virtualization and Programmability in Software Defined Optical Networks  Invited talk
Jie Zhang (Beijing University of Posts and Telecommunications, China)

14:10  (M31.2) Open Flow-Controlled Online Spectrum Defragmentation in Software-Defined Elastic Optical Networks  Invited talk
Zuqing Zhu (University of Science and Technology of China, China)

14:30  (M31.3) Experimental Evaluation of Software Defined Passive Optical Network with Network Coding
Tonglu Guo (Beijing University of Posts and Telecommunications, China); Shizong Zhang (Beijing University of Posts and Telecommunications, China); Yang Wang (China Electric
Technical Program

Power Research Institute, China); Guojun Liu (China Electric Power Research Institute, China); Rentao Gu (Beijing University of Posts and Telecommunications, School of Information and Communication Engineering, China); Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

14:50  (M31.4) Global Dynamic Bandwidth Optimization for Software Defined Optical Access and Aggregation Networks
Jialin Wu (Beijing University of Posts and Telecommunications, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Jie Zhang (Beijing University of Posts and Telecommunications, China); Junwen Zhou (Beijing University of Posts and Telecommunications, China); Ji Sun (Beijing University of Posts and Telecommunications, China)

15:10  (M31.5) An Active Queue Management Adaptation Framework for Software Defined Optical Network
Zhaozhi Ge (Beijing University of Posts and Telecommunications, China); Rentao Gu (Beijing University of Posts and Telecommunications, School of Information and Communication Engineering, China); Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

15:30  (M31.6) Master-slave Switching Nodes for Power Grid Communications in Substation Based on Software Defined Network
Yu Zheng (Southeast University, China); Xu Zhou (Southeast University, China); Min Zhu (Southeast University, China); Hehong Fan (Southeast University, China); Xiaohan Sun (Southeast University, China); Junmin Wu (State Grid Electric Power Research Institute, China); Xiaojian Zhang (EPRI, China); Peng Wu (China Electric Power Research Institute, China)

Room 2-M32  Novel Techniques for Optical Transmission I
Chair: Mingyi Gao (Soochow University, China)

13:50  (M32.1) Quadrature Squeezing of Phase Modulated Signals  Invited talk
Takayuki Kurosu (National Institute of Advanced Industrial Science and Technology, Japan)

14:10  (M32.2) Photonic Analog-to-digital Converter (ADC)  Invited talk
Huy Quoc Lam (Nanyang Technological University, Singapore)

14:30  (M32.3) Performance of Digital Phase Estimation QPSK Optical Coherent Receiver with N-Bit Resolution ADCs  Invited talk
Jian Chen (Nanjing University of Post and Telecommunications, China)

14:50  (M32.4) A Microwave Photonic System with Switchable Functions based on Cascaded Polarization Modulators
Technical Program

Yamei Zhang (Nanjing University of Aeronautics and Astronautics, China); Fangzheng Zhang (Nanjing University of Aeronautics and Astronautics, China); Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)

15:10 (M32.5) **Color-Filter-Free WDM MIMO RGB-LED Visible Light Communication System Using Mobile-Phone Camera**

Shih-Hao Chen (National Chiao Tung University, Taiwan); Chi-Wai Chow (National Chiao Tung University, Taiwan)

15:30 (M32.6) **Hierarchical Scheme for Detection of Rotating MIMO Visible Light Communication Systems Using Mobile-Phone Camera**

Shih-Hao Chen (National Chiao Tung University, Taiwan); Chi-Wai Chow (National Chiao Tung University, Taiwan)

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Room 3-M33 Passive Optical Networks

Chair: Chao Lu (Hong Kong Polytechnic University, Hong Kong)

13:50 (M33.1) **1.5-m High-Speed VCSEL Link for Optical Access Applications**

Invited talk

Hoon Kim (National University of Singapore, Singapore)

14:10 (M33.2) **Direct-Detection All-Optical OFDM Superchannel for Long-Reach PON**

Invited talk

Chi-Wai Chow (National Chiao Tung University, Taiwan)

14:30 (M33.3) **Chirp and Frequency offset Tolerant Coherent Burst-Mode Receiver Using Directly Modulated DFB Lasers for Coherent PON Systems**

Dezhao Huang (Nanyang Technological University, Singapore); Alan Pak Tao Lau (Hong Kong Polytechnic University, Hong Kong); Tee Hiang Cheng (Nanyang Technological University, Singapore); Chao Lu (Hong Kong Polytechnic University, Hong Kong); Shuangyi Yan (University of Bristol, United Kingdom); Lei Zhou (Huawei Technologies, China)

14:50 (M33.4) **Automatic Multi-layer Planning for PON Design and Failure Simulation**

Yaocheng Yu (Beijing University of Posts and Telecommunications, China); Yang Wang (China Electric Power Research Institute, China); Hui Li (Beijing University of Posts and Telecommunications, China); Guojun Liu (China Electric Power Research Institute, China); Rentao Gu (Beijing University of Posts and Telecommunications, School of Information and Communication Engineering, China); Yuefeng Ji (Beijing University of Posts and Telecommunications, China)

15:10 (M33.5) **Joint Optimization of Bit and Power Loading for Power Efficient OFDM-PON**

Xiaoxue Gong (Northeastern University, China); Yejun Liu (Northeastern University, China);
Technical Program

Lei Guo (Northeastern University, China)

15:30  (M33.6)  Rayleigh Crosstalk Reduction Base on Optical Filtering and Modified Duo-binary Coding in WDM-PONS
Yanfei Sun (Beijing University of Posts and Telecommunications, China); Zhiguo Zhang (Beijing University of Posts and Telecommunications, China); Jiang Xu (Beijing University of Posts and Telecommunications, China); Xue Chen (Beijing University of posts and Telecommunications, China)

16:10-18:10

Room 1-M41  Network Survivability

Chair: Jie Zhang (Beijing University of Posts and Telecommunications, China)

16:10  (M41.1)  Network Adaptability to Disasters by Exploiting Degraded-Service Tolerance
Invited talk
Biswanath Mukherjee, Ninghai Bao, and S. Sedef Savas (University of California, Davis, USA)

16:30  (M41.2)  Survivable Virtual Optical Network Embedding with Probabilistic Network-Element Failures in Elastic Optical Networks
Guangjun Luo (Beijing University of Posts and Telecommunications, China); Huixia Ding (China Electric Power Research Institute, China); Jing Zhou (China Electric Power Research Institute, China); Jie Zhang (Beijing University of Posts and Telecommunications, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Bowen Chen (School of Electronic and Information Engineering, Soochow University; Beijing University of Posts and Telecommunications, China); Chen Ma (Beijing University of Posts and Telecommunications, China)

16:50  (M41.3)  Spectrum-Shared Ability in Survivable Flexible Bandwidth Optical Networks with Distributed Data Centers Interconnect
Bowen Chen (Soochow University, China); Jie Zhang (Beijing University of Posts and Telecommunications, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Guangjun Luo (Beijing University of Posts and Telecommunications, China)

17:10  (M41.4)  Multi-Faults Re-restoration Algorithm Based on Fuzzy Set Theory in Optical Transport Networks
Yang Wang (China Electric Power Research Institute, China); Xin Li (China Electric Power Research Institute, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Jie Zhang (Beijing University of Posts and Telecommunications, China)

17:30  (M41.5)  Cloud Service Routing in WDM Networks With Awareness on Delay and Link
Technical Program

Failure Probability
Yanli Zhang (University of Electronic Science and Technology of China, China); Yun Shi (Beijing Institute of Satellite Information Engineering, China); Changde Li (Beijing Institute of Satellite Information Engineering, China); Jie Xiao (Tianjin University, China); Bin Wu (Tianjin University, China); Hong Wen (UESTC, China); Xiaohong Jiang (Future University-Hakodate, Japan)

17:50 (M41.6) Node Protection Method with Content-connectivity against Disaster in Disaster Recovery Center Networks
Yang Wang (China Electric Power Research Institute, China); Chen Ma (Beijing University of Posts and Telecommunications, China); Xin Li (China Electric Power Research Institute, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Jie Zhang (Beijing University of Posts and Telecommunications, China)

Room 2-M42 Novel Techniques for Optical Transmission II
Chair: Jian Chen (Nanjing University of Posts and Telecommunications, China)

16:10 (M42.1) Advanced Receiver Design for Next Generation Coherent Systems
Invited talk
Bo Zhang (Juniper Inc., USA)

16:30 (M42.2) Photonic Arbitrary Waveform Generation
Invited talk
Lianshan Yan (Southwest Jiaotong University, China)

16:50 (M42.3) Pilot-aided log-likelihood ratio for LDPC coded CO-OFDM system
Invited talk
Shengjiao Cao (A*STAR Institute for Infocomm Research, Singapore)

17:10 (M42.4) Performance of Carrier Phase Estimation QPSK Optical Coherent Receiver with n-Bit Resolution ADCs
Invited talk
Changyuan Yu (National University of Singapore, Singapore)

17:30 (M42.5) Effects of Atmosphere Turbulence on the Purity of Light Carrying Orbital Angular Momentum Employing Zernike Polynomials Method
Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Can Xu (Beijing University of Posts and Telecommunications, China); Ji Hao (Beijing University of Posts and Telecommunications, China); Jingjing Han (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China); Li Li (Beijing University of Posts and Telecommunications, China)

17:50 (M42.6) Degree Distribution Mapping Method of Parity Check Matrix in LDPC Based FSO Communication through Atmospheric Turbulence Channel
Technical Program

Fei Xiao (Beijing University of Posts and Telecommunications, China); Lijia Zhang (Beijing University of Posts and Telecommunications, China); Bo Liu (Beijing University of Posts and Telecommunications, China); Qi Zhang (Beijing University of Posts and Telecommunications, China); Yongjun Wang (Beijing University of Posts and Telecommunications, China); Jianglong Zheng (Beijing University of Posts and Telecommunications, China); Qinghua Tian (Beijing University of Posts and Telecommunications, China); Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China)

Room 3-M43 Radio over Fiber Systems

Chair: Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)

16:10 (M43.1) Stable Fiber Transmission of RF Signals Using Passive Phase Correction
Invited talk
Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)

16:30 (M43.2) Fiber-connected Massively Distributed Antenna Systems Invited talk
Yixin Wang (A*STAR Institute for Infocomm Research, Singapore)

16:50 (M43.3) Optical Up-conversion of Single Sideband Signal Using Frequency Quadrupling Technique for Radio over Fiber System
Yiying Gu (Dalian University of Technology, China); Jingjing Hu (Dalian University of Technology, China); Zijian Kang (Dalian University of Technology, China); Nuannuan Shi (Dalian University of Technology, China); Zhenlin Wu (Dalian University of Technology, China); Xiyou Han (Dalian University of Technology, China); Qi Liu (Shandong University, China); Mingshan Zhao (Dalian University of Technology, China)

17:10 (M43.4) Photonic Switching of RF Signals Based on Optical Single Sideband Wavelength Conversion in a Semiconductor Optical Amplifier
Dan Zhu (Nanjing University of Aeronautics and Astronautics, China); Huan Wu (Nanjing University of Aeronautics and Astronautics, China); Shilong Pan (Nanjing University of Aeronautics and Astronautics, China)

17:30 (M43.5) Noise-like Pulse Generation by Gold-coated Graphene Covered D-shape Fibre as both Saturable Absorber and Polarizer
Ran Zheng (Shanghai Jiao Tong University, China); Lilin Yi (Shanghai Jiao Tong University, China); Weixiong Li (Shanghai Jiao Tong University, China)

18:30-21:10

Banquet
A Distributed and Scalable Optical Packet Switch Architecture for Data Centers
Shanqing Chen (Beijing University of Posts and Telecommunications, China); Shanguo Huang (Beijing University of Posts and Telecommunications, China); Qian Kong (Beijing University of Posts and Telecommunications, China); Jun Liu (Beijing University of Posts and Telecommunications, China); Shan Yin (Beijing University of Posts and Telecommunication, China); Min Zhang (Beijing University of Posts and Telecommunications, China); Jie Zhang (Beijing University of Posts and Telecommunications, China)

Performance Modeling for Local Data Service in Integrated Sensing Network
Junhua Qiu (Southeast University, China), Ying Wang (Southeast University, China), Hengjian Tang (Southeast University, China), Xiaolu Zhang (Southeast University, China), Yu Zheng (Southeast University, China), Chao Pan (Southeast University, China), Xiaohan Sun (Southeast University, China)

Energy-Efficient Design for IP over WDM Networks With Clock Frequency Adaptive Router Cards
Xuejiao Zhao (Soochow University, China); Weidong Shao (Soochow University, China); Gangxiang Shen (Soochow University, China)

Experimental Demonstration of 20-Gb/s PDM Upstream Transmission Using Intensity Modulator and SCFDE for Coherent WDM-PON
Bangjiang Lin (Peking University, China); Juhao Li (Peking University, China); Yangsha Wan (Peking University, China); Yongqi He (Peking University, China); Zhangyuan Chen (Peking University, China)

Multipath and Optimal Spectrum Continuity based Method for Spectrum De-fragmentation in Pbit/s Optical Switching Node of Flexible Bandwidth Optical Networks
Nengxian Li (Beijing University of Posts and Telecommunications, China); Lijia Zhang (Beijing University of Posts and Telecommunications, China); Bo Liu (Beijing University of Posts and Telecommunications, China); Qi Zhang (Beijing University of Posts and Telecommunications, China); Yongjun Wang (Beijing University of Posts and Telecommunications, China); Qinghua Tian (Beijing University of Posts and Telecommunications, China); Xiaoli Yin (Beijing University of Posts and Telecommunications, China); Xiangjun Xin (Beijing University of Posts and Telecommunications, China)

Greening Optical Networks under Scheduled Traffic Model
Yuqi Fan (Hefei University of Technology, China); Zhaoming Cai (Hefei University of Technology, China); Tao Zhang (Wright State University, USA)

Traffic Grooming for IP over WDM Optical Satellite Networks
Tengyun Dong (Soochow University, China); Gangxiang Shen (Soochow University, China)

Multiple Services Scheduling Scheme of Service Stratum in Integrated Sensing Network
Technical Program

Ying Wang (Southeast University, China); Junhua Qiu (Southeast University, China); Yu Zheng (Southeast University, China); Hengjian Tang (Southeast University, China); Xiaolu Zhang (Southeast University, China); Pan Chao (Southeast University, China); Xiaohan Sun (Southeast University, China)

A Dynamic Bandwidth Planning Algorithm Based On ODUFLEX
Yang Su (Beijing University of Posts and Telecommunications, China); Yuefeng Ji (Beijing University of Posts and Telecommunications, China); Hui Li (Beijing University of Posts and Telecommunications, China)

Perpendicular Multi-layer Architecture among Multi-Domain Software Defined Optical Networks
Yadi Cui (Beijing University of Posts and Telecommunications, China); Yang Wang (China Electric Power Research Institute, China); Shanguo Huang (Beijing University of Posts and Telecommunications, China); Yiming Yu (Beijing University of Posts and Telecommunications, China); Qiang Wang (Beijing University of Posts and Telecommunications, China); Dajiang Wang (ZTE, China); Jiayu Wang (ZTE, China); Xiaobing Niu (ZTE Corporation, China)

Energy Efficient Traffic Grooming in Blocking IP over WDM Networks
Bin Chen (Shenzhen University, China); Donghui Bao (Shenzhen University, China); Robert K. F. Teng (California State University, Long Beach, USA); Tang Ming (Huazhong University of Science and Technology, China); Xiaohui Lin (Shenzhen University, China); Mingjun Dai (Shenzhen University, China); Hui Wang (Shenzhen University, China)

Dynamic Virtual Network Embedding Algorithm Based on Multi-path Virtual Concatenation in Elastic Optical Network
Yue Yu (Beijing University of Posts and Telecommunications, China); Qiang Wang (Beijing University of Posts and Telecommunications, China); Jing Zhou (China Electric Power Research Institute, China); Huixia Ding (China Electric Power Research Institute, China); Yongli Zhao (Beijing University of Posts and Telecommunications, China); Jie Zhang (Beijing University of Posts and Telecommunications, China); Yiming Yu (Beijing University of Posts and Telecommunications, China); Hui Yang (Beijing University of Posts and Telecommunications (Beijing University of Posts and Telecommunications, China); Yang Wang (China Electric Power Research Institute, China); Jiayu Wang (ZTE, China); Dajiang Wang (ZTE, China); Zhenyu Wang (ZTE, China)

BPSK-SIM Free-Space Optical Communication with Reference Continuous Wave Light
Shuchao Zhang (Nanjing University of Posts and Telecommunications, China); Jian Chen (Nanjing University of Posts and Telecommunications, China); Xiaodi You (Nanjing University of Posts and Telecommunications, China); Yulong Wang (Nanjing University of Post and Telecommunications, China)

Analysis of OSNR Monitoring in Optical Fiber Communication System
Mengchi Chen (Soochow University, China); Shanhong You (Soochow University, China)
Technical Program

Digital Coherent Detection with Bandpass Sampling in Multiband Phase-modulated Radio-over-fiber Links
Minghua Cao (Beijing University of Posts and Telecommunications, China); Jianqiang Li (Beijing University of Posts and Telecommunications, China); Kun Xu (Beijing University of Posts and Telecommunications, China); Yitang Dai (Beijing University of Posts and Telecommunications, China); Feifei Yin (Beijing University of Posts and Telecommunications, China)

Research on Carrier Injection Efficiency of SiGe-OI Electro-optic Modulator
Song Feng (Xi’an Polytechnic University, China); Ren-ke Jiang (Xi’an Polytechnic University, China); Yong Gao (Xi’an Polytechnic University, China)

A DIBR Method Based on Foreground Extraction and Holes Corrosion
Rong Hu (Communication University of China, China)
ICOCN 2014 will be held at **Suzhou Marriott Hotel** which is located in the downtown junction with High-Tech Development Zone, adjacent to Suzhou Government and Administrative Service Center.
Address: 1296 Ganjiang Road West, Gusu District Suzhou 215004 China

**Getting to the hotel from Suzhou Railway Station**

*By subway:* take Line-2 (6:10-22:20 3 RMB), stop at Guangjinanlu Station, switch to Line-1 (6:10-22:40), take Line-1, stop at Xihuanlu Station, export from exit NO. 3 and walk to Suzhou Marriott Hotel (~3 RMB).

*By taxi:* take a taxi to Suzhou Marriott Hotel (~20 RMB).
Suzhou is a city with a long history on the lower reaches of the Yangtze River and on the shores of Lake Taihu in the province of Jiangsu, China. The city is renowned for its beautiful stone bridges, pagodas, and meticulously designed gardens, which has become a great tourist attraction. Suzhou has also been an important center for China’s silk industry since the Song Dynasty (960-1279), and continues to hold that prominent position today.

1. **Humble Administrator’s Garden**

Humble Administrator’s Garden is one of four great Chinese gardens. Today’s garden is only very loosely related to its earliest version, but closely resembles its late Qing appearance, with numerous pavilion and bridges set among a maze of connected pools and islands. It consists of three major parts set about a large lake: the central part (Zhuozheng Yuan), the eastern part (once called Guitianyuanju, Dwelling Upon Return to the Countryside), and a western part (the Supplementary Garden).

Traffic route:

a. Walk for two minutes and arrive at Xinhongqiao West bus station, take Bus No.313, and get off at the Beiyuanlu bus station, walk to Humble Administrator’s Garden.

b. Walk for two minutes and arrive at Xinhongqiao West bus station, take Bus No.301, and get off at the Shizilin South bus station, walk to Humble Administrator’s Garden.

c. Take a taxi to Humble Administrator’s Garden at a cost of 30 yuan.

2. **Hanshan Temple**

The Bell-listening Program of Hanshan Temple on New Year’s Eve has been held for 32 years. As one of the earliest tourist programs, it has become a unique name card of Suzhou—the Oriental Venice and a paradise city. Harmonious Culture is an important cornerstone of traditional Chinese culture. Hanshan Temple, one of the Top 10 Temples of China, is well-known in Japan, Hong Kong, Macao and Taiwan as a soulful venue for intellectuals who love the Chinese culture. The melodious bell will bring the Harmonious Spirit and artistic conception to each and every visitor, enrich them and refresh them.

Traffic route:

a. Walk to Hongqiao bus station, take Bus No.935, and get off at Laifengqiao South bus station, then walk to Hanshan Temple.

b. Walk to Xinhongqiao West bus station, take Bus No.415, and get off at Hanshansi South bus station, then walk to Hanshan Temple.

c. Take a taxi to Hanshan Temple at a cost of 15 yuan.
3. Tongli

Tongli has a number of bridges, which endow the town with profound culture and forge the formation of a variety of folk customs, including the most famous custom to go across the “three bridges.” Such a custom is also called “taking a road for peace” and “taking a road against all diseases,” bearing the hope of people for health and peace. The local people consider the bridges to be symbols of luck.

Traffic route: Take a taxi to Tongli at a cost of 100 yuan.

4. The Ancient Canal

The ancient Suzhou City by the side of the Beijing-Hangzhou Grand Canal was a “heaven” drawing all merchants.

People can travel down the river by boat at night to appreciate the grace and exquisiteness of the one-thousand-year-old ancient city through the lights and buildings at the banks. There are 10 ancient gates (including Pan Gate, Xu Gate, Jin Gate and Lu Gate) and 20 bridges of different styles along the route.

Traffic route:
   a. Walk to Hongqiao bus station, take Bus No.935, and get off at Xinshiqiao West bus station, then walk to the Ancient Canal.
   b. Walk to FuerHospital bus station, take Bus No.51, and get off at Xinshiqiao West bus station, then walk to the Ancient Canal.
   c. Take a taxi to the Ancient Canal at a cost of 20 yuan.

5. Canglang Pavilion

Canglang Pavilion, a world cultural heritage site, is located near Sanyuanfang in the southern part of the Suzhou City. It has the longest history among the existing gardens of Suzhou. It was built in the Song Dynasty as the private garden of scholar Su Shunqin, covering an area of 1.08 hectares. There is a stream of water running through the garden, showing a beautiful scene with reflections in the shimmering water.

Traffic route:
   a. Walk to Hongqiao bus station, take Bus No.935, and get off at Gongrenwenhuagong South bus station, then walk to the Canglang Pavilion.
   b. Walk to FuerHospital bus station, take Bus No.308, and get off at Gongrenwenhuagong South bus station, then walk to the Canglang Pavilion.
   c. Take a taxi to Canglang Pavilion at a cost of 20 yuan.